

INSTALLATION INSTRUCTIONS

AC500 product family

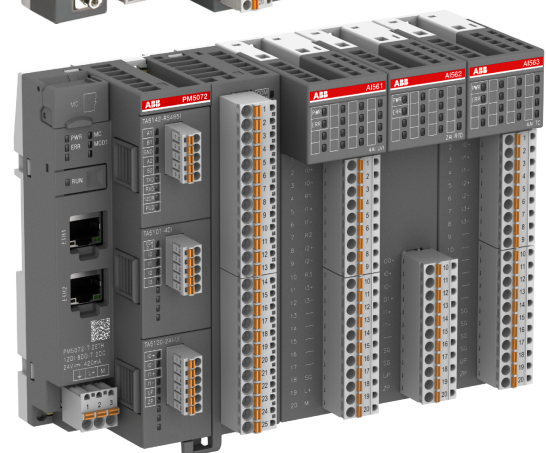
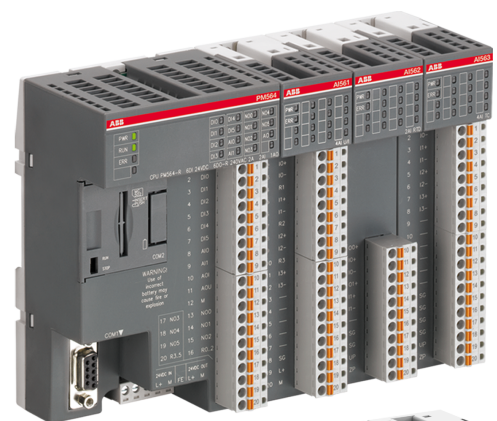
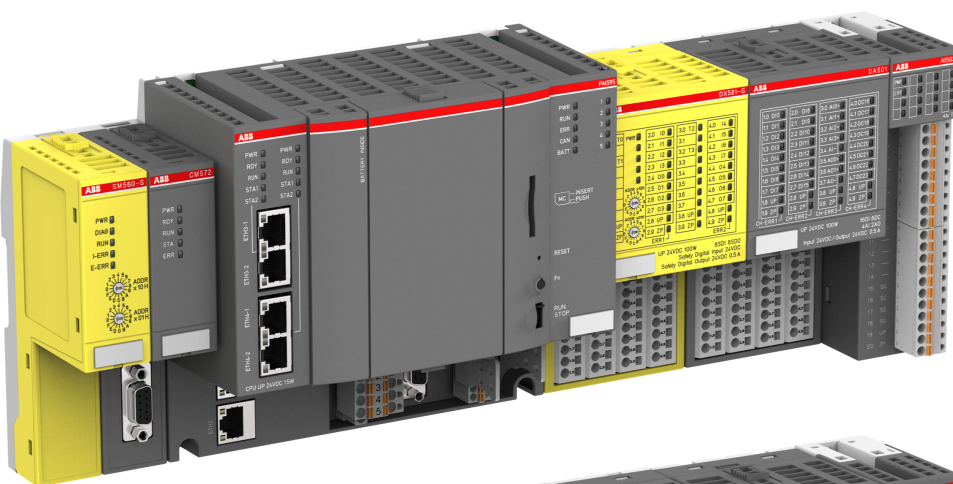


Table of contents

1	Documentation guide.....	31
2	Regulations.....	32
3	Safety instructions.....	33
4	AC522(-XC).....	37
4.1	Assembly.....	40
4.2	Disassembly.....	41
4.3	Dimensions.....	41
4.4	Connections.....	42
4.4.1	Process supply voltage.....	43
4.4.2	Inputs/Outputs.....	43
4.5	Cleaning.....	44
4.6	Certification.....	44
4.7	Recycling.....	44
5	AI523(-XC).....	45
5.1	Assembly.....	48
5.2	Disassembly.....	49
5.3	Dimensions.....	49
5.4	Connections.....	50
5.4.1	Process supply voltage.....	51
5.4.2	Inputs.....	51
5.5	Cleaning.....	52
5.6	Certification.....	52
5.7	Recycling.....	52
6	AI531(-XC).....	53
6.1	Assembly.....	56
6.2	Disassembly.....	57
6.3	Dimensions.....	57
6.4	Connections.....	58
6.4.1	Process supply voltage.....	59
6.4.2	Inputs.....	59
6.5	Cleaning.....	60
6.6	Certification.....	60
6.7	Recycling.....	61
7	AI561	62
7.1	Assembly.....	63
7.2	Disassembly.....	63
7.3	Assembly with screws.....	64
7.4	Dimensions.....	65
7.5	Connections.....	66
7.5.1	Inputs/Outputs.....	67
7.6	Cleaning.....	67
7.7	Certification.....	68
7.8	Recycling.....	68
8	AI562	69
8.1	Assembly.....	70
8.2	Disassembly.....	70

8.3	Assembly with screws.....	71
8.4	Dimensions.....	72
8.5	Connections.....	73
8.5.1	Inputs/Outputs.....	74
8.6	Cleaning.....	74
8.7	Certification.....	74
8.8	Recycling.....	75
9	AI563	76
9.1	Assembly.....	77
9.2	Disassembly.....	77
9.3	Assembly with screws.....	78
9.4	Dimensions.....	79
9.5	Connections.....	80
9.5.1	Inputs/Outputs.....	81
9.6	Cleaning.....	81
9.7	Certification.....	82
9.8	Recycling.....	82
10	AI581-S(-XC).....	83
10.1	Assembly.....	84
10.2	Disassembly.....	84
10.3	Dimensions.....	85
10.4	Connections.....	86
10.4.1	Process supply voltage.....	87
10.4.2	Inputs.....	87
10.5	Cleaning.....	88
10.6	Certification.....	88
10.7	Recycling.....	88
11	AO523(-XC).....	89
11.1	Assembly.....	92
11.2	Disassembly.....	93
11.3	Dimensions.....	93
11.4	Connections.....	94
11.4.1	Process supply voltage.....	95
11.4.2	Outputs.....	95
11.5	Cleaning.....	96
11.6	Certification.....	96
11.7	Recycling.....	96
12	AO561	97
12.1	Assembly.....	98
12.2	Disassembly.....	98
12.3	Assembly with screws.....	99
12.4	Dimensions.....	100
12.5	Connections.....	101
12.5.1	Inputs/Outputs.....	102
12.6	Cleaning.....	102
12.7	Certification.....	102
12.8	Recycling.....	103
13	AX521(-XC).....	104
13.1	Assembly.....	107
13.2	Disassembly.....	108

13.3	Dimensions.....	108
13.4	Connections.....	109
13.4.1	Process supply voltage.....	110
13.4.2	Inputs.....	110
13.4.3	Outputs.....	110
13.5	Cleaning.....	111
13.6	Certification.....	111
13.7	Recycling.....	111
14	AX522(-XC).....	112
14.1	Assembly.....	115
14.2	Disassembly.....	116
14.3	Dimensions.....	116
14.4	Connections.....	117
14.4.1	Process supply voltage.....	118
14.4.2	Inputs.....	118
14.4.3	Outputs.....	118
14.5	Cleaning.....	119
14.6	Certification.....	119
14.7	Recycling.....	119
15	AX561	120
15.1	Assembly.....	121
15.2	Disassembly.....	121
15.3	Assembly with screws.....	122
15.4	Dimensions.....	123
15.5	Connections.....	124
15.5.1	Inputs/Outputs.....	125
15.6	Cleaning.....	125
15.7	Certification.....	126
15.8	Recycling.....	126
16	CD522(-XC).....	127
16.1	Assembly.....	128
16.2	Disassembly.....	128
16.3	Dimensions.....	129
16.4	Connections.....	130
16.4.1	Process supply voltage.....	131
16.4.2	Inputs.....	131
16.4.3	Inputs/Outputs.....	132
16.4.4	Outputs.....	132
16.5	Cleaning.....	133
16.6	Certification.....	133
16.7	Recycling.....	134
17	CI501-PNIO(-XC).....	135
17.1	Assembly.....	138
17.2	Disassembly.....	139
17.3	Dimensions.....	139
17.4	Connections.....	140
17.4.1	Process supply voltage.....	141
17.4.2	Inputs/Outputs.....	141
17.5	Cleaning.....	142
17.6	Certification.....	143

17.7	Recycling.....	143
18	CI502-PNIO(-XC).....	144
18.1	Assembly.....	147
18.2	Disassembly.....	148
18.3	Dimensions.....	148
18.4	Connections.....	149
18.4.1	Process supply voltage.....	150
18.4.2	Inputs/Outputs.....	150
18.5	Cleaning.....	151
18.6	Certification.....	151
18.7	Recycling.....	151
19	CI504-PNIO(-XC).....	152
19.1	Assembly.....	153
19.2	Disassembly.....	153
19.3	Dimensions.....	154
19.4	Connections.....	155
19.4.1	Process supply voltage.....	156
19.4.2	Ethernet network interfaces.....	156
19.4.3	Serial interfaces COM1/COM2/COM3.....	157
19.5	Cleaning.....	158
19.6	Certification.....	158
19.7	Recycling.....	158
20	CI506-PNIO(-XC).....	159
20.1	Assembly.....	160
20.2	Disassembly.....	160
20.3	Dimensions.....	161
20.4	Connections.....	162
20.4.1	Process supply voltage.....	163
20.4.2	Serial interface COM1/COM2.....	163
20.4.3	CANopen interface.....	164
20.5	Cleaning.....	164
20.6	Certification.....	165
20.7	Recycling.....	165
21	CI511-ETHCAT.....	166
21.1	Assembly.....	169
21.2	Disassembly.....	170
21.3	Dimensions.....	170
21.4	Connections.....	171
21.4.1	Process supply voltage.....	172
21.4.2	Inputs/Outputs.....	172
21.5	Cleaning.....	173
21.6	Certification.....	173
21.7	Recycling.....	174
22	CI512-ETHCAT.....	175
22.1	Assembly.....	178
22.2	Disassembly.....	178
22.3	Dimensions.....	179
22.4	Connections.....	180
22.4.1	Process supply voltage.....	181
22.4.2	Inputs/Outputs.....	181

22.5	Cleaning.....	182
22.6	Certification.....	182
22.7	Recycling.....	182
23	CI521-MODTCP(-XC).....	183
23.1	Assembly.....	186
23.2	Disassembly.....	187
23.3	Dimensions.....	187
23.4	Connections.....	188
23.4.1	Process supply voltage.....	189
23.4.2	Inputs/Outputs.....	189
23.5	Cleaning.....	190
23.6	Certification.....	191
23.7	Recycling.....	191
24	CI522-MODTCP(-XC).....	192
24.1	Assembly.....	195
24.2	Disassembly.....	196
24.3	Dimensions.....	196
24.4	Connections.....	197
24.4.1	Process supply voltage.....	198
24.4.2	Inputs/Outputs.....	198
24.5	Cleaning.....	199
24.6	Certification.....	199
24.7	Recycling.....	200
25	CI541-DP(-XC).....	201
25.1	Assembly.....	204
25.2	Disassembly.....	205
25.3	Dimensions.....	205
25.4	Connections.....	206
25.4.1	Process supply voltage.....	207
25.4.2	Inputs/Outputs.....	207
25.5	Cleaning.....	208
25.6	Certification.....	208
25.7	Recycling.....	209
26	CI542-DP(-XC).....	210
26.1	Assembly.....	213
26.2	Disassembly.....	214
26.3	Dimensions.....	214
26.4	Connections.....	215
26.4.1	Process supply voltage.....	216
26.4.2	Inputs/Outputs.....	216
26.5	Cleaning.....	217
26.6	Certification.....	217
26.7	Recycling.....	217
27	CI581-CN(-XC).....	218
27.1	Assembly.....	219
27.2	Disassembly.....	219
27.3	Dimensions.....	220
27.4	Connections.....	221
27.4.1	Process supply voltage.....	222
27.4.2	Inputs.....	222

27.5	Cleaning.....	223
27.6	Certification.....	223
27.7	Recycling.....	224
28	CI582-CN(-XC).....	225
28.1	Assembly.....	226
28.2	Disassembly.....	226
28.3	Dimensions.....	227
28.4	Connections.....	228
28.4.1	Process supply voltage.....	229
28.4.2	Inputs.....	229
28.5	Cleaning.....	230
28.6	Certification.....	230
28.7	Recycling.....	230
29	CI590-CS31-HA(-XC).....	231
29.1	Assembly.....	232
29.2	Disassembly.....	232
29.3	Dimensions.....	233
29.4	Connections.....	234
29.4.1	Process supply voltage.....	235
29.4.2	Inputs/Outputs.....	235
29.5	Certification.....	236
29.6	Recycling.....	236
30	CI592-CS31(-XC).....	237
30.1	Assembly.....	238
30.2	Disassembly.....	238
30.3	Dimensions.....	239
30.4	Connections.....	240
30.4.1	Process supply voltage.....	241
30.4.2	Inputs/Outputs.....	241
30.5	Certification.....	242
30.6	Recycling.....	243
31	CM5640-2ETH(-XC).....	244
31.1	Assembly.....	244
31.2	Disassembly.....	245
31.3	Dimensions.....	245
31.4	Connections.....	246
31.4.1	Ethernet network interface.....	246
31.5	Cleaning.....	247
31.6	Certification.....	247
31.7	Recycling.....	247
32	CM574-x.....	248
32.1	Assembly.....	248
32.2	Disassembly.....	249
32.3	Dimensions.....	249
32.4	Connections.....	250
32.4.1	Serial interface.....	251
32.5	Cleaning.....	252
32.6	Certification.....	252
32.7	Recycling.....	252

33	CM579-x(-XC)	253
33.1	Assembly	254
33.2	Disassembly	254
33.3	Dimensions	254
33.4	Connections	255
33.4.1	Ethernet network interface	256
33.5	Cleaning	256
33.6	Certification	256
33.7	Recycling	257
34	CM582-DP(-XC)	258
34.1	Assembly	258
34.2	Disassembly	259
34.3	Dimensions	259
34.4	Connections	260
34.4.1	PROFIBUS interface	260
34.5	Cleaning	261
34.6	Certification	261
34.7	Recycling	261
35	CM588-CN(-XC)	262
35.1	Assembly	262
35.2	Disassembly	263
35.3	Dimensions	263
35.4	Connections	264
35.4.1	CAN interface	265
35.5	Cleaning	265
35.6	Certification	265
35.7	Recycling	266
36	CM589-PNIO(-4)(-XC)	267
36.1	Assembly	267
36.2	Disassembly	268
36.3	Dimensions	268
36.4	Connections	269
36.4.1	Ethernet network interface	269
36.5	Cleaning	270
36.6	Certification	270
36.7	Recycling	270
37	CM592-DP(-XC)	271
37.1	Assembly	271
37.2	Disassembly	272
37.3	Dimensions	272
37.4	Connections	273
37.4.1	PROFIBUS interface	273
37.5	Cleaning	274
37.6	Certification	274
37.7	Recycling	274
38	CM597-ETH(-XC)	275
38.1	Assembly	275
38.2	Disassembly	276
38.3	Dimensions	276

38.4	Connections.....	277
38.4.1	Ethernet network interface.....	277
38.5	Cleaning.....	278
38.6	Certification.....	278
38.7	Recycling.....	278
39	CM598-CN(-XC).....	279
39.1	Assembly.....	279
39.2	Disassembly.....	280
39.3	Dimensions.....	280
39.4	Connections.....	281
39.4.1	CAN interface.....	282
39.5	Cleaning.....	282
39.6	Certification.....	282
39.7	Recycling.....	283
40	DA501(-XC).....	284
40.1	Assembly.....	287
40.2	Disassembly.....	288
40.3	Dimensions.....	288
40.4	Connections.....	289
40.4.1	Process supply voltage.....	290
40.4.2	Inputs/Outputs.....	290
40.5	Cleaning.....	291
40.6	Certification.....	291
40.7	Recycling.....	292
41	DA502(-XC).....	293
41.1	Assembly.....	296
41.2	Disassembly.....	297
41.3	Dimensions.....	297
41.4	Connections.....	298
41.4.1	Process supply voltage.....	299
41.4.2	Inputs/Outputs.....	299
41.5	Cleaning.....	300
41.6	Certification.....	300
41.7	Recycling.....	301
42	DC501-CS31-AD.....	302
42.1	Dimensions.....	303
42.2	Connections.....	304
42.2.1	Bus termination.....	304
42.2.2	ADDR.....	305
42.2.3	SEL.....	305
42.2.4	Plug connection.....	305
42.3	Cleaning.....	308
42.4	Certification.....	309
42.5	Recycling.....	309
43	DC522(-XC).....	310
43.1	Assembly.....	313
43.2	Disassembly.....	314
43.3	Dimensions.....	314
43.4	Connections.....	315
43.4.1	Process supply voltage.....	316

43.4.2	Inputs/Outputs.....	316
43.5	Cleaning.....	316
43.6	Certification.....	317
43.7	Recycling.....	317
44	DC523(-XC).....	318
44.1	Assembly.....	321
44.2	Disassembly.....	322
44.3	Dimensions.....	322
44.4	Connections.....	323
44.4.1	Process supply voltage.....	324
44.4.2	Inputs/Outputs.....	324
44.5	Cleaning.....	324
44.6	Certification.....	325
44.7	Recycling.....	325
45	DC532(-XC).....	326
45.1	Assembly.....	329
45.2	Disassembly.....	330
45.3	Dimensions.....	330
45.4	Connections.....	331
45.4.1	Process supply voltage.....	332
45.4.2	Inputs.....	332
45.4.3	Inputs/Outputs.....	332
45.5	Cleaning.....	333
45.6	Certification.....	333
45.7	Recycling.....	333
46	DC541-CM(-XC).....	334
46.1	Assembly.....	334
46.2	Disassembly.....	335
46.3	Dimensions.....	335
46.4	Connections.....	336
46.4.1	Process supply voltage.....	337
46.4.2	Inputs/Outputs.....	337
46.5	Cleaning.....	337
46.6	Certification.....	338
46.7	Recycling.....	338
47	DC551-CS31(-XC).....	339
47.1	Assembly.....	340
47.2	Disassembly.....	340
47.3	Dimensions.....	341
47.4	Connections.....	342
47.4.1	Process supply voltage.....	343
47.4.2	Inputs.....	343
47.4.3	Inputs/Outputs.....	343
47.5	Cleaning.....	344
47.6	Certification.....	344
47.7	Recycling.....	344
48	DC562.....	345
48.1	Assembly.....	346
48.2	Disassembly.....	346
48.3	Assembly with screws.....	347

48.4	Dimensions.....	348
48.5	Connections.....	349
48.5.1	Inputs/Outputs.....	350
48.6	Cleaning.....	351
48.7	Certification.....	351
48.8	Recycling.....	351
49	DI524(-XC).....	352
49.1	Assembly.....	355
49.2	Disassembly.....	356
49.3	Dimensions.....	356
49.4	Connections.....	357
49.4.1	Process supply voltage.....	358
49.4.2	Inputs.....	358
49.5	Cleaning.....	358
49.6	Certification.....	359
49.7	Recycling.....	359
50	DI561.....	360
50.1	Assembly.....	361
50.2	Disassembly.....	361
50.3	Assembly with screws.....	362
50.4	Dimensions.....	363
50.5	Connections.....	364
50.5.1	Inputs/Outputs.....	365
50.6	Cleaning.....	365
50.7	Certification.....	365
50.8	Recycling.....	366
51	DI562.....	367
51.1	Assembly.....	368
51.2	Disassembly.....	368
51.3	Assembly with screws.....	369
51.4	Dimensions.....	370
51.5	Connections.....	371
51.5.1	Inputs.....	372
51.6	Cleaning.....	373
51.7	Certification.....	373
51.8	Recycling.....	373
52	DI571.....	374
52.1	Assembly.....	375
52.2	Disassembly.....	375
52.3	Assembly with screws.....	376
52.4	Dimensions.....	377
52.5	Connections.....	378
52.5.1	Inputs/Outputs.....	379
52.6	Cleaning.....	380
52.7	Certification.....	380
52.8	Recycling.....	380
53	DI572.....	381
53.1	Assembly.....	382
53.2	Disassembly.....	382
53.3	Assembly with screws.....	383

53.4	Dimensions.....	384
53.5	Connections.....	385
53.5.1	Inputs/Outputs.....	386
53.6	Cleaning.....	387
53.7	Certification.....	387
53.8	Recycling.....	387
54	DI581-S(-XC).....	388
54.1	Assembly.....	389
54.2	Disassembly.....	389
54.3	Dimensions.....	390
54.4	Connections.....	391
54.4.1	Process supply voltage.....	392
54.4.2	Inputs.....	392
54.5	Cleaning.....	393
54.6	Certification.....	393
54.7	Recycling.....	393
55	DO524(-XC).....	394
55.1	Assembly.....	397
55.2	Disassembly.....	398
55.3	Dimensions.....	398
55.4	Connections.....	399
55.4.1	Process supply voltage.....	400
55.4.2	Outputs.....	400
55.5	Cleaning.....	400
55.6	Certification.....	400
55.7	Recycling.....	401
56	DO526(-XC).....	402
56.1	Assembly.....	405
56.2	Disassembly.....	406
56.3	Dimensions.....	406
56.4	Connections.....	407
56.4.1	Process supply voltage.....	408
56.4.2	Outputs.....	408
56.5	Cleaning.....	408
56.6	Certification.....	409
56.7	Recycling.....	409
57	DO561.....	410
57.1	Assembly.....	411
57.2	Disassembly.....	411
57.3	Assembly with screws.....	412
57.4	Dimensions.....	413
57.5	Connections.....	414
57.5.1	Outputs.....	415
57.6	Cleaning.....	415
57.7	Certification.....	416
57.8	Recycling.....	416
58	DO562.....	417
58.1	Assembly.....	418
58.2	Disassembly.....	418
58.3	Assembly with screws.....	419

58.4	Dimensions.....	420
58.5	Connections.....	421
58.5.1	Outputs.....	422
58.6	Cleaning.....	423
58.7	Certification.....	423
58.8	Recycling.....	423
59	DO571.....	424
59.1	Assembly.....	425
59.2	Disassembly.....	425
59.3	Assembly with screws.....	426
59.4	Dimensions.....	427
59.5	Connections.....	428
59.5.1	Inputs/Outputs.....	429
59.6	Cleaning.....	430
59.7	Certification.....	430
59.8	Recycling.....	430
60	DO572.....	431
60.1	Assembly.....	432
60.2	Disassembly.....	432
60.3	Assembly with screws.....	433
60.4	Dimensions.....	434
60.5	Connections.....	435
60.5.1	Outputs.....	436
60.6	Cleaning.....	437
60.7	Certification.....	437
60.8	Recycling.....	437
61	DO573.....	438
61.1	Assembly.....	439
61.2	Disassembly.....	439
61.3	Assembly with screws.....	440
61.4	Dimensions.....	441
61.5	Connections.....	442
61.5.1	Outputs.....	444
61.6	Cleaning.....	445
61.7	Certification.....	445
61.8	Recycling.....	445
62	DX522(-XC).....	446
62.1	Assembly.....	449
62.2	Disassembly.....	450
62.3	Dimensions.....	450
62.4	Connections.....	451
62.4.1	Process supply voltage.....	452
62.4.2	Inputs.....	452
62.4.3	Outputs.....	452
62.5	Cleaning.....	453
62.6	Certification.....	453
62.7	Recycling.....	453
63	DX531.....	454
63.1	Assembly.....	457
63.2	Disassembly.....	457

63.3	Dimensions.....	458
63.4	Connections.....	459
63.4.1	Process supply voltage.....	460
63.4.2	Inputs.....	460
63.4.3	Outputs.....	460
63.5	Cleaning.....	461
63.6	Certification.....	461
63.7	Recycling.....	461
64	DX561.....	462
64.1	Assembly.....	463
64.2	Disassembly.....	463
64.3	Assembly with screws.....	464
64.4	Dimensions.....	465
64.5	Connections.....	466
64.5.1	Inputs/Outputs.....	467
64.6	Cleaning.....	468
64.7	Certification.....	468
64.8	Recycling.....	468
65	DX571.....	469
65.1	Assembly.....	470
65.2	Disassembly.....	470
65.3	Assembly with screws.....	471
65.4	Dimensions.....	472
65.5	Connections.....	473
65.5.1	Inputs/Outputs.....	475
65.6	Cleaning.....	476
65.7	Certification.....	476
65.8	Recycling.....	476
66	DX581-S(-XC).....	477
66.1	Assembly.....	478
66.2	Disassembly.....	478
66.3	Dimensions.....	479
66.4	Connections.....	480
66.4.1	Process supply voltage.....	481
66.4.2	Inputs/Outputs.....	481
66.5	Cleaning.....	482
66.6	Certification.....	482
66.7	Recycling.....	483
67	FM502-CMS(-XC).....	484
67.1	Assembly.....	485
67.2	Disassembly.....	485
67.3	Dimensions.....	486
67.4	Connections.....	487
67.4.1	Process supply voltage.....	488
67.4.2	Ethernet network interface.....	488
67.4.3	Serial interface COM.....	489
67.4.4	Inputs/Outputs.....	490
67.5	Cleaning.....	491
67.6	Certification.....	492
67.7	Recycling.....	492

68	FM562	493
68.1	Assembly	494
68.2	Disassembly	494
68.3	Assembly with screws	495
68.4	Dimensions	496
68.5	Connections	497
68.5.1	Inputs/Outputs	498
68.6	Cleaning	499
68.7	Certification	499
68.8	Recycling	499
69	MC503 - Memory card adapter	500
69.1	Assembly	501
69.2	Disassembly	501
69.3	Cleaning	502
69.4	Certification	502
69.5	Recycling	503
70	MC5xx(x) - Memory card	504
70.1	Assembly	505
70.2	Disassembly	506
70.3	Dimensions	508
70.4	Cleaning	509
70.5	Certification	509
70.6	Recycling	510
71	PM5012-x-ETH	511
71.1	Assembly	512
71.1.1	Assembly TA5301-CFA	513
71.2	Disassembly	513
71.3	Assembly with screws	514
71.4	Dimensions	515
71.5	Connections	516
71.5.1	Power supply	517
71.5.2	Ethernet network interface(s)	518
71.5.3	Onboard I/Os	518
71.6	Cleaning	526
71.7	Certification	526
71.8	Recycling	526
72	PM5032-x-ETH	527
72.1	Assembly	528
72.1.1	Assembly TA5301-CFA	529
72.2	Disassembly	529
72.3	Assembly with screws	530
72.4	Dimensions	531
72.5	Connections	532
72.5.1	Power supply	533
72.5.2	Ethernet network interface(s)	534
72.5.3	Onboard I/Os	534
72.6	Cleaning	542
72.7	Certification	542
72.8	Recycling	542

73	PM5052-x-ETH	543
73.1	Assembly	544
73.1.1	Assembly TA5301-CFA	545
73.2	Disassembly	545
73.3	Assembly with screws	546
73.4	Dimensions	547
73.5	Connections	548
73.5.1	Power supply	549
73.5.2	Ethernet network interface(s)	550
73.5.3	Onboard I/Os	550
73.6	Cleaning	558
73.7	Certification	558
73.8	Recycling	558
74	PM5072-T-2ETH(W)	559
74.1	Assembly	560
74.1.1	Assembly TA5301-CFA	561
74.2	Disassembly	561
74.3	Assembly with screws	562
74.4	Dimensions	563
74.5	Connections	564
74.5.1	Power supply	565
74.5.2	Ethernet network interface(s)	566
74.5.3	Onboard I/Os	566
74.6	Cleaning	574
74.7	Certification	574
74.8	Recycling	574
75	PM5082-T-2ETH	575
75.1	Assembly	576
75.1.1	Assembly TA5301-CFA	577
75.2	Disassembly	577
75.3	Assembly with screws	578
75.4	Dimensions	579
75.5	Connections	580
75.5.1	Power supply	581
75.5.2	Ethernet network interface(s)	582
75.5.3	Onboard I/Os	582
75.6	Cleaning	590
75.7	Certification	590
75.8	Recycling	590
76	PM554-x(-x)	591
76.1	Assembly	592
76.2	Disassembly	592
76.3	Assembly with screws	593
76.4	Dimensions	593
76.5	Connections	594
76.5.1	Serial interface COM1	595
76.5.2	Serial interface COM2	595
76.5.3	Inputs/Outputs	596
76.6	Cleaning	597
76.7	Certification	597

76.8	Recycling.....	598
77	PM556-TP-ETH.....	599
77.1	Assembly.....	600
77.2	Disassembly.....	600
77.3	Assembly with screws.....	601
77.4	Dimensions.....	601
77.5	Connections.....	602
77.5.1	Power Supply.....	603
77.5.2	Serial interface COM1.....	604
77.5.3	Serial interface COM2.....	604
77.5.4	Inputs/Outputs.....	605
77.6	Cleaning.....	605
77.7	Certification.....	605
77.8	Recycling.....	606
78	PM5630-2ETH(-XC).....	607
78.1	Assembly.....	608
78.2	Disassembly.....	608
78.3	Dimensions.....	609
78.4	Connections.....	610
78.5	Cleaning.....	611
78.6	Certification.....	611
78.7	Recycling.....	611
79	PM564-x(-x).....	612
79.1	Assembly.....	613
79.2	Disassembly.....	613
79.3	Assembly with screws.....	614
79.4	Dimensions.....	614
79.5	Connections.....	615
79.5.1	Power supply.....	616
79.5.2	Serial interface COM1.....	617
79.5.3	Serial interface COM2.....	617
79.5.4	Inputs/Outputs.....	618
79.6	Cleaning.....	619
79.7	Certification.....	619
79.8	Recycling.....	620
80	PM5650-2ETH(-XC).....	621
80.1	Assembly.....	622
80.2	Disassembly.....	622
80.3	Dimensions.....	623
80.4	Connections.....	624
80.5	Cleaning.....	625
80.6	Certification.....	625
80.7	Recycling.....	625
81	PM566-TP-ETH.....	626
81.1	Assembly.....	627
81.2	Disassembly.....	627
81.3	Assembly with screws.....	628
81.4	Dimensions.....	628
81.5	Connections.....	629
81.5.1	Serial interface COM1.....	630

81.5.2	Serial interface COM2.....	630
81.5.3	Inputs/Outputs.....	631
81.6	Cleaning.....	631
81.7	Certification.....	631
81.8	Recycling.....	632
82	PM5670-2ETH(-XC).....	633
82.1	Assembly.....	634
82.2	Disassembly.....	634
82.3	Dimensions.....	635
82.4	Connections.....	636
82.5	Cleaning.....	637
82.6	Certification.....	637
82.7	Recycling.....	637
83	PM5675-2ETH(-XC).....	638
83.1	Assembly.....	639
83.2	Disassembly.....	639
83.3	Dimensions.....	640
83.4	Connections.....	641
83.5	Cleaning.....	642
83.6	Certification.....	642
83.7	Recycling.....	642
84	PM572.....	643
84.1	Assembly.....	644
84.2	Disassembly.....	644
84.3	Dimensions.....	645
84.4	Connections.....	646
84.5	Cleaning.....	646
84.6	Certification.....	647
84.7	Recycling.....	647
85	PM573-ETH(-XC).....	648
85.1	Assembly.....	649
85.2	Disassembly.....	649
85.3	Dimensions.....	650
85.4	Connections.....	651
85.5	Cleaning.....	651
85.6	Certification.....	652
85.7	Recycling.....	652
86	PM582(-XC).....	653
86.1	Assembly.....	654
86.2	Disassembly.....	654
86.3	Dimensions.....	655
86.4	Connections.....	656
86.5	Cleaning.....	656
86.6	Certification.....	657
86.7	Recycling.....	657
87	PM583-ETH(-XC).....	658
87.1	Assembly.....	659
87.2	Disassembly.....	659
87.3	Dimensions.....	660

87.4	Connections.....	661
87.5	Cleaning.....	661
87.6	Certification.....	662
87.7	Recycling.....	662
88	PM585-ETH.....	663
88.1	Assembly.....	664
88.2	Disassembly.....	664
88.3	Dimensions.....	665
88.4	Connections.....	666
88.5	Cleaning.....	666
88.6	Certification.....	667
88.7	Recycling.....	667
89	PM590-x.....	668
89.1	Assembly.....	669
89.2	Disassembly.....	669
89.3	Dimensions.....	670
89.4	Connections.....	671
89.5	Cleaning.....	671
89.6	Certification.....	672
89.7	Recycling.....	672
90	PM591-ETH(-XC).....	673
90.1	Assembly.....	674
90.2	Disassembly.....	674
90.3	Dimensions.....	675
90.4	Connections.....	676
90.5	Cleaning.....	676
90.6	Certification.....	677
90.7	Recycling.....	677
91	PM592-ETH(-XC).....	678
91.1	Assembly.....	679
91.2	Disassembly.....	679
91.3	Dimensions.....	680
91.4	Connections.....	681
91.5	Cleaning.....	681
91.6	Certification.....	682
91.7	Recycling.....	682
92	PM595-4ETH-x(-XC).....	683
92.1	Assembly.....	684
92.2	Disassembly.....	684
92.3	Assembly with screws.....	685
92.4	Dimensions.....	686
92.5	Connections.....	687
92.5.1	Power supply.....	687
92.5.2	Serial interface COM1.....	688
92.5.3	Serial interface COM2.....	688
92.5.4	Ethernet network interface.....	689
92.6	Cleaning.....	689
92.7	Certification.....	689
92.8	Recycling.....	690

93	SM560-S(-FD-x)(-XC)	691
93.1	Assembly.....	691
93.2	Disassembly.....	692
93.3	Dimensions.....	692
93.4	Connections.....	693
93.5	Cleaning.....	693
93.6	Certification.....	693
93.7	Recycling.....	694
94	TA5101-4DI(W) - Option board for digital I/O extension	695
94.1	Assembly.....	695
94.1.1	Optimized mounting of the option boards.....	696
94.2	Disassembly.....	697
94.3	Dimensions.....	698
94.4	Connections.....	699
94.4.1	Inputs/Outputs.....	700
94.5	Cleaning.....	700
94.6	Certification.....	701
94.7	Recycling.....	701
95	TA5105-4DOT(W) - Digital output module option board	702
95.1	Assembly.....	702
95.1.1	Optimized mounting of the option boards.....	703
95.2	Disassembly.....	704
95.3	Dimensions.....	705
95.4	Connections.....	706
95.4.1	Inputs/Outputs.....	707
95.5	Cleaning.....	707
95.6	Certification.....	708
95.7	Recycling.....	708
96	TA5110-2DI2DO(T/W) - Option board for digital I/O extension	709
96.1	Assembly.....	709
96.1.1	Optimized mounting of the option boards.....	710
96.2	Disassembly.....	711
96.3	Dimensions.....	712
96.4	Connections.....	713
96.4.1	Inputs/Outputs.....	714
96.5	Cleaning.....	715
96.6	Certification.....	715
96.7	Recycling.....	715
97	TA5120-2AI-UI(W) - Option board for analog I/O extension	716
97.1	Assembly.....	717
97.1.1	Optimized mounting of the option boards.....	717
97.2	Disassembly.....	718
97.3	Dimensions.....	719
97.4	Connections.....	720
97.5	Cleaning.....	722
97.6	Certification.....	722
97.7	Recycling.....	723
98	TA5123-2AI-RT(D/W) - Option board for analog I/O extension	724
98.1	Assembly.....	725

98.1.1	Optimized mounting of the option boards.....	725
98.2	Disassembly.....	726
98.3	Dimensions.....	727
98.4	Connections.....	728
98.5	Cleaning.....	730
98.6	Certification.....	730
98.7	Recycling.....	731
99	TA5126-2AO-UI(W) - Option board for analog I/O extension.....	732
99.1	Assembly.....	733
99.1.1	Optimized mounting of the option boards.....	733
99.2	Disassembly.....	734
99.3	Dimensions.....	735
99.4	Connections.....	736
99.5	Cleaning.....	738
99.6	Certification.....	738
99.7	Recycling.....	739
100	TA5130-KNXPB(W) - Option board KNX adress push button.....	740
100.1	Assembly.....	741
100.1.1	Optimized mounting of the option boards.....	741
100.2	Disassembly.....	742
100.3	Dimensions.....	743
100.4	Connections.....	743
100.5	Cleaning.....	744
100.6	Certification.....	744
100.7	Recycling.....	744
101	TA5131-RTC - Option board for real-time clock.....	745
101.1	Assembly.....	746
101.1.1	Optimized mounting of the option boards.....	746
101.2	Disassembly.....	747
101.3	Dimensions.....	748
101.4	Cleaning.....	748
101.5	Certification.....	748
101.6	Recycling.....	749
102	TA514-SAFETY.....	750
102.1	Assembly.....	750
102.2	Connections.....	752
102.3	Cleaning.....	752
102.4	Certification.....	753
102.5	Recycling.....	753
103	TA5141-RS232I(W) - Option board for COMx serial communication.....	754
103.1	Assembly.....	755
103.1.1	Optimized mounting of the option boards.....	755
103.2	Disassembly.....	756
103.3	Dimensions.....	757
103.4	Connections.....	758
103.4.1	Serial interface.....	758
103.5	Cleaning.....	759
103.6	Certification.....	759
103.7	Recycling.....	759

104	TA5142-RS485(I)(W) - Option board for COMx serial communication	760
104.1	Assembly	761
104.1.1	Optimized mounting of the option boards	761
104.2	Disassembly	762
104.3	Dimensions	763
104.4	Connections	764
104.4.1	Serial interface	764
104.4.2	Bus termination configuration	765
104.5	Cleaning	767
104.6	Certification	767
104.7	Recycling	768
105	TA515-CASE / TA5450-CASE	769
105.1	Connections	770
105.1.1	System setup	770
105.1.2	Features of demo program	771
105.1.3	Restoring demo program	771
105.1.4	Power supply	771
105.1.5	Inputs/Outputs	772
105.2	Cleaning	772
105.3	Certification	773
105.4	Recycling	773
106	TA521 - Battery	774
106.1	Assembly	774
106.2	Certification	776
106.3	Recycling	777
107	TA52xx(-x) - Terminal block sets	778
107.1	Assembly	780
107.2	Disassembly	780
107.3	Dimensions	781
107.3.1	3-pin terminal block for power supply	781
107.3.2	13-pin terminal block for I/O connectors	782
107.3.3	12-pin terminal block for I/O connectors	783
107.3.4	x-pin terminal blocks for option boards	784
107.4	Connections	785
107.5	Cleaning	785
107.6	Certification	785
107.7	Recycling	785
108	TA5300-CVR - Option board slot cover	786
108.1	Assembly	787
108.2	Disassembly	787
108.3	Dimensions	788
108.4	Cleaning	788
108.5	Certification	788
108.6	Recycling	789
109	TA5400-SIM - Input simulator	790
109.1	Assembly	791
109.2	Disassembly	792
109.3	Dimensions	792
109.4	Connections	793

109.5	Cleaning.....	794
109.6	Certification.....	794
109.7	Recycling.....	795
110	TA541 - Battery.....	796
110.1	Assembly.....	796
110.2	Certification.....	798
110.3	Recycling.....	799
111	TA561-RTC - Real-time clock adapter.....	800
111.1	Battery Replacement.....	801
111.2	Cleaning.....	807
111.3	Certification.....	807
111.4	Recycling.....	807
112	TA562-RS(-x) / TA569-RS(-x) - Adapter.....	808
112.1	Battery Replacement.....	809
112.2	Connections.....	815
112.3	Cleaning.....	815
112.4	Certification.....	815
112.5	Recycling.....	816
113	TA563-TA565 - Terminal block sets.....	817
113.1	Assembly.....	818
113.2	Disassembly.....	819
113.3	Dimensions.....	819
113.4	Connections.....	822
113.5	Cleaning.....	822
113.6	Certification.....	823
113.7	Recycling.....	823
114	TA571-SIM - Input simulator.....	824
114.1	Assembly.....	824
114.2	Disassembly.....	825
114.3	Dimensions.....	826
114.4	Connections.....	827
114.4.1	Inputs.....	828
114.5	Cleaning.....	828
114.6	Certification.....	828
114.7	Recycling.....	829
115	TB511-x(-XC).....	830
115.1	Assembly.....	831
115.2	Disassembly.....	831
115.3	Assembly with screws.....	831
115.4	Dimensions.....	832
115.5	Connections.....	833
115.5.1	Power supply.....	833
115.5.2	Serial interface COM1.....	834
115.5.3	Serial interface COM2.....	834
115.5.4	ARCNET network interface.....	835
115.5.5	Ethernet network interface.....	835
115.5.6	Neutral FBP interface.....	835
115.6	Cleaning.....	836
115.7	Certification.....	836

115.8	Recycling.....	836
116	TB521-x(-XC).....	837
116.1	Assembly.....	838
116.2	Disassembly.....	838
116.3	Assembly with screws.....	838
116.4	Dimensions.....	839
116.5	Connections.....	840
116.5.1	Power supply.....	840
116.5.2	Serial interface COM1.....	841
116.5.3	Serial interface COM2.....	841
116.5.4	ARCNET network interface.....	842
116.5.5	Ethernet network interface.....	842
116.5.6	Neutral FBP interface.....	842
116.6	Cleaning.....	843
116.7	Certification.....	843
116.8	Recycling.....	843
117	TB523-2ETH.....	844
117.1	Assembly.....	845
117.2	Disassembly.....	845
117.3	Assembly with screws.....	845
117.4	Dimensions.....	846
117.5	Connections.....	847
117.5.1	Power supply.....	847
117.5.2	Serial interface COM1.....	848
117.5.3	Ethernet network interface.....	848
117.6	Cleaning.....	849
117.7	Certification.....	849
117.8	Recycling.....	849
118	TB541-ETH(-XC).....	850
118.1	Assembly.....	851
118.2	Disassembly.....	851
118.3	Assembly with screws.....	851
118.4	Dimensions.....	852
118.5	Connections.....	853
118.5.1	Power supply.....	853
118.5.2	Serial interface COM1.....	854
118.5.3	Serial interface COM2.....	854
118.5.4	ARCNET network interface.....	855
118.5.5	Ethernet network interface.....	855
118.5.6	Neutral FBP interface.....	855
118.6	Cleaning.....	856
118.7	Certification.....	856
118.8	Recycling.....	856
119	TB56xx-2ETH(-XC).....	857
119.1	Assembly.....	858
119.2	Disassembly.....	859
119.3	Assembly with screws.....	859
119.4	Dimensions.....	860
119.5	Connections.....	861
119.5.1	CAN interface.....	861

119.5.2	Power supply.....	862
119.5.3	Serial interface COM1.....	862
119.5.4	Ethernet network interface.....	863
119.6	Cleaning.....	863
119.7	Certification.....	863
119.8	Recycling.....	864
120	TF501-CMS(-XC).....	865
120.1	Assembly.....	865
120.2	Disassembly.....	866
120.3	Assembly with screws.....	866
120.4	Dimensions.....	867
120.5	Connections.....	868
120.5.1	Process supply voltage.....	869
120.5.2	Ethernet network interface.....	869
120.5.3	Serial interface COM1.....	870
120.6	Cleaning.....	870
120.7	Certification.....	870
120.8	Recycling.....	871
121	TF521-CMS(-XC).....	872
121.1	Assembly.....	872
121.2	Disassembly.....	873
121.3	Assembly with screws.....	873
121.4	Dimensions.....	874
121.5	Connections.....	875
121.5.1	Process supply voltage.....	876
121.5.2	Ethernet network interface.....	876
121.5.3	Serial interface COM1.....	877
121.6	Cleaning.....	877
121.7	Certification.....	877
121.8	Recycling.....	878
122	TK503.....	879
122.1	Connections.....	879
122.2	Cleaning.....	880
122.3	Certification.....	880
122.4	Recycling.....	881
123	TK504.....	882
123.1	Connections.....	882
123.2	Cleaning.....	883
123.3	Certification.....	883
123.4	Recycling.....	884
124	TK506.....	885
124.1	Assembly.....	886
124.2	Disassembly.....	887
124.3	Dimensions.....	888
124.4	Connections.....	888
124.4.1	D-sub 9-pin, RS-485.....	889
124.4.2	Interface (Terminal 5-pin, RS-485).....	889
124.5	Cleaning.....	889
124.6	Certification.....	890
124.7	Recycling.....	890

125	TU507-ETH	891
125.1	Assembly	891
125.2	Disassembly	892
125.3	Assembly with screws	892
125.4	Dimensions	893
125.5	Connections	894
125.5.1	Ethernet network interface	895
125.6	Cleaning	895
125.7	Certification	895
125.8	Recycling	896
126	TU508-ETH(-XC)	897
126.1	Assembly	898
126.2	Disassembly	898
126.3	Assembly with screws	899
126.4	Dimensions	899
126.5	Connections	900
126.5.1	Ethernet network interface	901
126.6	Cleaning	901
126.7	Certification	901
126.8	Recycling	902
127	TU509	903
127.1	Assembly	903
127.2	Disassembly	904
127.3	Assembly with screws	904
127.4	Dimensions	905
127.5	Connections	906
127.5.1	Bus interface	907
127.6	Cleaning	907
127.7	Certification	907
127.8	Recycling	908
128	TU510(-XC)	909
128.1	Assembly	909
128.2	Disassembly	910
128.3	Assembly with screws	910
128.4	Dimensions	911
128.5	Connections	912
128.5.1	Bus interface	913
128.6	Cleaning	913
128.7	Certification	913
128.8	Recycling	914
129	TU515 24 V DC	915
129.1	Assembly	918
129.2	Disassembly	919
129.3	Assembly with screws	919
129.4	Dimensions	920
129.5	Connections	921
129.6	Cleaning	921
129.7	Certification	922
129.8	Recycling	922

130	TU516(-H)(-XC) 24 V DC	923
130.1	Assembly	927
130.2	Disassembly	927
130.3	Assembly with screws	928
130.4	Dimensions	928
130.5	Connections	929
130.6	Cleaning	929
130.7	Certification	930
130.8	Recycling	930
131	TU517	931
131.1	Assembly	931
131.2	Disassembly	932
131.3	Assembly with screws	932
131.4	Dimensions	933
131.5	Connections	934
131.5.1	Bus interface	935
131.6	Cleaning	935
131.7	Certification	935
131.8	Recycling	936
132	TU518(-XC)	937
132.1	Assembly	937
132.2	Disassembly	938
132.3	Assembly with screws	938
132.4	Dimensions	939
132.5	Connections	940
132.5.1	Bus interface	941
132.6	Cleaning	941
132.7	Certification	941
132.8	Recycling	942
133	TU520-ETH(-XC)	943
133.1	Assembly	943
133.2	Disassembly	944
133.3	Assembly with screws	944
133.4	Dimensions	945
133.5	Connections	946
133.5.1	Ethernet network interface	947
133.6	Cleaning	947
133.7	Certification	947
133.8	Recycling	948
134	TU531 230 V AC	949
134.1	Assembly	952
134.2	Disassembly	953
134.3	Assembly with screws	953
134.4	Dimensions	954
134.5	Connections	955
134.6	Cleaning	955
134.7	Certification	956
134.8	Recycling	956

135	TU532(-H)(-XC) 230 V AC	957
135.1	Assembly	961
135.2	Disassembly	961
135.3	Assembly with screws	962
135.4	Dimensions	962
135.5	Connections	963
135.6	Cleaning	963
135.7	Certification	964
135.8	Recycling	964
136	TU541 24 V DC	965
136.1	Assembly	968
136.2	Disassembly	969
136.3	Assembly with screws	969
136.4	Dimensions	970
136.5	Connections	971
136.6	Cleaning	971
136.7	Certification	972
136.8	Recycling	972
137	TU542(-H)(-XC) 24 V DC	973
137.1	Assembly	977
137.2	Disassembly	977
137.3	Assembly with screws	978
137.4	Dimensions	978
137.5	Connections	979
137.6	Cleaning	979
137.7	Certification	980
137.8	Recycling	980
138	TU551-CS31	981
138.1	Assembly	981
138.2	Disassembly	982
138.3	Assembly with screws	982
138.4	Dimensions	983
138.5	Connections	984
138.6	Cleaning	985
138.7	Certification	985
138.8	Recycling	985
139	TU552-CS31(-XC)	986
139.1	Assembly	987
139.2	Disassembly	987
139.3	Assembly with screws	988
139.4	Dimensions	988
139.5	Connections	989
139.5.1	Bus interface	990
139.6	Cleaning	990
139.7	Certification	990
139.8	Recycling	991
140	TU582-S(-XC) 24 V DC	992
140.1	Assembly	993
140.2	Disassembly	993

140.3	Assembly with screws.....	994
140.4	Dimensions.....	994
140.5	Connections.....	995
140.6	Cleaning.....	996
140.7	Certification.....	996
140.8	Recycling.....	996
141	07AC91-AD.....	997
141.1	Dimensions.....	998
141.2	Connections.....	998
141.2.1	DIP switch for CONFIG1.....	999
141.2.2	DIP switch for CONFIG2.....	999
141.2.3	DIP switch for ADDR.....	1000
141.2.4	Plug connection.....	1001
141.3	Cleaning.....	1003
141.4	Certification.....	1003
141.5	Recycling.....	1004
142	07AC91-AD2.....	1005
142.1	Dimensions.....	1006
142.2	Connections.....	1006
142.2.1	DIP switch for CONFIG1.....	1007
142.2.2	DIP switch for CONFIG2.....	1007
142.2.3	DIP switch for ADDR.....	1008
142.2.4	Plug connection.....	1009
142.3	Cleaning.....	1011
142.4	Certification.....	1011
142.5	Recycling.....	1012
143	07AI91-AD.....	1013
143.1	Dimensions.....	1014
143.2	Connections.....	1015
143.2.1	DIP switch for CONFIG1 / CONFIG2.....	1016
143.2.2	DIP switch for ADDR.....	1016
143.2.3	Plug connection.....	1017
143.3	Cleaning.....	1018
143.4	Certification.....	1019
143.5	Recycling.....	1019
144	07DC91-AD.....	1020
144.1	Dimensions.....	1021
144.2	Connections.....	1022
144.2.1	DIP switch for ADDR.....	1022
144.2.2	Plug connection.....	1023
144.3	Cleaning.....	1025
144.4	Certification.....	1025
144.5	Recycling.....	1026
145	07DC92-AD.....	1027
145.1	Dimensions.....	1028
145.2	Connections.....	1029
145.2.1	DIP switch for ADDR.....	1029
145.2.2	Plug connection.....	1030
145.3	Cleaning.....	1032
145.4	Certification.....	1032

145.5	Recycling.....	1033
146	07KT9x-AD.....	1034
146.1	Dimensions.....	1035
146.2	Connections.....	1035
146.2.1	Diagnosis connector.....	1036
146.2.2	Serial interface COM2.....	1036
146.2.3	Ethernet network interface.....	1037
146.2.4	ARCNET.....	1037
146.2.5	PROFIBUS interface.....	1037
146.2.6	Plug connection.....	1038
146.3	Cleaning.....	1042
146.4	Certification.....	1042
146.5	Recycling.....	1042

1 Documentation guide



Where to find information about:

- PLC system
 - [System description](#)
 - [Getting started](#): First steps with the platform and creation of your first program
 - [Starter kit](#): Introduction to PLC programming using pre-installed kits, including the creation of control panel visualization
 - [Safety user manual for safety PLCs](#)
- Devices
 - [Data sheets](#)
 - [Installation instructions](#)
 - [PLC hardware descriptions](#)
 - [Safety user manual for safety PLCs](#)
 - [Control panels](#)
- Software and programming
 - [Engineering suite Automation Builder](#)
 - [Programming examples available for download](#)
 - Programming examples available in the engineering suite: Open Automation Builder menu “Help → Project examples”
 - [Application descriptions for specific features and use cases](#)
 - [Release notes for the latest version of the engineering suite Automation Builder](#)

2 Regulations

Planning and installation of the electrical system

The planning and installation of the electrical system must be carried out in compliance with the applicable regulations and standards. Hazards due to malfunctions must be prevented by taking appropriate measures.

The suitability of the products for the respective application is proven by declarations of conformity and certificates.

The PLC Automation catalog contains an *overview of the available declarations of conformity and certificates*.

Qualified personnel

Both the AC500 control system and other components in the vicinity are operated with dangerous touch voltages. Touching live components can lead to serious health implications or even death.

To avoid such risks and the occurrence of property damage, persons involved in the installation, commissioning and maintenance must have relevant knowledge about:

- Automation technology
- Handling of hazardous voltages
- Application of relevant standards and regulations, accident prevention regulations and regulations on special environmental conditions (e.g., hazardous areas due to explosive substances, heavy soiling or corrosive influences).

3 Safety instructions

Relevant standards and regulations, accident prevention regulations and regulations on special environmental conditions must be observed (e.g., hazardous areas due to explosive substances, heavy soiling or corrosive influences).

The devices must be handled and operated within the specified technical data and system data.

The devices contain no serviceable parts and must not be opened.

Removable covers must be closed during operation unless otherwise specified.

Any liability for the consequences of incorrect use or unauthorized repairs is rejected.

Qualified personnel

Both the AC500 control system and other components in the vicinity are operated with dangerous touch voltages. Touching live components can lead to serious health implications or even death.

To avoid such risks and the occurrence of property damage, persons involved in the installation, commissioning and maintenance must have relevant knowledge about:

- Automation technology
- Handling of hazardous voltages
- Application of relevant standards and regulations, accident prevention regulations and regulations on special environmental conditions (e.g., hazardous areas due to explosive substances, heavy soiling or corrosive influences).

Functional safety

The *AC500-S safety user manual* must be read and understood before using the safety configuration and programming tools of Automation Builder/PS501 Control Builder Plus. Only qualified personnel are permitted to work with AC500-S safety PLCs.

General information

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variants and requirements associated with any particular installation, ABB cannot assume responsibility or liability for actual use based on the examples and diagrams.

The PLC was developed according to the relevant standards. Any module-specific measures are described in the individual descriptions of the modules.

PLC-specific safety notices



The product family AC500 control system is designed according to the EN 61131-2 and IEC 61131-2 standards. Any data that differs from IEC 61131-2, is due to the higher requirements of Maritime Services. Other differences are described in the technical data description of the devices.



NOTICE!

Avoidance of electrostatic charging

PLC devices and equipment are sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Observe the following rules when handling the system:

- Touch a grounded object to discharge potential static.
- Wear an approved grounding wrist strap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- If available, use a static-safe workstation.
- When not in use, store the equipment in appropriate static-safe packaging.



NOTICE!

Use of suitable enclosure

The devices must be mounted in a control cabinet that ensures compliance with the specified environmental conditions.



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

Connection plans and a user program must be created so that no dangerous situations can occur during normal operation or failure.

The application must be tested to ensure that no dangerous situations can occur during operation.



Do not operate devices outside of the specified, technical data!

Trouble-free functioning cannot be ensured outside of the specified data.



NOTICE!

PLC damage due to missing grounding

- Make sure to ground the devices.
- The grounding (switch cabinet grounding) is supplied both by the mains connection (or 24 V supply voltage) and via the DIN rail. The DIN rail must be connected to ground before power is supplied to the device. The grounding may be removed only if it is certain that no more power is being supplied to the control system.
- In case of screw mounting, use metal screws for grounding.



CAUTION!

Do not obstruct the ventilation for cooling!

The ventilation slots on the upper and lower sides of the devices must not be covered.



CAUTION!

Run signal and power wiring separately!

Signal and supply lines (power cables) must be laid out so that no malfunctions due to capacitive and inductive interference can occur (EMC).



WARNING!

Warning sign on the module!

This indicates that dangerous voltages may be present or that surfaces may have dangerous temperatures.

**WARNING!****Splaying of strands can cause hazards!**

Avoid splayed strands when wiring terminals with stranded conductors.

- Ferrules can be used to prevent splaying.

**WARNING!****Removal/Insertion under power**

Removal or insertion under power is permissible only if all conditions for hot swapping are fulfilled.

🔗 *“Conditions for hot swap” on page 35*

The devices are not designed for removal or insertion under power when the conditions for hot swap do not apply. Because of unforeseeable consequences, it is not allowed to plug in or unplug devices with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace a module.

Disconnecting any powered devices while they are energized in a hazardous location could result in an electric arc, which could create an ignition source resulting in fire or explosion.

Prior to proceeding, make sure that power is been disconnected and that the area has been thoroughly checked to ensure that flammable materials are not present.

The devices must not be opened when in operation. The same applies to the network interfaces.

Conditions for hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

**Conditions for hot swapping**

- Digital outputs are not under load.
- Input/output voltages above safety extra low voltage/ protective extra low voltages (SELV/PELV) are switched off.
- Modules are completely plugged on the terminal unit with both snap fit engaged before switching on loads or input/output voltage.

Information on batteries**CAUTION!****Use only ABB approved lithium battery modules!**

At the end of the battery's lifetime, always replace it only with a genuine battery module.

**CAUTION!****Risk of explosion!**

Do not open, re-charge or disassemble lithium batteries. Attempting to charge lithium batteries will lead to overheating and can cause explosions.

Protect them from heat and fire and store them in a dry place.

Never short-circuit or operate lithium batteries with the polarities reversed. The batteries are likely to overheat and explode. Avoid unintentional short circuiting do not store batteries in metal containers and do not place them on metallic surfaces. Escaping lithium is a health hazard.

**Environment considerations**

Recycle exhausted batteries. Dispose of batteries in an environmentally conscious manner in accordance with regulations issued by the local authorities.

4 AC522(-XC)

- AC522
- AC522-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

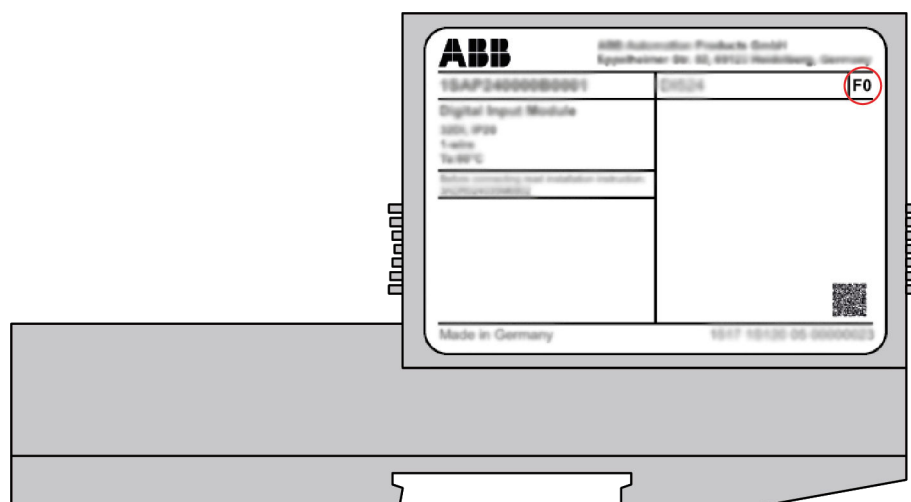
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

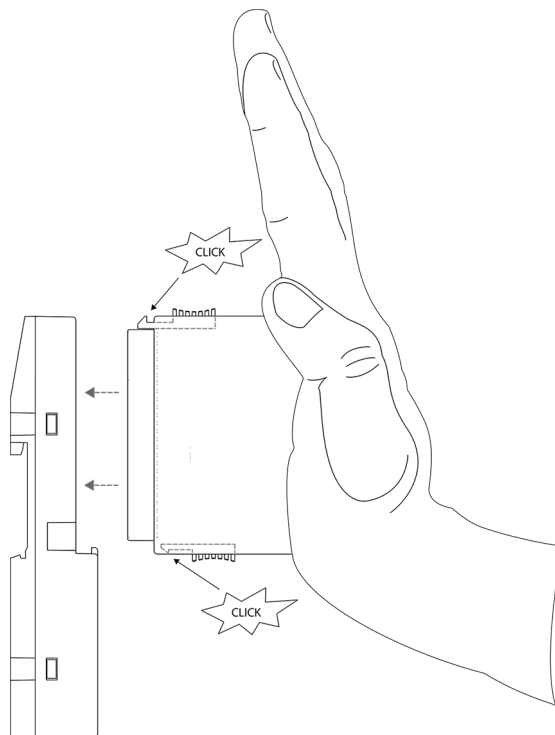
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

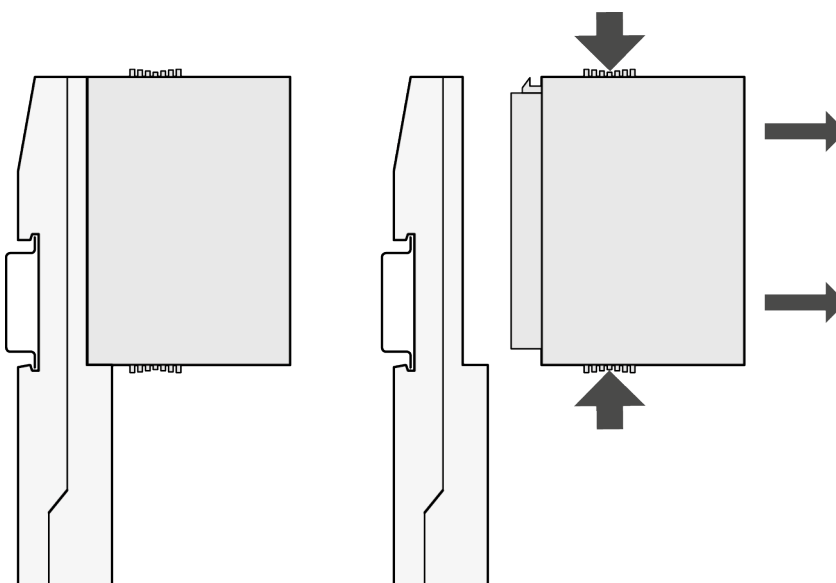
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

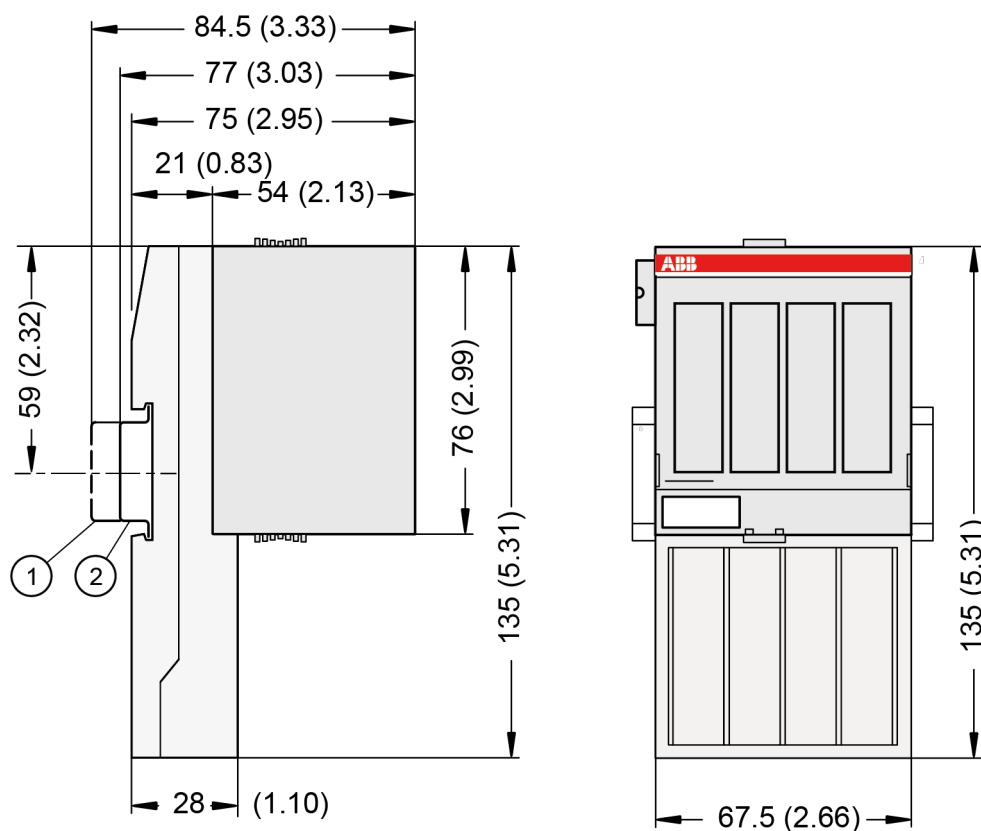
4.1 Assembly



4.2 Disassembly



4.3 Dimensions

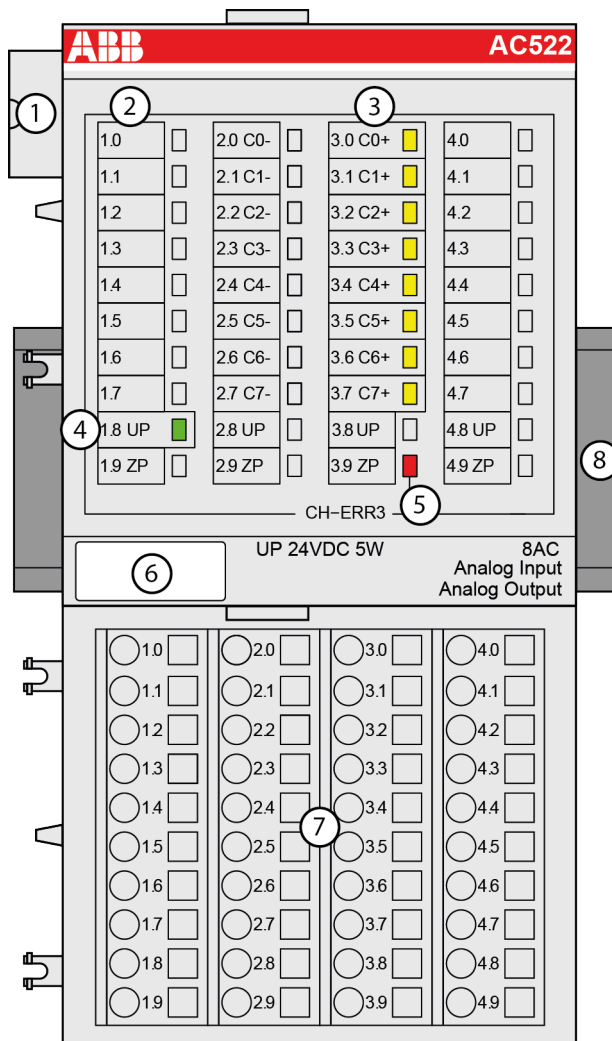


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

4.4 Connections

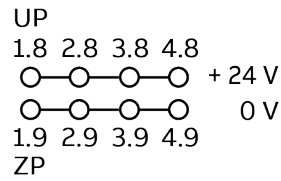


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states at the analog inputs/outputs (C0 ... C7)
- 4 1 green LED to display the state of the process supply voltage UP
- 5 1 red LED to display errors
- 6 Label
- 7 Terminal unit
- 8 DIN rail
-  Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

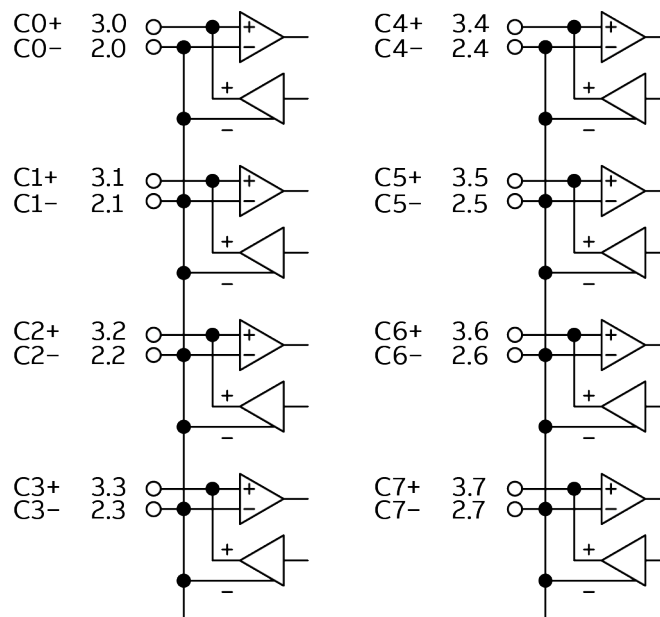
4.4.1 Process supply voltage



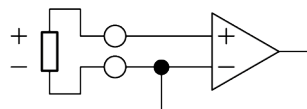
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

4.4.2 Inputs/Outputs

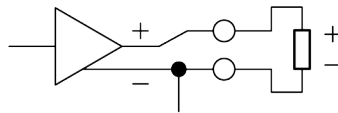


Examples



C0 ... C7
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 1: Example of connection input



C0 ... C3	C4 ... C7
$\pm 10 \text{ V}$	$\pm 10 \text{ V}$
0 mA ... +20 mA	–
+4 mA ... +20 mA	–

Fig. 2: Example of connection output

4.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

4.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

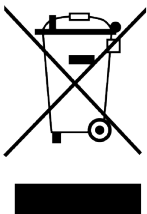
ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

4.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

5 AI523(-XC)

- AI523
- AI523-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

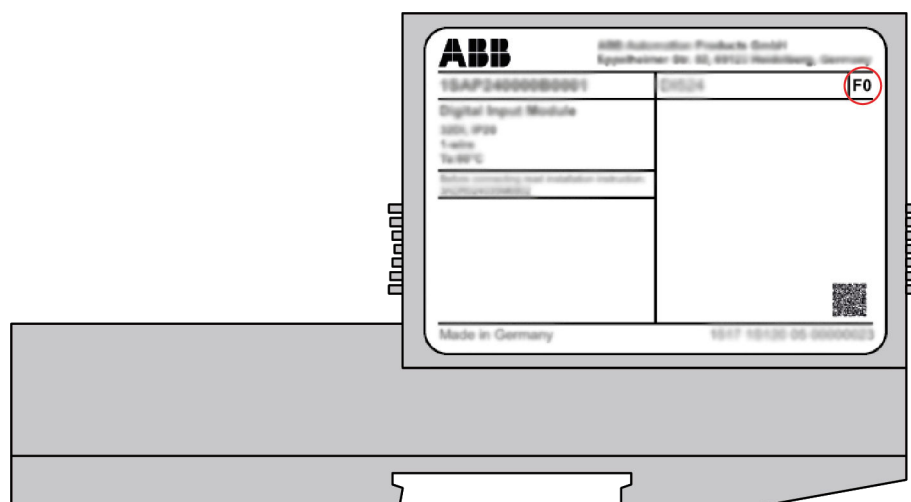
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

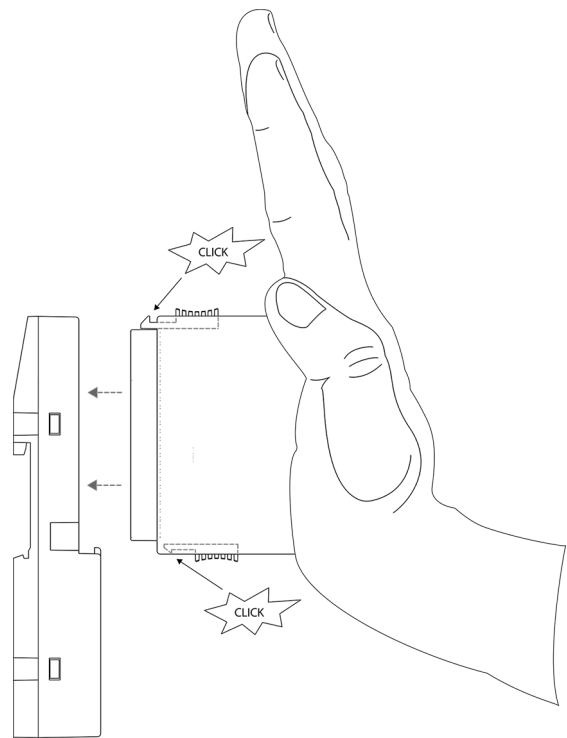
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

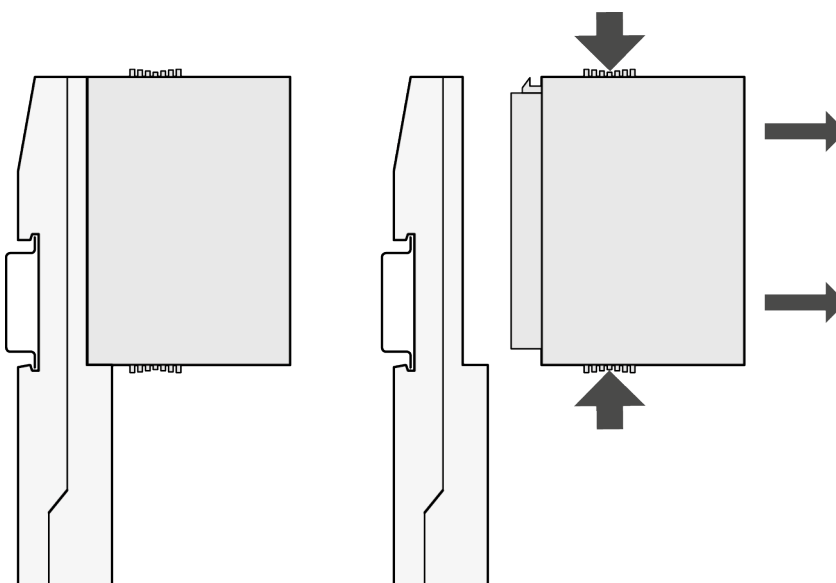
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

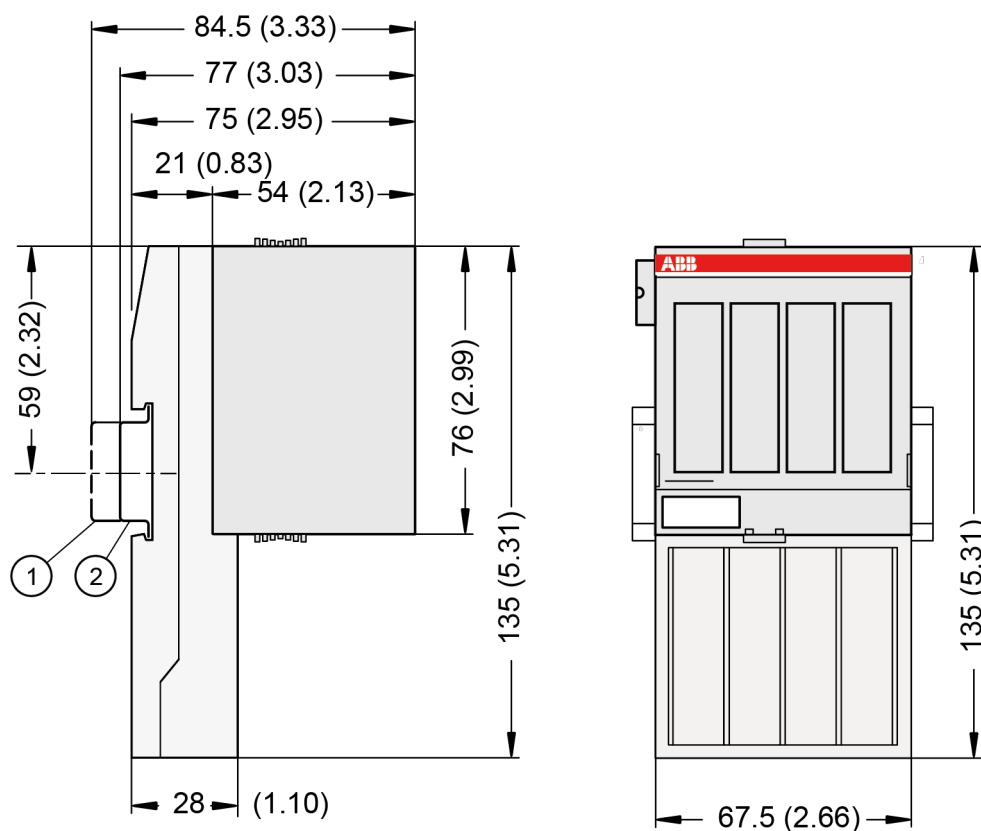
5.1 Assembly



5.2 Disassembly



5.3 Dimensions

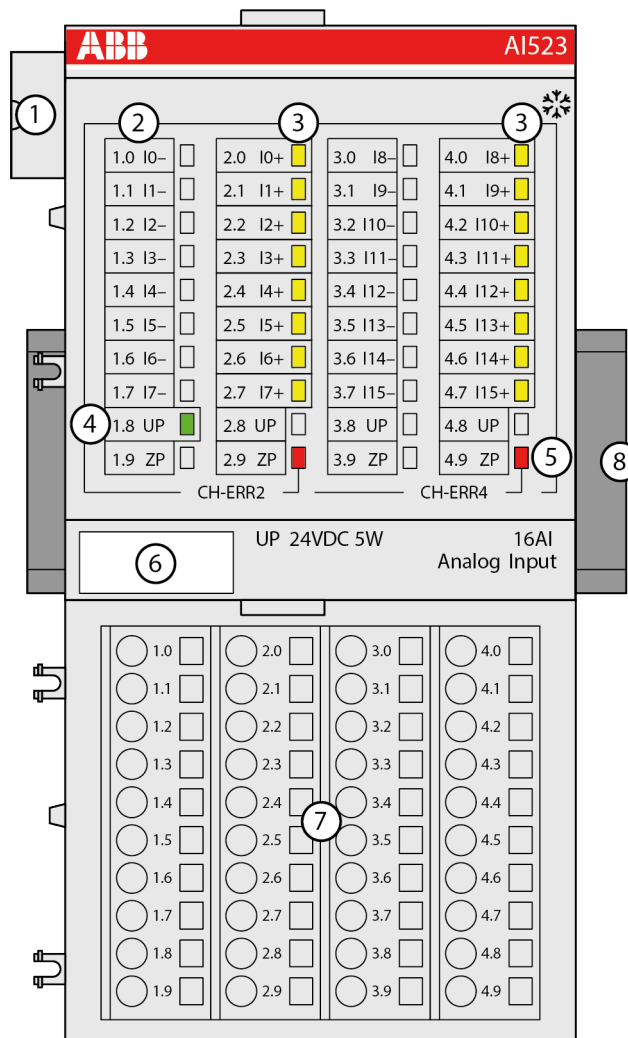


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

5.4 Connections

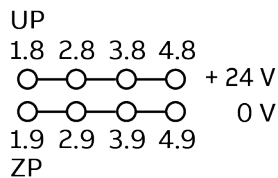


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 16 yellow LEDs to display the signal states at the analog inputs (I0 ... I15)
- 4 1 green LED to display the state of the process supply voltage UP
- 5 2 red LEDs to display errors
- 6 Label
- 7 Terminal unit
- 8 DIN rail
- ✱ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

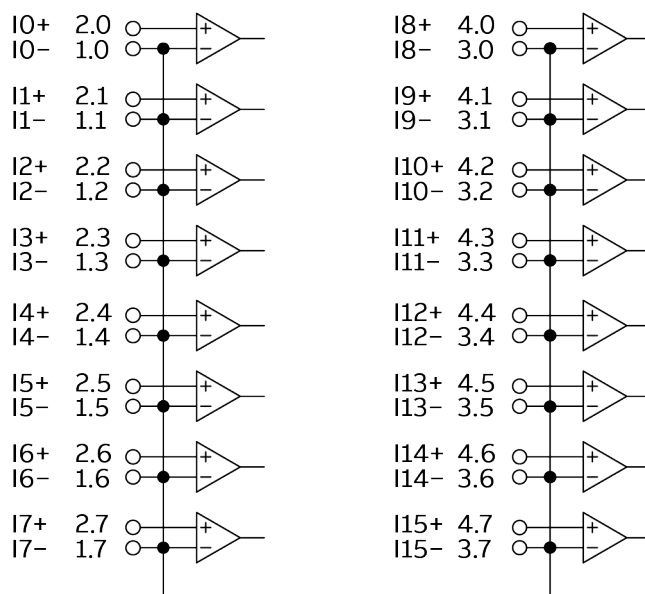
5.4.1 Process supply voltage



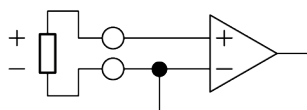
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

5.4.2 Inputs



Example



I0 ... I15
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 3: Example of connection input

5.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

5.6 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

5.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

6 AI531(-XC)

- AI531
- AI531-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

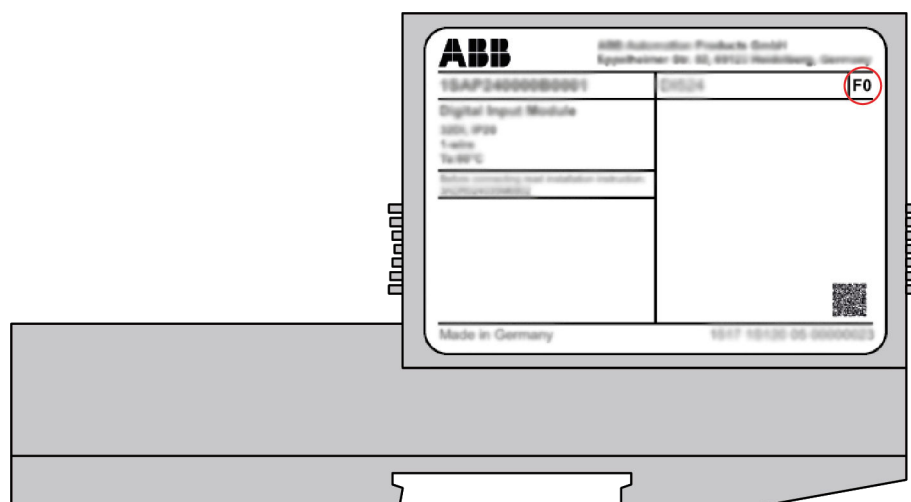
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- Communication interface modules CI5xx as of index F0.
- Processor modules PM56xx-2ETH with firmware version as of V3.2.0.



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

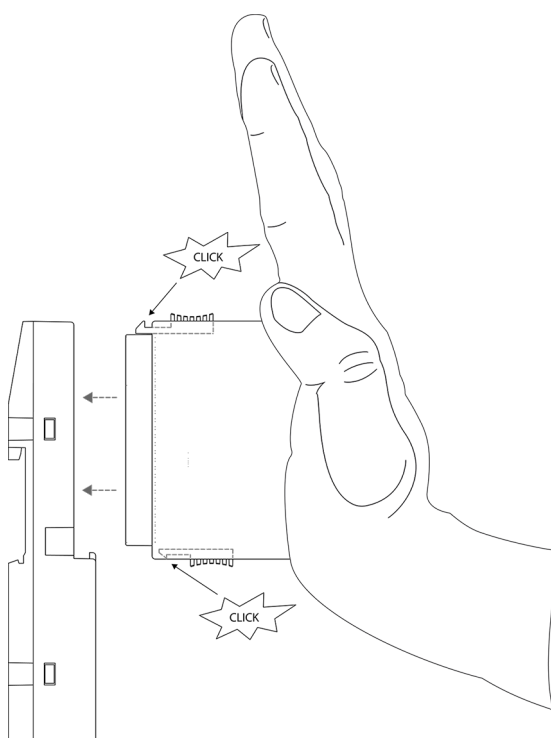
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

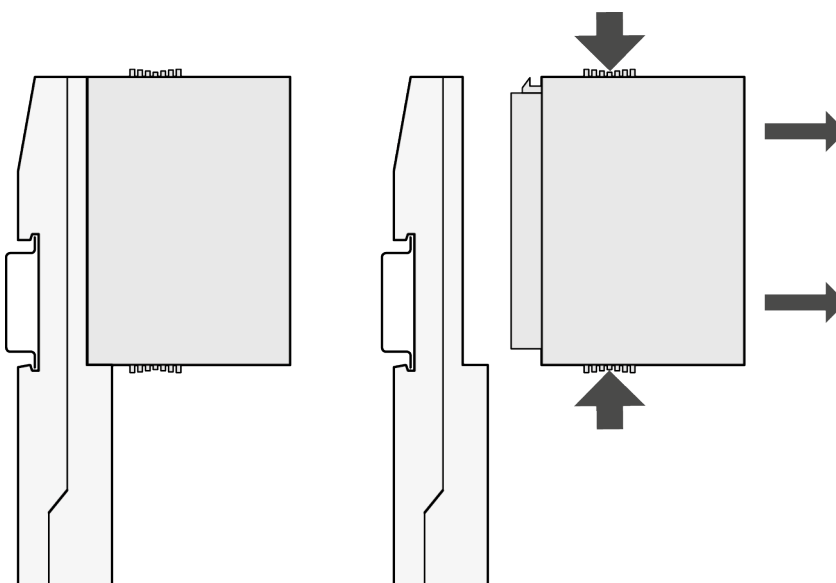
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

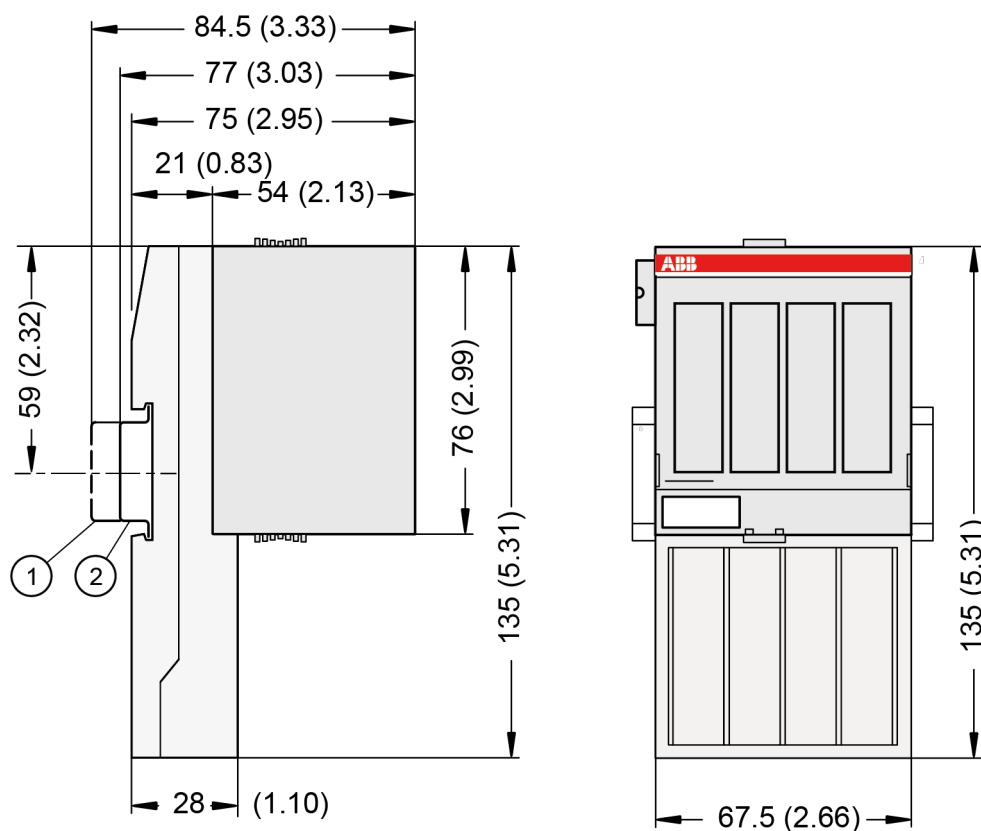
6.1 Assembly



6.2 Disassembly



6.3 Dimensions

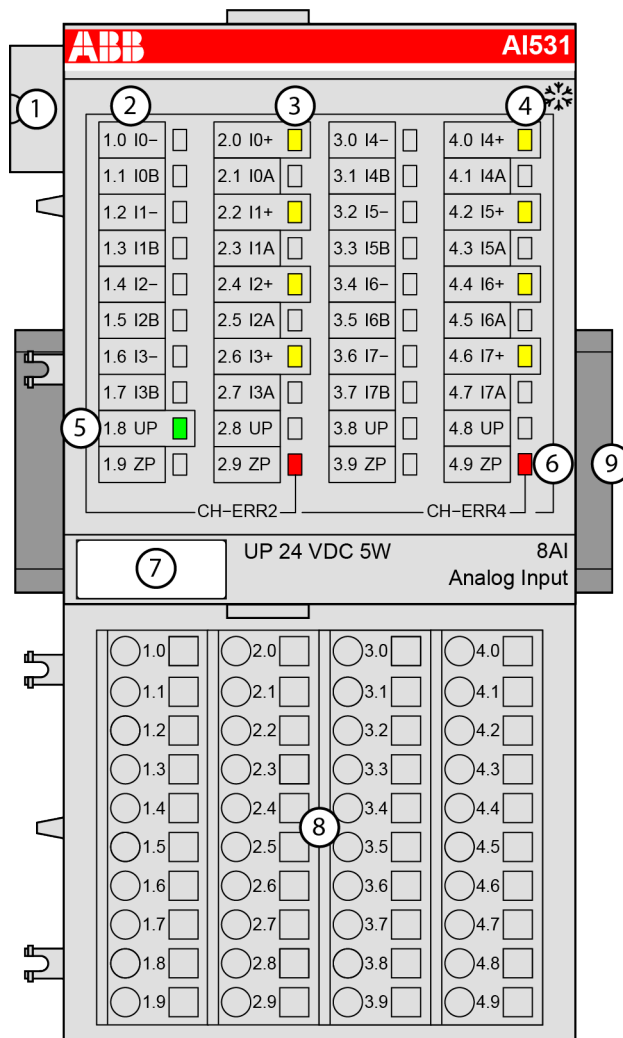


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

6.4 Connections

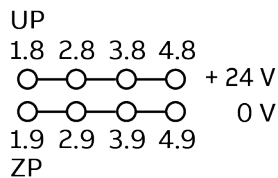


- 1 I/O bus
- 2 Allocation between terminal number and signal names
- 3 4 yellow LEDs to display the states at the inputs I0 ... I3
- 4 4 yellow LEDs to display the states at the inputs I4 ... I7
- 5 1 green LED to display the process supply voltage UP
- 6 2 red LEDs to display errors (CH-ERR2 and CH-ERR4)
- 7 Label
- 8 Terminal unit
- 9 DIN rail
- ✱ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

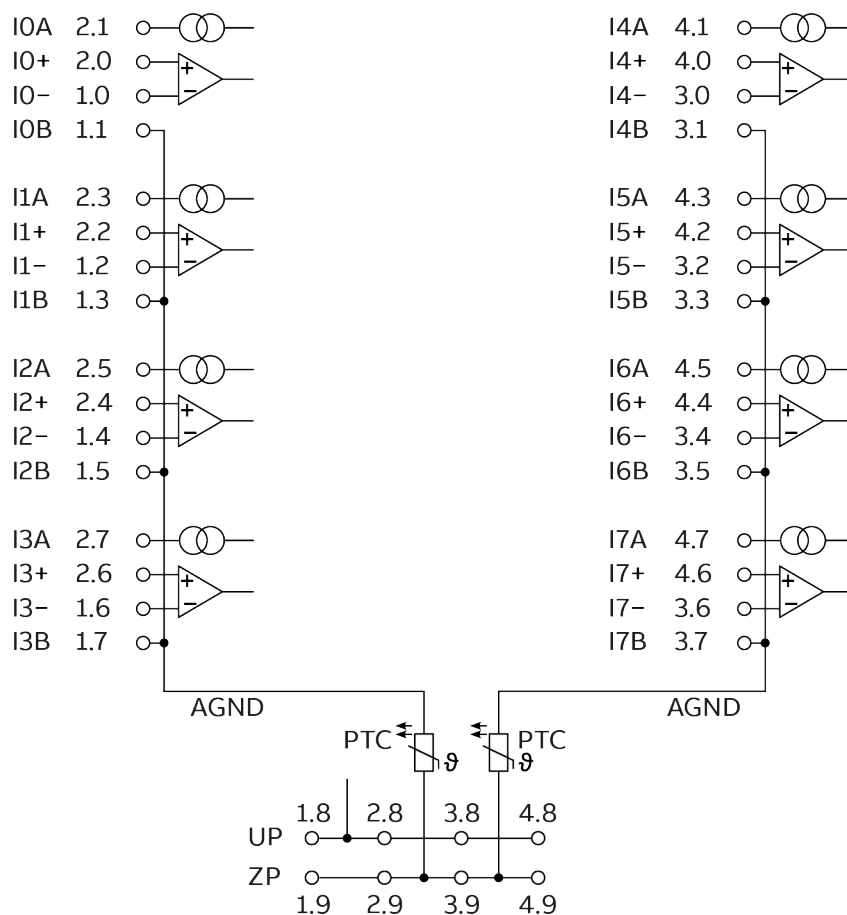
6.4.1 Process supply voltage



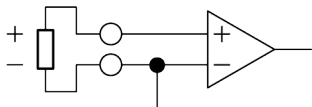
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

6.4.2 Inputs



Example



I0 ... I7
-50 mV... +50 mV
-500 mV ... +500 mV
-1 V ... +1 V
-5 V ... +5 V
-10 V... +10 V
0 V ... +5 V
0 V ... +10 V
0 mA ... +20 mA
+4 mA ... +20 mA
0 Ω ... 50 kΩ
Pt100 / Pt1000
Ni1000
Cu50
Thermo J, K, T, N, S
Digital Input

Fig. 4: Example of connection input

6.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

6.6 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

6.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

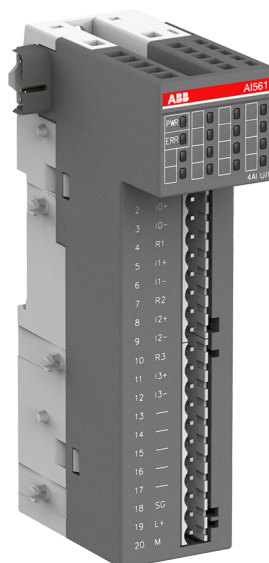
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

7 AI561

- AI561



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

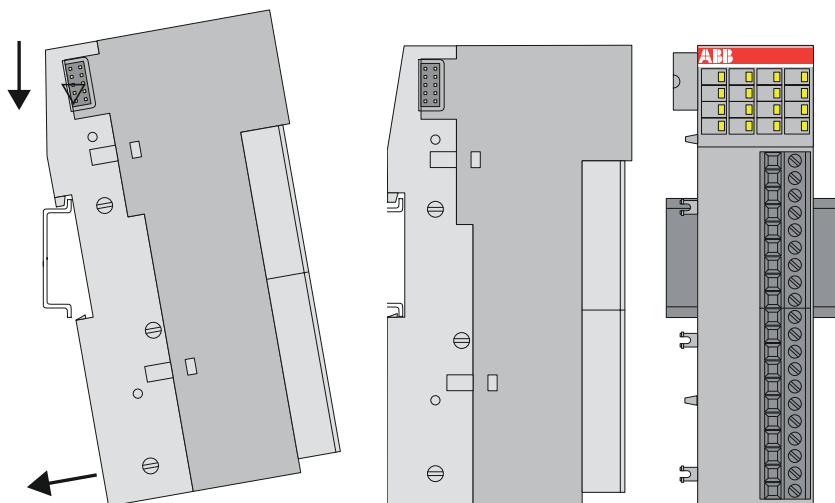
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



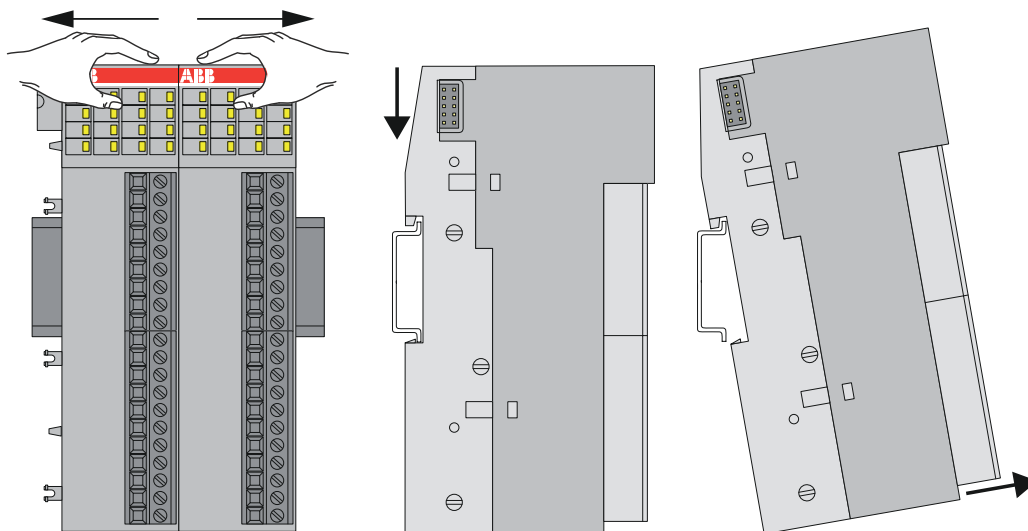
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

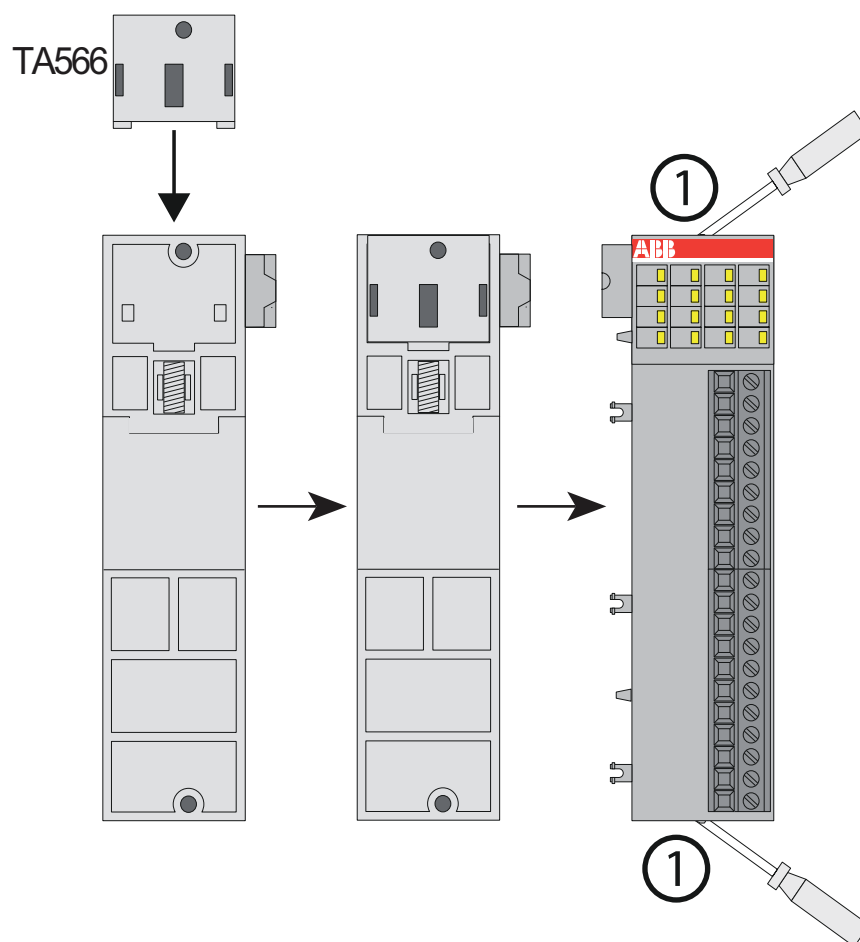
7.1 Assembly



7.2 Disassembly



7.3 Assembly with screws



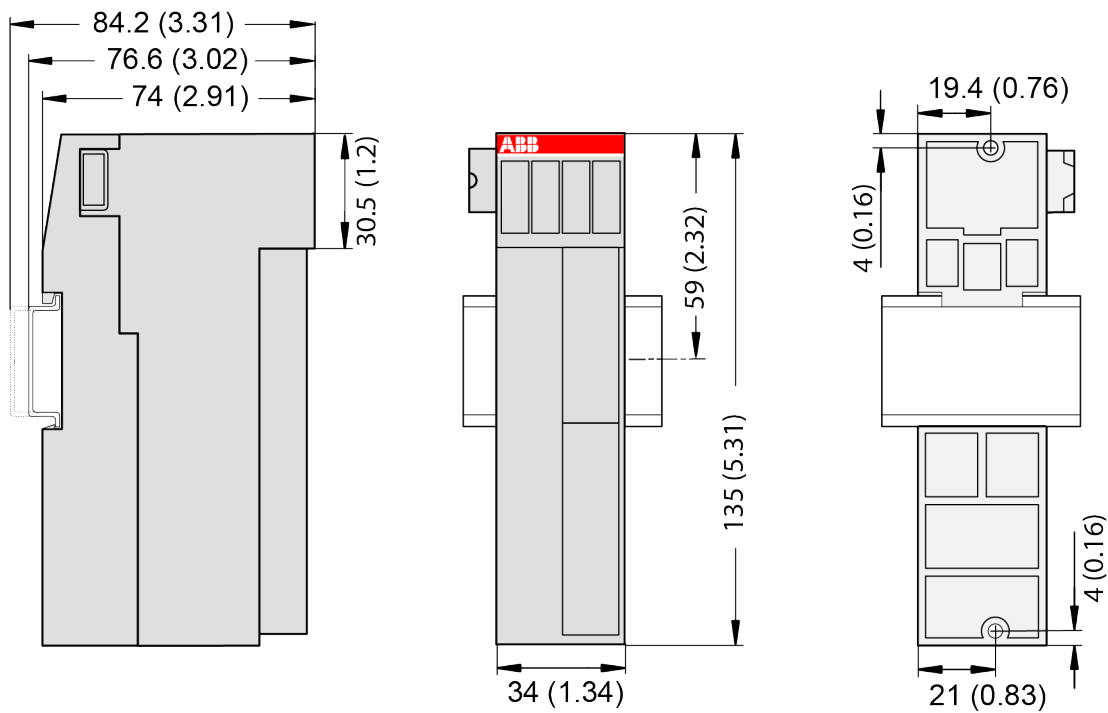
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

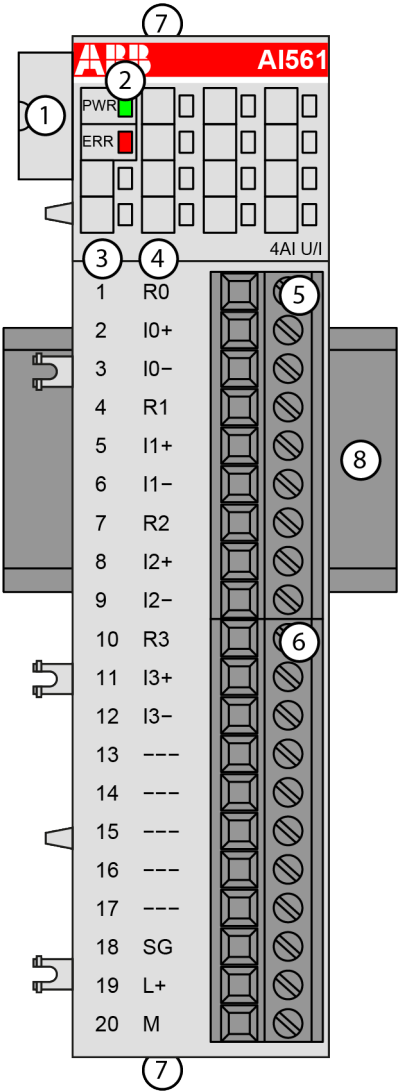
The insertion of the accessories TA566 for wall mounting is essential.

7.4 Dimensions



The dimensions are in mm and in brackets in inch.

7.5 Connections



- 1 I/O bus
- 2 1 green LED to display power supply, 1 red LED to display error
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 Terminal block for input signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

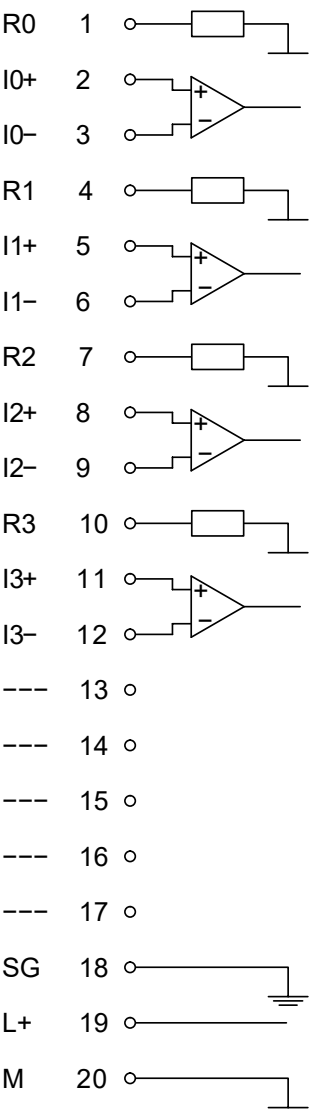


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from front
	TA564-9	9-pin, screw, cable from side
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from front

	TA564-11	11-pin, screw, cable from side
	TA565-11	11-pin, spring, cable from front

7.5.1 Inputs/Outputs



7.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

7.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500-eCo		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

7.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

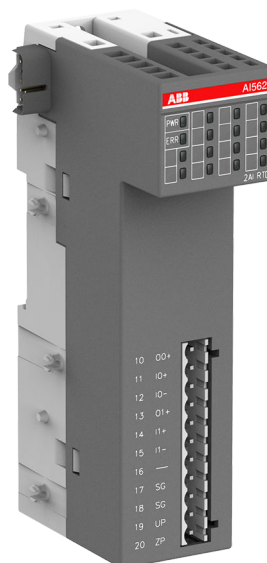
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

8 AI562

- AI562



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

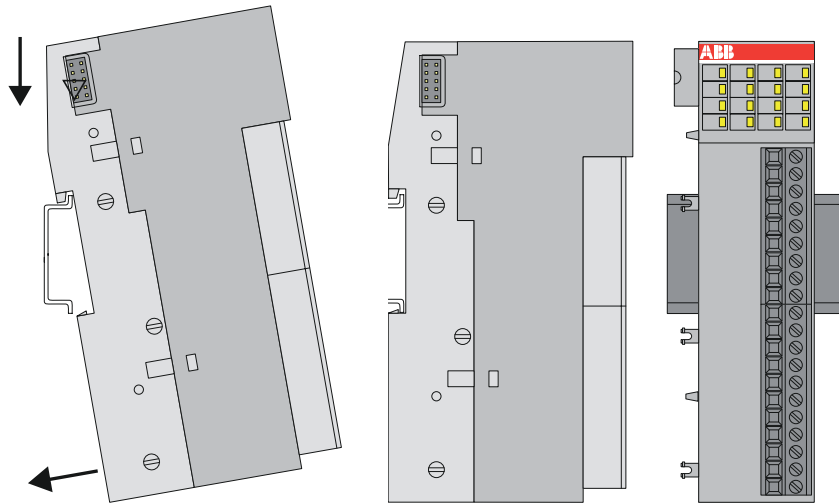
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



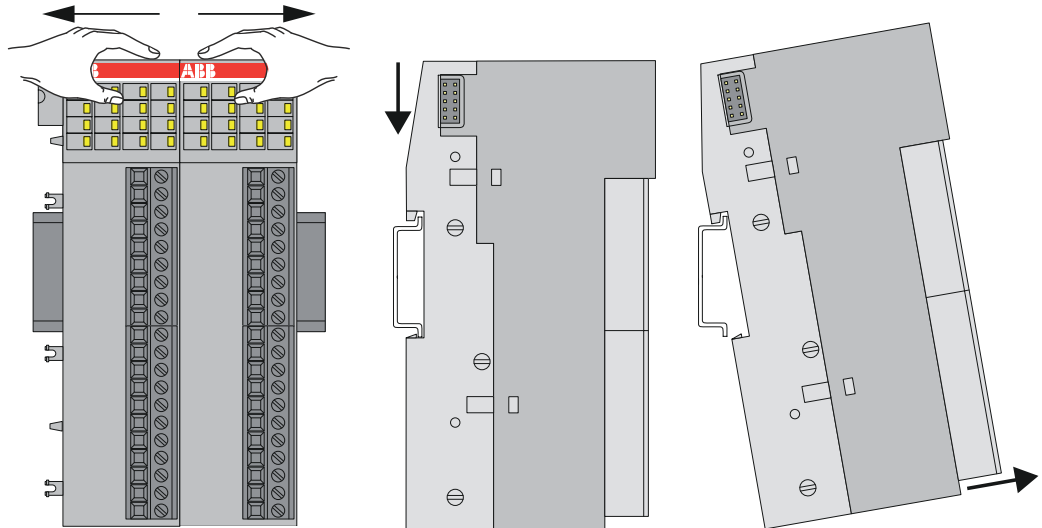
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

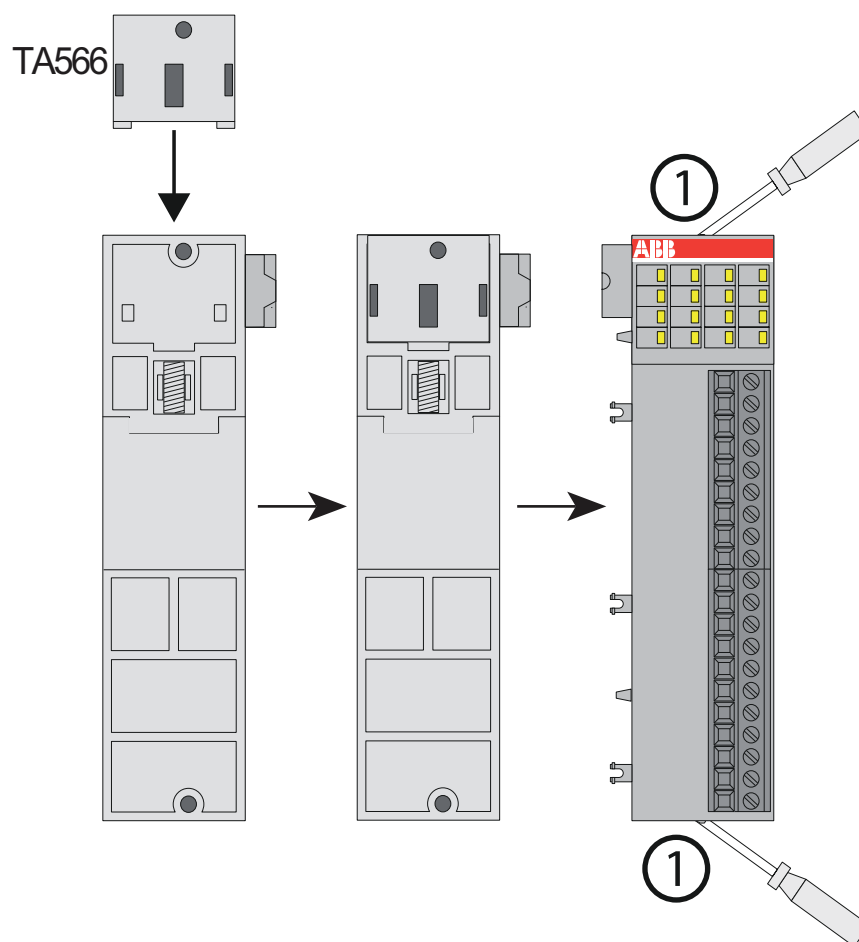
8.1 Assembly



8.2 Disassembly



8.3 Assembly with screws



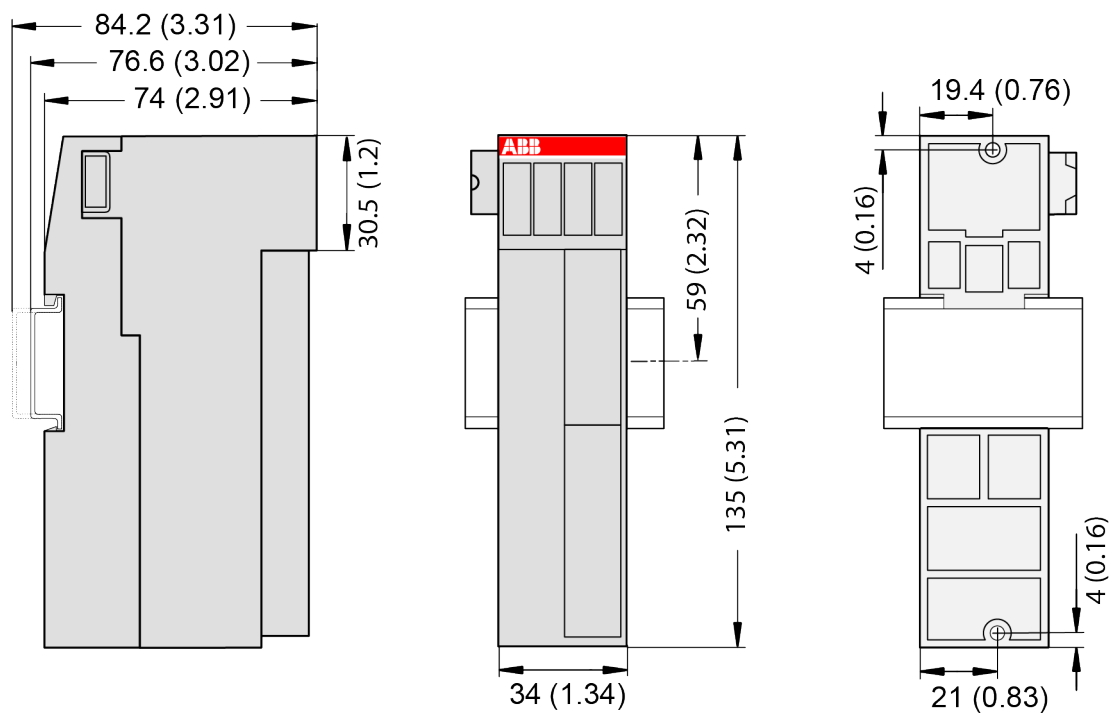
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

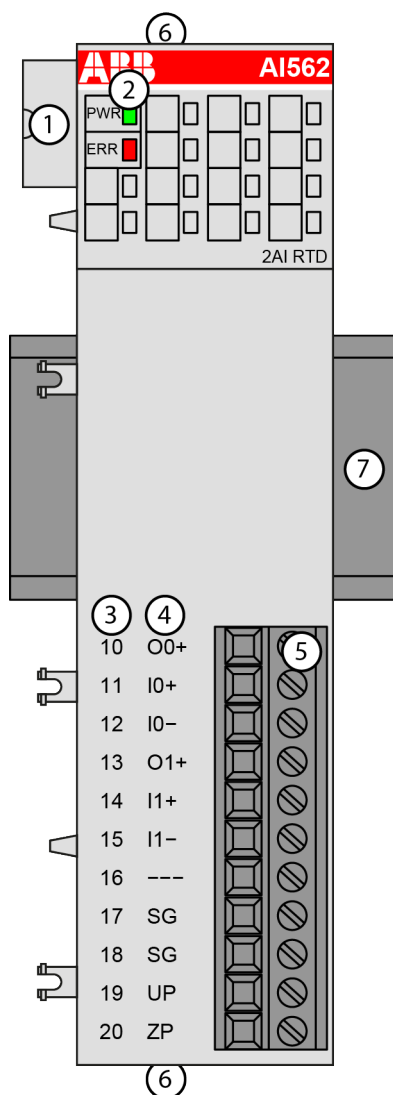
The insertion of the accessories TA566 for wall mounting is essential.

8.4 Dimensions



The dimensions are in mm and in brackets in inch.

8.5 Connections



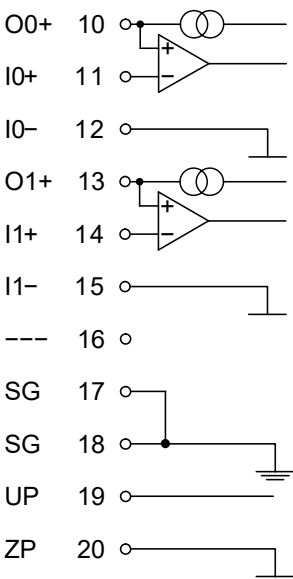
- 1 I/O bus
- 2 1 green LED to display power supply, 1 red LED to display error
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (11-pin)
- 6 2 holes for wall-mounting with screws
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-11	11-pin, screw, cable from front
	TA564-11	11-pin, screw, cable from side
	TA565-11	11-pin, spring, cable from front

8.5.1 Inputs/Outputs



8.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

8.7 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging
ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”
KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

8.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

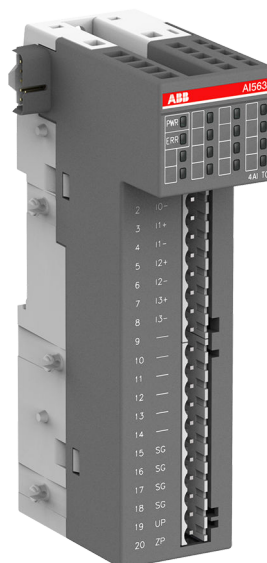
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

9 AI563

- AI563

**CAUTION!****Risk of injury and damaging the product!**

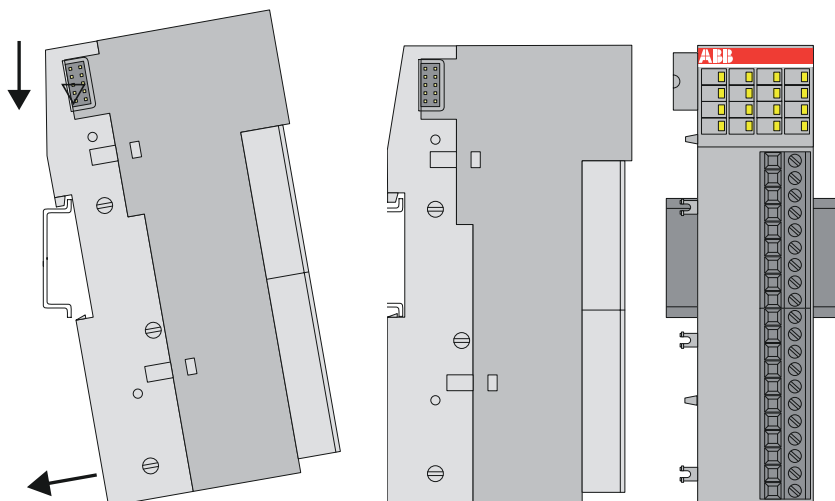
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

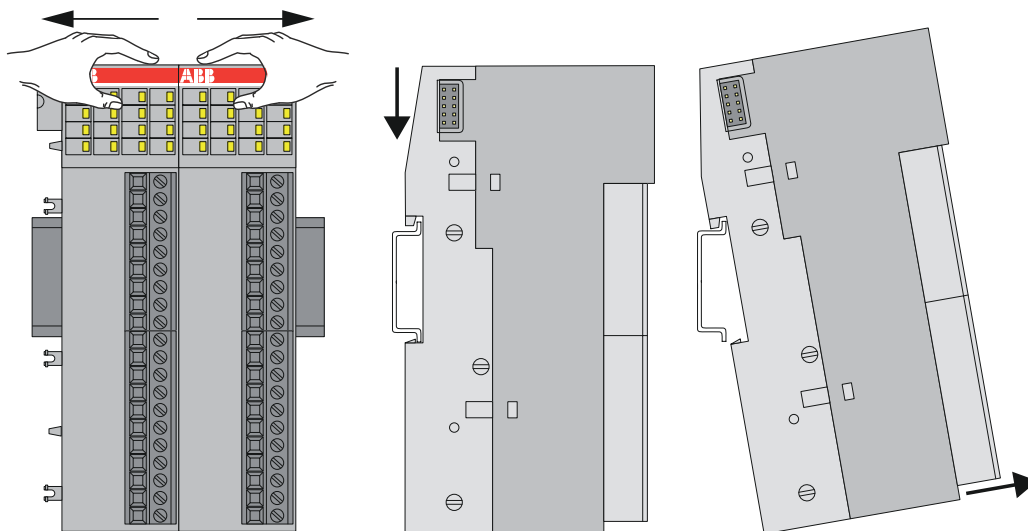
**CAUTION!**

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

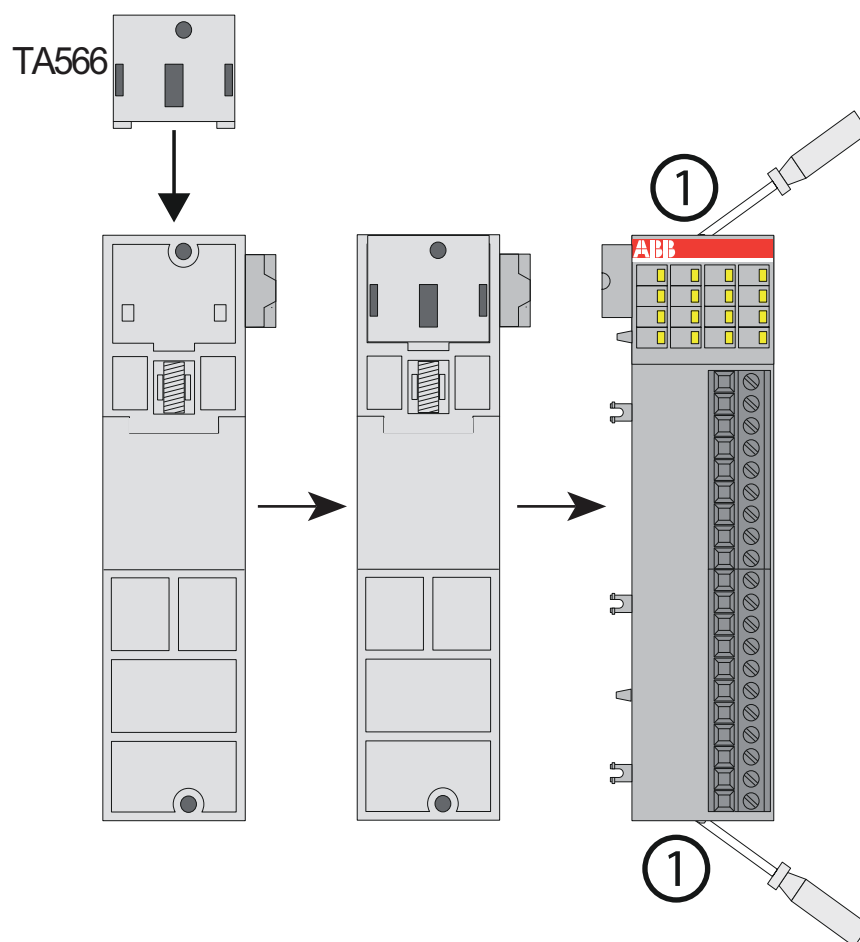
9.1 Assembly



9.2 Disassembly



9.3 Assembly with screws



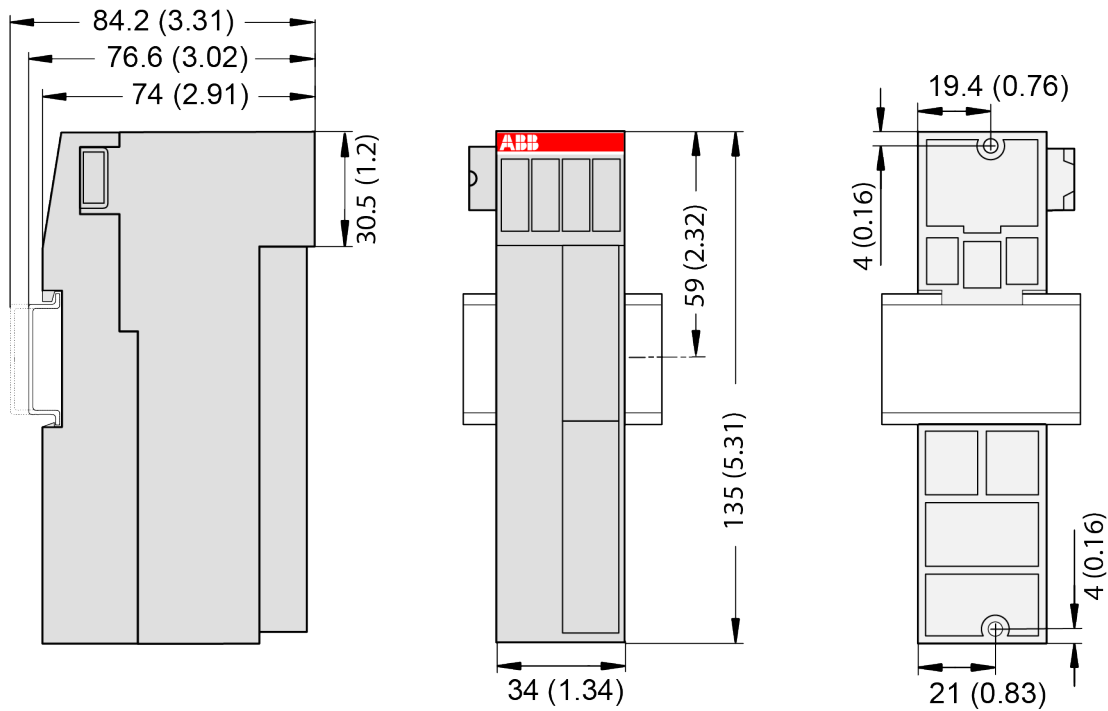
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

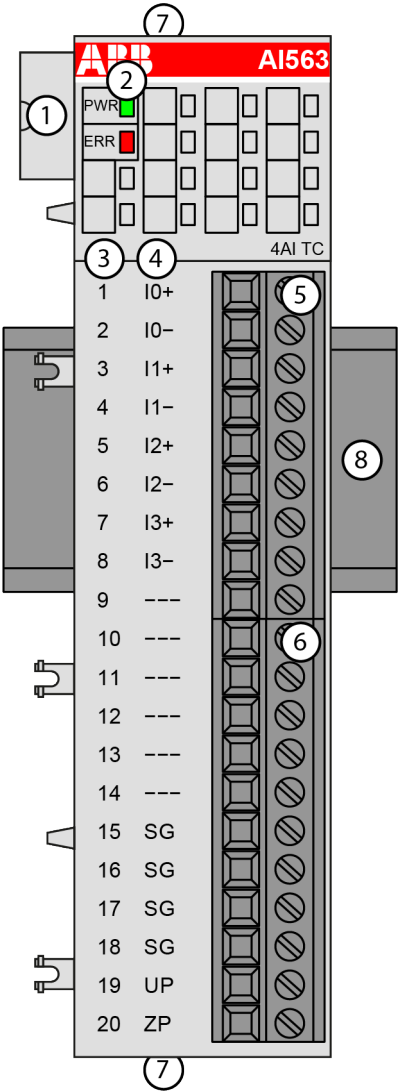
The insertion of the accessories TA566 for wall mounting is essential.

9.4 Dimensions



The dimensions are in mm and in brackets in inch.

9.5 Connections



- 1 I/O bus
- 2 1 green LED to display power supply, 1 red LED to display error
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 Terminal block for input signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

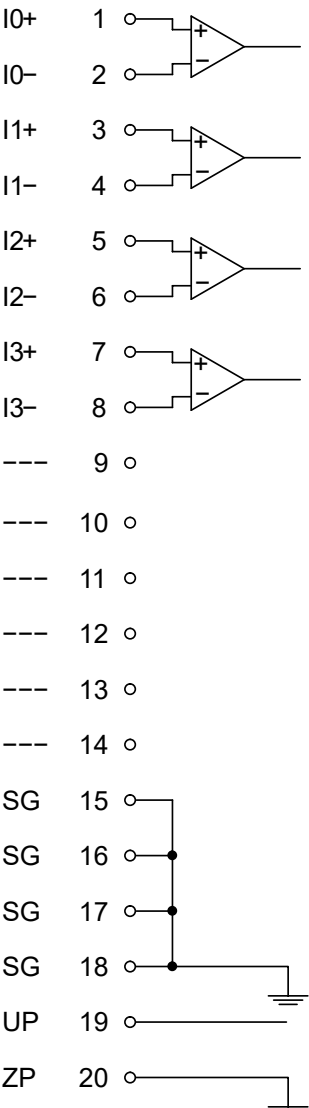


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from front
	TA564-9	9-pin, screw, cable from side
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from front

	TA564-11	11-pin, screw, cable from side
	TA565-11	11-pin, spring, cable from front

9.5.1 Inputs/Outputs



9.6 Cleaning

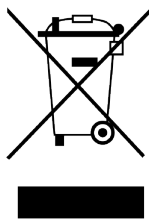


Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

9.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500-eCo		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

9.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

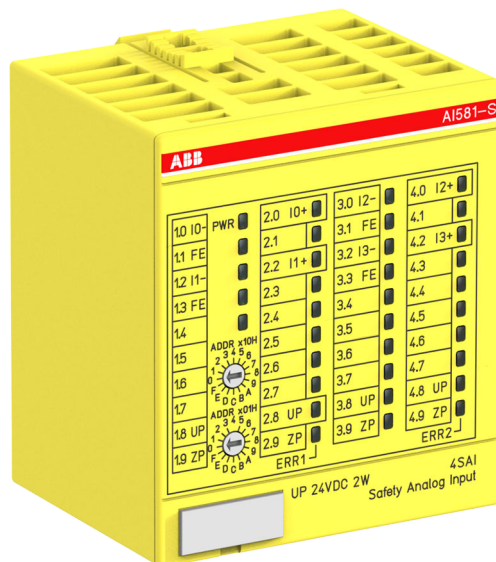
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

10 AI581-S(-XC)

- AI581-S
- AI581-S-XC



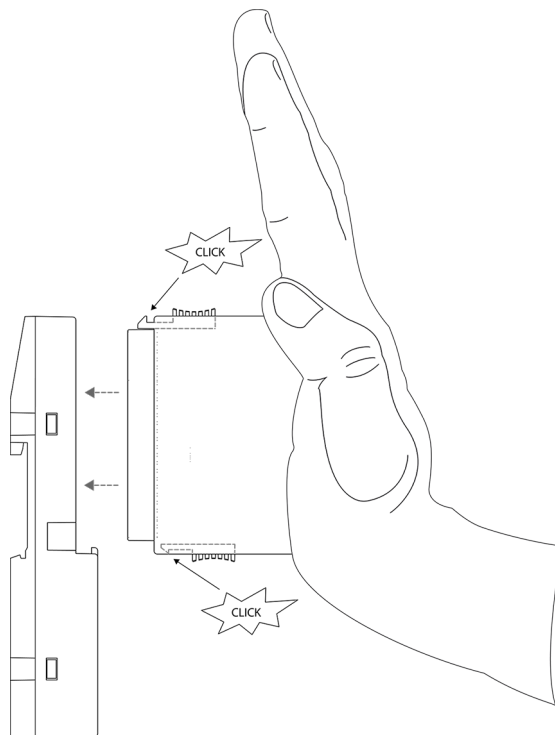
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

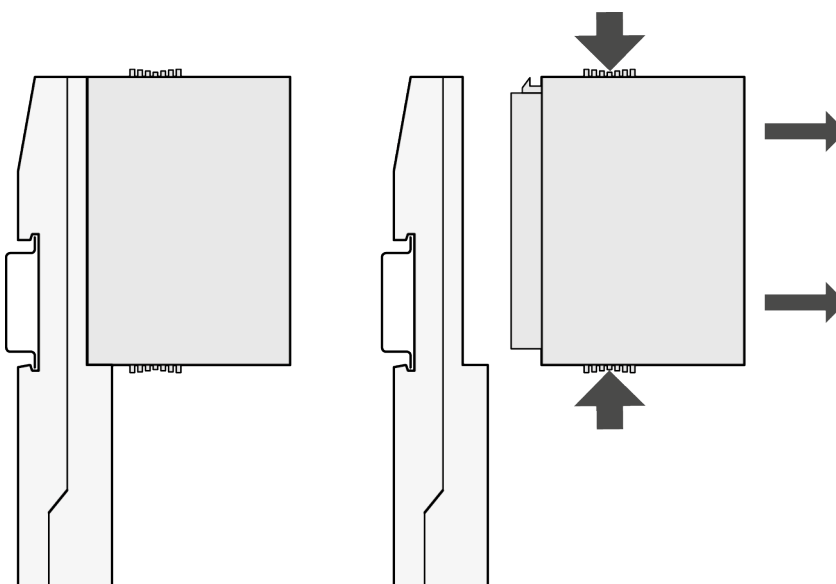
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

10.1 Assembly

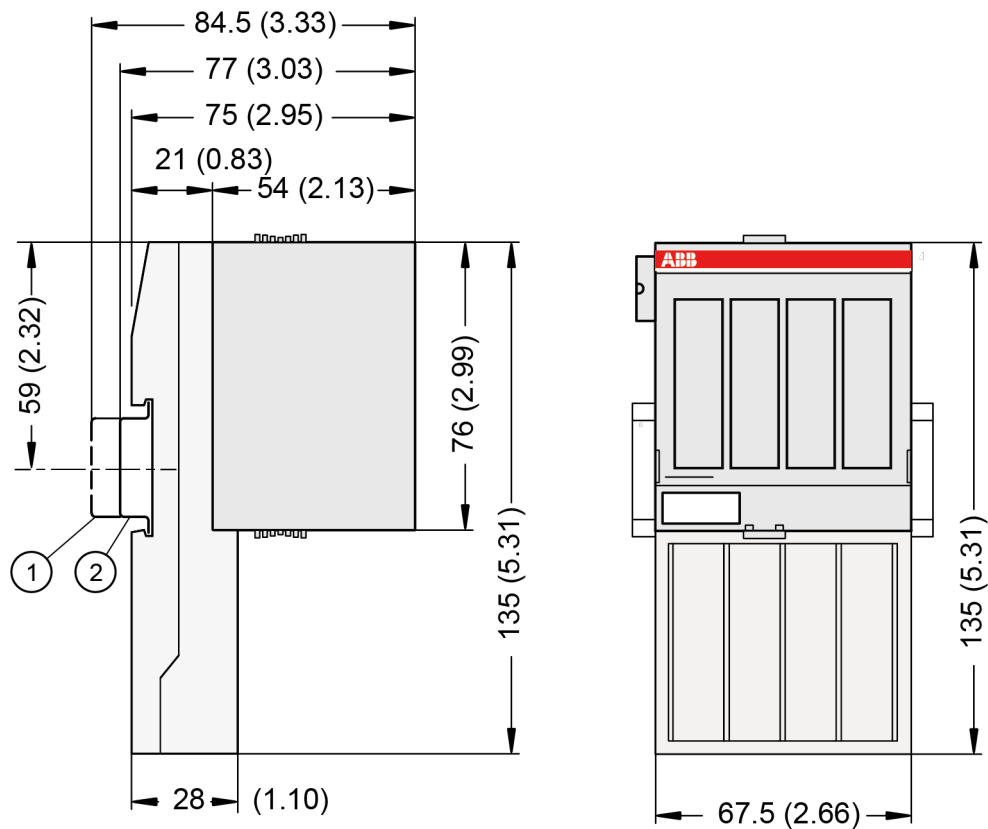


1. Put the module on the terminal unit
⇒ Module clicks in.
2. Then press the module with a force of at least 100 N into the terminal unit to achieve proper electrical contact.

10.2 Disassembly

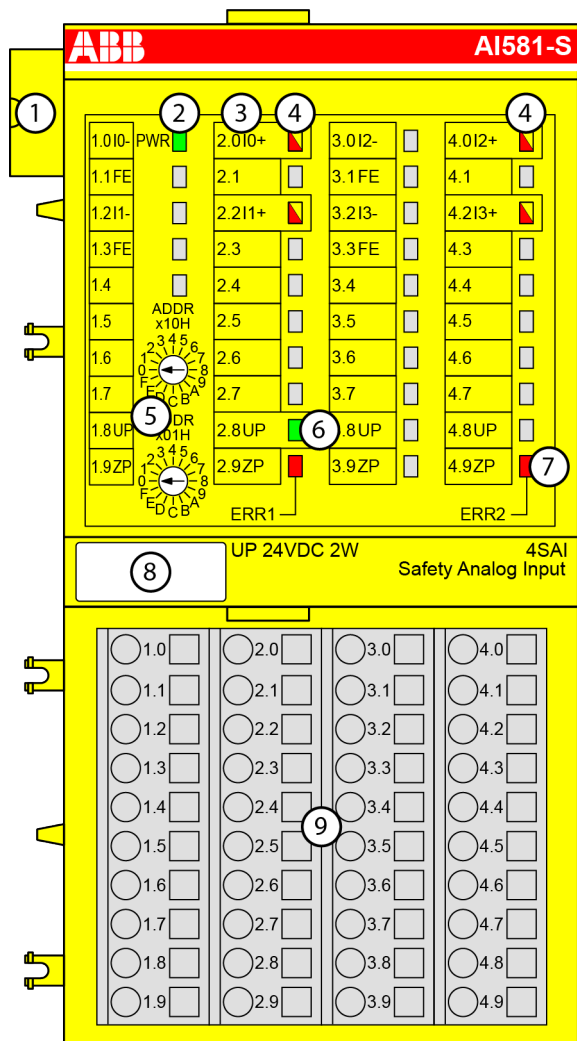


10.3 Dimensions



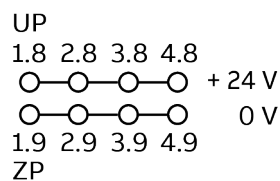
The dimensions are in mm and in brackets in inch.

10.4 Connections



- 1 I/O bus
- 2 System LED
- 3 Allocation of terminal number and signal name
- 4 4 yellow/red LEDs to display the signal states of the analog inputs
- 5 2 rotary switches for setting the PROFIsafe address
- 6 1 green LED to display the state of the process supply voltage UP
- 7 2 red LEDs to display errors
- 8 Label
- 9 Terminal unit TU582-S(-XC)
- ✱ Sign for XC version

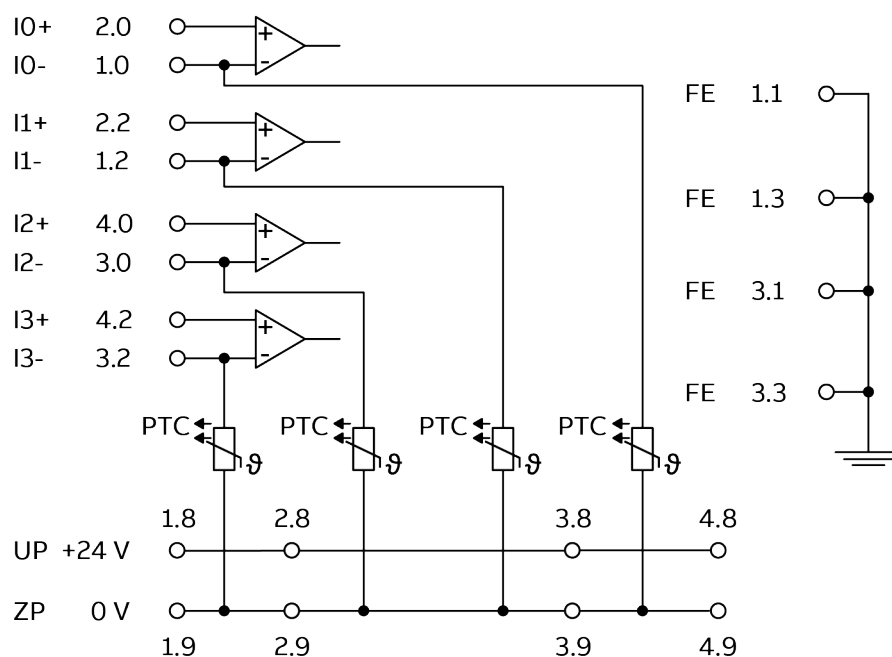
10.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

10.4.2 Inputs



Example

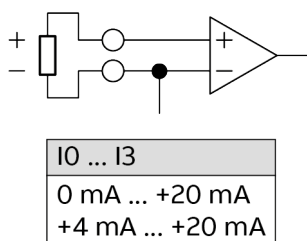


Fig. 5: Example of connection input



AC500-S safety user manual

For a detailed description of the connection of the module, please refer to the "AC500-S safety user manual".

10.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

10.6 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

10.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

11 AO523(-XC)

- AO523
- AO523-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

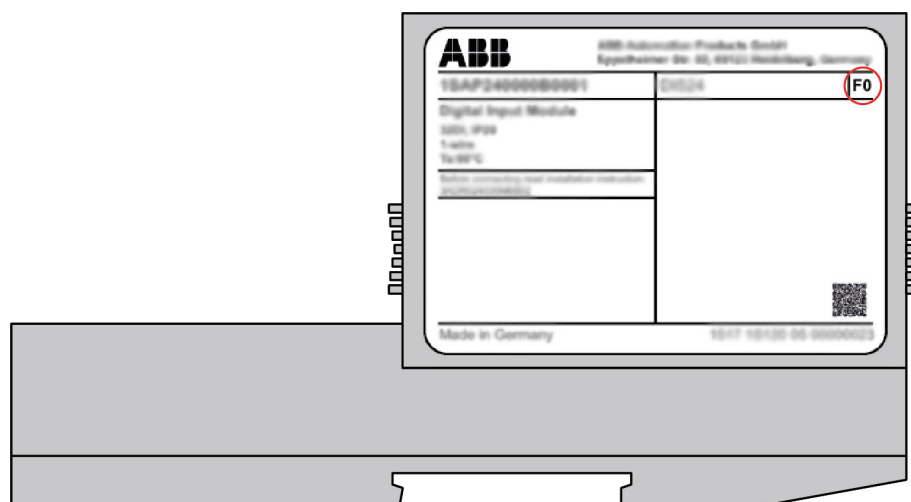
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

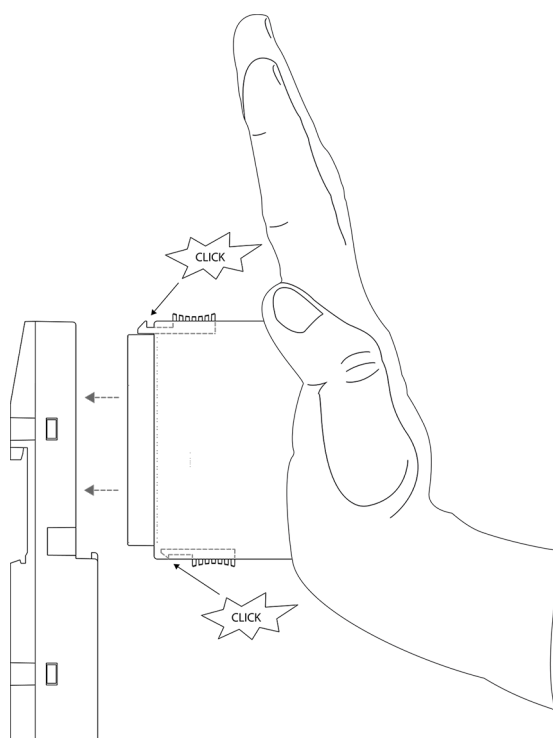
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

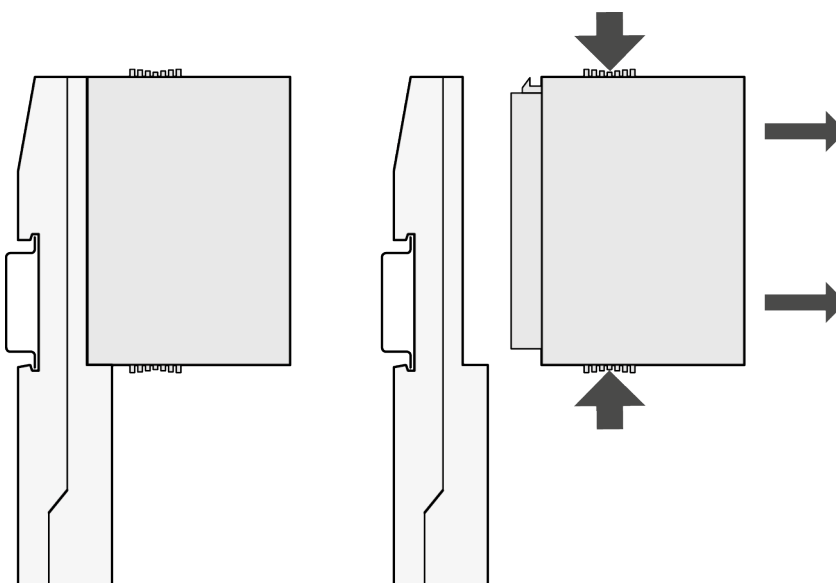
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

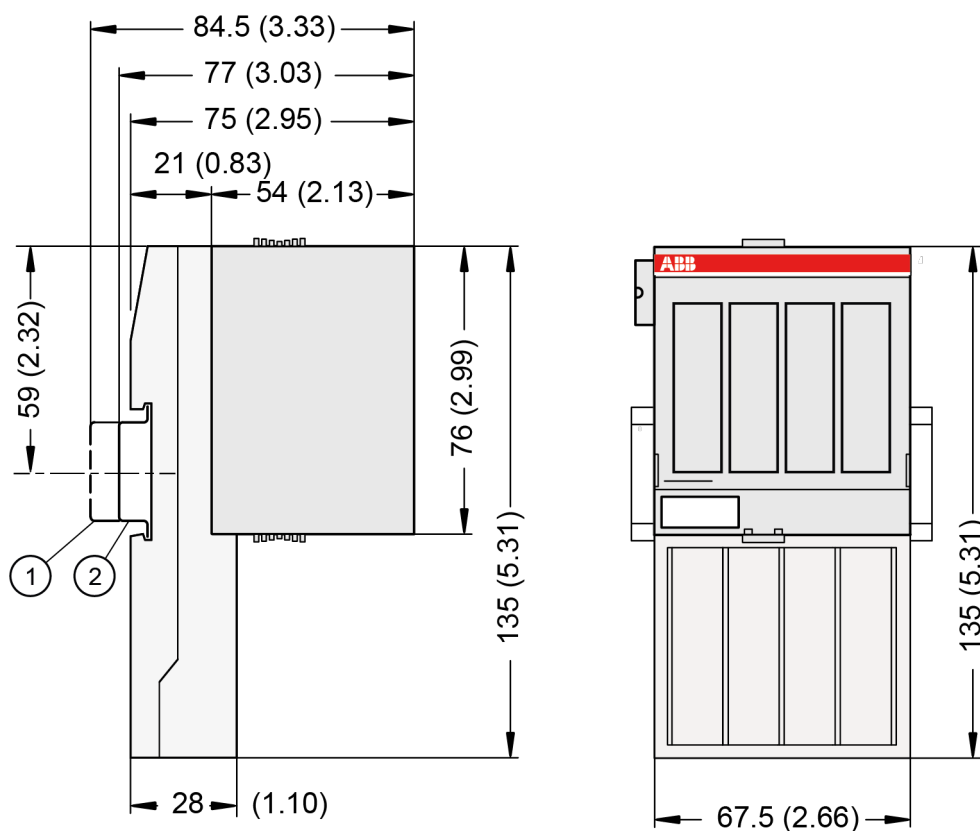
11.1 Assembly



11.2 Disassembly



11.3 Dimensions

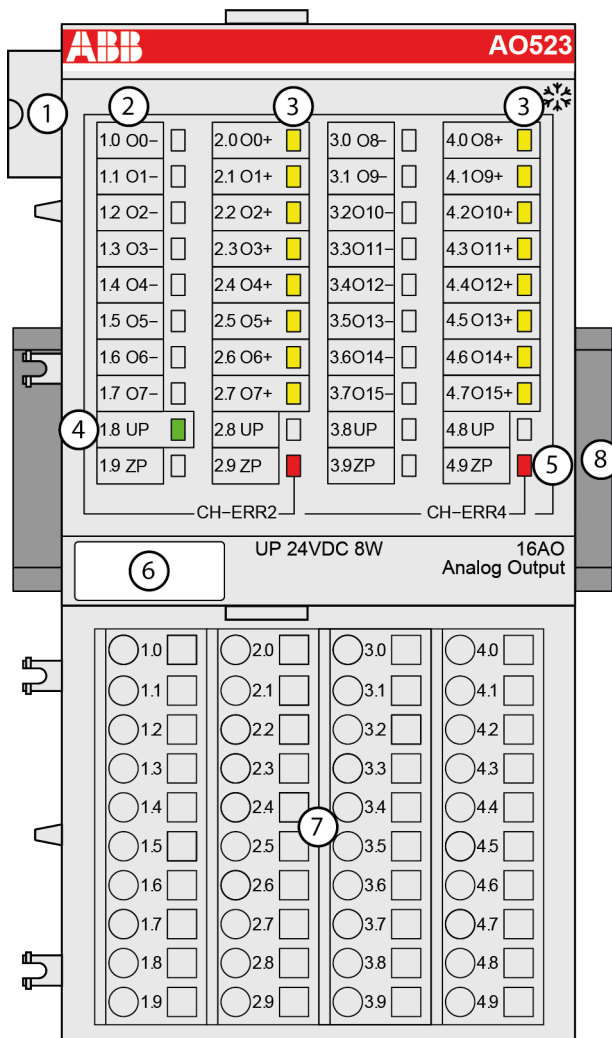


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

11.4 Connections

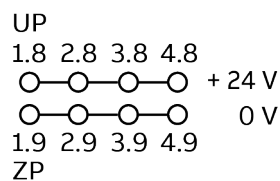


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 16 yellow LEDs to display the signal states at the analog outputs (O0 ... O15)
- 4 1 green LED to display the state of the process supply voltage UP
- 5 2 red LEDs to display errors
- 6 Label
- 7 Terminal unit
- 8 DIN rail
- ✱ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

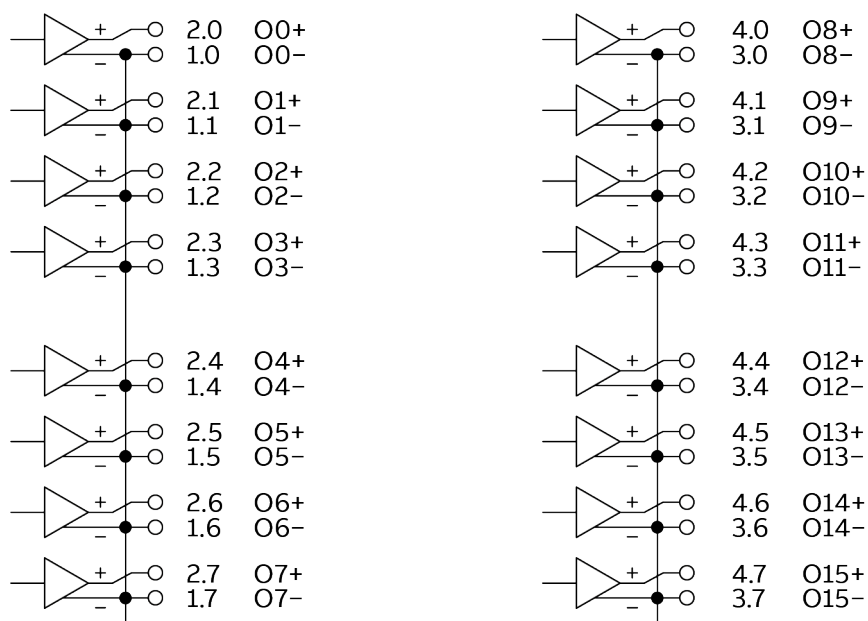
11.4.1 Process supply voltage



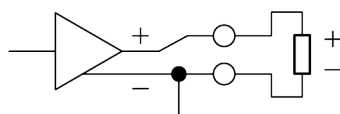
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

11.4.2 Outputs



Example



O0 ... O3	O4 ... O7
O8 ... O11	O12 ... O15
± 10 V	± 10 V
0 mA ... +20 mA	—
+4 mA ... +20 mA	—

Fig. 6: Example of connection output

11.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

11.6 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

11.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

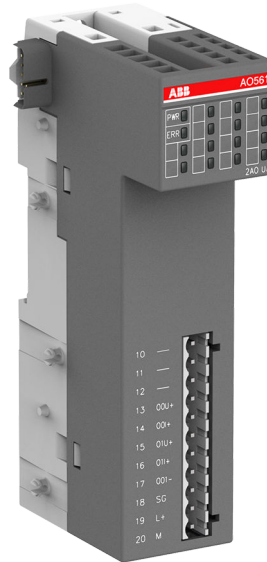
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

12 AO561

- AO561



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

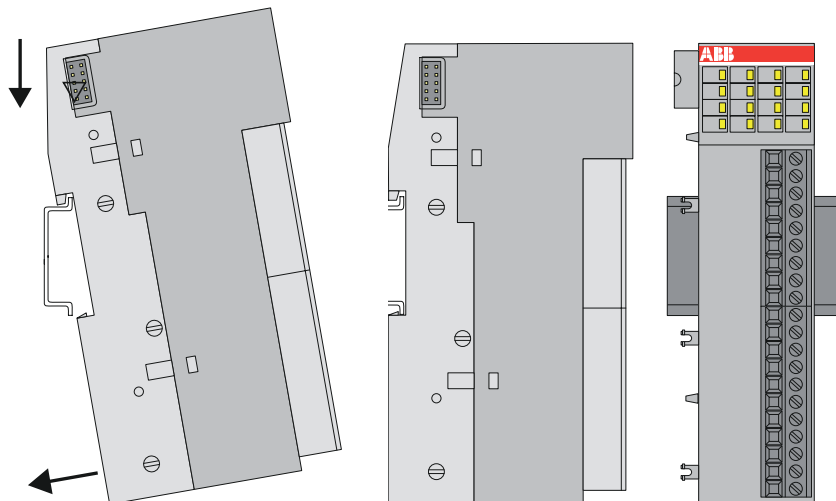
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



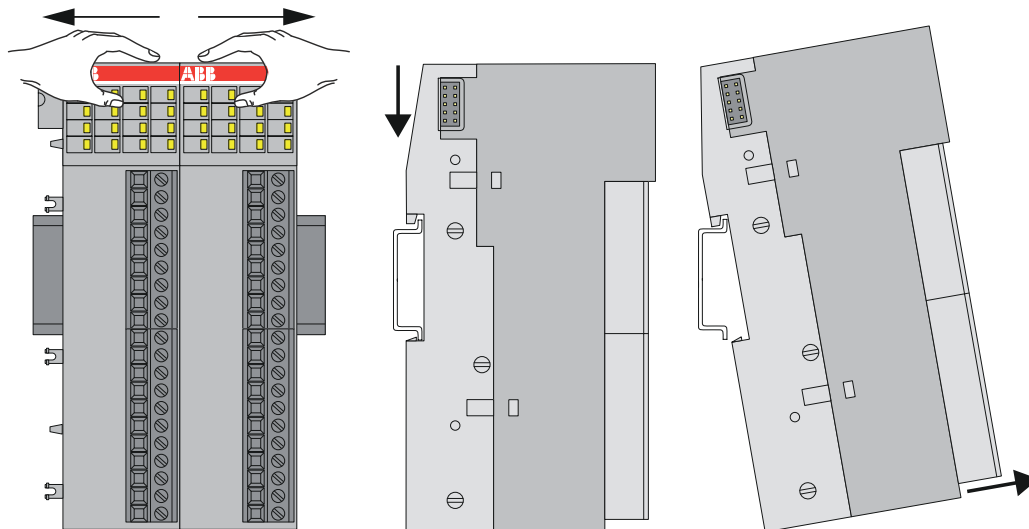
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

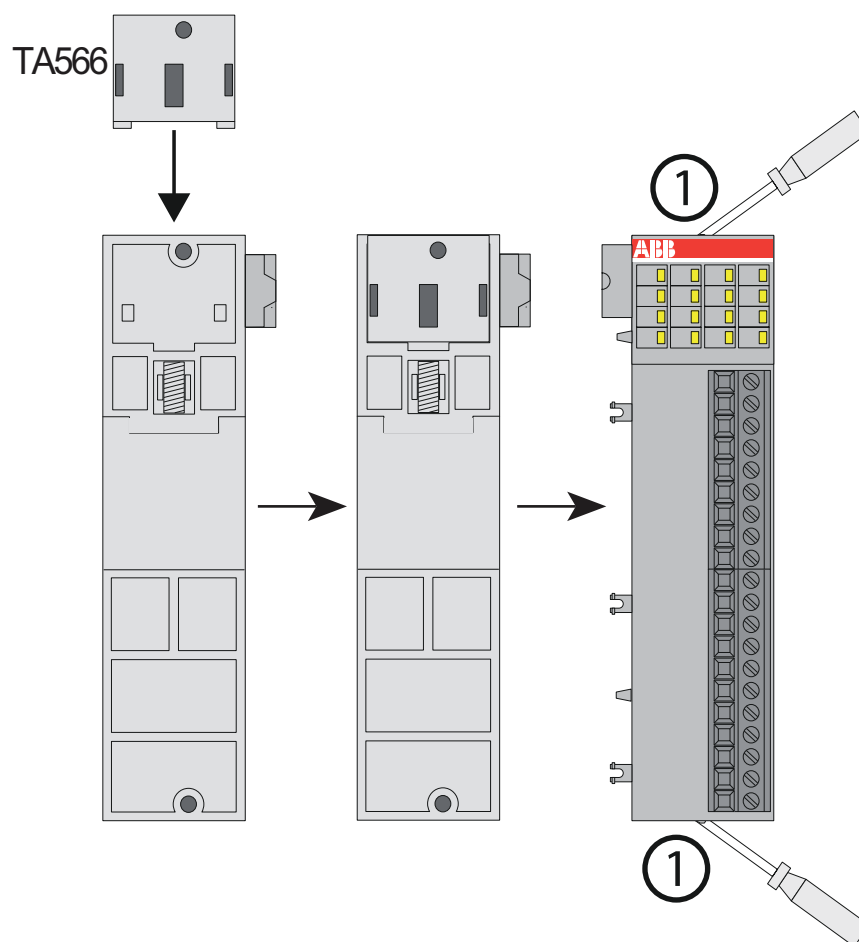
12.1 Assembly



12.2 Disassembly



12.3 Assembly with screws



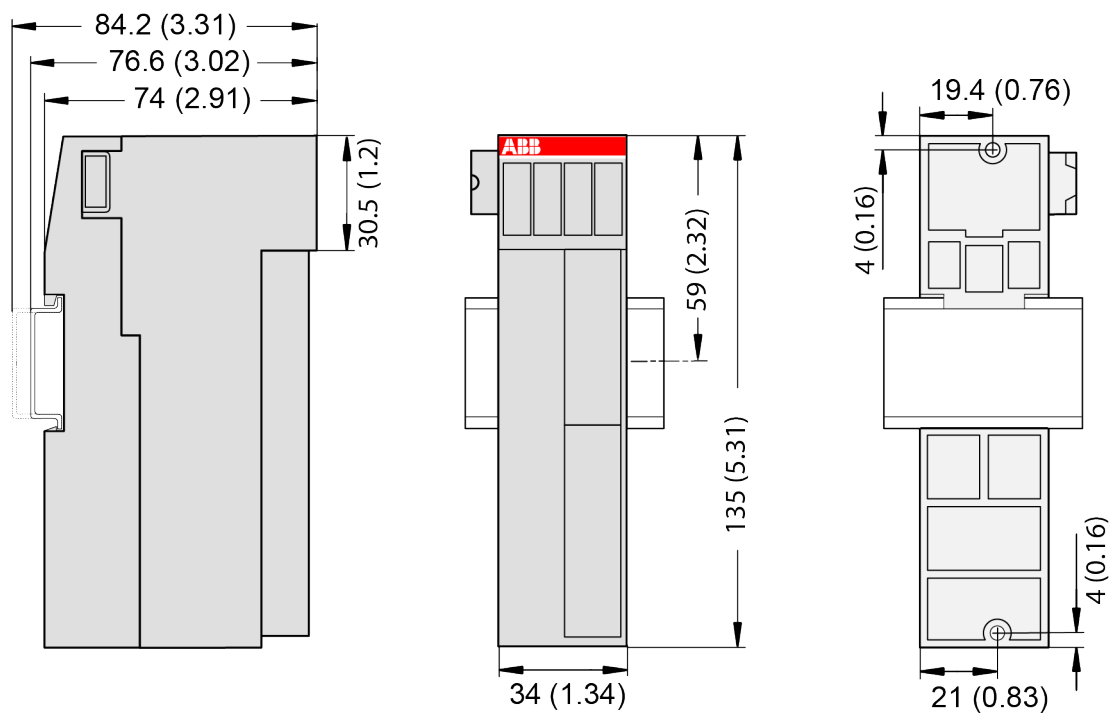
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

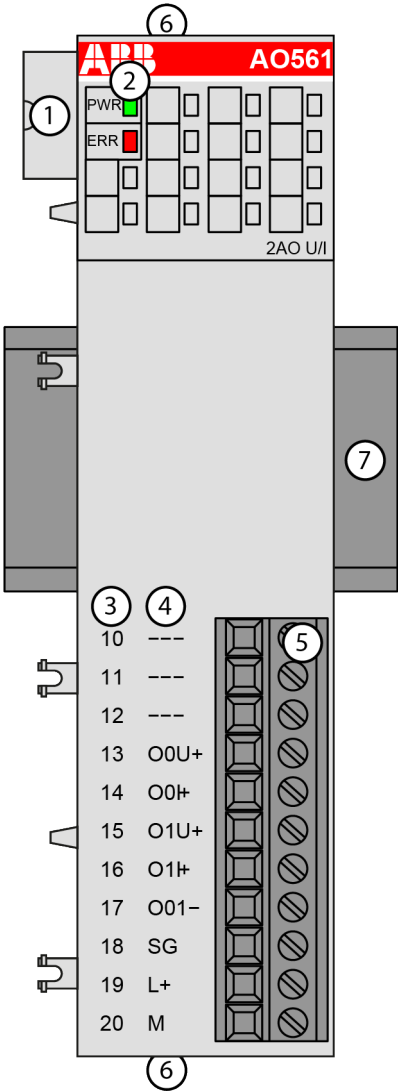
The insertion of the accessories TA566 for wall mounting is essential.

12.4 Dimensions



The dimensions are in mm and in brackets in inch.

12.5 Connections

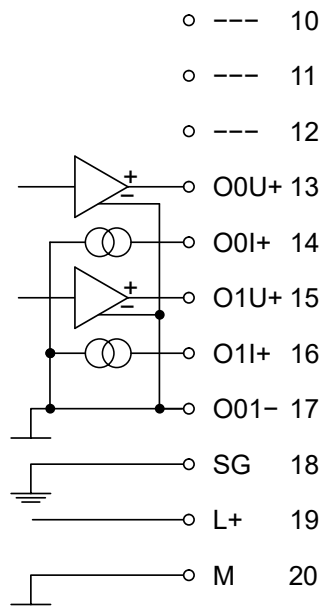


- 1 I/O bus
- 2 1 green LED to display power supply, 1 red LED to display error
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for output signals (11-pin)
- 6 2 holes for wall-mounting with screws
- 7 DIN rail

 All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-11	11-pin, screw, cable from front
	TA564-11	11-pin, screw, cable from side
	TA565-11	11-pin, spring, cable from front

12.5.1 Inputs/Outputs



12.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

12.7 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging
ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en **Note**
These devices correspond to:
ko 참고
이러한 기기는

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"
KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

12.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

13 AX521(-XC)

- AX521
- AX521-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

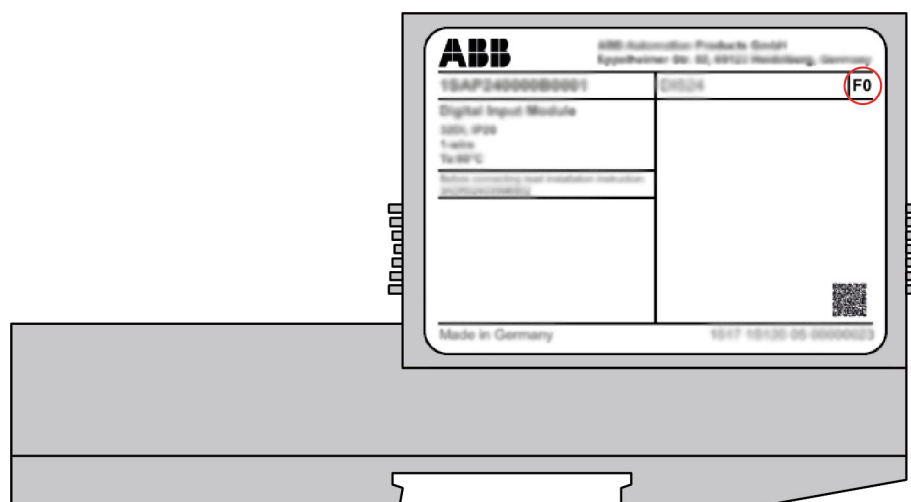
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

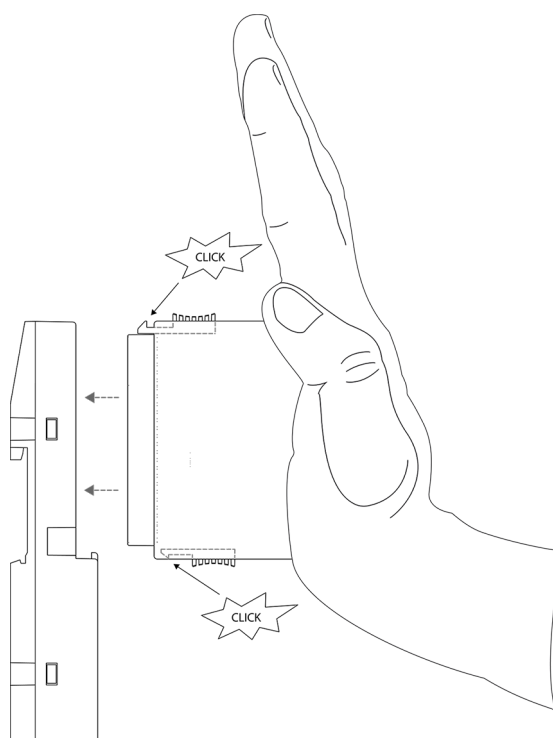
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

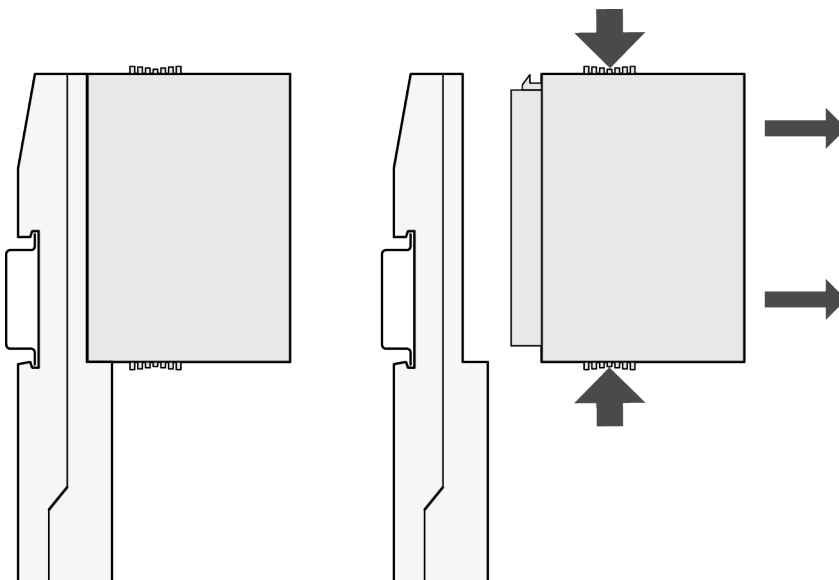
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

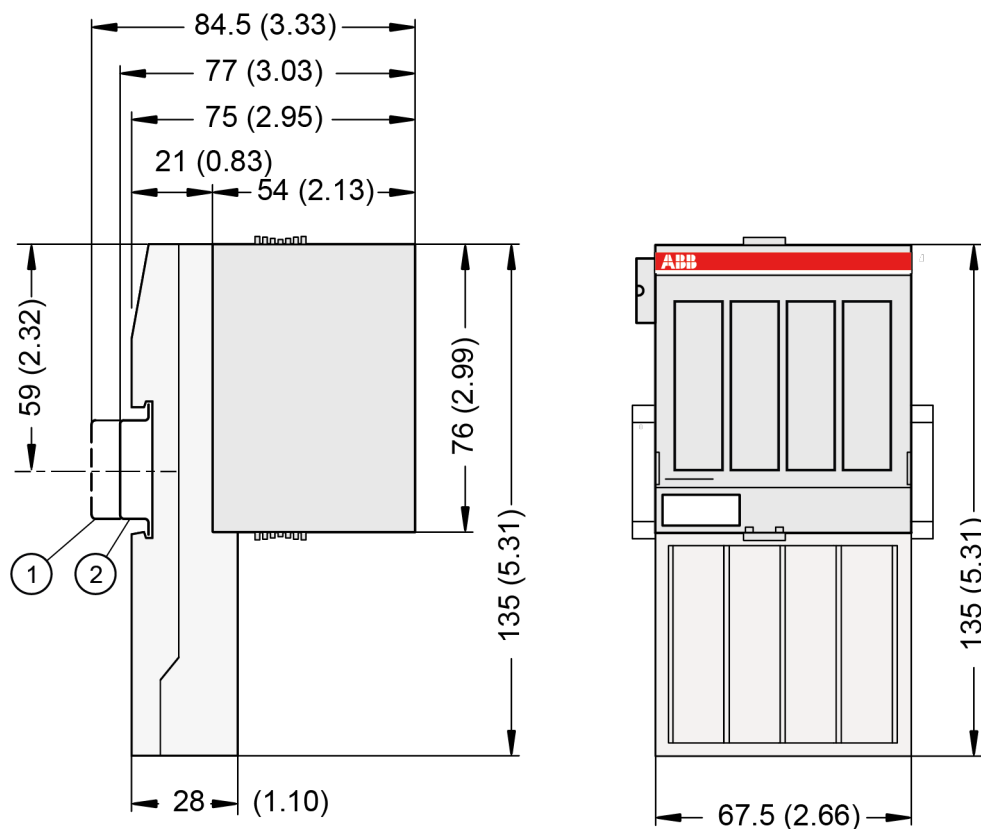
13.1 Assembly



13.2 Disassembly



13.3 Dimensions

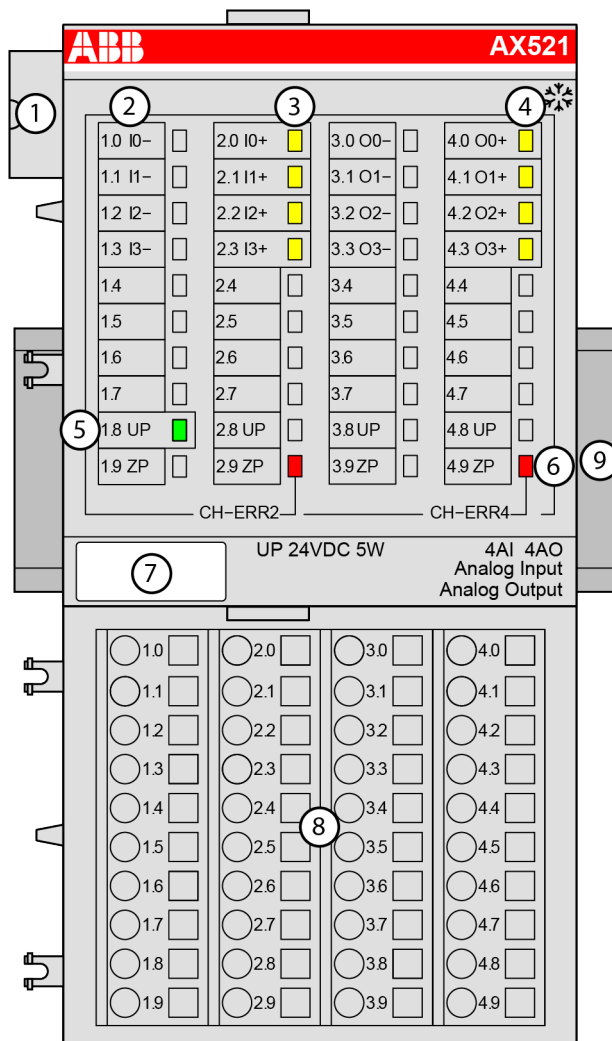


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

13.4 Connections

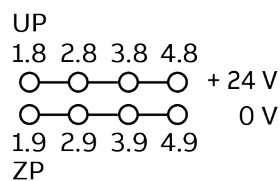


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 4 yellow LEDs to display the signal states at the analog inputs (I0 ... I3)
- 4 4 yellow LEDs to display the signal states at the analog outputs (O0 ... O3)
- 5 1 green LED to display the state of the process supply voltage UP
- 6 2 red LEDs to display errors
- 7 Label
- 8 Terminal unit
- 9 DIN rail
- AX521 Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

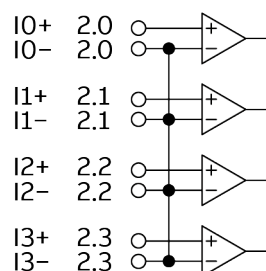
13.4.1 Process supply voltage



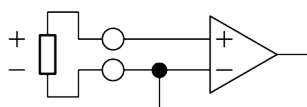
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

13.4.2 Inputs



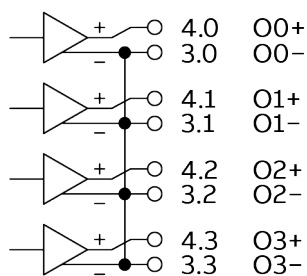
Example



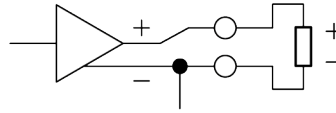
I0 ... I3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 7: Example of connection input

13.4.3 Outputs



Example



O0 ... O3
$\pm 10 \text{ V}$
0 mA ... +20 mA
+4 mA ... +20 mA

Fig. 8: Example of connection output

13.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

13.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

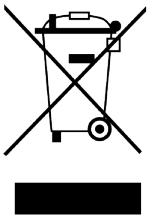
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

13.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

14 AX522(-XC)

- AX522
- AX522-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

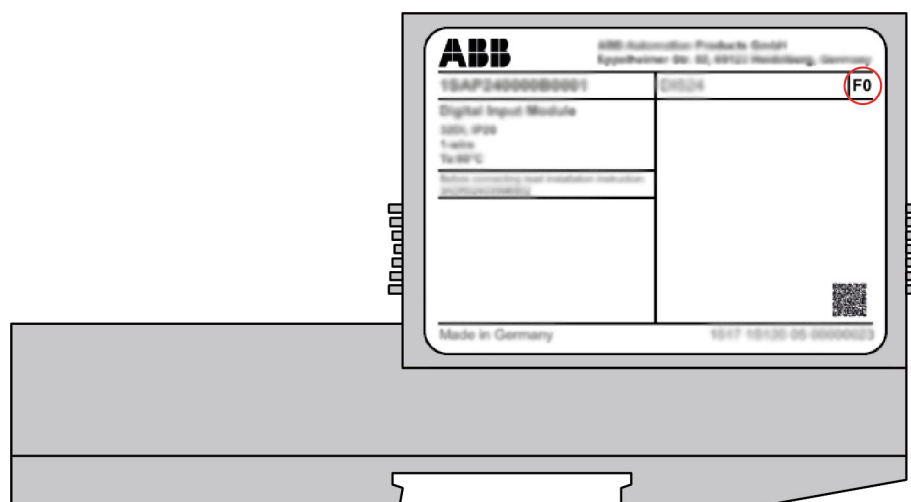
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

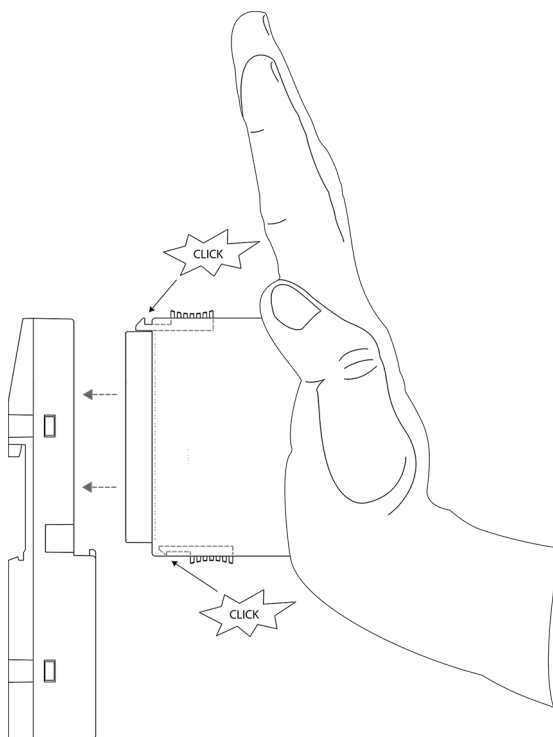
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

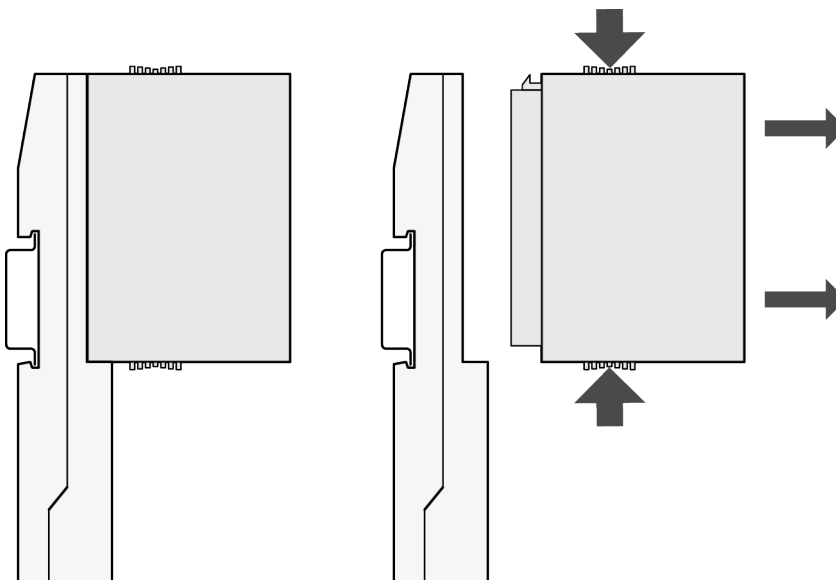
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

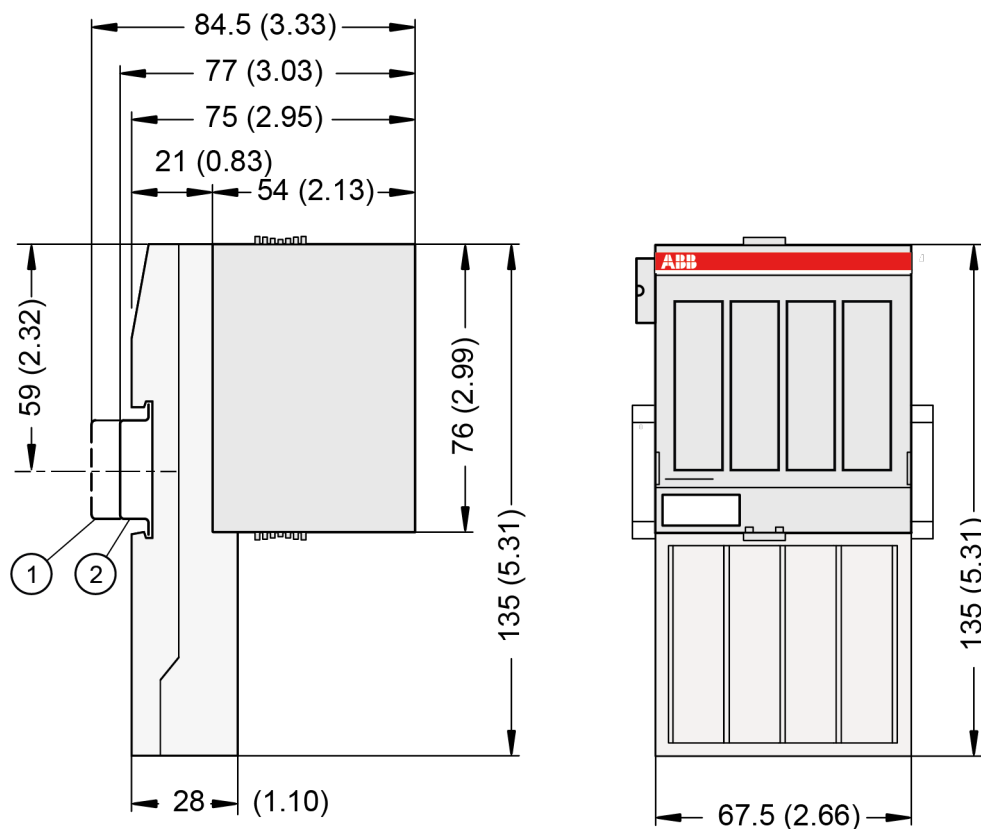
14.1 Assembly



14.2 Disassembly



14.3 Dimensions

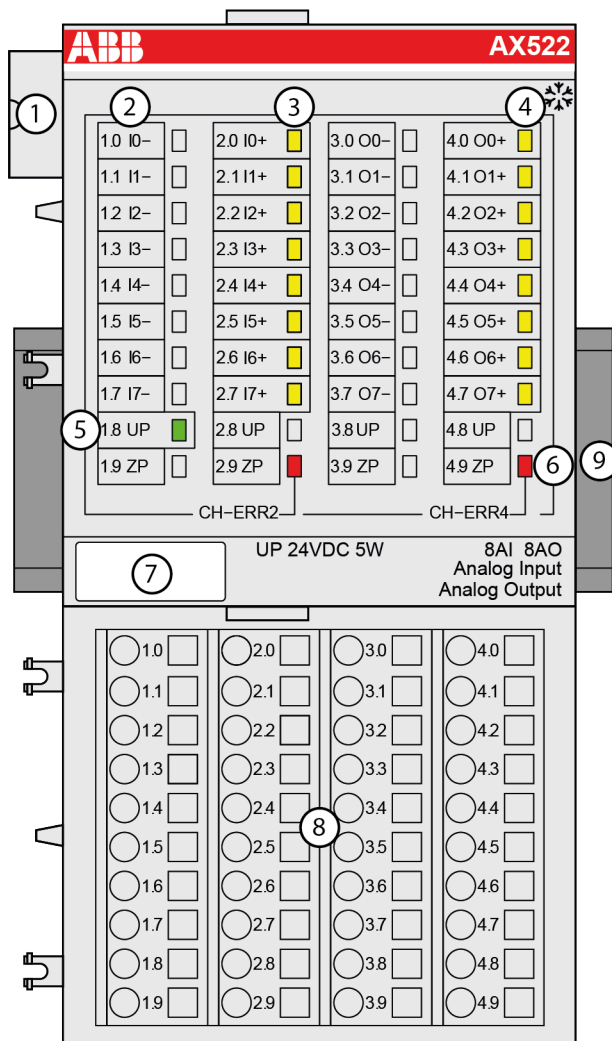


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

14.4 Connections

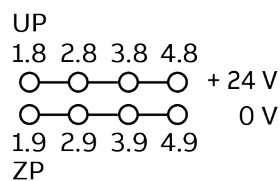


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states at the analog inputs (I0 ... I7)
- 4 8 yellow LEDs to display the signal states at the analog outputs (O0 ... O7)
- 5 1 green LED to display the state of the process supply voltage UP
- 6 2 red LEDs to display errors
- 7 Label
- 8 Terminal unit
- 9 DIN rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

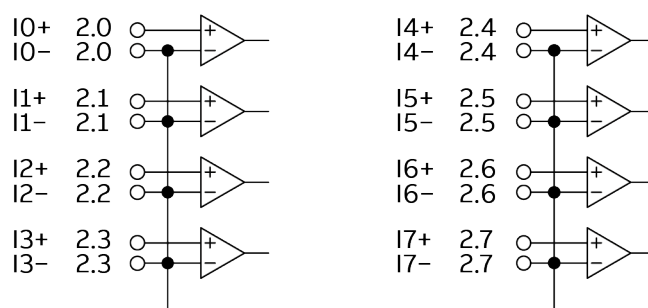
14.4.1 Process supply voltage



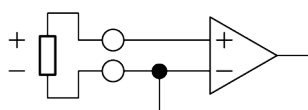
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

14.4.2 Inputs



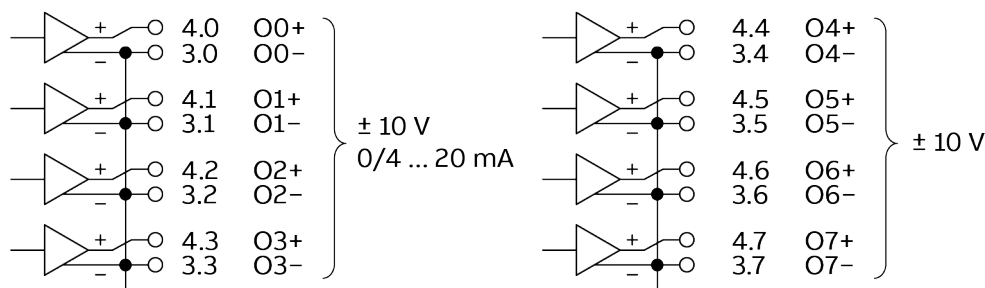
Example



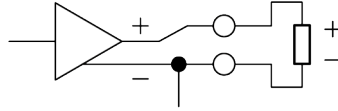
I0 ... I7
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 9: Example of connection input

14.4.3 Outputs



Example



O0 ... O3	O4 ... O7
$\pm 10 \text{ V}$	$\pm 10 \text{ V}$
0 mA ... +20 mA	–
+4 mA ... +20 mA	–

Fig. 10: Example of connection output

14.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

14.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

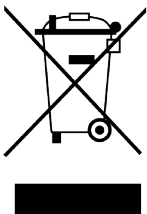
ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

14.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

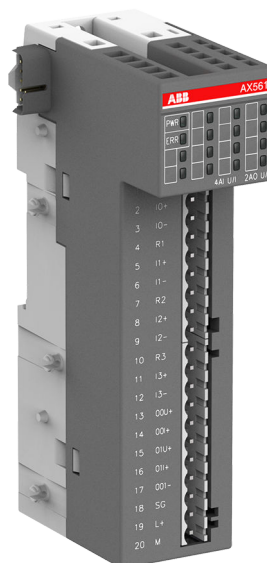
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

15 AX561

- AX561

**CAUTION!****Risk of injury and damaging the product!**

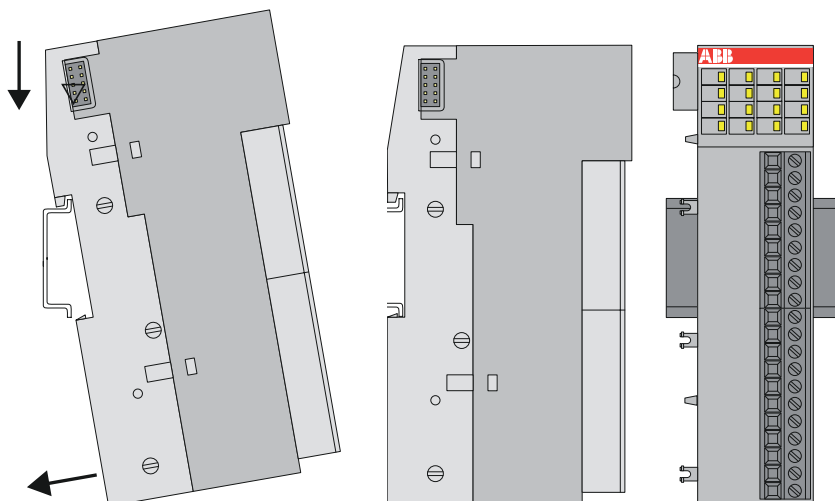
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

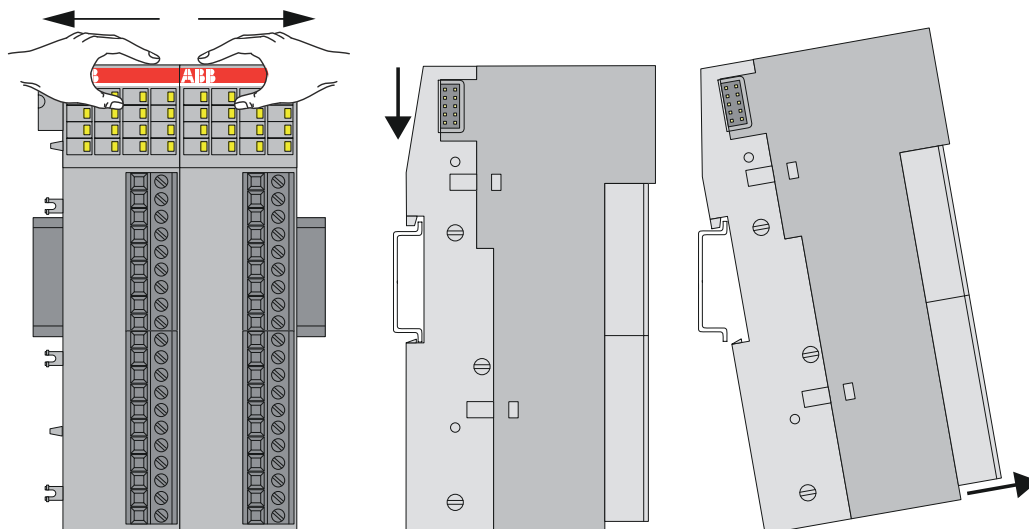
**CAUTION!**

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

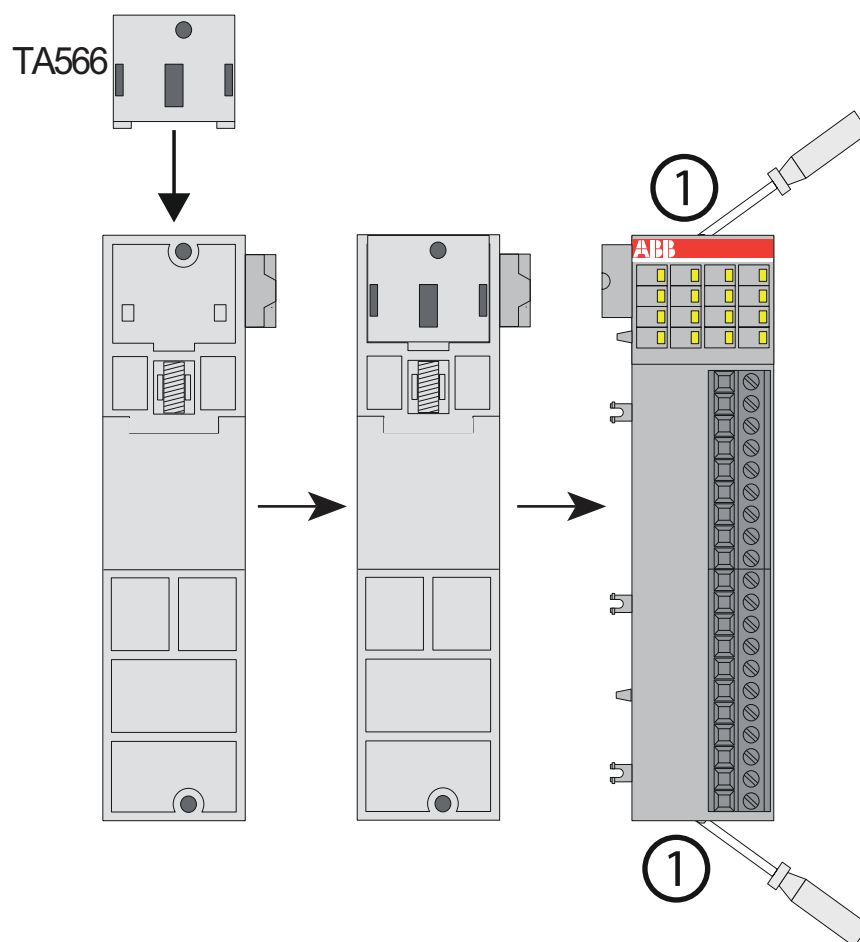
15.1 Assembly



15.2 Disassembly



15.3 Assembly with screws



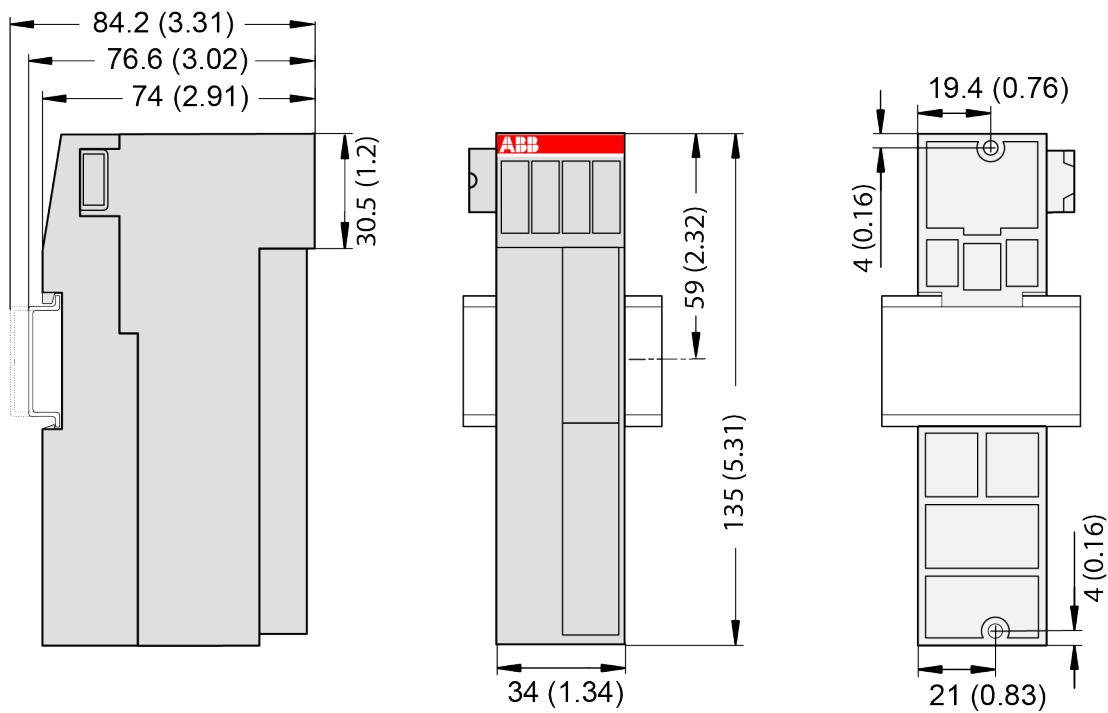
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

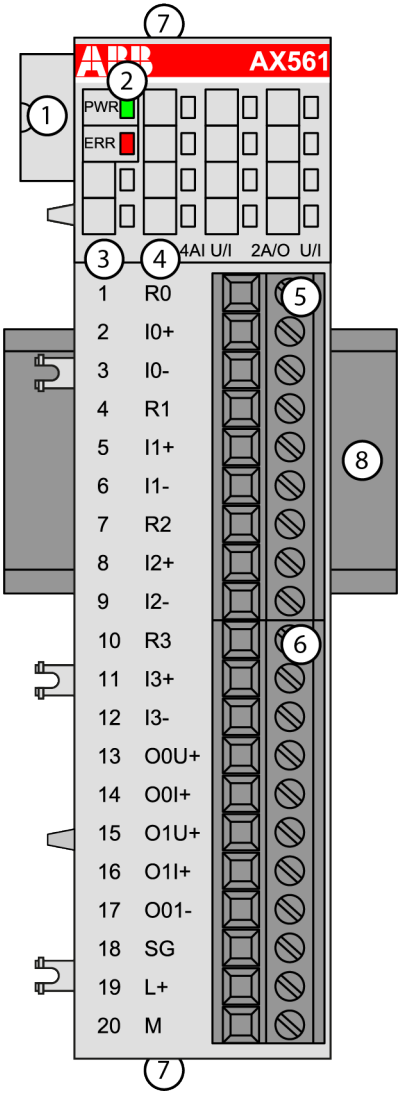
The insertion of the accessories TA566 for wall mounting is essential.

15.4 Dimensions



The dimensions are in mm and in brackets in inch.

15.5 Connections



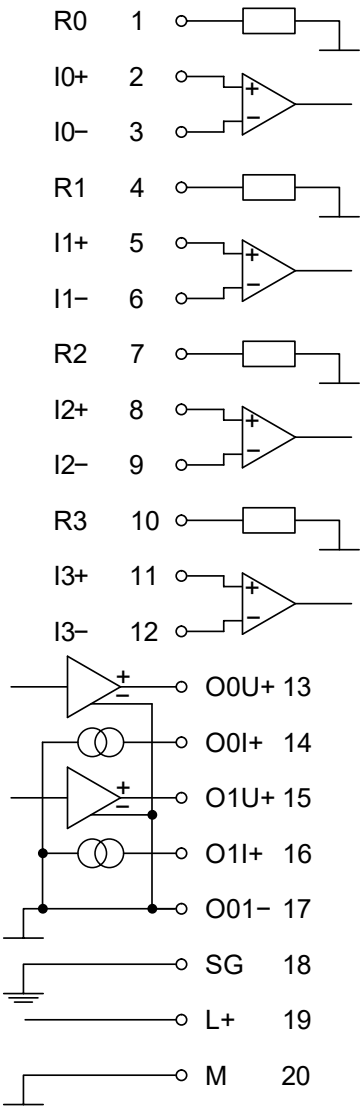
- 1 I/O bus
- 2 1 green LED to display power supply, 1 red LED to display error
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 Terminal block for output signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

 All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from front
	TA564-9	9-pin, screw, cable from side
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from front

	TA564-11	11-pin, screw, cable from side
	TA565-11	11-pin, spring, cable from front

15.5.1 Inputs/Outputs



15.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

15.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500-eCo		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

15.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

16 CD522(-XC)

- CD522
- CD522-XC



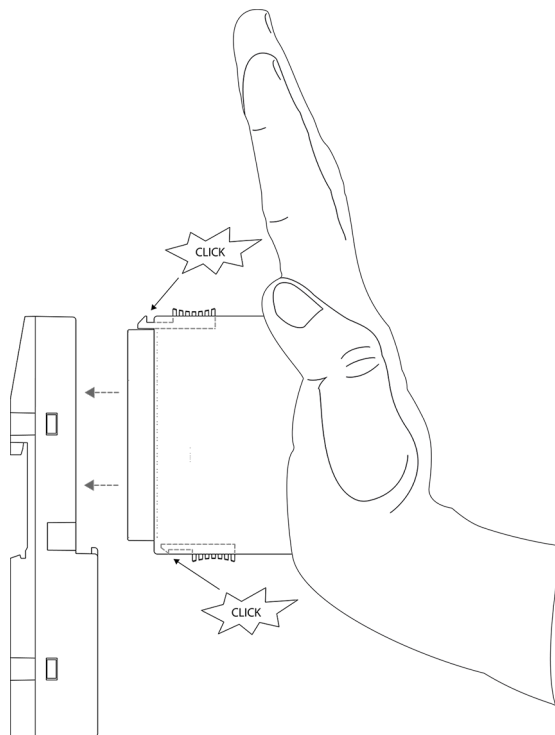
CAUTION!

Risk of injury and damaging the product!

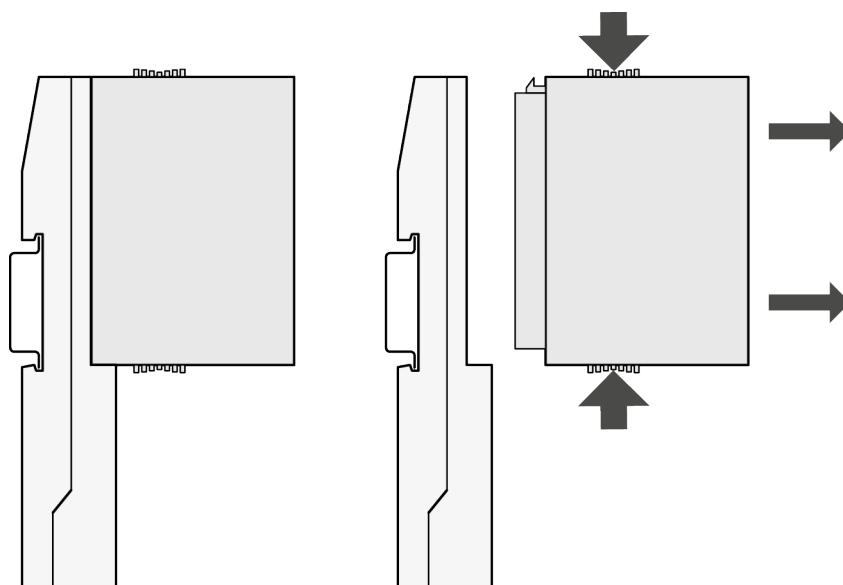
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

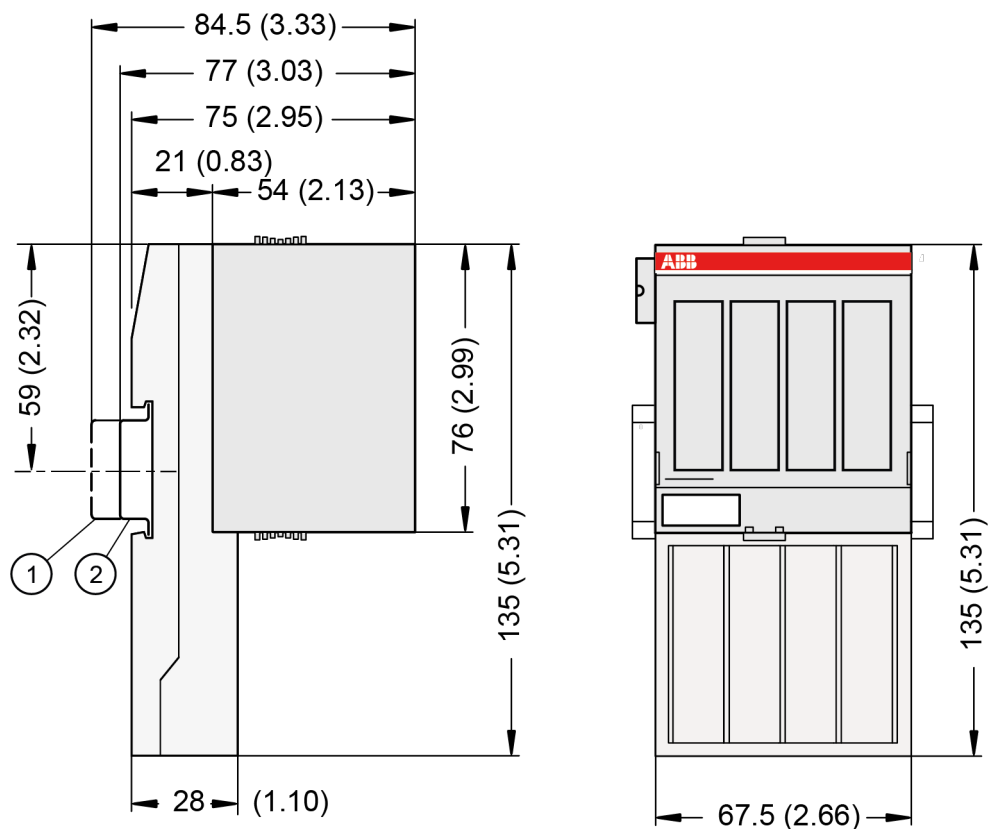
16.1 Assembly



16.2 Disassembly



16.3 Dimensions

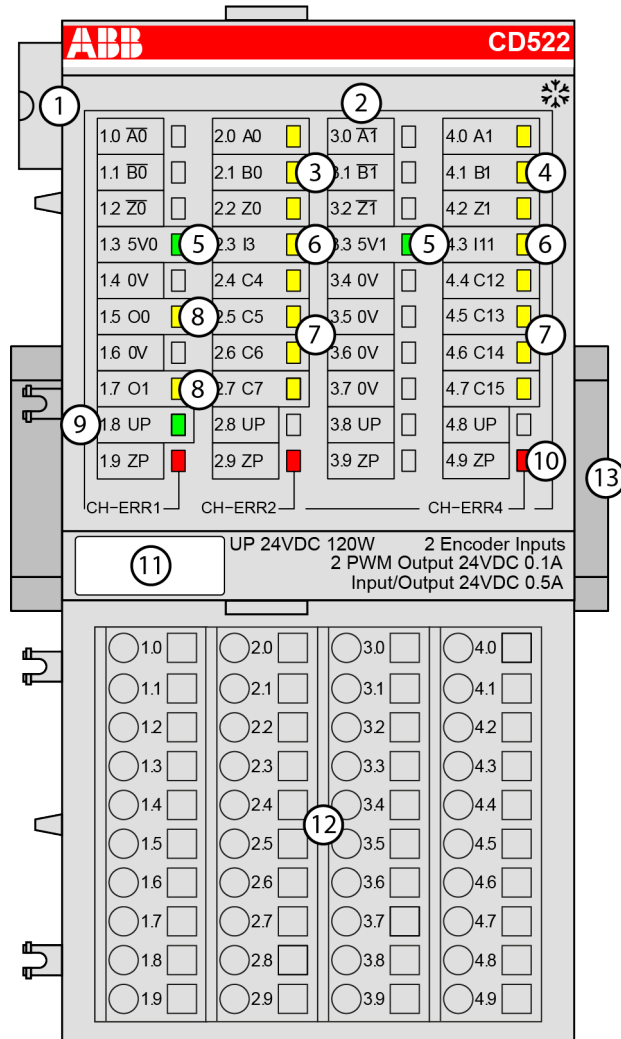


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

16.4 Connections

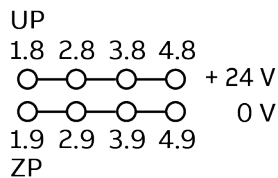


- 1 I/O bus
- 2 Allocation of terminal No. and signal name
- 3 3 yellow LEDs to display the signal states of the encoder 0 input
- 4 3 yellow LEDs to display the signal states of the encoder 1 input
- 5 2 green LEDs to display the 5-V-power-supply states
- 6 2 yellow LEDs to display the signal state of the digital input I3 and I11
- 7 8 yellow LEDs to display the input/output signal states
- 8 2 yellow LEDs to display the signal states of the PWM/pulse outputs
- 9 1 green LED to display the process voltage UP
- 10 3 red LEDs to display errors
- 11 Label
- 12 Terminal unit
- 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

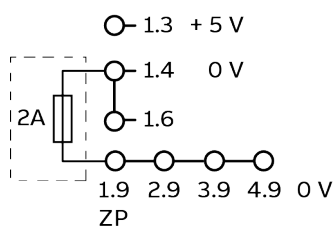
16.4.1 Process supply voltage



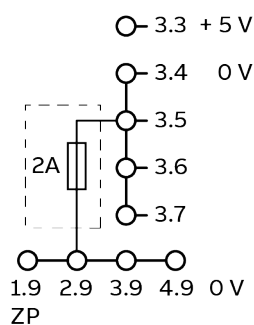
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

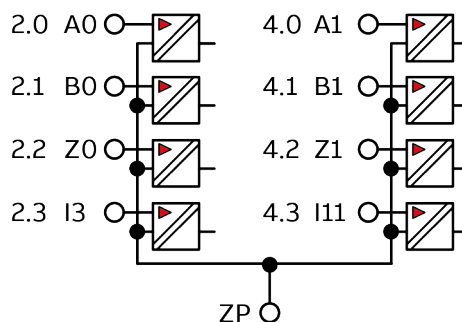
5V0



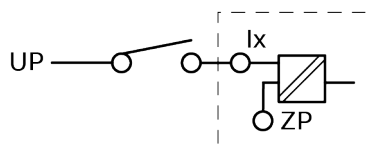
5V1



16.4.2 Inputs

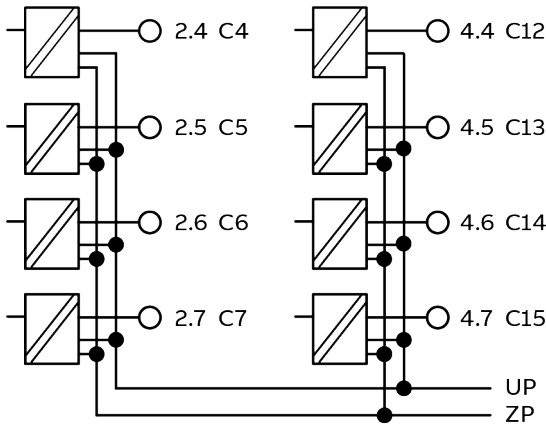


Example

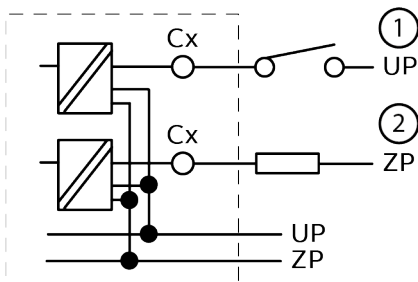


- 1 Example of connection input Ix

16.4.3 Inputs/Outputs



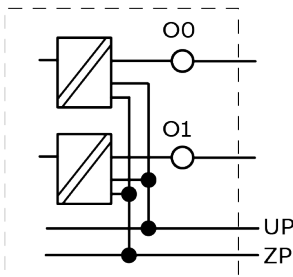
Example



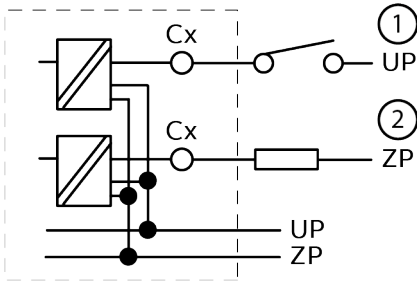
- 1 Example of connection as an input
- 2 Example of connection as an output

16.4.4 Outputs

Push-pull outputs



Example



- 1 Example of connection as output with UP reference
- 2 Example of connection as output with ZP reference



Examples of connection encoder/sensors, see description CD522.

16.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

16.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging
ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”
KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

16.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

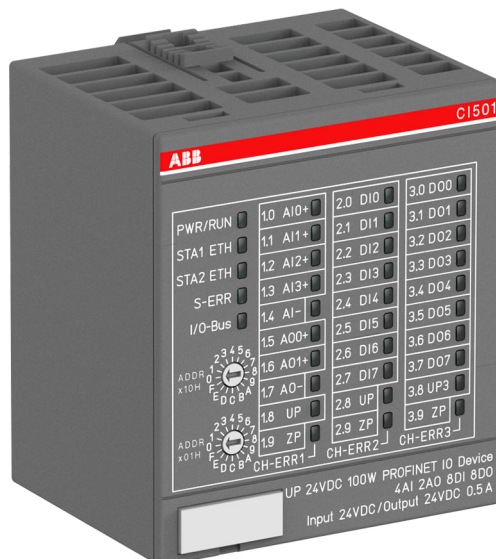
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

17 CI501-PNIO(-XC)

- CI501-PNIO
- CI501-PNIO-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

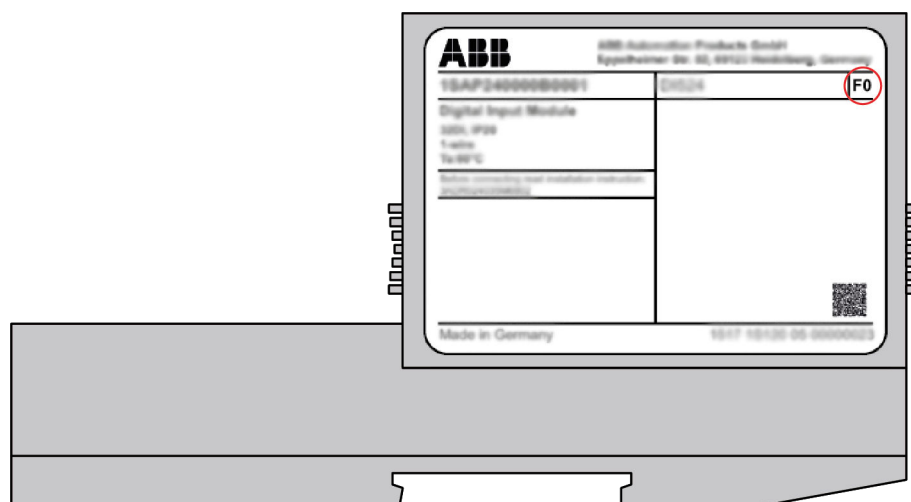
- Types of terminal units that support hot swapping of I/O modules have the appendix **TU5xx-H**.
- I/O modules as of index **F0**.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

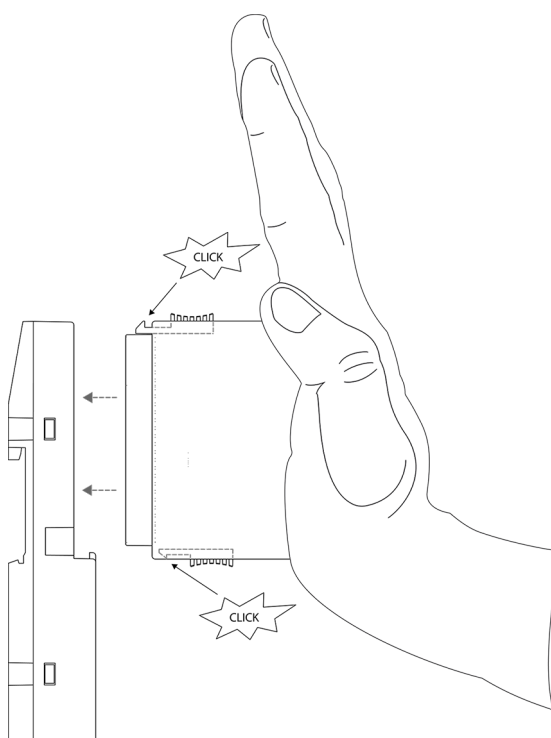
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

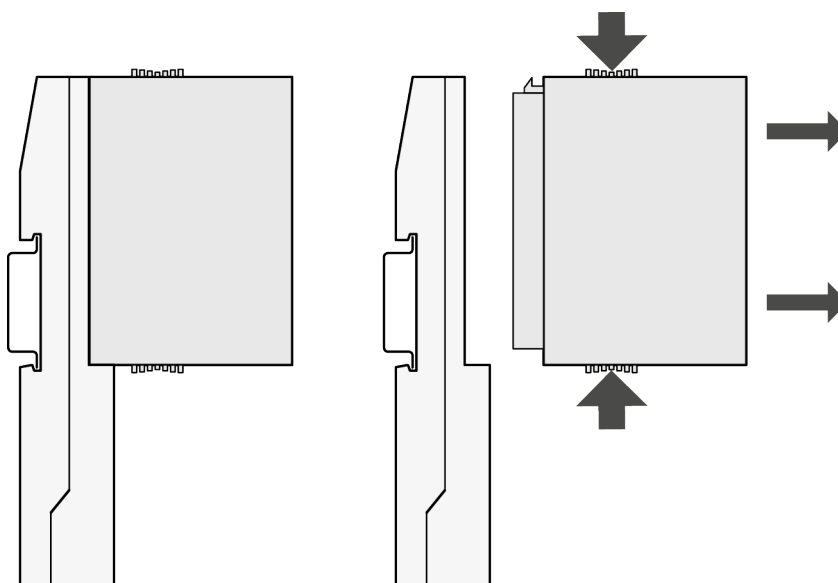
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

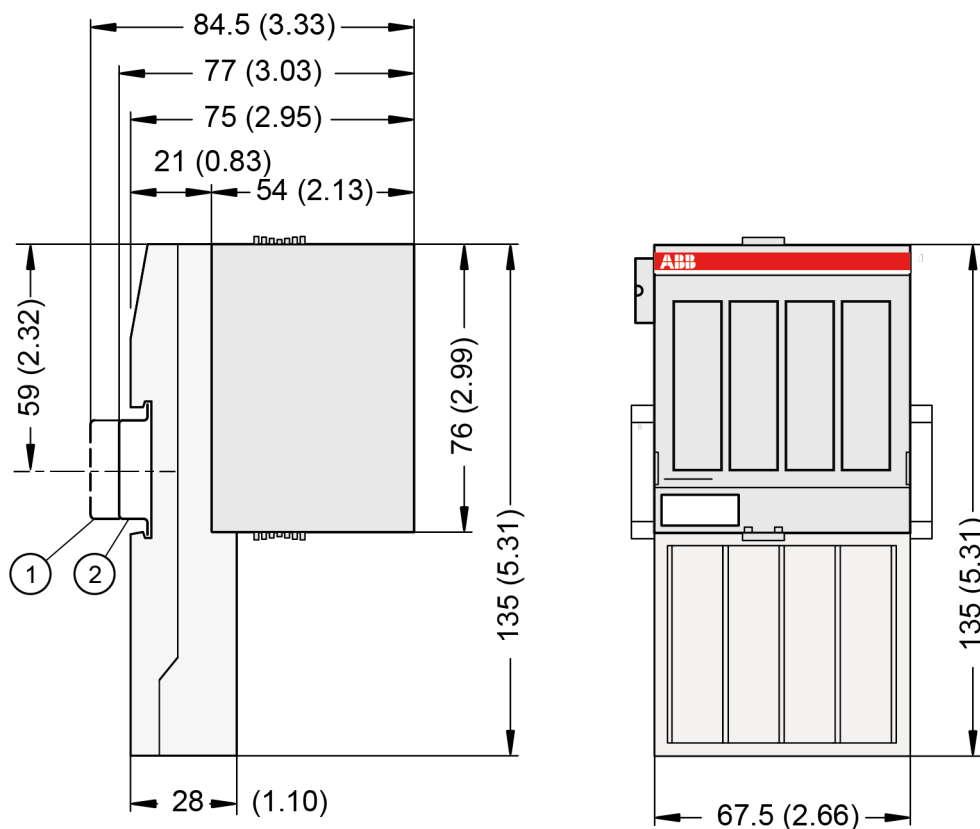
17.1 Assembly



17.2 Disassembly



17.3 Dimensions

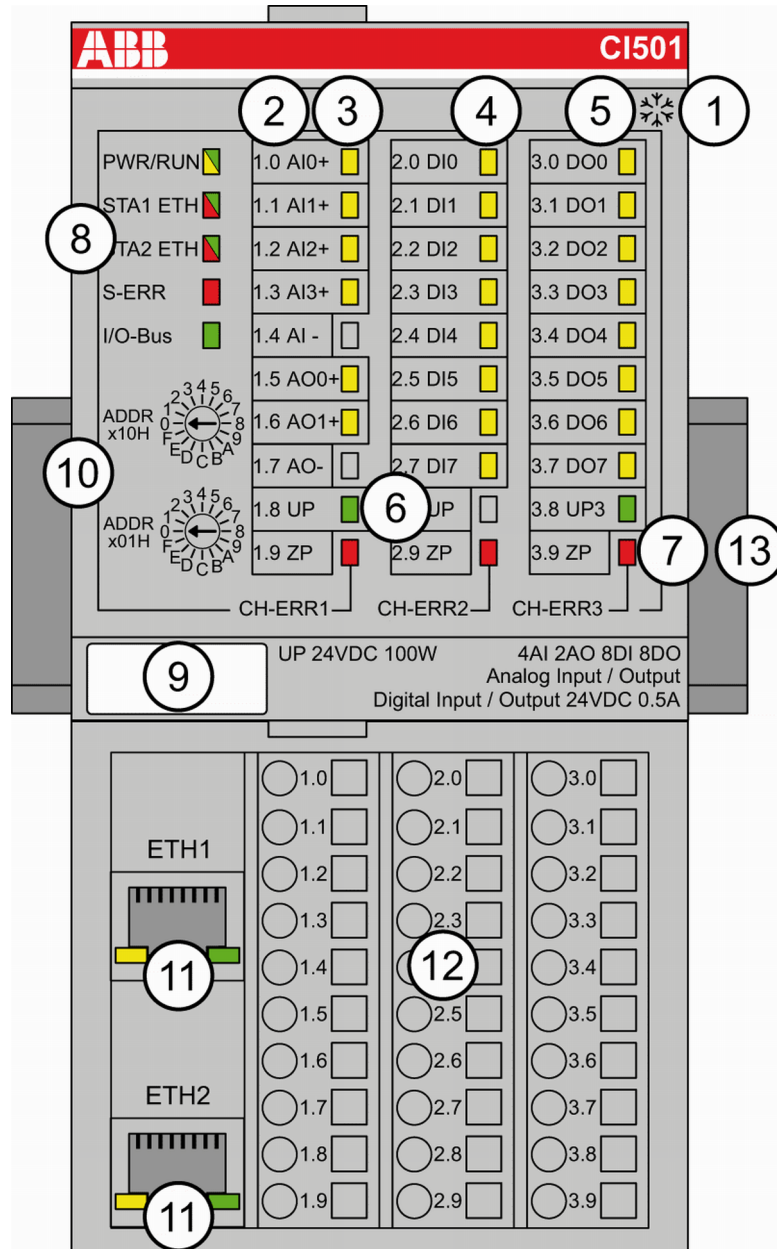


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

17.4 Connections

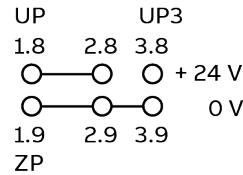


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 6 yellow LEDs to display the signal states of the analog inputs/outputs (AI0 ... AI3, AO0 ... AO1)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI0 ... DI7)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO0 ... DO7)
- 6 2 green LEDs to display the process supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 system LEDs: PWR/RUN, STA1 ETH, STA2 ETH, S-ERR, I/O-Bus
- 9 Label
- 10 2 rotary switches for setting the I/O device identifier
- 11 Ethernet interfaces (ETH1, ETH2) on the terminal unit
- 12 Terminal unit
- 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

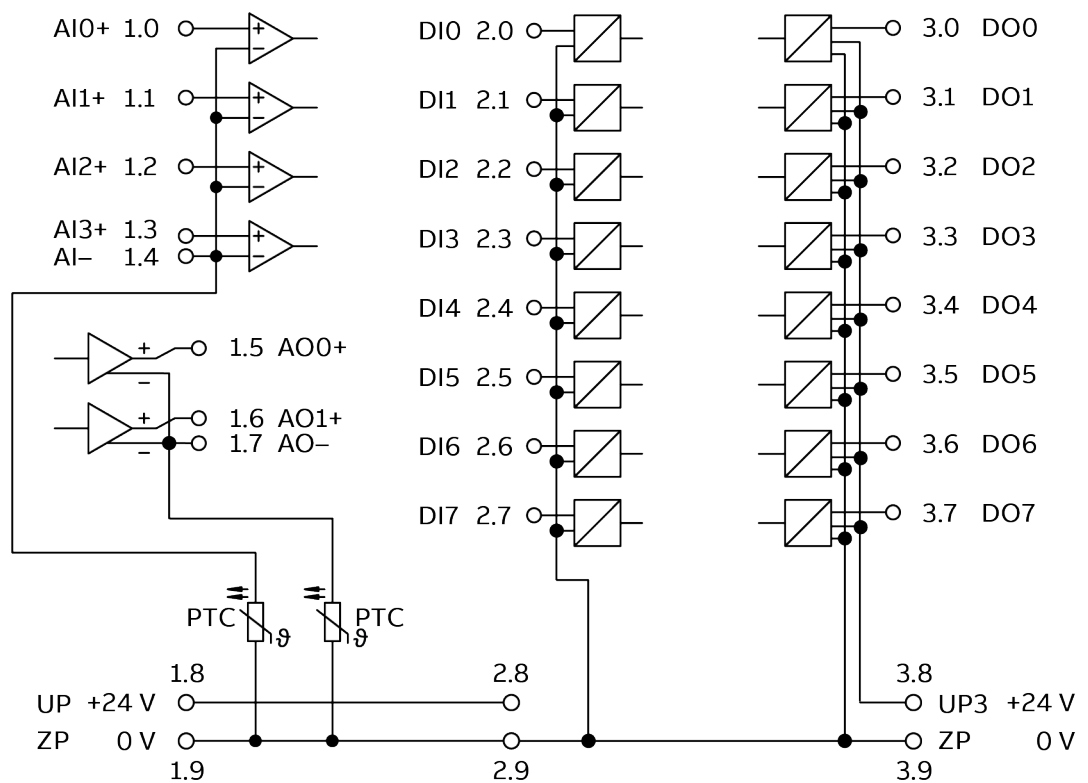
17.4.1 Process supply voltage



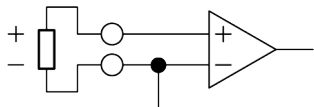
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

17.4.2 Inputs/Outputs



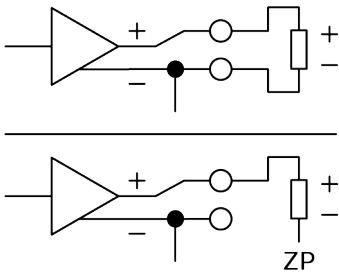
Example analog
input



AI0 ... AI3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 11: Example of connection input AIx

Example analog
output



AO0 ... AO1
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA

Fig. 12: Example of connection output AOx

Example digital
input

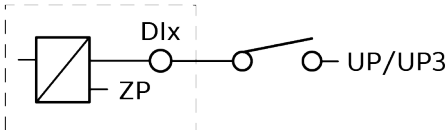


Fig. 13: Example of connection input DIx

Example digital
output

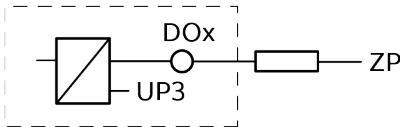


Fig. 14: Example of connection output DOx

17.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

17.6 Certification

	MSIP-REI-Abb-AC500	en Devices with KCC sign on product sticker and packaging ko 제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

17.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

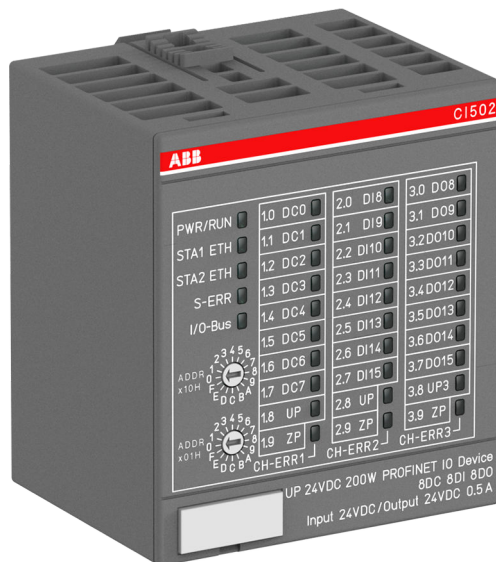
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

18 CI502-PNIO(-XC)

- CI502-PNIO
- CI502-PNIO-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



NOTICE!

The section "Hot Swap" is only valid for CI502-PNIO(-XC) and CI522-MODTCP(-XC).

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

Electric shock due to negligent behavior during hot swapping!

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



Risk of damage to I/O modules!

Processor modules and communication interface modules must not be removed or inserted during operation.



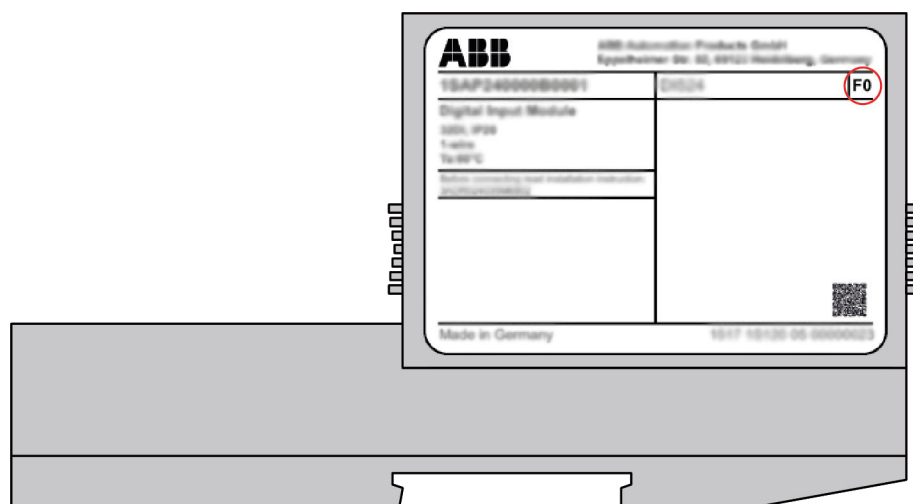
System requirements for hot swapping of I/O modules:

- The following I/O bus masters support hot swapping of attached I/O modules:*

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

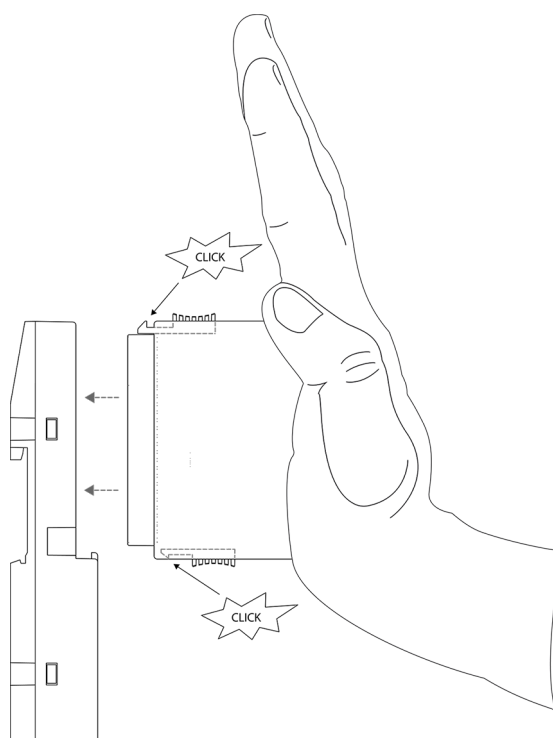
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

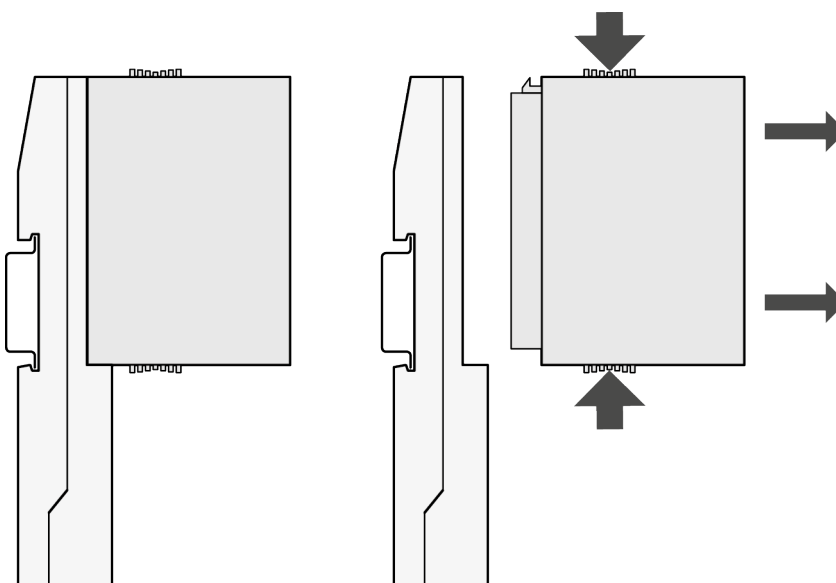
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

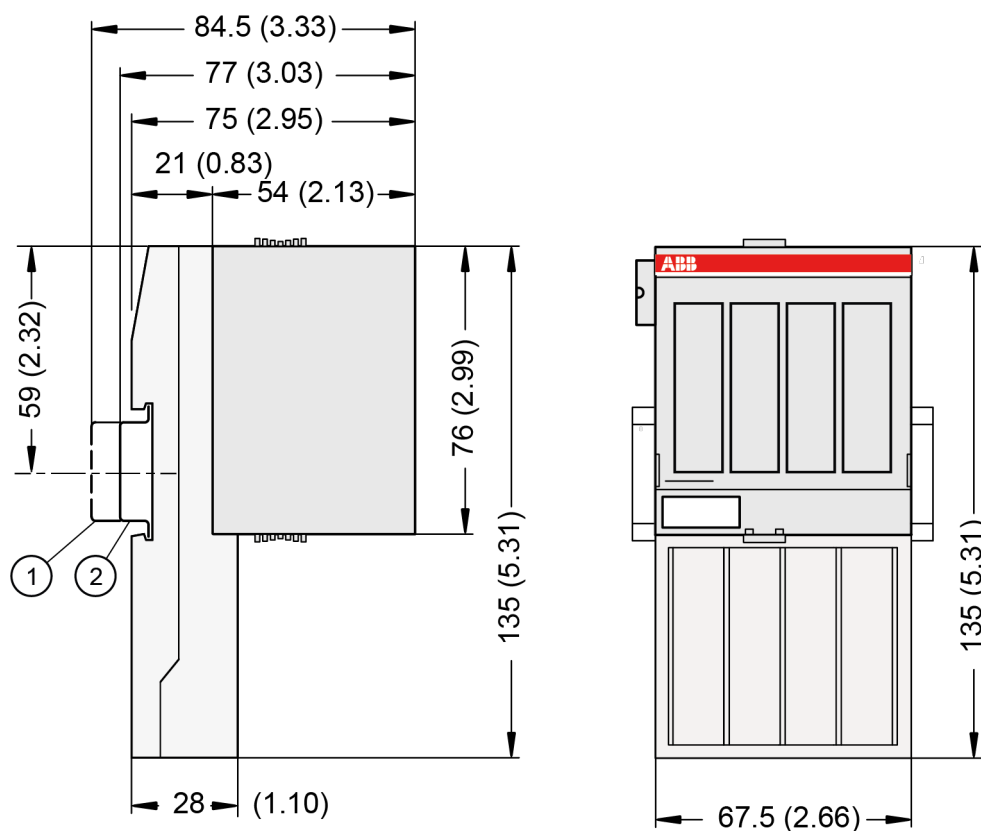
18.1 Assembly



18.2 Disassembly



18.3 Dimensions

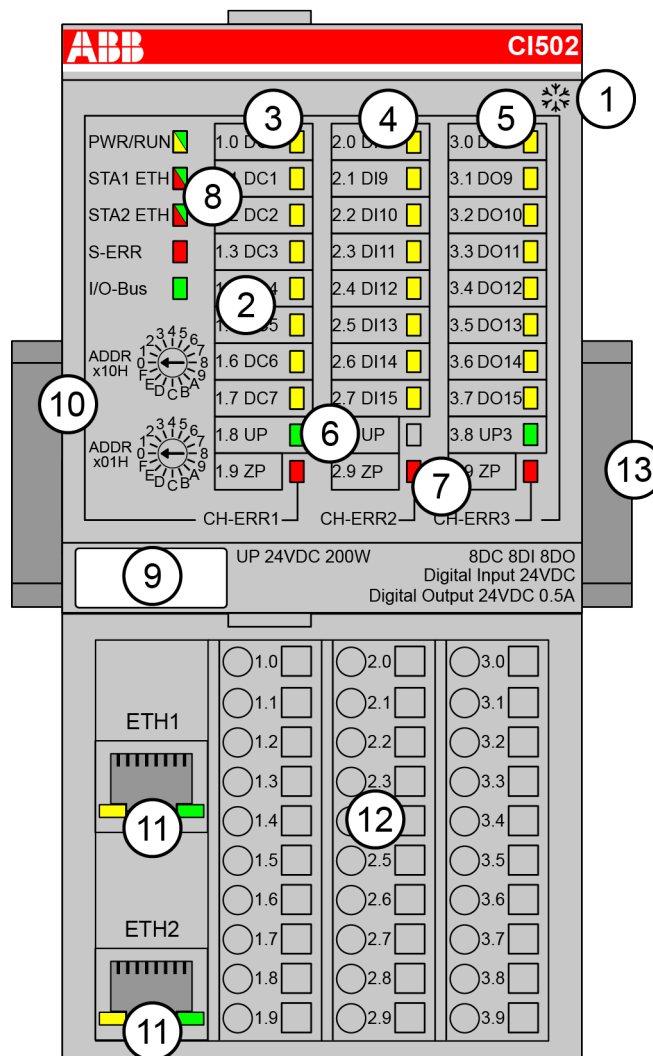


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

18.4 Connections

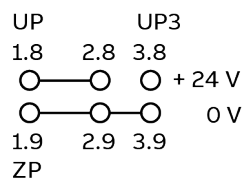


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states of the digital configurable inputs/outputs (DC0 ... DC7)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI8 ... DI15)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO8 ... DO15)
- 6 2 green LEDs to display the process supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 system LEDs: PWR/RUN, STA1 ETH, STA2 ETH, S-ERR, I/O-Bus
- 9 Label
- 10 2 rotary switches for setting the I/O device identifier
- 11 Ethernet interfaces (ETH1, ETH2) on the terminal unit
- 12 Terminal unit
- 13 DIN rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

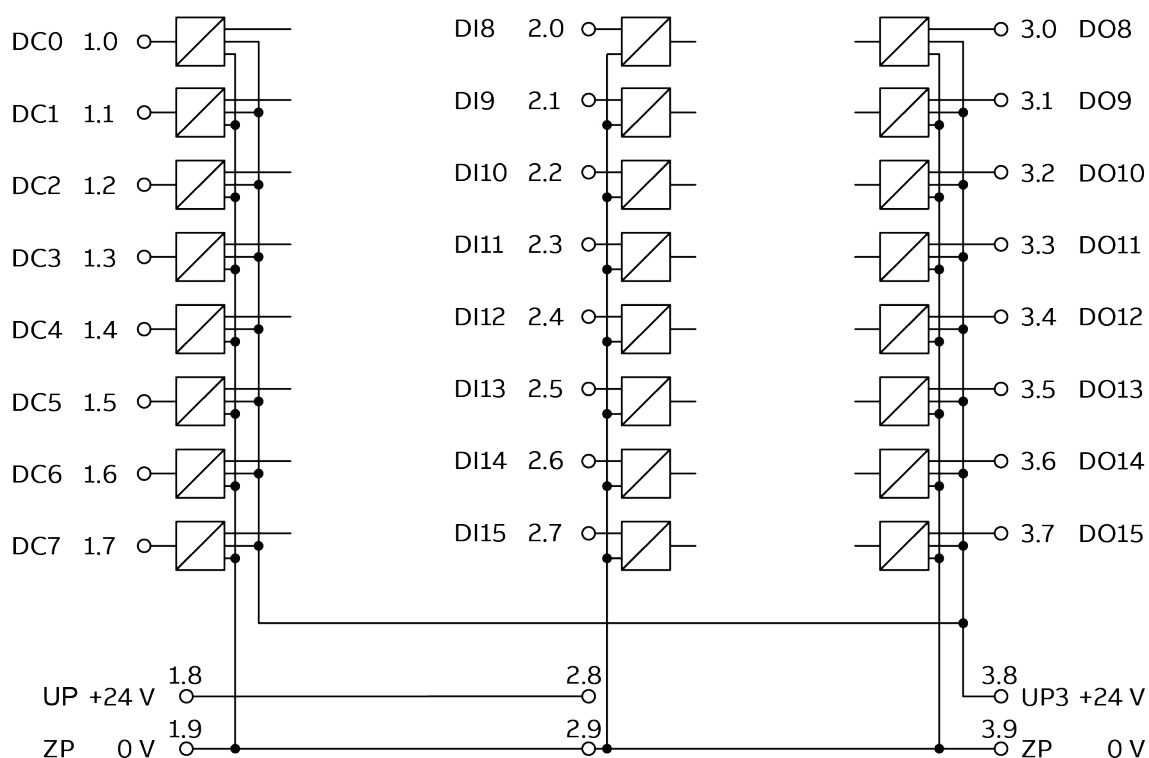
18.4.1 Process supply voltage



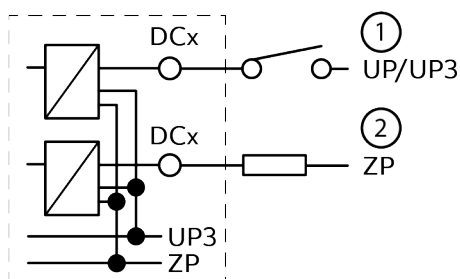
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

18.4.2 Inputs/Outputs



Example input or output



- 1 Example of connection as an input
- 2 Example of connection as an output

Example digital input

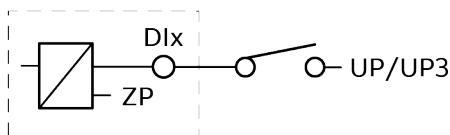


Fig. 15: Example of connection input DLx

Example digital output

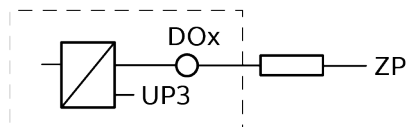


Fig. 16: Example of connection output DOx

18.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

18.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

18.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

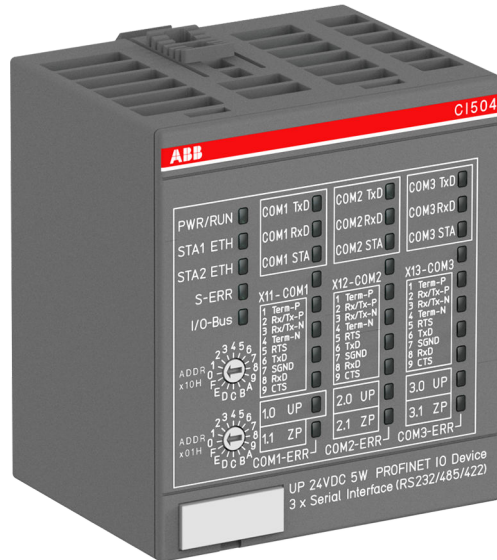
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

19 CI504-PNIO(-XC)

- CI504-PNIO
- CI504-PNIO-XC



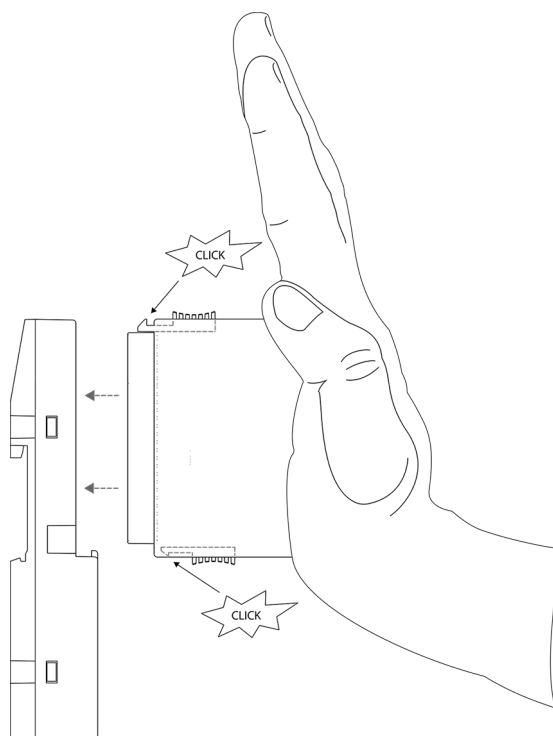
CAUTION!

Risk of injury and damaging the product!

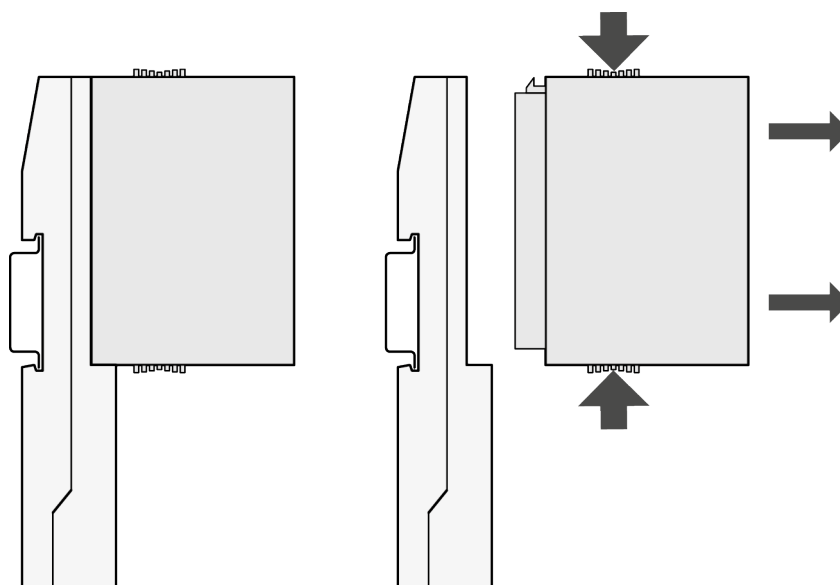
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

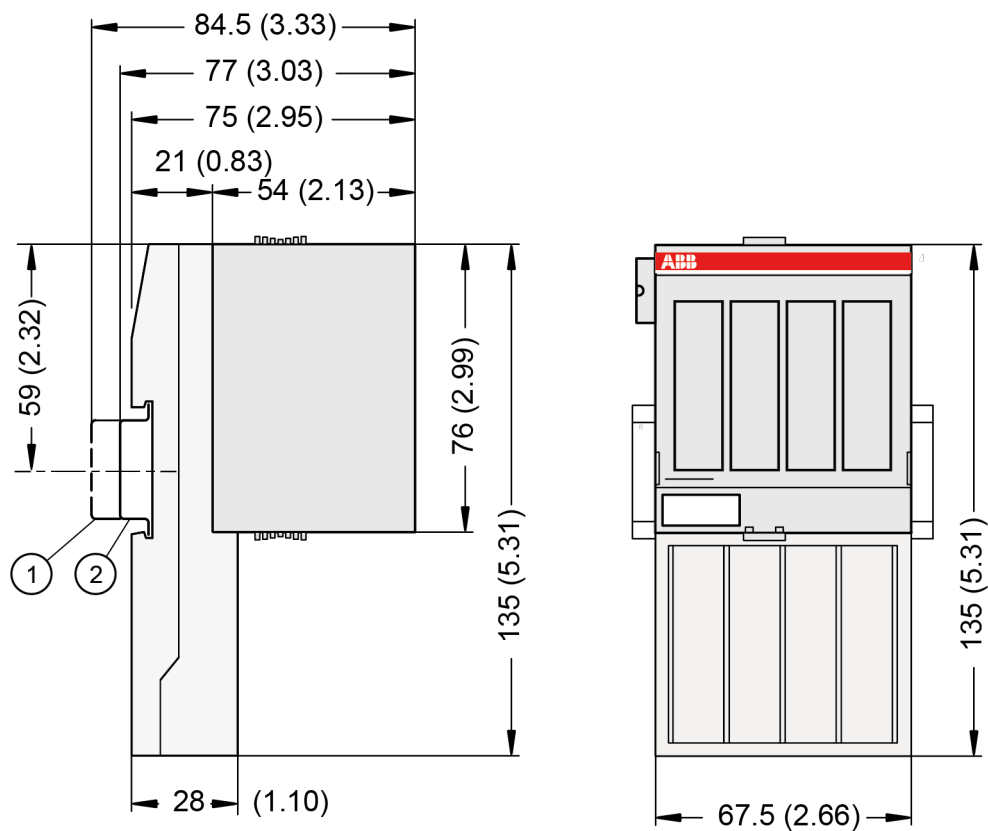
19.1 Assembly



19.2 Disassembly

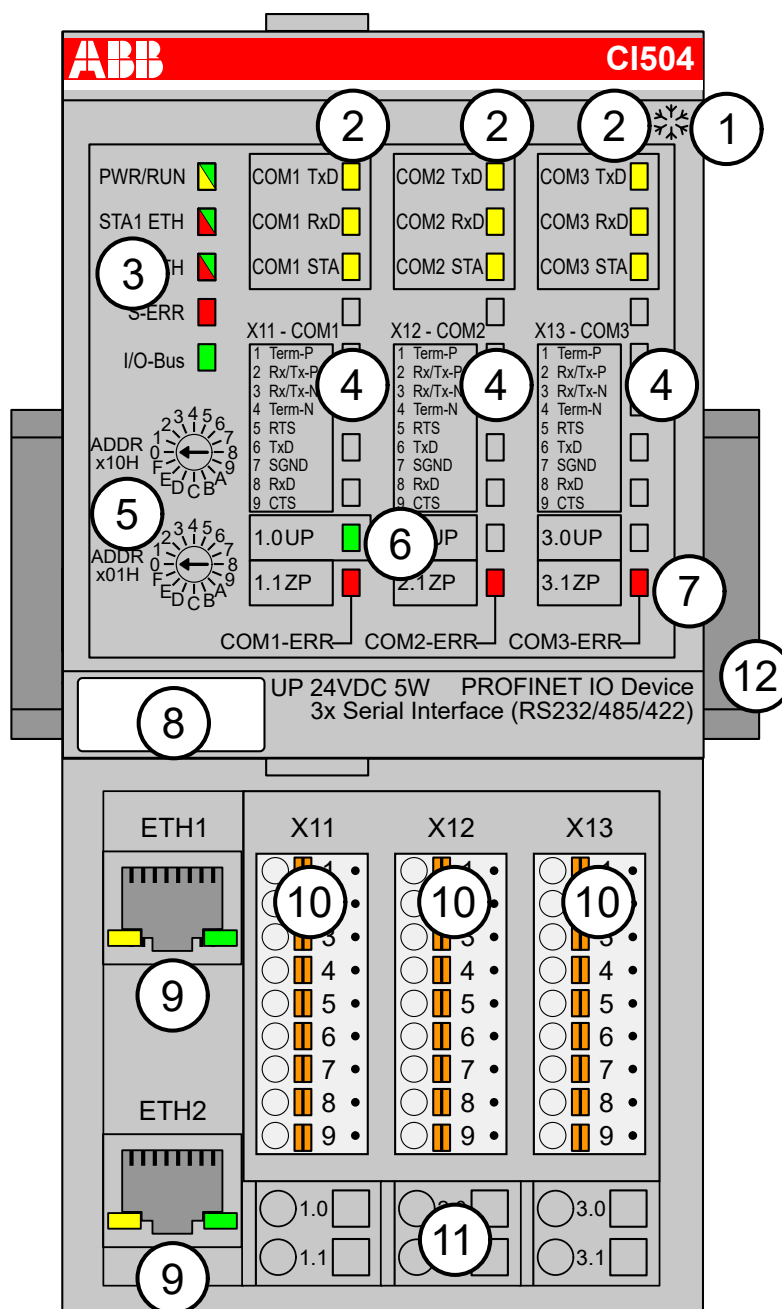


19.3 Dimensions



The dimensions are in mm and in brackets in inch.

19.4 Connections

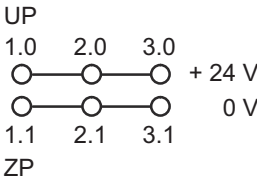


- 1 I/O bus
- 2 3 x 3 yellow LEDs to display the signal states of the serial interfaces COM1, COM2 and COM3
- 3 5 system LEDs: PWR/RUN, STA1 ETH, STA2 ETH, S-ERR, I/O-Bus
- 4 Allocation between terminal number and signal name of the serial interfaces
- 5 2 rotary switches for setting the I/O device identifier
- 6 1 green LED to display the process voltage UP
- 7 3 red LEDs to display errors (COM1-ERR, COM2-ERR, COM3-ERR) of the serial interfaces
- 8 Label
- 9 Ethernet Interfaces (ETH1, ETH2) on the terminal unit
- 10 3 removable connectors to connect the interfaces
- 11 6 spring terminals for power supply voltage (UP)
- 12 DIN rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

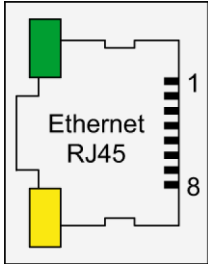
19.4.1 Process supply voltage



CAUTION!
The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

19.4.2 Ethernet network interfaces

Pin assignment

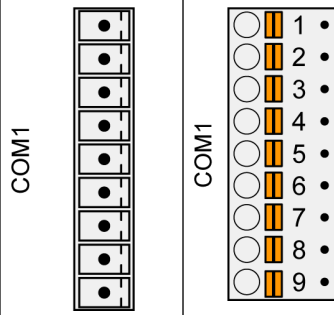
Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



In corrosive environment, please protect unused connectors using the TA535 accessory.
Not supplied with this device.

19.4.3 Serial interfaces COM1/COM2/COM3

Pin assignment
(RS-485 /
RS-232)

		Pin	Signal	Interface	Description
COM1  Terminal block removed	COM1 Terminal block inserted	1	Terminator P	RS-485	Terminator P
		2	RxD/TxD-P	RS-485	Receive/Transmit, positive
		3	RxD/TxD-N	RS-485	Receive/Transmit, negative
		4	Terminator N	RS-485	Terminator N
		5	RTS	RS-232	Request to send (output)
		6	TxD	RS-232	Transmit data (output)
		7	SGND	Signal Ground	Signal Ground
		8	RxD	RS-232	Receive data (input)
		9	CTS	RS-232	Clear to send (input)

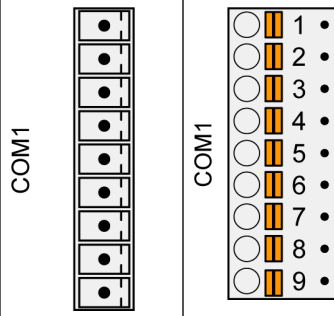


NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

Pin assignment
(RS-422)

		PIN	Signal	Interface	Description
COM1  Terminal block removed	COM1 Terminal block inserted	1	Terminator P/ RxD+	RS-422	Terminator P/ Receive, positive
		2	TxD+	RS-422	Transmit, positive
		3	TxD-	RS-422	Transmit, negative
		4	Terminator N/ RxD-	RS-422	Terminator N/ Receive, negative
		5			
		6			
		7	SGND	RS-422	Signal Ground
		8			
		9			



NOTICE!

Resistors are connected inside the module

The line-terminating resistors are connected inside the module. Additional resistors are not necessary

19.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

19.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

19.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

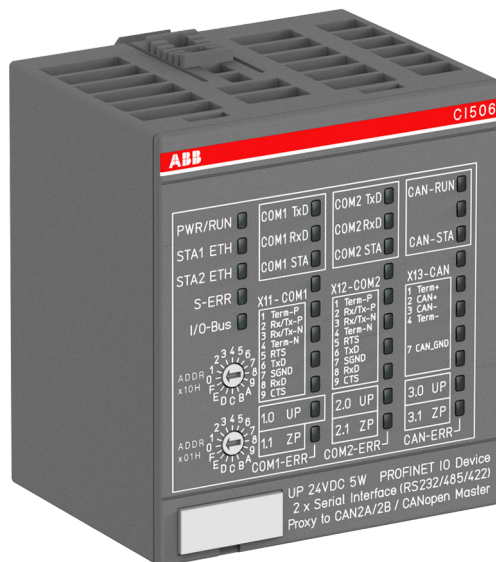
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

20 CI506-PNIO(-XC)

- CI506-PNIO
- CI506-PNIO-XC



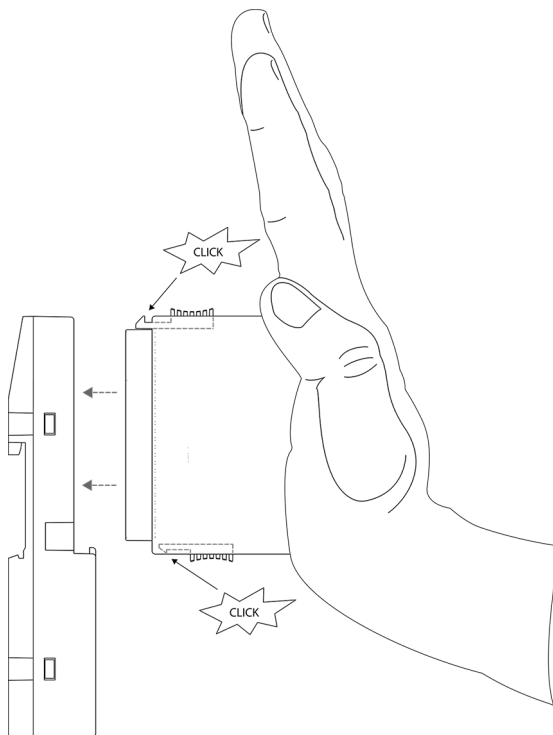
CAUTION!

Risk of injury and damaging the product!

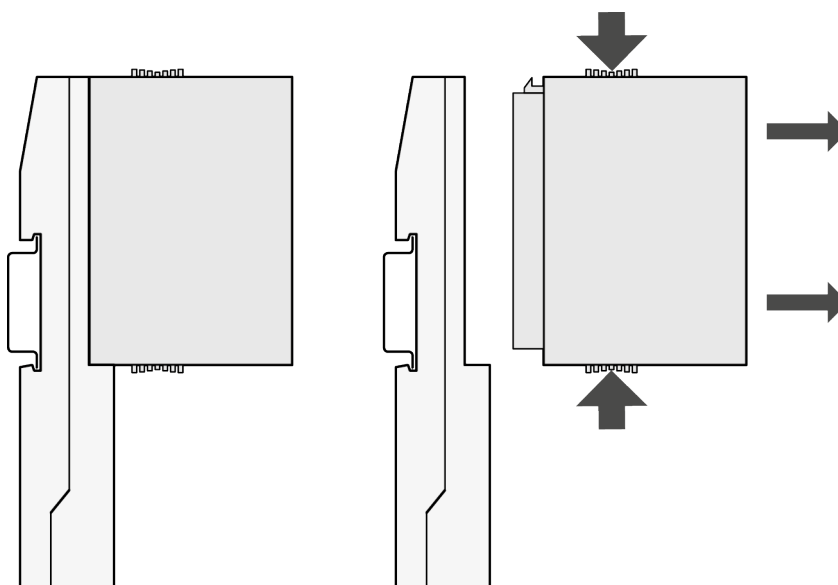
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

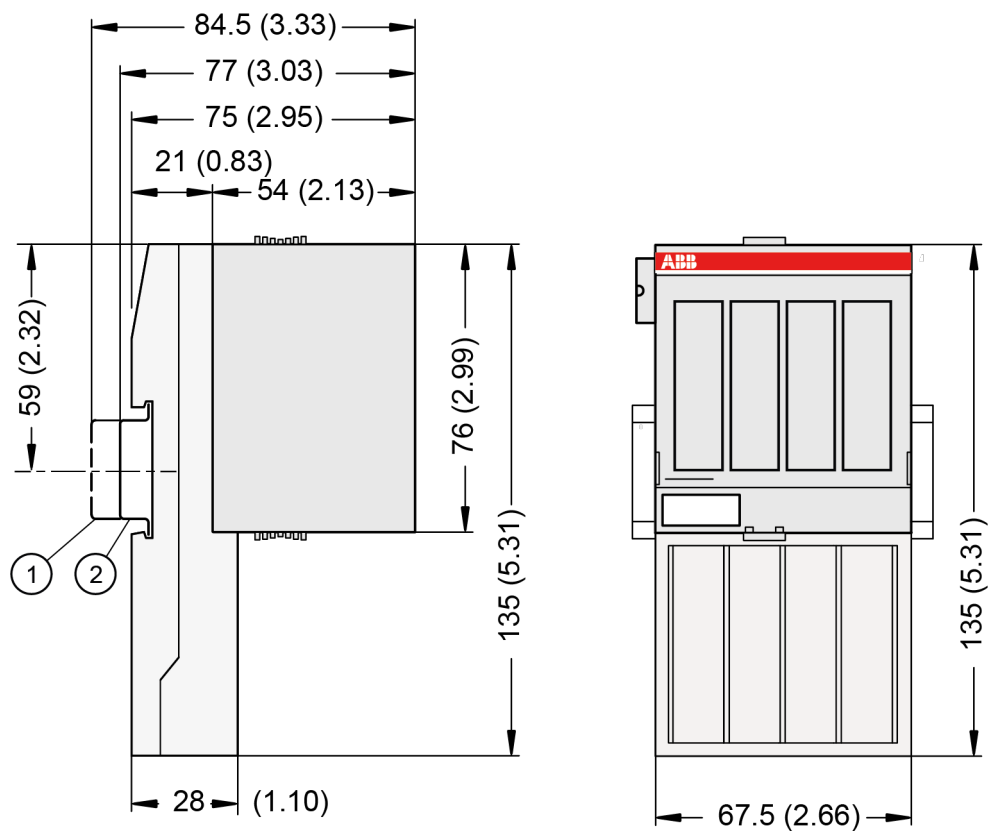
20.1 Assembly



20.2 Disassembly

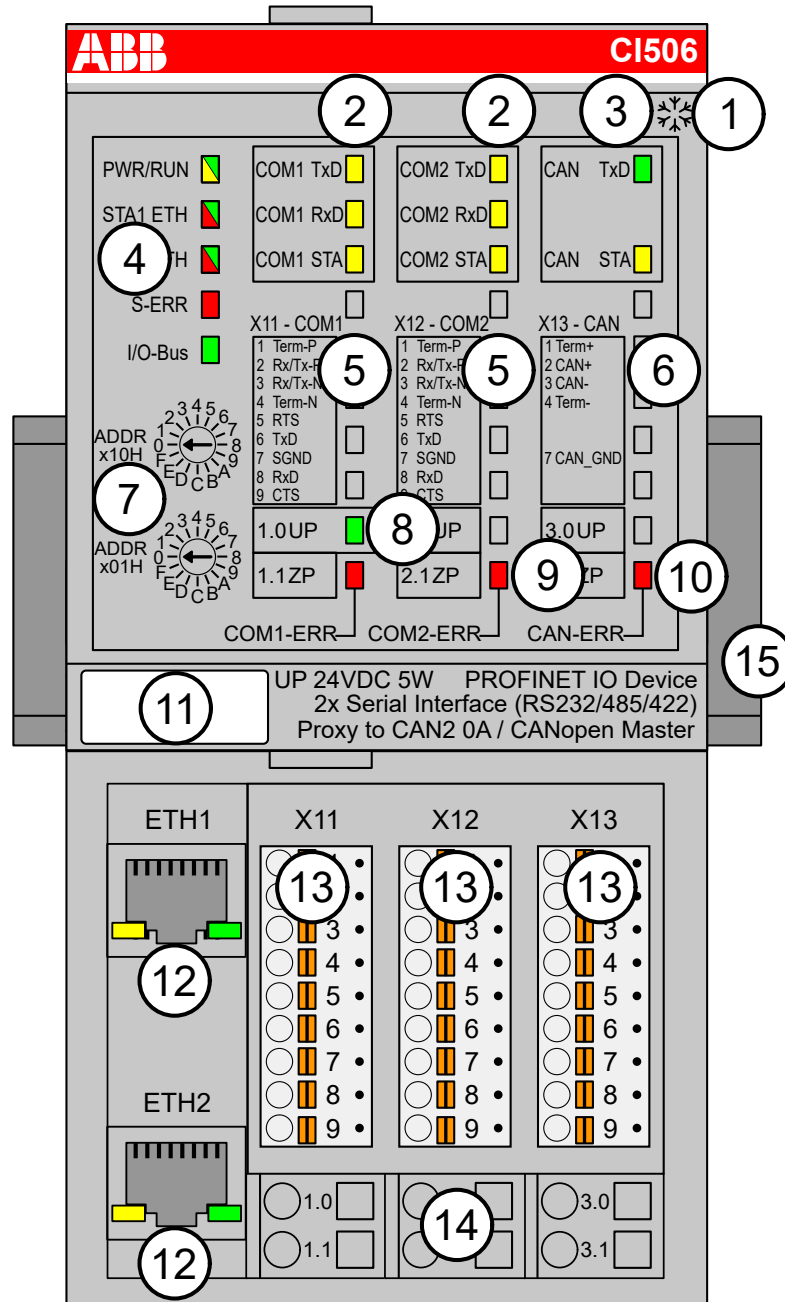


20.3 Dimensions



The dimensions are in mm and in brackets in inch.

20.4 Connections

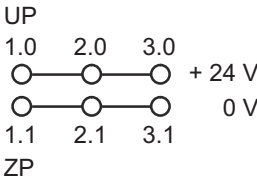


- 1 I/O bus
 - 2 2 x 3 yellow LEDs to display the signal states of the serial interfaces COM1 and COM2
 - 3 1 green and 1 yellow LEDs to display the signal states of the CANopen interface
 - 4 5 system LEDs: PWR/RUN, STA1 ETH, STA2 ETH, S-ERR, I/O-Bus
 - 5 Allocation between terminal number and signal name of the serial interfaces
 - 6 Allocation between terminal number and signal name of the CANopen interface
 - 7 2 rotary switches for setting the I/O device identifier
 - 8 1 green LED to display the process voltage UP
 - 9 2 red LEDs to display errors (COM1-ERR, COM2-ERR) of the serial interfaces
 - 10 1 red LED to display errors (CAN-ERR) of the CANopen interface
 - 11 Label
 - 12 Ethernet Interfaces (ETH1, ETH2) on the terminal unit
 - 13 3 removable connectors to connect the subordinated interfaces
 - 14 6 spring terminals for power supply voltage (UP)
 - 15 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

20.4.1 Process supply voltage



CAUTION!
The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

20.4.2 Serial interface COM1/COM2

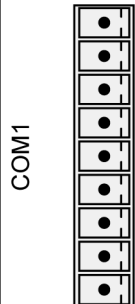
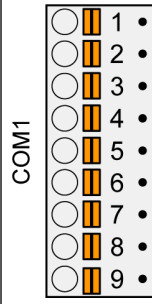
Pin assignment
(RS-485 /
RS-232)

		Pin	Signal	Interface	Description
COM1  Terminal block removed	COM1  Terminal block inserted	1	Terminator P	RS-485	Terminator P
		2	RxD/TxD-P	RS-485	Receive/Transmit, positive
		3	RxD/TxD-N	RS-485	Receive/Transmit, negative
		4	Terminator N	RS-485	Terminator N
		5	RTS	RS-232	Request to send (output)
		6	TxD	RS-232	Transmit data (output)
		7	SGND	Signal Ground	Signal Ground
		8	RxD	RS-232	Receive data (input)
		9	CTS	RS-232	Clear to send (input)



NOTICE!
Unused connector!
Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

Pin assignment (RS-422)

		PIN	Signal	Interface	Description
 Terminal block removed	 Terminal block inserted	1	Terminator P/ RxD+	RS-422	Terminator P/ Receive, positive
		2	TxD+	RS-422	Transmit, positive
		3	TxD-	RS-422	Transmit, negative
		4	Terminator N/ RxD-	RS-422	Terminator N/ Receive, negative
		5			
		6			
		7	SGND	RS-422	Signal Ground
		8			
		9			



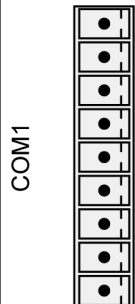
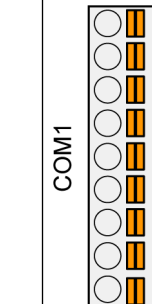
NOTICE!

Resistors are connected inside the module

The line-terminating resistors are connected inside the module. Additional resistors are not necessary

20.4.3 CANopen interface

Pin assignment

		PIN	Signal	Description
 Terminal block removed	 Terminal block inserted	1	Term +	Terminator, positive
		2	CAN +	CAN, positive
		3	CAN -	CAN, negative
		4	Term -	Terminator, negative
		5		
		6		
		7	CAN GND	CAN Ground
		8		
		9		



NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

20.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

20.6 Certification

	MSIP-REI-Abb-AC500	en Devices with KCC sign on product sticker and packaging ko 제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

20.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

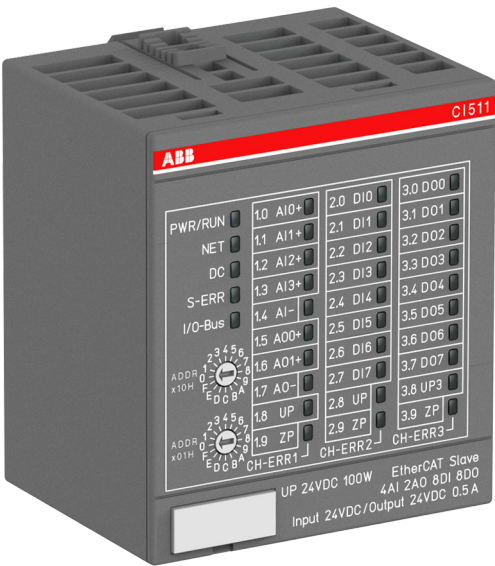
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

21 CI511-ETHCAT

- CI511-ETHCAT



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



NOTICE!

The section "Hot Swap" is only valid for CI501-PNIO(-XC) and CI521-MODTCP(-XC).

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

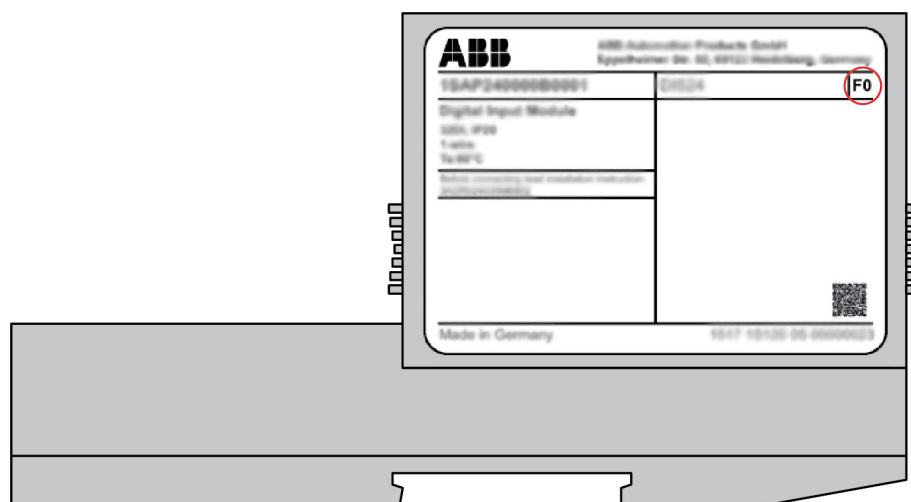
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

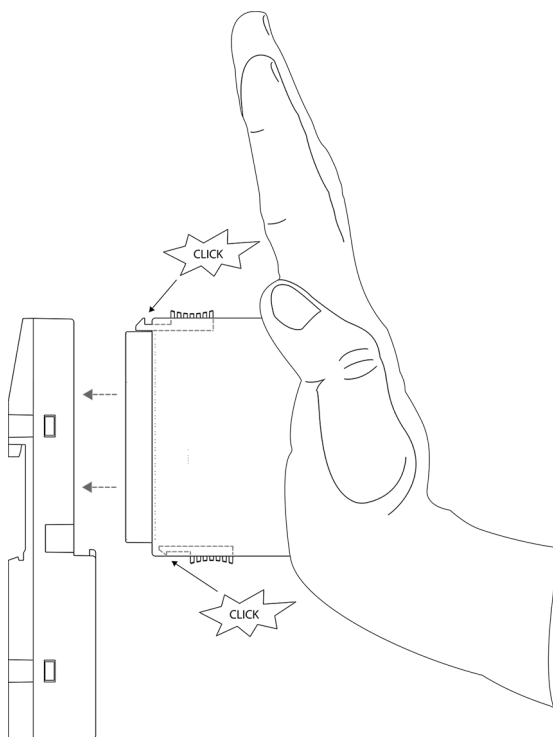
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

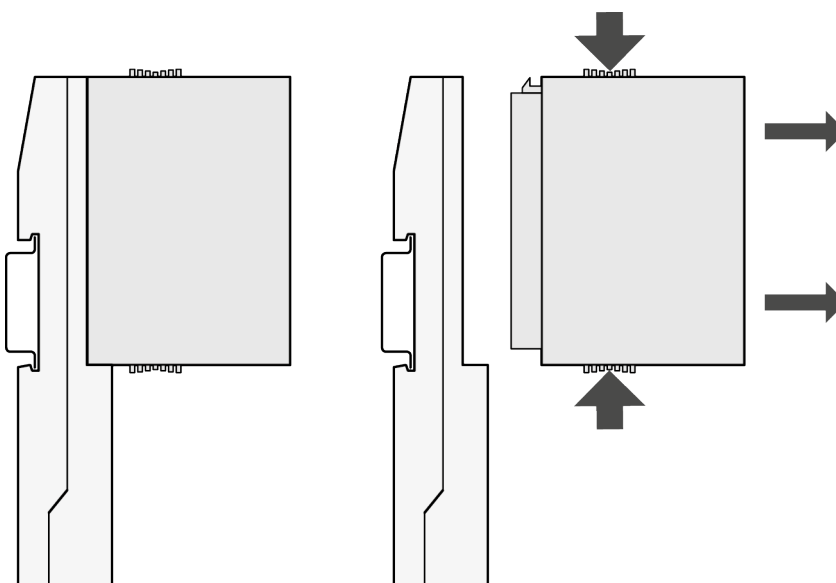
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

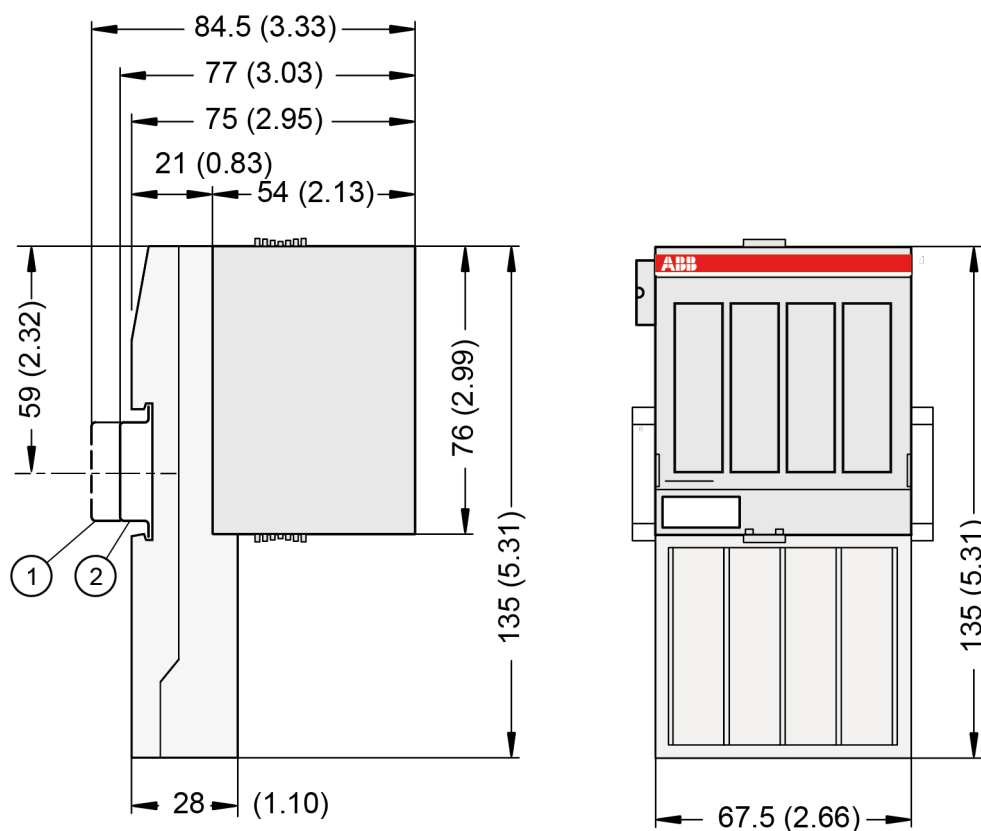
21.1 Assembly



21.2 Disassembly



21.3 Dimensions

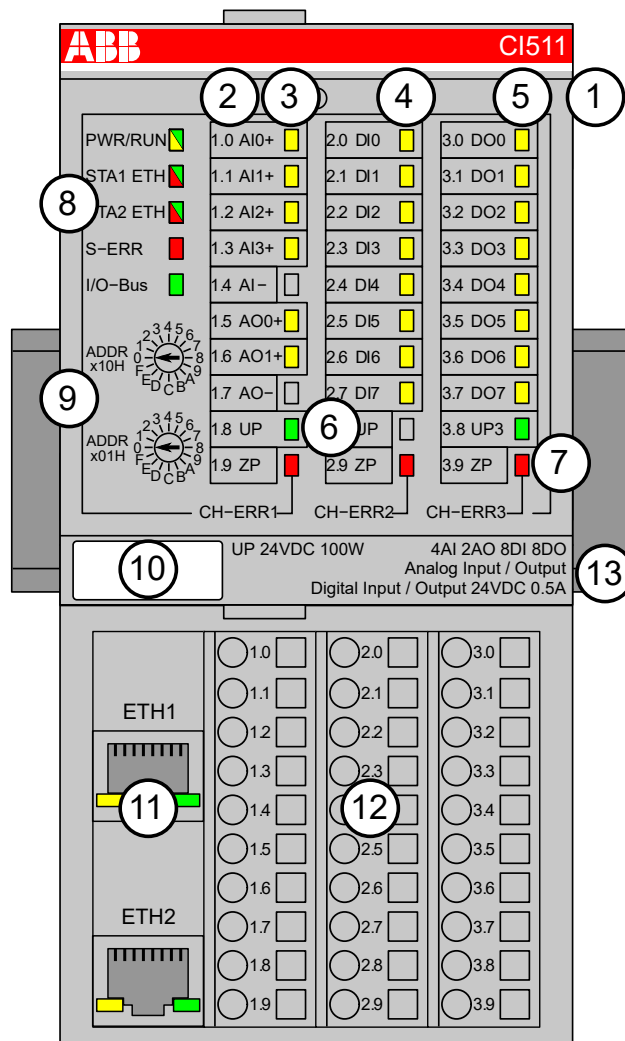


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

21.4 Connections

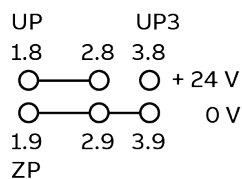


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 6 yellow LEDs to display the signal states of the analog inputs/outputs (AI0 ... AI3, AO0 ... AO1)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI0 ... DI7)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO0 ... DO7)
- 6 2 green LEDs to display the supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 system LEDs: PWR/RUN, NET, DC, S-ERR, I/O-Bus
- 9 2 rotary switches (reserved for future extensions)
- 10 Label
- 11 Ethernet interfaces (ETH1, ETH2) on the terminal unit
- 12 Terminal unit
- 13 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

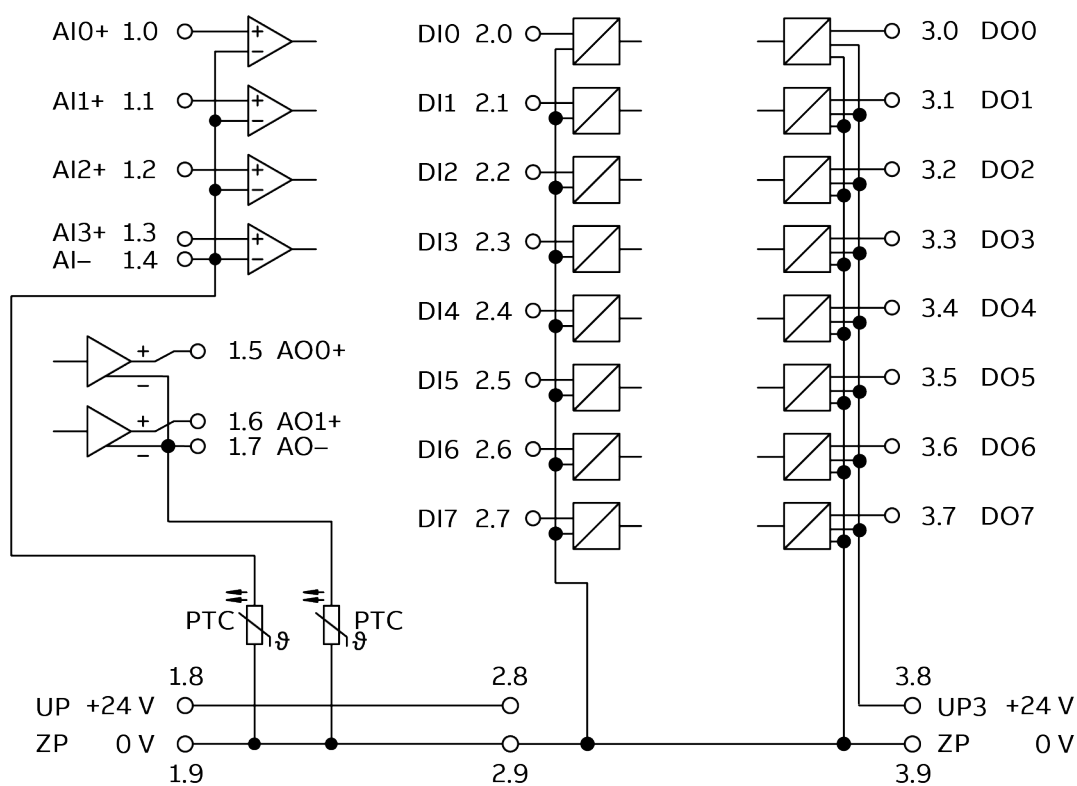
21.4.1 Process supply voltage



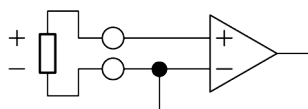
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

21.4.2 Inputs/Outputs



Example analog input



AI0 ... AI3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 17: Example of connection input AIx

Example analog
output

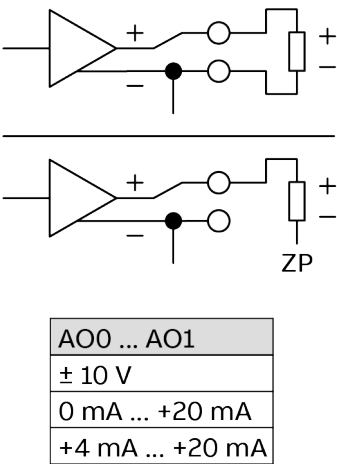


Fig. 18: Example of connection output AOx

Example digital
input

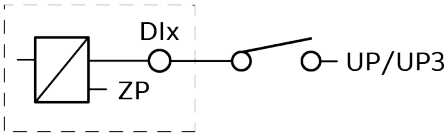


Fig. 19: Example of connection input DIx

Example digital
output

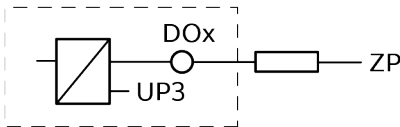


Fig. 20: Example of connection output DOx

21.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

21.6 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

21.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

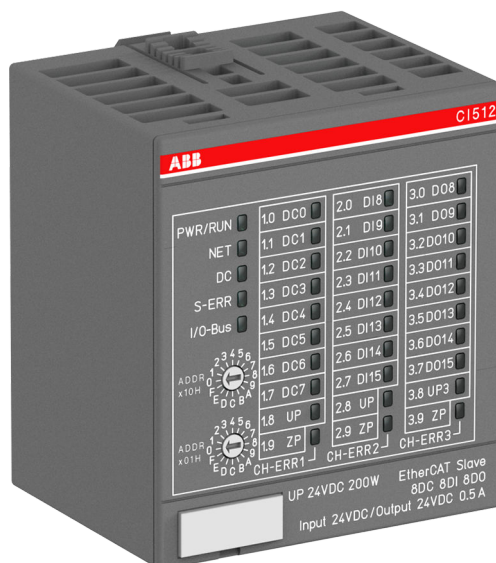
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

22 CI512-ETHCAT

- CI512-ETHCAT



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

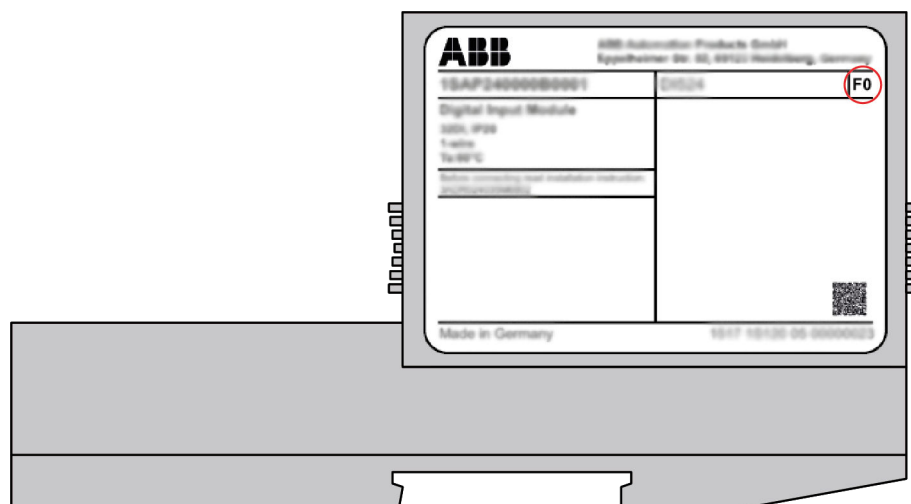
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!



The index of the module is in the right corner of the label.

**NOTICE!****Risk of damage to I/O modules!**

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.

**NOTICE!****Risk of damage to I/O modules!**

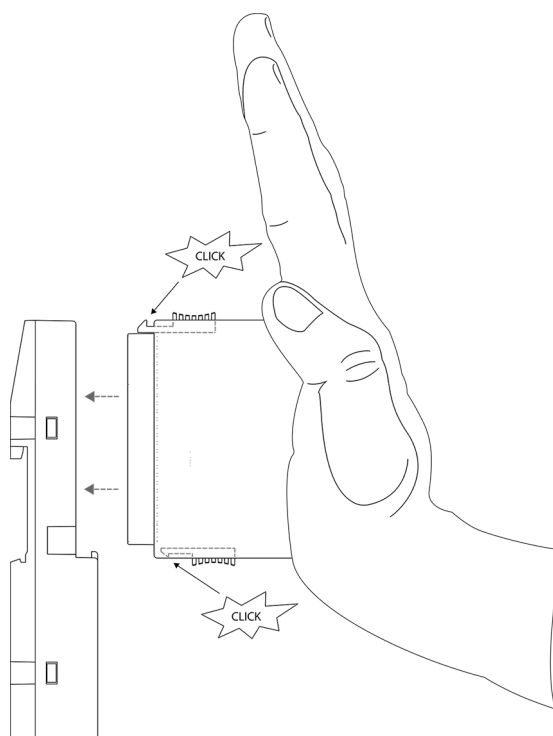
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

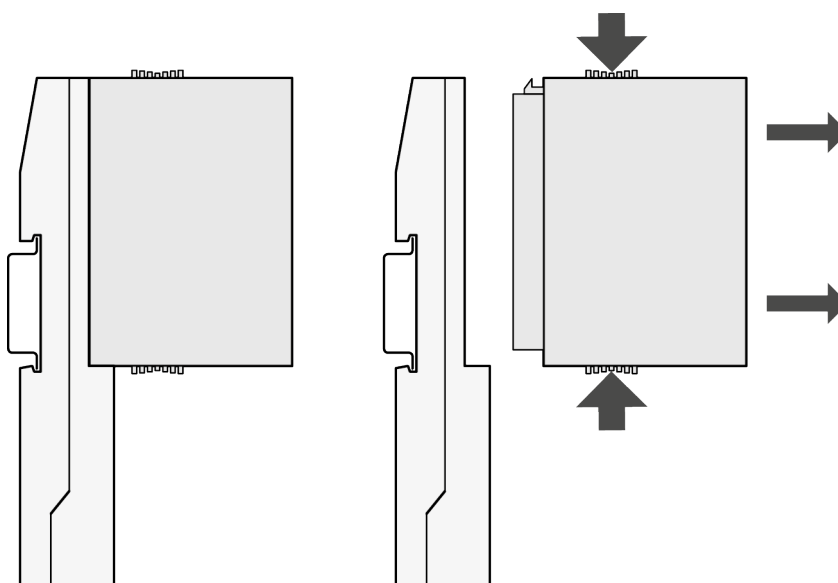
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2

Device	Min. required device index for I/O module as of FW Version 3.0.14
DX531	D2
DX561	B2
DX571	B3
FM562	A1

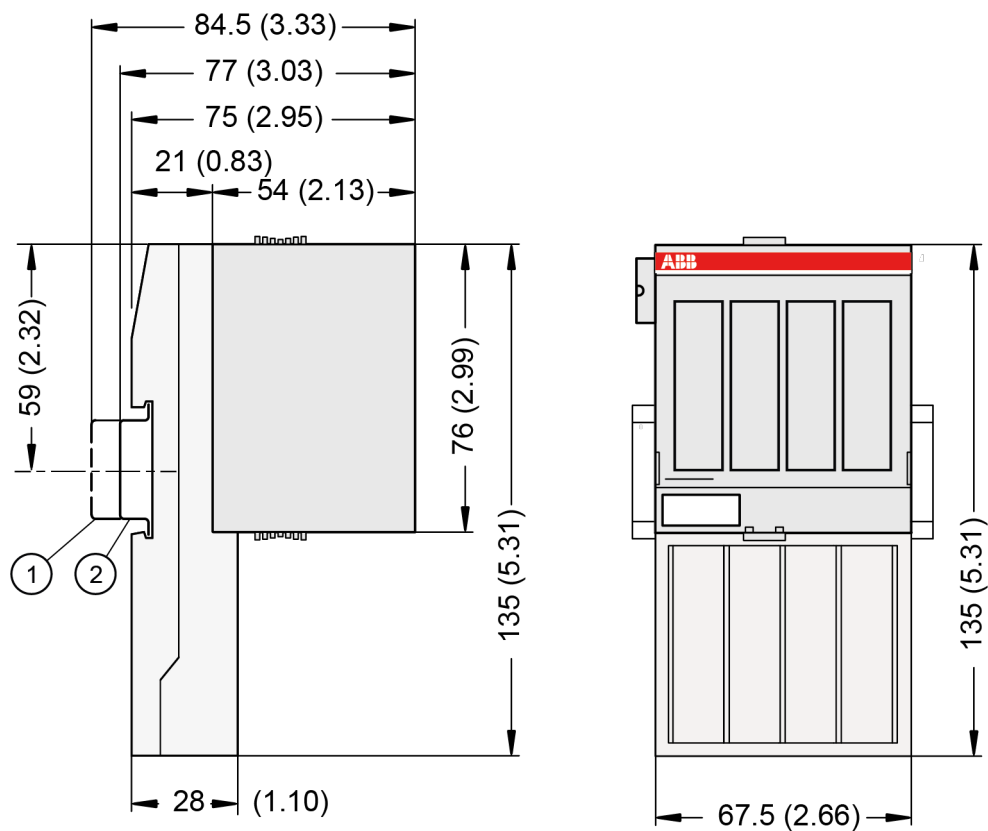
22.1 Assembly



22.2 Disassembly

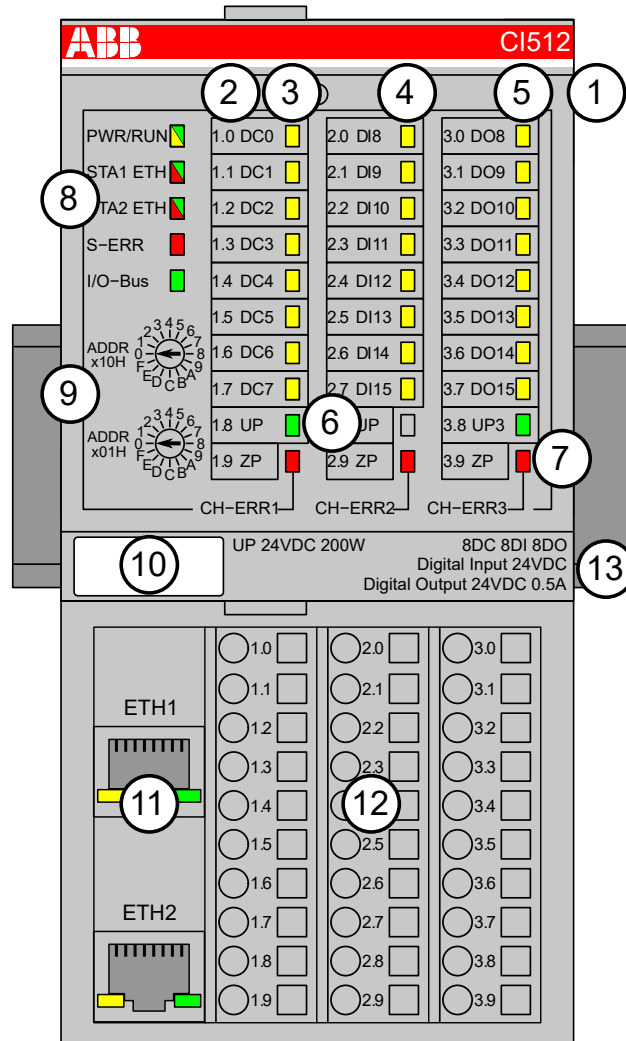


22.3 Dimensions



The dimensions are in mm and in brackets in inch.

22.4 Connections

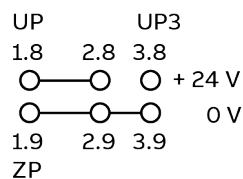


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states of the digital configurable inputs/outputs (DC0 ... DC7)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI0 ... DI7)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO0 ... DO7)
- 6 2 green LEDs to display the supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 System LEDs: PWR/RUN, NET, DC, S-ERR, I/O-Bus
- 9 2 rotary switches (reserved for future extensions)
- 10 Label
- 11 Ethernet interfaces (ETH1, ETH2) on the terminal unit
- 12 Terminal unit
- 13 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

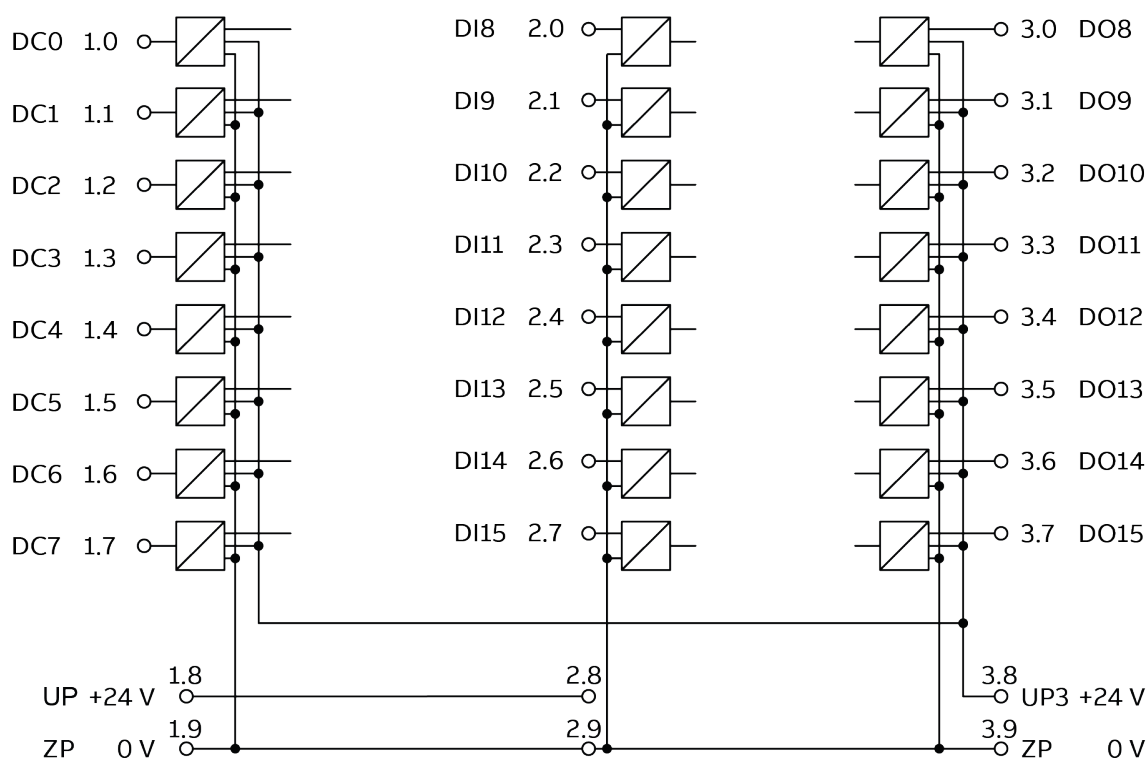
22.4.1 Process supply voltage



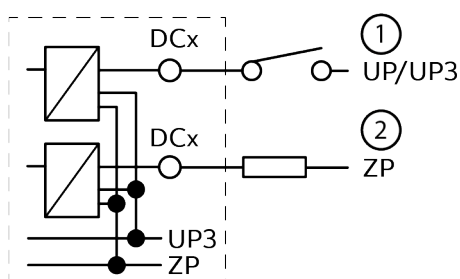
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

22.4.2 Inputs/Outputs



Example input or output



- 1 Example of connection as an input
- 2 Example of connection as an output

Example digital
input

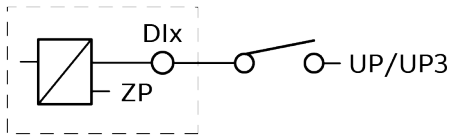


Fig. 21: Example of connection input DLx

Example digital
output

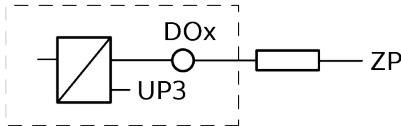


Fig. 22: Example of connection output DOx

22.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

22.6 Certification



MSIP-REI-Abb-AC500

en **Note**
 These devices correspond to:

ko 참고
 이러한 기기는

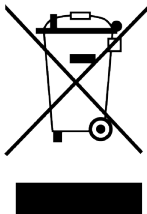
en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

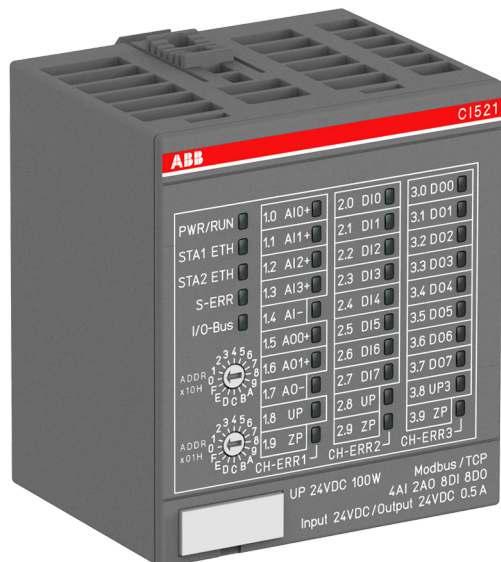
22.7 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

23 CI521-MODTCP(-XC)

- CI521-MODTCP
- CI521-MODTCP-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

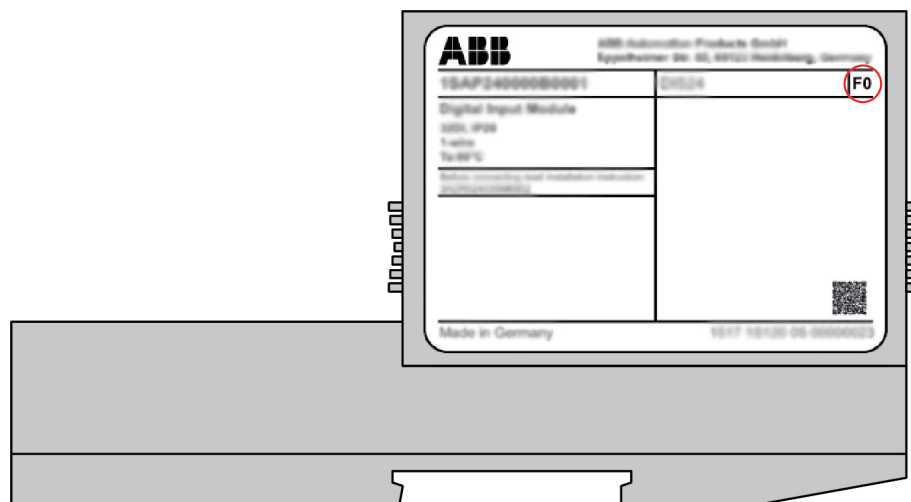
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

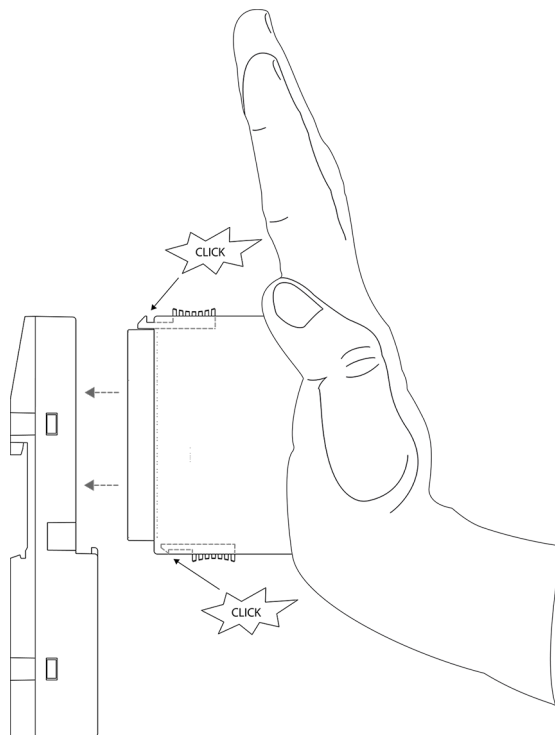
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

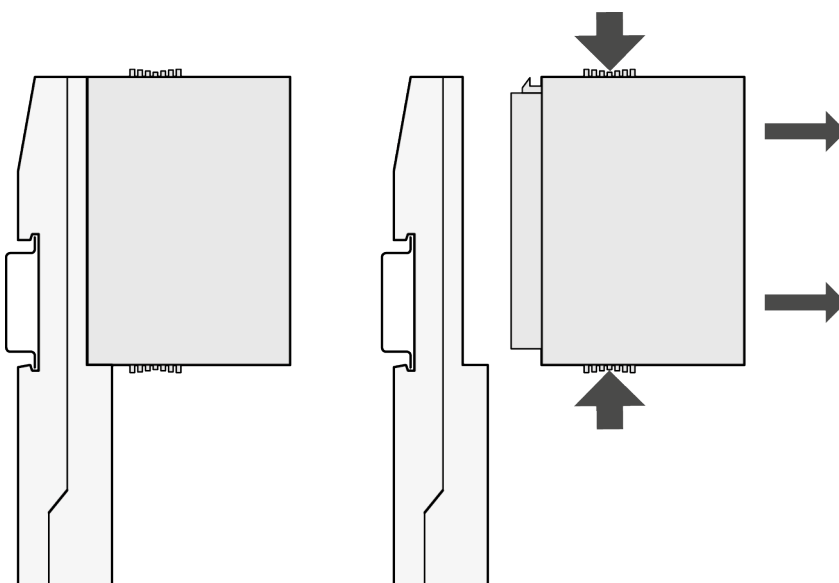
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

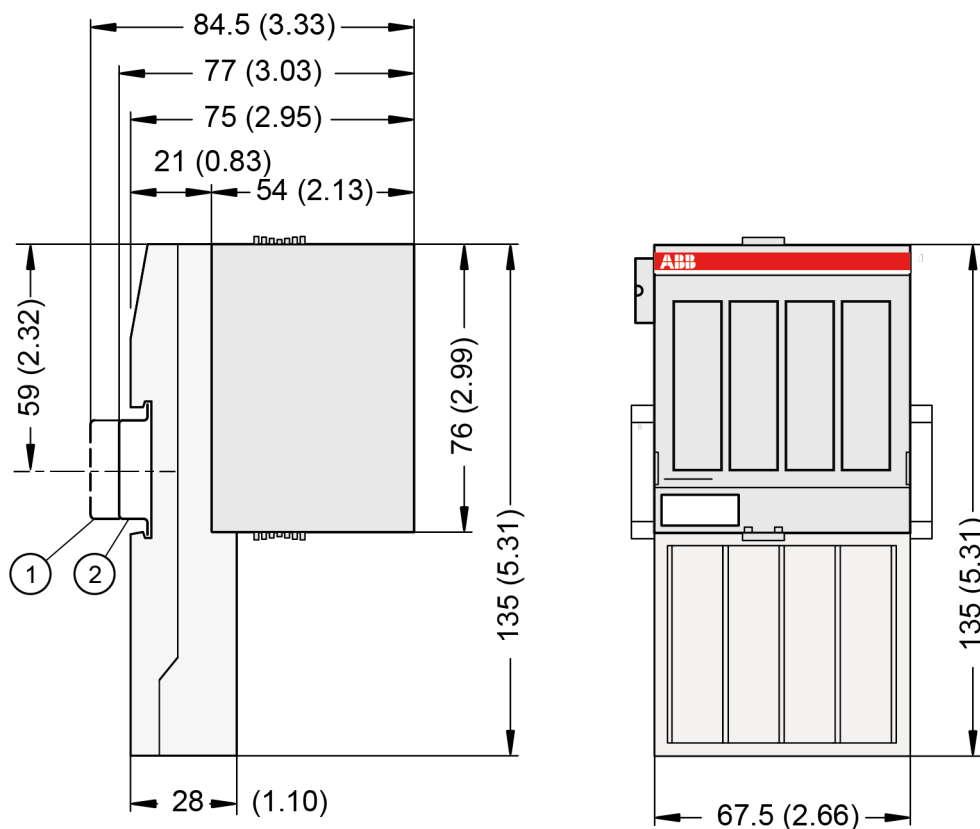
23.1 Assembly



23.2 Disassembly



23.3 Dimensions

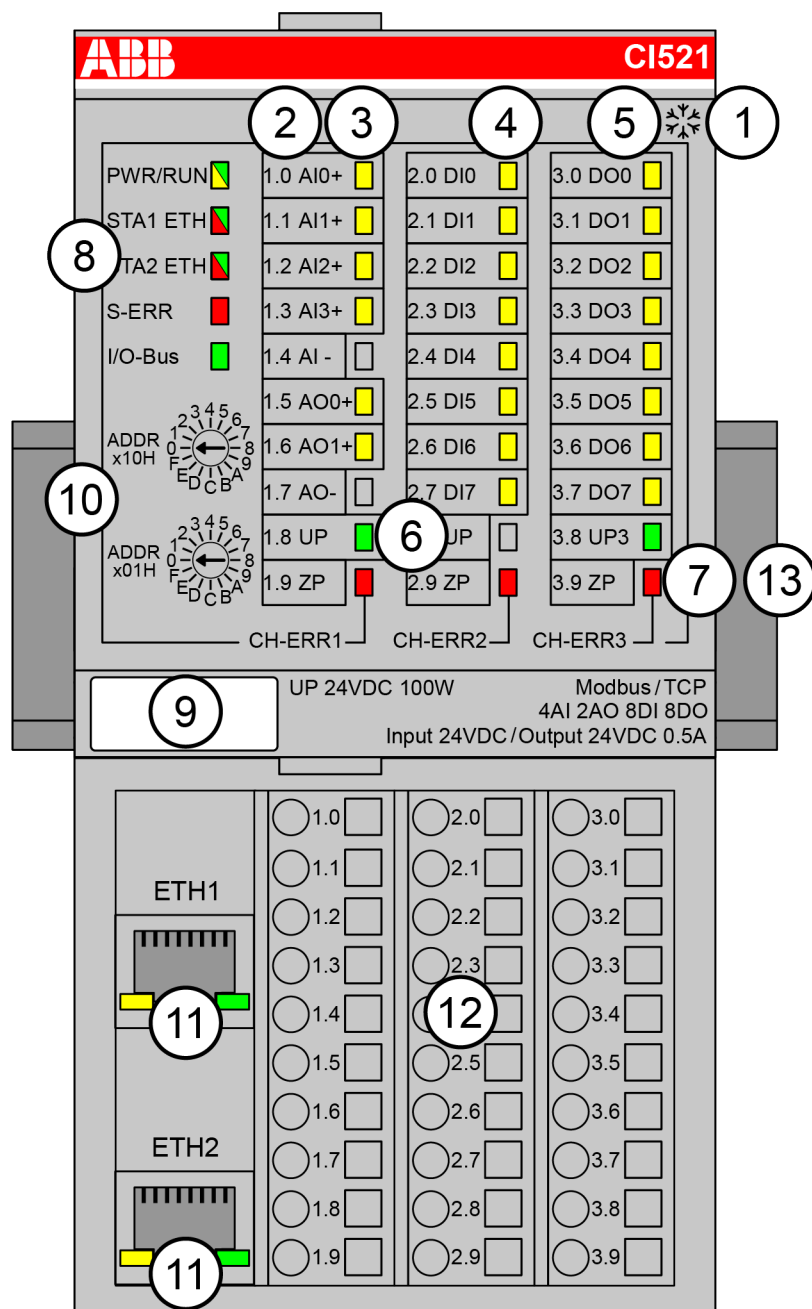


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

23.4 Connections

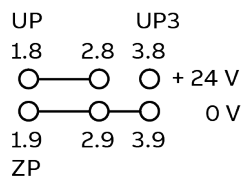


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 6 yellow LEDs to display the signal states of the analog inputs/outputs (AI0 ... AI3, AO0 ... AO1)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI0 ... DI7)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO0 ... DO7)
- 6 2 green LEDs to display the process supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 system LEDs: PWR/RUN, STA1 ETH, STA2 ETH, S-ERR, I/O-Bus
- 9 Label
- 10 2 rotary switches for setting the IP address
- 11 Ethernet interfaces (ETH1, ETH2) on the terminal unit
- 12 Terminal unit
- 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

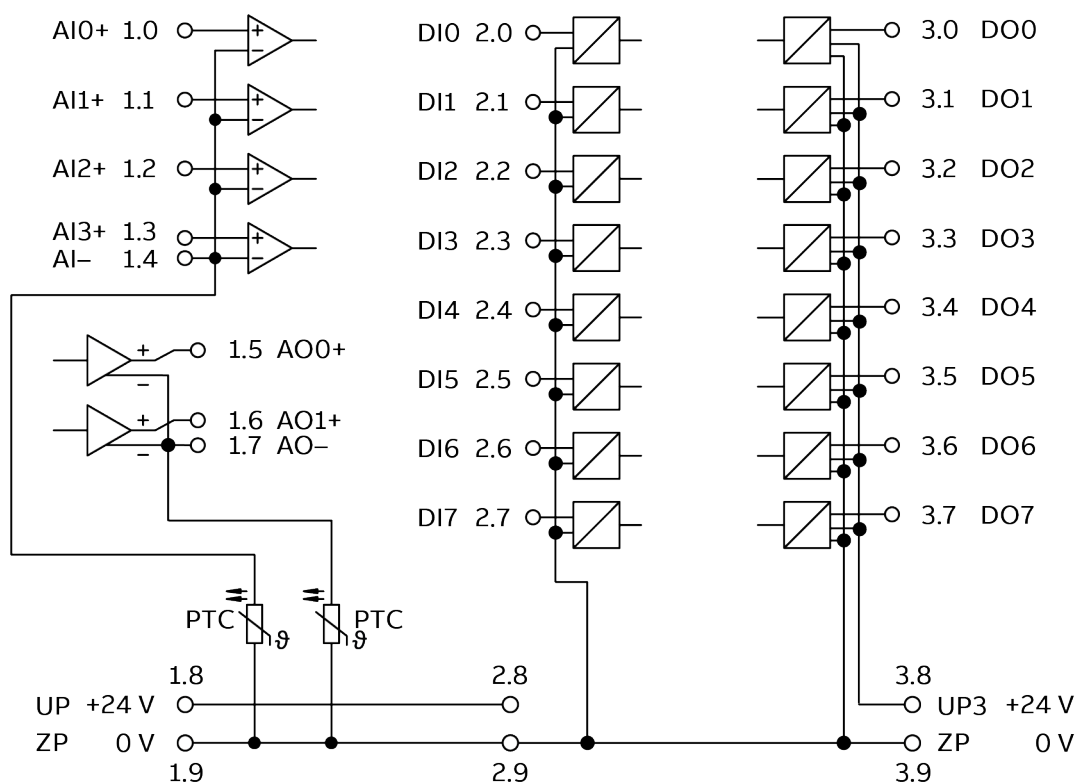
23.4.1 Process supply voltage



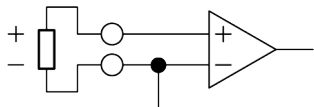
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

23.4.2 Inputs/Outputs



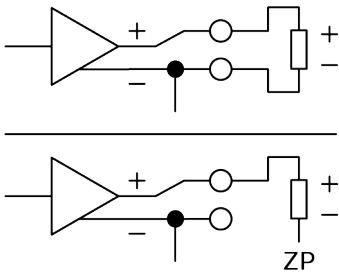
Example analog
input



AI0 ... AI3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 23: Example of connection input AIx

Example analog
output



AO0 ... AO1
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA

Fig. 24: Example of connection output AOx

Example digital
input

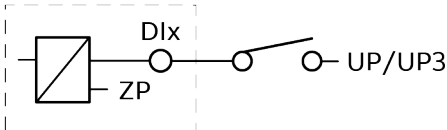


Fig. 25: Example of connection input DIx

Example digital
output

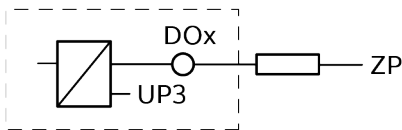


Fig. 26: Example of connection output DOx

23.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

23.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

23.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

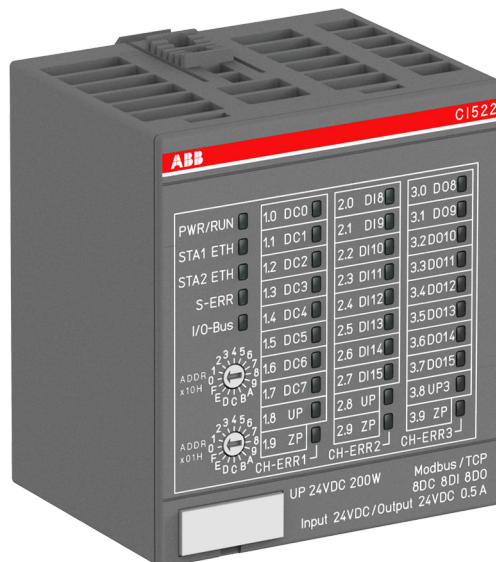
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

24 CI522-MODTCP(-XC)

- CI522-MODTCP
- CI522-MODTCP-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



NOTICE!

The section "Hot Swap" is only valid for CI502-PNIO(-XC) and CI522-MODTCP(-XC).

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

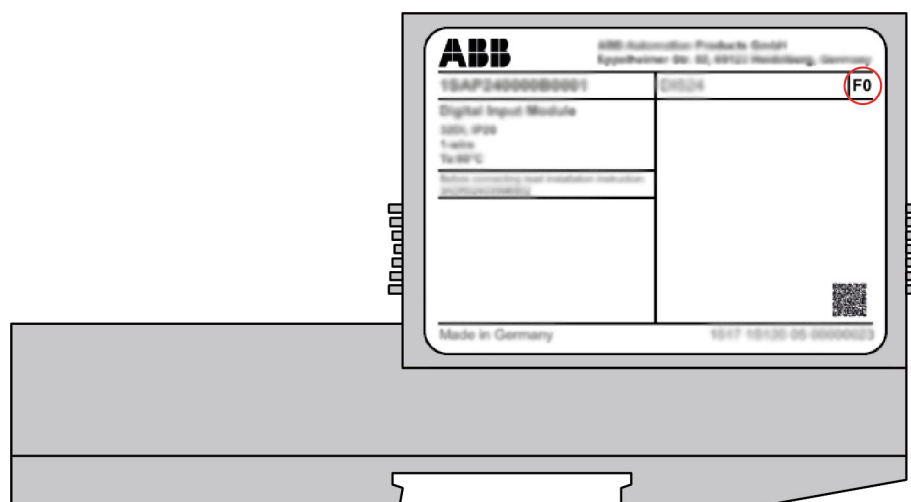
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

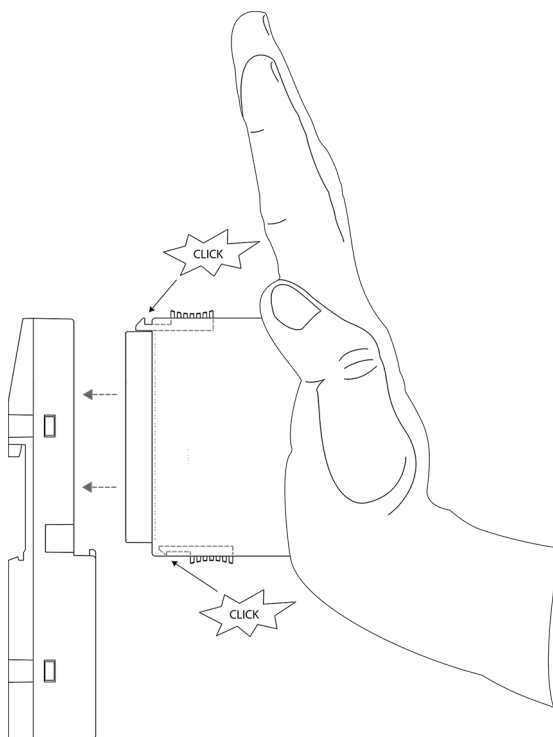
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

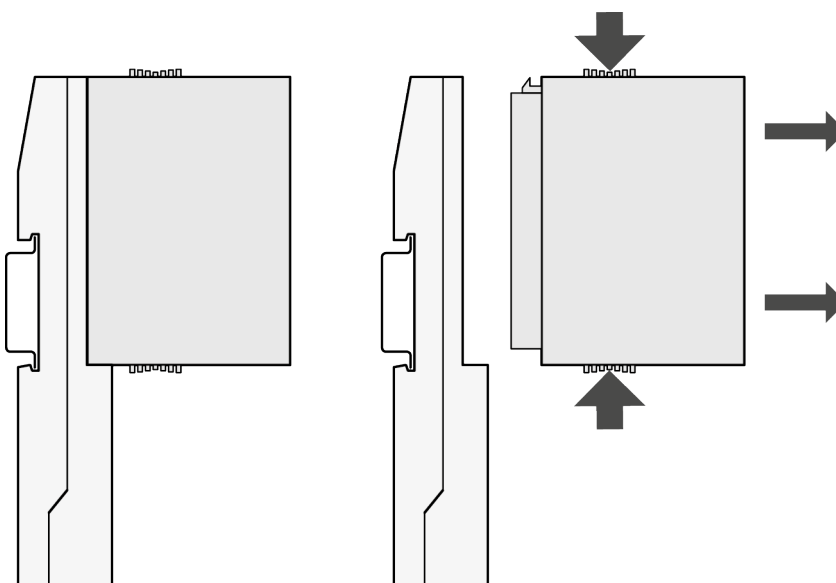
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

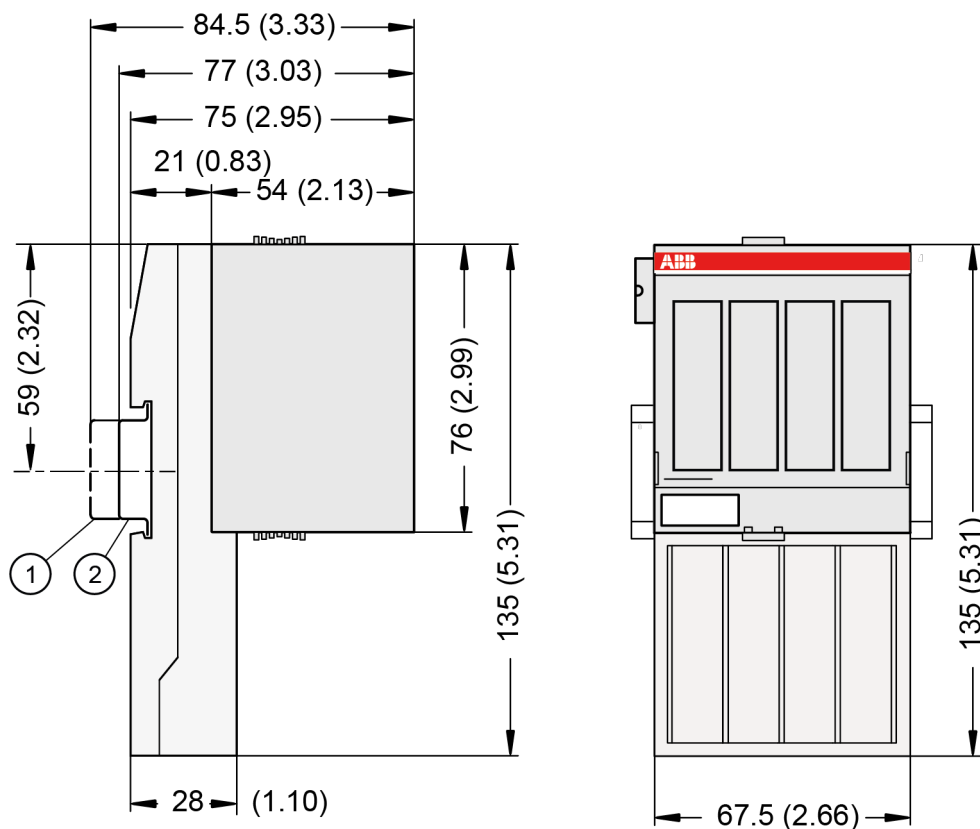
24.1 Assembly



24.2 Disassembly



24.3 Dimensions

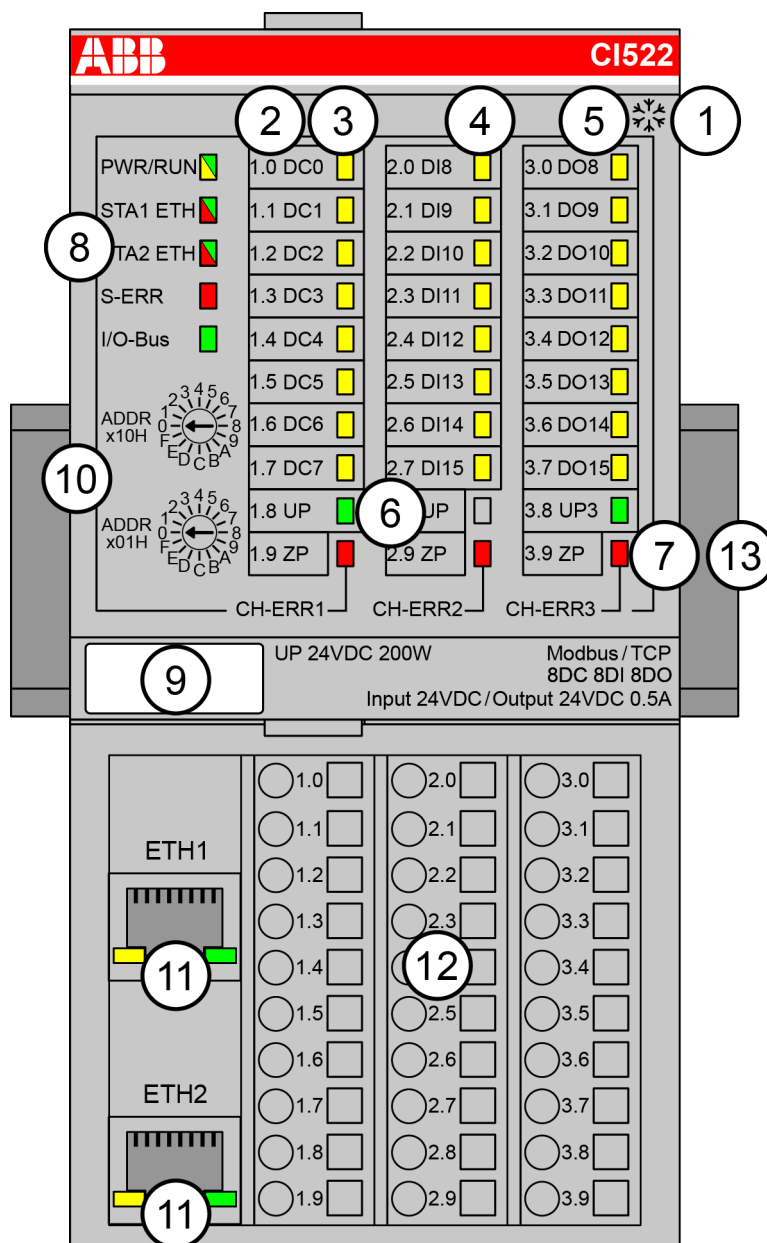


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

24.4 Connections

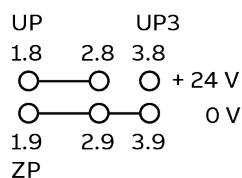


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states of the digital configurable inputs/outputs (DC0 ... DC7)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI8 ... DI15)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO8 ... DO15)
- 6 2 green LEDs to display the process supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 system LEDs: PWR/RUN, STA1 ETH, STA2 ETH, S-ERR, I/O-Bus
- 9 Label
- 10 2 rotary switches for setting the IP address
- 11 Ethernet interfaces (ETH1, ETH2) on the terminal unit
- 12 Terminal unit
- 13 DIN rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

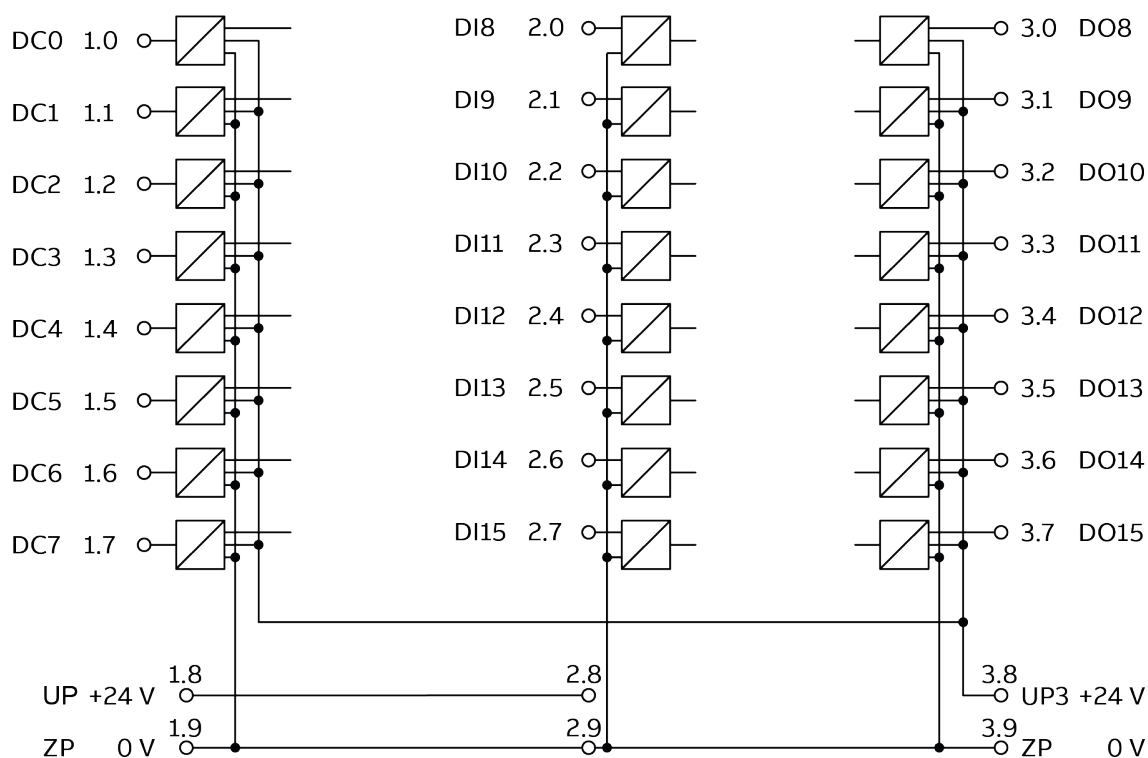
24.4.1 Process supply voltage



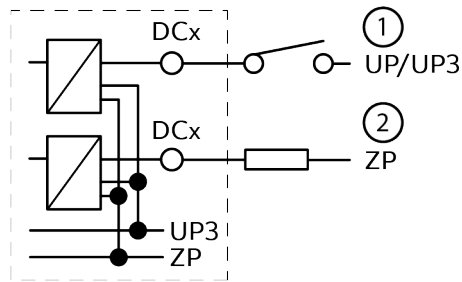
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

24.4.2 Inputs/Outputs



Example input or output



- 1 Example of connection as an input
- 2 Example of connection as an output

Example digital input

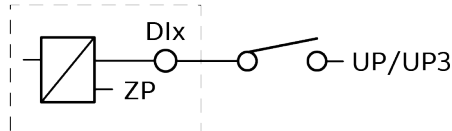


Fig. 27: Example of connection input DIx

Example digital output

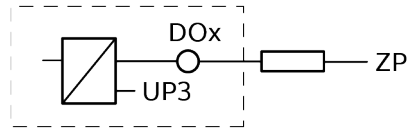


Fig. 28: Example of connection output DOx

24.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

24.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

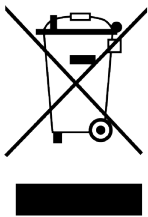
ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

24.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

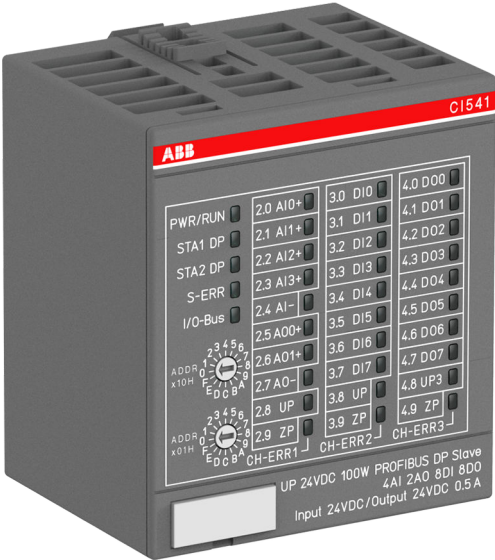
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

25 CI541-DP(-XC)

- CI541-DP
- CI541-DP-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

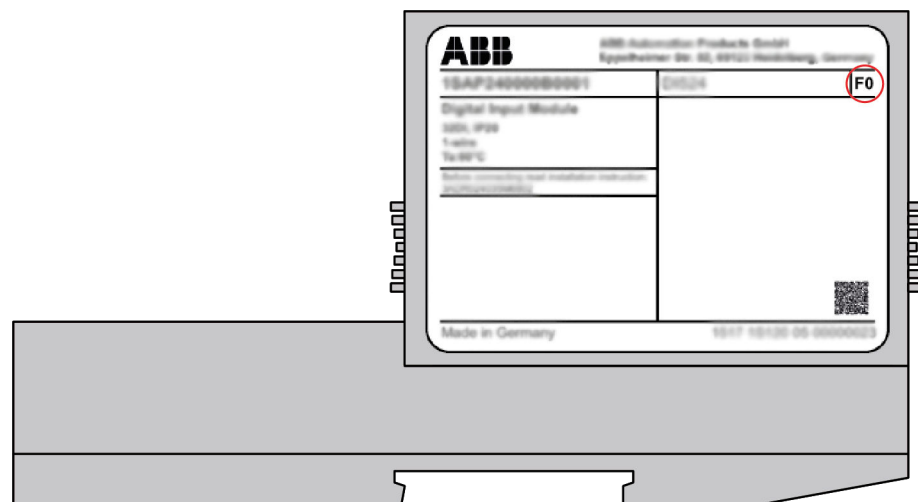
- Types of terminal units that support hot swapping of I/O modules have the appendix **TU5xx-H**.
- I/O modules as of index **F0**.

The following I/O bus masters support hot swapping of attached I/O modules:

- Communication interface modules **CI5xx** as of index **F0**.
- Processor modules **PM56xx-2ETH** with firmware version as of **V3.2.0**.



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

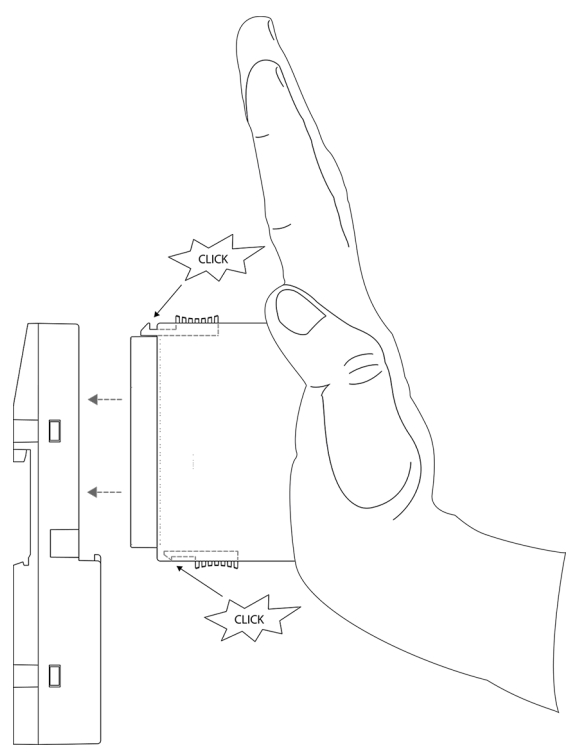
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

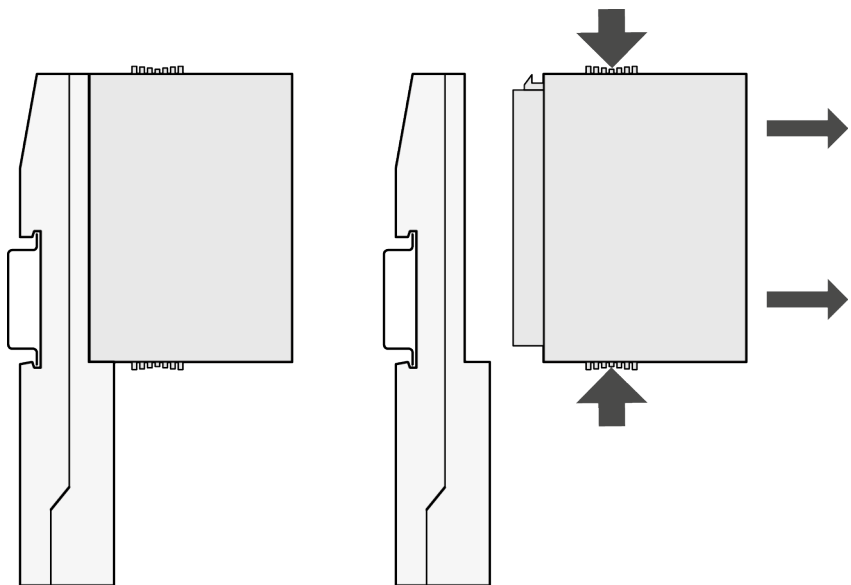
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

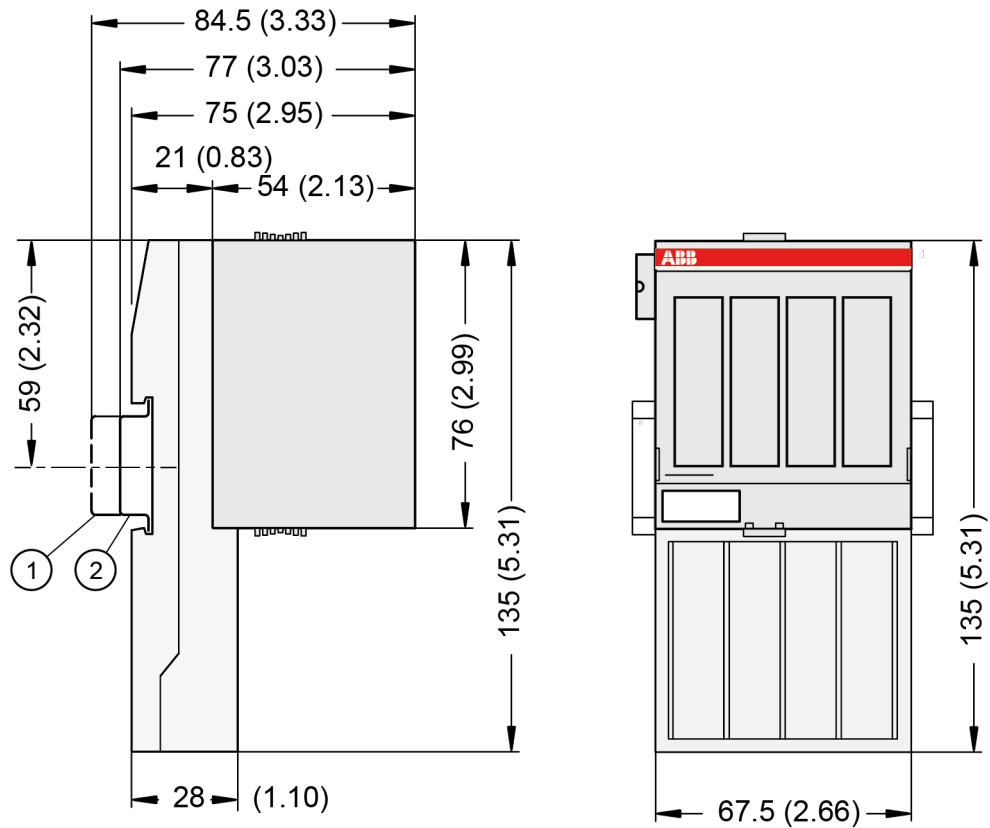
25.1 Assembly



25.2 Disassembly



25.3 Dimensions

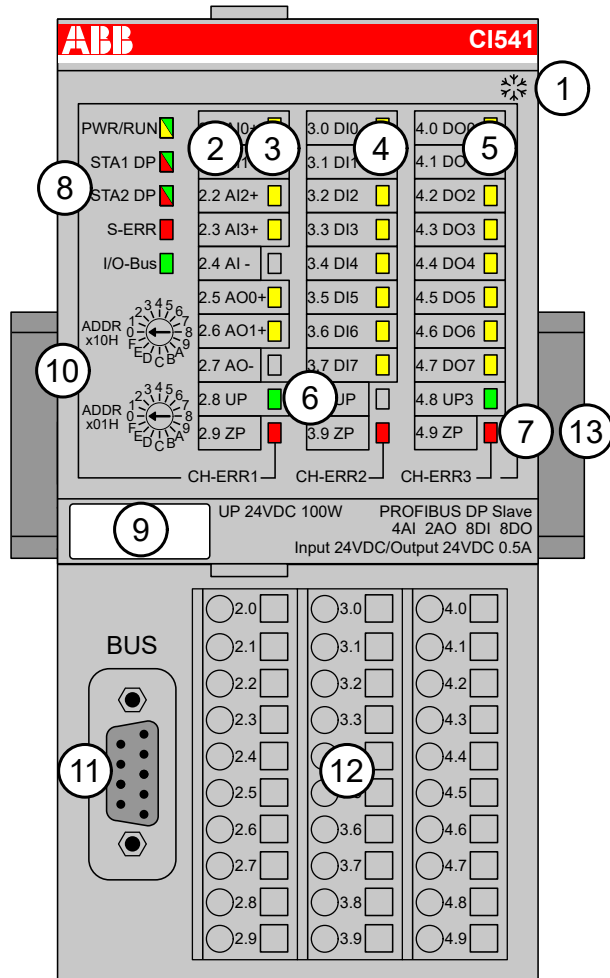


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

25.4 Connections

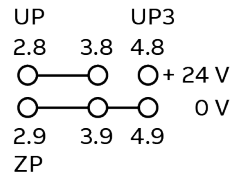


- 1 I/O bus
 - 2 Allocation between terminal number and signal name
 - 3 6 yellow LEDs to display the signal states of the analog inputs/outputs (AI0 ... AI3, AO0 ... AO1)
 - 4 8 yellow LEDs to display the signal states of the digital inputs (DI0 ... DI7)
 - 5 8 yellow LEDs to display the signal states of the digital outputs (DO0 ... DO7)
 - 6 2 green LEDs to display the process supply voltage UP and UP3
 - 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
 - 8 5 system LEDs: PWR/RUN, STA1 DP, STA2 DP, S-ERR, I/O-Bus
 - 9 Label
 - 10 2 rotary switches for setting the PROFIBUS ID
 - 11 9-pin D-SUB connector to connect the PROFIBUS DP signals
 - 12 Terminal unit
 - 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

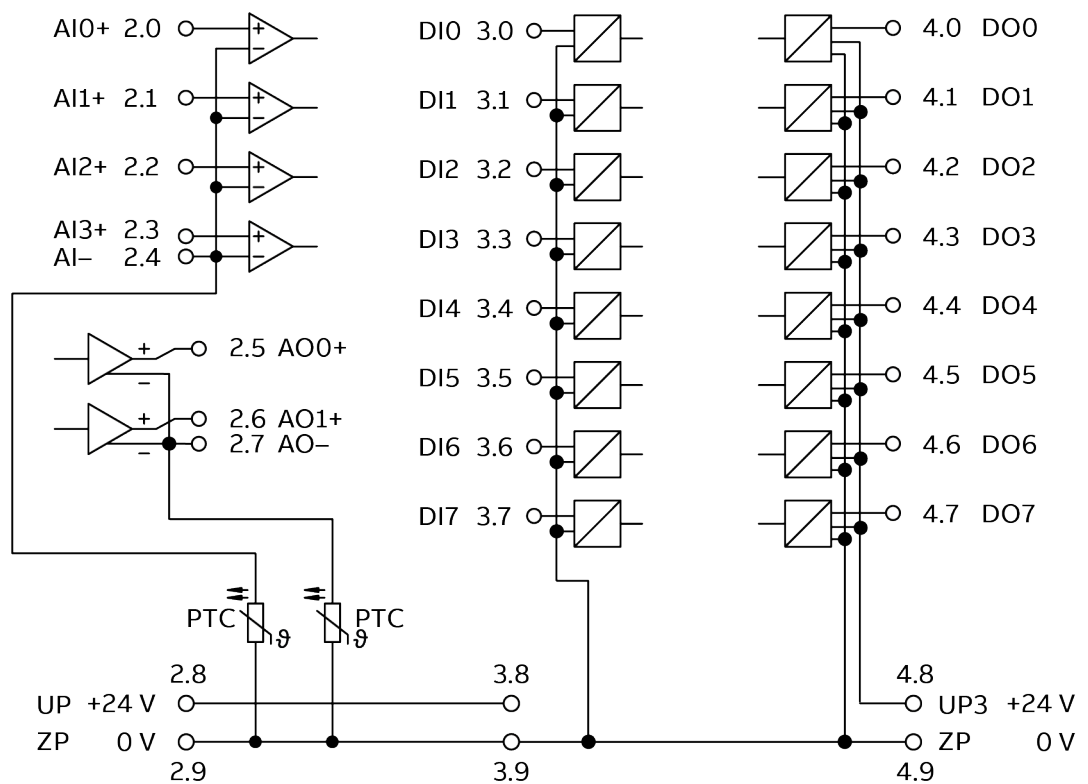
25.4.1 Process supply voltage



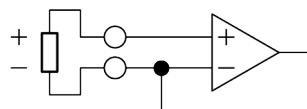
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

25.4.2 Inputs/Outputs



Example analog input



AI0 ... AI3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 29: Example of connection input AIx

Example analog
output

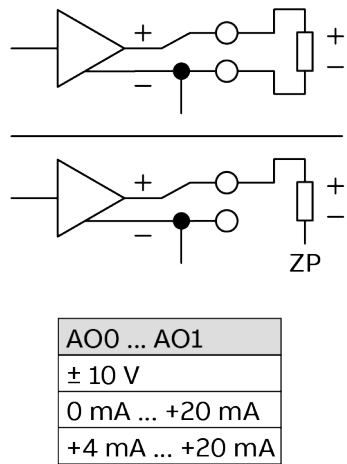


Fig. 30: Example of connection output AOx

Example digital
input

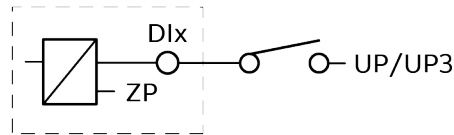


Fig. 31: Example of connection input DIx

Example digital
output

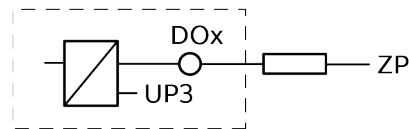


Fig. 32: Example of connection output DOx

25.5 Cleaning

Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

25.6 Certification

MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

25.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

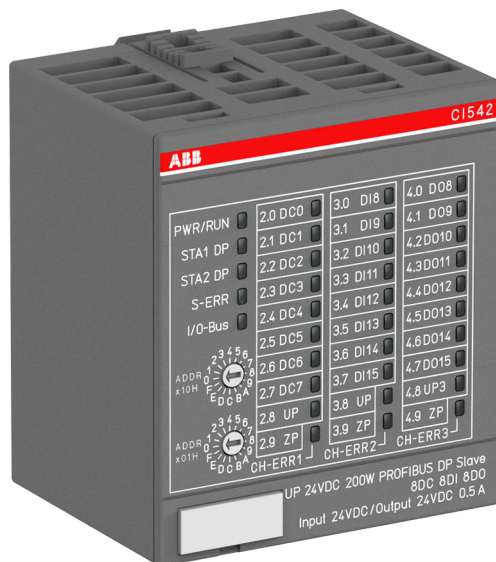
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

26 CI542-DP(-XC)

- CI542-DP
- CI542-DP-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

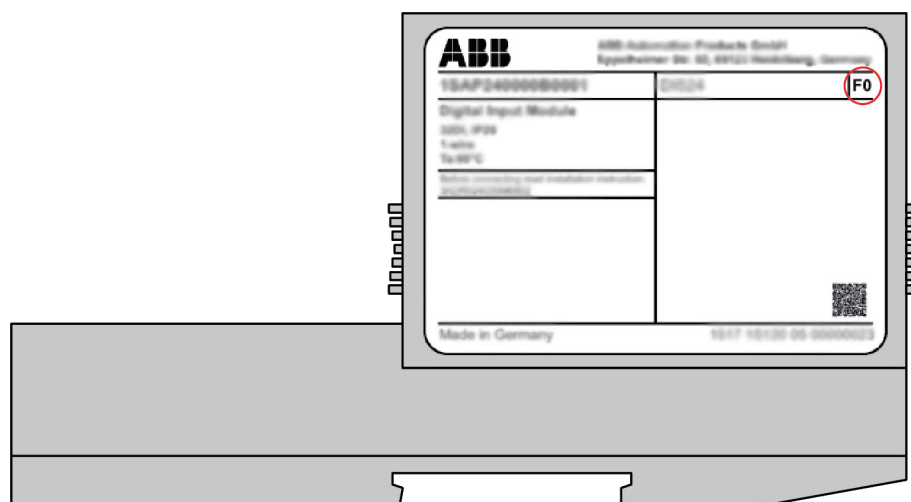
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

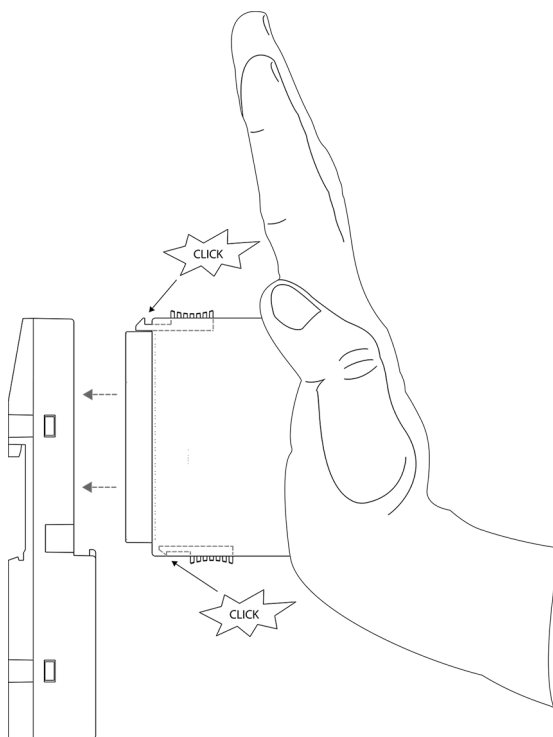
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

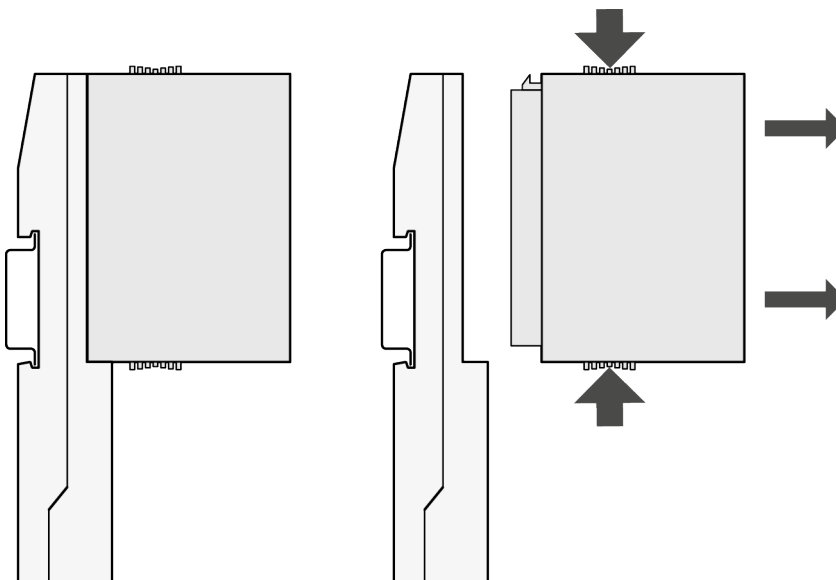
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

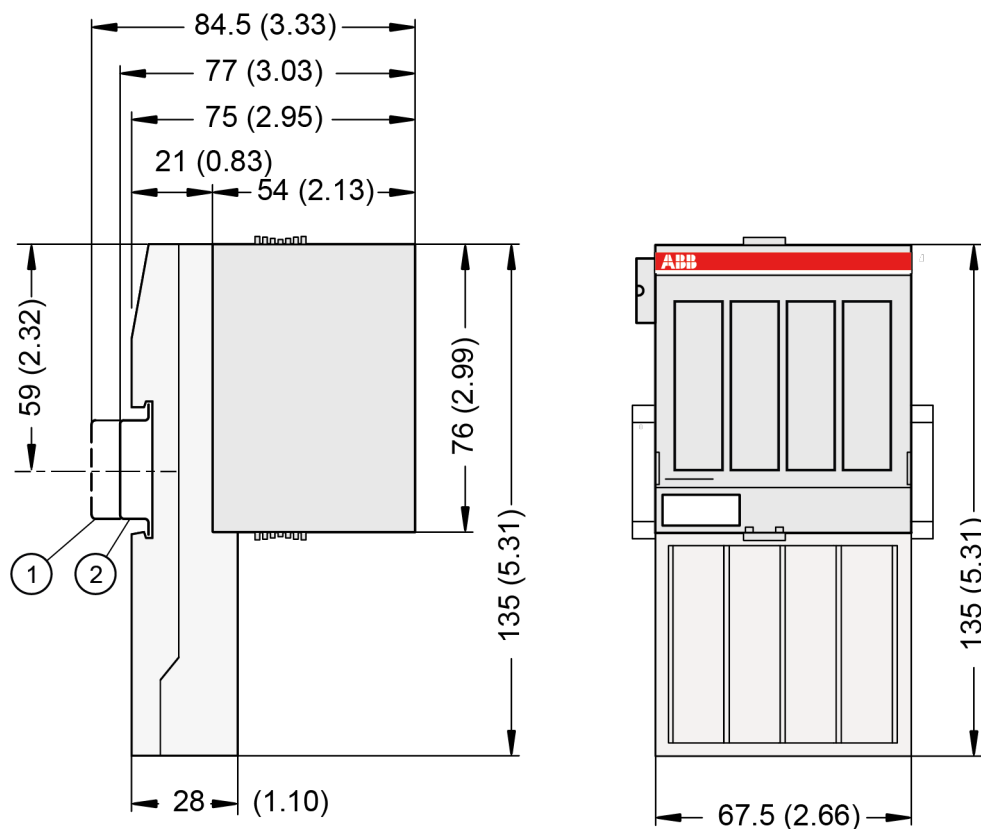
26.1 Assembly



26.2 Disassembly



26.3 Dimensions

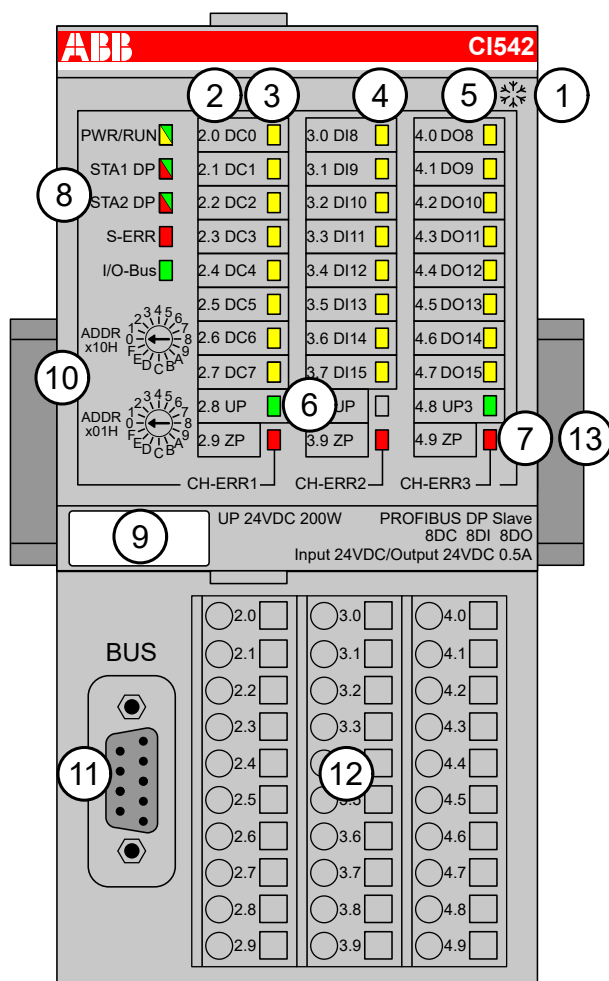


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

26.4 Connections

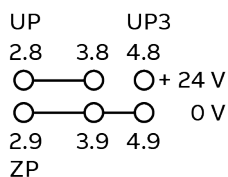


- 1 I/O bus
 - 2 Allocation between terminal number and signal name
 - 3 8 yellow LEDs to display the signal states of the configurable digital inputs/outputs (DC0 ... DC7)
 - 4 8 yellow LEDs to display the signal states of the digital inputs (DI8 ... DI15)
 - 5 8 yellow LEDs to display the signal states of the digital outputs (DO8 ... DO15)
 - 6 2 green LEDs to display the process supply voltage UP and UP3
 - 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
 - 8 5 system LEDs: PWR/RUN, STA1 DP, STA2 DP, S-ERR, I/O-Bus
 - 9 Label
 - 10 2 rotary switches for setting the PROFIBUS ID
 - 11 9-pin D-SUB connector to connect the PROFIBUS DP signals
 - 12 Terminal unit
 - 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

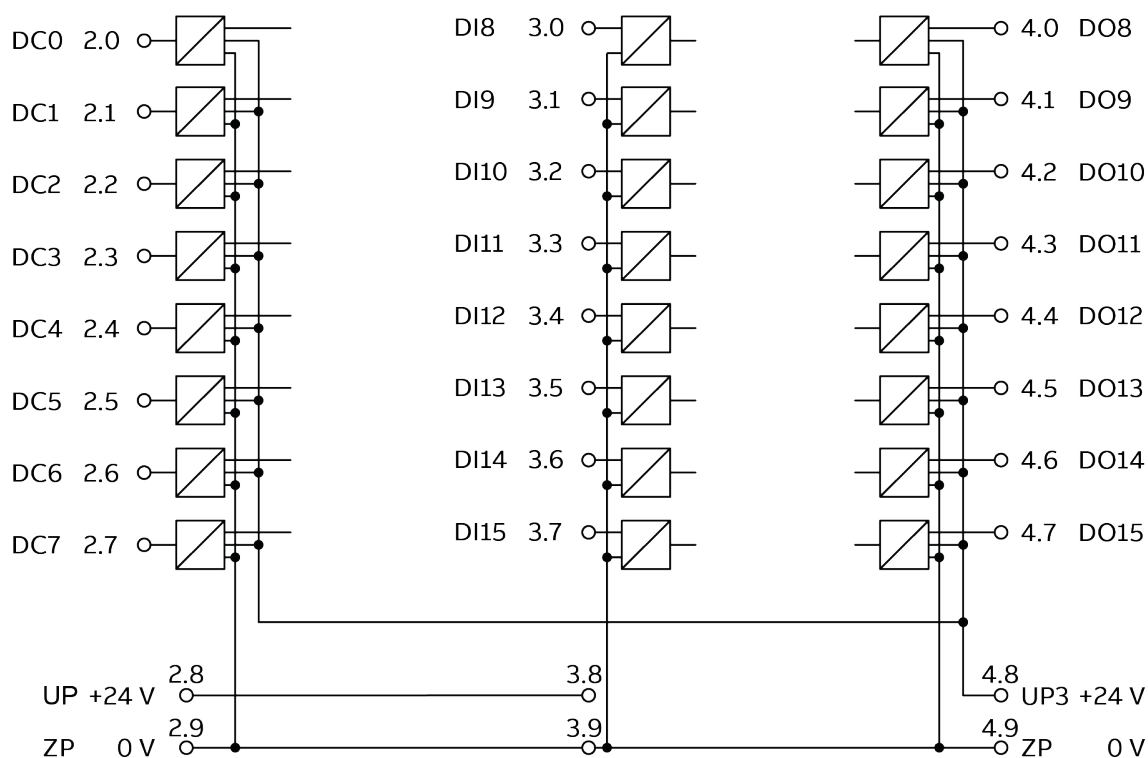
26.4.1 Process supply voltage



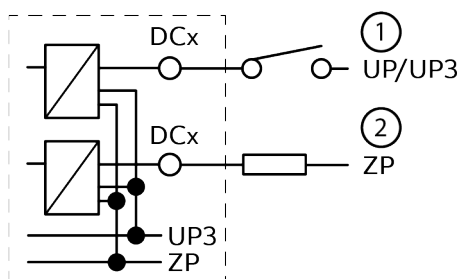
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

26.4.2 Inputs/Outputs



Example input or output



- 1 Example of connection as an input
- 2 Example of connection as an output

Example digital input

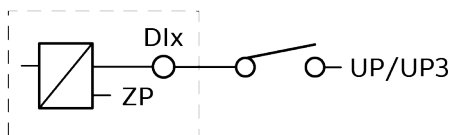


Fig. 33: Example of connection input DLx

Example digital output

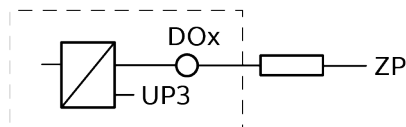


Fig. 34: Example of connection output DOx

26.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

26.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

26.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

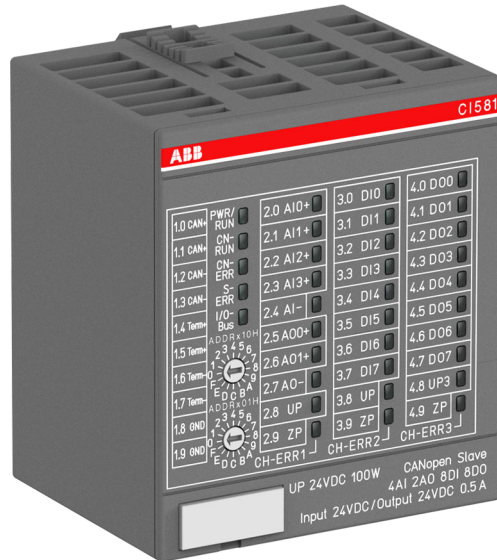
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

27 CI581-CN(-XC)

- CI581-CN
- CI581-CN-XC



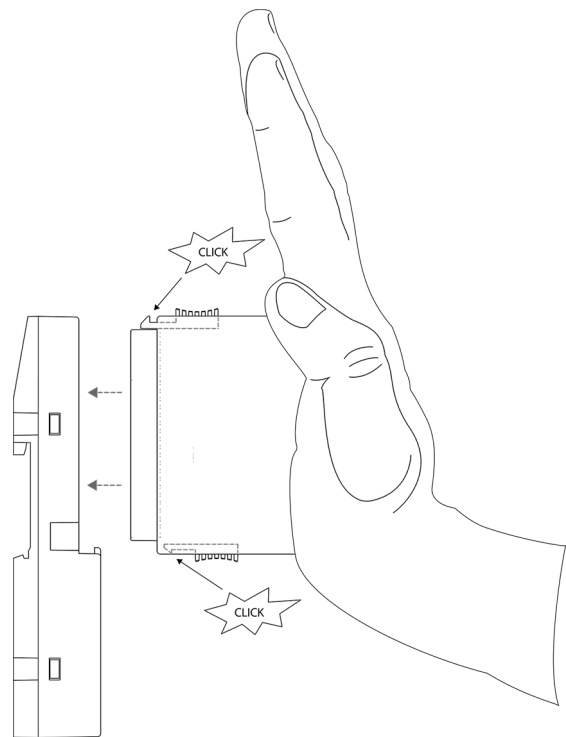
CAUTION!

Risk of injury and damaging the product!

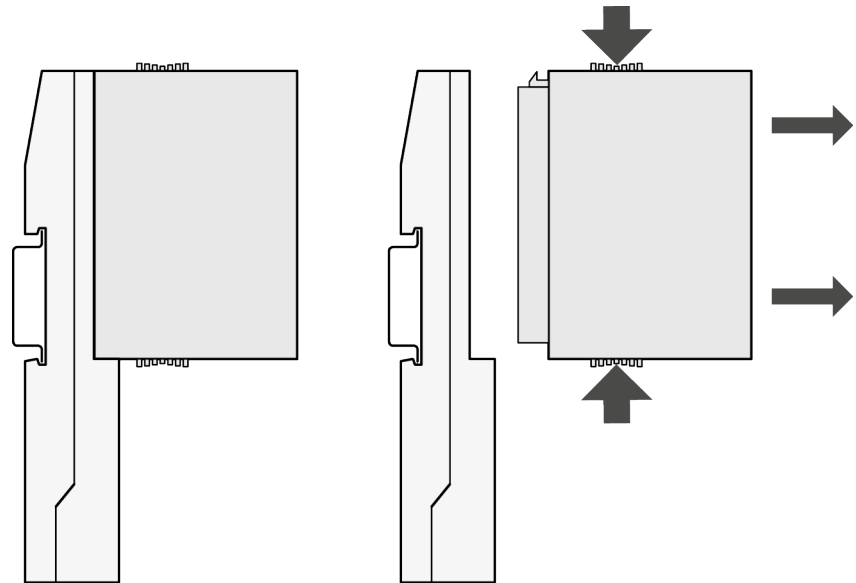
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

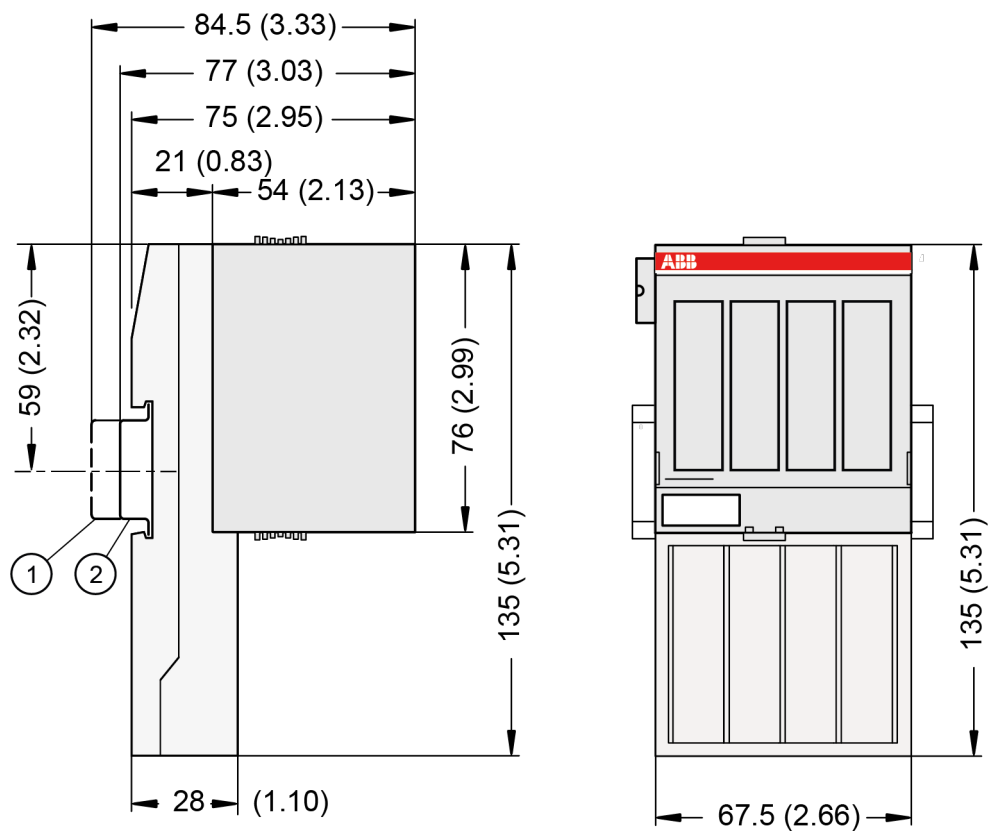
27.1 Assembly



27.2 Disassembly

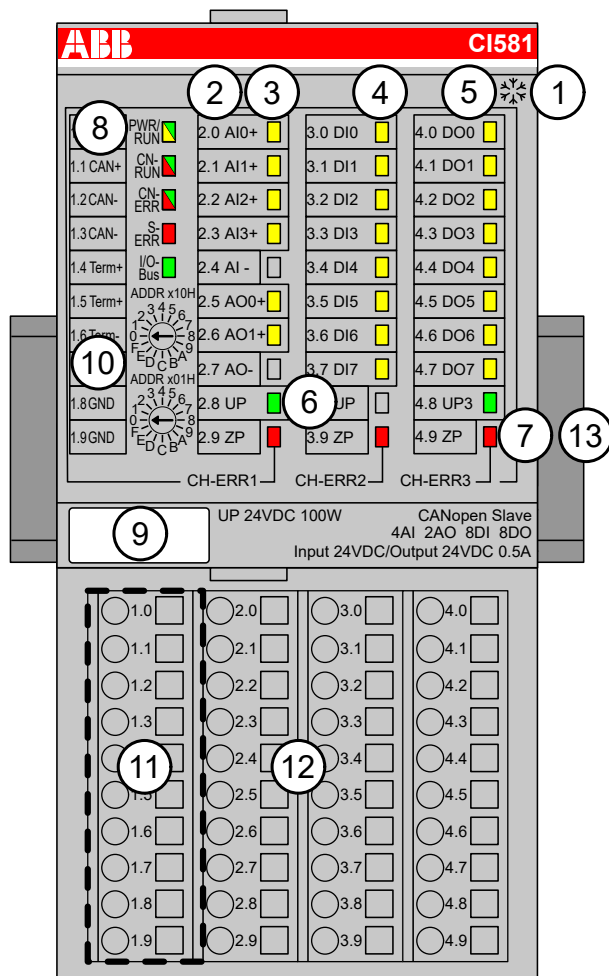


27.3 Dimensions



The dimensions are in mm and in brackets in inch.

27.4 Connections

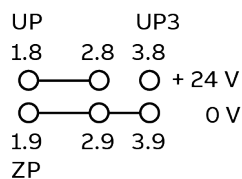


- 1 I/O bus
- 2 Allocation between terminal No. and signal name
- 3 6 yellow LEDs to display the signal states of the analog inputs/outputs (AI0 ... AI3, AO0 ... AO1)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI0 ... DI7)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO0 ... DO7)
- 6 2 green LEDs to display the supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 System LEDs: PWR/RUN, CN-RUN, CN-ERR, S-ERR, I/O-Bus
- 9 Label
- 10 2 rotary switches for setting the CANopen Node ID
- 11 10 terminals to connect the CANopen bus signals
- 12 Terminal unit
- 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

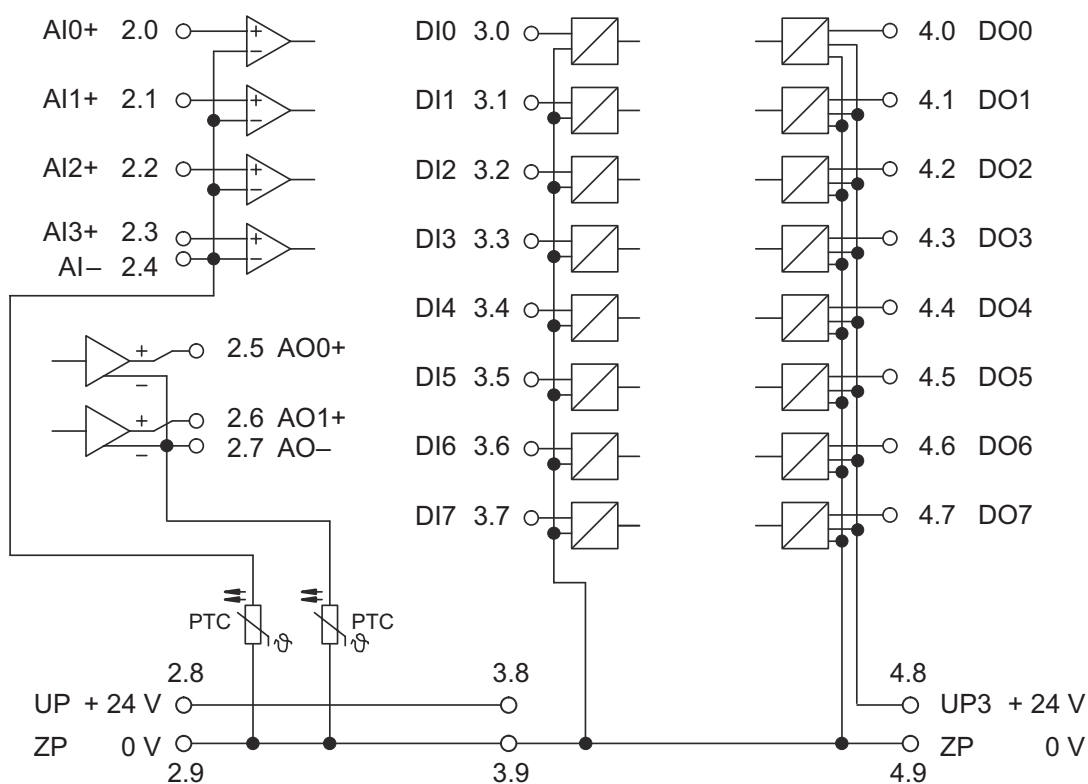
27.4.1 Process supply voltage



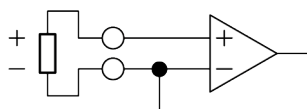
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

27.4.2 Inputs



Example analog input



AI0 ... AI3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 35: Example for connection input AIx

Example analog
output

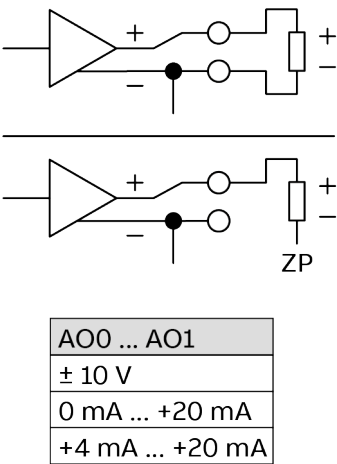


Fig. 36: Example for connection output AOx

Example digital
input

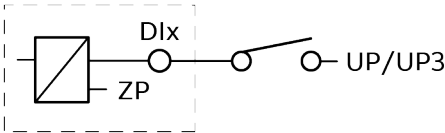


Fig. 37: Example for connection input DIx

Example digital
output

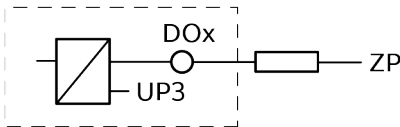


Fig. 38: Example for connection output DOx

27.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

27.6 Certification



MSIP-REI-Abb-AC500

en **Note**
 These devices correspond to:

ko 참고
 이러한 기기는

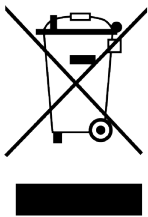
en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

27.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

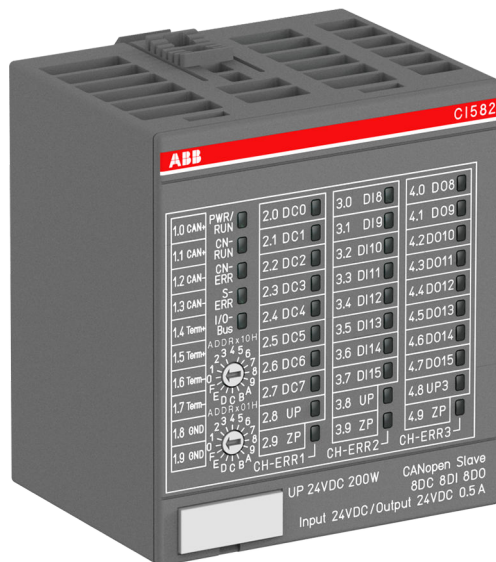
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

28 CI582-CN(-XC)

- CI582-CN
- CI582-CN-XC



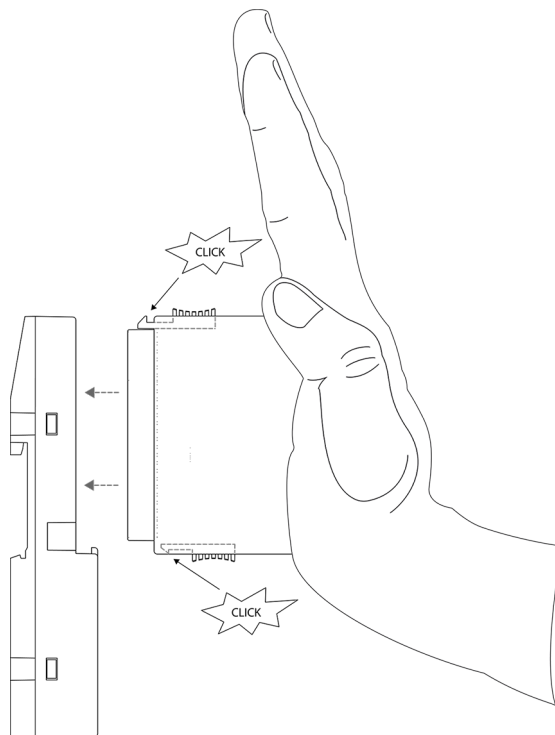
CAUTION!

Risk of injury and damaging the product!

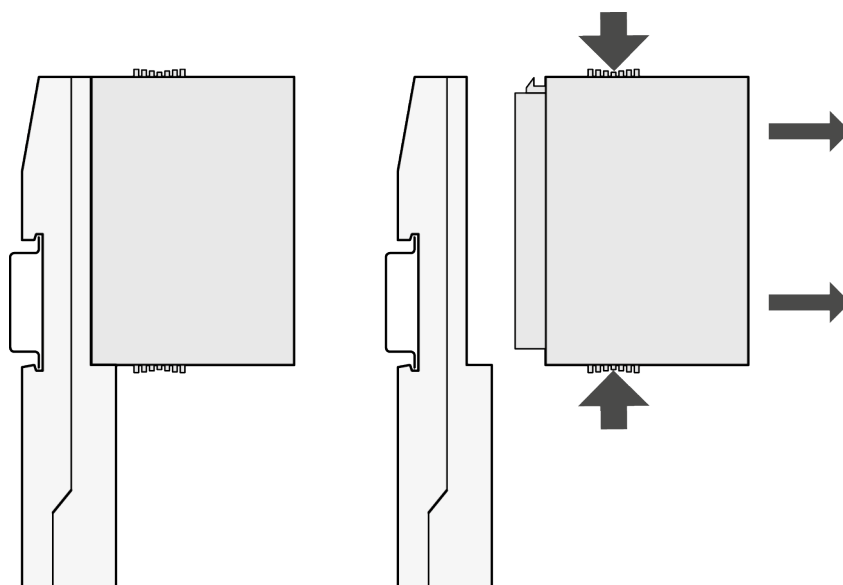
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

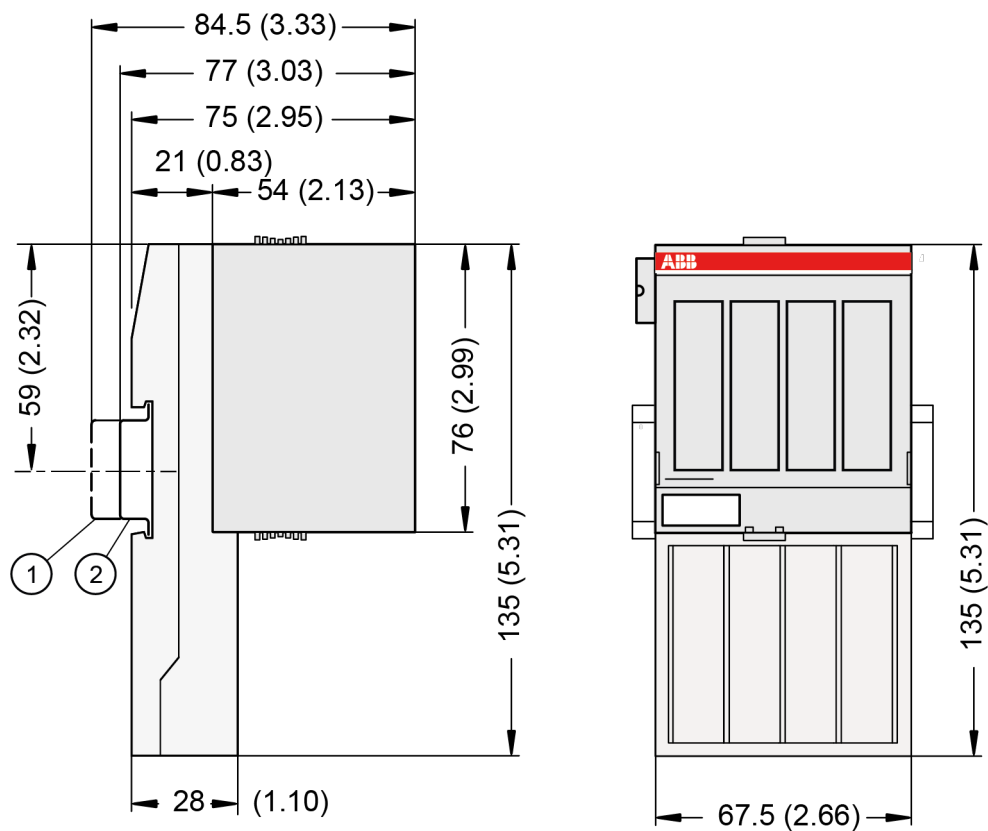
28.1 Assembly



28.2 Disassembly

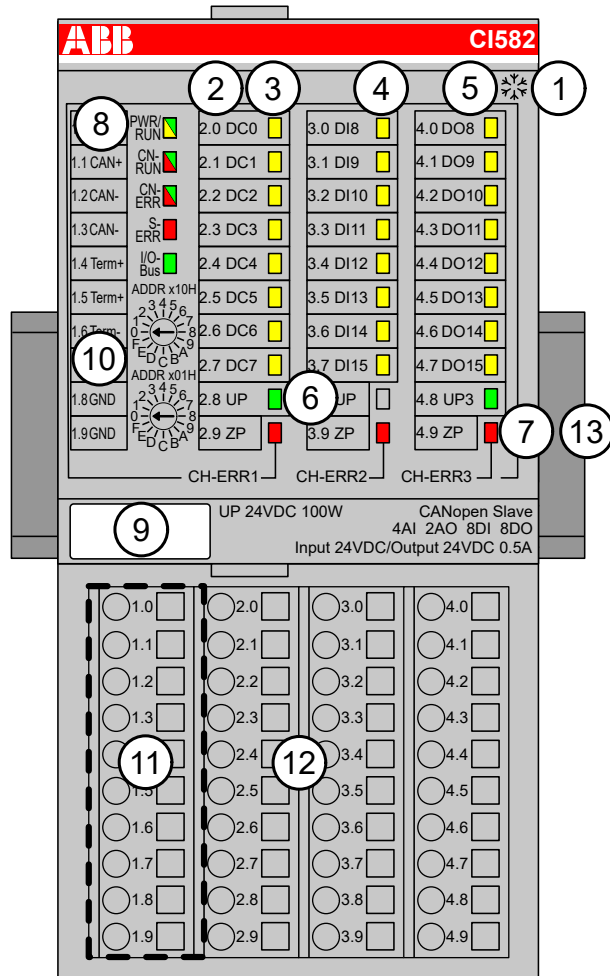


28.3 Dimensions



The dimensions are in mm and in brackets in inch.

28.4 Connections

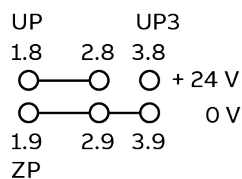


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states of the configurable digital inputs/outputs (DC0 ... DC7)
- 4 8 yellow LEDs to display the signal states of the digital inputs (DI8 ... DI15)
- 5 8 yellow LEDs to display the signal states of the digital outputs (DO8 ... DO15)
- 6 2 green LEDs to display the supply voltage UP and UP3
- 7 3 red LEDs to display errors (CH-ERR1, CH-ERR2, CH-ERR3)
- 8 5 System LEDs: PWR/RUN, CN-RUN, CN-ERR, S-ERR, I/O-Bus
- 9 Label
- 10 2 rotary switches for setting the CANopen node ID
- 11 10 terminals to connect the CANopen bus signals
- 12 Terminal unit
- 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

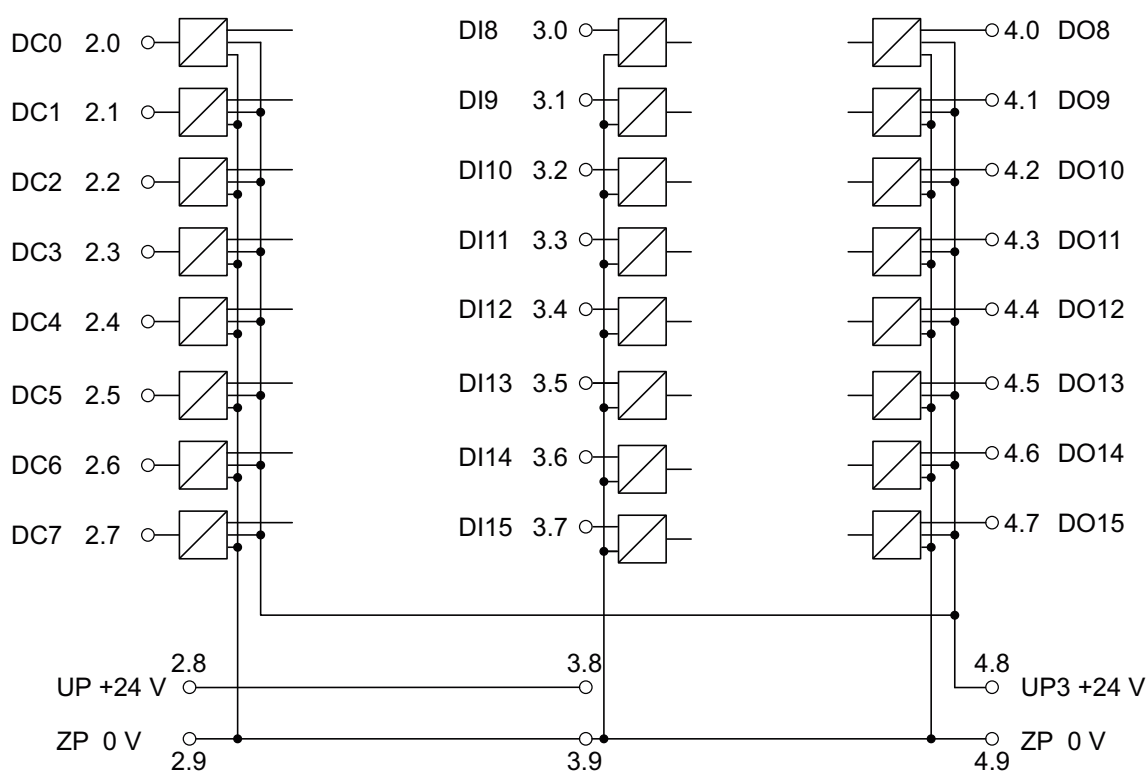
28.4.1 Process supply voltage



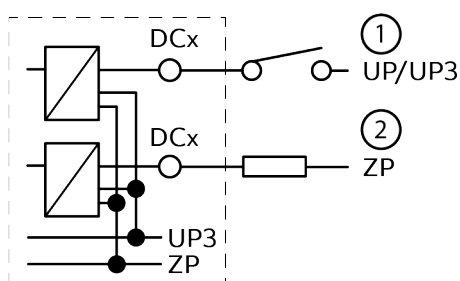
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

28.4.2 Inputs



Example input or output



- 1 Example for connection as an input
- 2 Example for connection as an output

Example digital input

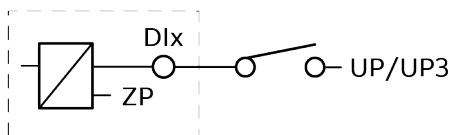


Fig. 39: Example for connection input DLx

Example digital output

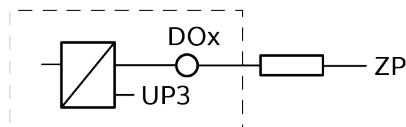


Fig. 40: Example for connection output DOx

28.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

28.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

28.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

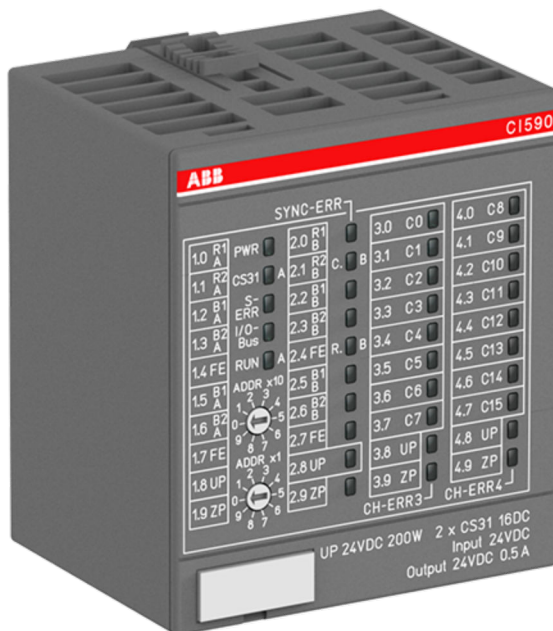
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

29 CI590-CS31-HA(-XC)

- CI590-CS31-HA
- CI590-CS31-HA-XC



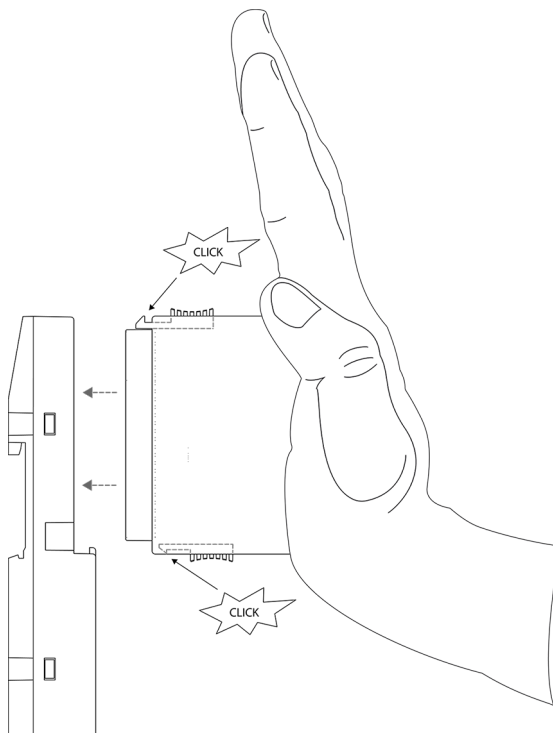
CAUTION!

Risk of injury and damaging the product!

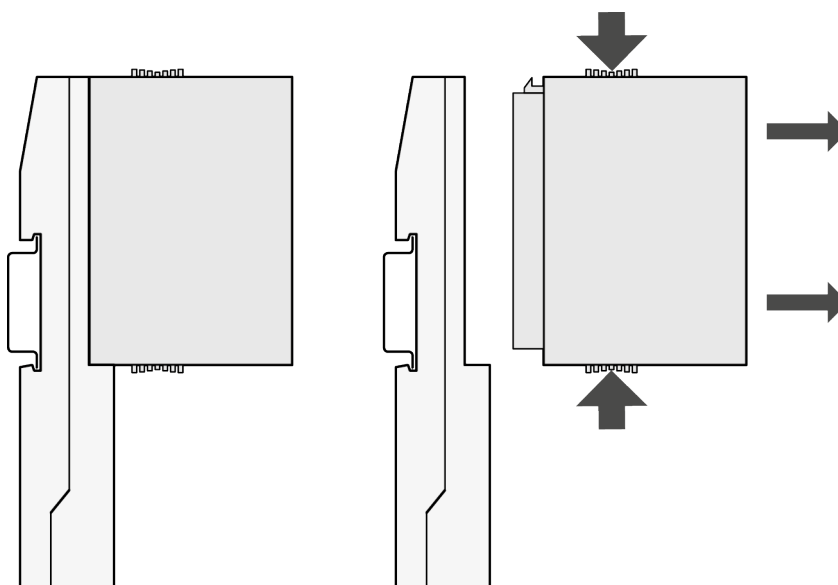
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

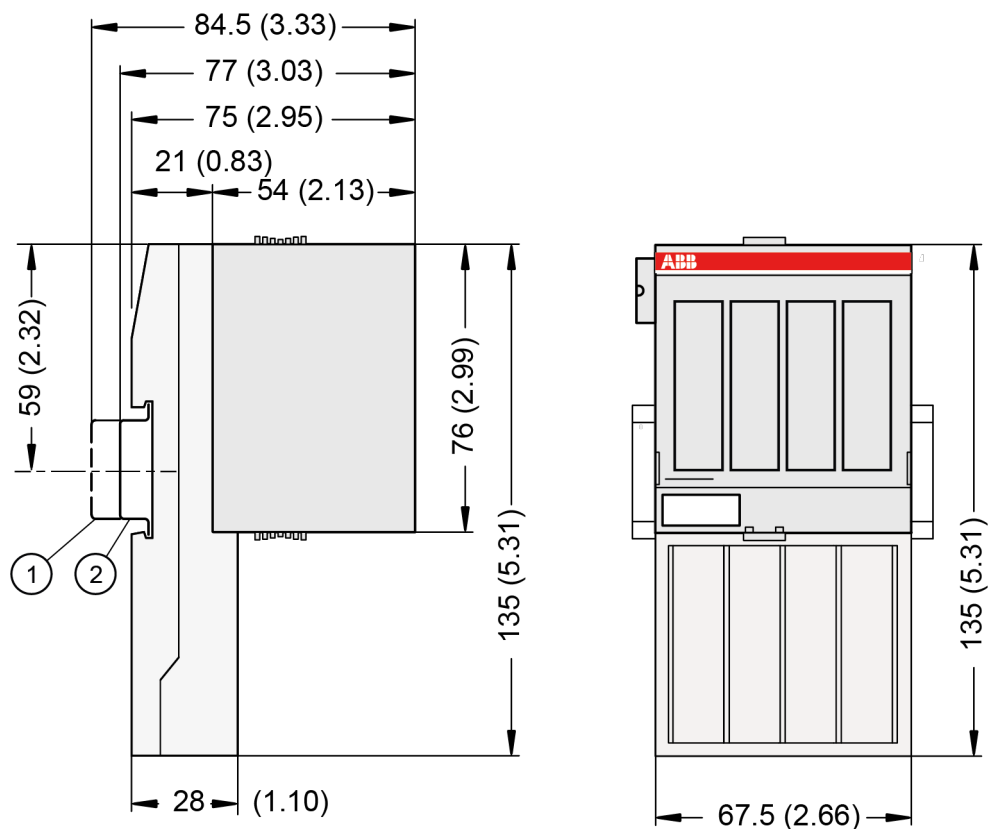
29.1 Assembly



29.2 Disassembly



29.3 Dimensions

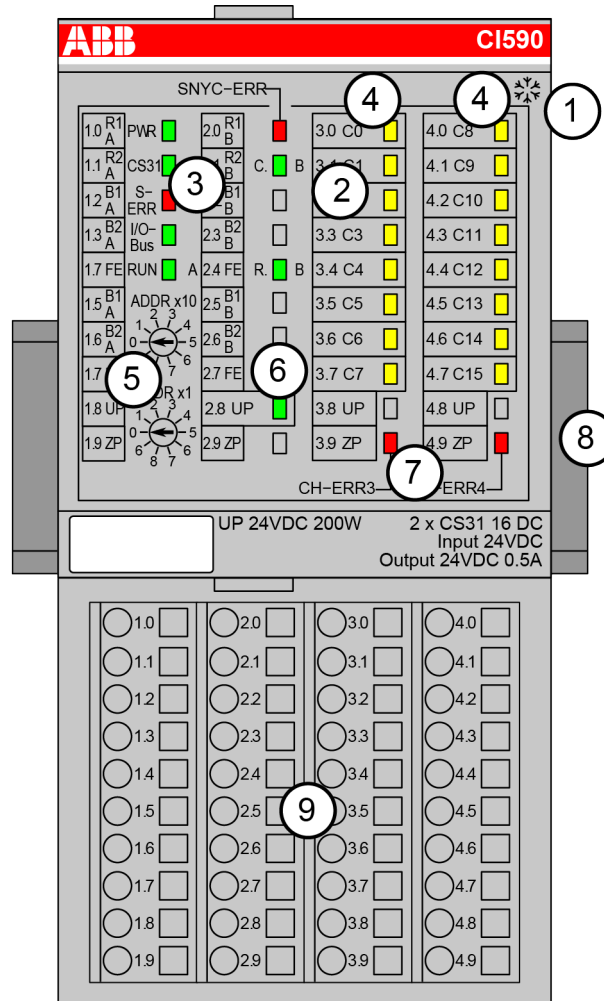


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

29.4 Connections

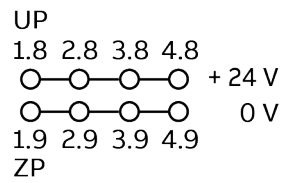


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 5 system LEDs
- 4 16 yellow LEDs to display the signal states of the configurable digital inputs/outputs C0 ... C15
- 5 2 rotary switches to set the module's address (00d ... 99d)
- 6 1 green LED to display the process voltage UP
- 7 2 red LEDs to display errors
- 8 DIN rail
- 9 Terminal unit
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

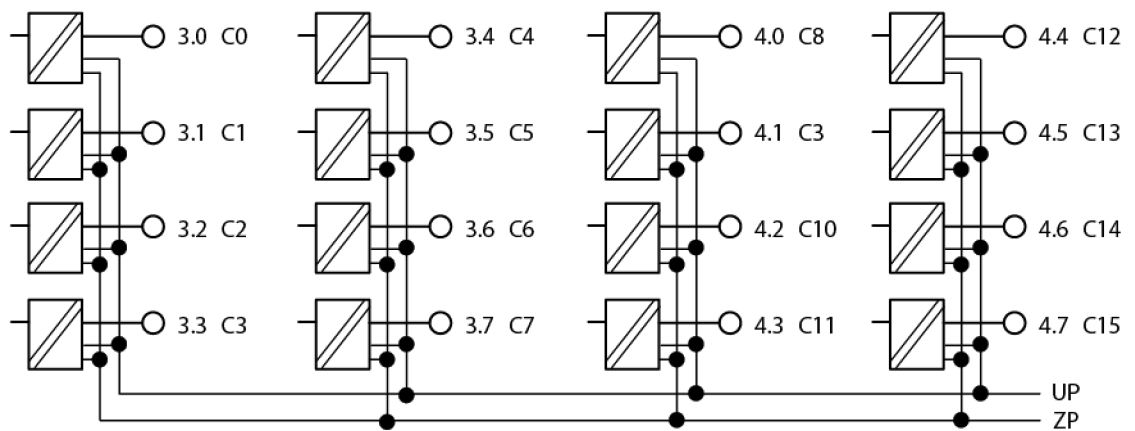
29.4.1 Process supply voltage



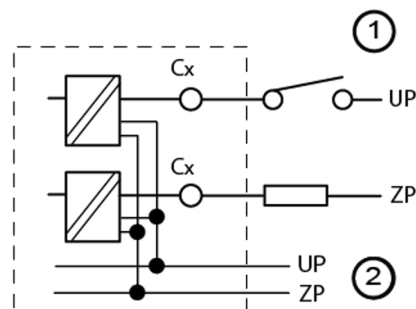
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

29.4.2 Inputs/Outputs



Example

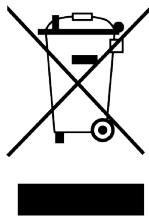


- 1 Example of connection as an input
- 2 Example of connection as an output

29.5 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

29.6 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

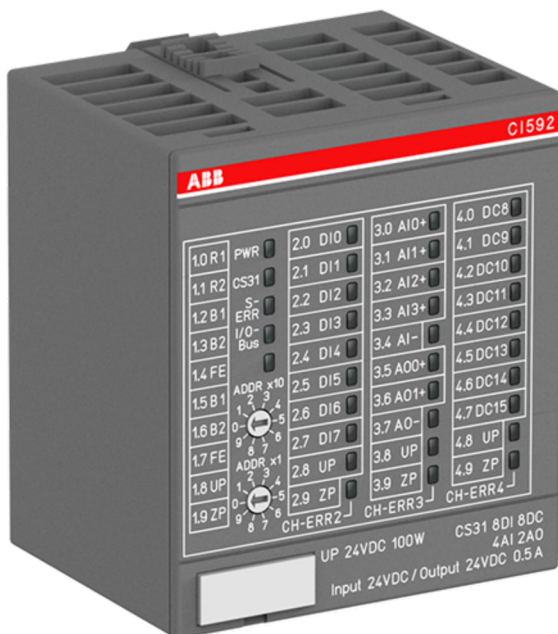
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

30 CI592-CS31(-XC)

- CI592-CS31
- CI592-CS31-XC



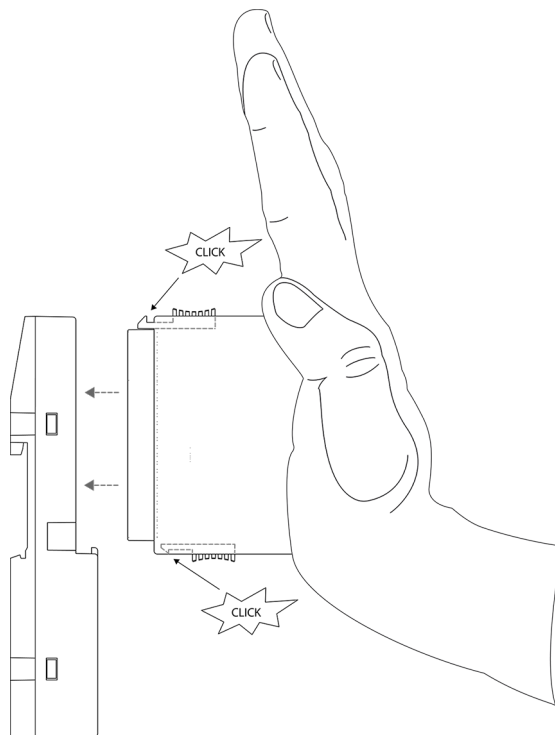
CAUTION!

Risk of injury and damaging the product!

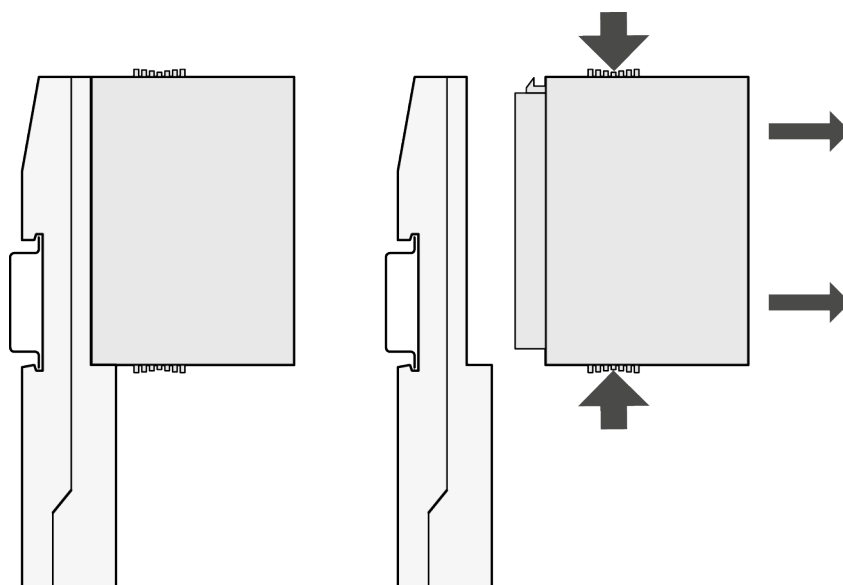
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

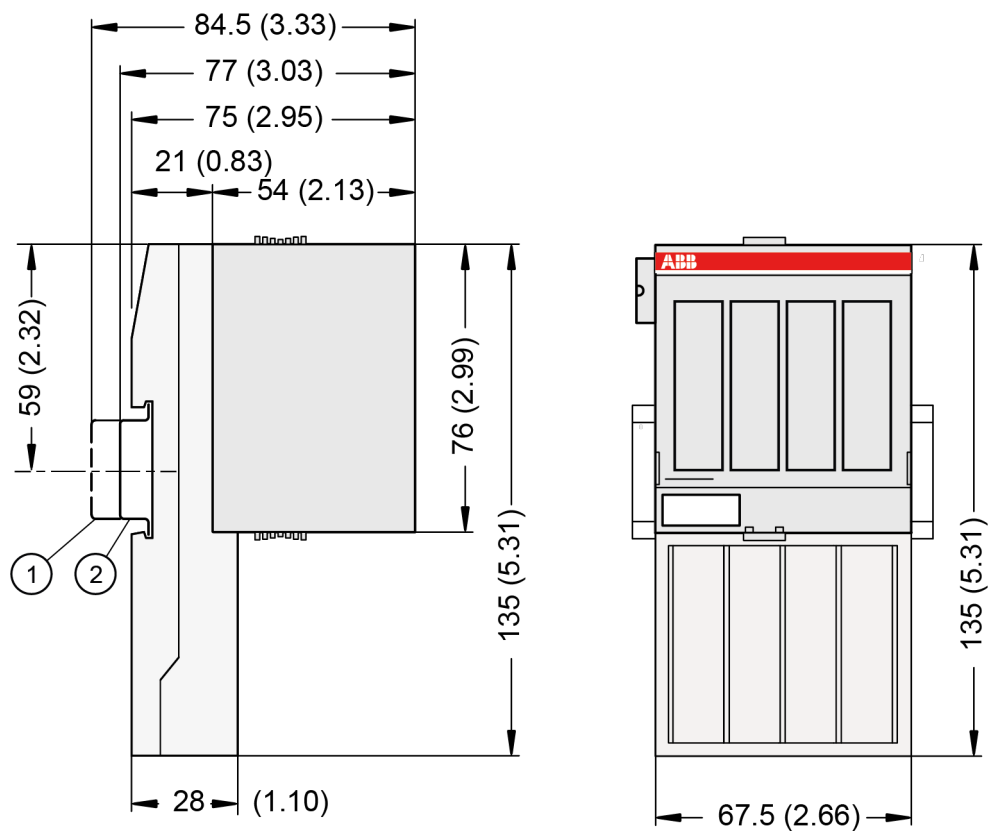
30.1 Assembly



30.2 Disassembly



30.3 Dimensions

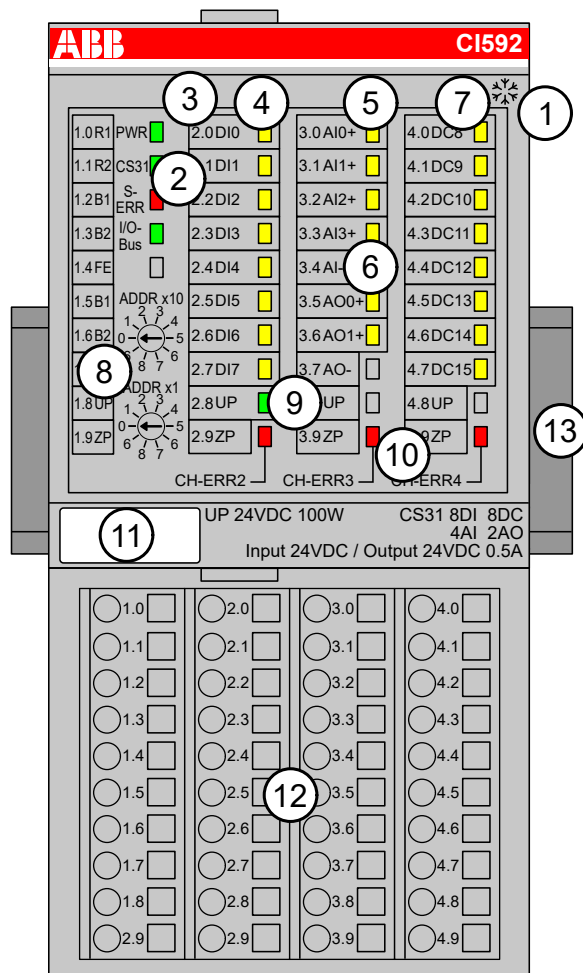


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

30.4 Connections

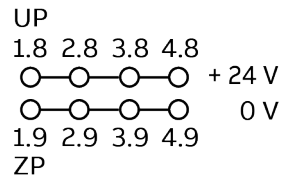


- 1 I/O bus
- 2 4 system LEDs
- 3 Allocation between terminal number and signal name
- 4 8 yellow LEDs to display the signal states of the digital inputs DI0 ... DI7
- 5 4 yellow LEDs to display the signal states of the analog inputs AI0 ... AI3
- 6 2 yellow LEDs to display the signal states of the analog outputs AO0 ... AO1
- 7 8 yellow LEDs to display the signal states of the configurable digital inputs/outputs DC8 ... DC15
- 8 2 rotary switches to set the module's address (00d ... 99d)
- 9 1 green LED to display the process voltage UP
- 10 3 red LEDs to display errors
- 11 Label
- 12 Terminal unit
- 13 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

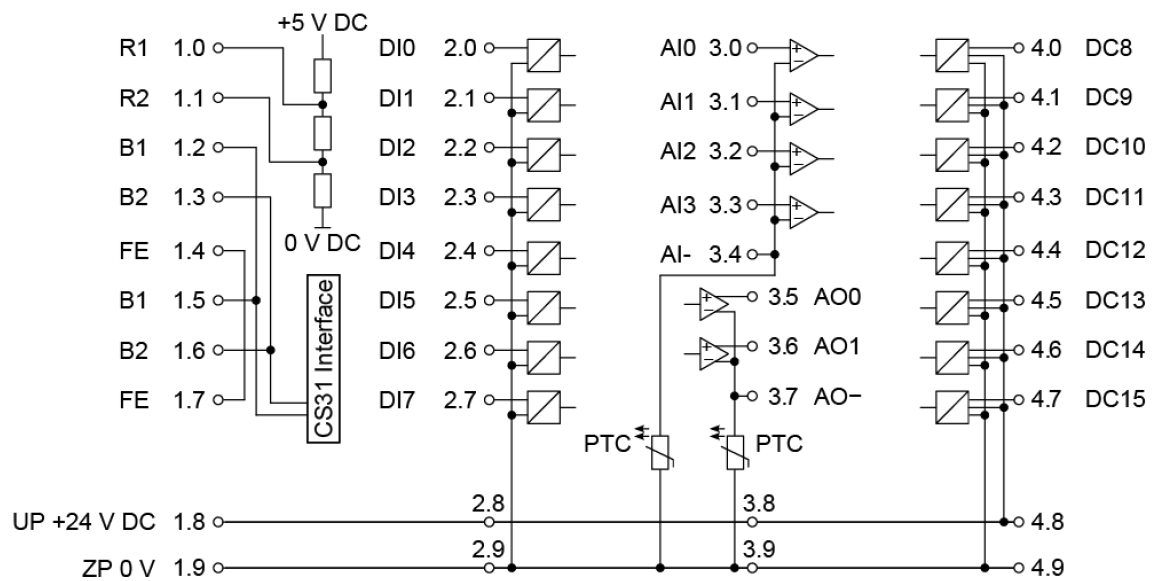
30.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

30.4.2 Inputs/Outputs



Example input or output

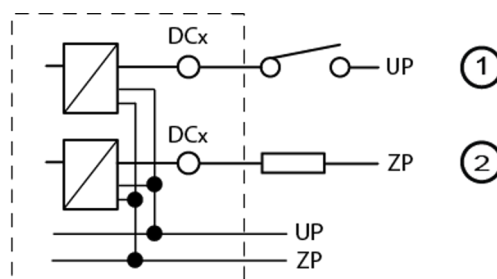


Fig. 41: Example as Input/Output

- 1 Example of connection as an input
- 2 Example of connection as an output

Example analog
input

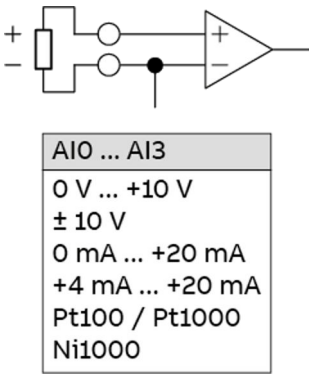


Fig. 42: Example as Input AIx

Example digital
input

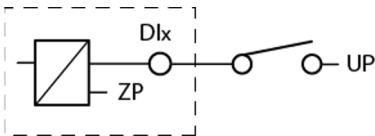


Fig. 43: Example as Input DIx

Example analog
output

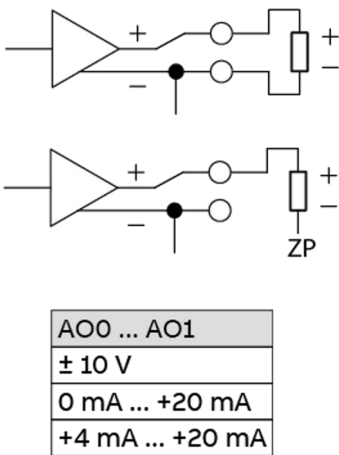


Fig. 44: Example as Output AOx

30.5 Certification

		MSIP-REI-Abb-AC500	
en	Note	Devices with KCC sign on product sticker and packaging	
	These devices correspond to:	en	제품 스티커 및 포장에 KCC 표시가 된 기기
ko	참고 이러한 기기는	ko	
		KN61000-6-2 “Immunity for industrial environments”, KN61000-6-4 “Emission standard for industrial environments”	
		KN61000-6-2 “산업 환경에 대한 내성”, KN61000-6-4 “산업 환경 누출 기준”에 적합함	

30.6 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

31 CM5640-2ETH(-XC)

- CM5640-2ETH
- CM5640-2ETH-XC



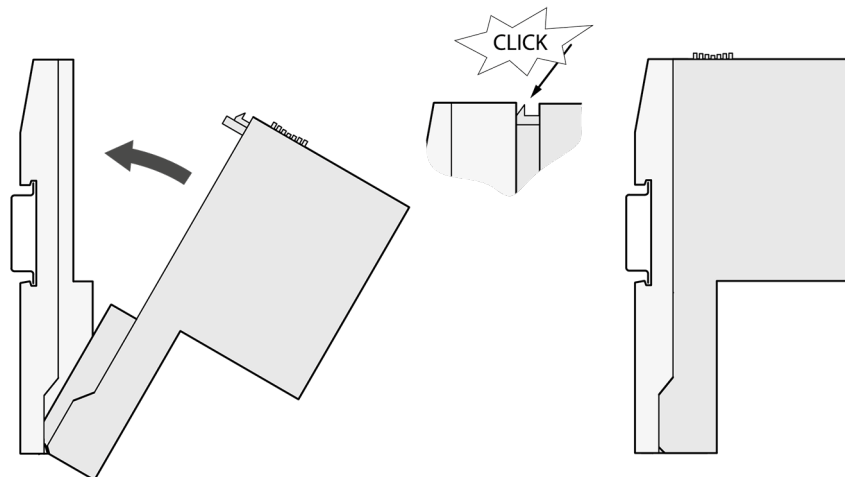
CAUTION!

Risk of injury and damaging the product!

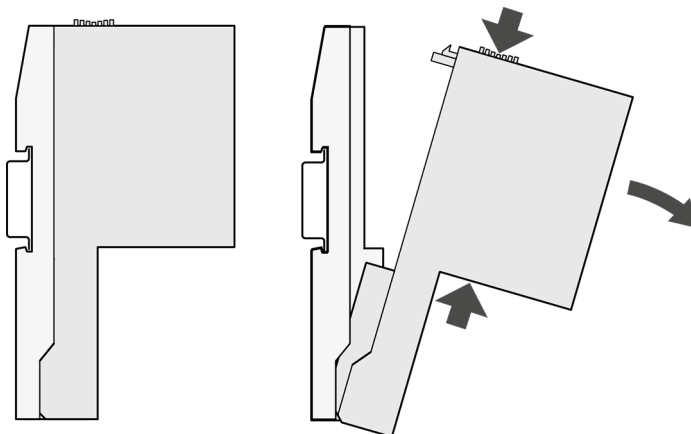
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

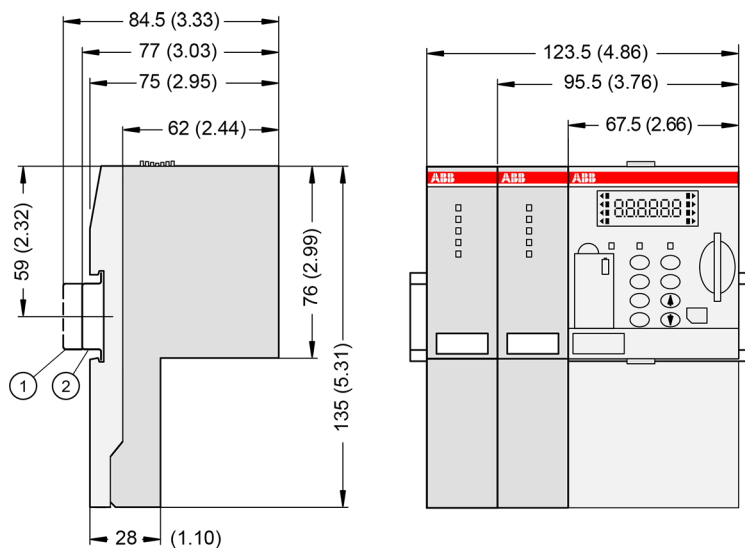
31.1 Assembly



31.2 Disassembly



31.3 Dimensions



- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

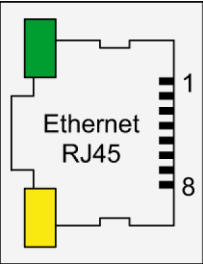
31.4 Connections



- 1 5 LEDs for state display
- 2 2 rotary switches for station identification
- 3 Label
- 4 2 communication interfaces Ethernet RJ45
-  Sign for XC version

31.4.1 Ethernet network interface

Pin assignment

Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

31.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

31.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

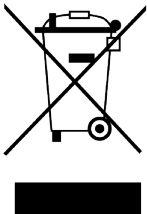
ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

31.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

32 CM574-x

- CM574-RS
- CM574-RCOM



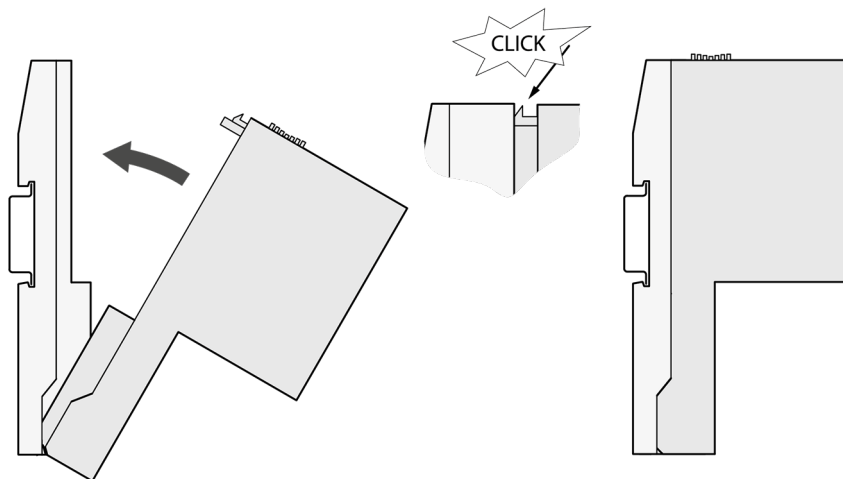
CAUTION!

Risk of injury and damaging the product!

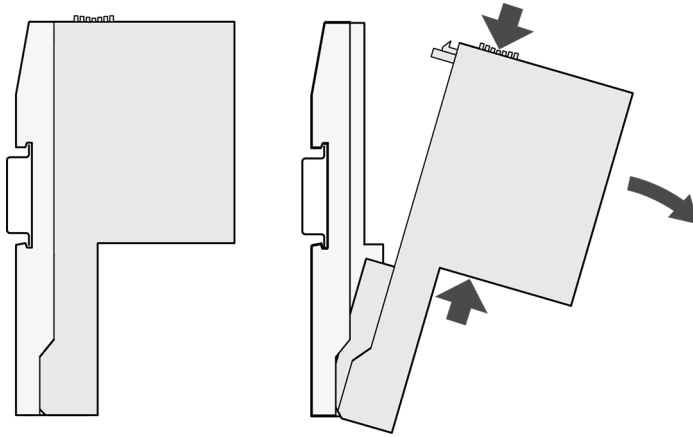
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

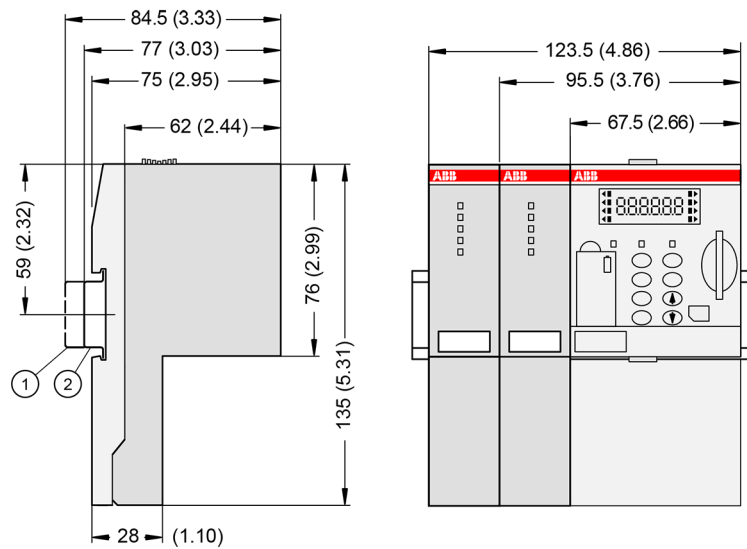
32.1 Assembly



32.2 Disassembly



32.3 Dimensions



The dimensions are in mm and in brackets in inch.

32.4 Connections



Fig. 45: CM574-RS

- 1 5 LEDs for state display
- 2 2 rotary switches for address setting
- 3 Label
- 4 2 serial communication interfaces



Fig. 46: CM574-RCOM

1

5 LEDs for state display

2

Label

3

2 interfaces: 1 RCOM protocol interface, 1 CONSOLE

32.4.1 Serial interface

Pin assignment

Pin		Signal	Interface	Description
	1	Term. P	RS-485	Terminator P
	2	RxD/TxD-P	RS-485	Receive/Transmit, positive
	3	RxD/TxD-N	RS-485	Receive/Transmit, negative
	4	Term. N	RS-485	Terminator N
	5	RTS	RS-232	Request to send (output)
	6	TxD	RS-232	Transmit data (output)
	7	SGND	Signal Ground	Signal Ground
	8	RxD	RS-232	Receive data (input)
	9	CTS	RS-232	Clear to send (input)

32.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

32.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

32.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

33 CM579-x(-XC)

- CM579-PNIO
- CM579-PNIO-XC
- CM579-ETHCAT



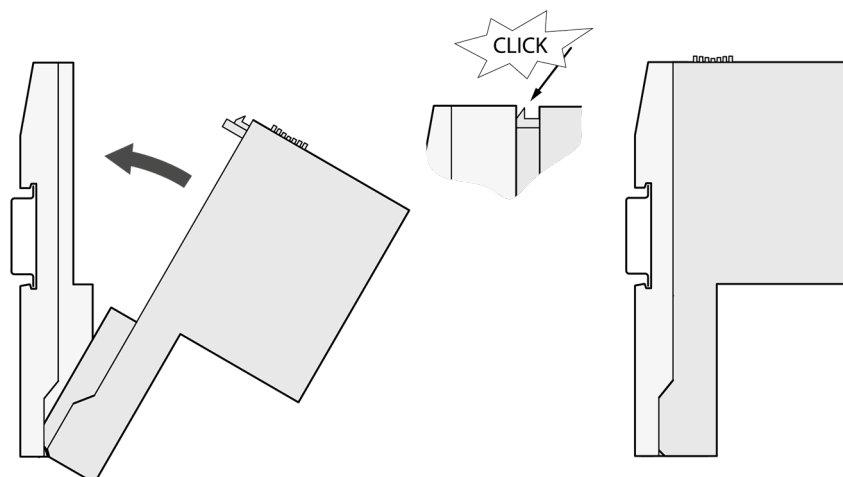
CAUTION!

Risk of injury and damaging the product!

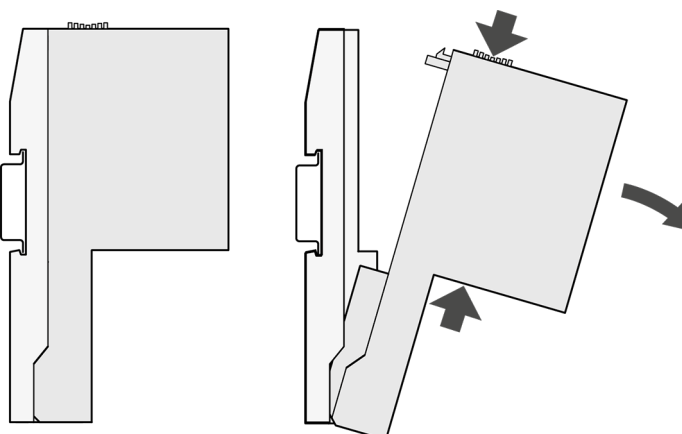
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

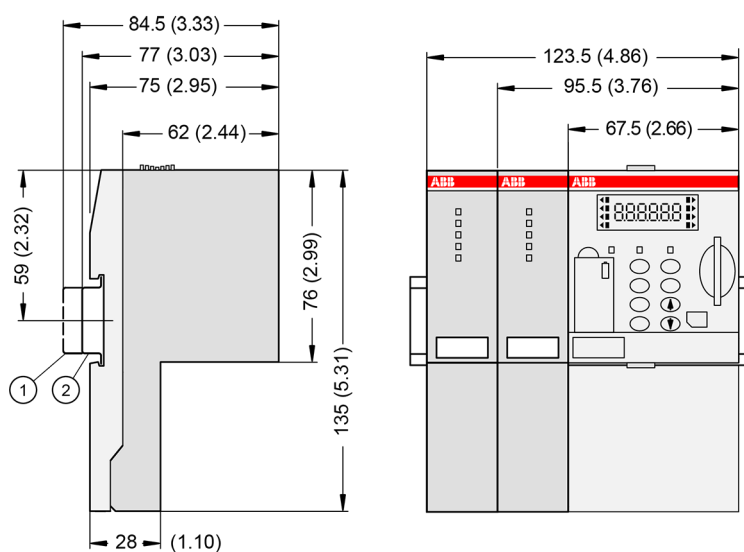
33.1 Assembly



33.2 Disassembly



33.3 Dimensions

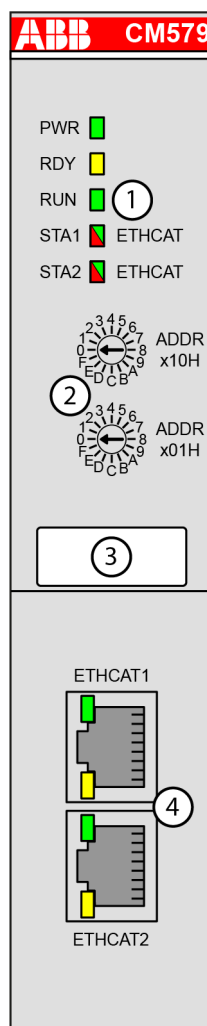


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

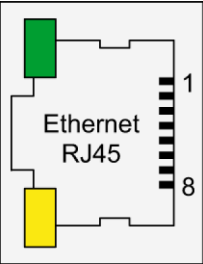
33.4 Connections



- 1 5 LEDs for state display
- 2 2 rotary switches for address setting (not used)
- 3 Label
- 4 2 communication interfaces RJ45 (ETHCAT1 and ETHCAT2)

33.4.1 Ethernet network interface

Pin assignment

Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

33.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

33.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

33.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

34 CM582-DP(-XC)

- CM582-DP
- CM582-DP-XC



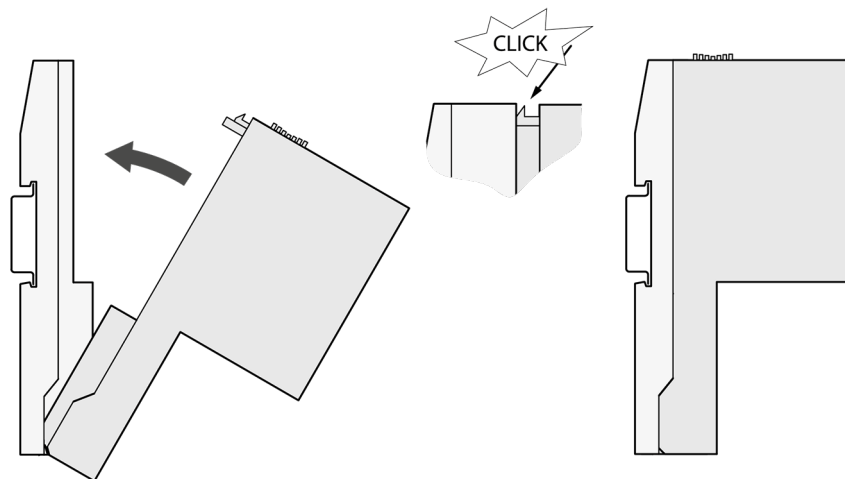
CAUTION!

Risk of injury and damaging the product!

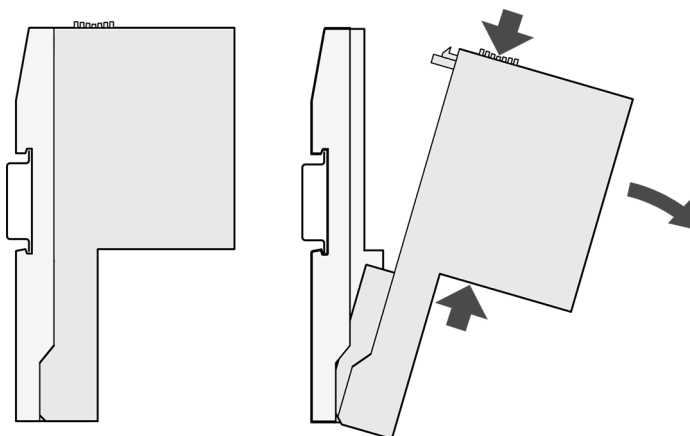
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

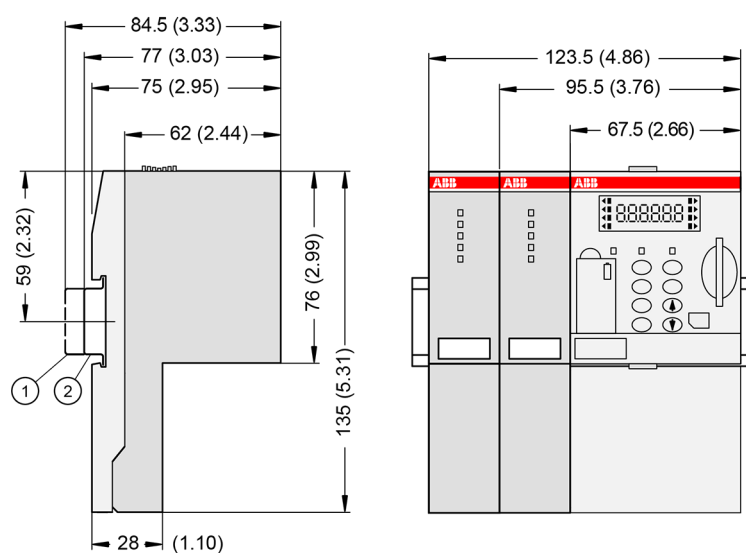
34.1 Assembly



34.2 Disassembly



34.3 Dimensions

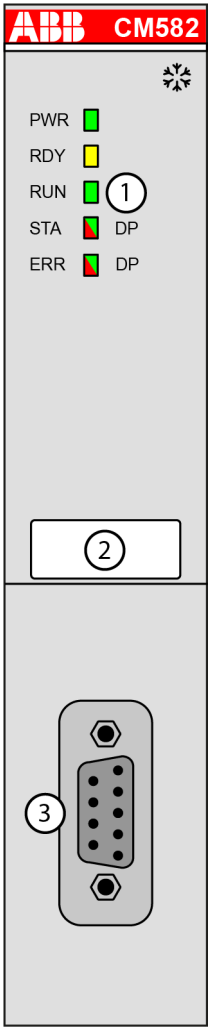


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

34.4 Connections



- 1 5 LEDs for state display
- 2 Label
- 3 Communication interface PROFIBUS DP D-sub, 9-pin, female
- Sign for XC version

34.4.1 PROFIBUS interface

Pin assignment

Pin		Signal	Description
	1	NC	Not connected
	2	NC	Not connected
	3	RxD/TxD-P	Receive/Transmit positive
	4	CNTR-P	Control signal for repeater, positive
	5	DGND	Reference potential for data exchange and +5 V _I
	6	VP	+5 V (power supply for the bus terminating resistors)
	7	NC	Not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	NC	Not connected



*In corrosive environment, please protect unused connectors using the TA535 accessory.
Not supplied with this device.*

34.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

34.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

34.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

35 CM588-CN(-XC)

- CM588-CN
- CM588-CN-XC



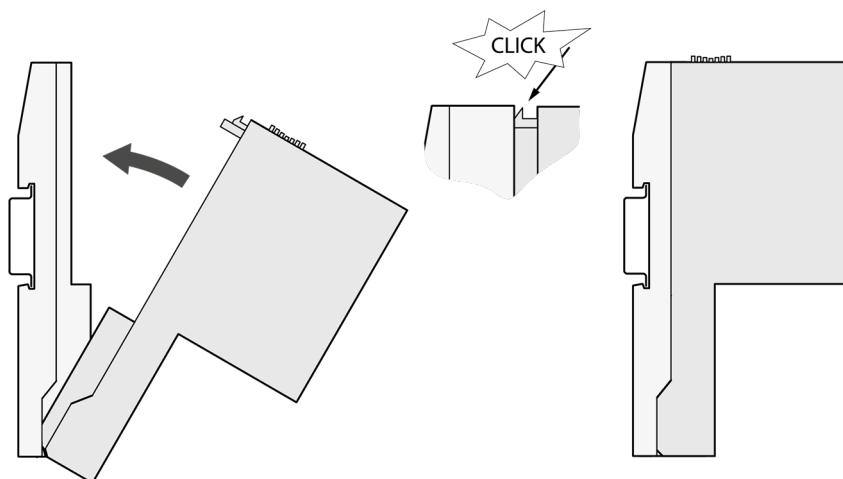
CAUTION!

Risk of injury and damaging the product!

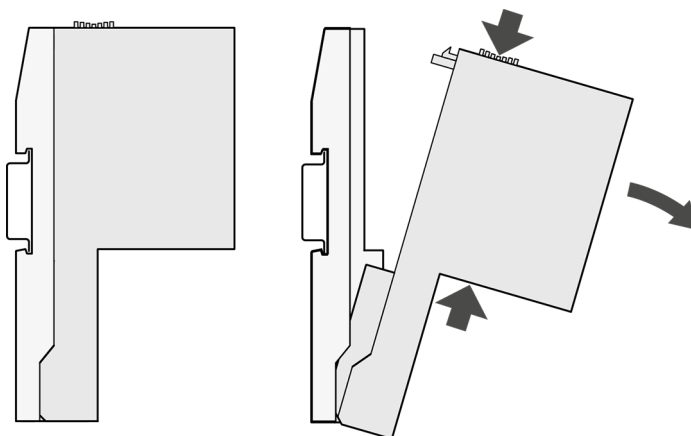
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

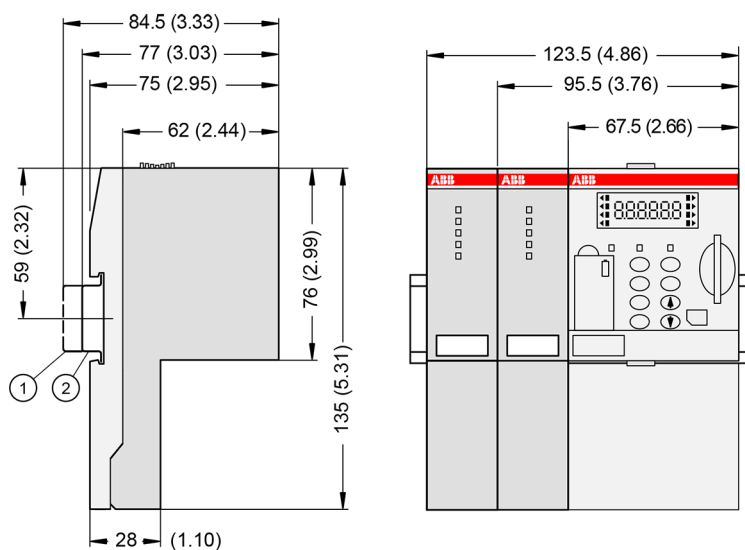
35.1 Assembly



35.2 Disassembly



35.3 Dimensions

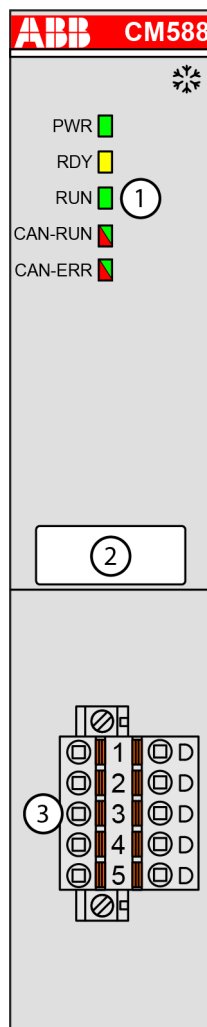


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

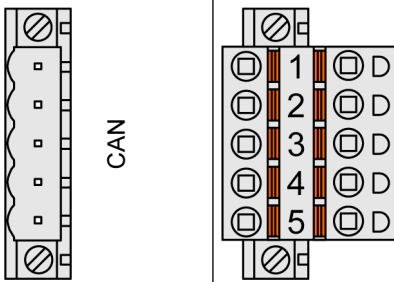
35.4 Connections



- 1 5 LEDs for state display
- 2 Label
- 3 Communication interface, 5-pin, Combicon, male, removable plug with spring terminals
- ❄ Sign for XC version

35.4.1 CAN interface

Pin assignment

Interface		PIN	Signal	Description
		1	CAN_GND	CAN reference potential
		2	CAN_L	Bus line, receive/transmit line, LOW
		3	CAN_SHLD	Shield of the bus line
		4	CAN_H	Bus line, receive/transmit line, HIGH
		5	NC	Not connected



NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

35.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

35.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

35.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

36 CM589-PNIO(-4)(-XC)

- CM589-PNIO
- CM589-PNIO-XC
- CM589-PNIO-4
- CM589-PNIO-4-XC



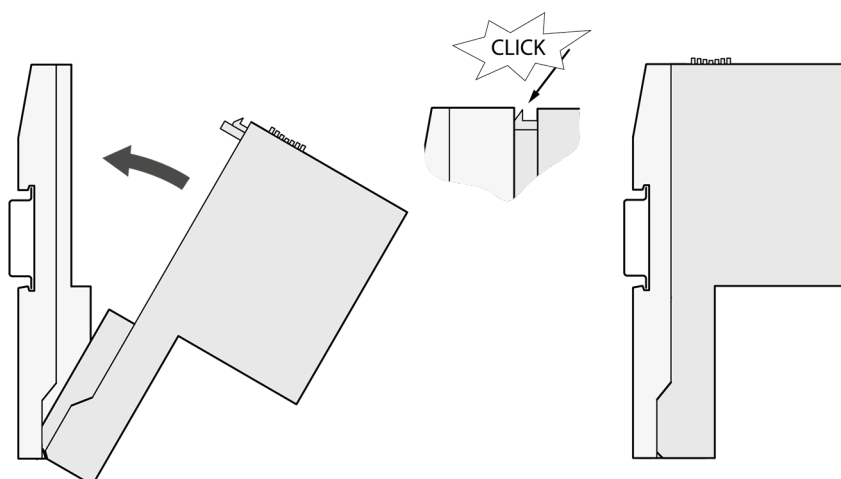
CAUTION!

Risk of injury and damaging the product!

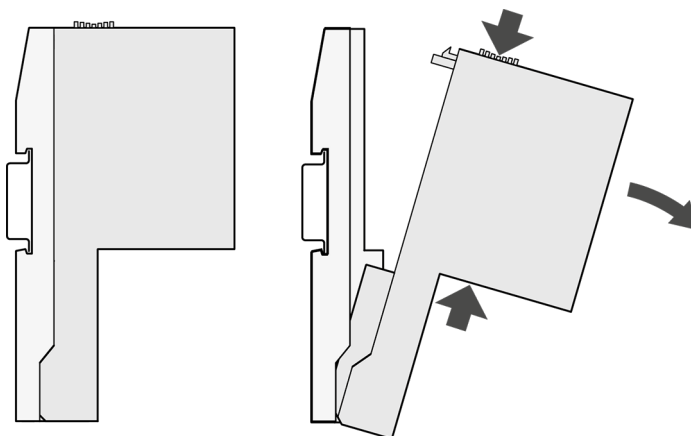
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

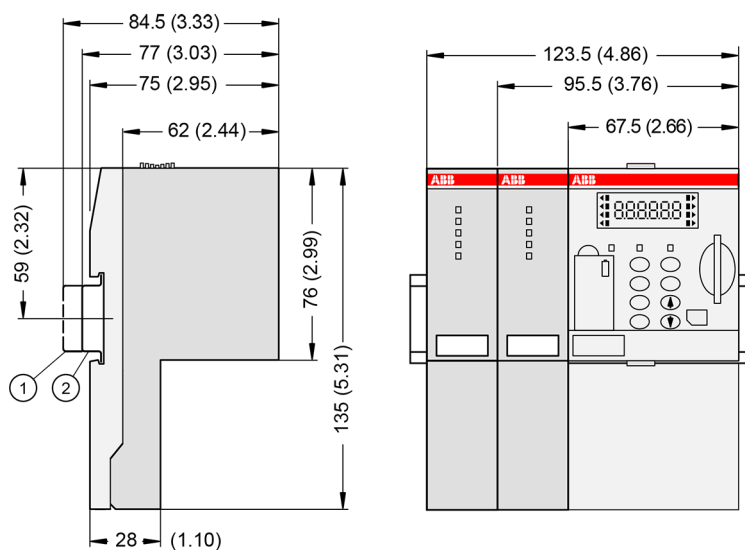
36.1 Assembly



36.2 Disassembly



36.3 Dimensions

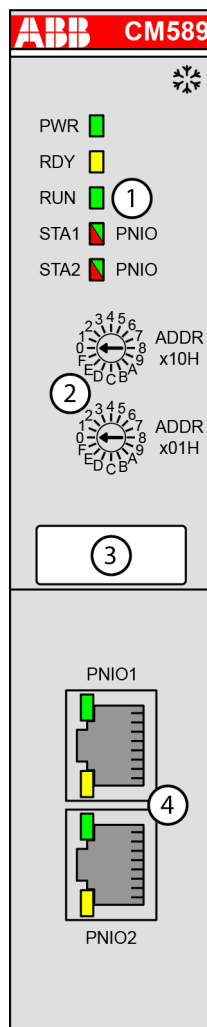


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

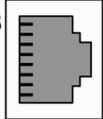
36.4 Connections



- 1 5 LEDs for state display
- 2 2 rotary switches for setting the I/O device identifier
- 3 Label
- 4 2 communication interfaces RJ45 (PNIO1 and PNIO2)
- Sign for XC version

36.4.1 Ethernet network interface

Pin assignment

 RJ45	Pin	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



*In corrosive environment, please protect unused connectors using the TA535 accessory.
Not supplied with this device.*

36.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

36.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

36.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

37 CM592-DP(-XC)

- CM592-DP
- CM592-DP-XC



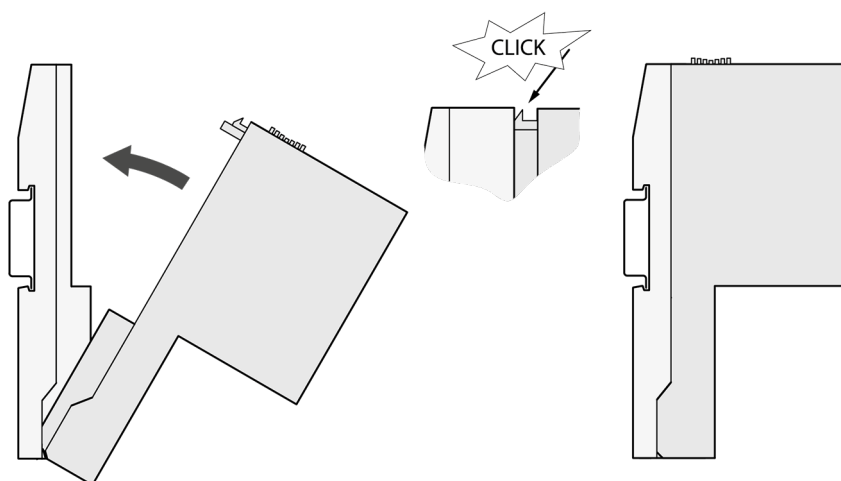
CAUTION!

Risk of injury and damaging the product!

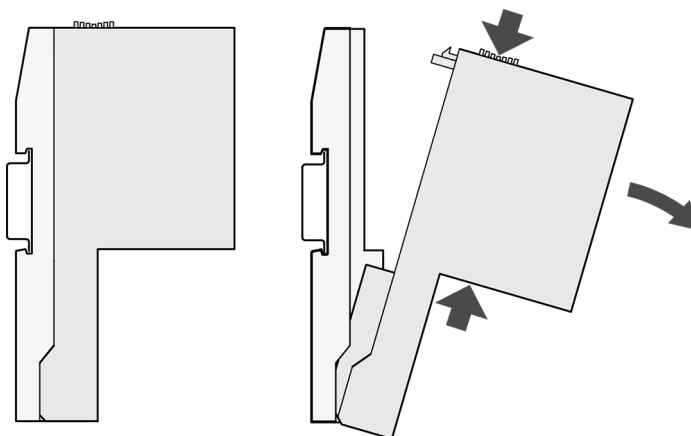
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

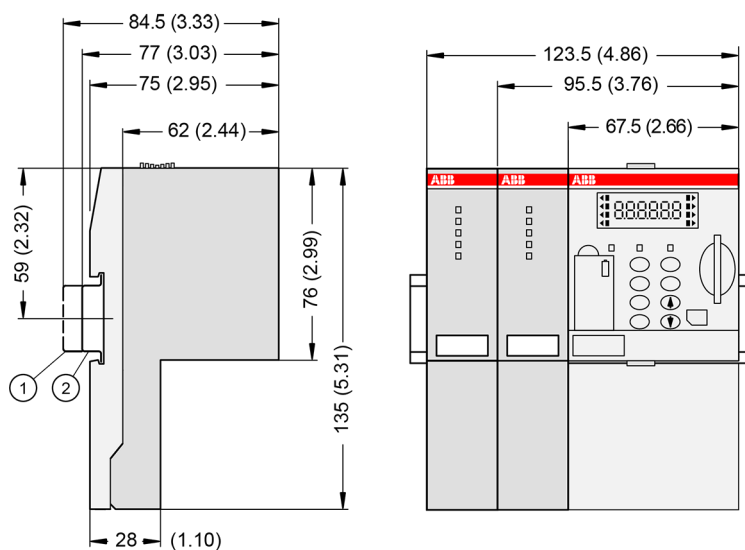
37.1 Assembly



37.2 Disassembly



37.3 Dimensions

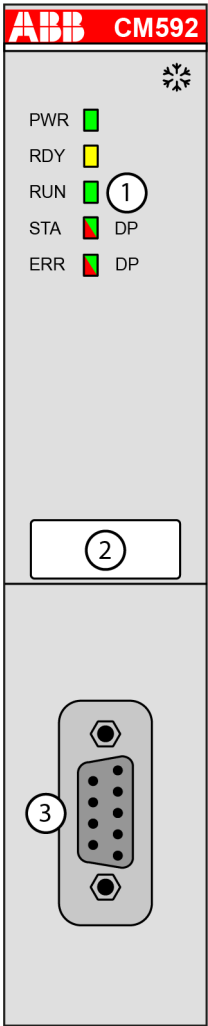


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

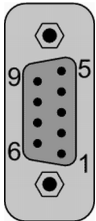
37.4 Connections



- 1 5 LEDs for state display
- 2 Label
- 3 Communication interface PROFIBUS DP D-sub, 9-pin, female
-  Sign for XC version

37.4.1 PROFIBUS interface

Pin assignment

Pin		Signal	Description
	1	NC	Not connected
	2	NC	Not connected
	3	RxD/TxD-P	Receive/Transmit positive
	4	CNTR-P	Control signal for repeater, positive
	5	DGND	Reference potential for data exchange and +5 V _I
	6	VP	+5 V (power supply for the bus terminating resistors)
	7	NC	Not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	NC	Not connected



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

37.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

37.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

37.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

38 CM597-ETH(-XC)

- CM597-ETH
- CM597-ETH-XC



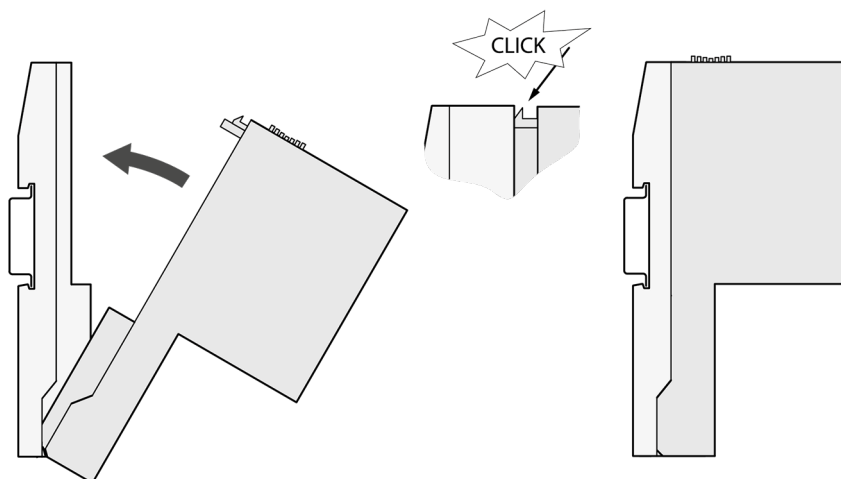
CAUTION!

Risk of injury and damaging the product!

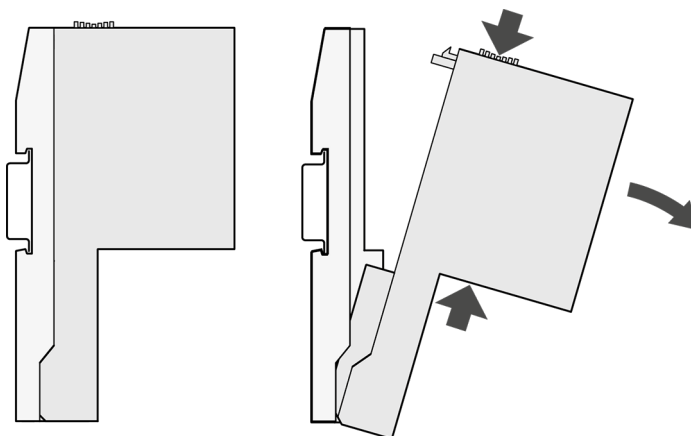
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

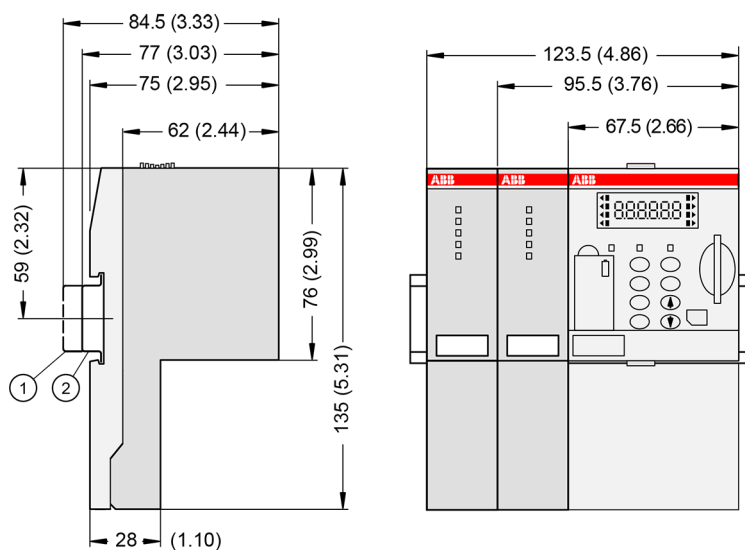
38.1 Assembly



38.2 Disassembly



38.3 Dimensions

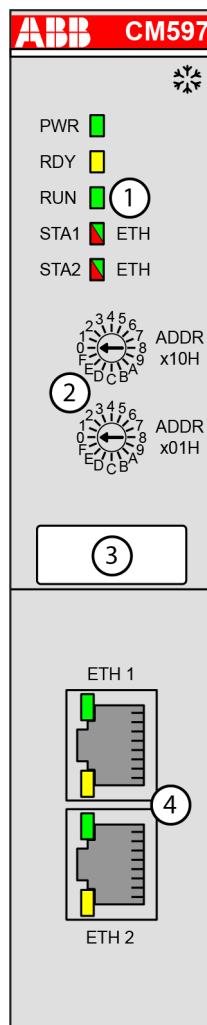


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

38.4 Connections



- 1 5 LEDs for state display
- 2 2 rotary switches for address setting
- 3 Label
- 4 2 communication interfaces Ethernet RJ45
- Sign for XC version

38.4.1 Ethernet network interface

Pin assignment

Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



*In corrosive environment, please protect unused connectors using the TA535 accessory.
Not supplied with this device.*

38.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

38.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

38.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

39 CM598-CN(-XC)

- CM598-CN
- CM598-CN-XC



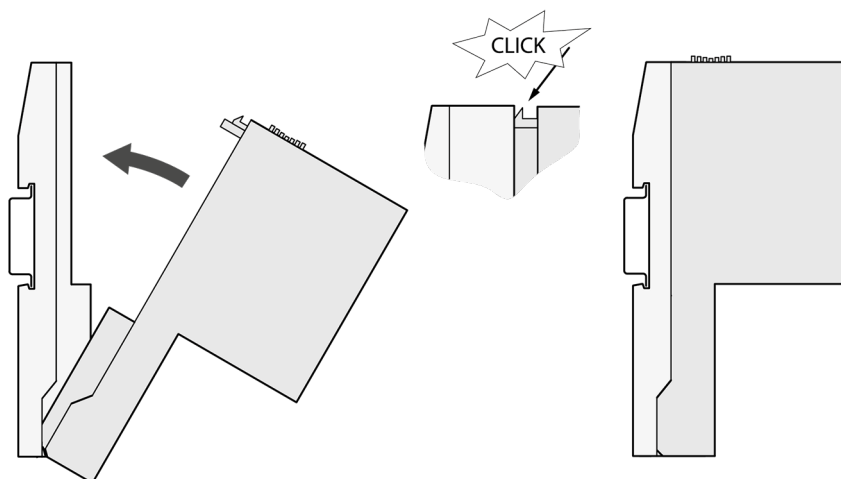
CAUTION!

Risk of injury and damaging the product!

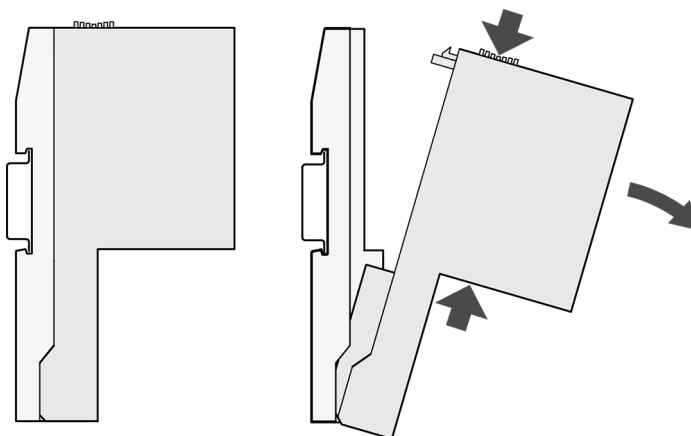
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

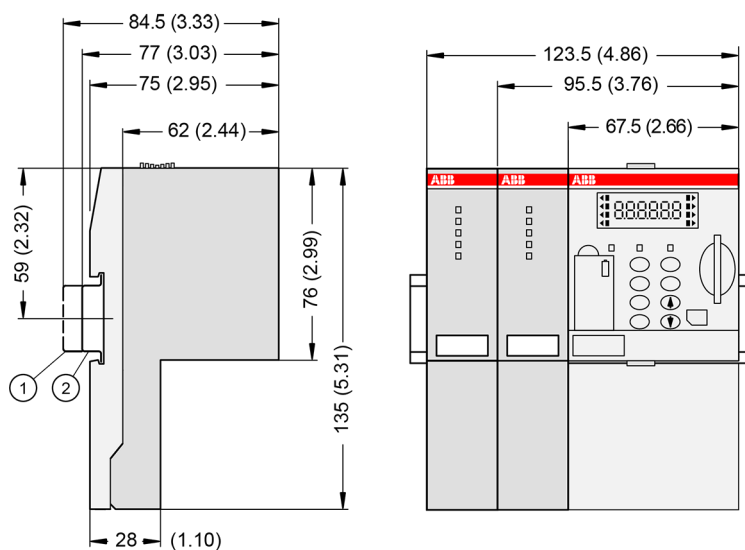
39.1 Assembly



39.2 Disassembly



39.3 Dimensions

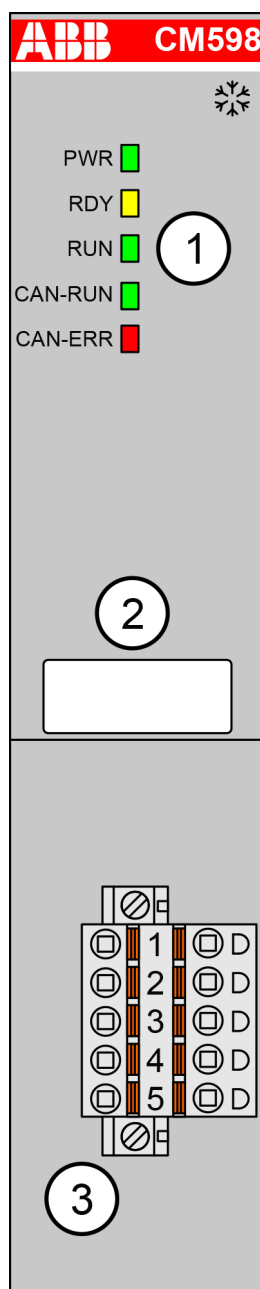


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

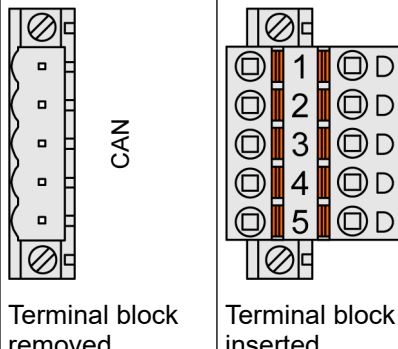
39.4 Connections



- 1 5 LEDs for state display
- 2 Label
- 3 Communication interface, 5-pin, Combicon, male, removable plug with spring terminals
- ❄ Sign for XC version

39.4.1 CAN interface

Pin assignment

Interface	PIN	Signal	Description
 Terminal block removed Terminal block inserted	1	CAN_GND	CAN reference potential
	2	CAN_L	Bus line, receive/transmit line, LOW
	3	CAN_SHLD	Shield of the bus line
	4	CAN_H	Bus line, receive/transmit line, HIGH
	5	NC	Not connected



NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

39.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

39.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

39.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

40 DA501(-XC)

- DA501
- DA501-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

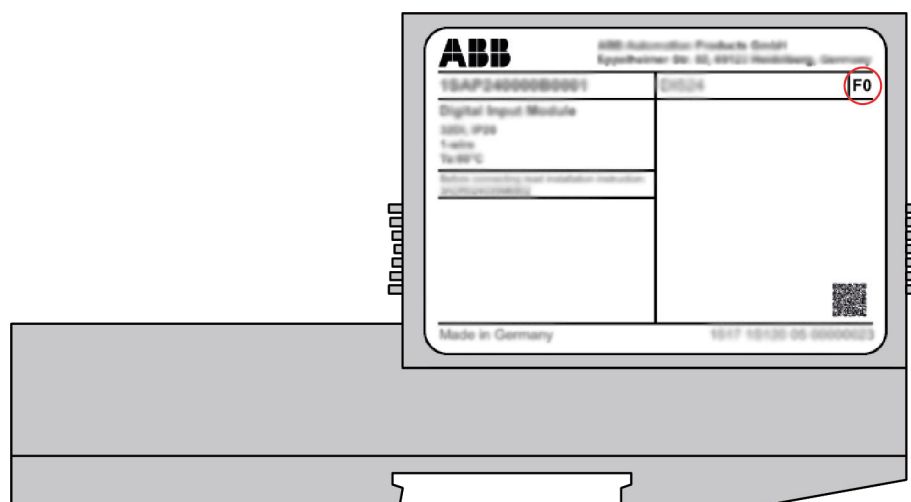
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

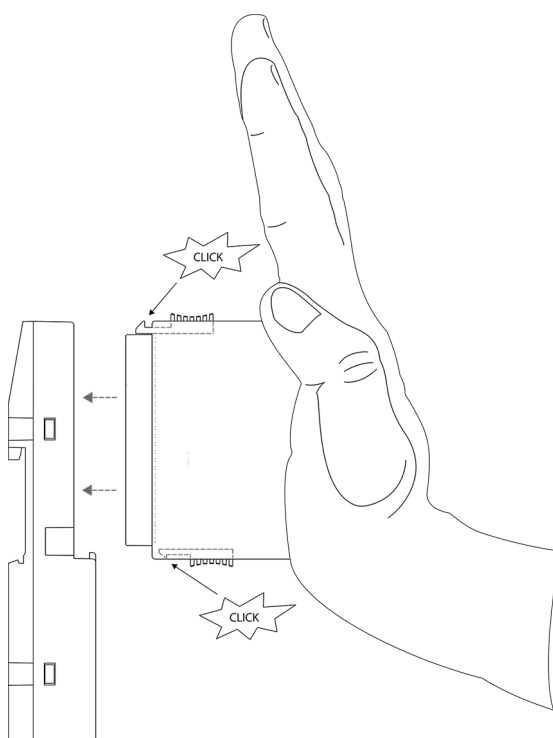
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

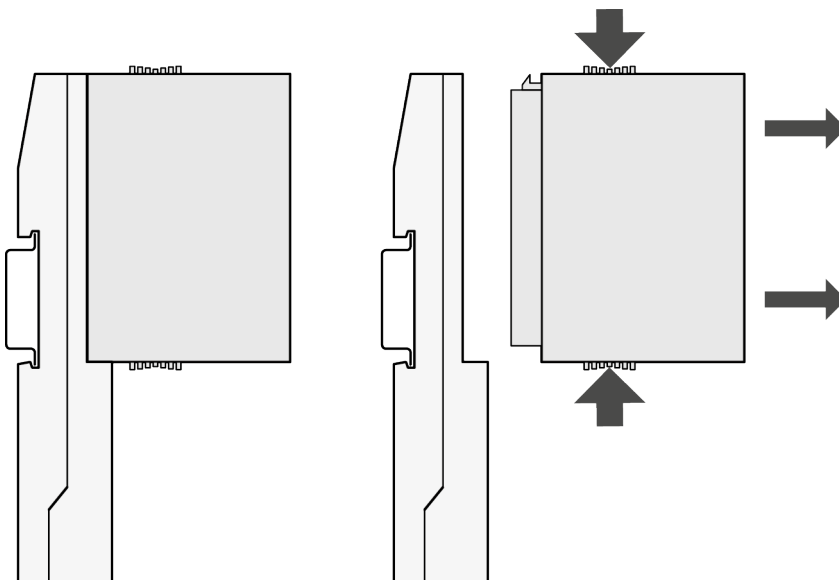
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

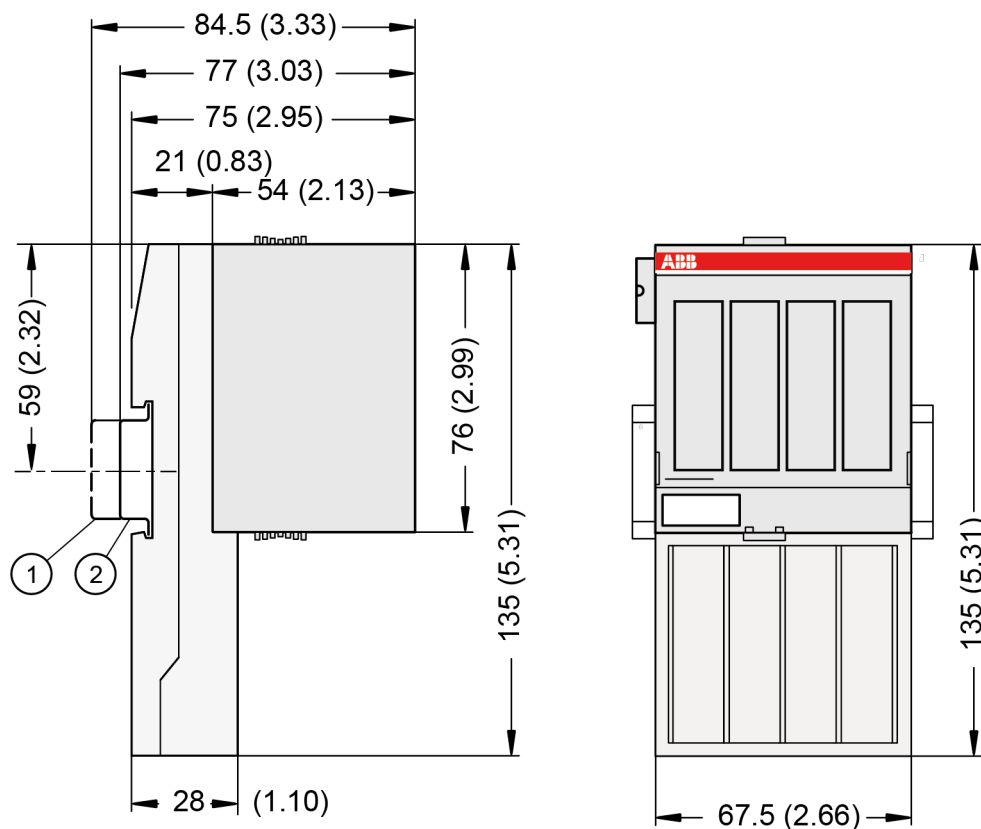
40.1 Assembly



40.2 Disassembly



40.3 Dimensions

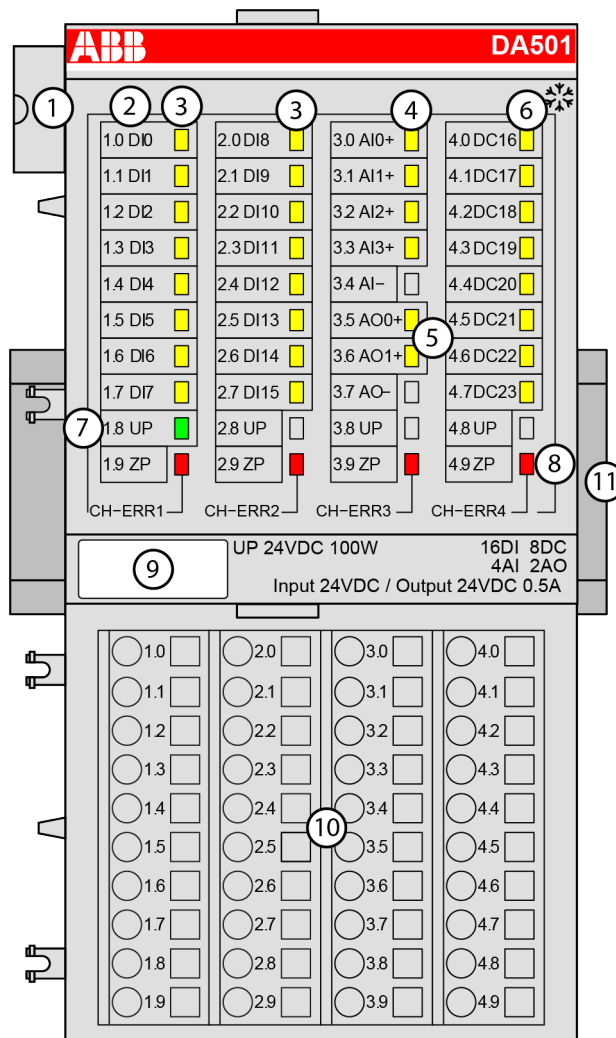


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

40.4 Connections

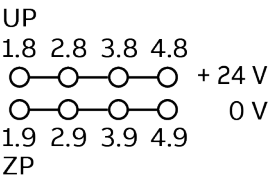


- 1 I/O bus
 - 2 Allocation between terminal number and signal name
 - 3 16 yellow LEDs to display the signal states of the digital inputs DI0 ... DI15
 - 4 4 yellow LEDs to display the signal states of the analog inputs AI0 ... AI3
 - 5 2 yellow LEDs to display the signal states of the analog outputs AO0 ... AO1
 - 6 8 yellow LEDs to display the signal state of the configurable digital inputs/outputs DC16 ... DC23
 - 7 1 green LED to display the state of the process supply voltage UP
 - 8 4 red LEDs to display errors
 - 9 Label
 - 10 Terminal unit
 - 11 DIN rail
- ✱ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

40.4.1 Process supply voltage

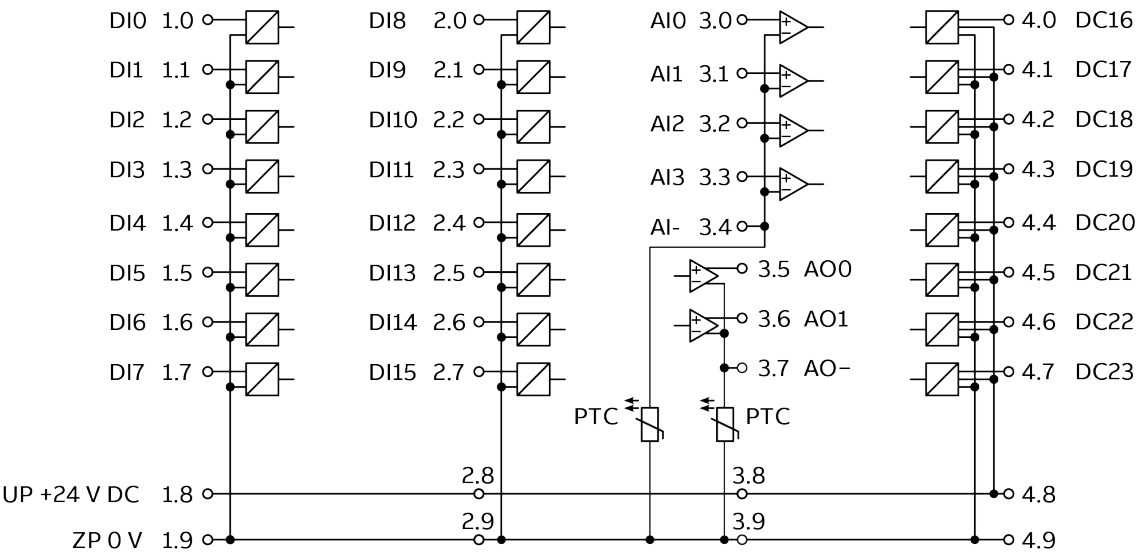




CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

40.4.2 Inputs/Outputs



Example digital input

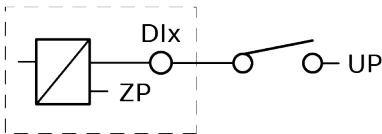


Fig. 47: Example of connection input DIx

Example analog input

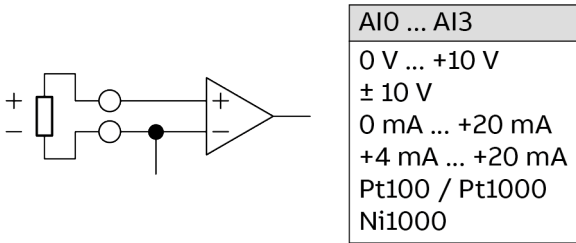


Fig. 48: Example of connection input AIx

Example analog
output

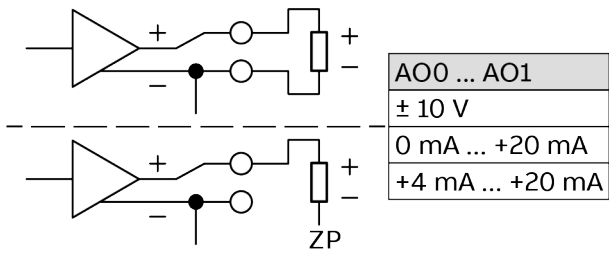
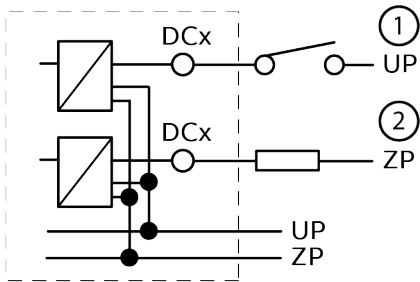


Fig. 49: Example of connection output AOx

Example input
or output



- 1 Example of connection as an input
- 2 Example of connection as an output

40.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

40.6 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

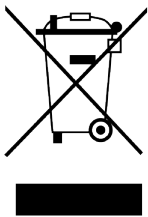
en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

40.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

41 DA502(-XC)

- DA502
- DA502-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

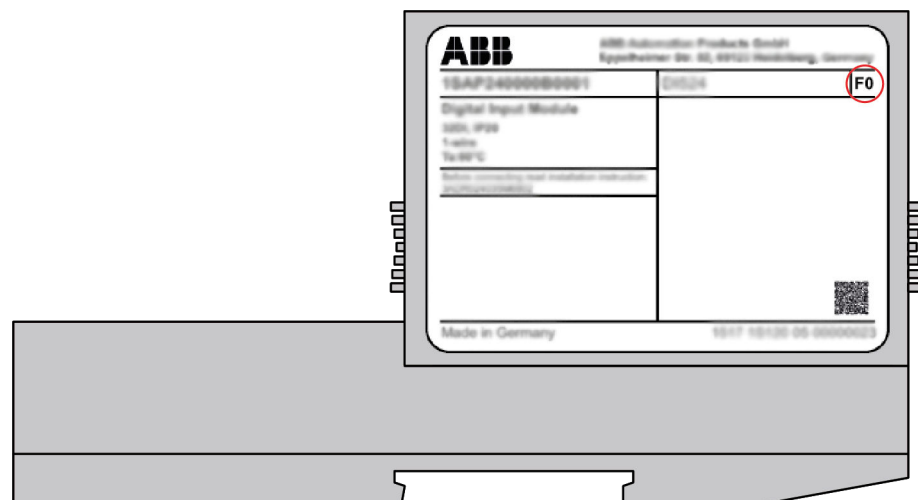
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

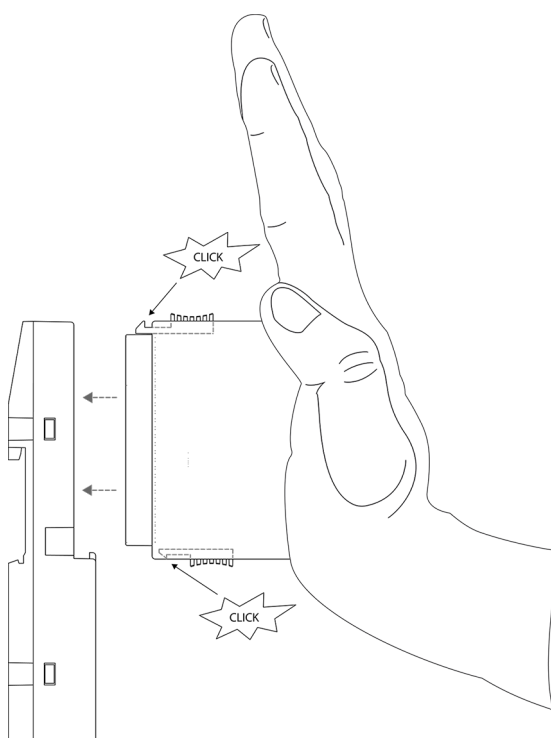
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

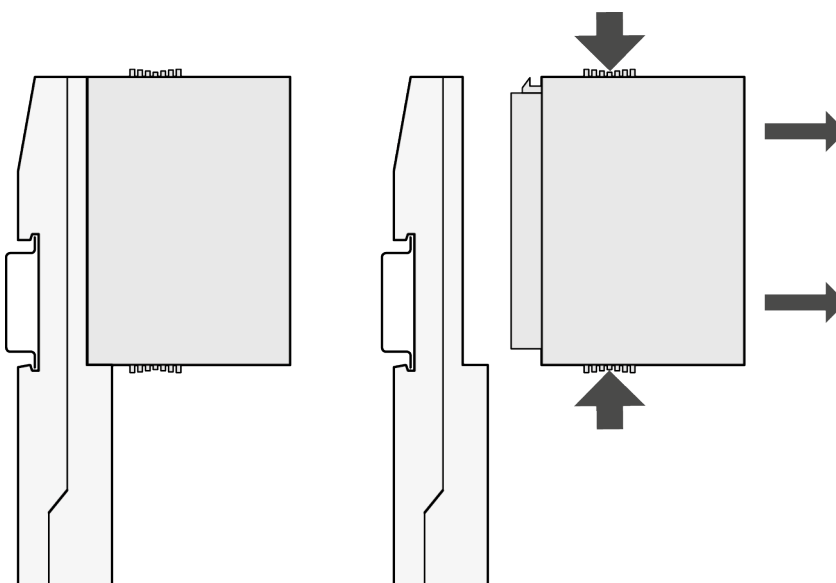
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

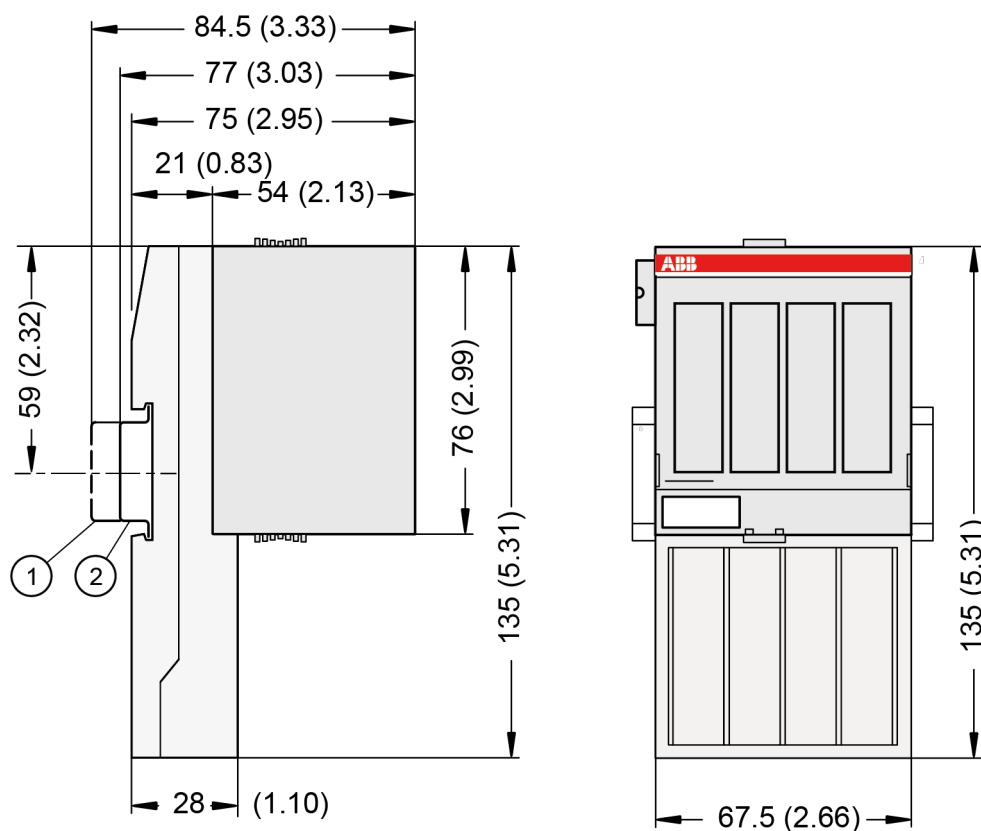
41.1 Assembly



41.2 Disassembly



41.3 Dimensions

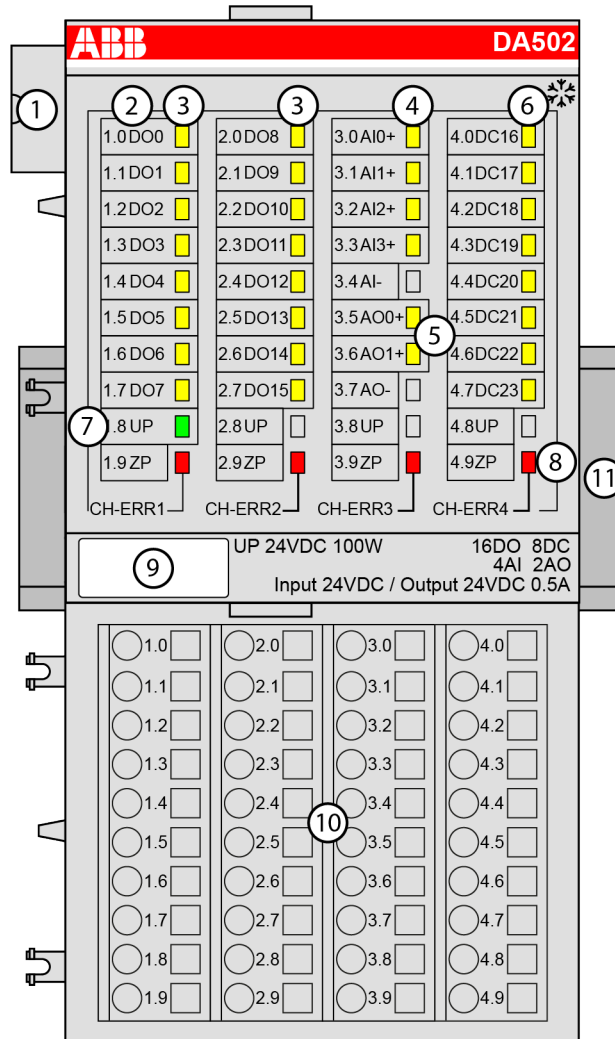


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

41.4 Connections

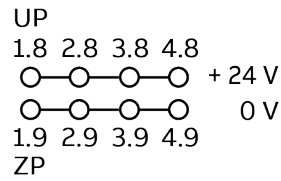


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 16 yellow LEDs to display the signal states of the digital outputs DO0 ... DO15
- 4 4 yellow LEDs to display the signal states of the analog inputs AI0 ... AI3
- 5 2 yellow LEDs to display the signal states of the analog outputs AO0 ... AO1
- 6 8 yellow LEDs to display the signal states of the configurable digital inputs/outputs DC16 ... DC23
- 7 1 green LED to display the state of the process supply voltage UP
- 8 4 red LEDs to display errors
- 9 Label
- 10 Terminal unit
- 11 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

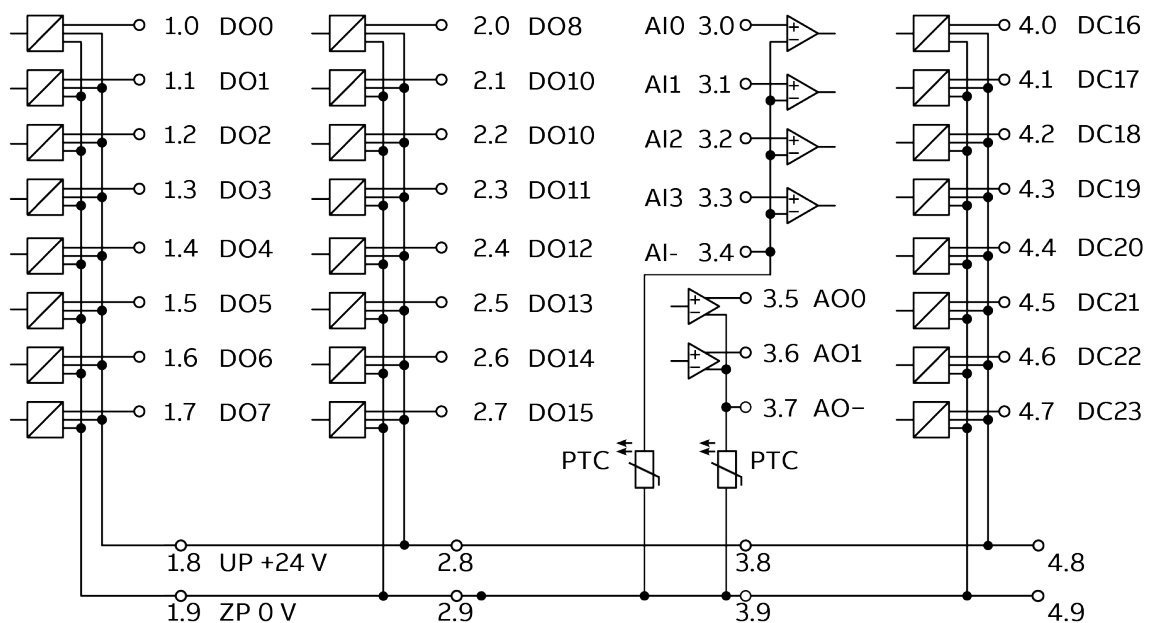
41.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

41.4.2 Inputs/Outputs



Example digital output

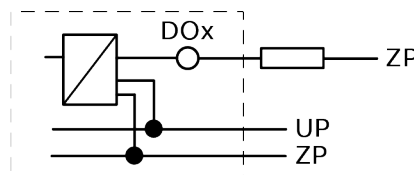
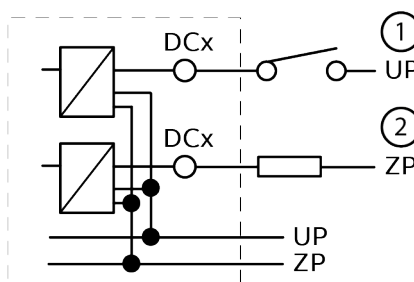


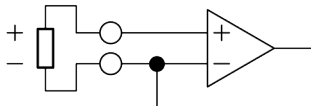
Fig. 50: Example of connection output DOx

Example input or output



- 1 Example of connection as an input
- 2 Example of connection as an output

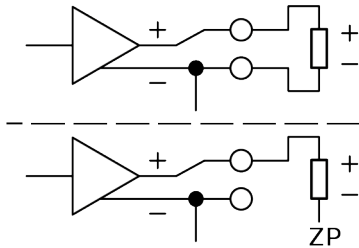
Example analog
input



AI0 ... AI3
0 V ... +10 V
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA
Pt100 / Pt1000
Ni1000

Fig. 51: Example of connection input AIx

Example analog
output



AO0 ... AO1
± 10 V
0 mA ... +20 mA
+4 mA ... +20 mA

Fig. 52: Example of connection output AOx

41.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

41.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

41.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

42 DC501-CS31-AD

- DC501-CS31-AD



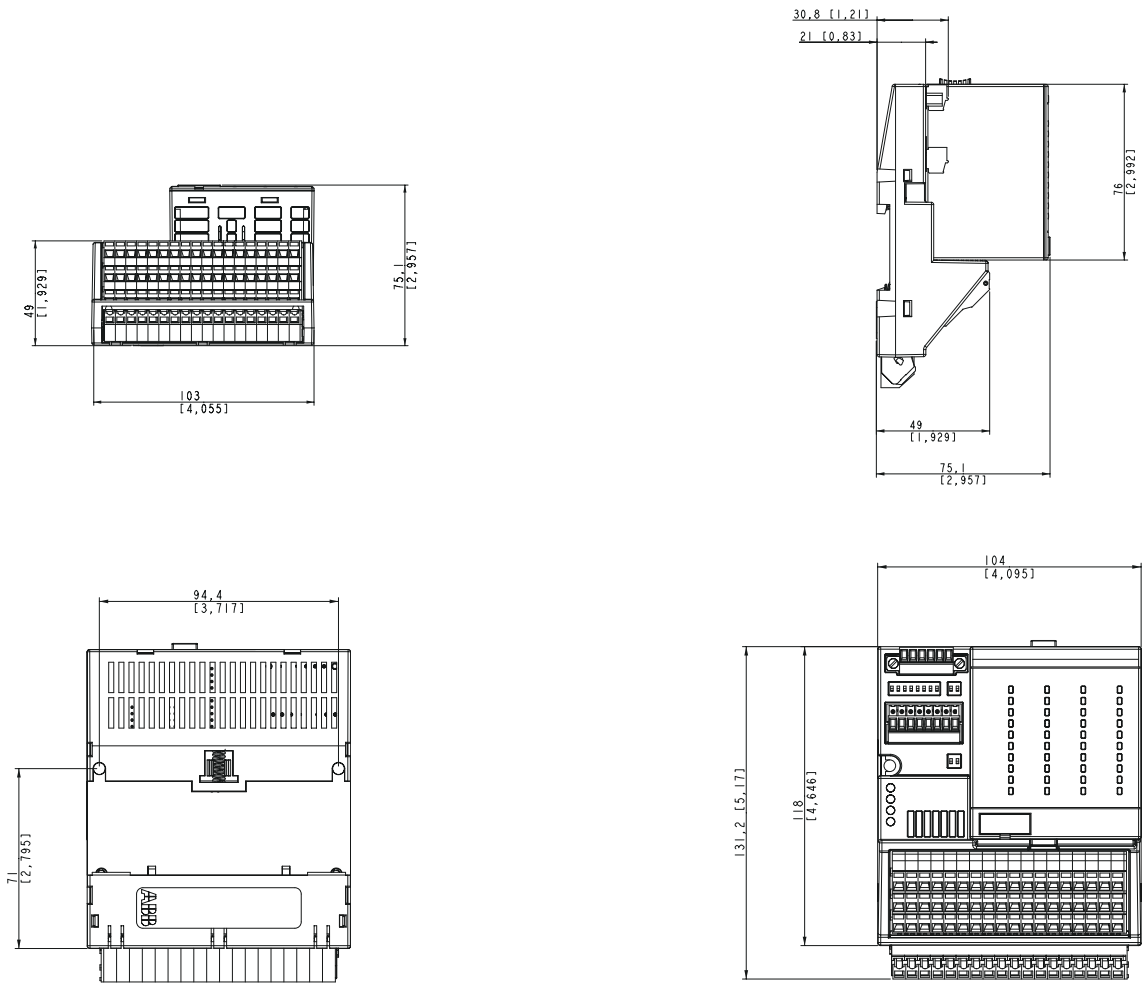
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

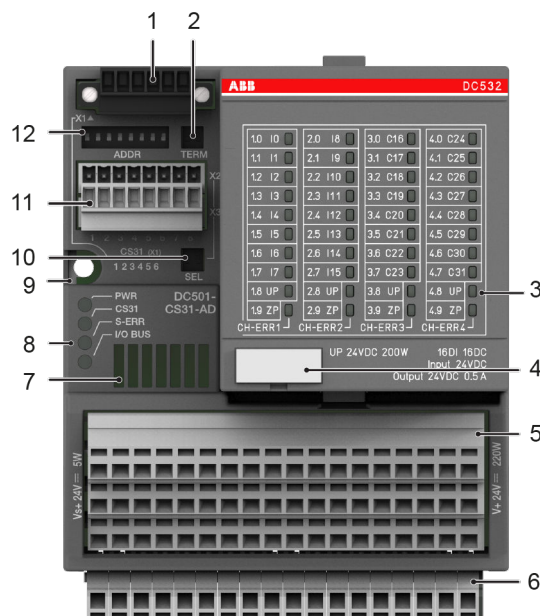
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

42.1 Dimensions



The dimensions are in mm and in brackets in inch.

42.2 Connections



- 1 Connection for CS31 bus (X1)
- 2 Bus termination (CS31 bus)
- 3 Status LEDs for DC532
- 4 TA525: Label
- 5 Terminals signal level (X4). 16 digital inputs, 8 digital outputs, 8 DC voltage supply (incl. DC532)
- 6 Terminals signal level (plug-in power bus)
- 7 Ventilation
- 8 4 Status LEDs
- 9 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 10 Function selector switch for I/O extension
- 11 4 digital inputs (X2): 24 V DC. 3 analog inputs, 1 analog output (X3): 0 V ... +10 V.
- 12 DIP switch for ADDR (X1)



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

42.2.1 Bus termination



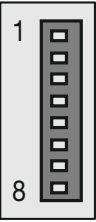
ON OFF

S1 + S2: Term. No term.

Switch 1 and 2 are set to ON: termination of CS31 bus.

Switch 1 and 2 are set to OFF: CS31 bus is not terminated.

42.2.2 ADDR

		ON	OFF
	S1: C	16 I/ 16 O	24 I/ 16 O
	S2: 64	ADDR: 32	0
	S3: 32	ADDR: 16	0
	S4: 16	ADDR: 8	0
	S5: 8	ADDR: 4	0
	S6: 4	ADDR: 2	0
	S7: 2	ADDR: 1	0
	S8: 1	NC	NC

42.2.3 SEL



	ON	OFF
S1:	DI501	0
S2:	AX501	0

Switch 1 and 2 are set to ON: No extensions are allowed, module DC501R0100 is used.

42.2.4 Plug connection

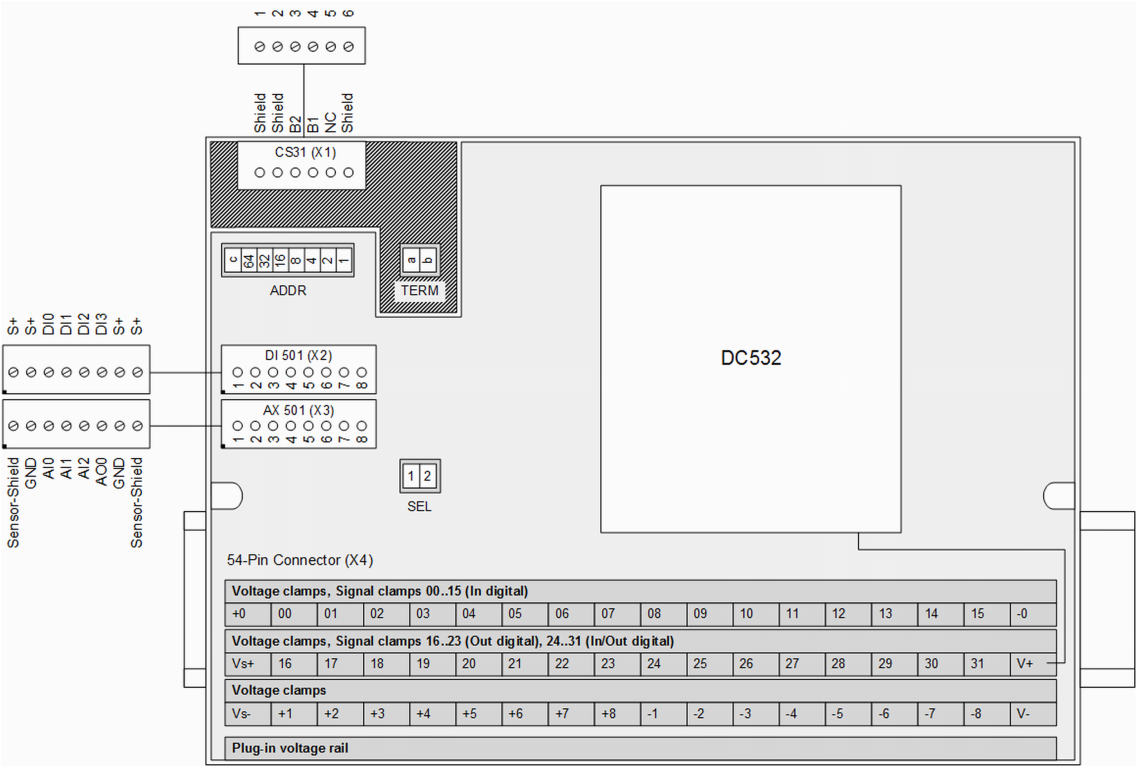


Table 1: Pin assignment CS31 bus (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / Shield	1	Shield (internally connected to pins 2 and 6. No internal connection to functional earth)
X1 / Shield	2	Shield (internally connected to pins 1 and 6. No internal connection to functional earth)
X1 / B2	3	BUS 2
X1 / B1	4	BUS 1
X1 / NC	5	Not connected
X1 / Shield	6	Shield (internally connected to pins 1 and 2. No internal connection to functional earth)

Table 2: Pin assignment DI501 (X2)

Connector / Terminal	Pin	Assignment / Signal
X2 / S+	1	Auxiliary voltage (max. 32 mA total load of S+ permitted) for DI0 - DI3. Voltage derived from input voltage Vs+ (X4)
X2 / S+	2	Auxiliary voltage (max. 32 mA total load of S+ permitted) for DI0 - DI3. Voltage derived from input voltage Vs+ (X4)
X2 / DI0	3	Digital extension input 0
X2 / DI1	4	Digital extension input 1
X2 / DI2	5	Digital extension input 2
X2 / DI3	6	Digital extension input 3
X2 / S+	7	Auxiliary voltage (max. 32 mA total load of S+ permitted) for DI0 - DI3. Voltage derived from input voltage Vs+ (X4)
X2 / S+	8	Auxiliary voltage (max. 32 mA total load of S+ permitted) for DI0 - DI3. Voltage derived from input voltage Vs+ (X4)

Table 3: Pin assignment AX501 (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / Sensor shield	1	Sensor shield
X3 / GND	2	GND
X3 / AI0	3	Analog extension input 0
X3 / AI1	4	Analog extension input 1
X3 / AI2	5	Analog extension input 2
X3 / AO0	6	Analog extension output 0
X3 / GND	7	GND
X3 / Sensor shield	8	Sensor shield

The connections X3 / 2 and X3 / 7 (GND) are directly connected to X4 / Vs-, X4 / V-. There is no AGND potential in accordance with module AX501. In module AX501, AGND is connected to GND via a resistor.

Both sensor shield connections of X3 are interconnected and jointly connected to FE via 10 MΩ || 4 nF.

Table 4: Pin assignment 54 pin connector (X4)

Connector / Block	Pin	Assignment / Signal
X4 / 1	+0	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 1	00	DC532 / I0
X4 / 1	01	DC532 / I1
X4 / 1	02	DC532 / I2
X4 / 1	03	DC532 / I3
X4 / 1	04	DC532 / I4
X4 / 1	05	DC532 / I5
X4 / 1	06	DC532 / I6
X4 / 1	07	DC532 / I7
X4 / 1	08	DC532 / I8
X4 / 1	09	DC532 / I9
X4 / 1	10	DC532 / I10
X4 / 1	11	DC532 / I11
X4 / 1	12	DC532 / I12
X4 / 1	13	DC532 / I13
X4 / 1	14	DC532 / I14
X4 / 1	15	DC532 / I15
X4 / 1	-0	GND
X4 / 2	Vs+	Voltage supply for electronics system (also for functionality of AX501 and DI501)
X4 / 2	16	DC532 / C16
X4 / 2	17	DC532 / C17
X4 / 2	18	DC532 / C18
X4 / 2	19	DC532 / C19
X4 / 2	20	DC532 / C20
X4 / 2	21	DC532 / C21
X4 / 2	22	DC532 / C22
X4 / 2	23	DC532 / C23
X4 / 2	24	DC532 / C24
X4 / 2	25	DC532 / C25
X4 / 2	26	DC532 / C26
X4 / 2	27	DC532 / C27
X4 / 2	28	DC532 / C28
X4 / 2	29	DC532 / C29
X4 / 2	30	DC532 / C30
X4 / 2	31	DC532 / C31
X4 / 2	V+	Voltage supply of inputs/outputs (module DC532 and auxiliary voltage)
X4 / 3	Vs-	GND

Connector / Block	Pin	Assignment / Signal
X4 / 3	+1	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+2	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+3	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+4	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+5	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+6	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+7	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	+8	Auxiliary voltage (max. 200 mA total load of +0/ +1/ .../ +7/ +8 permitted). Voltage derived from input voltage V+ (X4)
X4 / 3	-1	GND
X4 / 3	-2	GND
X4 / 3	-3	GND
X4 / 3	-4	GND
X4 / 3	-5	GND
X4 / 3	-6	GND
X4 / 3	-7	GND
X4 / 3	-8	GND
X4 / 3	V-	GND

Connection data of spring terminals (X4):

- Conductor cross section, single wire: 0.2 mm² to 2.5 mm²
- Conductor cross section, flexible: 0.2 mm² to 1.5 mm² (existing device: 2.5 mm² flexible)
- Conductor cross section, flexible with wire-end ferrule: 0.25 mm² to 1.5 mm²

42.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

42.4 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

42.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

43 DC522(-XC)

- DC522
- DC522-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

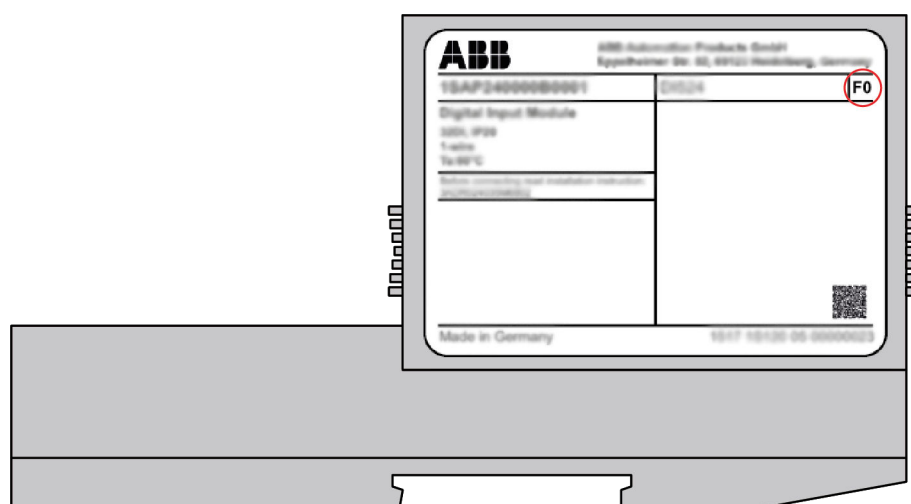
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- Communication interface modules CI5xx as of index F0.
- Processor modules PM56xx-2ETH with firmware version as of V3.2.0.



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

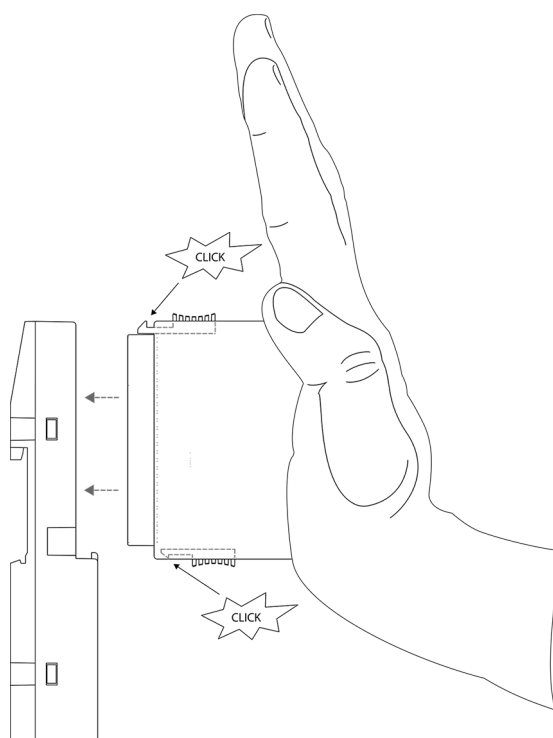
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

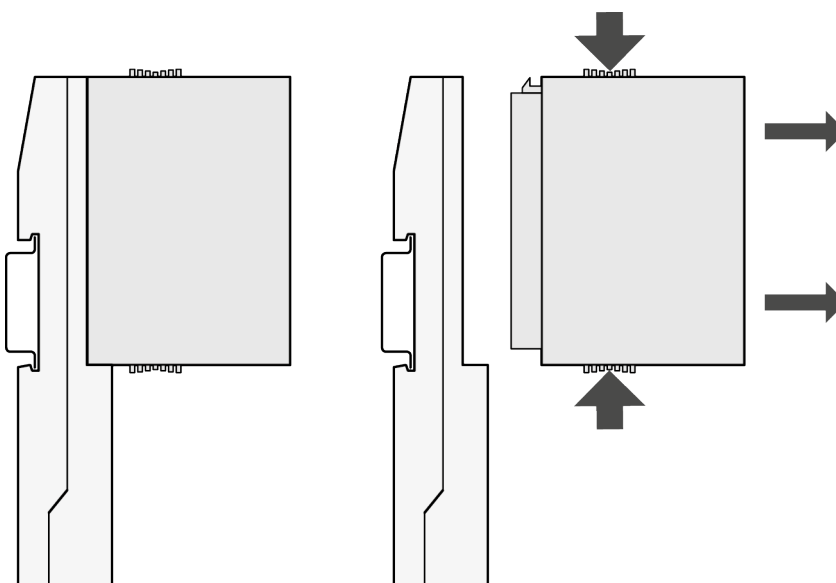
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

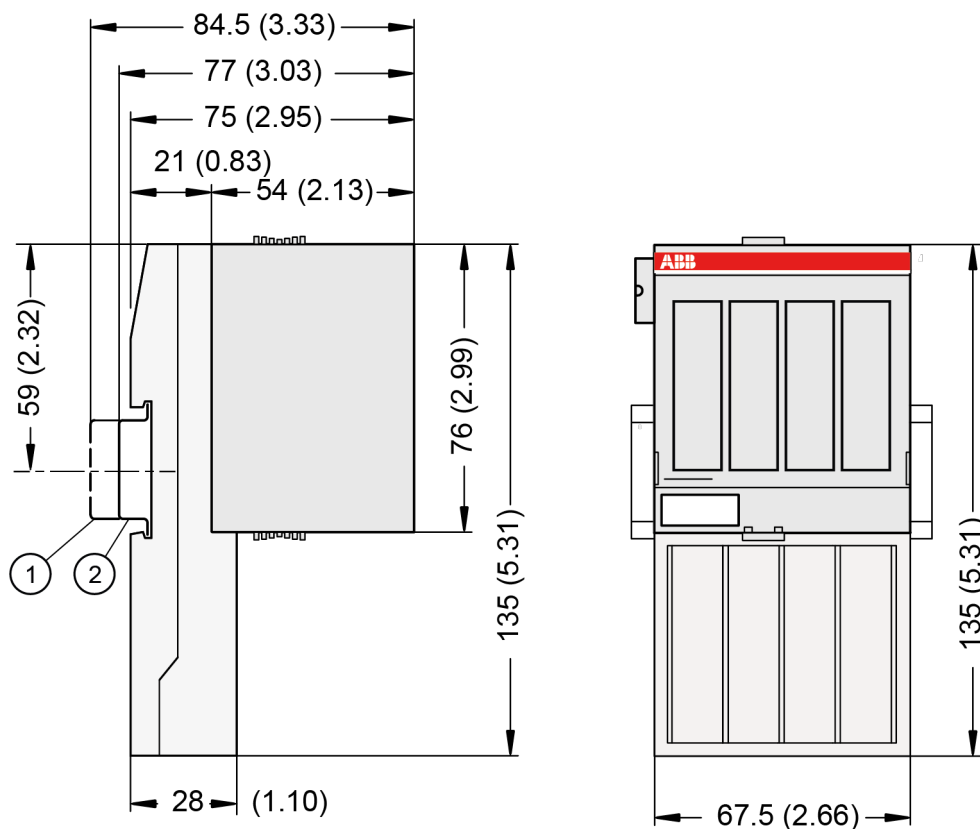
43.1 Assembly



43.2 Disassembly



43.3 Dimensions

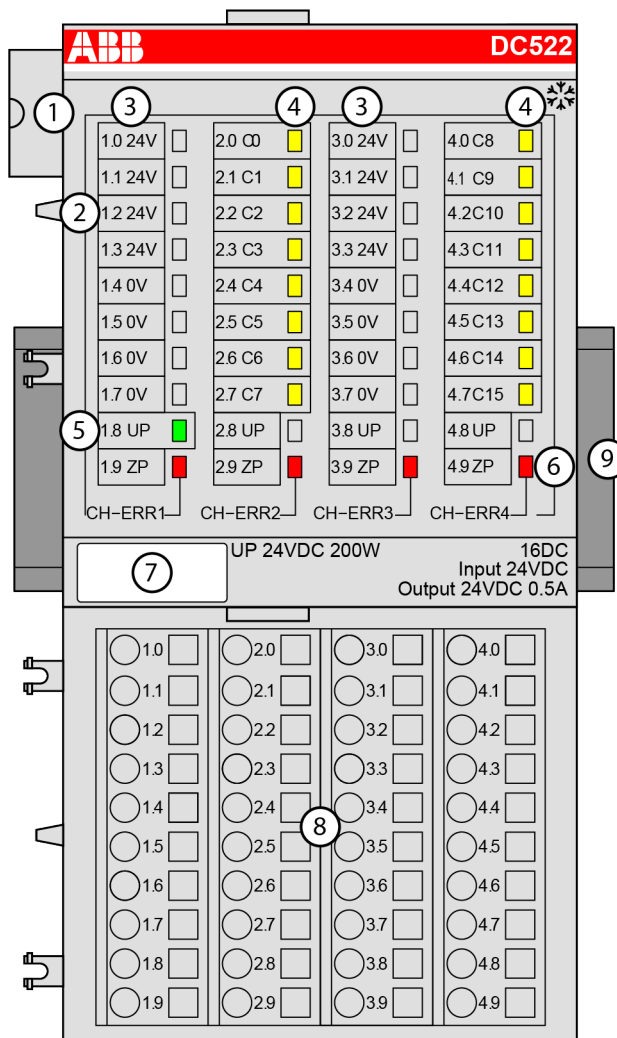


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

43.4 Connections

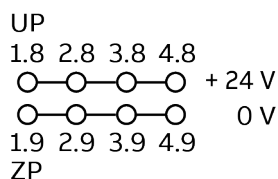


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 Sensor power supply 24 V DC / 0.5 A
- 4 16 yellow LEDs to display the signal states at the digital inputs/outputs (C0 ... C15)
- 5 1 green LED to display the state of the process supply voltage UP
- 6 4 red LEDs to display errors
- 7 Label
- 8 Terminal unit
- 9 DIN rail
-  Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

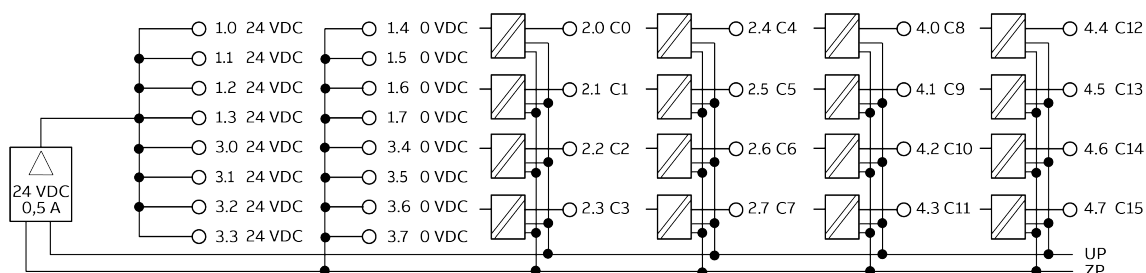
43.4.1 Process supply voltage



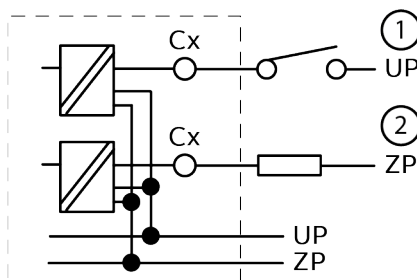
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

43.4.2 Inputs/Outputs



Example



- 1 Example of connection as an input
- 2 Example of connection as an output

43.5 Cleaning



Cleaning instructions

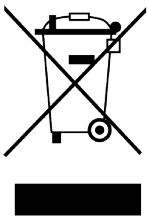
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

43.6 Certification

	MSIP-REI-Abb-AC500	en Devices with KCC sign on product sticker and packaging	ko 제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

43.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

44 DC523(-XC)

- DC523
- DC523-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

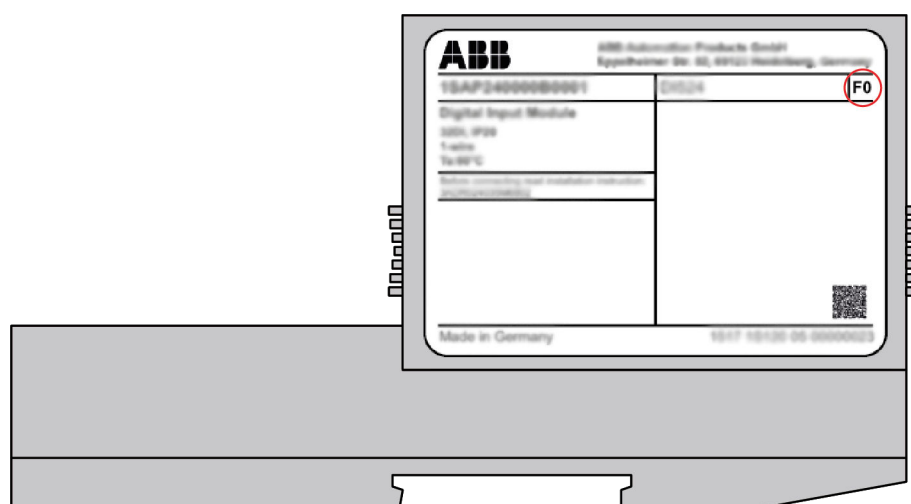
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

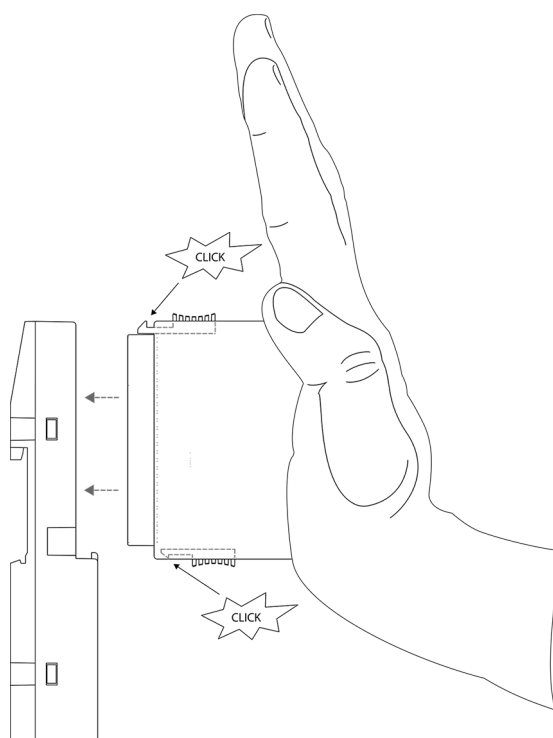
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

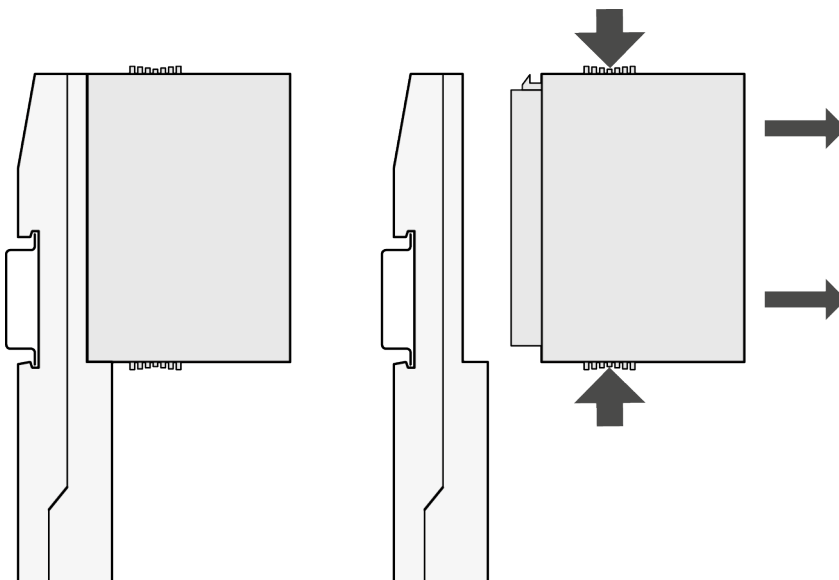
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

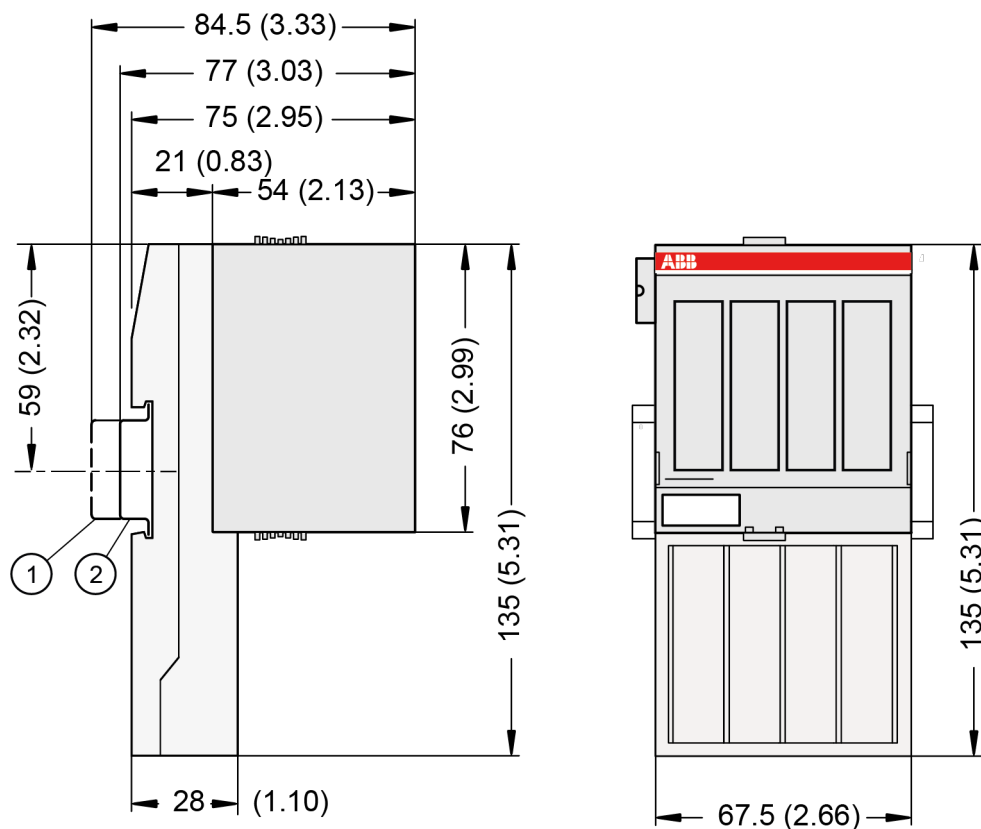
44.1 Assembly



44.2 Disassembly



44.3 Dimensions

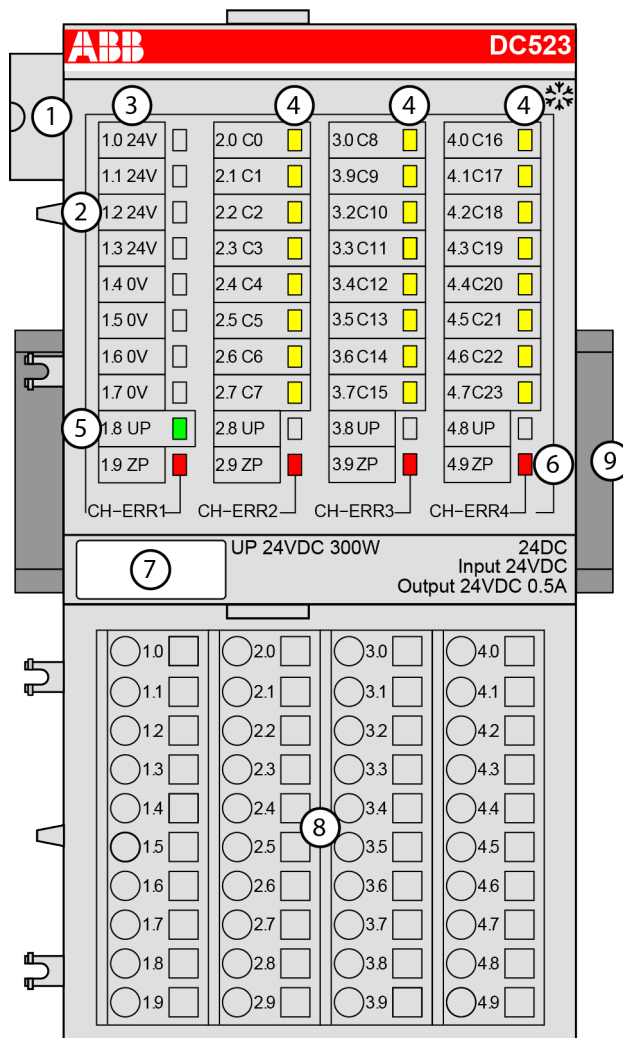


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

44.4 Connections

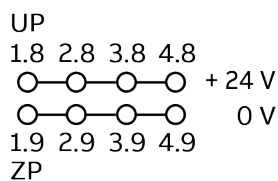


- | | |
|---|--|
| 1 | I/O bus |
| 2 | Allocation between terminal number and signal name |
| 3 | Sensor power supply 24 V DC / 0.5 A |
| 4 | 24 yellow LEDs to display the signal states at the digital inputs/outputs (C0 ... C23) |
| 5 | 1 green LED to display the status of the process supply voltage UP |
| 6 | 4 red LEDs to display errors |
| 7 | Label |
| 8 | Terminal unit |
| 9 | DIN rail |
|  | Sign for XC version |



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

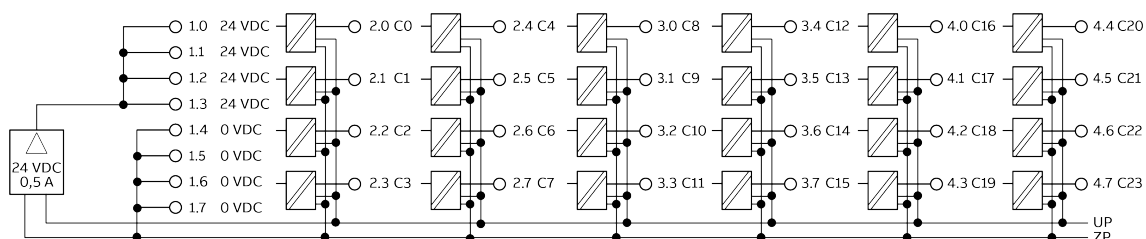
44.4.1 Process supply voltage



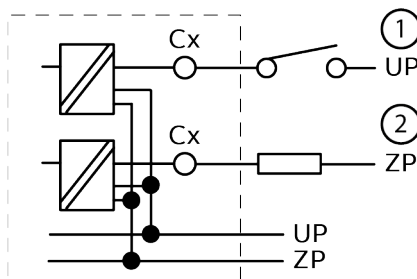
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

44.4.2 Inputs/Outputs



Example



- 1 Example of connection as an input
- 2 Example of connection as an output

44.5 Cleaning



Cleaning instructions

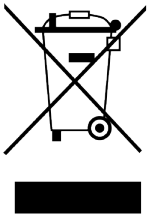
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

44.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

44.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

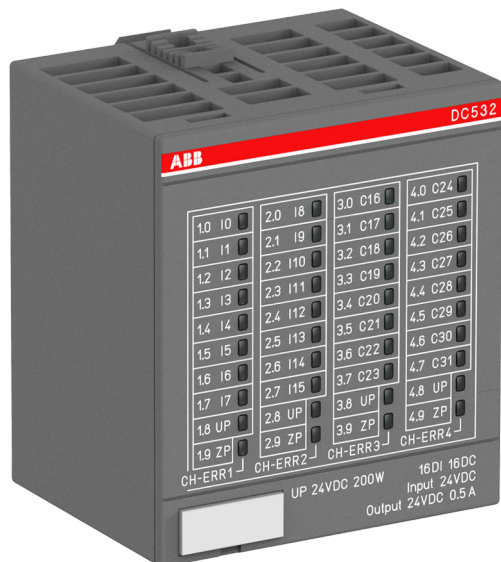
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

45 DC532(-XC)

- DC532
- DC532-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

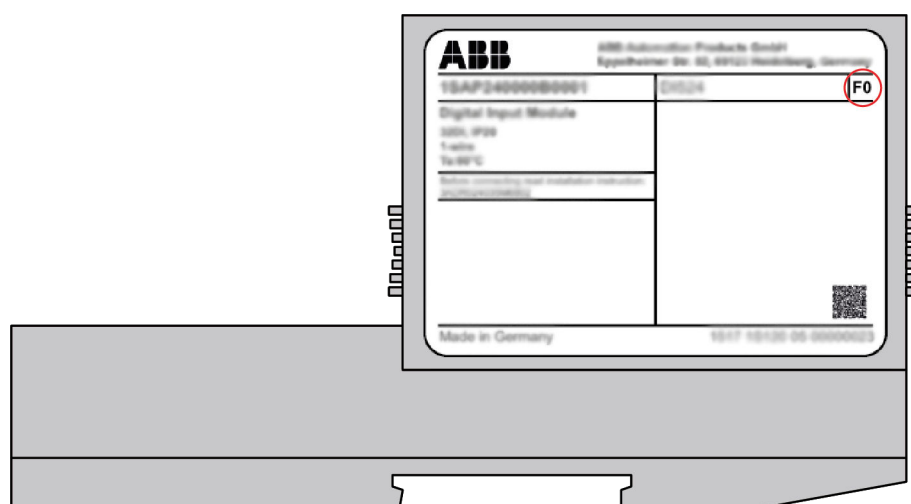
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

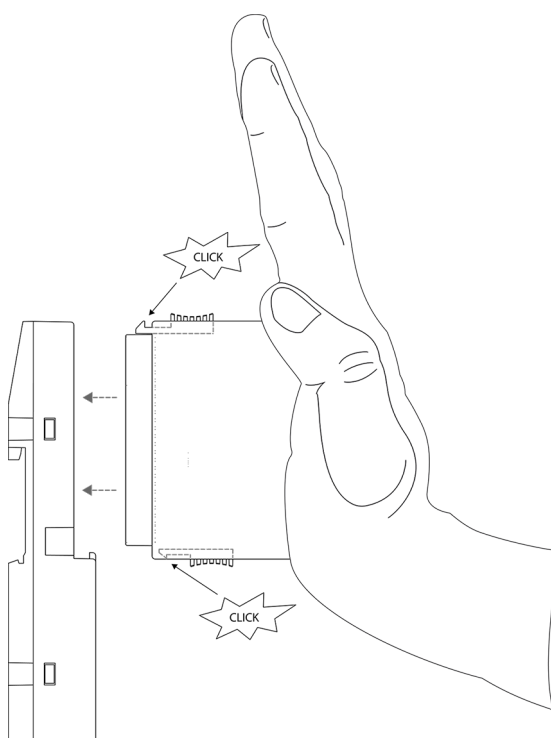
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

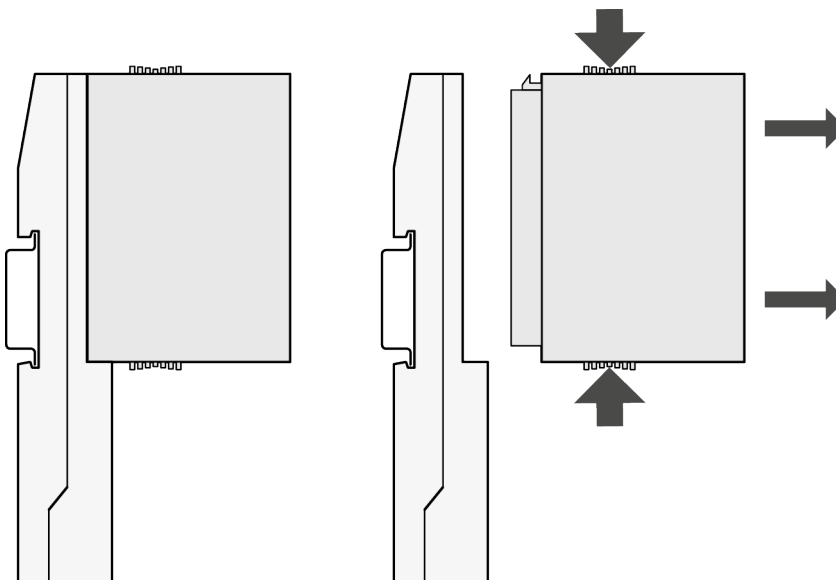
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

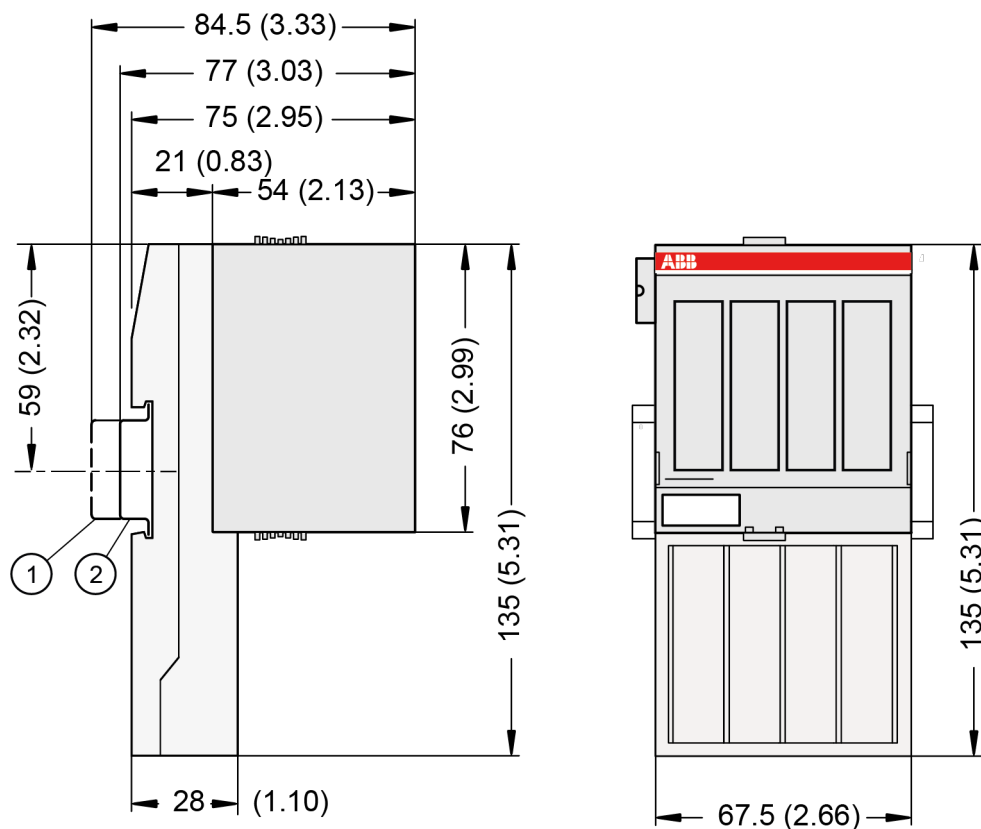
45.1 Assembly



45.2 Disassembly



45.3 Dimensions

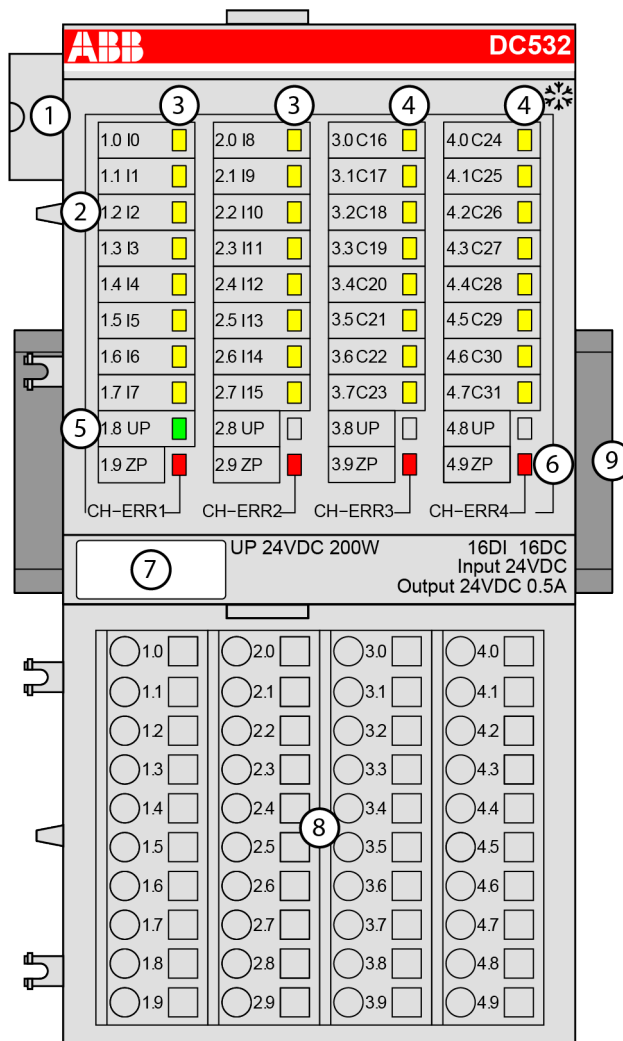


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

45.4 Connections

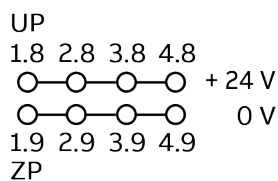


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 16 yellow LEDs to display the signal states at the digital inputs (I0 ... I15)
- 4 16 yellow LEDs to display the signal states at the digital inputs/outputs (C16 ... C31)
- 5 1 green LED to display the state of the process supply voltage UP
- 6 4 red LEDs to display errors
- 7 Label
- 8 Terminal unit
- 9 DIN rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

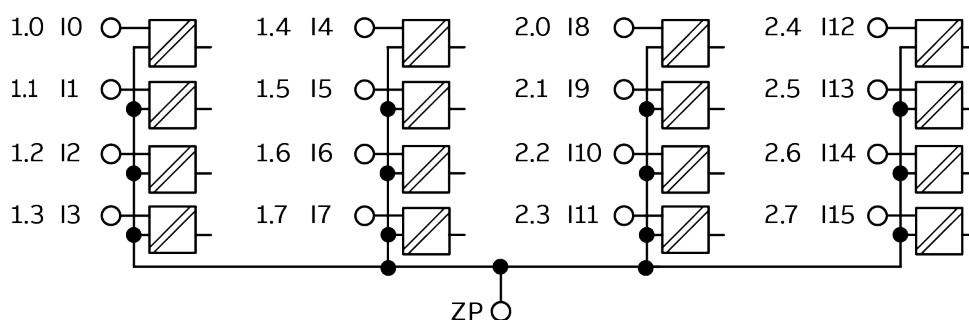
45.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

45.4.2 Inputs



Example

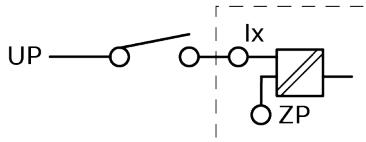
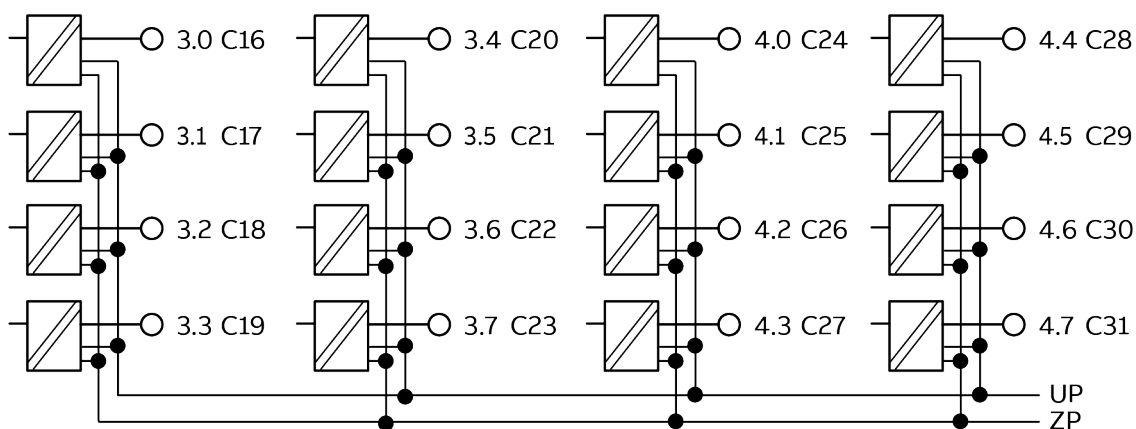
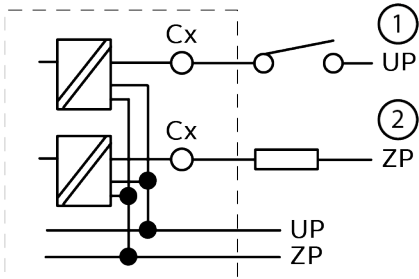


Fig. 53: Example of connection input Ix

45.4.3 Inputs/Outputs



Example



- 1 Example of connection as an input
- 2 Example of connection as an output

45.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

45.6 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

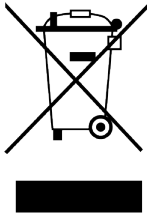
en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

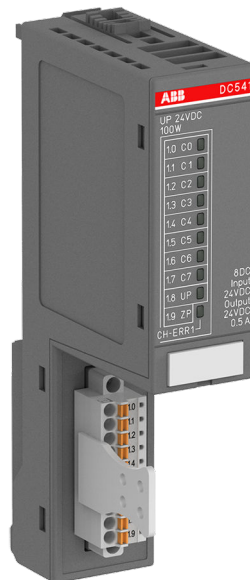
45.7 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

46 DC541-CM(-XC)

- DC541-CM
- DC541-CM-XC



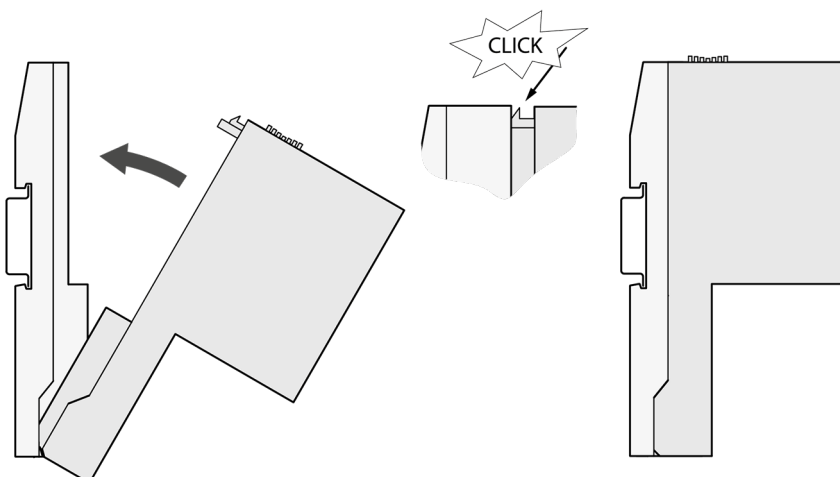
CAUTION!

Risk of injury and damaging the product!

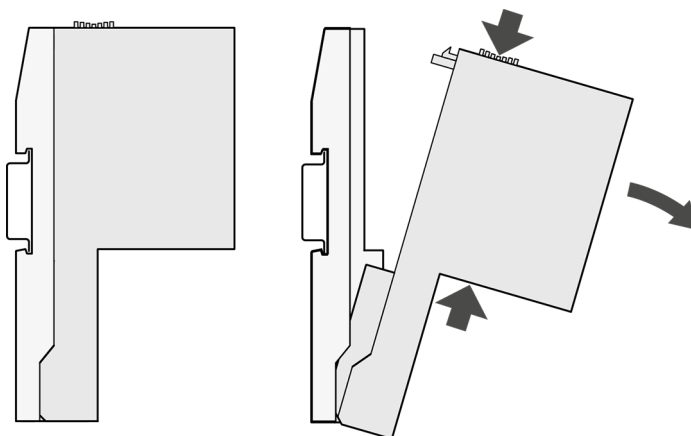
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

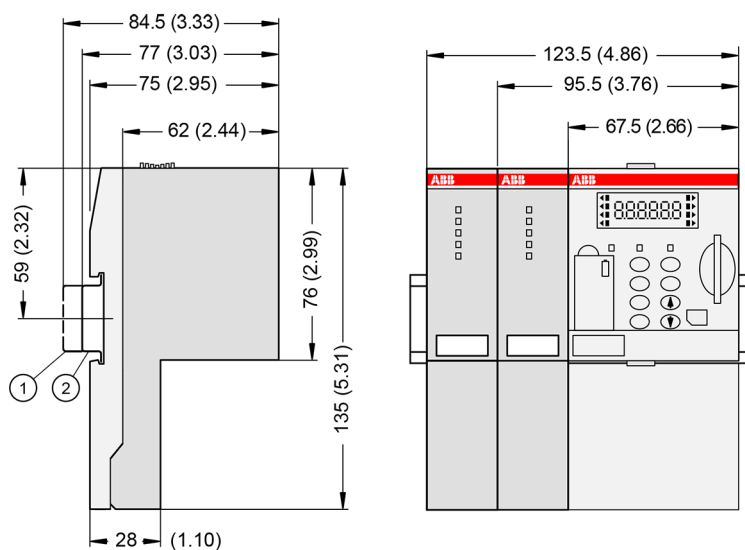
46.1 Assembly



46.2 Disassembly



46.3 Dimensions

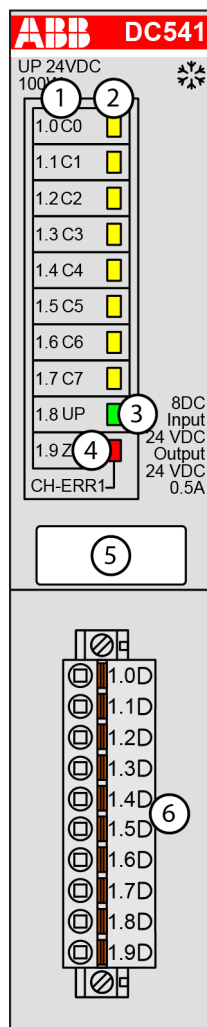


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



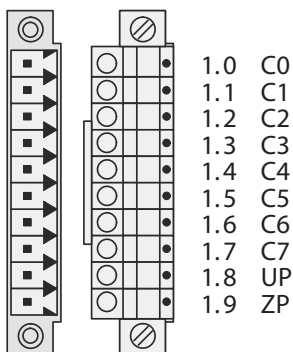
The dimensions are in mm and in brackets in inch.

46.4 Connections

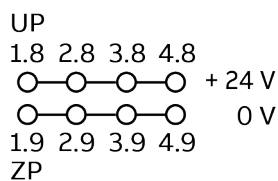


- 1 Allocation between terminal number and signal name
 - 2 8 yellow LEDs to display the signal states at the inputs/outputs C0 ... C7
 - 3 1 green LED to display the state of the process supply voltage UP
 - 4 1 red LED to display errors (CH-ERR1)
 - 5 Label
 - 6 Terminal block with 10 terminals for 8 inputs/outputs and process power supply (ZP/UP)
- ✱✱✱ Sign for XC version

Terminal unit



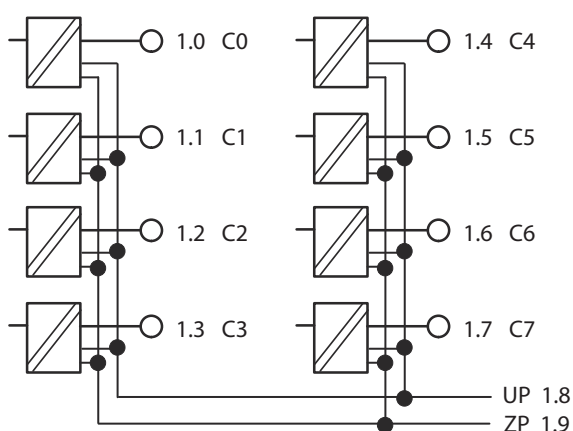
46.4.1 Process supply voltage



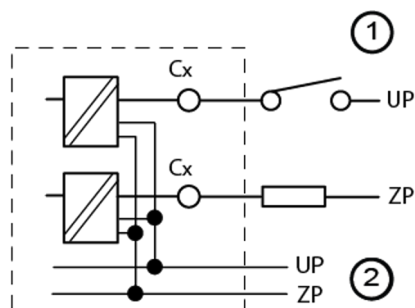
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

46.4.2 Inputs/Outputs



Examples



- 1 Example for connection as an input
- 2 Example for connection as an output

46.5 Cleaning



Cleaning instructions

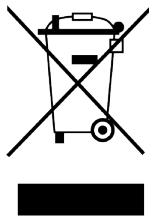
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

46.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

46.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

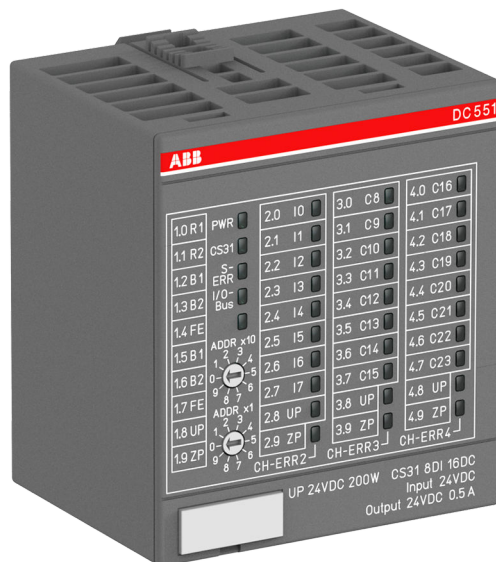
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

47 DC551-CS31(-XC)

- DC551-CS31
- DC551-CS31-XC



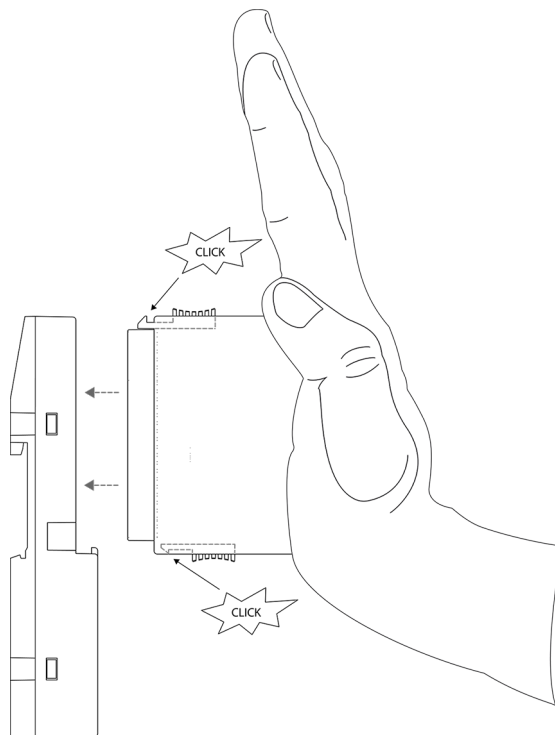
CAUTION!

Risk of injury and damaging the product!

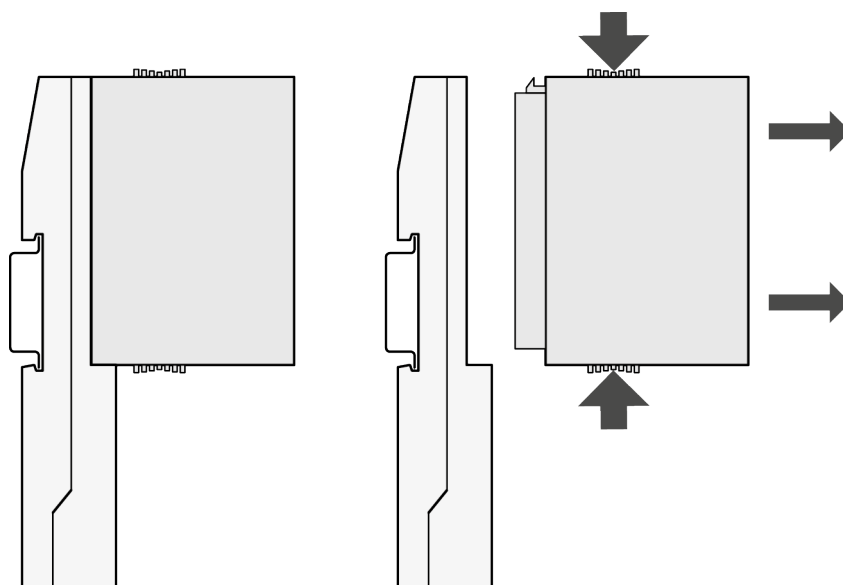
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

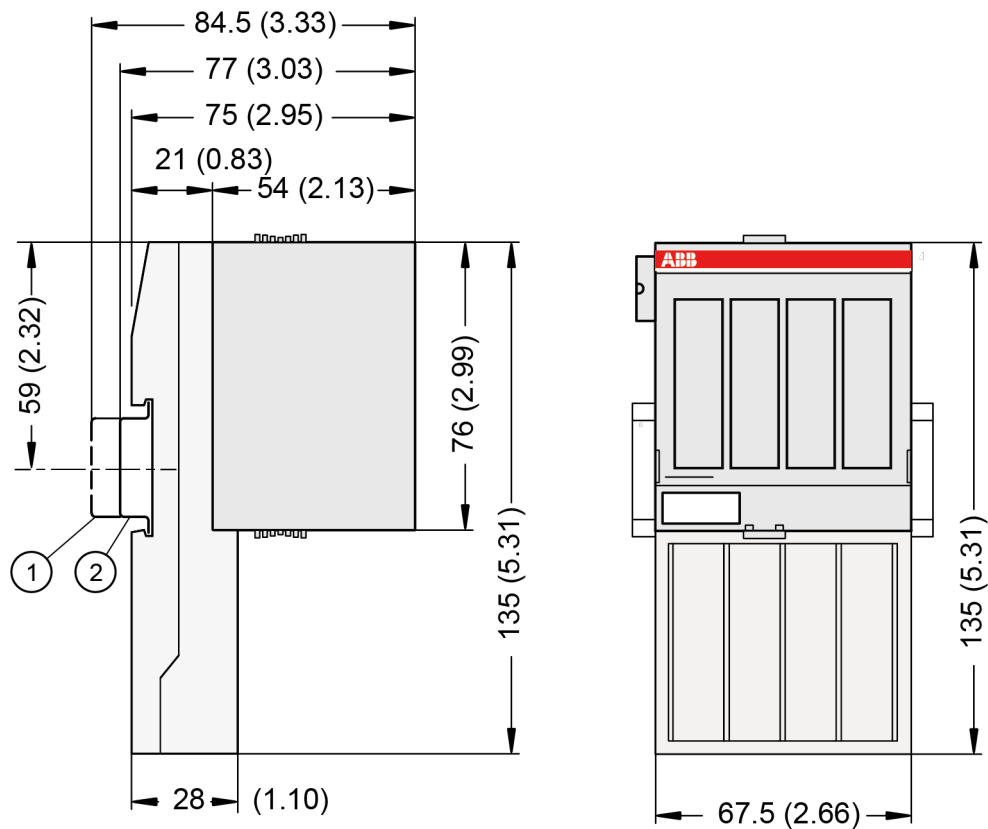
47.1 Assembly



47.2 Disassembly



47.3 Dimensions

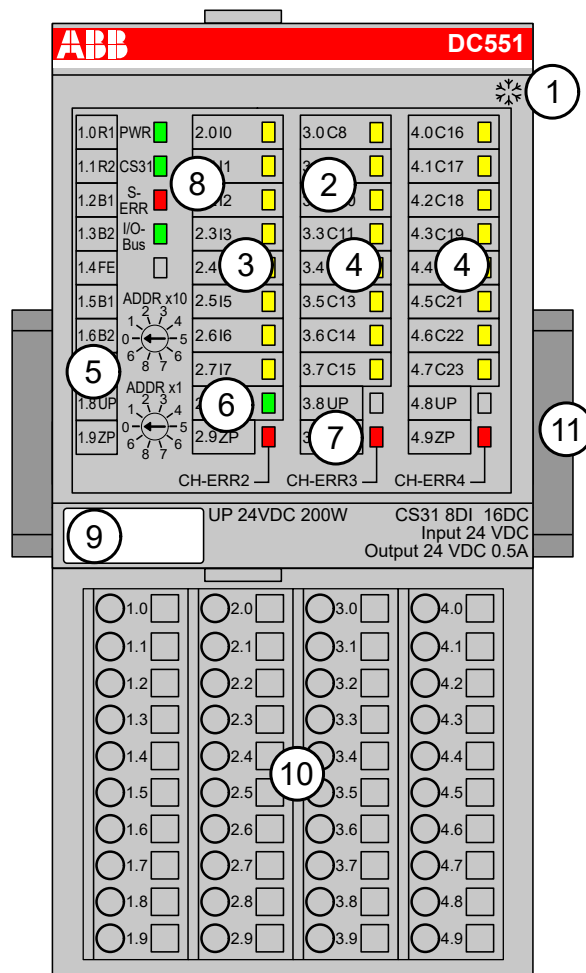


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

47.4 Connections

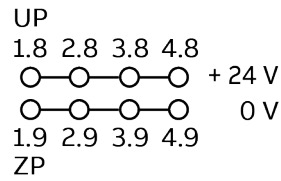


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states of the digital inputs I0 ... I7
- 4 16 yellow LEDs to display the signal states of the digital inputs/outputs C8 ... C23
- 5 2 rotary switches to set the module's address (00d ... 99d)
- 6 1 green LED to display the process voltage UP
- 7 3 red LEDs to display errors
- 8 4 system LEDs
- 9 Label
- 10 Terminal unit
- 11 DIN rail
- * Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

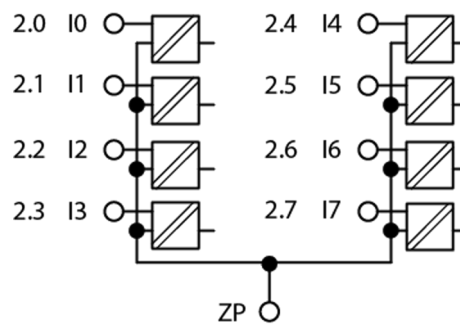
47.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

47.4.2 Inputs



Example

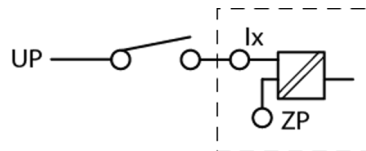
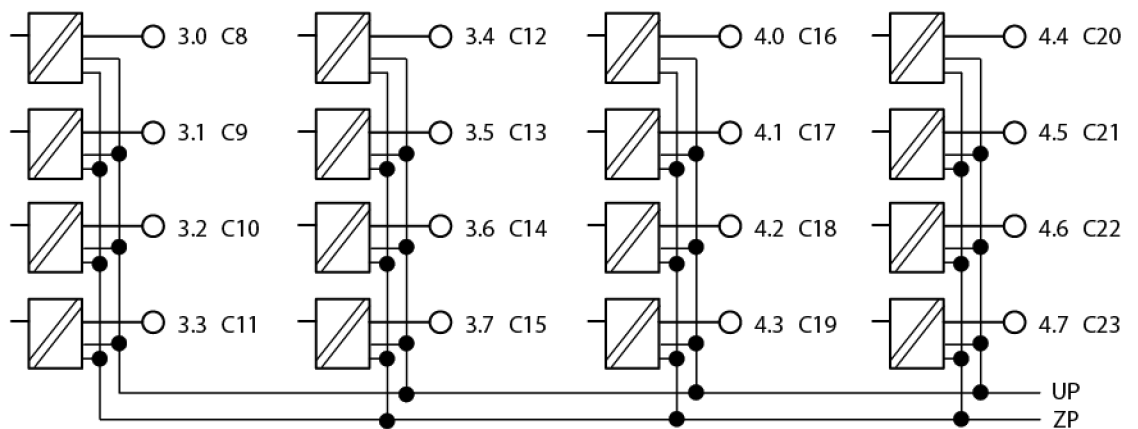
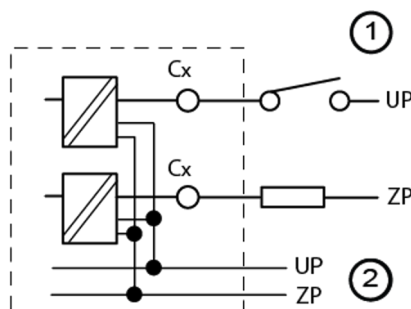


Fig. 54: Example for connection input Ix

47.4.3 Inputs/Outputs



Example



- 1 Example of connection as an input
- 2 Example of connection as an output

47.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

47.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

47.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

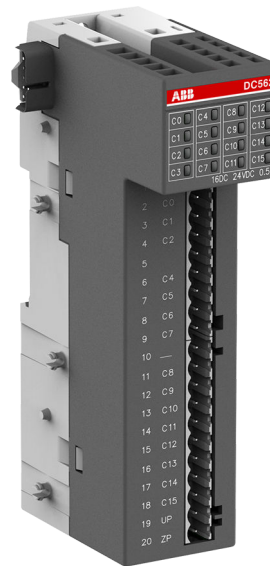
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

48 DC562

- DC562



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

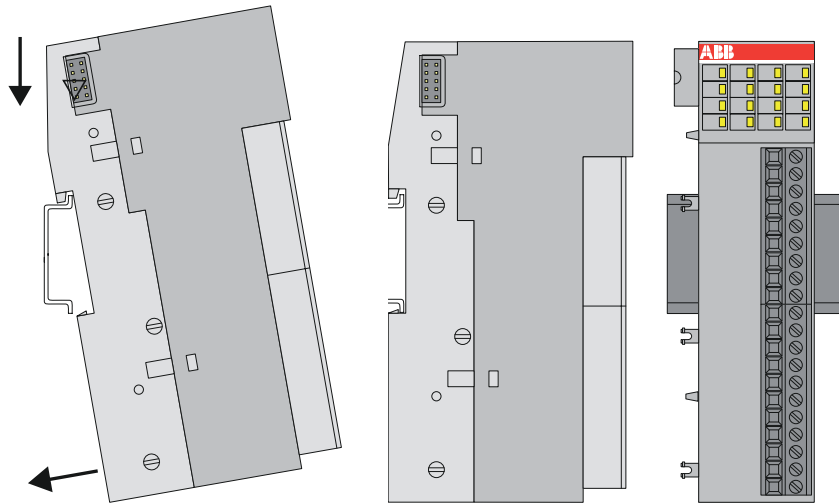
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



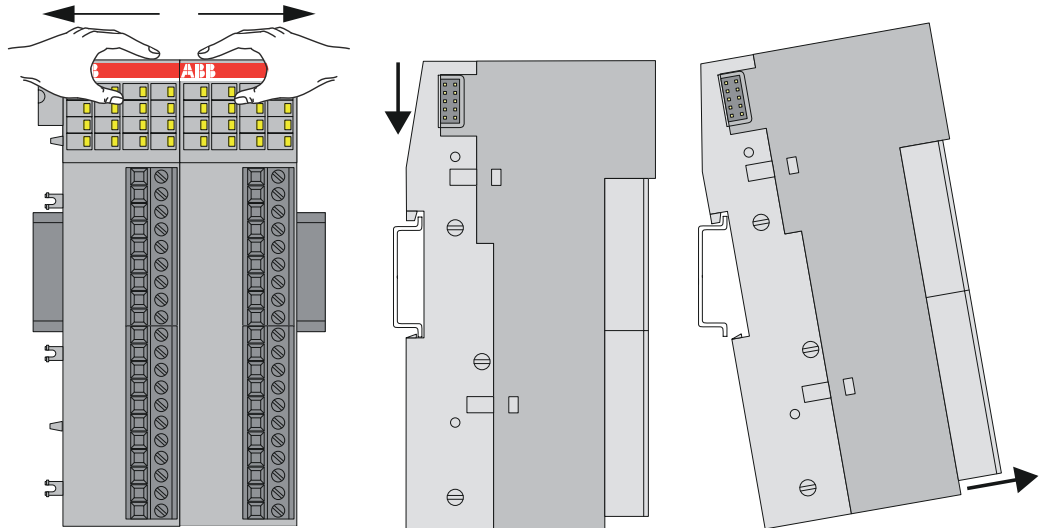
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

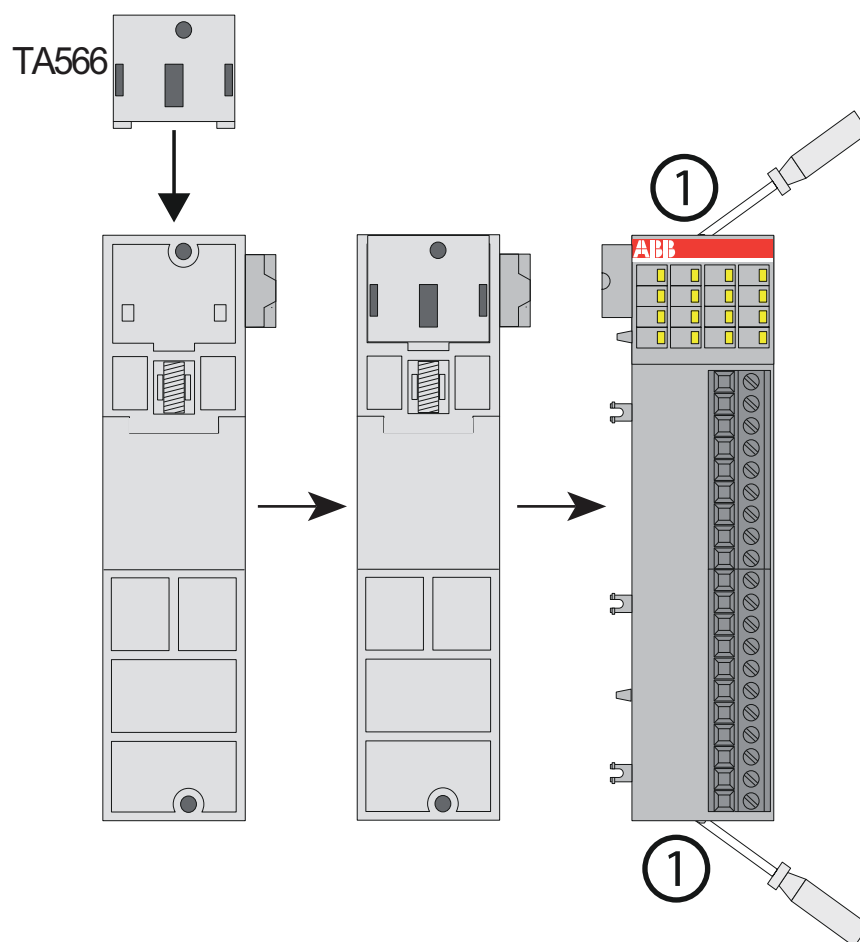
48.1 Assembly



48.2 Disassembly



48.3 Assembly with screws



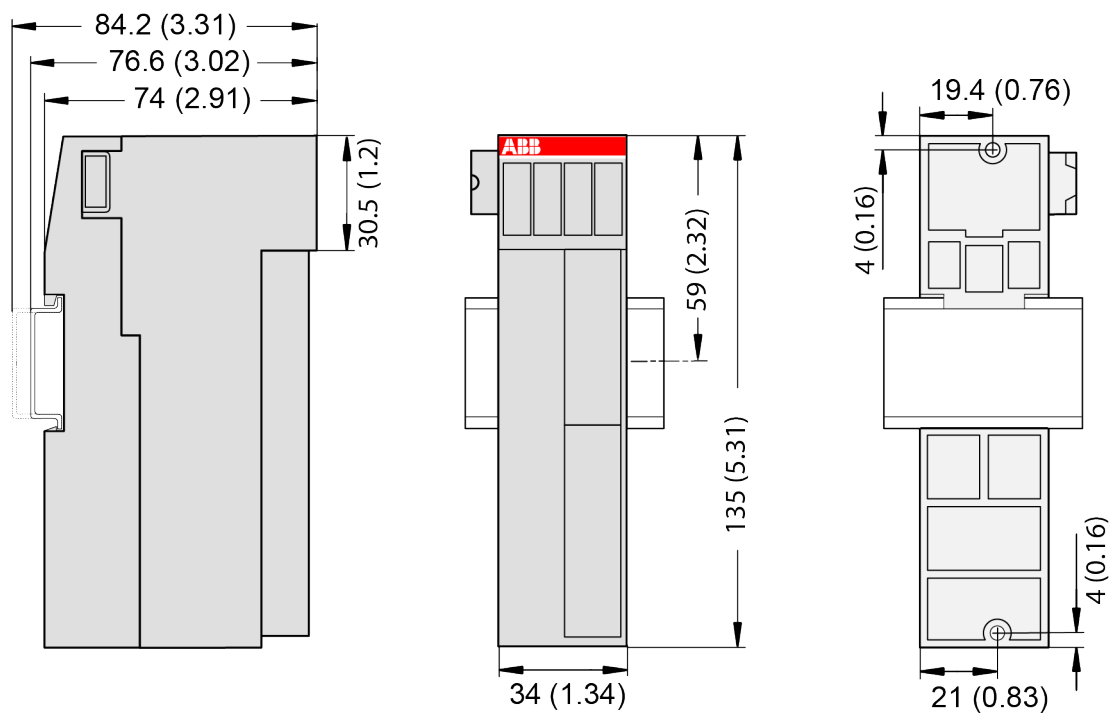
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

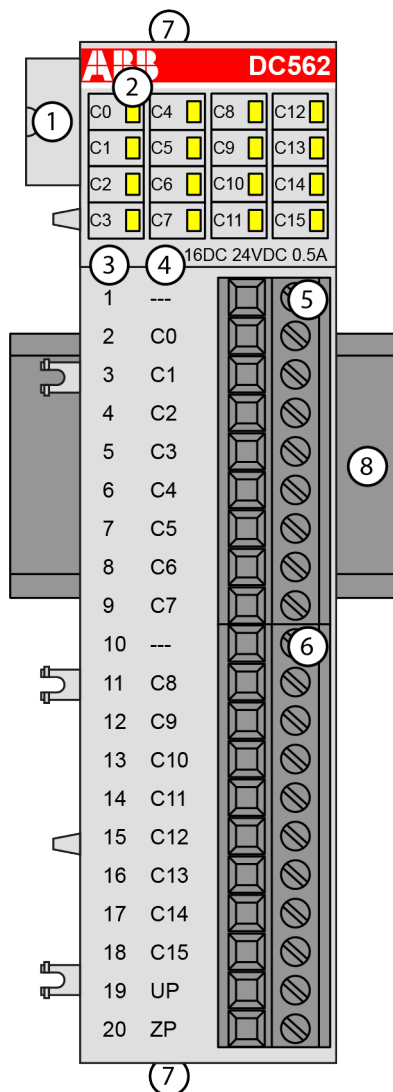
The insertion of the accessories TA566 for wall mounting is essential.

48.4 Dimensions



The dimensions are in mm and in brackets in inch.

48.5 Connections



- 1 I/O bus
- 2 16 yellow LEDs to display the states of the inputs/outputs C0 ... C15
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input and output signals (9-pin)
- 6 Terminal block for input and output signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

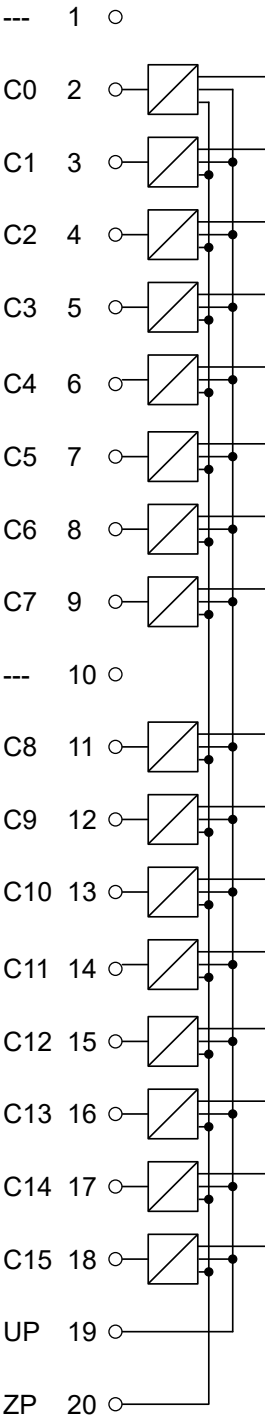


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

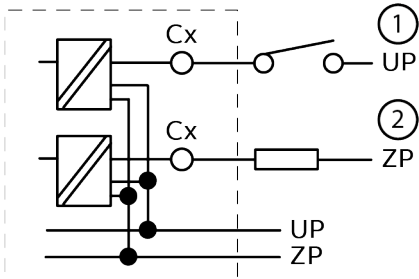
5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

48.5.1 Inputs/Outputs



Examples



- 1 Example for connection as an input
- 2 Example for connection as an output

48.6 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

48.7 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

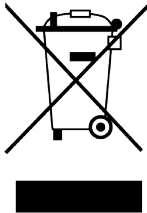
en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

48.8 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

49 DI524(-XC)

- DI524
- DI524-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

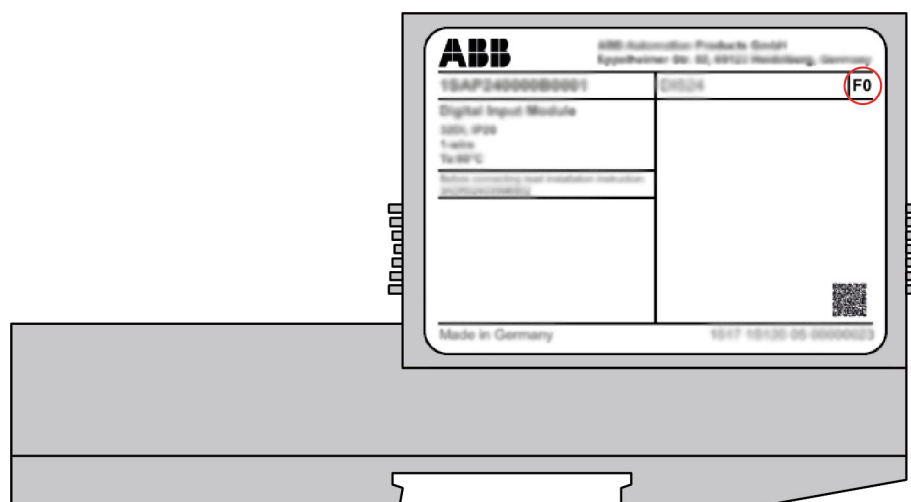
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

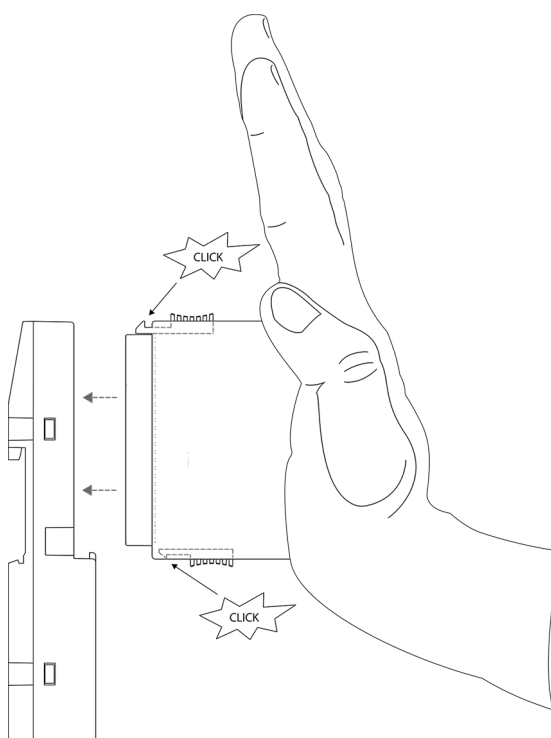
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

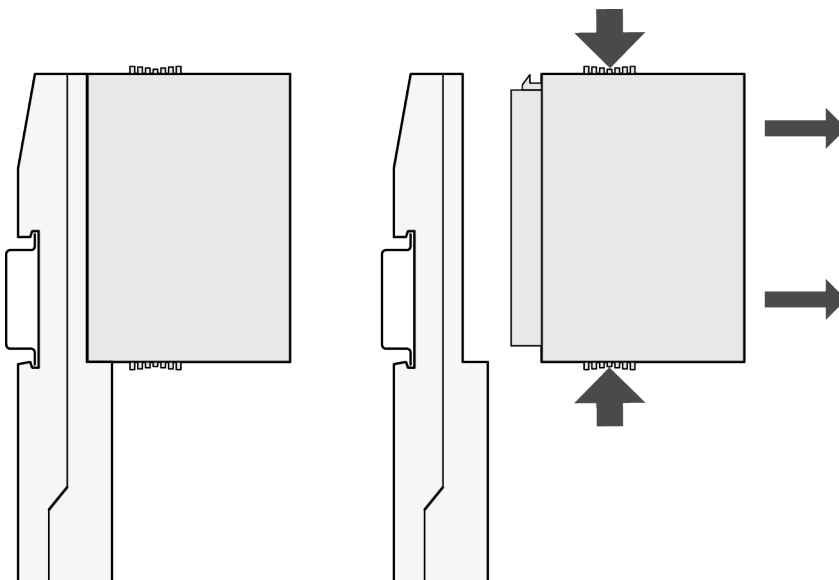
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

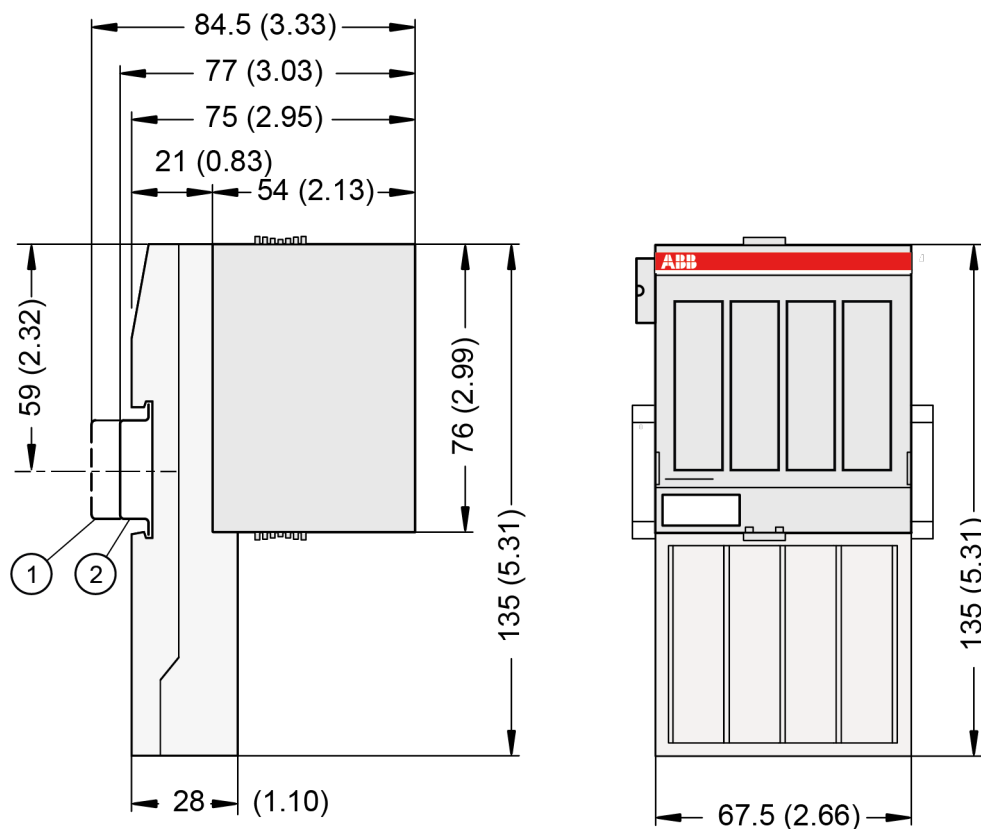
49.1 Assembly



49.2 Disassembly



49.3 Dimensions

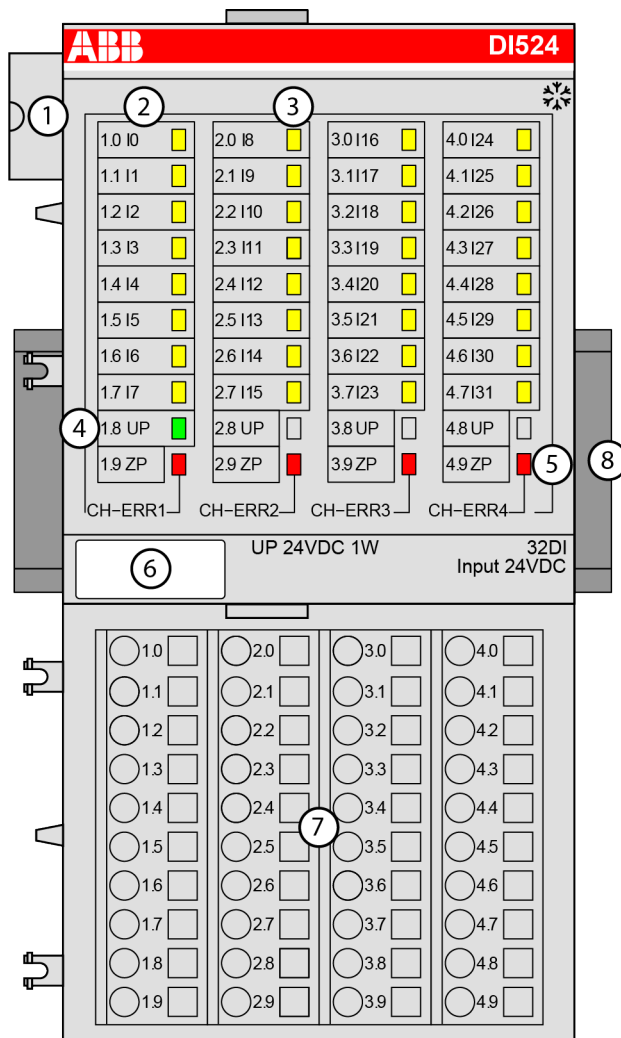


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

49.4 Connections

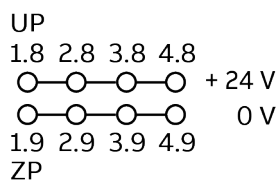


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 32 yellow LEDs to display the signal states at the digital inputs (I0 ... I31)
- 4 1 green LED to display the state of the process supply voltage UP
- 5 4 red LEDs to display errors
- 6 Label
- 7 Terminal unit
- 8 DIN rail
- ✱ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

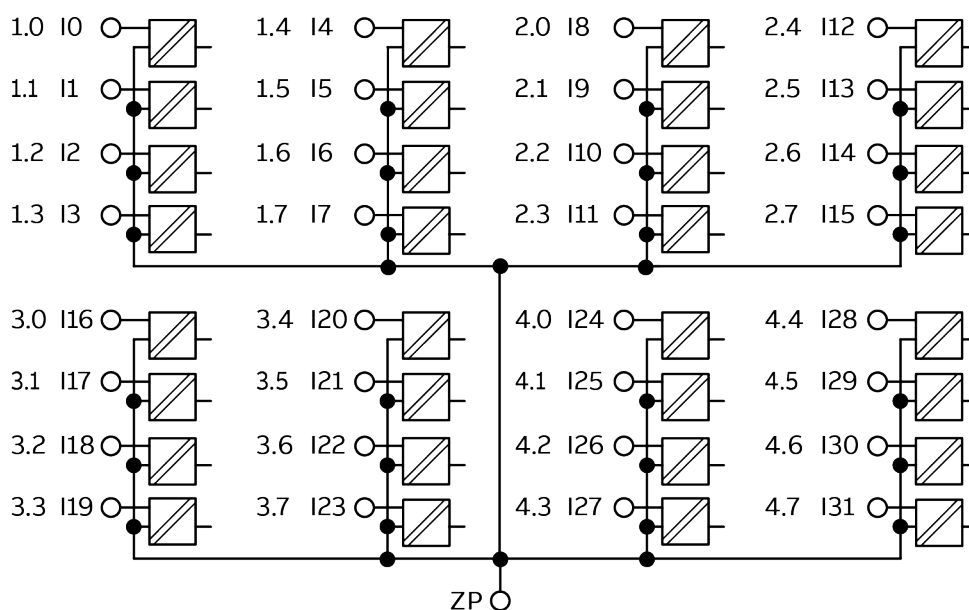
49.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

49.4.2 Inputs



Example

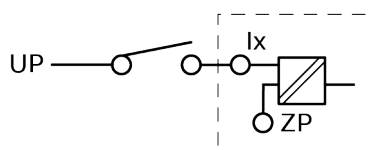


Fig. 55: Example of connection input Ix

49.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

49.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

49.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

50 DI561

- DI561

**CAUTION!****Risk of injury and damaging the product!**

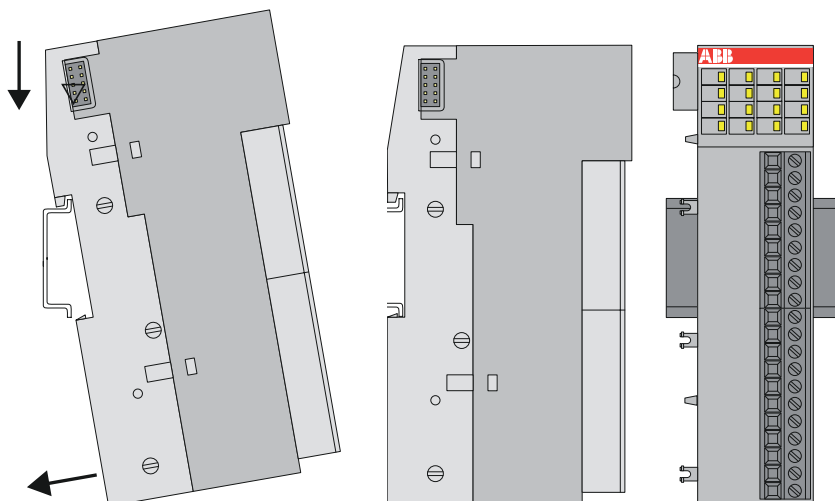
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

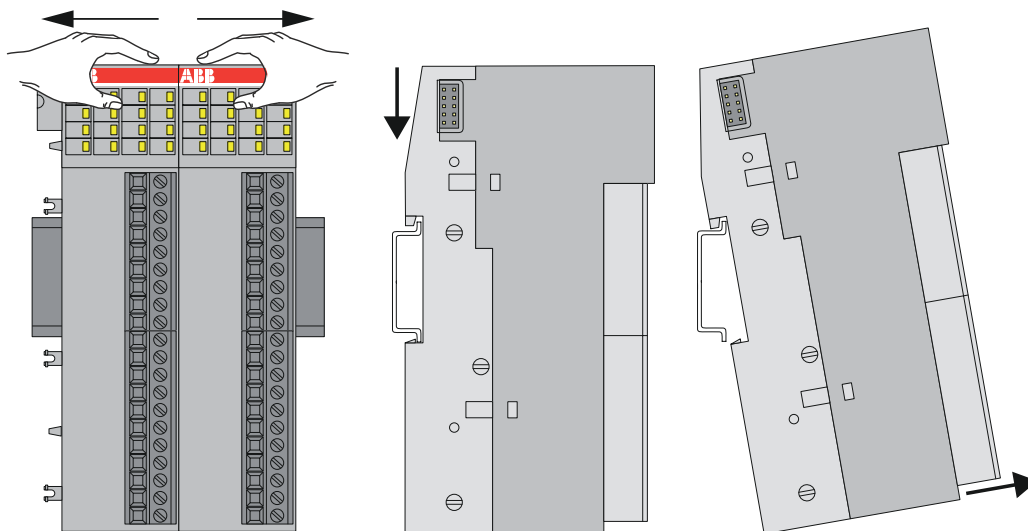
**CAUTION!**

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

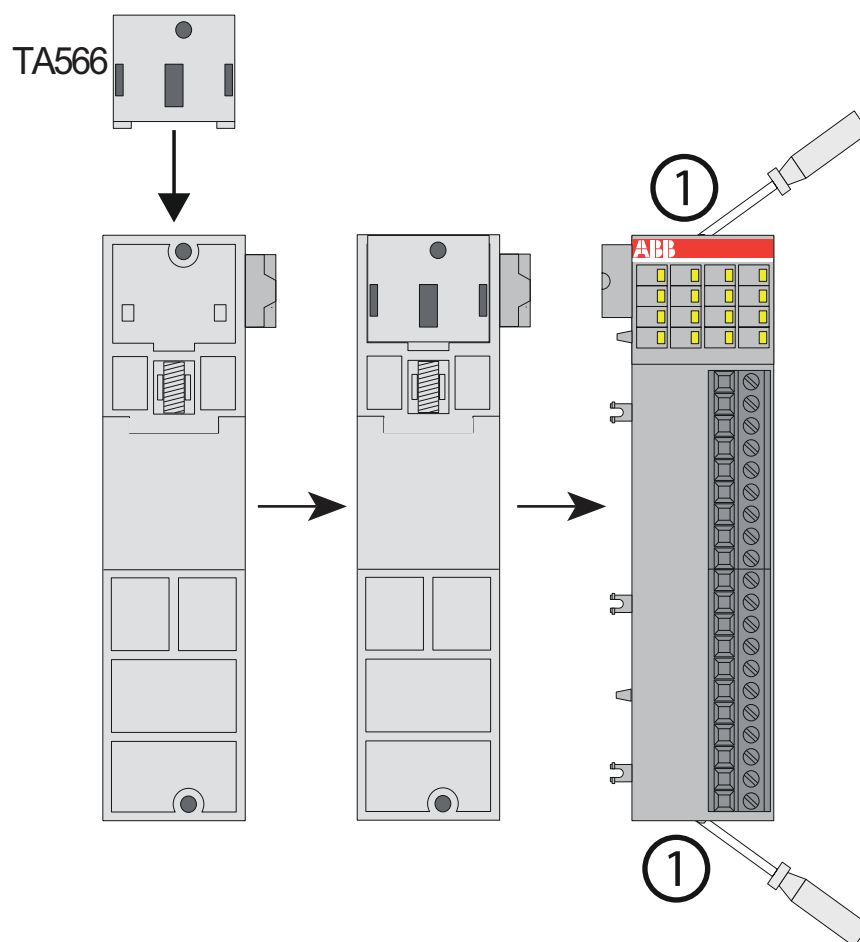
50.1 Assembly



50.2 Disassembly



50.3 Assembly with screws



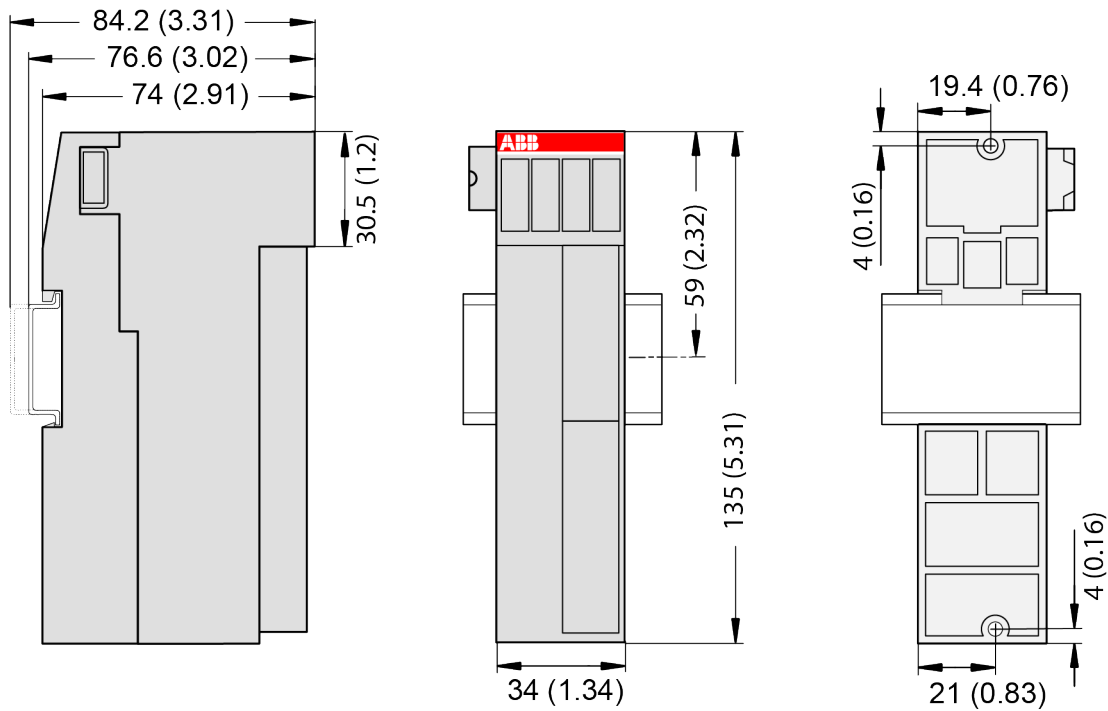
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

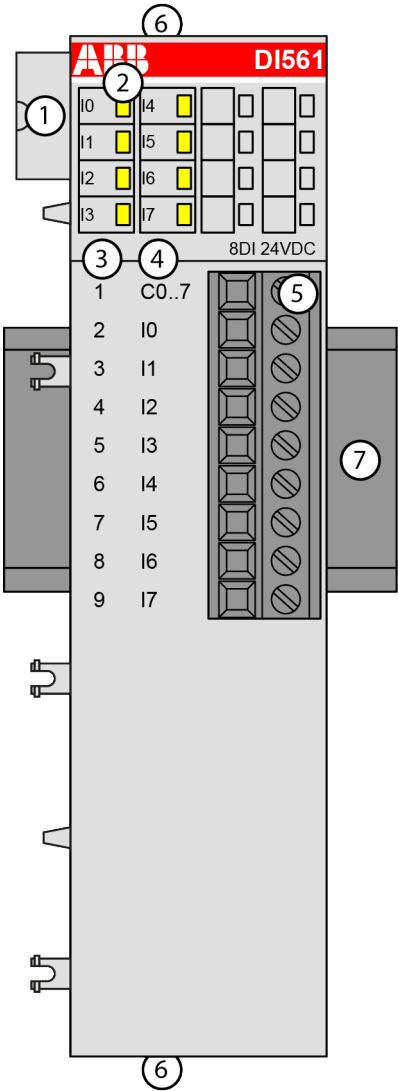
The insertion of the accessories TA566 for wall mounting is essential.

50.4 Dimensions



The dimensions are in mm and in brackets in inch.

50.5 Connections



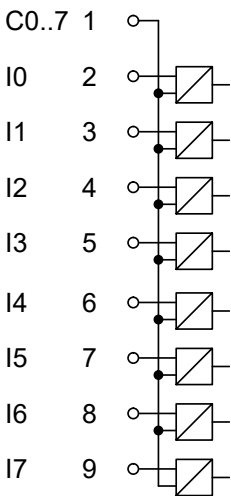
- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the inputs I0 to I7
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 2 holes for wall-mounting with screws
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front

50.5.1 Inputs/Outputs



Examples

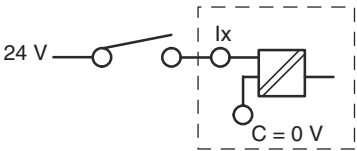


Fig. 56: DI561 used as source inputs

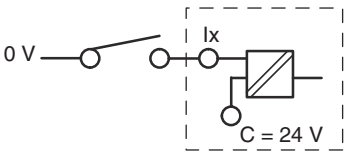


Fig. 57: DI561 used as sink inputs

50.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

50.7 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

50.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

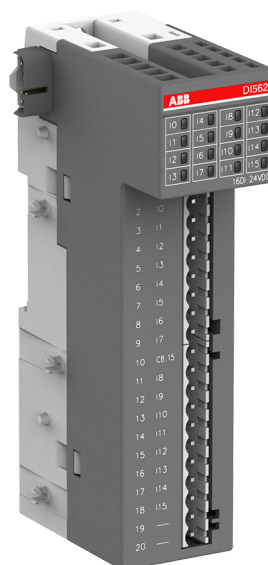
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

51 DI562

- DI562



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

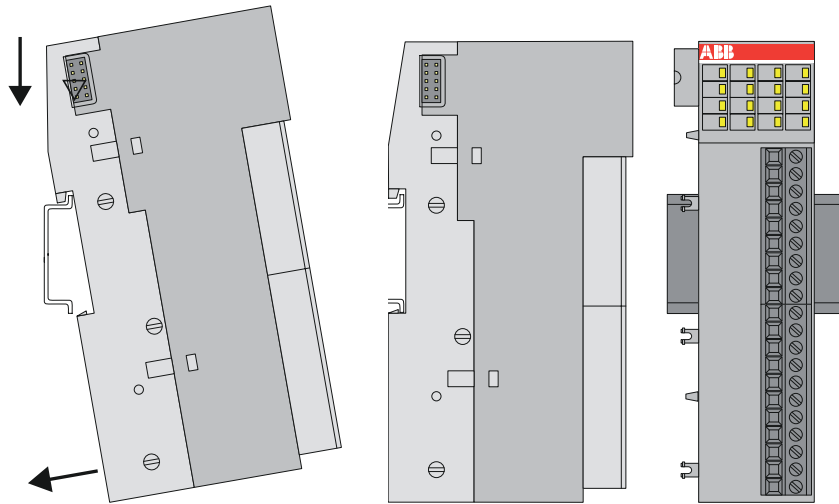
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



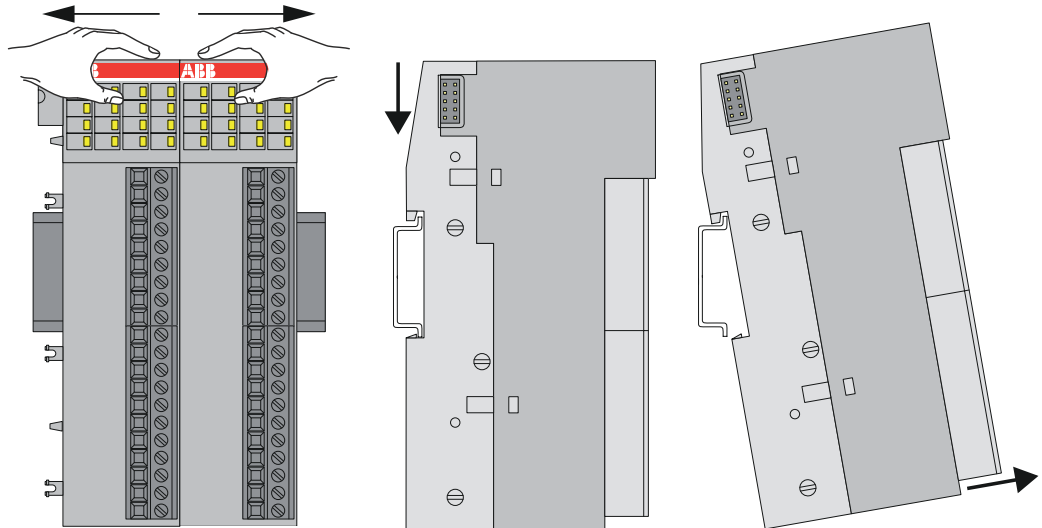
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

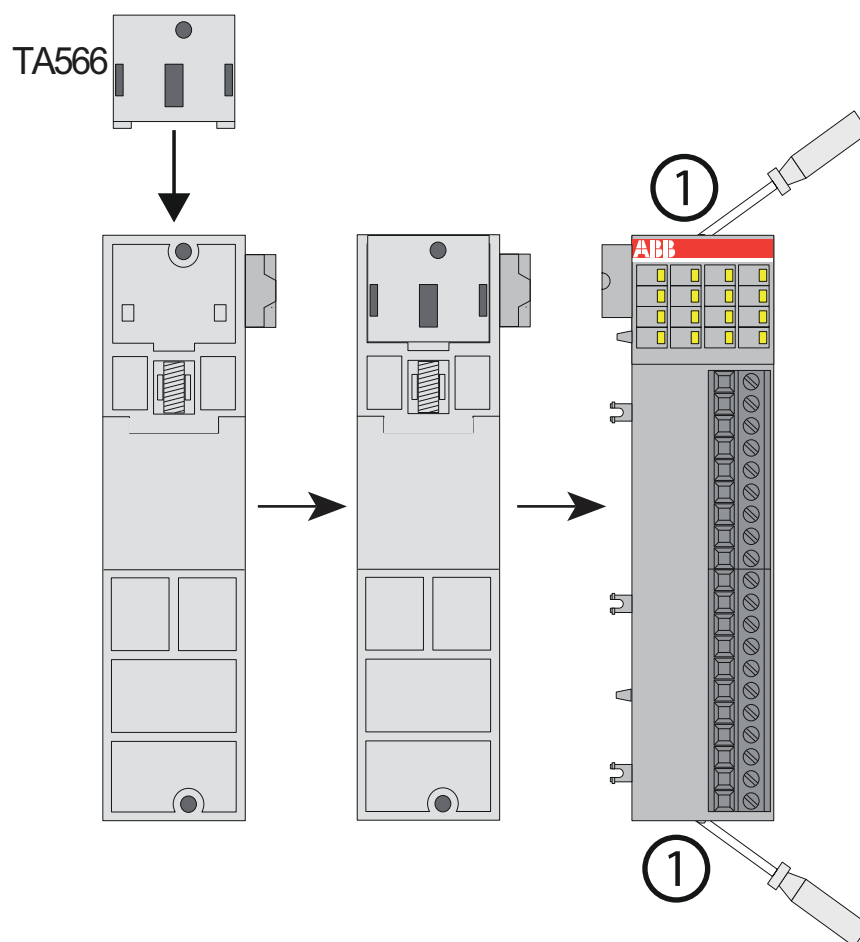
51.1 Assembly



51.2 Disassembly



51.3 Assembly with screws



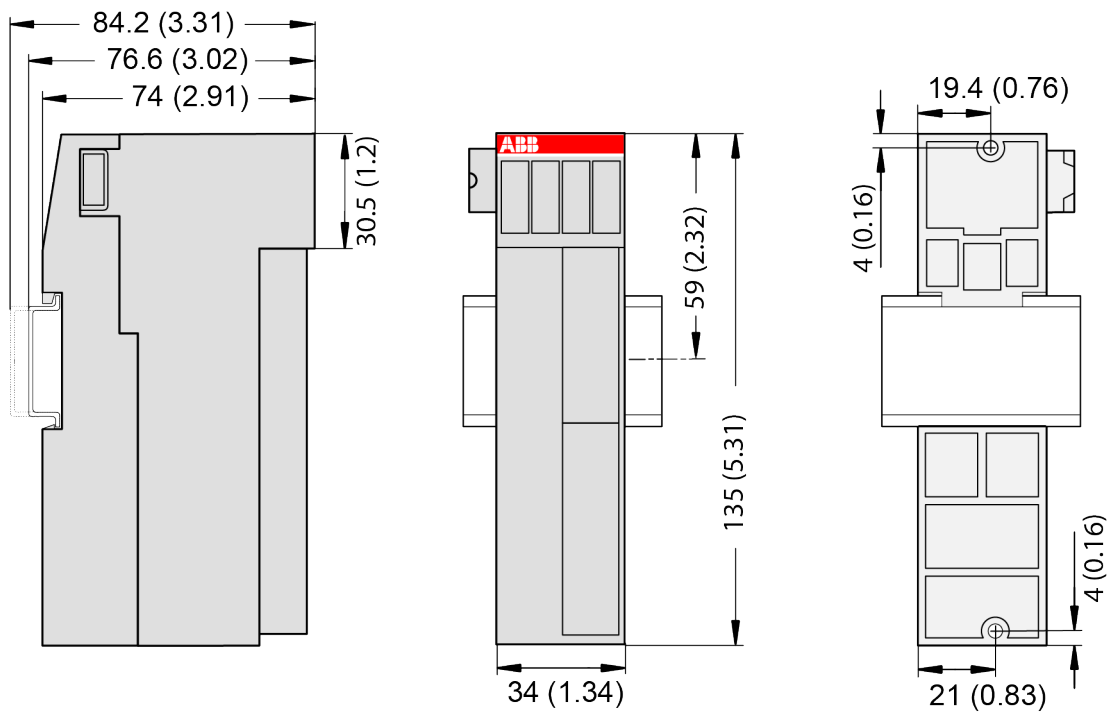
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

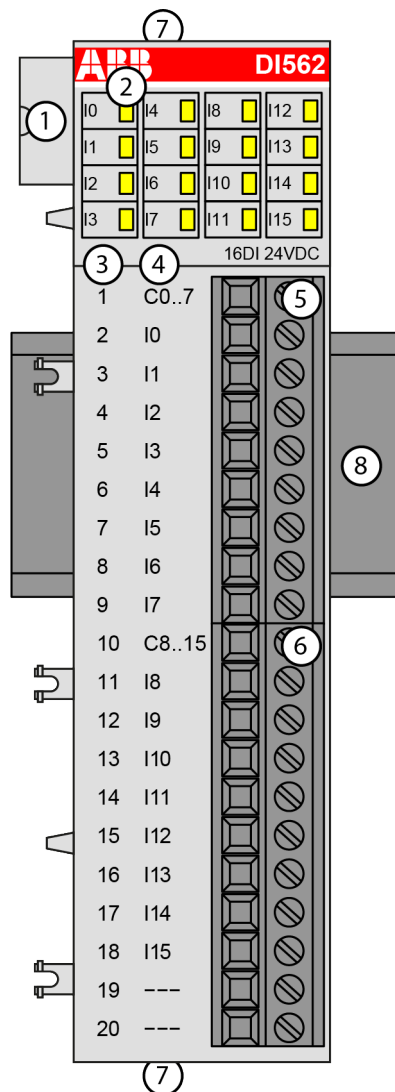
The insertion of the accessories TA566 for wall mounting is essential.

51.4 Dimensions



The dimensions are in mm and in brackets in inch.

51.5 Connections



- 1 I/O bus
- 2 16 yellow LEDs to display the signal states of the inputs I0 ... I15
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 Terminal block for input signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

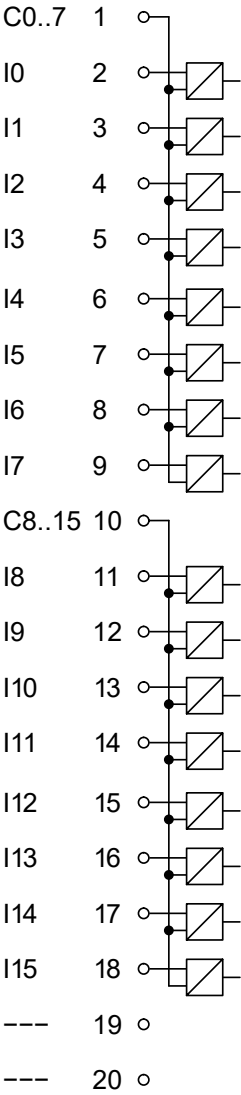


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

51.5.1 Inputs



Examples

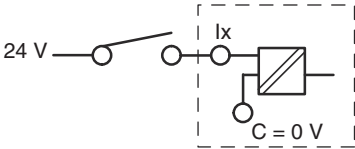


Fig. 58: DI562 used as source inputs

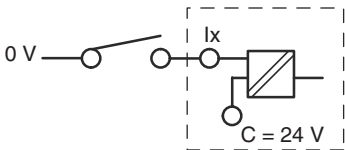


Fig. 59: DI562 used as sink inputs

51.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

51.7 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

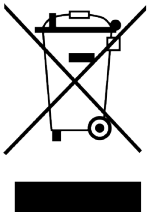
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

51.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

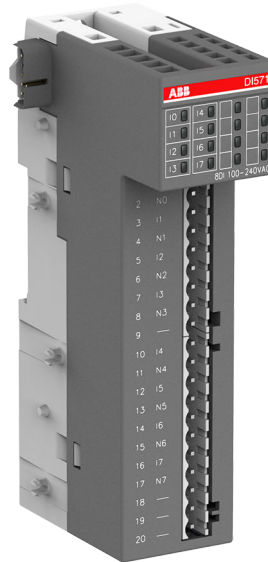
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

52 DI571

- DI571

**CAUTION!****Risk of injury and damaging the product!**

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

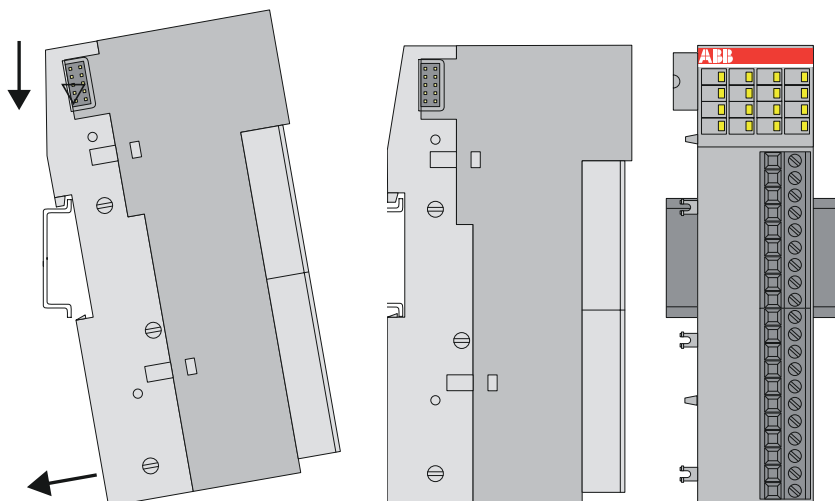
**CAUTION!**

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

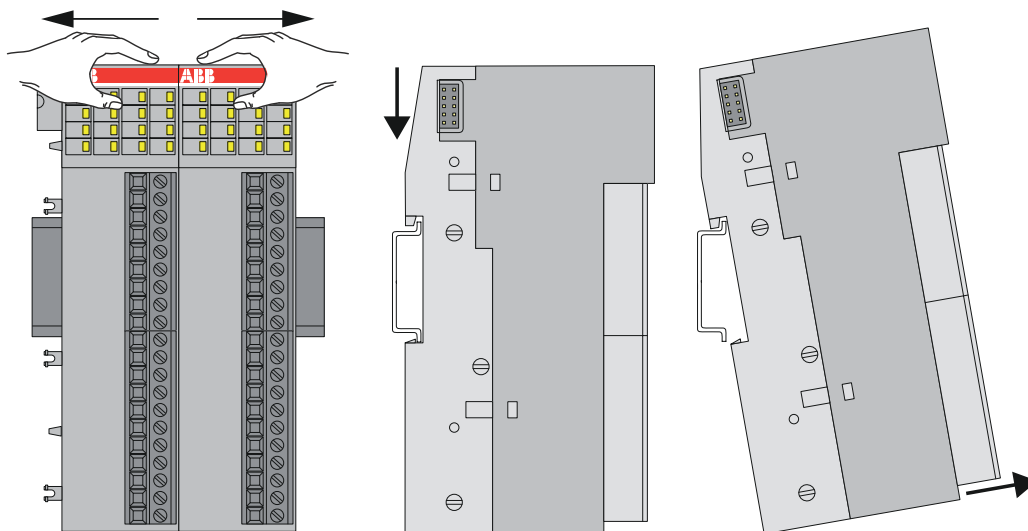
**CAUTION!**

Make sure that all channels are supplied from the same phase.

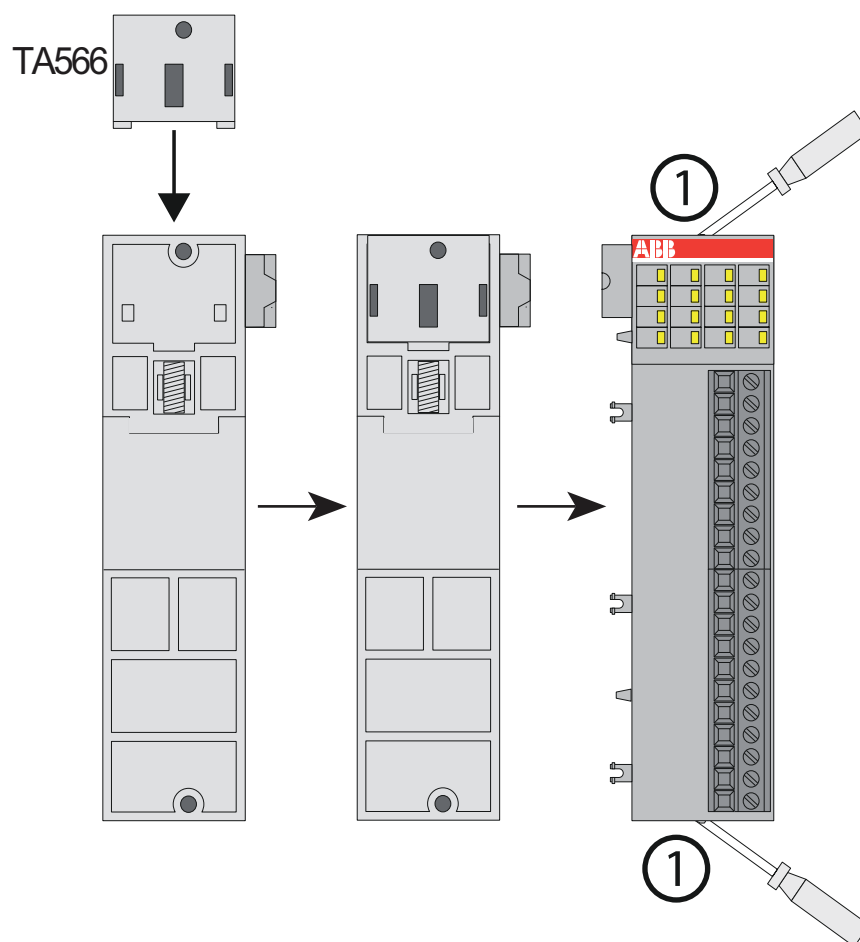
52.1 Assembly



52.2 Disassembly



52.3 Assembly with screws



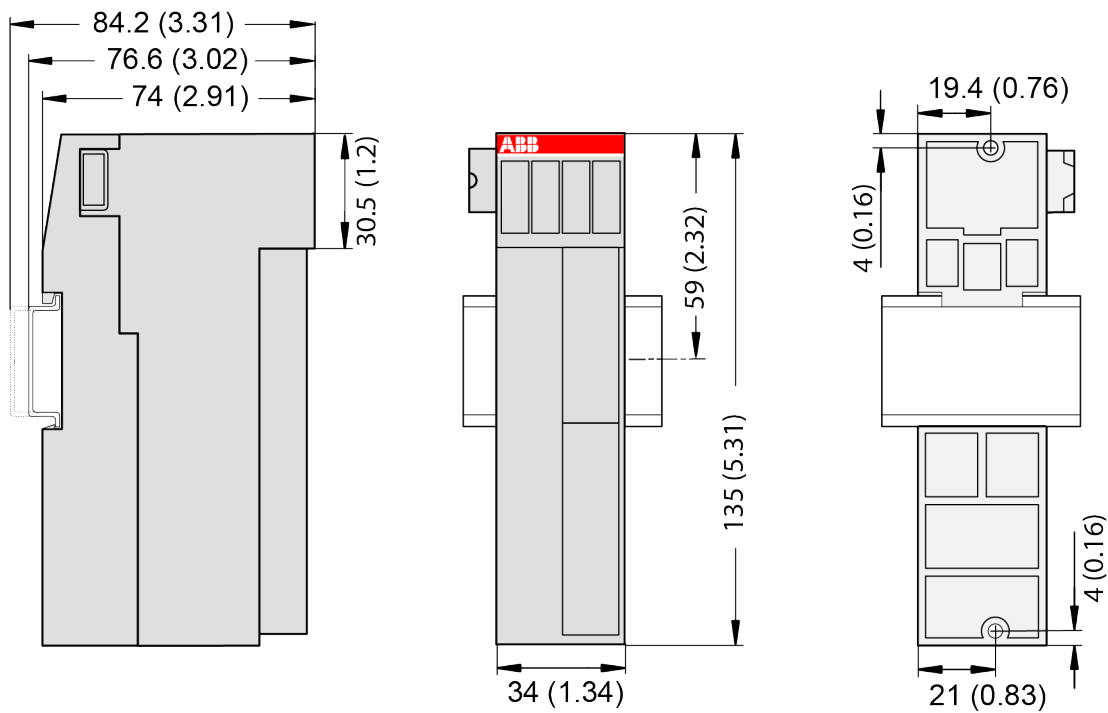
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

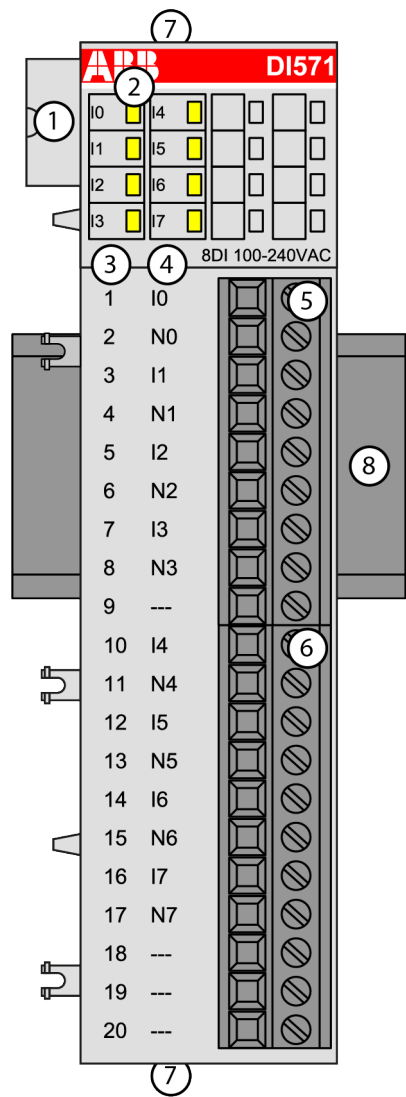
The insertion of the accessories TA566 for wall mounting is essential.

52.4 Dimensions



The dimensions are in mm and in brackets in inch.

52.5 Connections



- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the inputs I0 ... I7
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 Terminal block for input signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

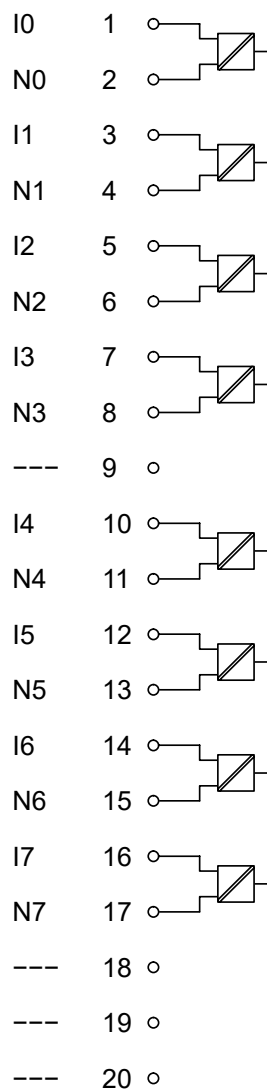


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

52.5.1 Inputs/Outputs



Examples

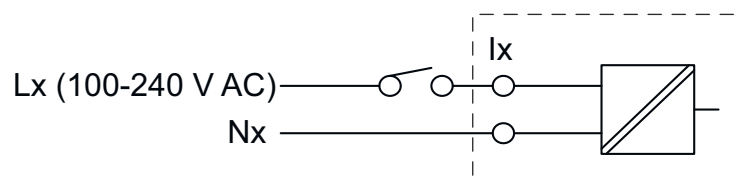


Fig. 60: Example for connection input Ix

52.6 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

52.7 Certification

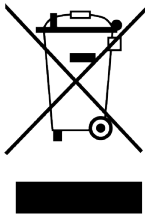


MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging
ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

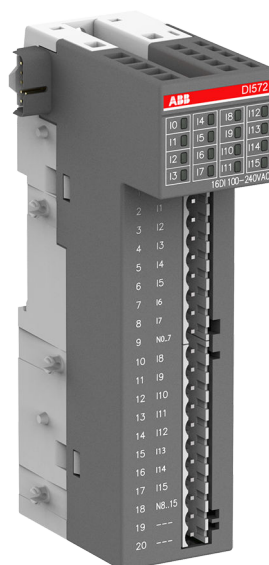
52.8 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

53 DI572

- DI572



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

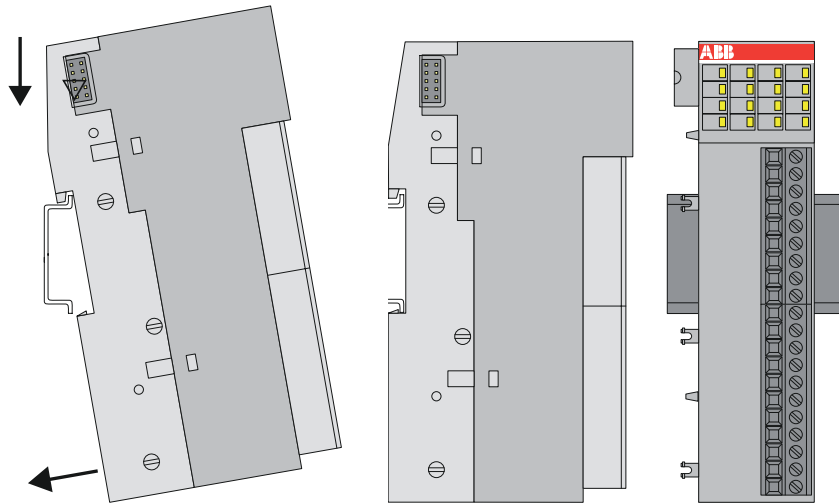
Do not use this module together with the DC505-FBP/CI590-CS31-HA module.



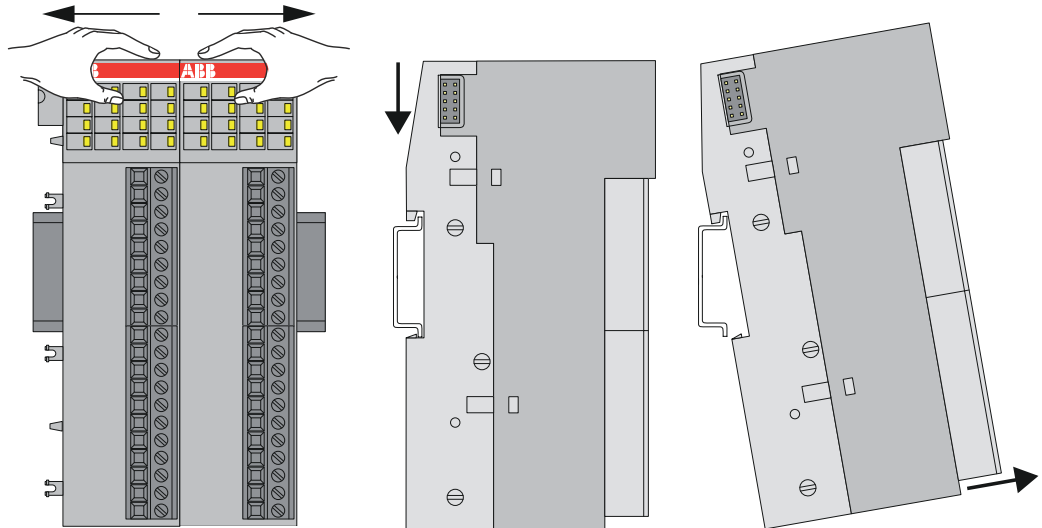
CAUTION!

Make sure that all channels are supplied from the same phase.

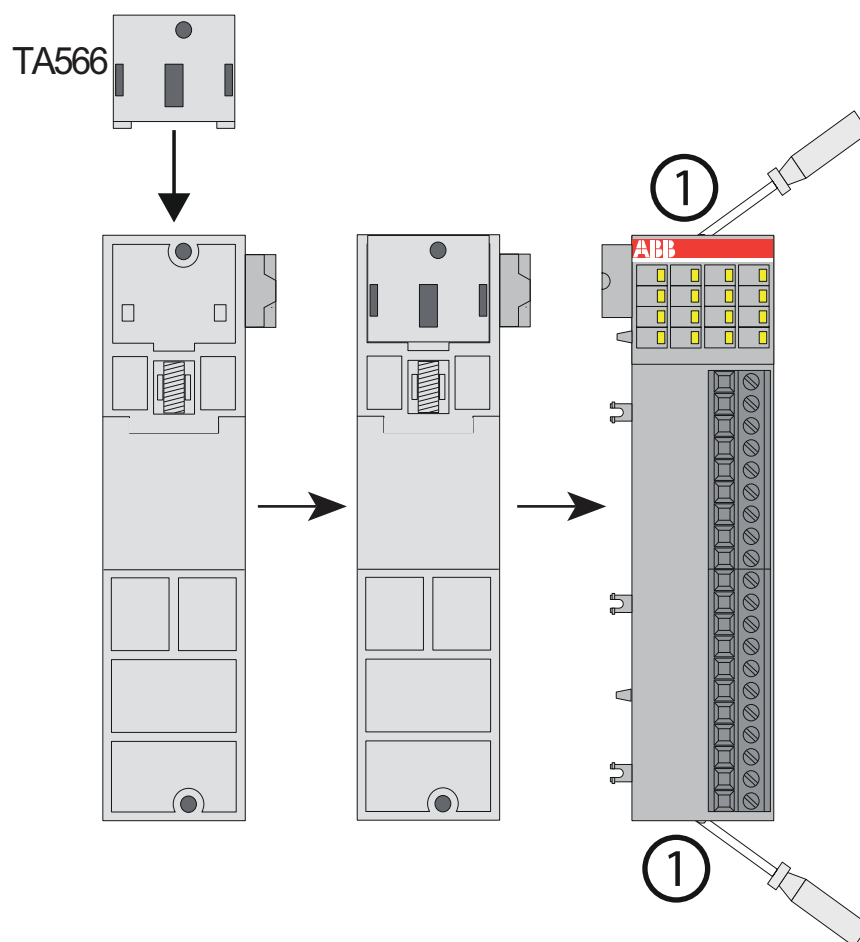
53.1 Assembly



53.2 Disassembly



53.3 Assembly with screws



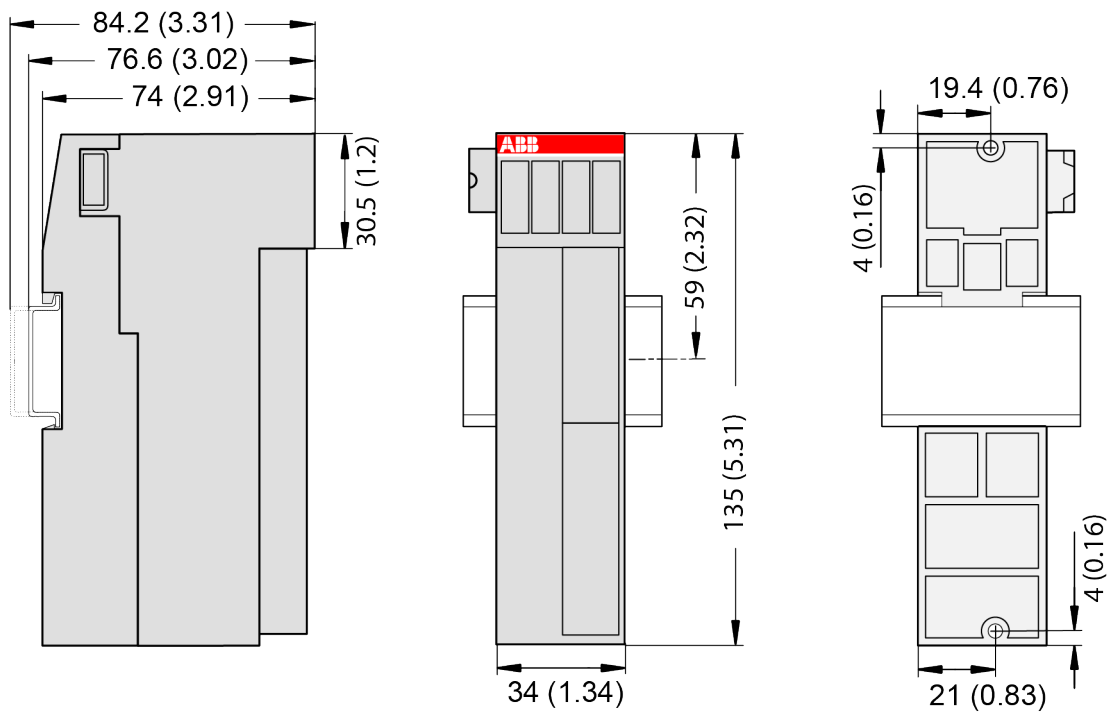
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

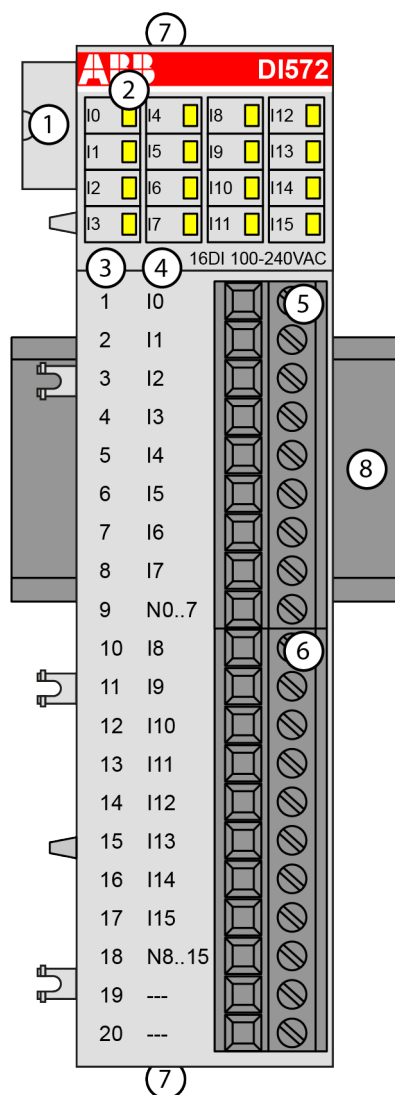
The insertion of the accessories TA566 for wall mounting is essential.

53.4 Dimensions



The dimensions are in mm and in brackets in inch.

53.5 Connections



- 1 I/O bus
- 2 16 yellow LEDs to display the signal states of the inputs I0 ... I15
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for input signals (9-pin)
- 6 Terminal block for input signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

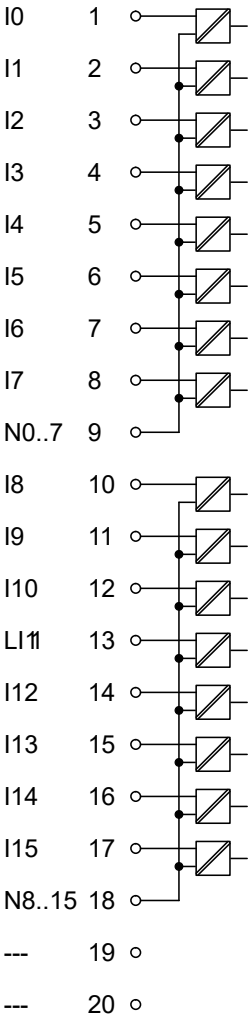


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

53.5.1 Inputs/Outputs



Examples

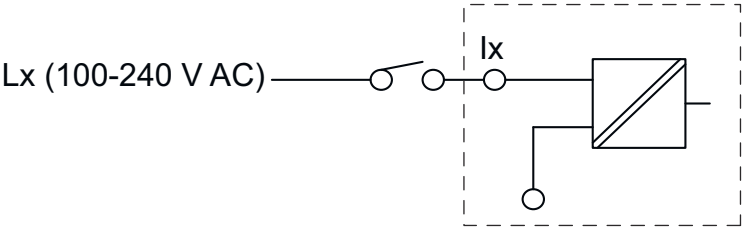


Fig. 61: Example for connection input Ix

53.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

53.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

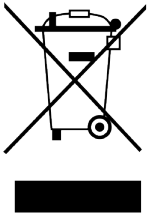
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

53.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

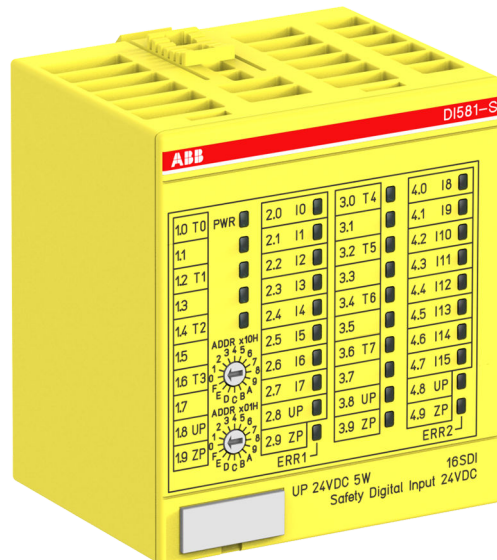
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

54 DI581-S(-XC)

- DI581-S
- DI581-S-XC



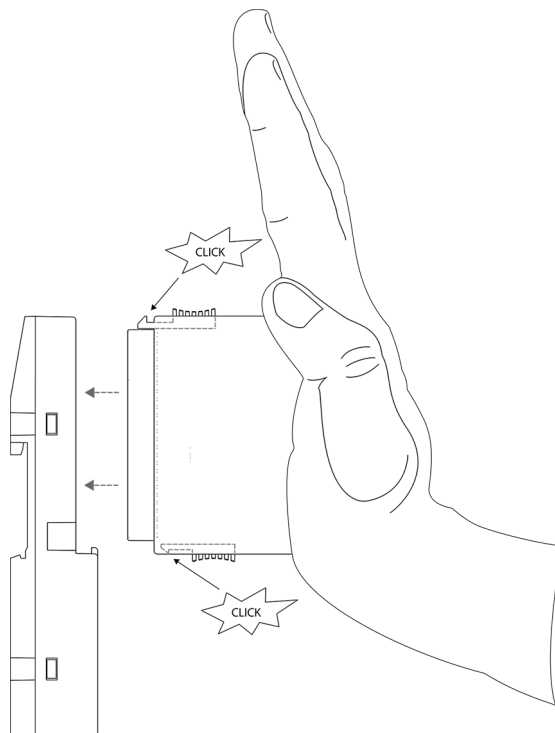
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

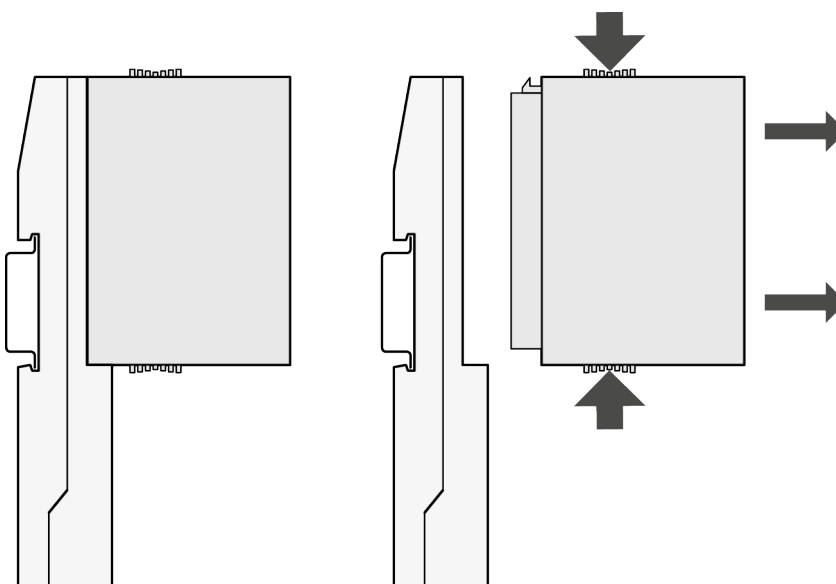
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

54.1 Assembly

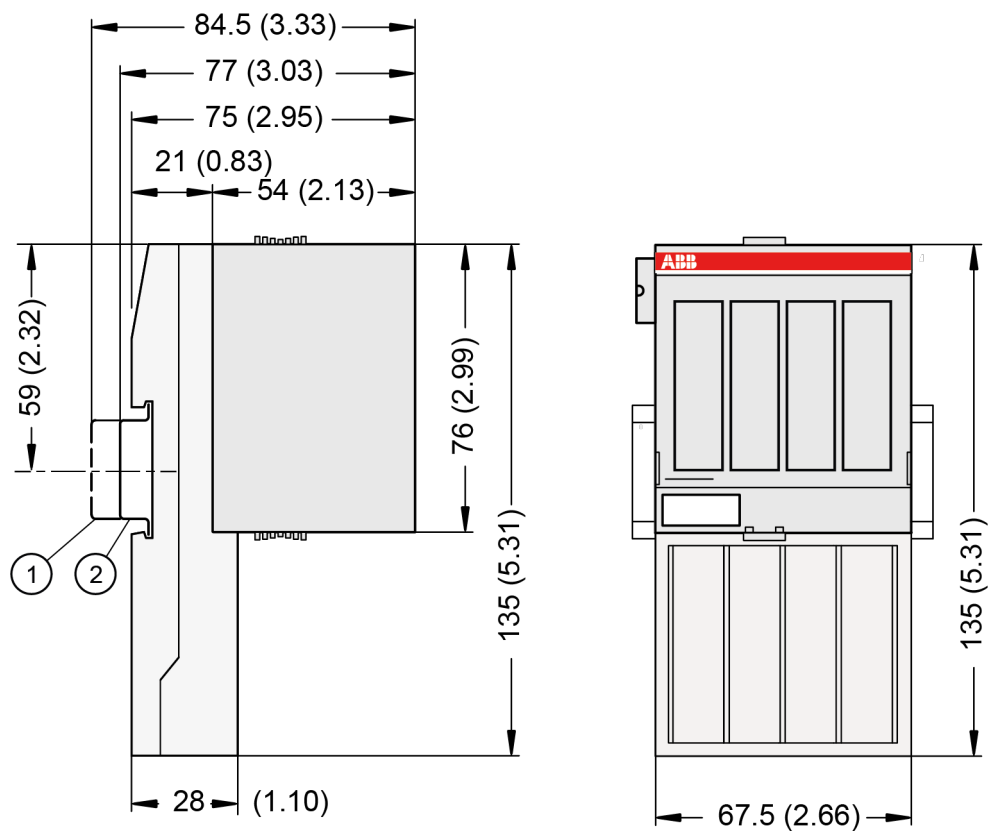


1. Put the module on the terminal unit
⇒ Module clicks in.
2. Then press the module with a force of at least 100 N into the terminal unit to achieve proper electrical contact.

54.2 Disassembly



54.3 Dimensions

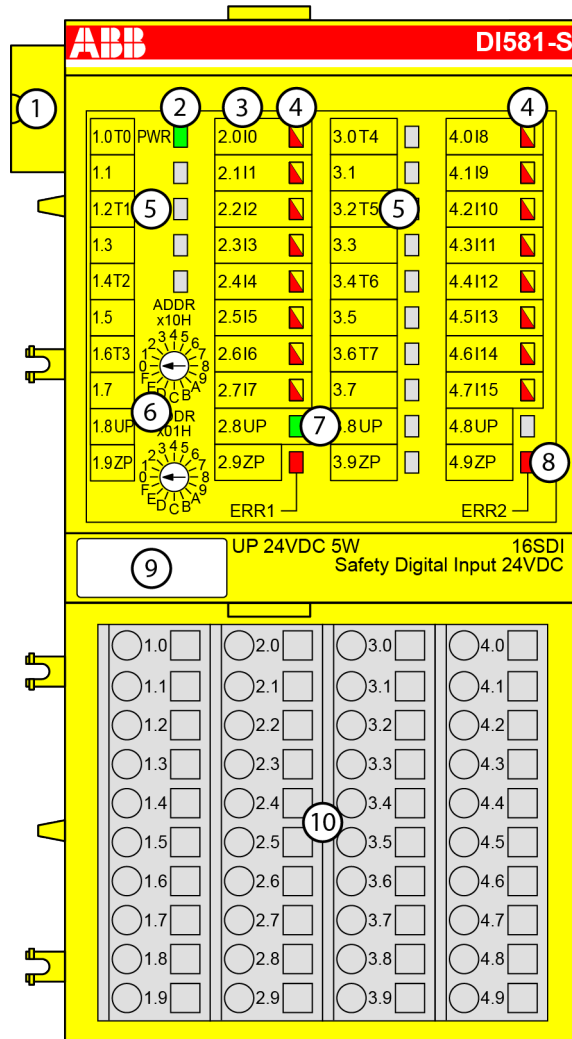


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



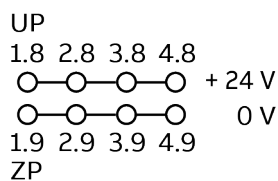
The dimensions are in mm and in brackets in inch.

54.4 Connections



- 1 I/O bus
- 2 System LED
- 3 Allocation of terminal number and signal name
- 4 16 yellow/red LEDs to display the signal states of the digital inputs I0 to I15
- 5 8 Test pulse outputs T0 to T7
- 6 2 rotary switches for setting the PROFIsafe address
- 7 1 green LED to display the state of the process supply voltage UP
- 8 2 red LEDs to display errors
- 9 Label
- 10 Terminal unit TU582-S(-XC)
-  Sign for XC version

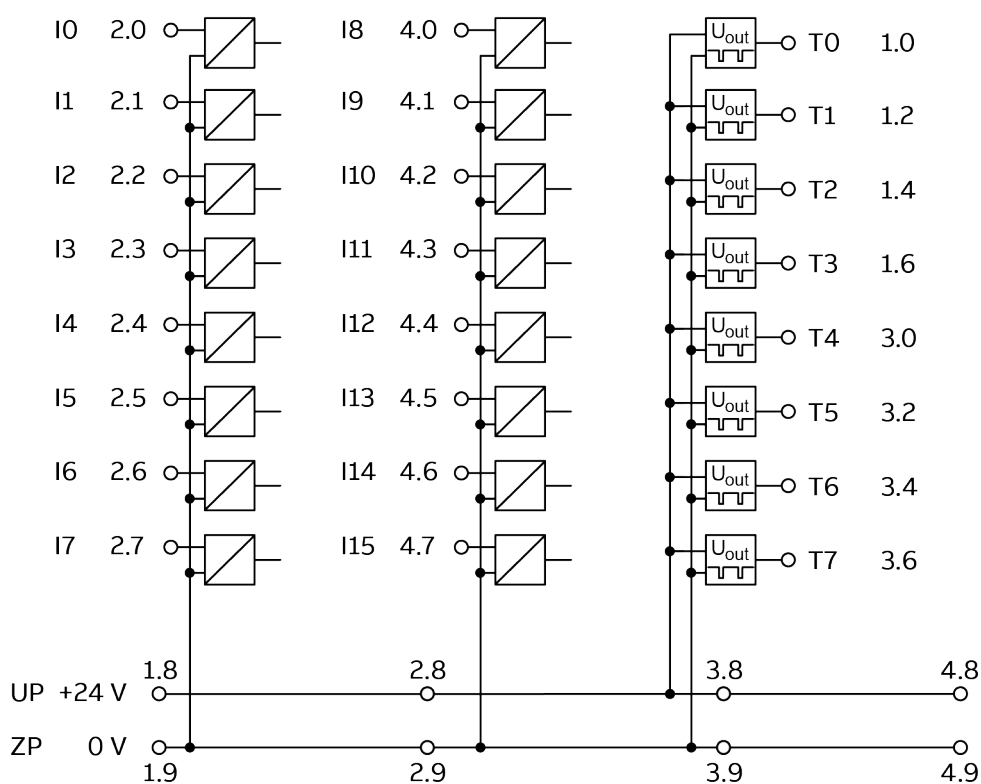
54.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

54.4.2 Inputs



Example

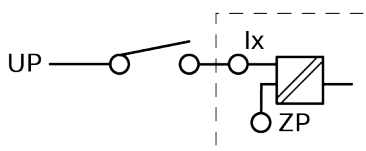


Fig. 62: Example of connection input Ix



AC500-S safety user manual

For a detailed description of the connection of the module, please refer to the "AC500-S safety user manual".

54.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

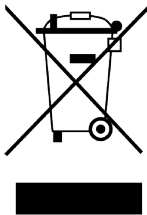
54.6 Certification



MSIP-REI-Abb-AC500

en	Devices with KCC sign on product sticker and packaging	
ko	제품 스티커 및 포장에 KCC 표시가 된 기기	
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

54.7 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

55 DO524(-XC)

- DO524
- DO524-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

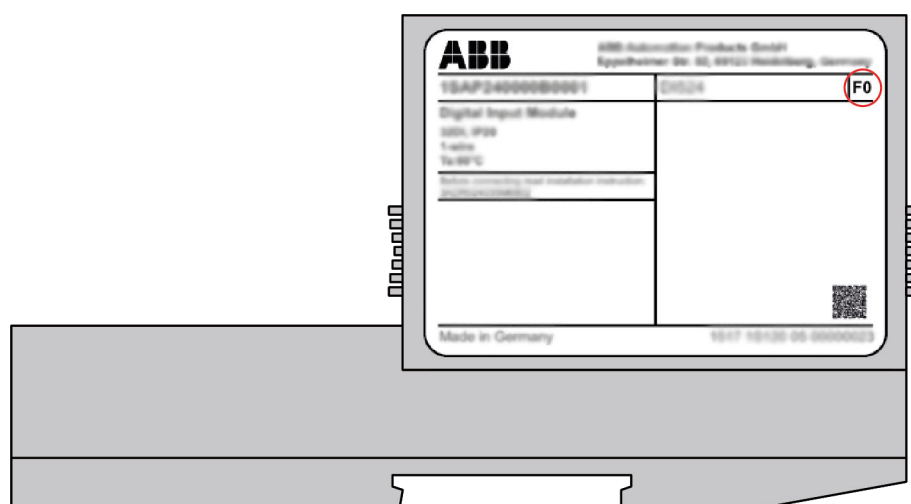
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

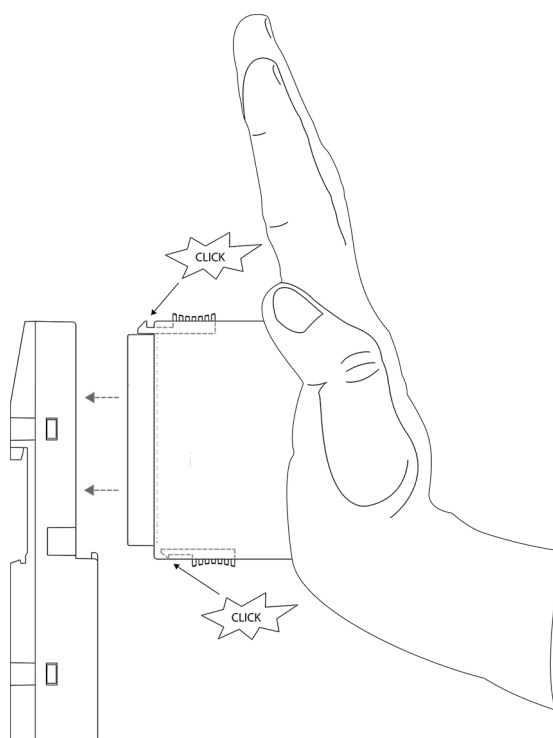
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

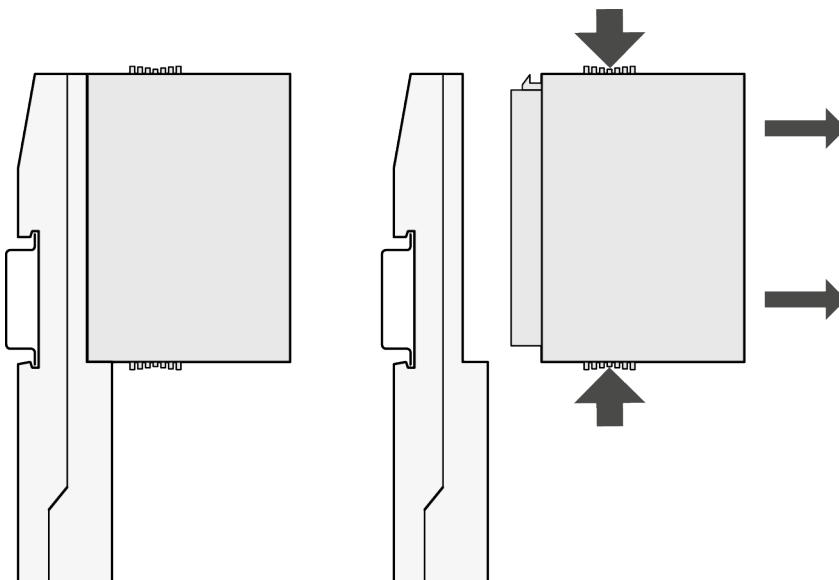
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

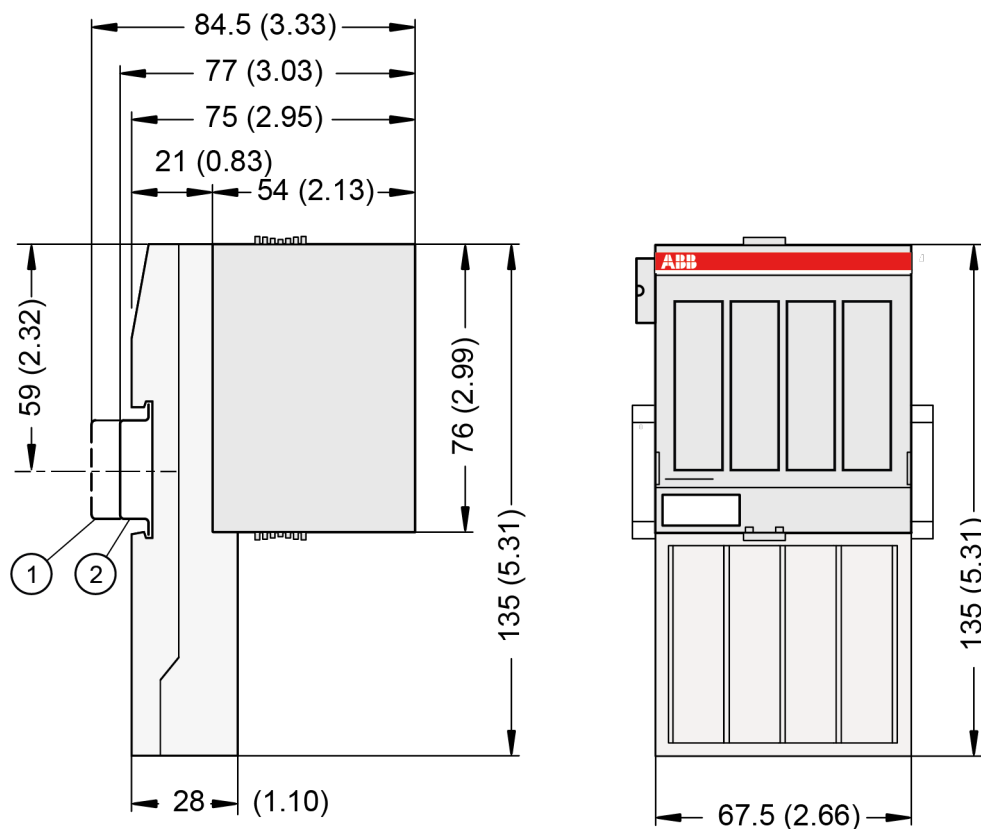
55.1 Assembly



55.2 Disassembly



55.3 Dimensions

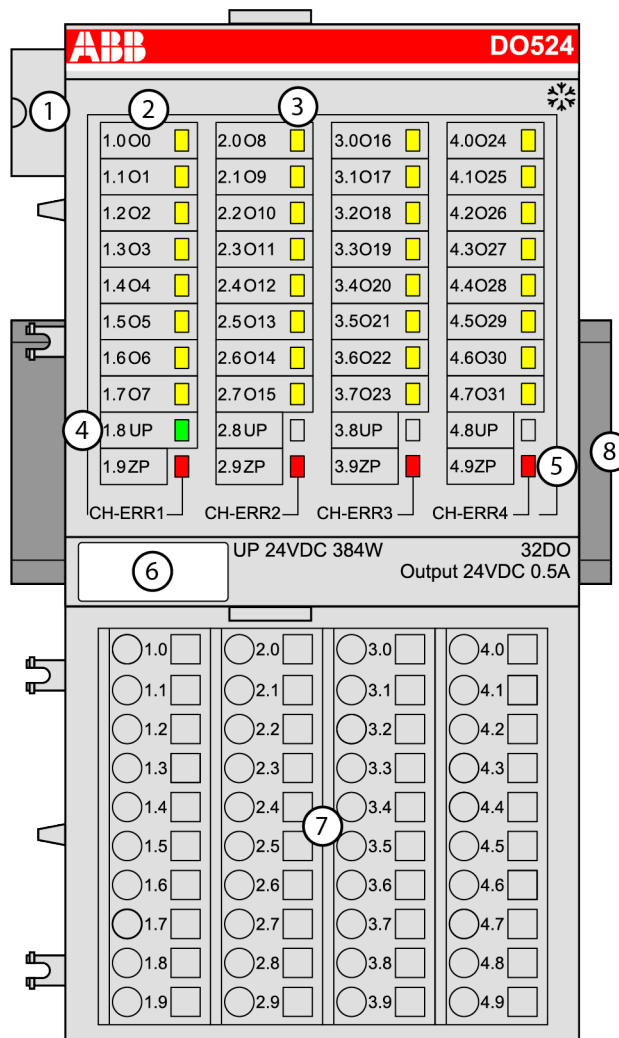


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

55.4 Connections

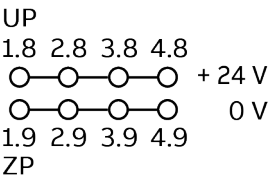


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 32 yellow LEDs to display the signal states at the digital outputs (O0 ... O31)
- 4 1 green LED to display the state of the process supply voltage UP
- 5 4 red LEDs to display errors
- 6 Label
- 7 Terminal unit
- 8 DIN rail
- ❄ Sign for XC version



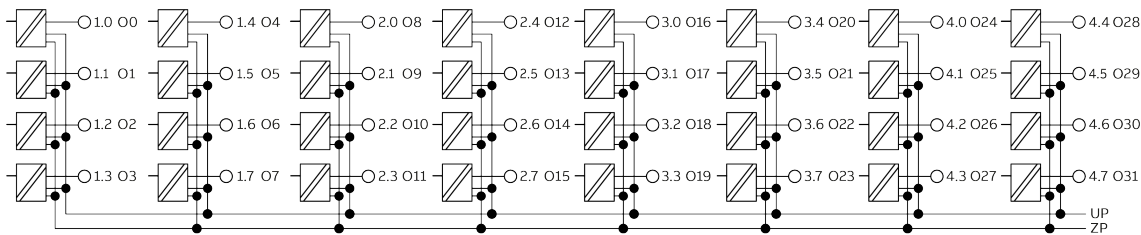
All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

55.4.1 Process supply voltage



CAUTION!
The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

55.4.2 Outputs



Example

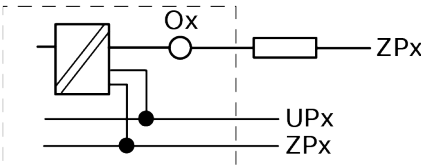


Fig. 63: Example of connection output

55.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

55.6 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

55.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

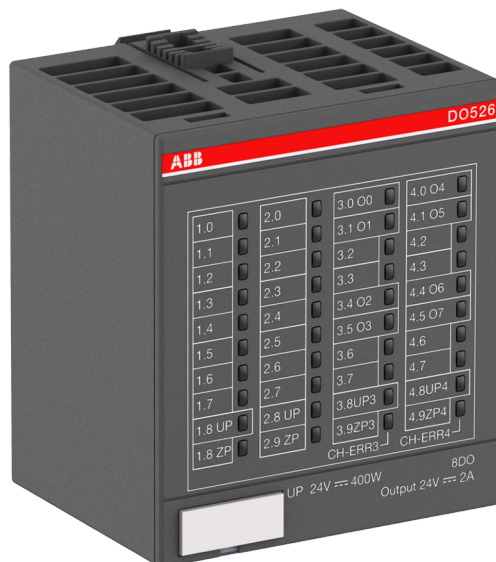
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

56 DO526(-XC)

- DO526
- DO526-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

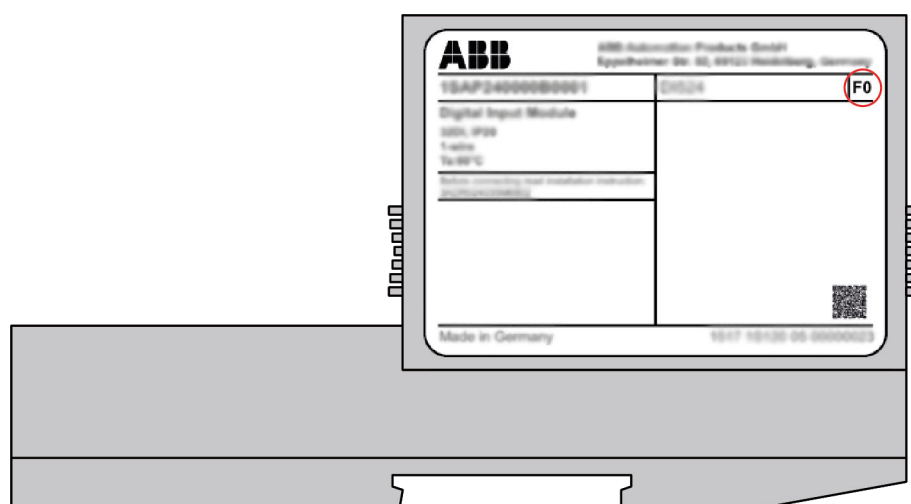
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

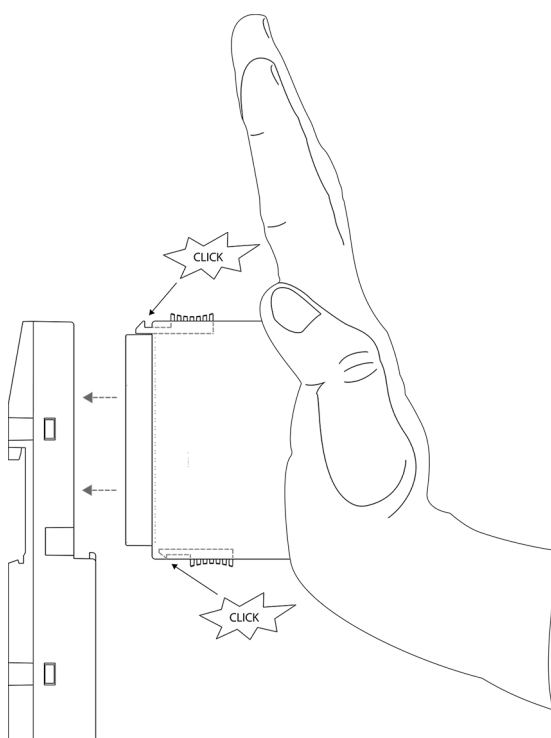
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

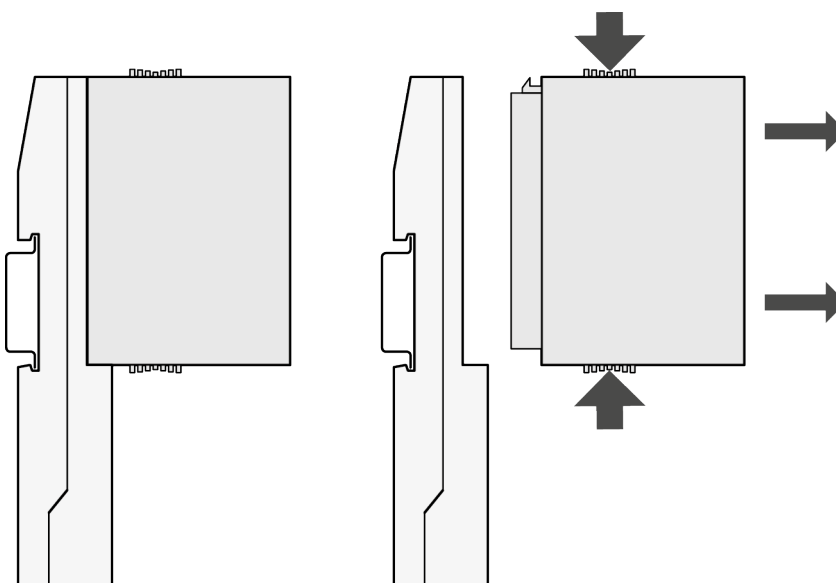
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

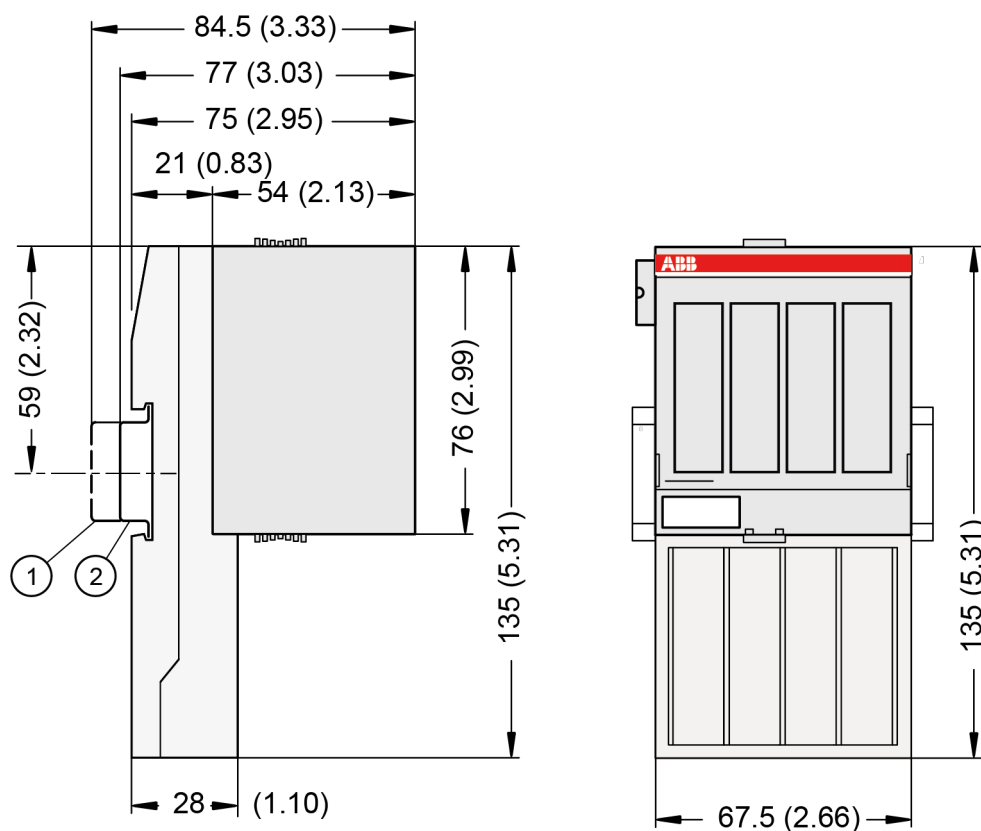
56.1 Assembly



56.2 Disassembly



56.3 Dimensions

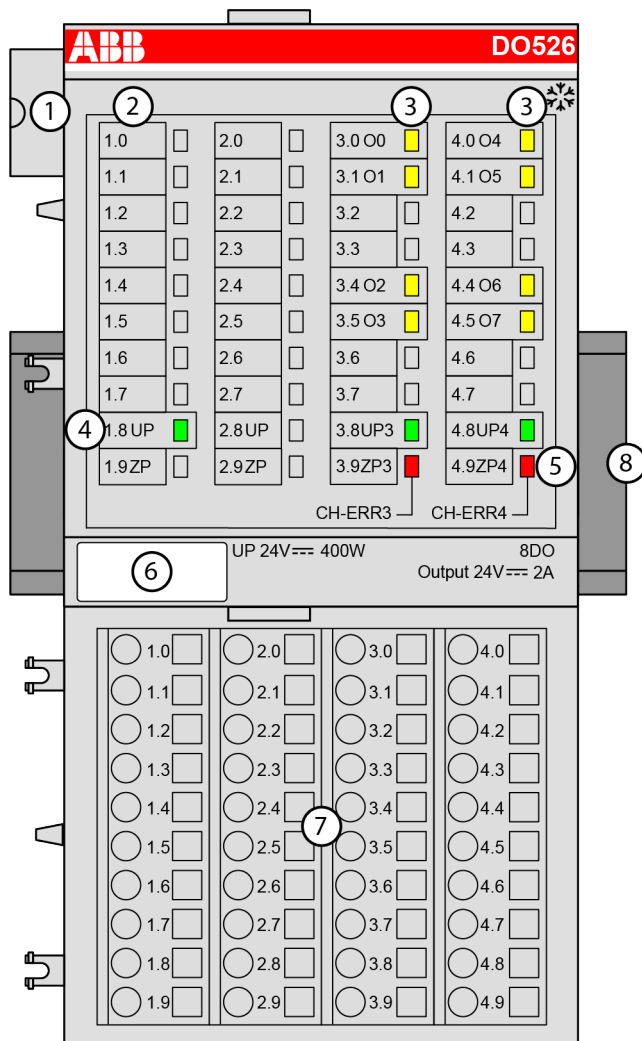


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

56.4 Connections



- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states of the outputs O0 ... O7
- 4 3 green LEDs to display the states of the process supply voltage UP, UP3 and UP4
- 5 2 red LEDs to display errors
- 6 Label
- 7 Terminal unit
- 8 DIN-rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

56.4.1 Process supply voltage

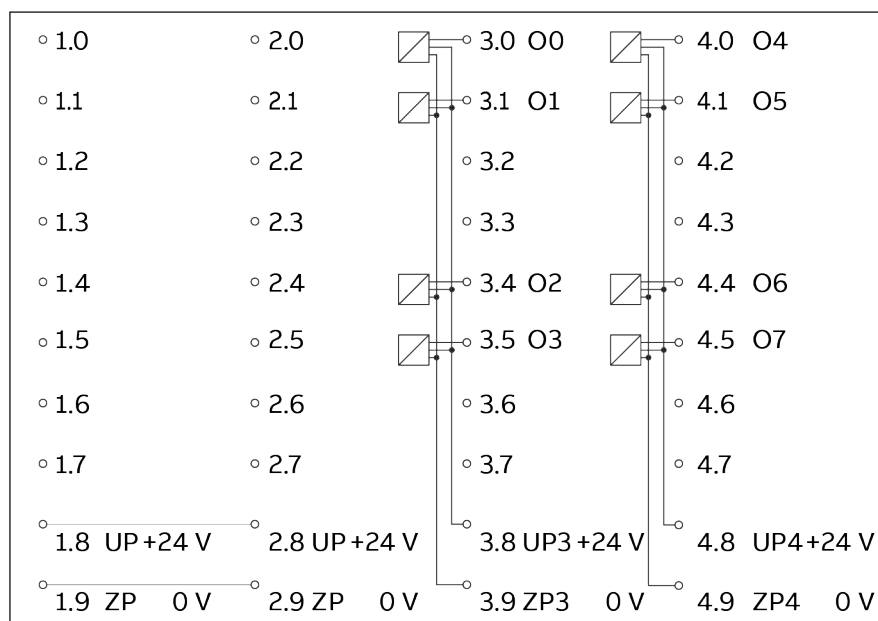
UP	UP3	UP4	
1.8 2.8	3.8 4.8		
○—○	○ ○		+ 24 V
○—○	○ ○		0 V
1.9 2.9	3.9 4.9		
ZP	ZP3 ZP4		



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

56.4.2 Outputs



Example

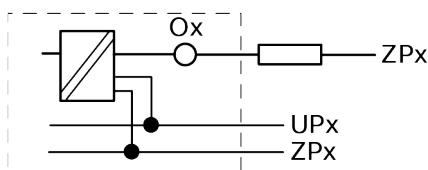


Fig. 64: Example of connection output

56.5 Cleaning



Cleaning instructions

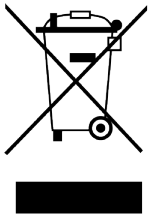
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

56.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

56.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

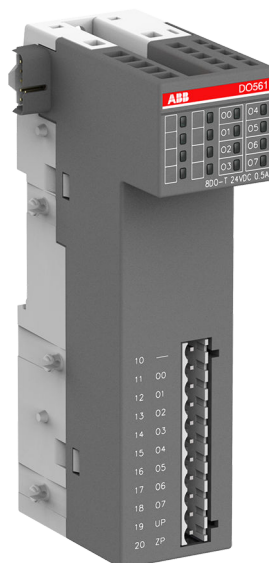
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

57 DO561

- DO561



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

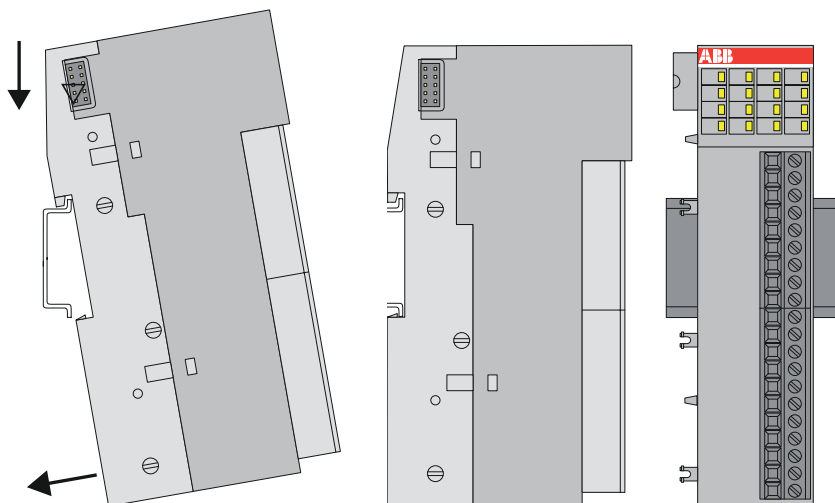
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



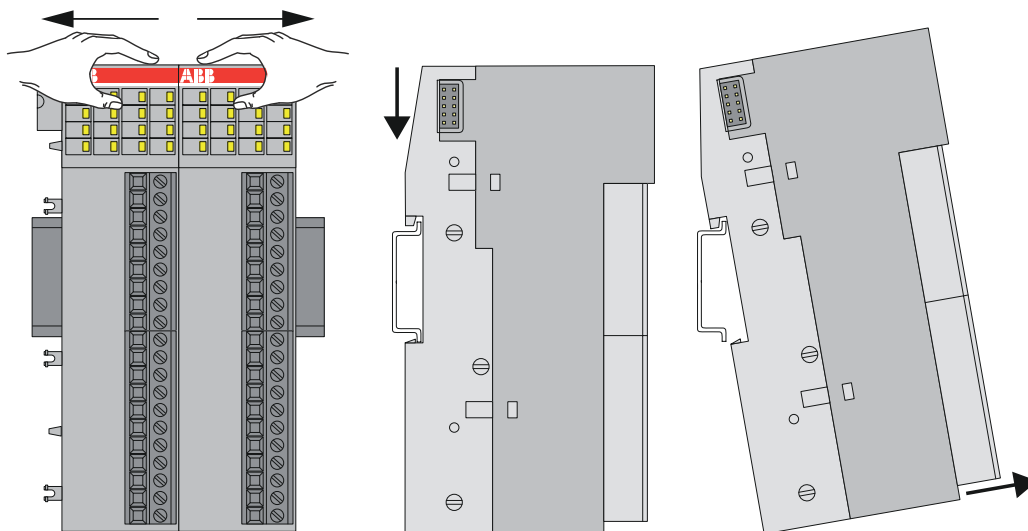
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

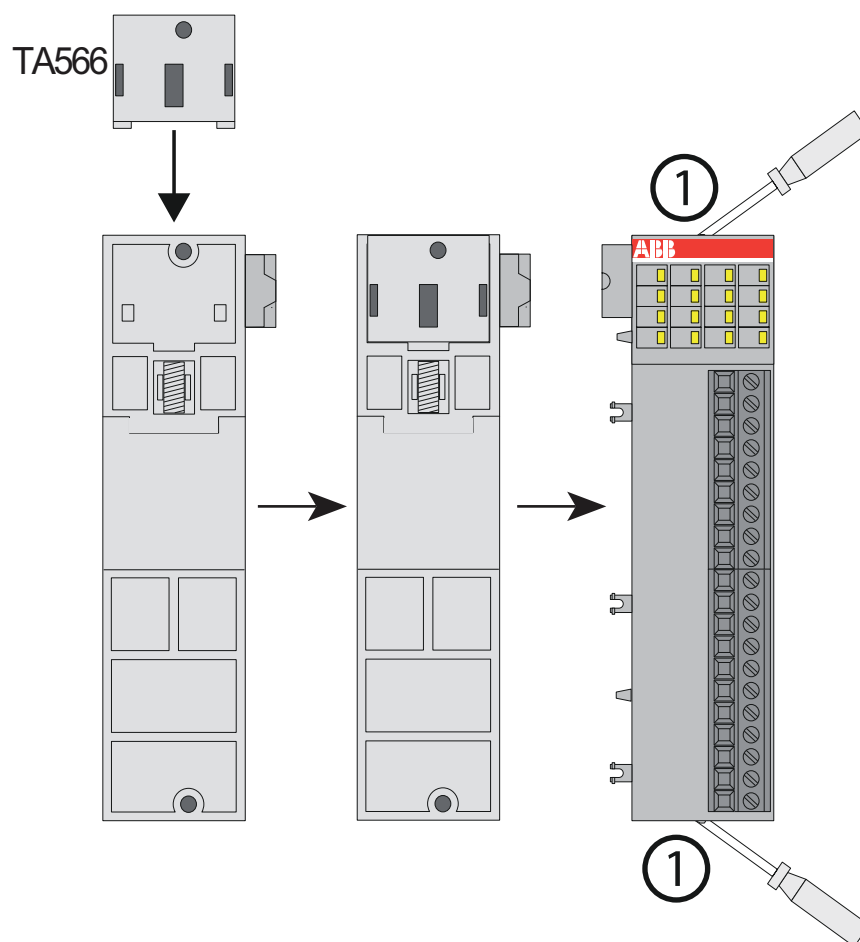
57.1 Assembly



57.2 Disassembly



57.3 Assembly with screws



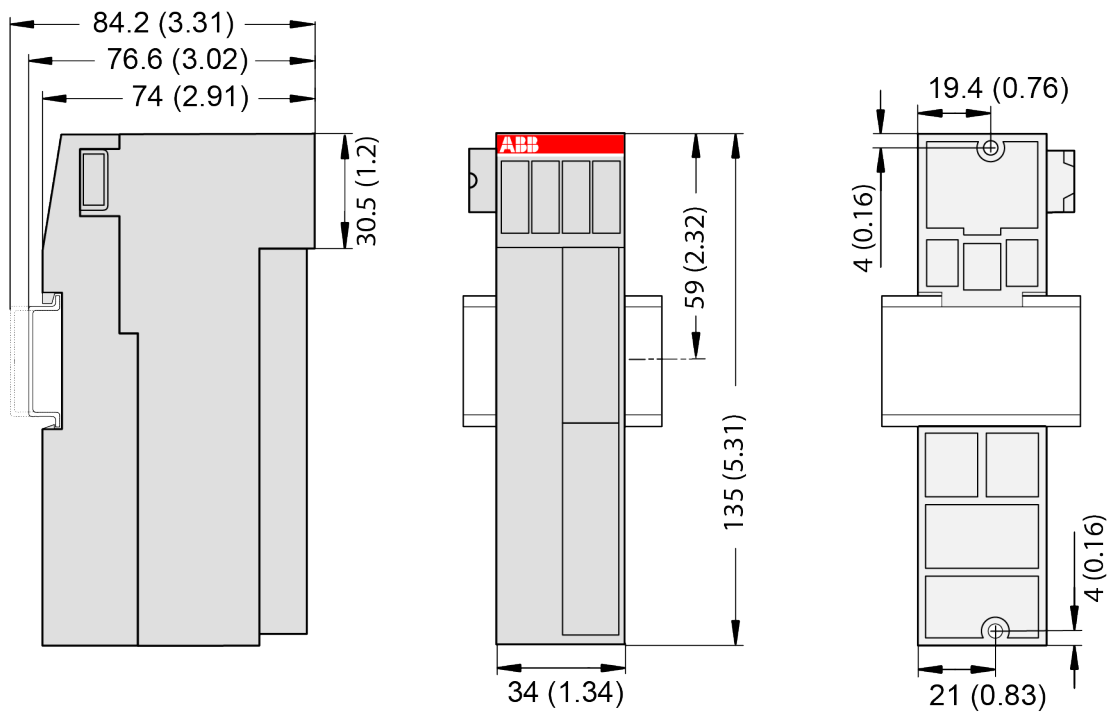
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

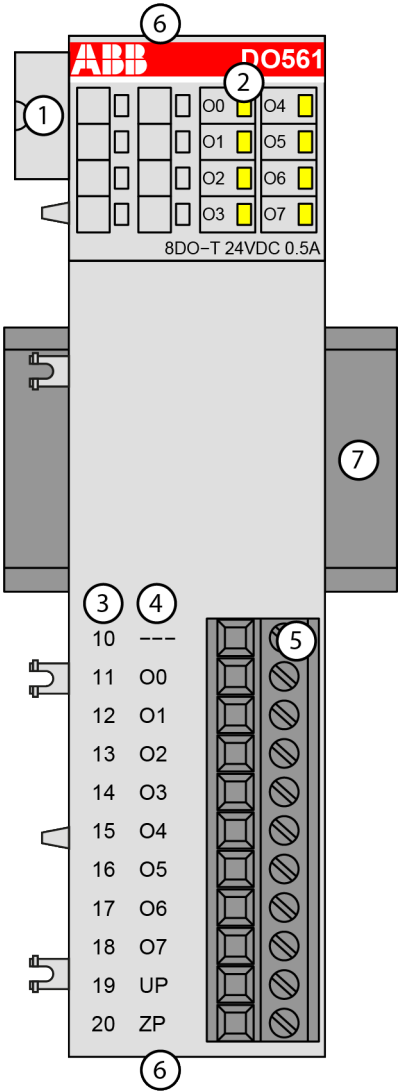
The insertion of the accessories TA566 for wall mounting is essential.

57.4 Dimensions



The dimensions are in mm and in brackets in inch.

57.5 Connections



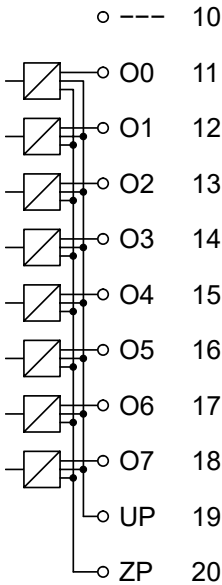
- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the outputs O0 ... O7
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for output signals (11-pin)
- 6 2 holes for wall-mounting with screws
- 7 DIN rail

 All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

57.5.1 Outputs



Examples

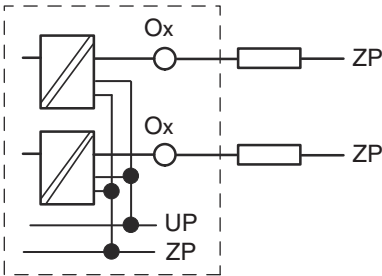


Fig. 65: Example of connection output Ox

57.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

57.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500-eCo		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

57.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

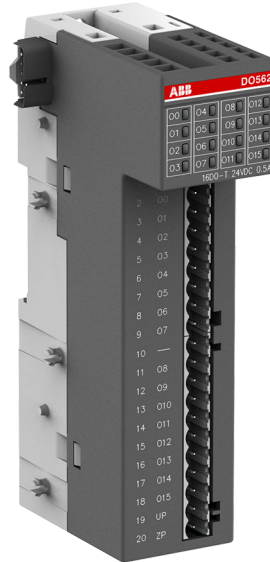
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

58 DO562

- DO562



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

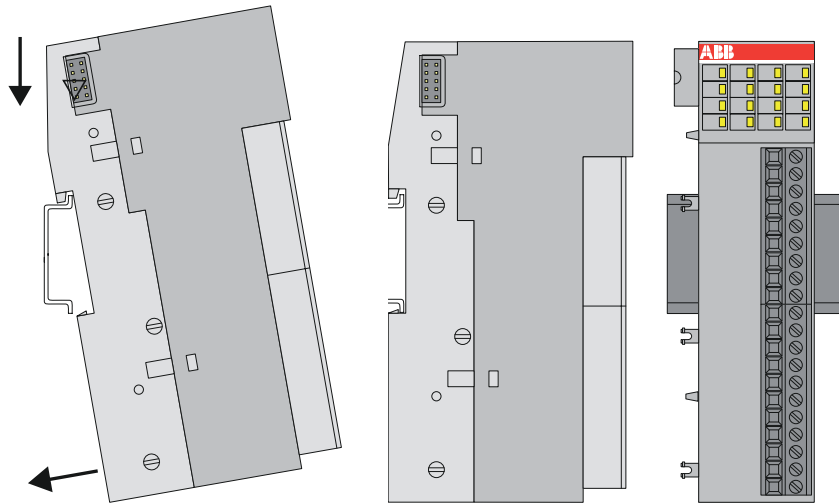
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



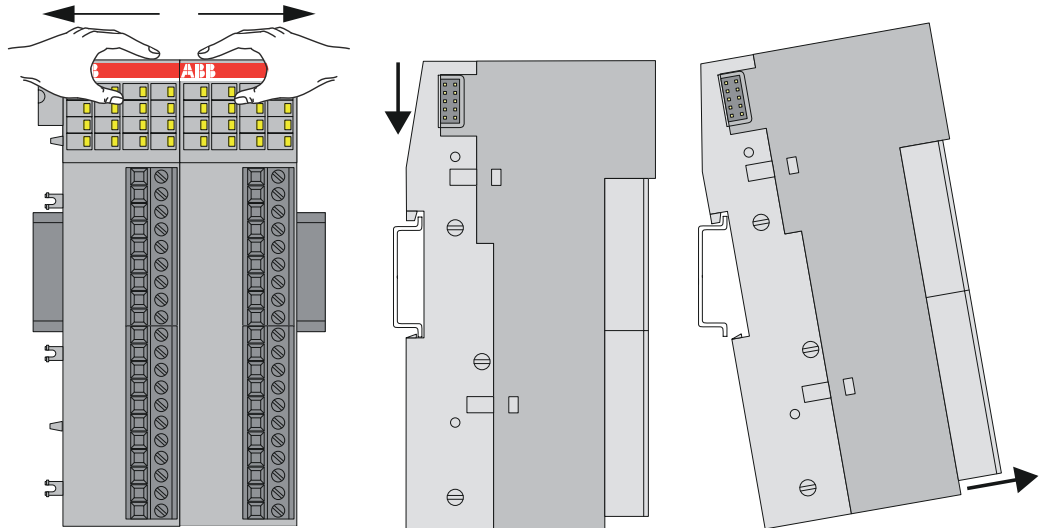
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

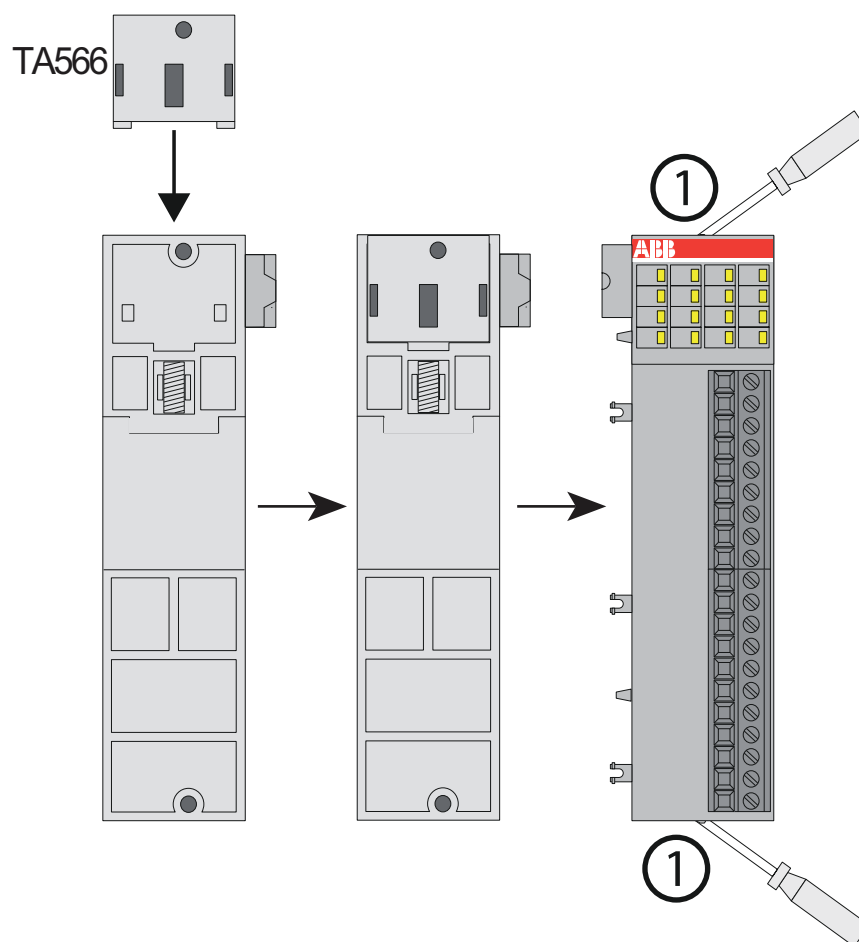
58.1 Assembly



58.2 Disassembly



58.3 Assembly with screws



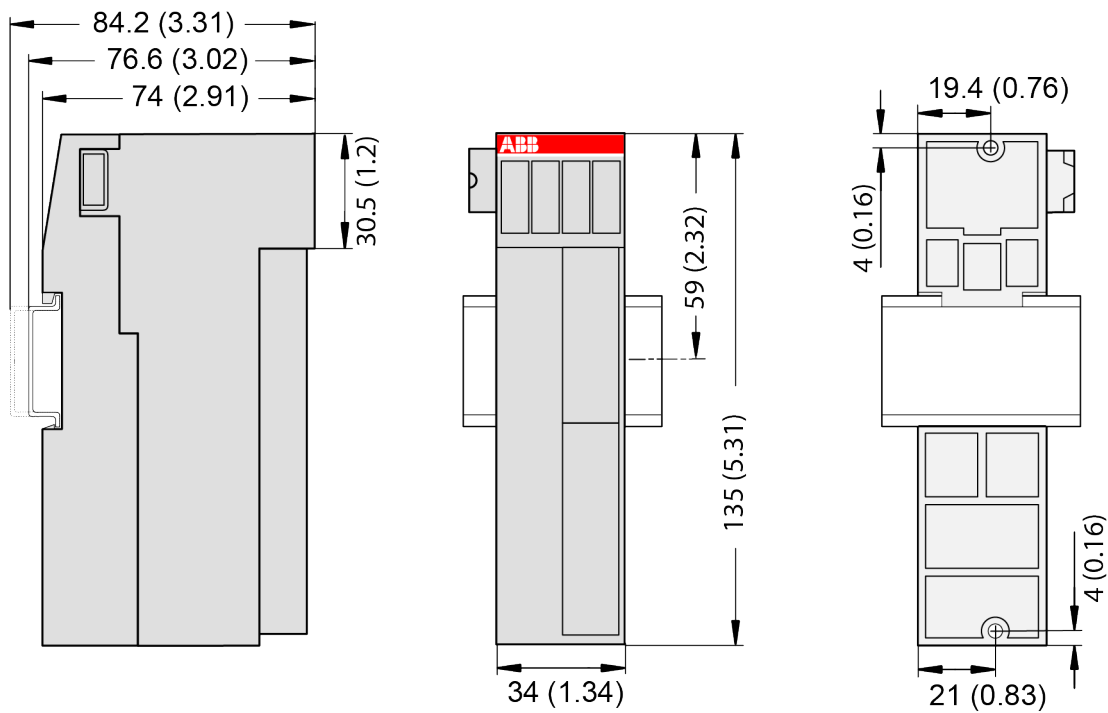
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

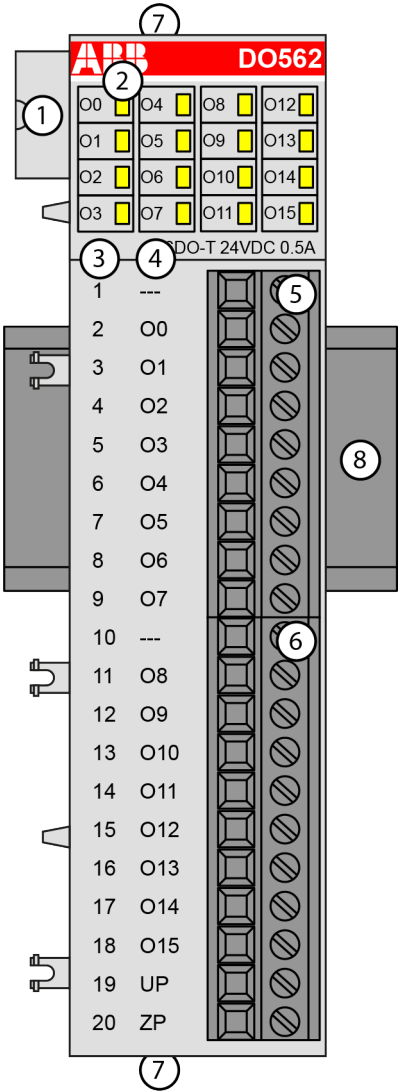
The insertion of the accessories TA566 for wall mounting is essential.

58.4 Dimensions



The dimensions are in mm and in brackets in inch.

58.5 Connections



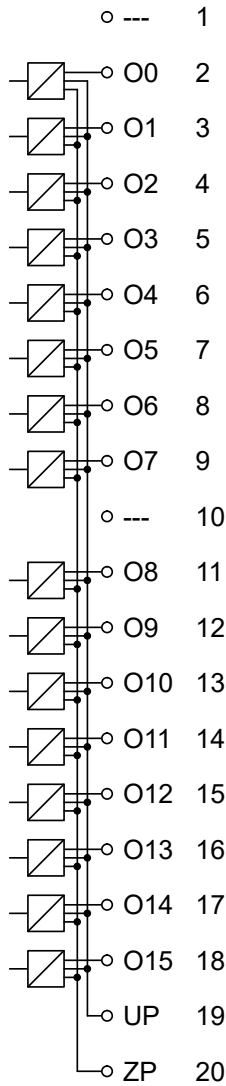
- 1 I/O bus
- 2 16 yellow LEDs to display the signal states of the outputs O0 ... O15
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for output signals (9-pin)
- 6 Terminal block for output signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

 All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

58.5.1 Outputs



Examples

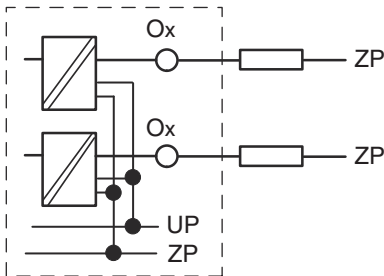


Fig. 66: Example for connection output Ox

58.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

58.7 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

58.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

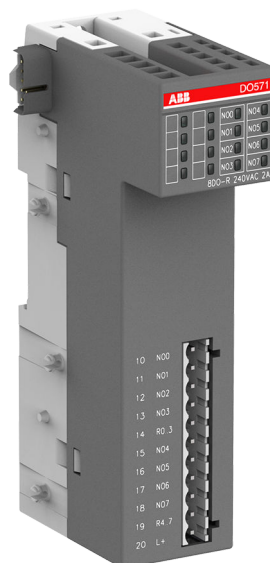
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

59 DO571

- DO571



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

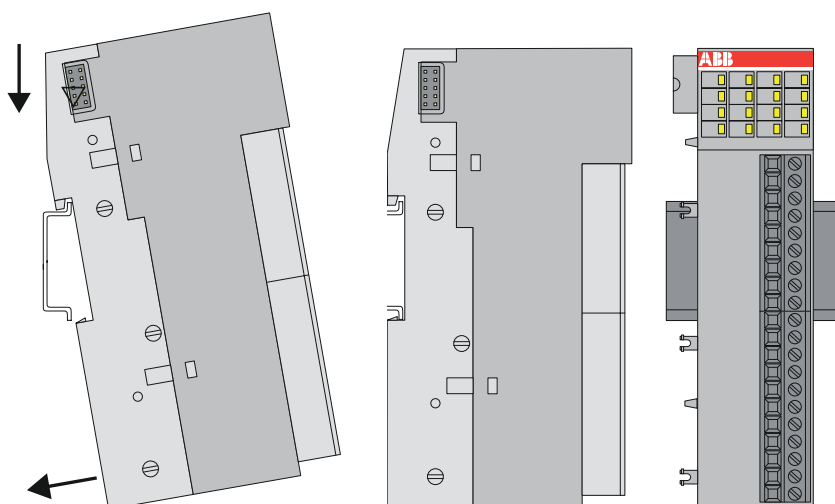
Do not use this module together with the DC505-FBP/CI590-CS31-HA module.



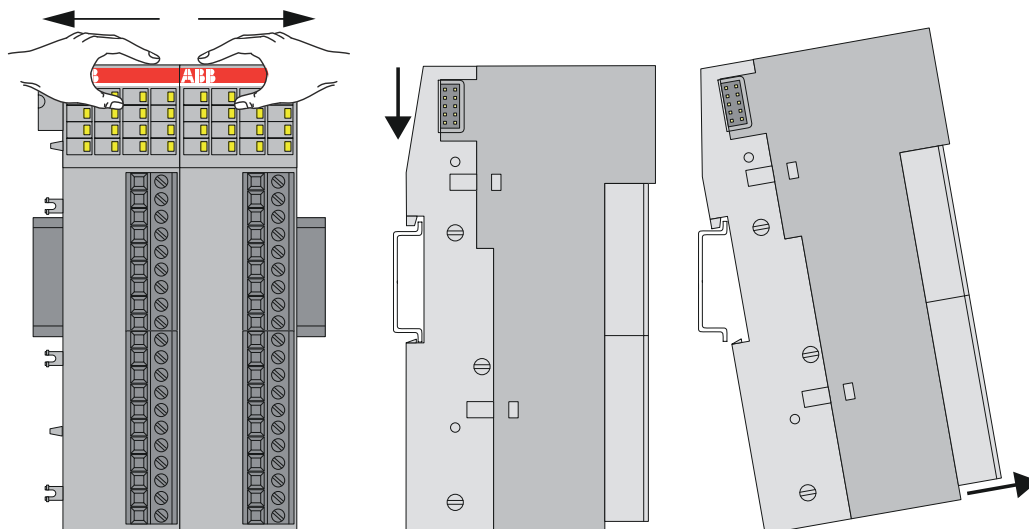
CAUTION!

Make sure that all channels are supplied from the same phase.

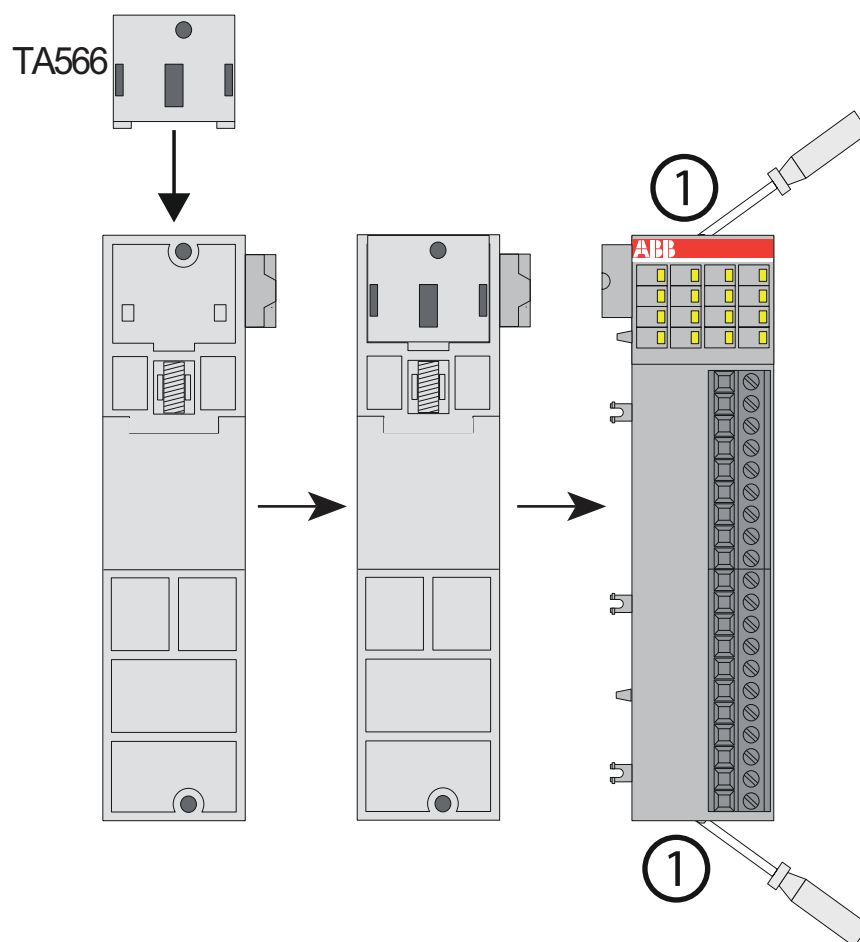
59.1 Assembly



59.2 Disassembly



59.3 Assembly with screws



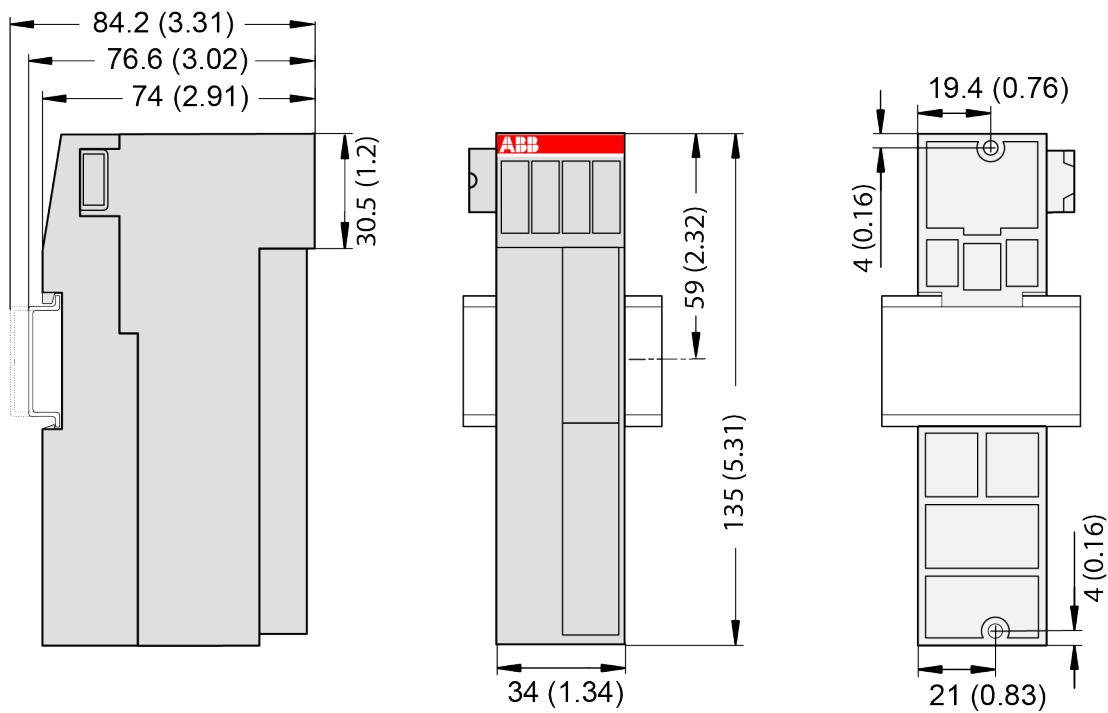
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

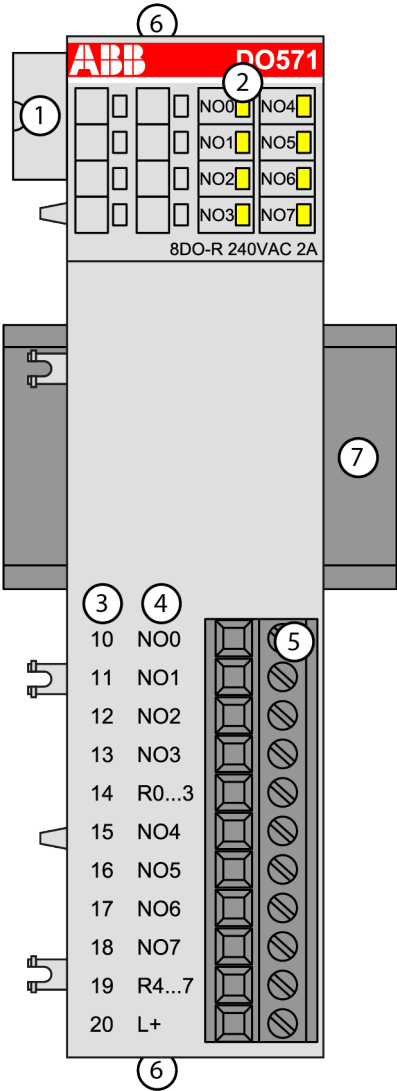
The insertion of the accessories TA566 for wall mounting is essential.

59.4 Dimensions



The dimensions are in mm and in brackets in inch.

59.5 Connections

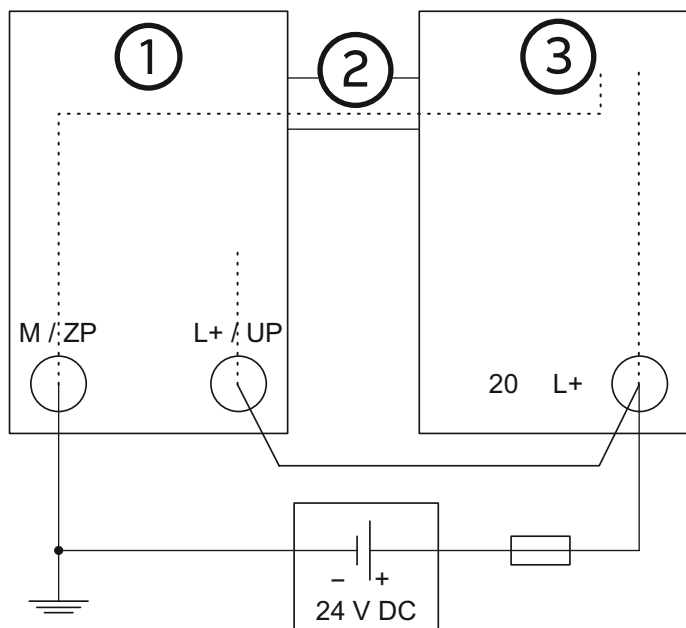


- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the outputs O0 ... O7
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for output signals (11-pin)
- 6 2 holes for wall-mounting with screws
- 7 DIN rail

 All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

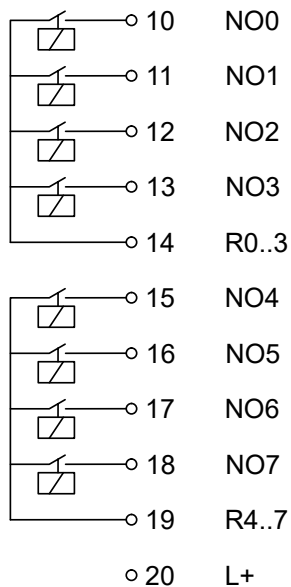
5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front



- 1 CPU or communication interface module
- 2 I/O bus
- 3 DO571

59.5.1 Inputs/Outputs



Examples

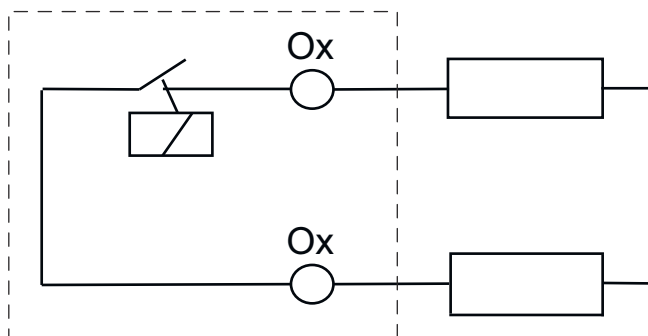


Fig. 67: Example for connection output Ox

59.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

59.7 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

59.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

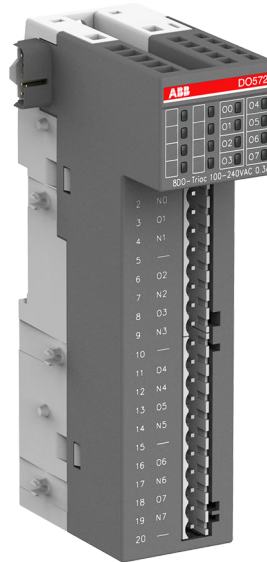
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

60 DO572

- DO572



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

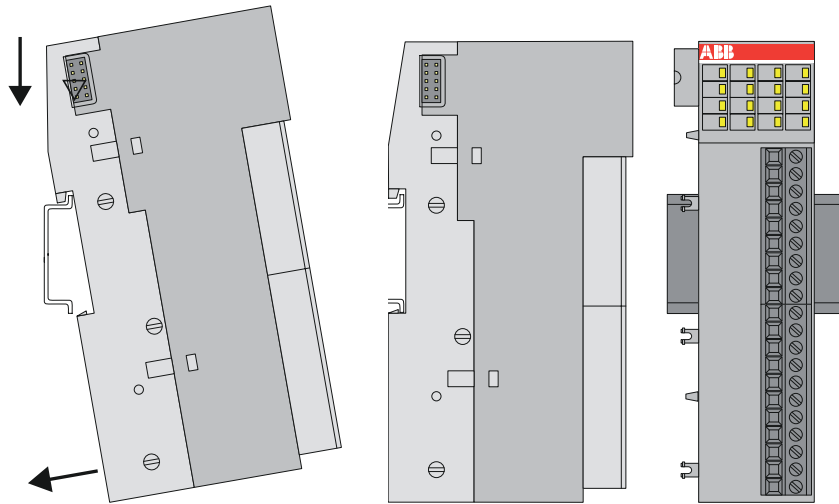
Do not use this module together with the DC505-FBP/CI590-CS31-HA module.



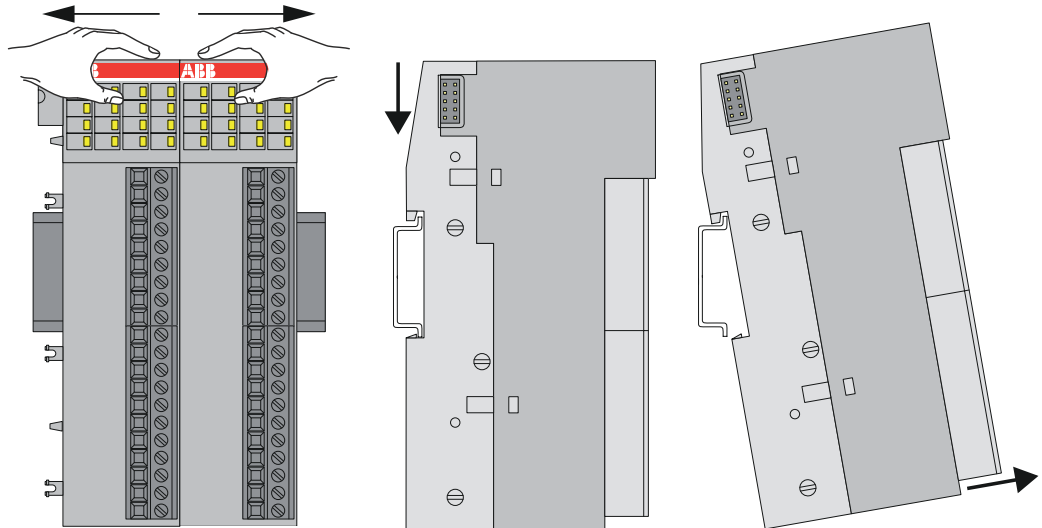
CAUTION!

Make sure that all channels are supplied from the same phase.

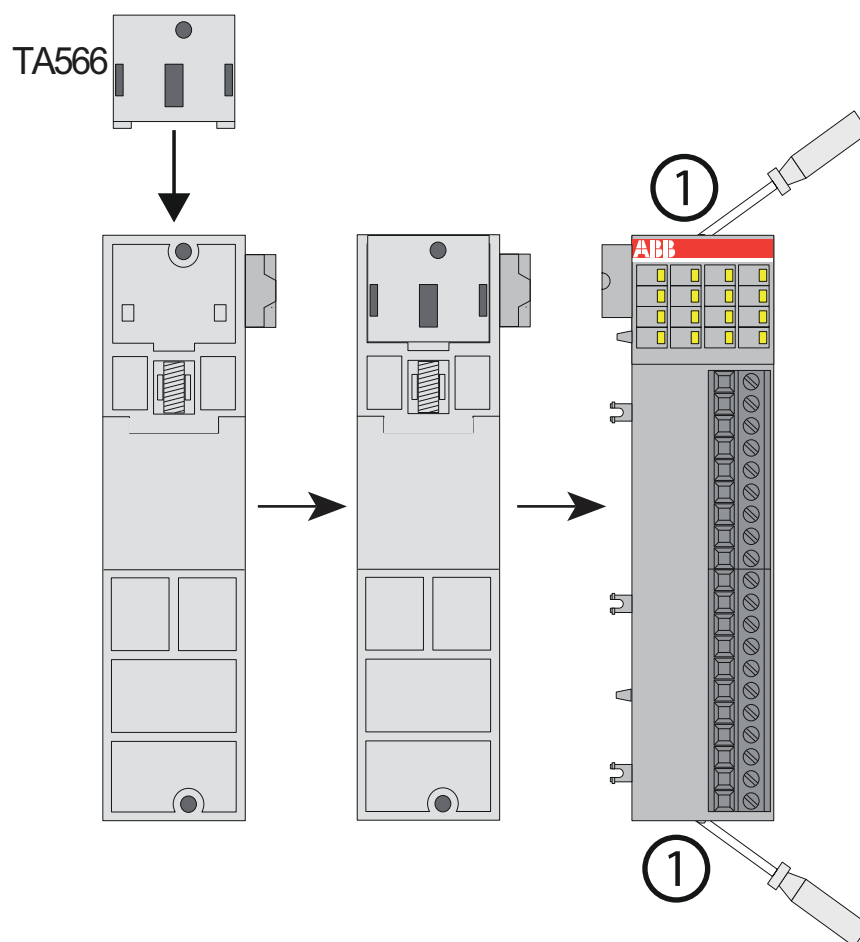
60.1 Assembly



60.2 Disassembly



60.3 Assembly with screws



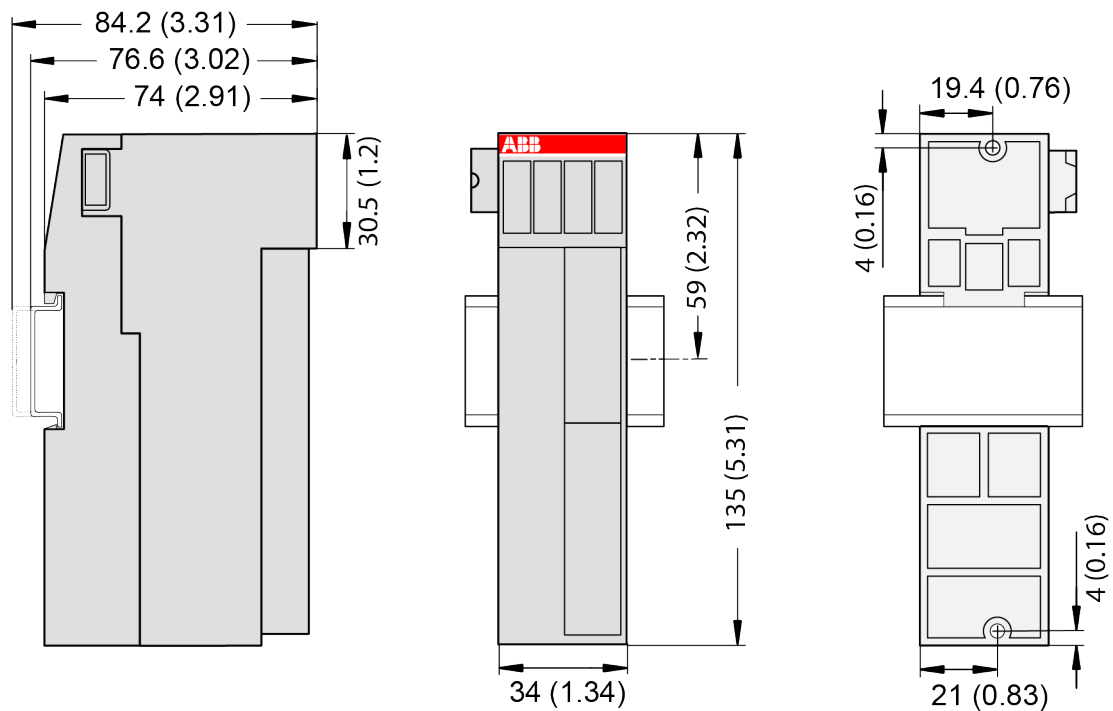
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

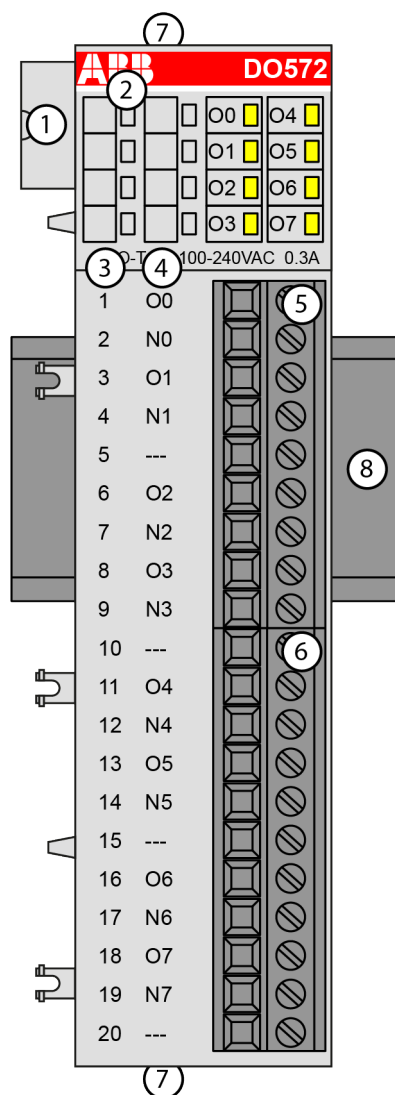
The insertion of the accessories TA566 for wall mounting is essential.

60.4 Dimensions



The dimensions are in mm and in brackets in inch.

60.5 Connections



- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the outputs O0 ... O7
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for output signals (9-pin)
- 6 Terminal block for output signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail

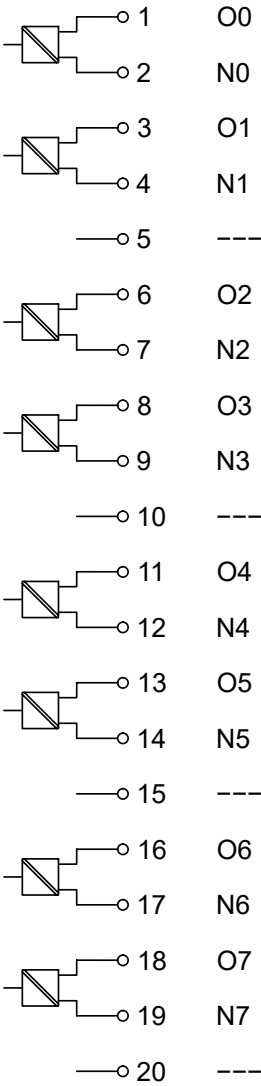


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

60.5.1 Outputs



Examples

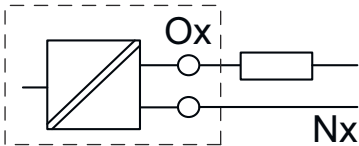


Fig. 68: Example for connection output O_x

60.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

60.7 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

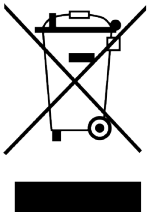
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

60.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

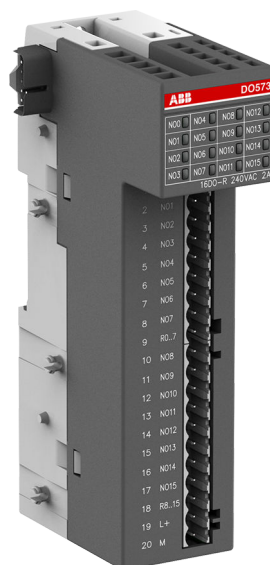
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

61 DO573

- DO573



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

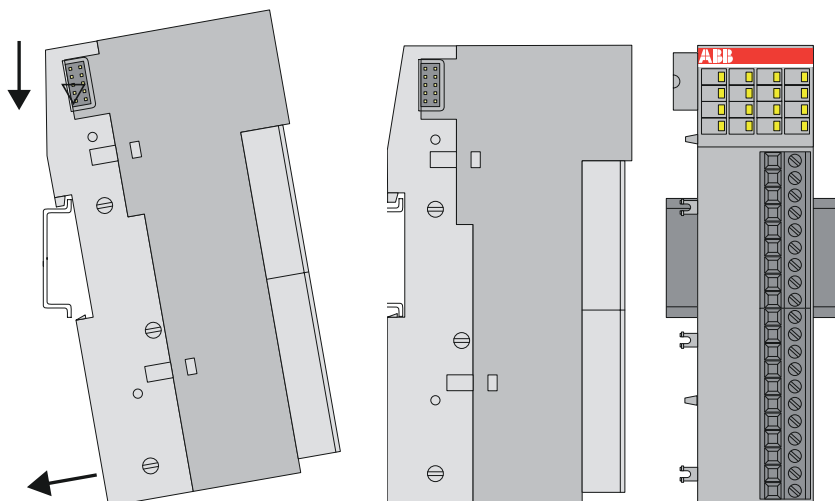
Do not use this module together with the DC505-FBP/CI590-CS31-HA module.



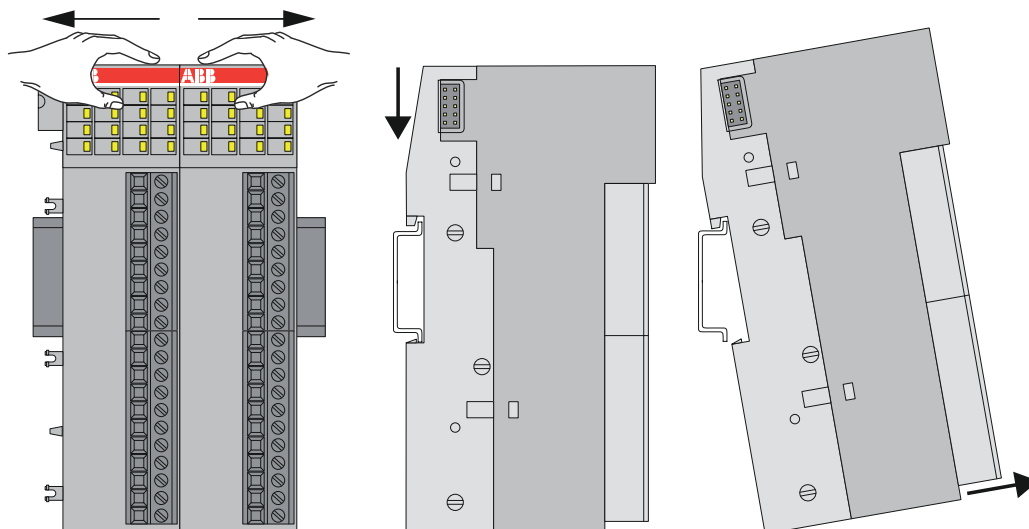
CAUTION!

Make sure that all channels are supplied from the same phase.

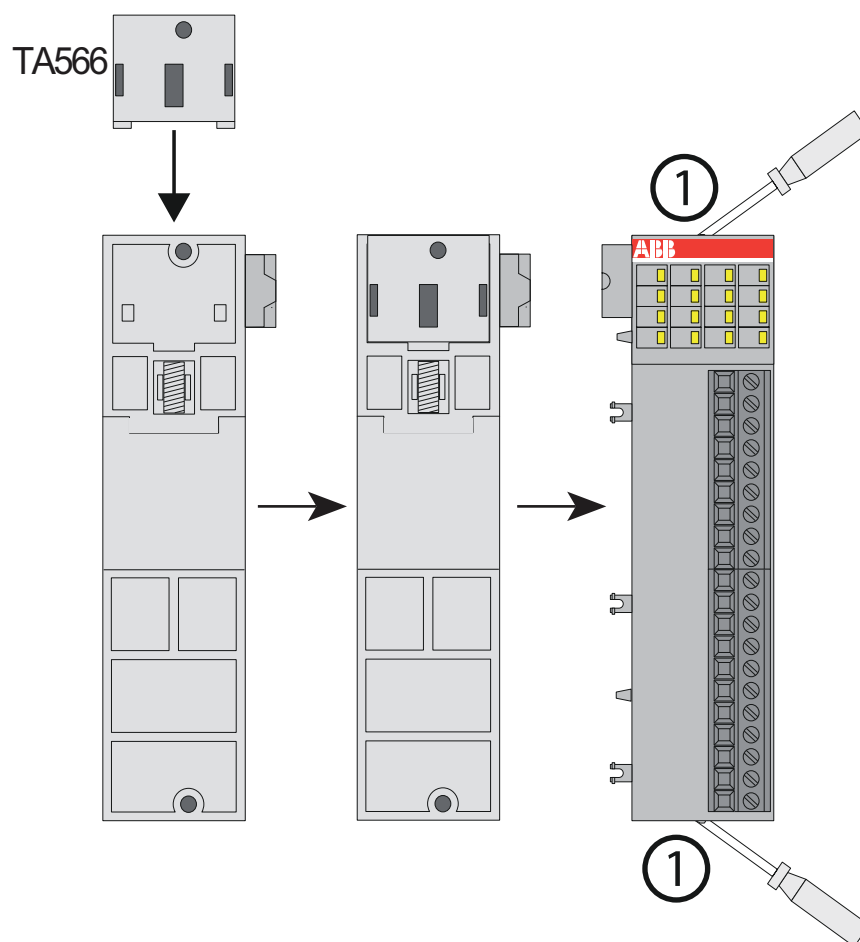
61.1 Assembly



61.2 Disassembly



61.3 Assembly with screws



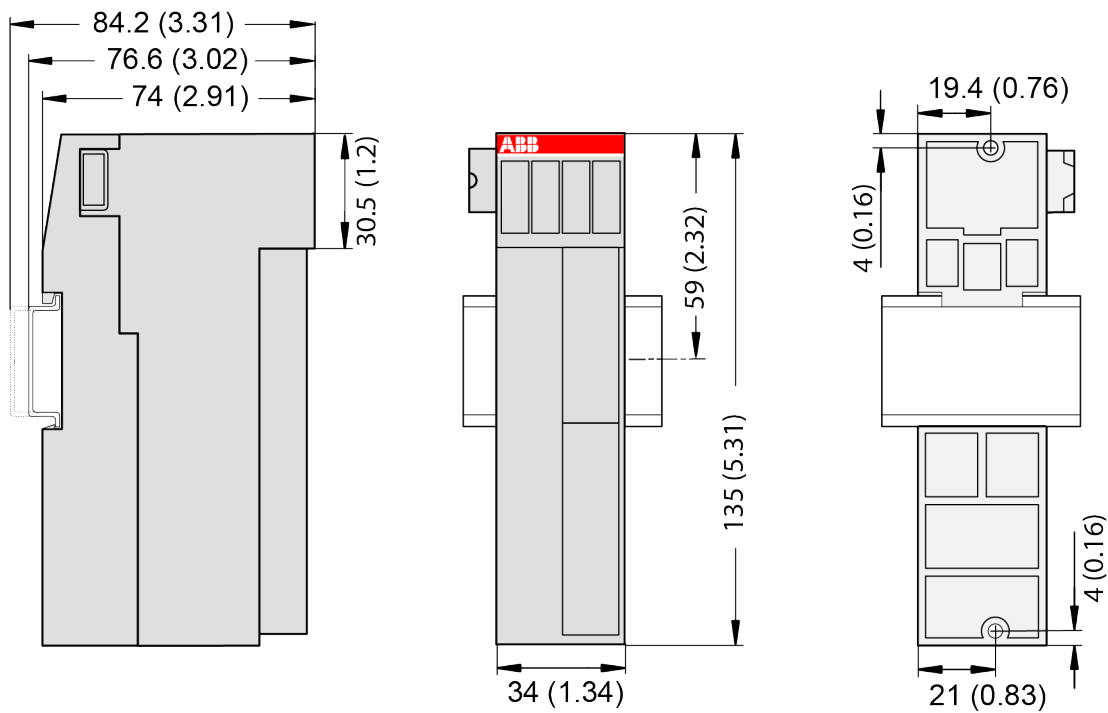
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

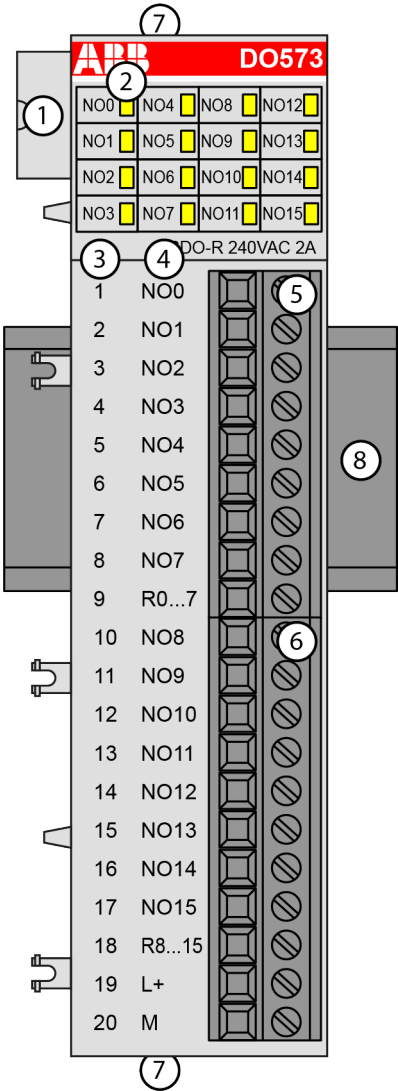
The insertion of the accessories TA566 for wall mounting is essential.

61.4 Dimensions



The dimensions are in mm and in brackets in inch.

61.5 Connections



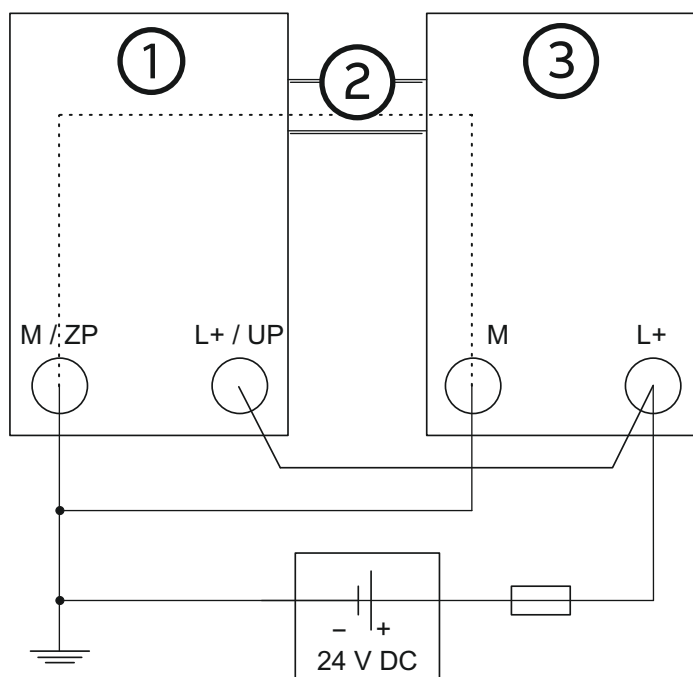
- 1 I/O bus
- 2 16 yellow LEDs to display the signal states of the outputs O0 ... O15
- 3 Terminal number
- 4 Allocation of signal name
- 5 Terminal block for output signals (9-pin)
- 6 Terminal block for output signals (11-pin)
- 7 2 holes for wall-mounting with screws
- 8 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

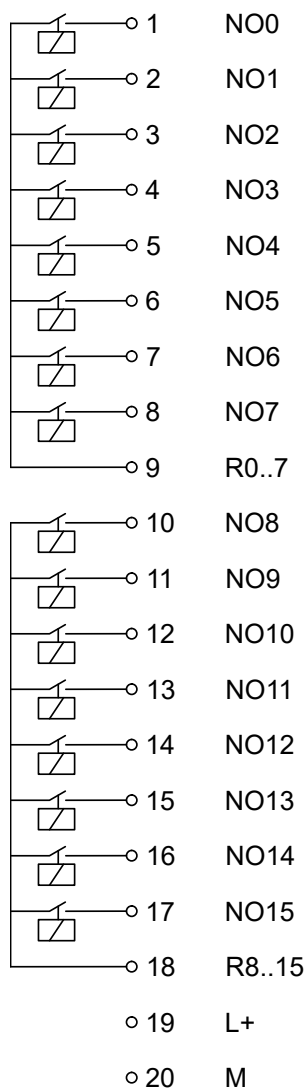
5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front



- 1 CPU or communication interface module
- 2 I/O bus
- 3 DO573

61.5.1 Outputs



Examples

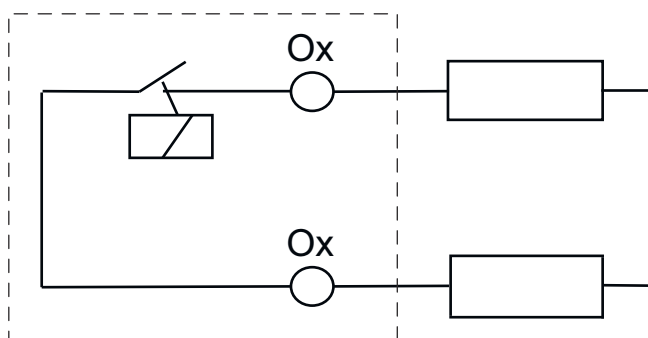


Fig. 69: Example for connection output Ox

61.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

61.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

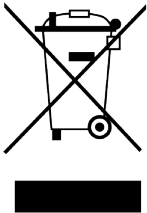
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

61.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

62 DX522(-XC)

- DX522
- DX522-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

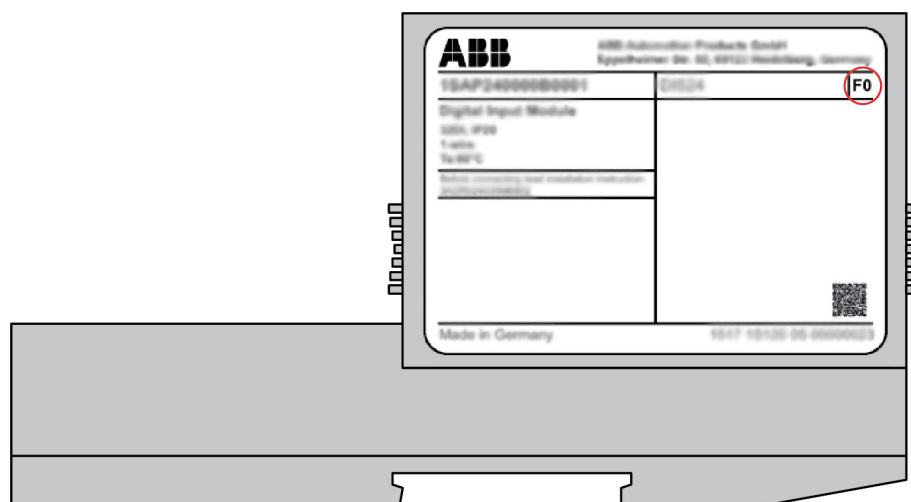
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

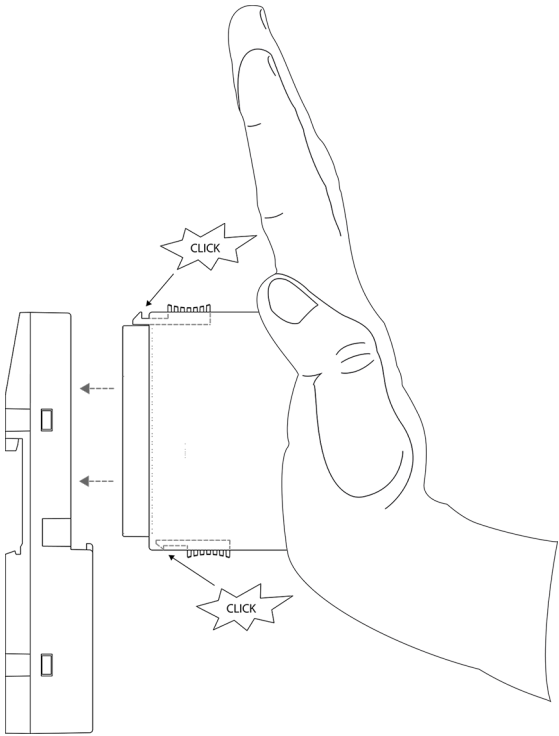
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

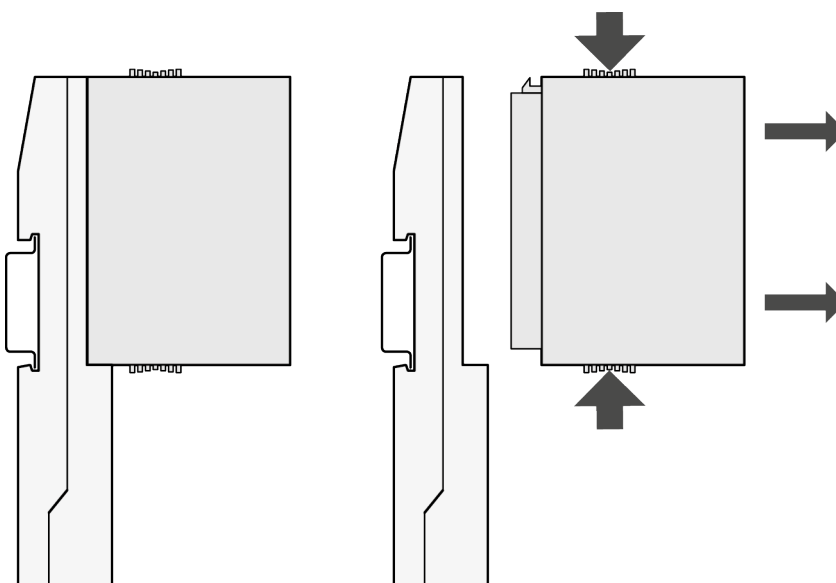
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

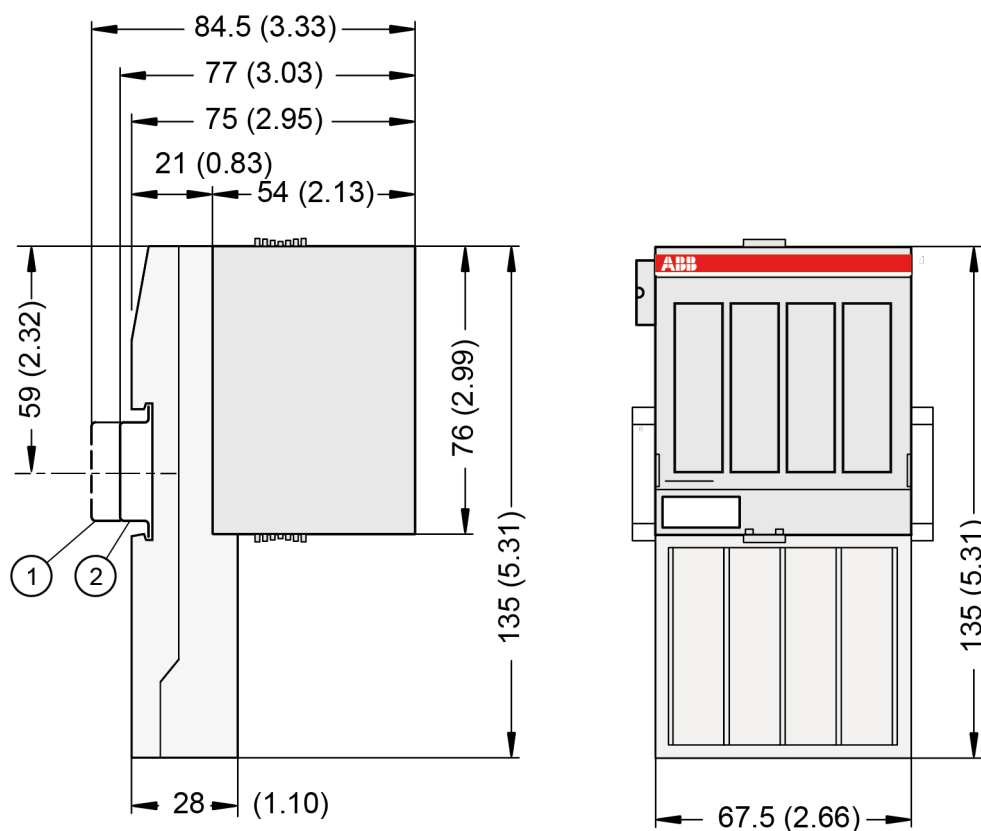
62.1 Assembly



62.2 Disassembly



62.3 Dimensions

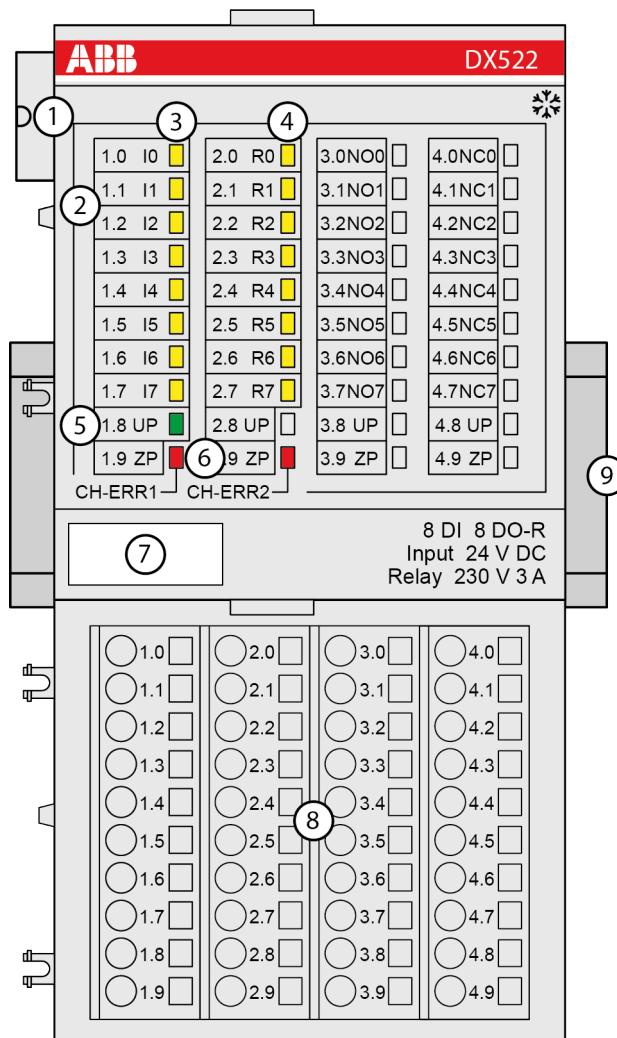


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

62.4 Connections

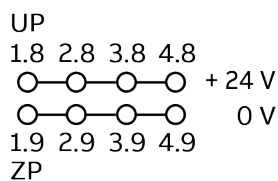


- 1 I/O bus
- 2 Allocation between terminal number and signal name
- 3 8 yellow LEDs to display the signal states at the digital inputs (I0 ... I7)
- 4 8 yellow LEDs to display the signal states at the digital relay outputs (R0 ... R7)
- 5 1 green LED to display the state of the process supply voltage UP
- 6 2 red LEDs to display errors
- 7 Label
- 8 Terminal unit
- 9 DIN rail
- ❄ Sign for XC version



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

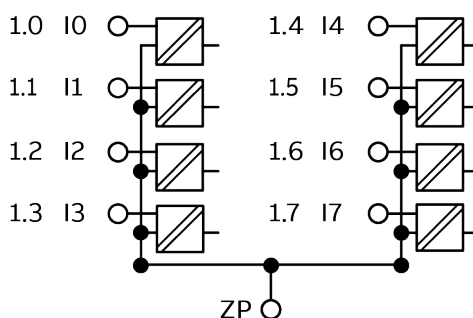
62.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

62.4.2 Inputs



Example

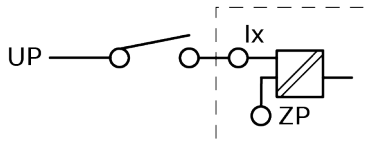
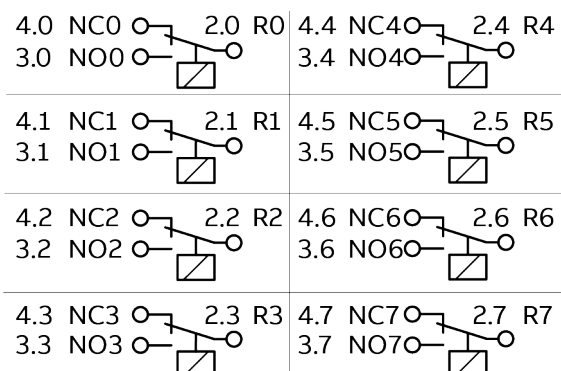


Fig. 70: Example of connection input

62.4.3 Outputs



If the relay outputs have to switch inductive DC loads, free-wheeling diodes must be circuited in parallel to these loads.



If the relay outputs have to switch inductive AC loads, spark suppressors are required.

62.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

62.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

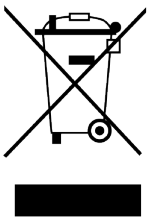
ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

62.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

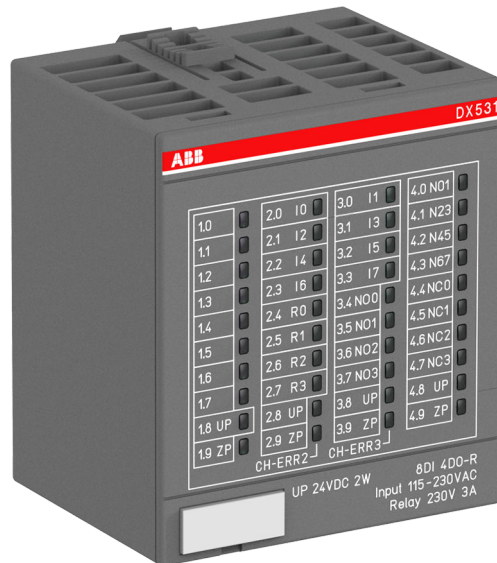
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

63 DX531

- DX531



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

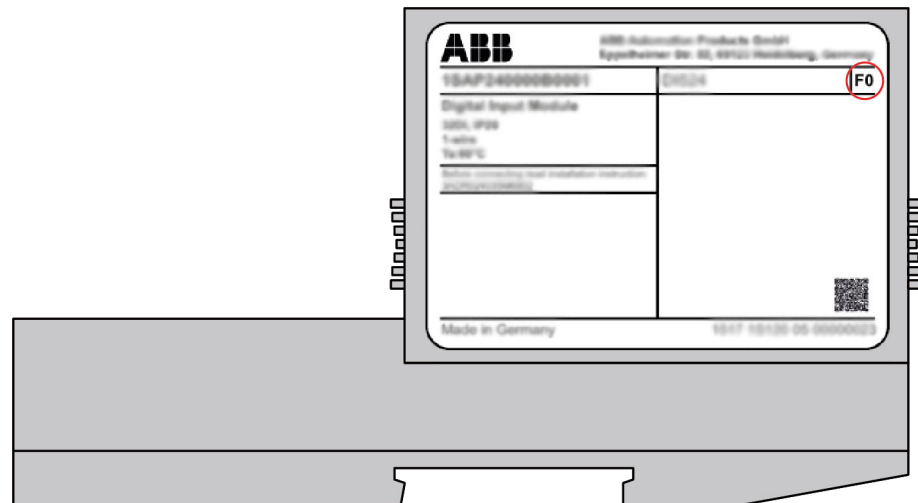
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!



The index of the module is in the right corner of the label.

**NOTICE!****Risk of damage to I/O modules!**

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.

**NOTICE!****Risk of damage to I/O modules!**

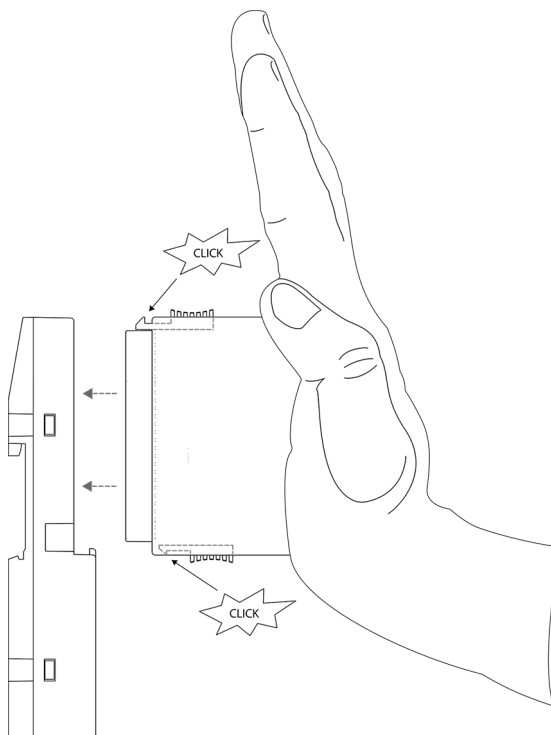
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

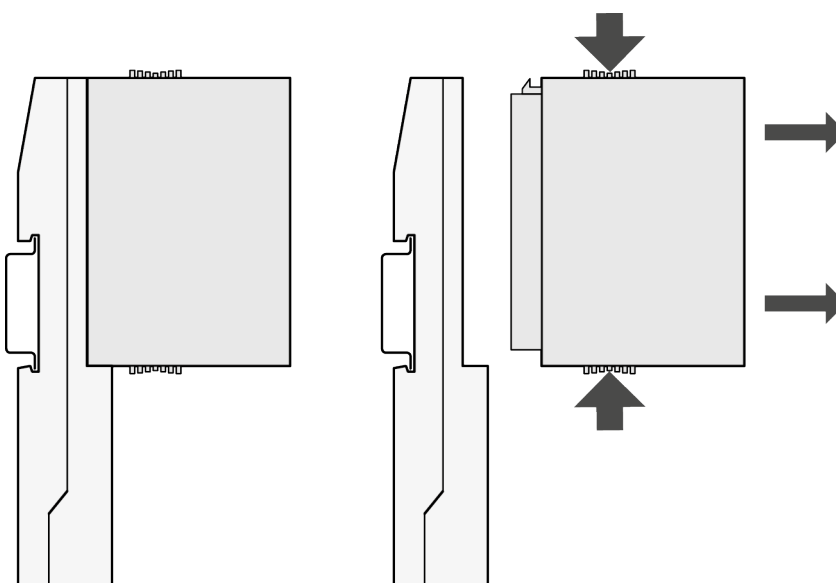
Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2

Device	Min. required device index for I/O module as of FW Version 3.0.14
DX531	D2
DX561	B2
DX571	B3
FM562	A1

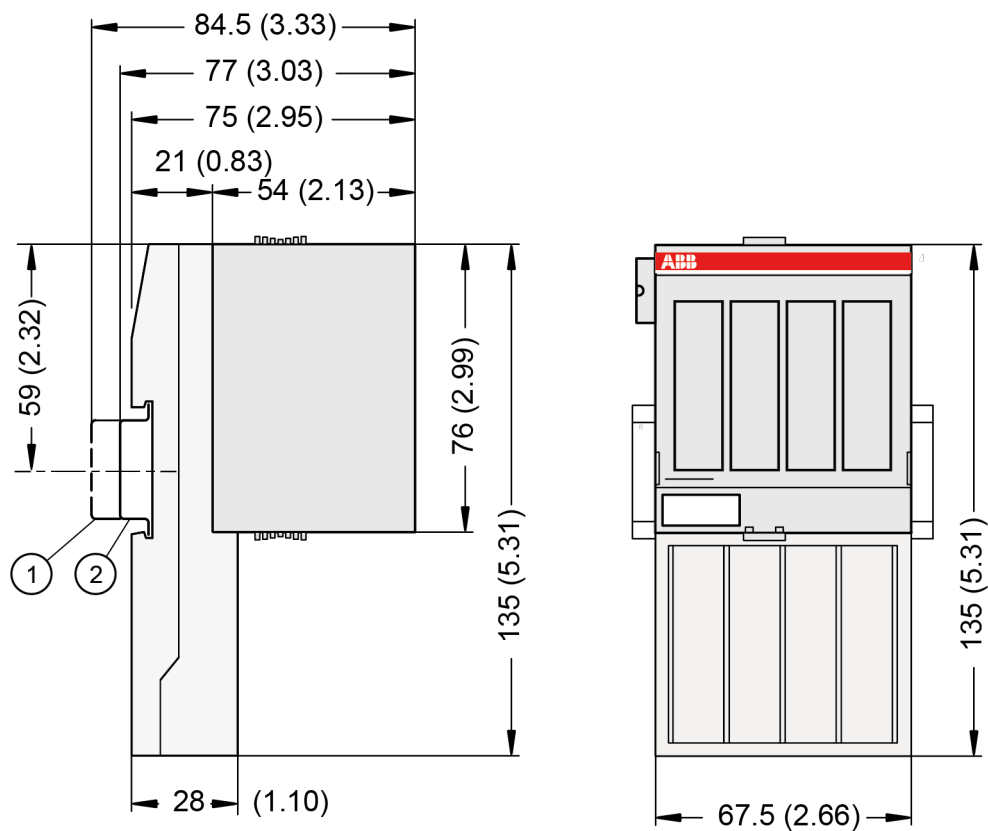
63.1 Assembly



63.2 Disassembly

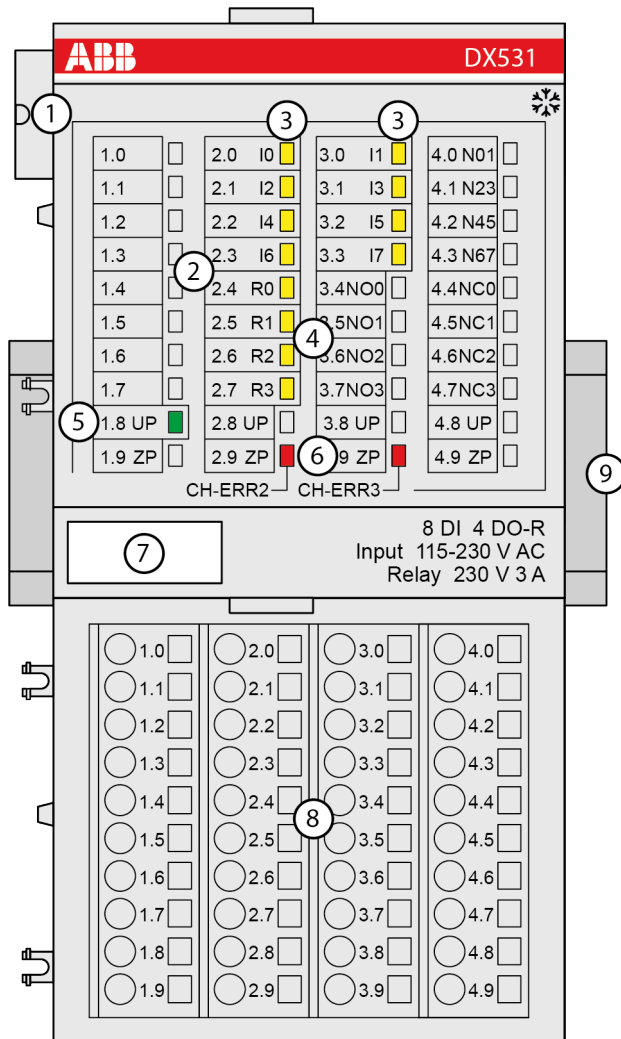


63.3 Dimensions



The dimensions are in mm and in brackets in inch.

63.4 Connections

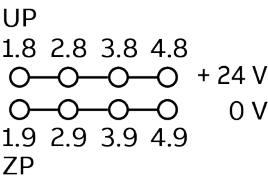


- | | |
|---|---|
| 1 | I/O bus |
| 2 | Allocation between terminal number and signal name |
| 3 | 8 yellow LEDs to display the signal states at the digital inputs (I0 ... I7) |
| 4 | 4 yellow LEDs to display the signal states at the digital relay outputs (R0 ... R3) |
| 5 | 1 green LED to display the state of the process supply voltage UP |
| 6 | 2 red LEDs to display errors |
| 7 | Label |
| 8 | Terminal unit |
| 9 | DIN rail |
|  | Sign for XC version |



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

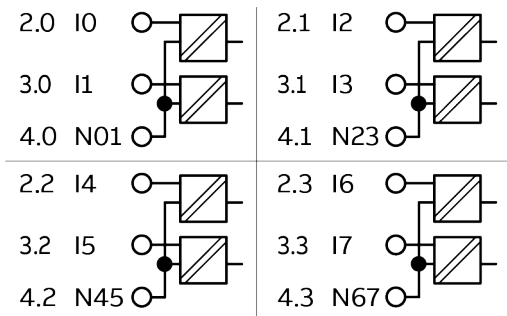
63.4.1 Process supply voltage



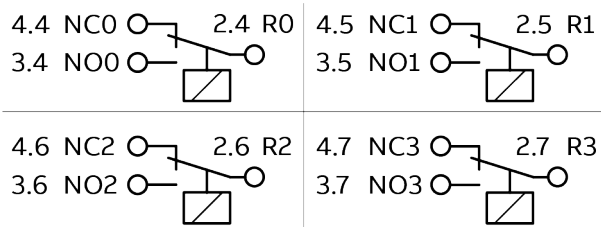
CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

63.4.2 Inputs



63.4.3 Outputs



If the relay outputs have to switch inductive DC loads, free-wheeling diodes must be circuited in parallel to these loads.



If the relay outputs have to switch inductive AC loads, spark suppressors are required.

63.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

63.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

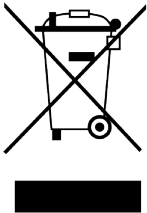
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

63.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

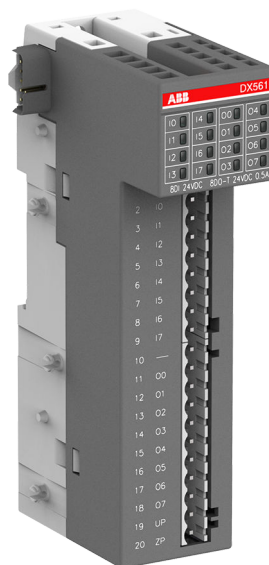
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

64 DX561

- DX561



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

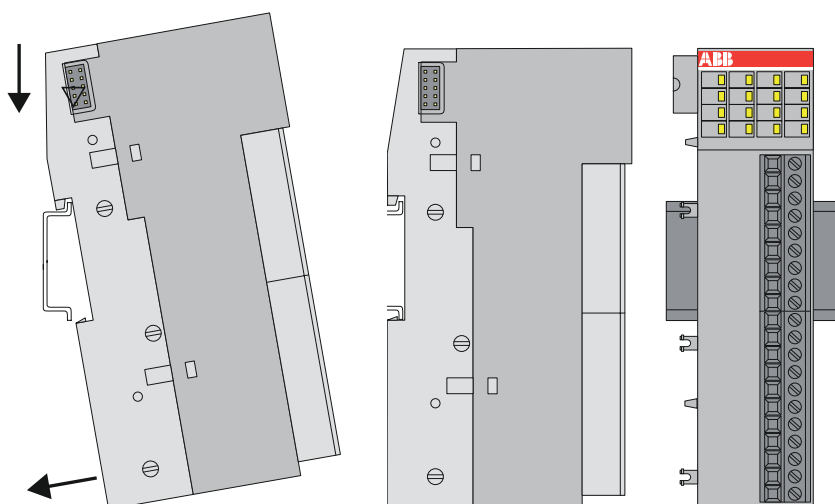
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



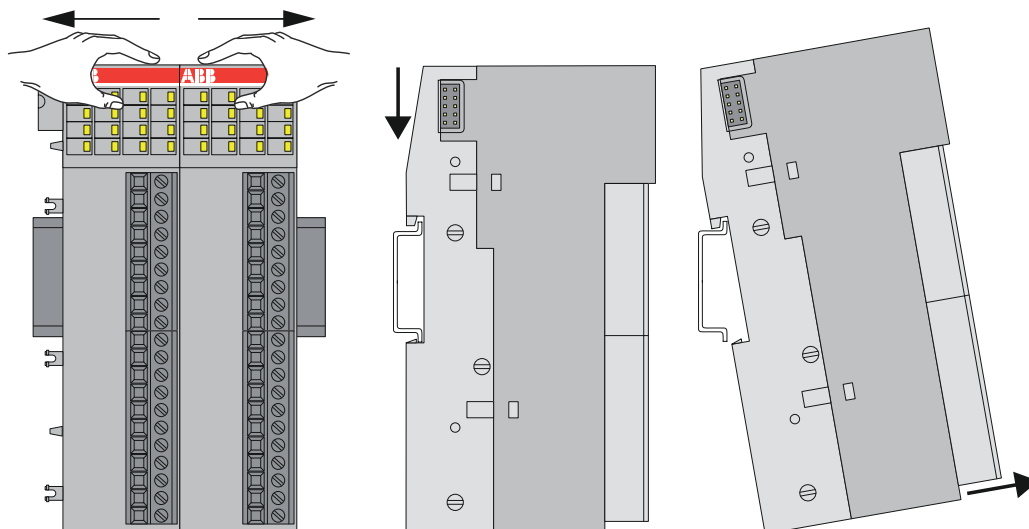
CAUTION!

Do not use this module together with the DC505-FBP/CI590-CS31-HA module.

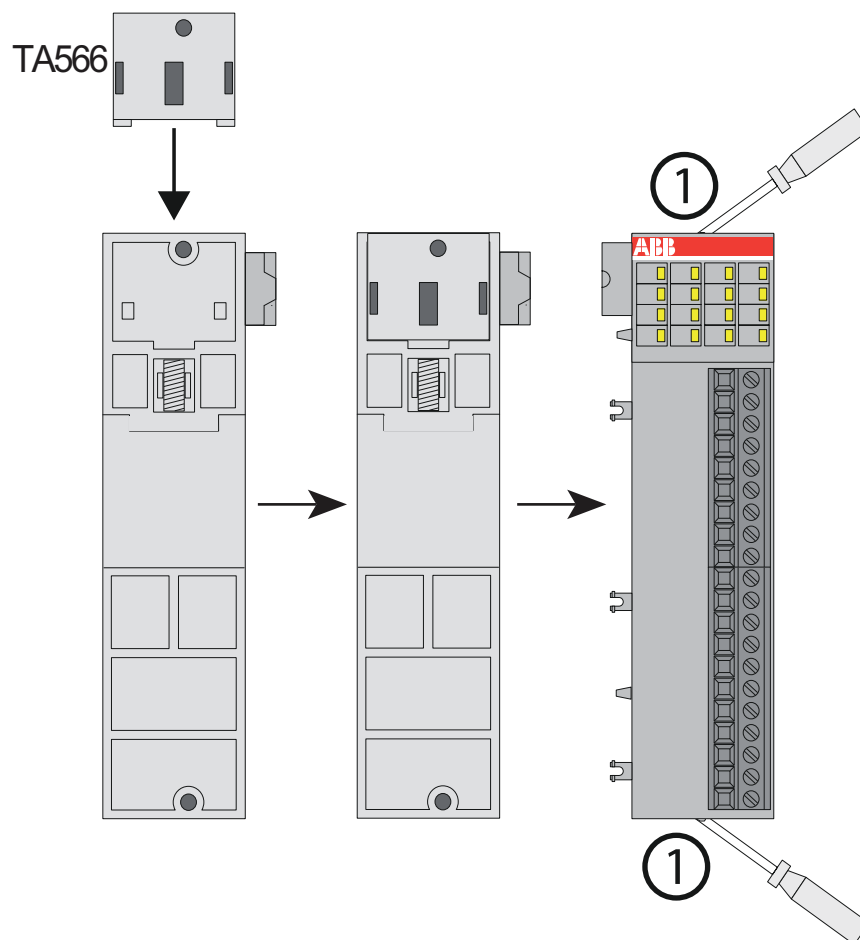
64.1 Assembly



64.2 Disassembly



64.3 Assembly with screws



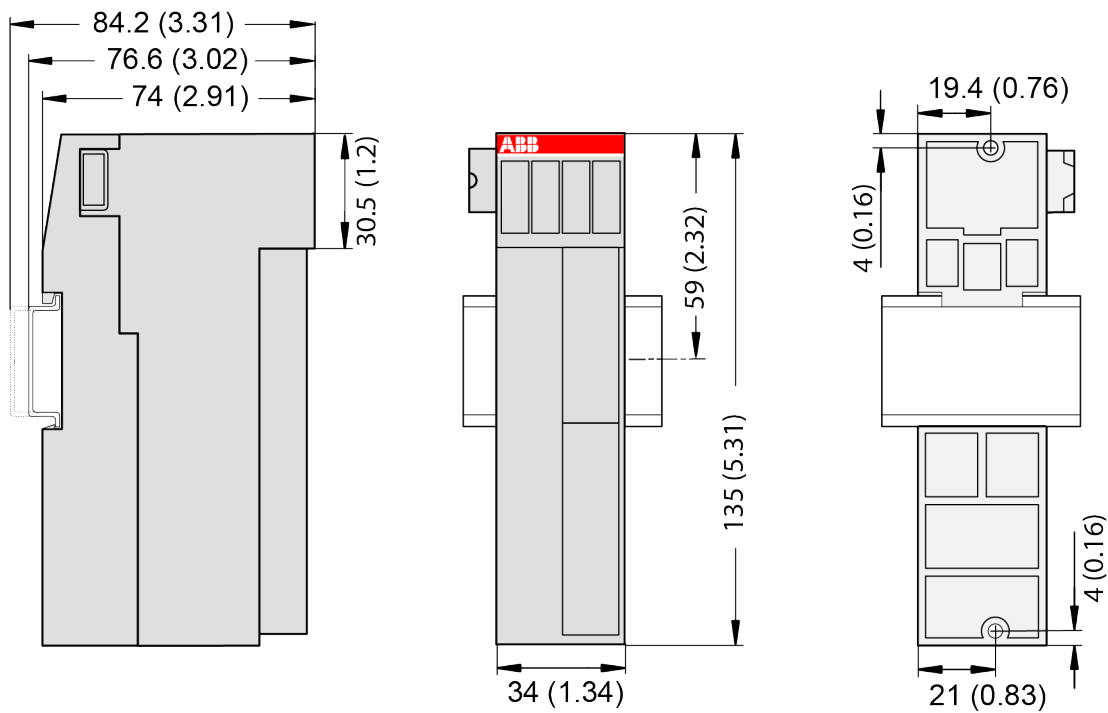
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

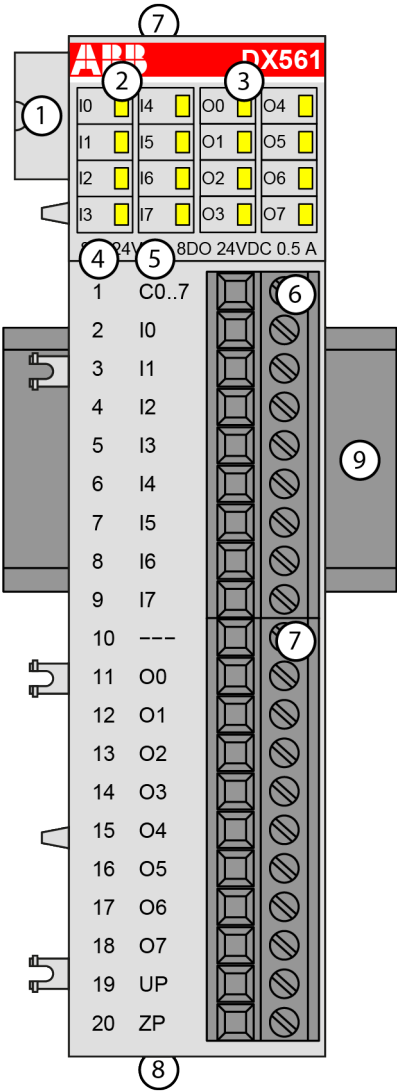
The insertion of the accessories TA566 for wall mounting is essential.

64.4 Dimensions



The dimensions are in mm and in brackets in inch.

64.5 Connections



- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the inputs I0 ... I7
- 3 8 yellow LEDs to display the signal states of the outputs O0 ... O7
- 4 Terminal number
- 5 Allocation of signal name
- 6 Terminal block for input signals (9-pin)
- 7 Terminal block for output signals (11-pin)
- 8 2 holes for wall-mounting with screws
- 9 DIN rail

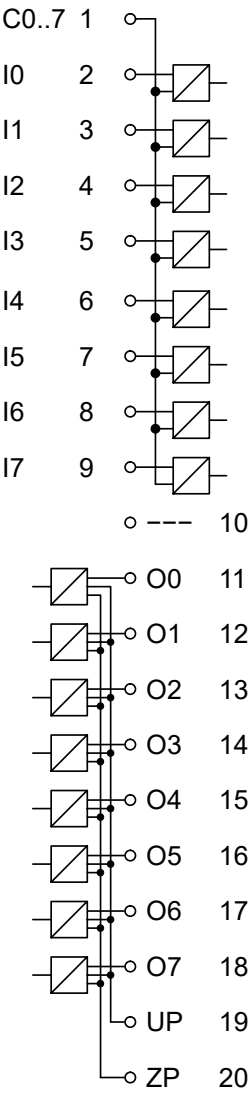


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

64.5.1 Inputs/Outputs



Examples

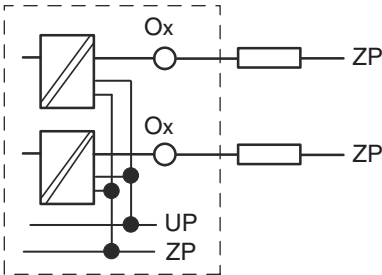


Fig. 71: Example for connection output Ox

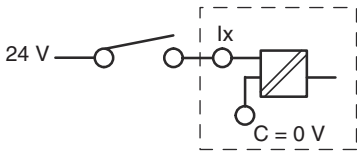


Fig. 72: DX561 used as source inputs

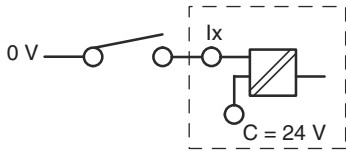


Fig. 73: DX561 used as sink inputs

64.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

64.7 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

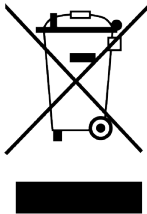
en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

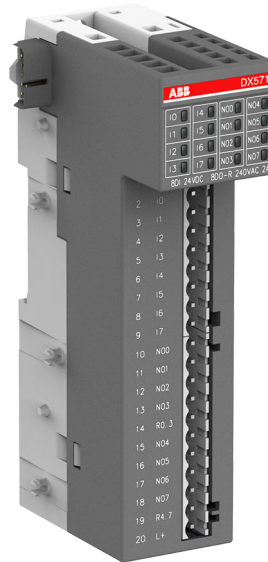
64.8 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

65 DX571

- DX571



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

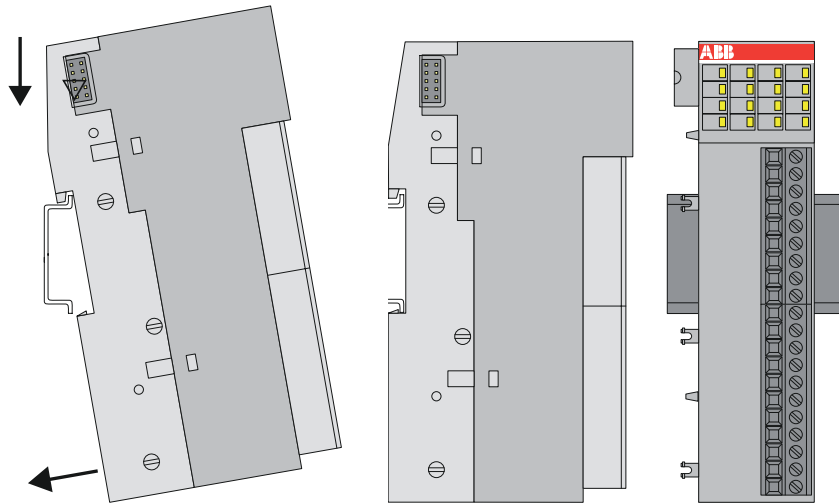
Do not use this module together with the DC505-FBP/CI590-CS31-HA module.



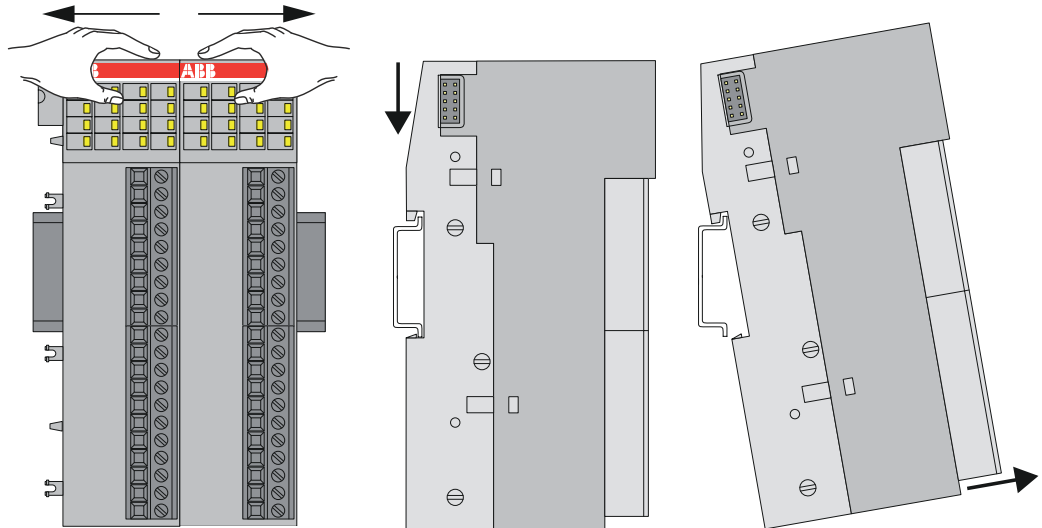
CAUTION!

Make sure that all channels are supplied from the same phase.

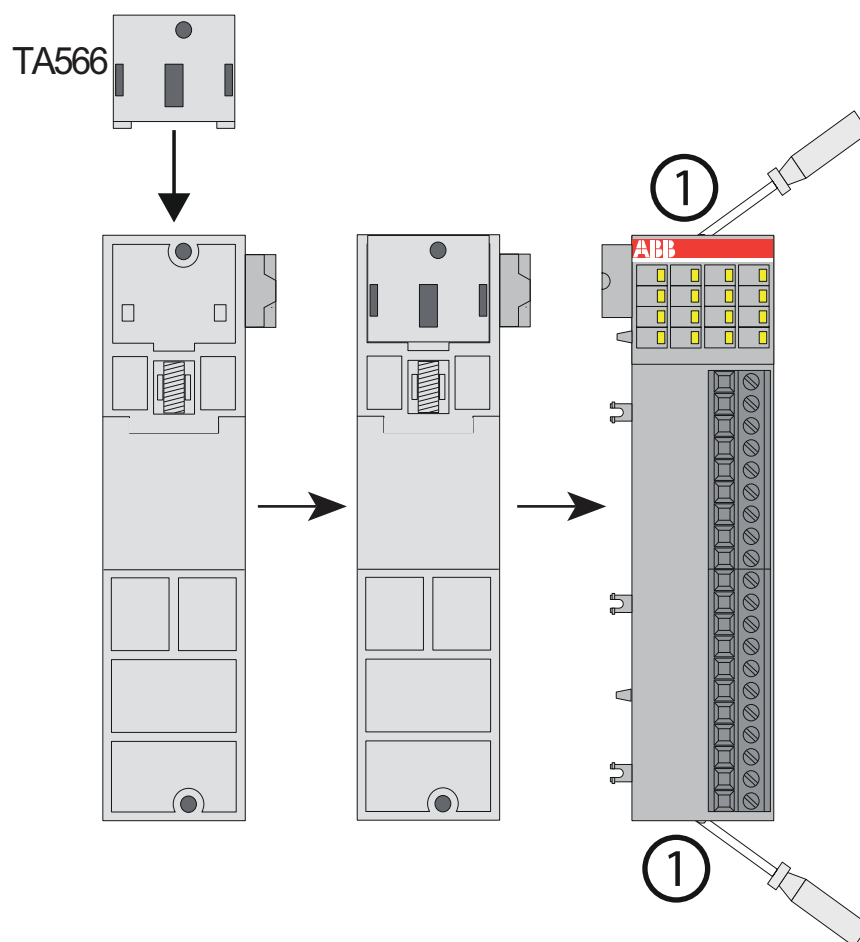
65.1 Assembly



65.2 Disassembly



65.3 Assembly with screws



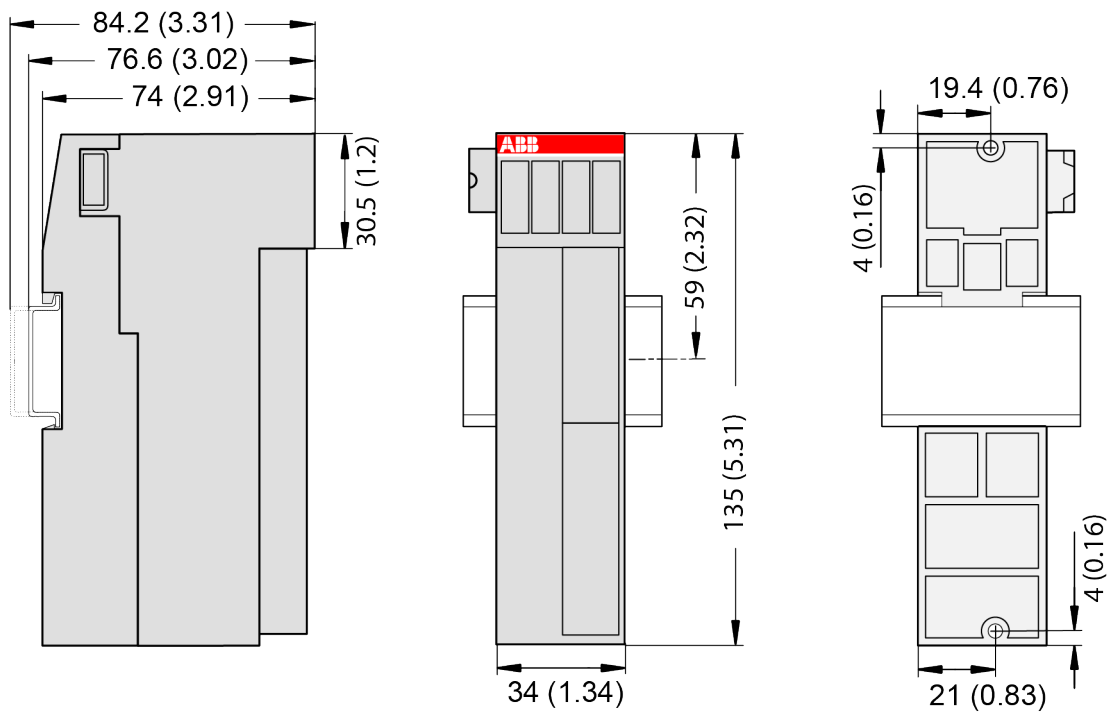
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

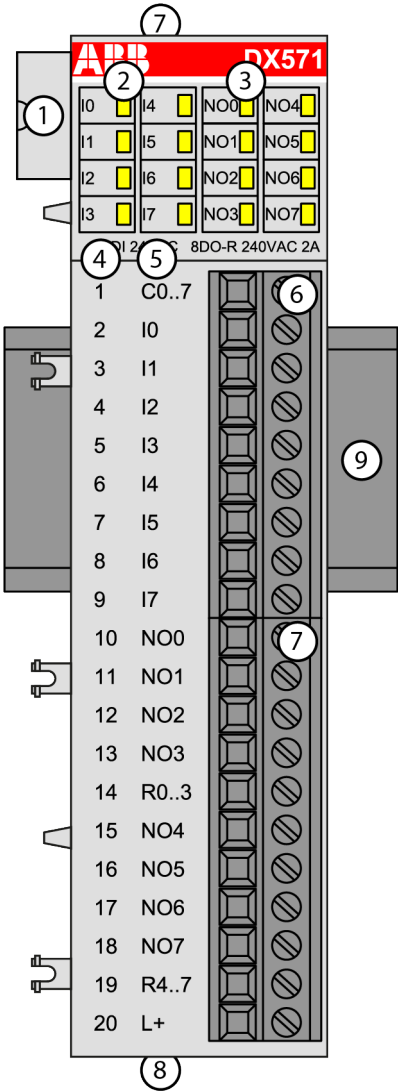
The insertion of the accessories TA566 for wall mounting is essential.

65.4 Dimensions



The dimensions are in mm and in brackets in inch.

65.5 Connections



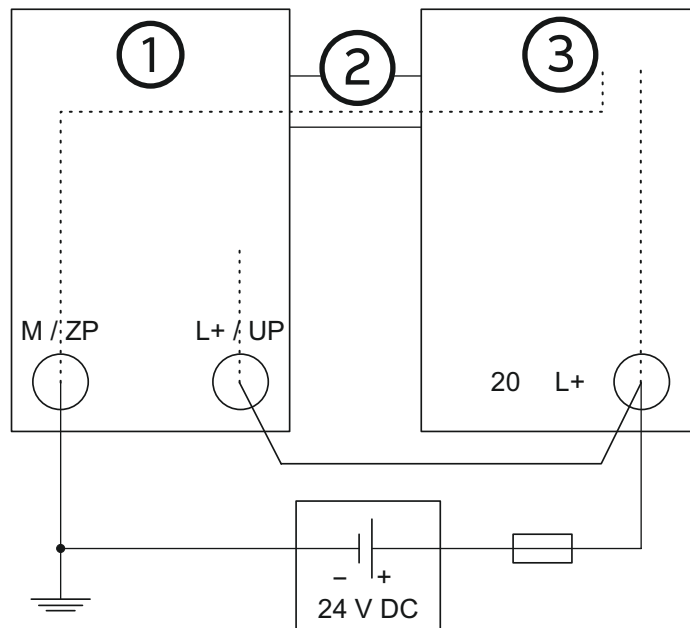
- 1 I/O bus
- 2 8 yellow LEDs to display the signal states of the inputs I0 ... I7
- 3 8 yellow LEDs to display the signal states of the outputs NO0 ... NO7
- 4 Terminal number
- 5 Allocation of signal name
- 6 Terminal block for input signals (9-pin)
- 7 Terminal block for output signals (11-pin)
- 8 2 holes for wall-mounting with screws
- 9 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

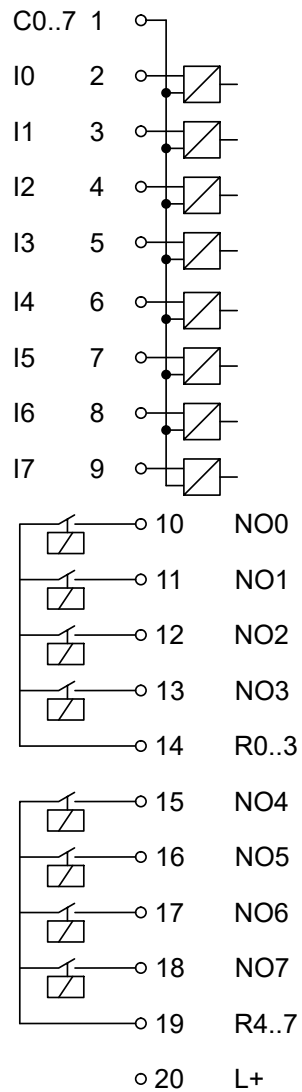
5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side

	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front



- 1 CPU or communication interface module
- 2 I/O bus
- 3 DO571

65.5.1 Inputs/Outputs



Examples

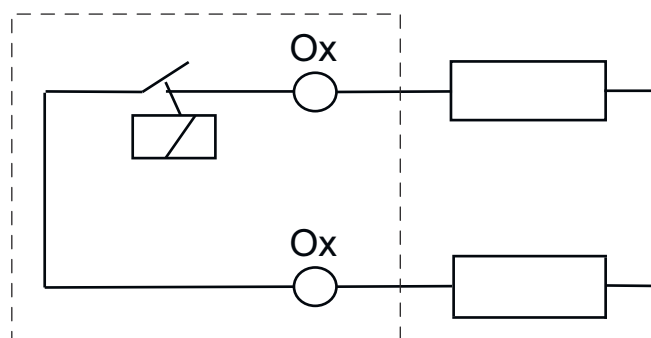


Fig. 74: Example for connection output Ox

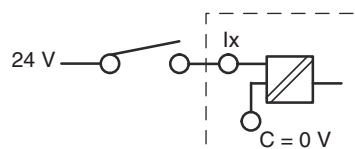


Fig. 75: DX571 used as source inputs

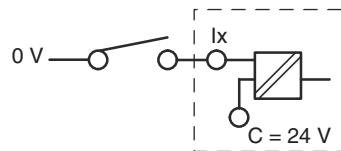


Fig. 76: DX571 used as sink inputs

65.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

65.7 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

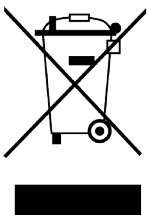
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

65.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

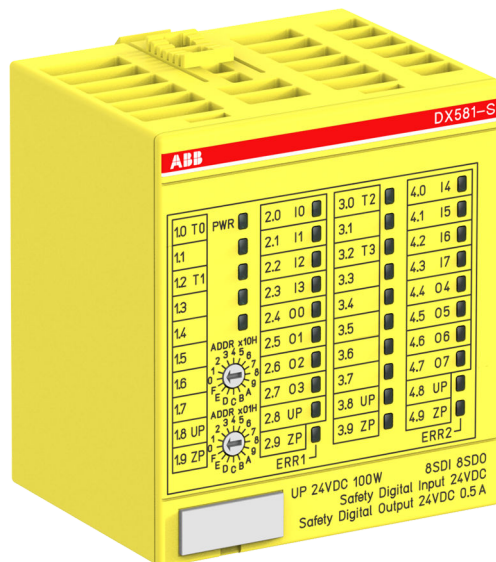
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

66 DX581-S(-XC)

- DX581-S
- DX581-S-XC



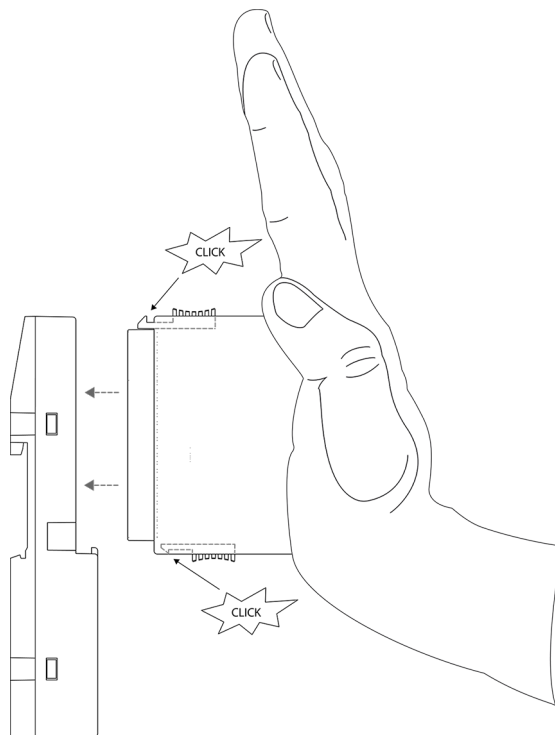
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

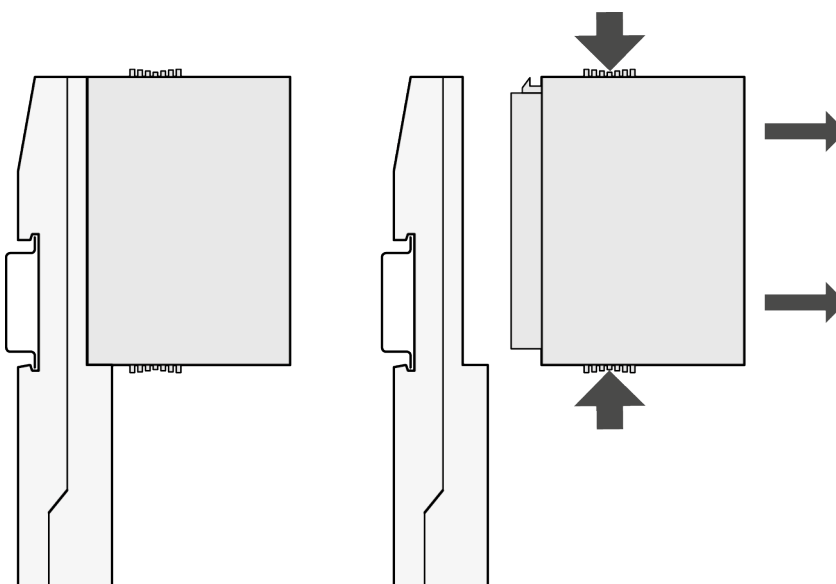
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

66.1 Assembly

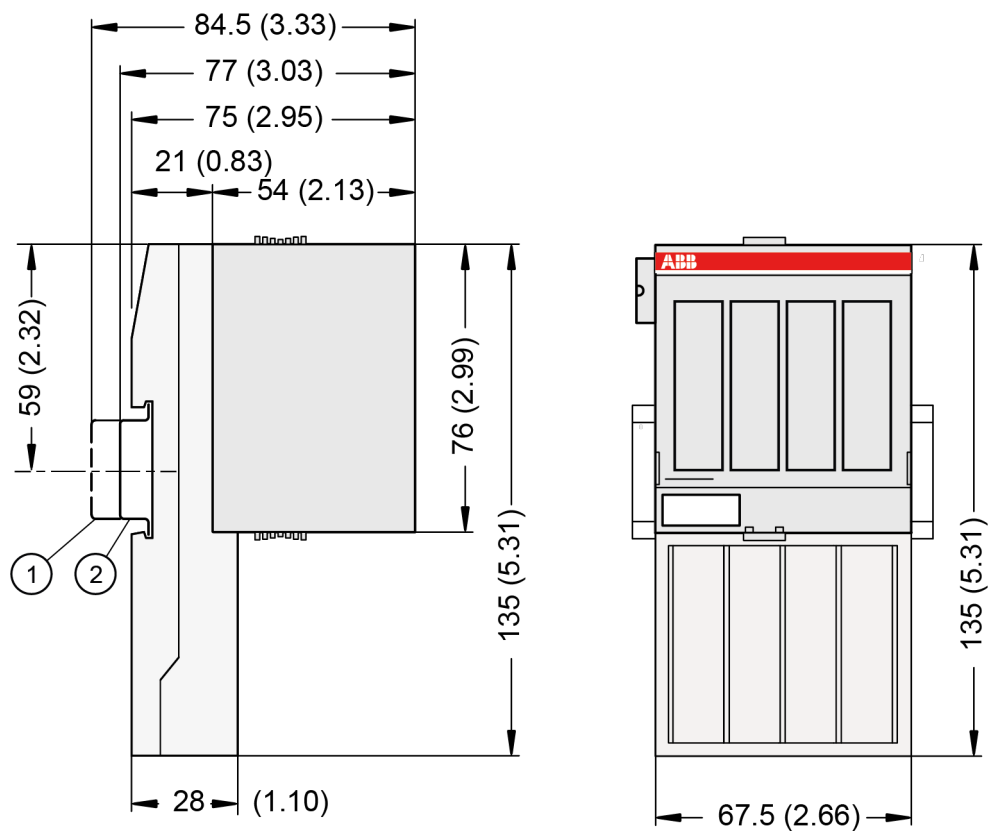


1. Put the module on the terminal unit
⇒ Module clicks in.
2. Then press the module with a force of at least 100 N into the terminal unit to achieve proper electrical contact.

66.2 Disassembly

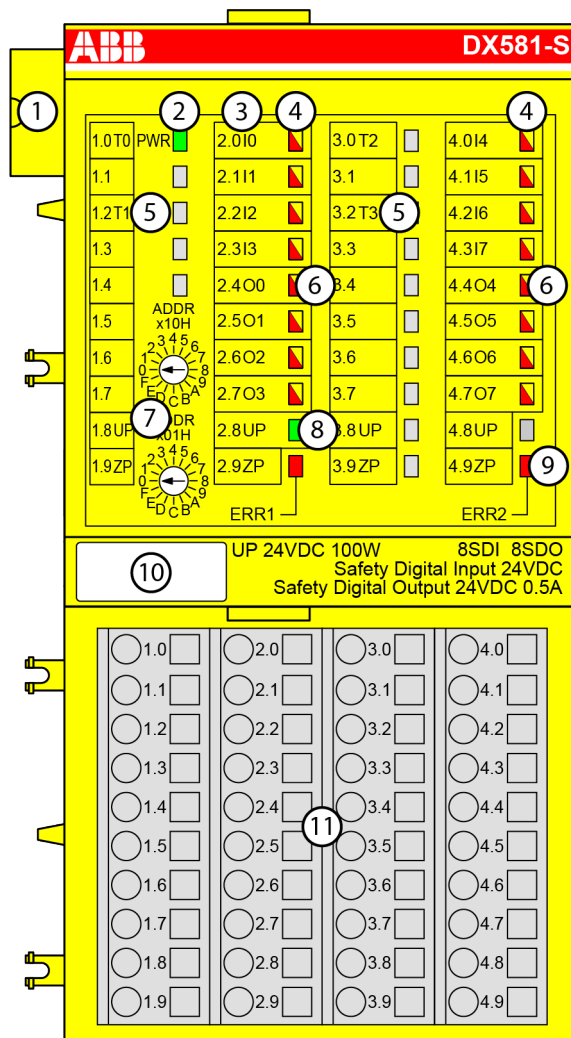


66.3 Dimensions



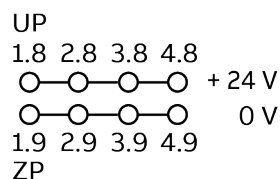
The dimensions are in mm and in brackets in inch.

66.4 Connections



- 1 I/O bus
- 2 System LED
- 3 Allocation of terminal number and signal name
- 4 8 yellow/red LEDs to display the signal states of the digital inputs I0 to I7
- 5 4 Test pulse outputs T0 to T3
- 6 8 yellow/red LEDs to display the signal states of the digital outputs O0 to O7
- 7 2 rotary switches for setting the PROFIsafe address
- 8 1 green LED to display the state of the process supply voltage UP
- 9 2 red LEDs to display errors
- 10 Label
- 11 Terminal unit TU582-S(-XC)
- * Sign for XC version

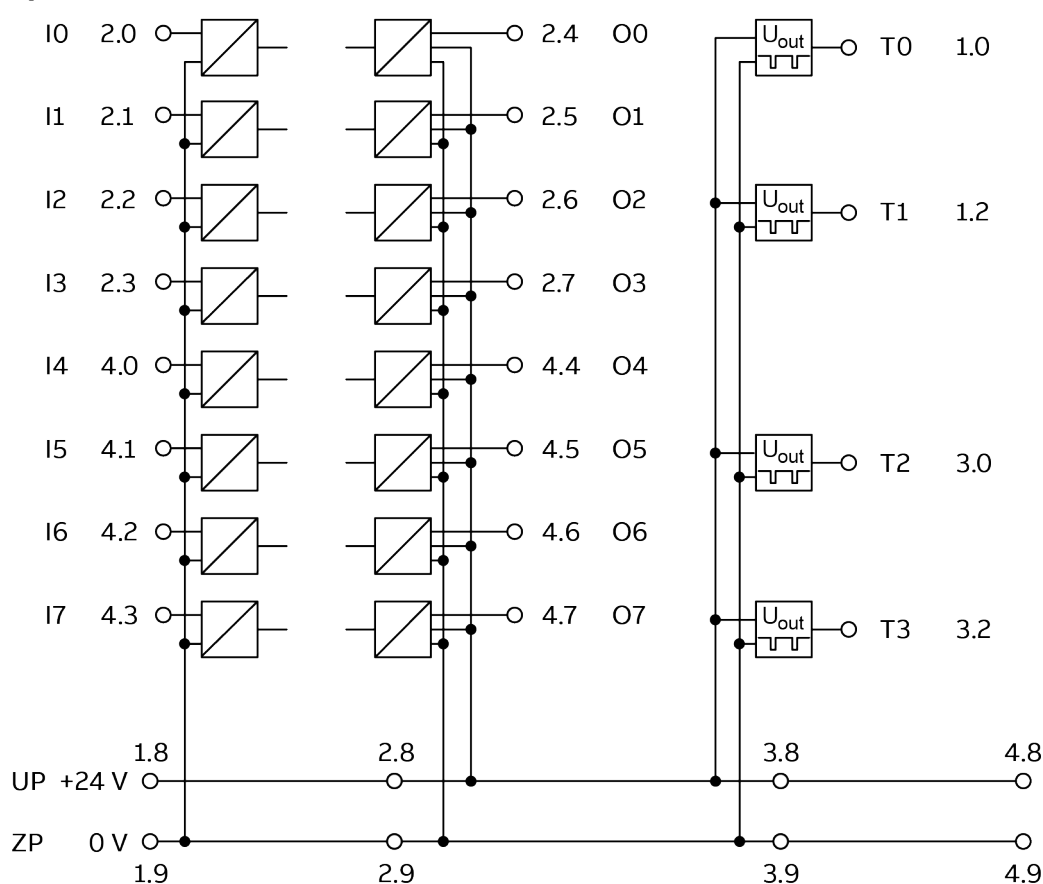
66.4.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

66.4.2 Inputs/Outputs



Example input

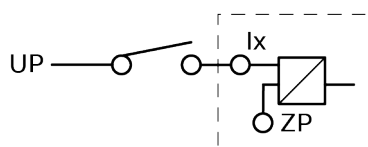


Fig. 77: Example of connection input I_x

Example output

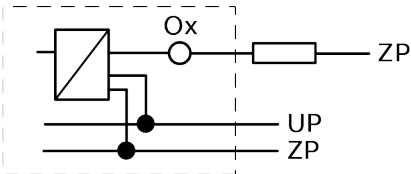


Fig. 78: Example of connection output Ox



AC500-S safety user manual

For a detailed description of the connection of the module, please refer to the "AC500-S safety user manual".

66.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

66.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

66.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

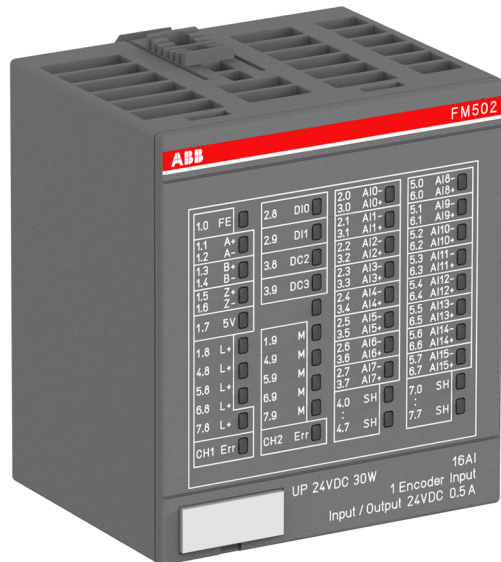
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

67 FM502-CMS(-XC)

- FM502-CMS
- FM502-CMS-XC



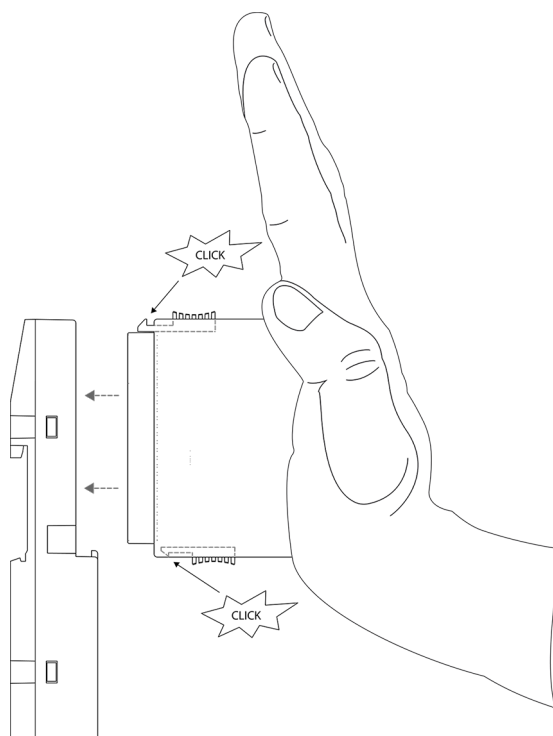
CAUTION!

Risk of injury and damaging the product!

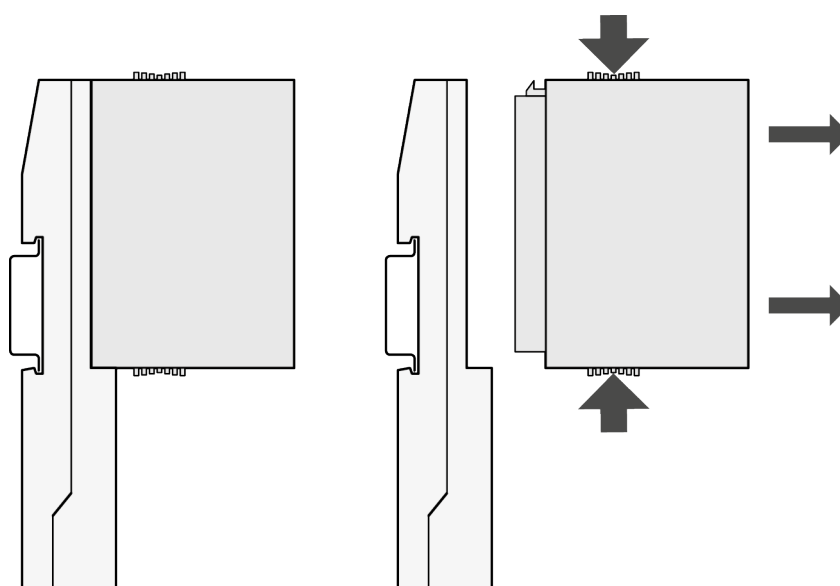
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

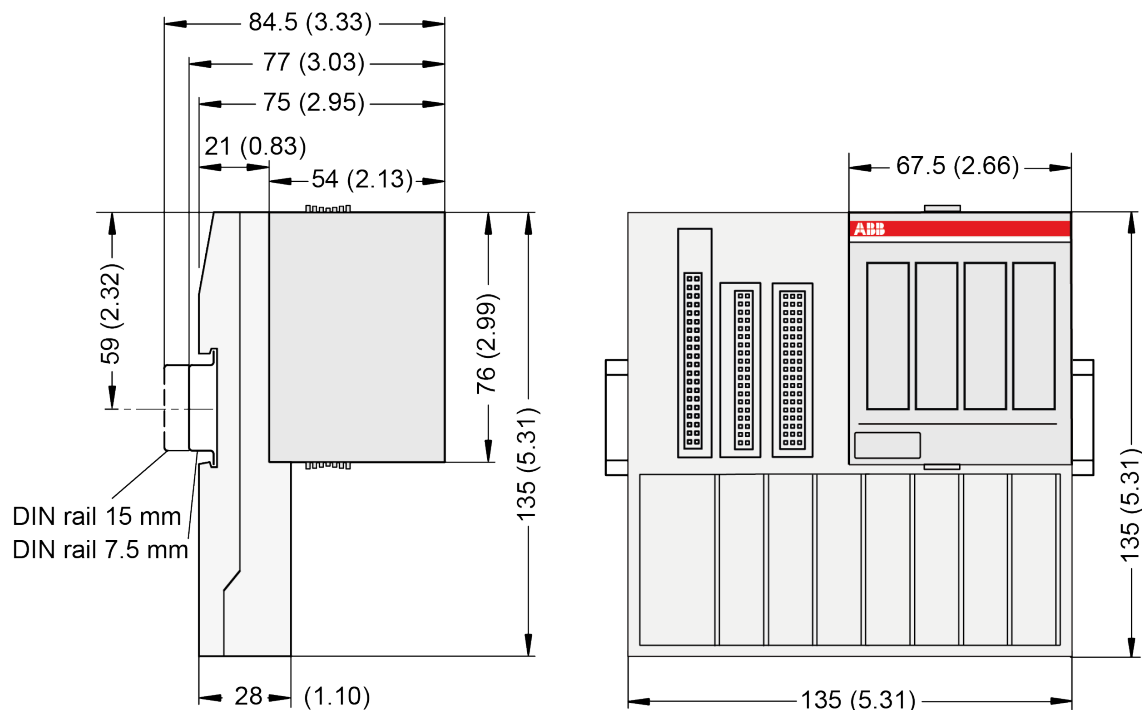
67.1 Assembly



67.2 Disassembly

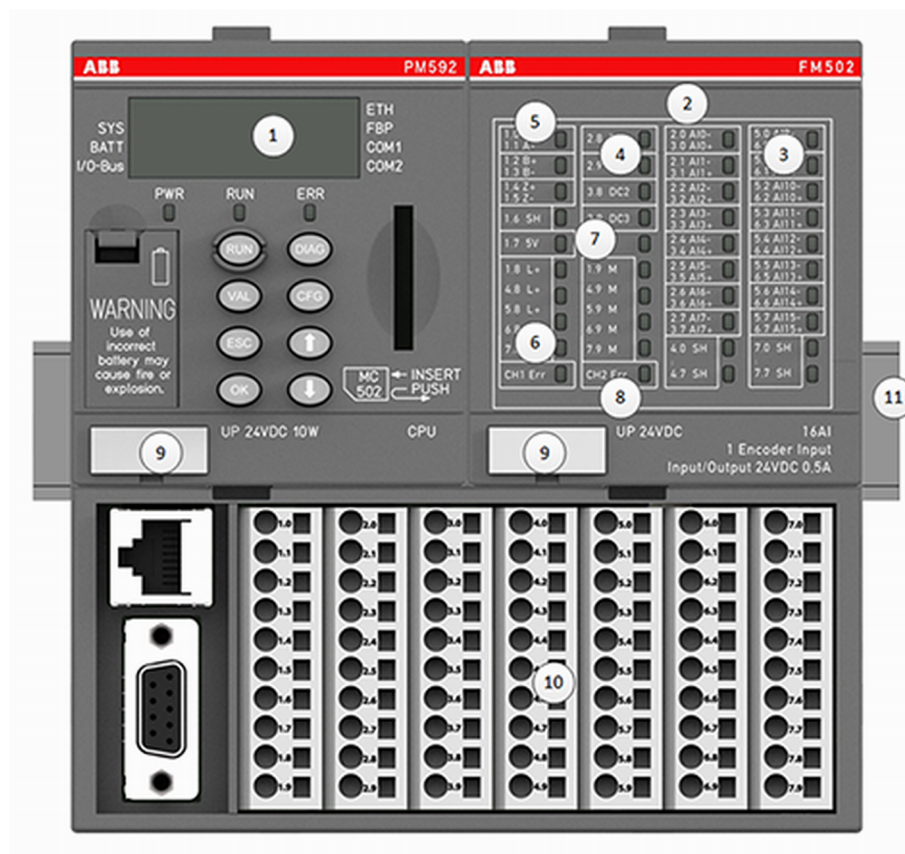


67.3 Dimensions



The dimensions are in mm and in brackets in inch.

67.4 Connections



- 1 Processor module PM592-ETH
- 2 Allocation between terminal no. and signal name
- 3 16 green/red LEDs to display the signal states at the analog inputs A0 ... A15
- 4 4 yellow LEDs to display digital inputs DI0, DI1 and digital inputs/outputs DC2,DC3
- 5 3 yellow LEDs display encoder/counter inputs
- 6 1 green LED to display the state of the process supply voltage L+
- 7 1 green LED to display the state of 5 V supply voltage for encoder
- 8 2 red LEDs to display errors
- 9 Label
- 10 Function module terminal base
- 11 DIN rail
- * Sign for XC version



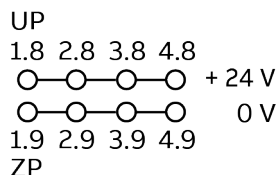
All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

Table 5: Function module terminal base - pin assignment

1.0 FE	2.0 AI0-	3.0 AI0+	4.0 SH	5.0 AI8-	6.0 AI8+	7.0 SH
1.1 A+	2.1 AI1-	3.1 AI1+	4.1 SH	5.1 AI9-	6.1 AI9+	7.1 SH
1.2 A-	2.2 AI2-	3.2 AI2+	4.2 SH	5.2 AI10-	6.2 AI10+	7.2 SH
1.3 B+	2.3 AI3-	3.3 AI3+	4.3 SH	5.3 AI11-	6.3 AI11+	7.3 SH
1.4 B-	2.4 AI4-	3.4 AI4+	4.4 SH	5.4 AI12-	6.4 AI12+	7.4 SH
1.5 Z+	2.5 AI5-	3.5 AI5+	4.5 SH	5.5 AI13-	6.5 AI13+	7.5 SH

1.6 Z-	2.6 AI6-	3.6 AI6+	4.6 SH	5.6 AI14-	6.6 AI14+	7.6 SH
1.7 5V	2.7 AI7-	3.7 AI7+	4.7 SH	5.7 AI15-	6.7 AI15+	7.7 SH
1.8 L+	2.8 DI0	3.8 DC2	4.8 L+	5.8 L+	6.8 L+	7.8 L+
1.9 M	2.9 DI1	3.9 DC3	4.9 M	5.9 M	6.9 M	7.9 M

67.4.1 Process supply voltage

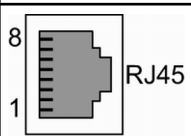


CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

67.4.2 Ethernet network interface

Pin assignment

	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



NOTICE!

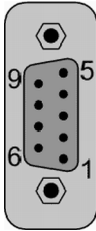
Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

67.4.3 Serial interface COM

Pin assignment

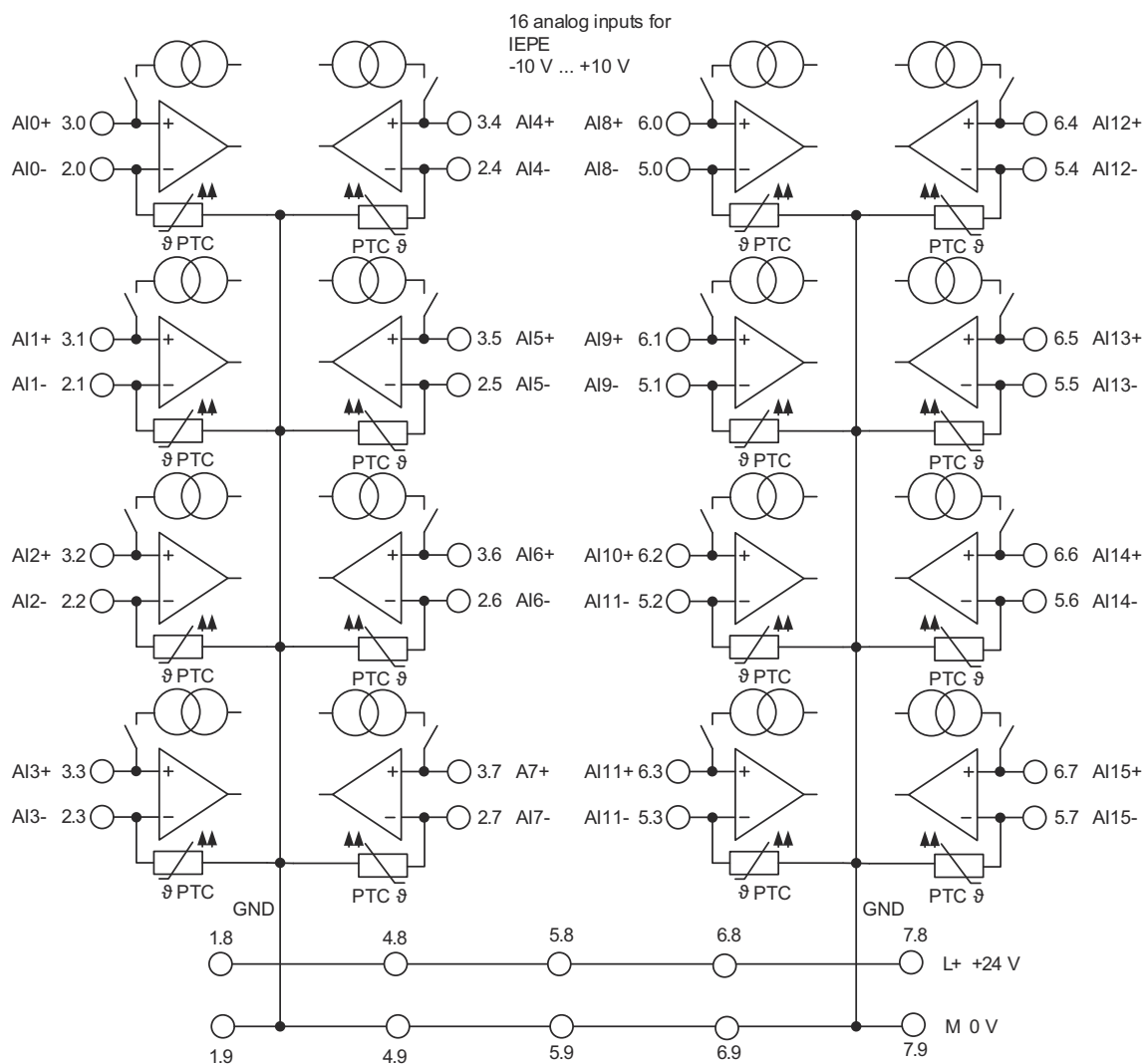
Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!
Risk of corrosion!
Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

67.4.4 Inputs/Outputs

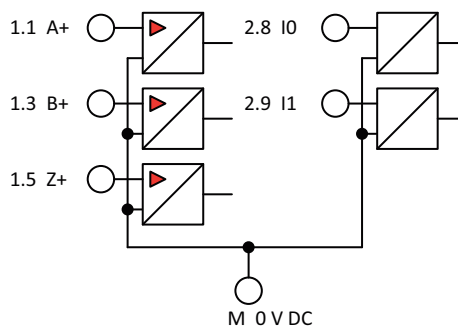


5V

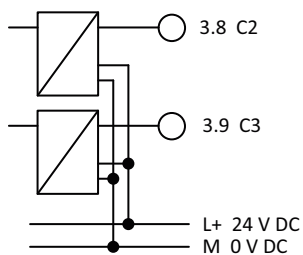
1.7 5 V DC

1.9 4.9 5.9 6.9 7.9
M 0 V DC

Inputs



In-/Outputs



67.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

67.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

67.7 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

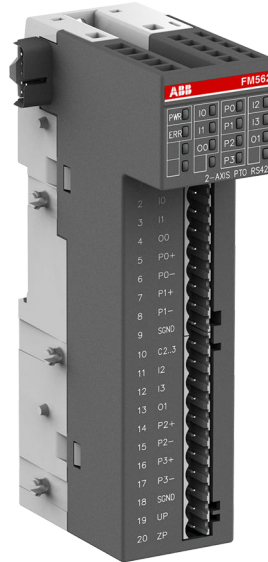
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

68 FM562

- FM562



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

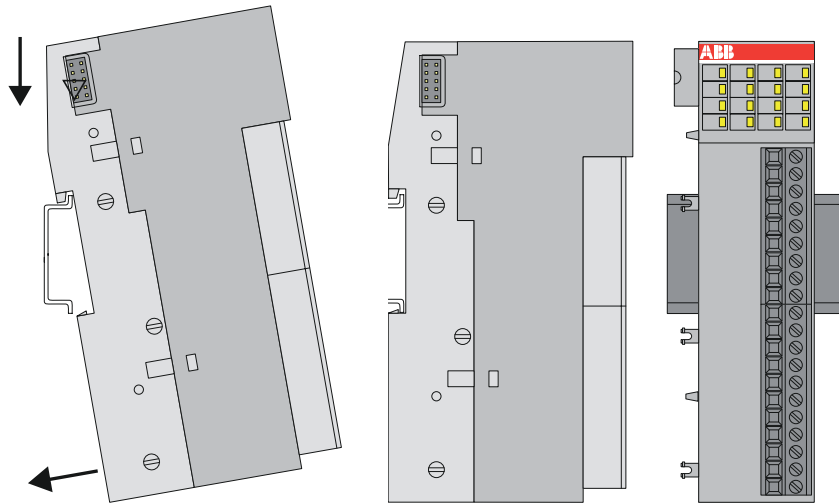
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



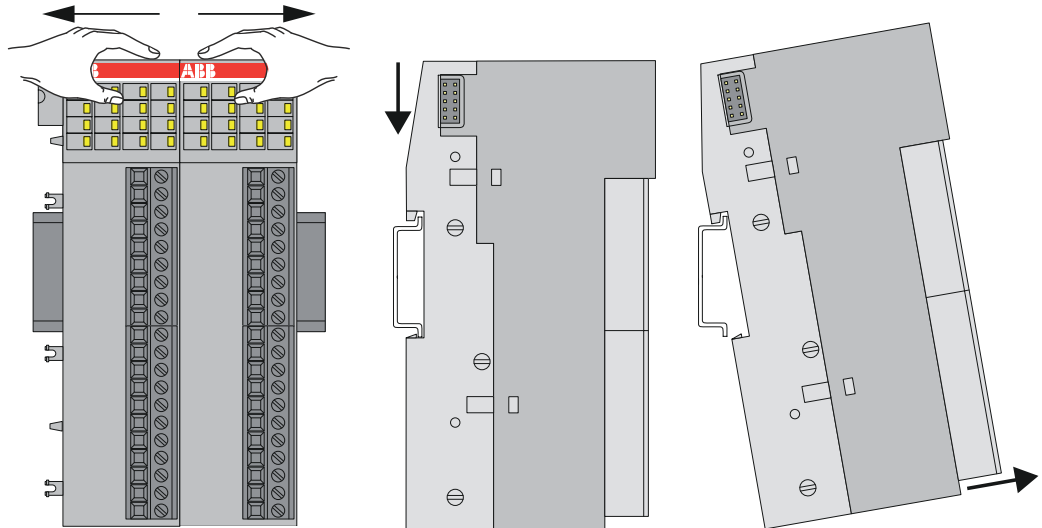
CAUTION!

This module must not be used together with the DC505-FBP/DC551- CS31/ CI51X/CI59X module.

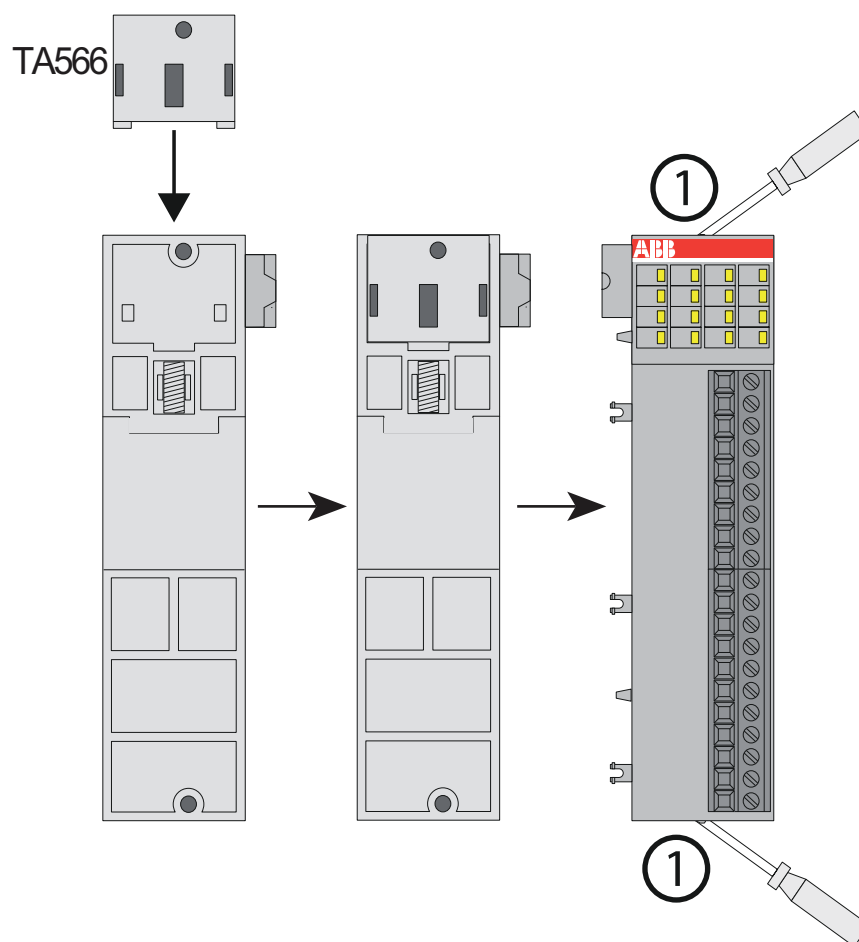
68.1 Assembly



68.2 Disassembly



68.3 Assembly with screws



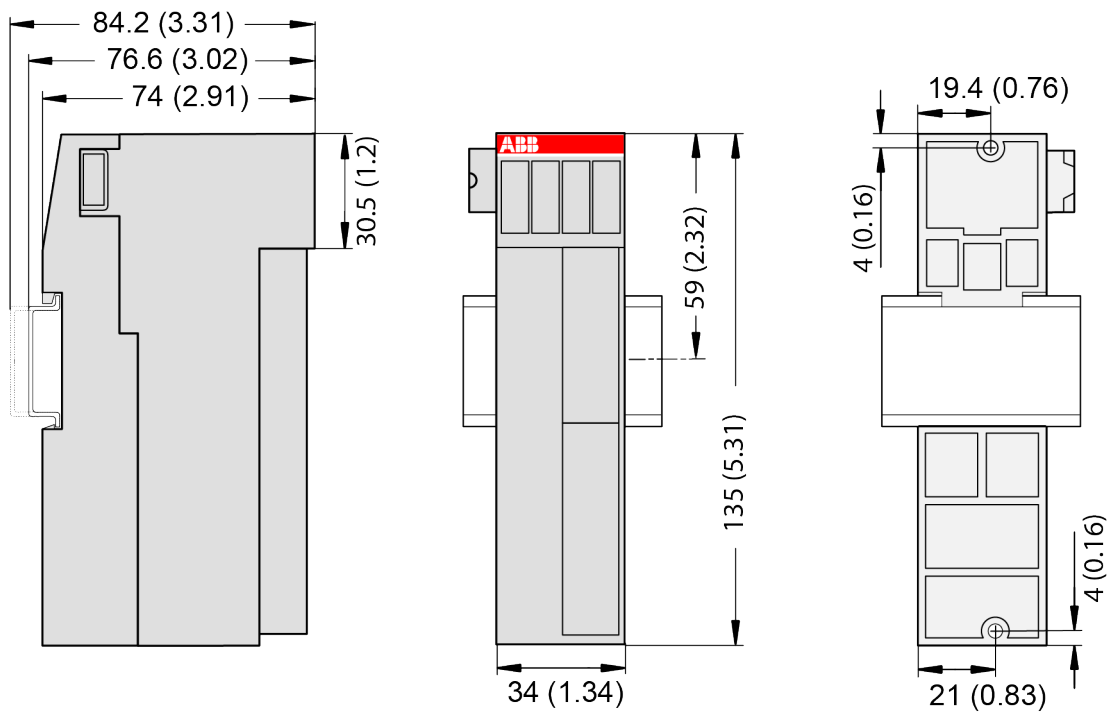
- 1 Fasten the module with two screws (max. diameter 4 mm)



NOTICE!

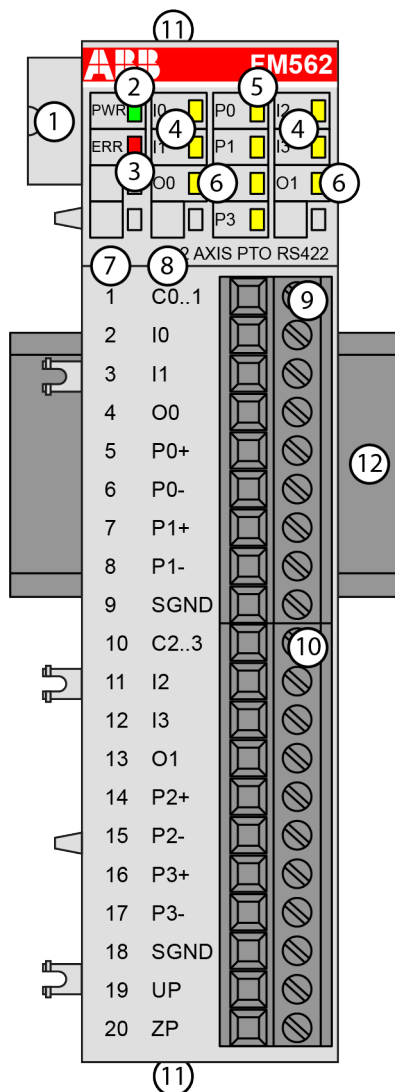
The insertion of the accessories TA566 for wall mounting is essential.

68.4 Dimensions



The dimensions are in mm and in brackets in inch.

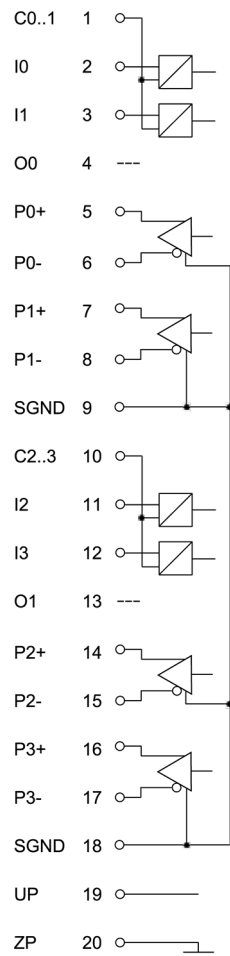
68.5 Connections



- 1 I/O bus
- 2 1 green LED to display power supply
- 3 1 red LED to display error
- 4 4 yellow LEDs to display the signal states of the inputs I0 to I3
- 5 4 yellow LEDs to display the signal states of the pulse train outputs P0 ... P3
- 6 2 yellow LEDs to display the signal states of O0 ... O1 (reserved)
- 7 Terminal number
- 8 Allocation of signal name
- 9 Terminal block for axis signals (9-pin)
- 10 Terminal block for axis signals and process supply voltage (11-pin)
- 11 2 holes for wall-mounting with screws
- 12 DIN rail

5	TA563-9	9-pin, screw, cable from side
	TA564-9	9-pin, screw, cable from front
	TA565-9	9-pin, spring, cable from front
6	TA563-11	11-pin, screw, cable from side
	TA564-11	11-pin, screw, cable from front
	TA565-11	11-pin, spring, cable from front

68.5.1 Inputs/Outputs



Examples

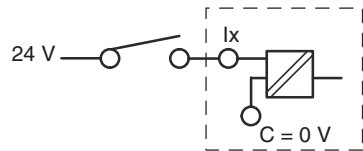


Fig. 79: FM562 used as source input

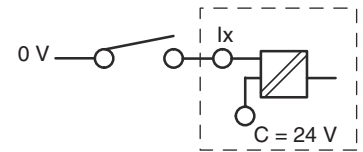


Fig. 80: FM562 used as sink input

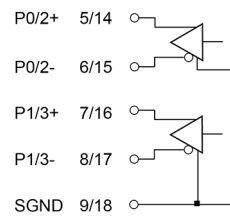


Fig. 81: Example for RS-422 differential output Px

68.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

68.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

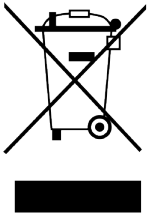
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

68.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

69 MC503 - Memory card adapter

- MC503



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

Removal/Insertion under power

The devices are not designed for removal or insertion under power. Because of unforeseeable consequences, it is not allowed to plug or unplug devices with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace a module.

Disconnecting any powered devices while energized in a hazardous location could result in an electric arc, which could create a flammable ignition resulting in fire or explosion.

Make sure that power is removed and that the area has been thoroughly checked to ensure that flammable materials are not present prior to proceeding.

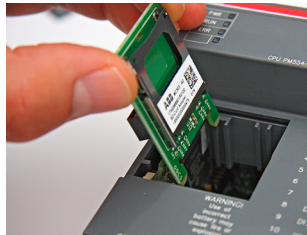
The devices must not be opened when in operation. The same applies to the network interfaces.

69.1 Assembly

1. Remove the option board slot cover of the CPU totally by pushing it to the left side.



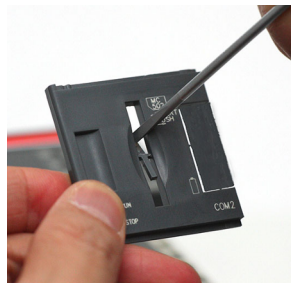
2. Plug the memory card adapter to the left slot of the CPU.



3. Make sure that the 2 noses of the extension module fit to the holes of the CPU PCB.

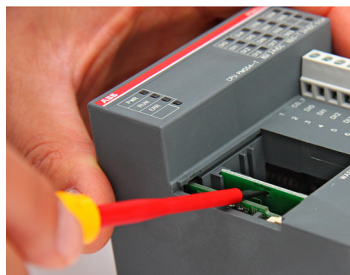


4. Remove the bar located in the middle of the option board slot cover with a screwdriver.

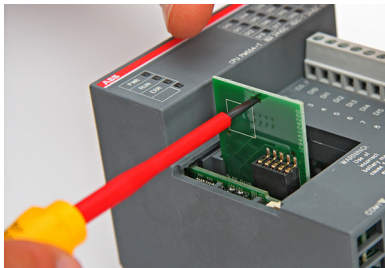


69.2 Disassembly

1. Remove the option board slot cover of the CPU totally by pushing it to the left side.



2. Remove the adapter from the CPU by lifting it up with a screwdriver.



3. Refit the option board slot cover of the CPU.



69.3 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

69.4 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

69.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

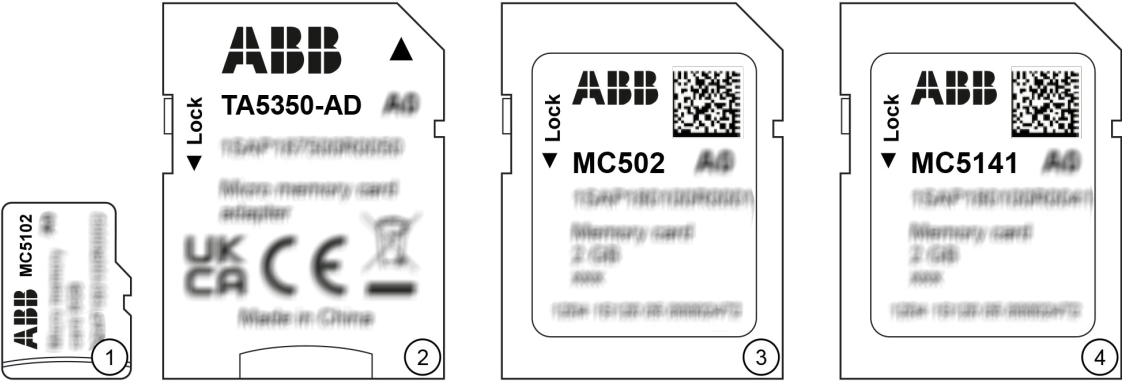
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

70 MC5xx(x) - Memory card

- MC502 memory card
- MC5141 memory card
- MC5102 micro memory card with TA5350-AD micro memory card adapter



- 1 MC5102 micro memory card
- 2 TA5350-AD micro memory card adapter
- 3 MC502 memory card
- 4 MC5141 memory card



The use of other memory cards than MC502, MC5141 and MC5102 is prohibited.

ABB is not responsible nor liable for consequences resulting from use of unapproved memory cards.

Memory card type	AC500 V2	AC500-XC V2	AC500-eCo V2 ³⁾	AC500 V3	AC500-XC V3	AC500-eCo V3
MC5141	x	x	x	x	x	-
MC5102 with TA5350-AD micro memory card adapter	x ¹⁾	x ¹⁾ ²⁾	x ¹⁾	x	x ²⁾	-
MC5102 without TA5350-AD micro memory card adapter	-	-	-	-	-	x

¹⁾ As of firmware 2.5.x

²⁾ Temporary use of MC5102 is possible under normal environmental conditions, but MC5141 should be preferred.

³⁾ A memory card can only be inserted when a MC503 memory card adapter is installed in the processor module.



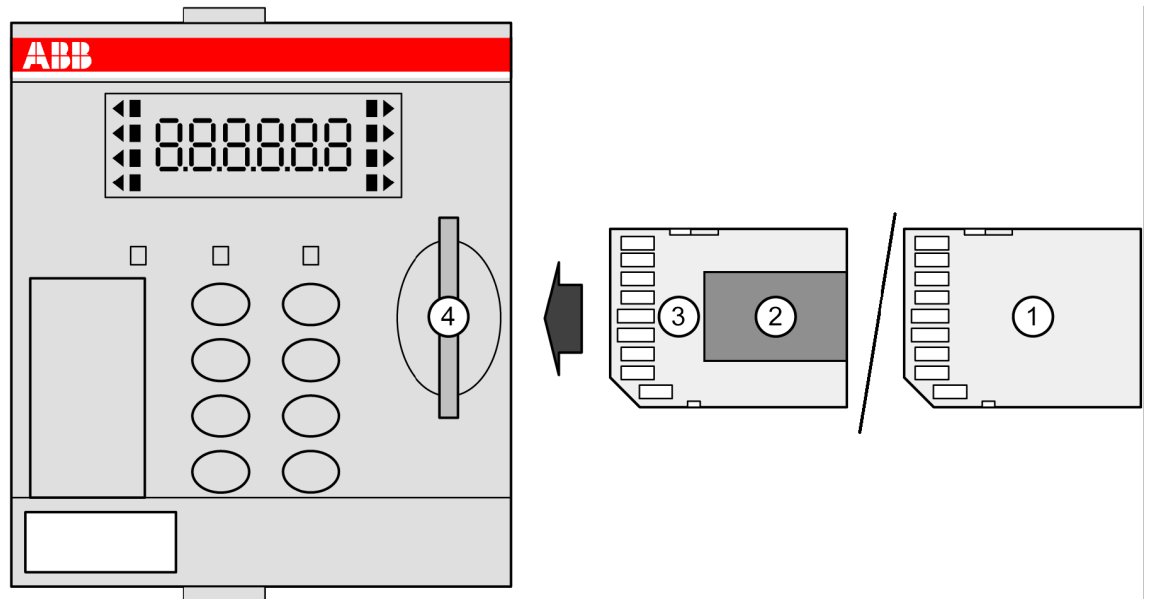
CAUTION!
Risk of injury and damaging the product!
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

70.1 Assembly

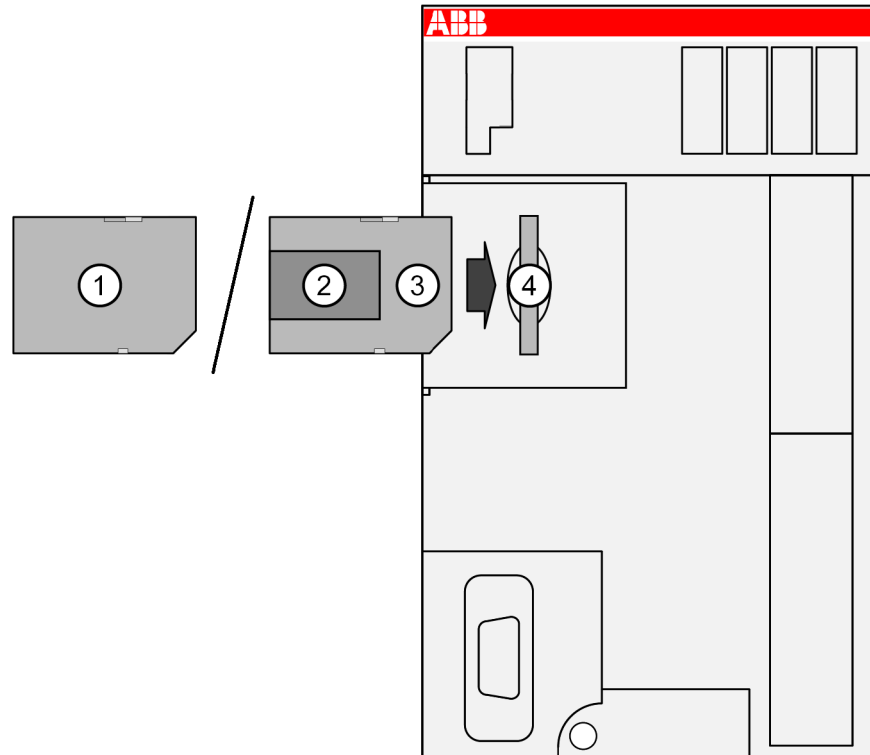
- ▷ Insert the memory card into the memory card slot of the processor module until locked.

AC500 V2 and AC500 V3



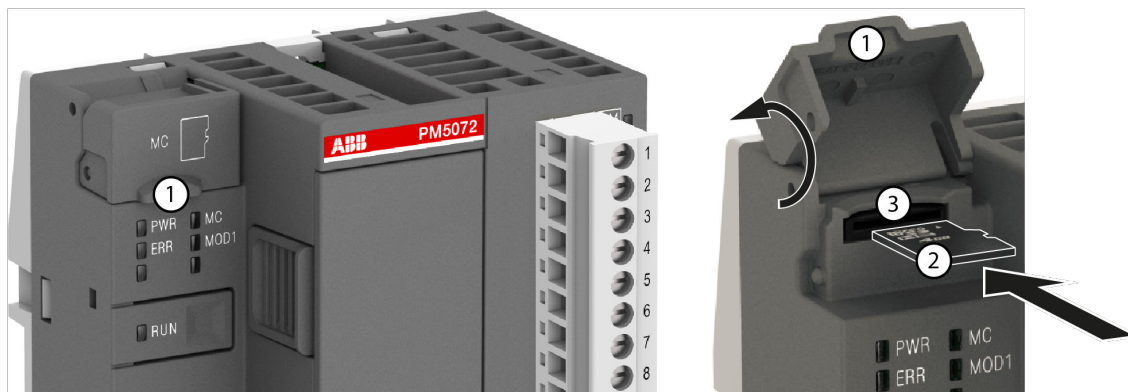
- 1 MC502 or MC5141 memory card
- 2 MC5102 micro memory card
- 3 TA5350-AD micro memory card adapter
- 4 Memory card slot

AC500-eCo V2



- 1 MC502 or MC5141 memory card
- 2 MC5102 micro memory card
- 3 TA5350-AD micro memory card adapter
- 4 MC503 memory card adapter

AC500-eCo V3



- 1 Micro memory card slot cover
- 2 Micro memory card
- 3 Micro memory card slot

1. Open the micro memory card slot cover by turning it upwards.
2. Carefully insert the micro memory card into the micro memory card slot as far as it will go. Observe orientation of card.
3. Close the micro memory card slot cover by turning it downwards.

70.2 Disassembly



NOTICE!

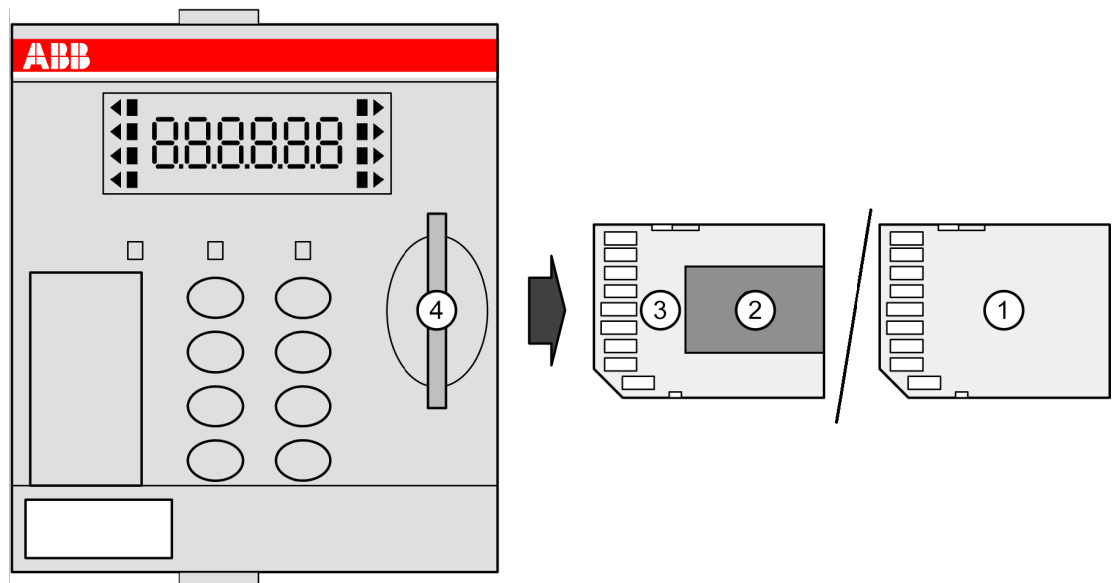
Removal of the memory card

Do not remove the memory card during access.

Otherwise the memory card and/or files on it might get corrupted and/or normal PLC operation might be disturbed.

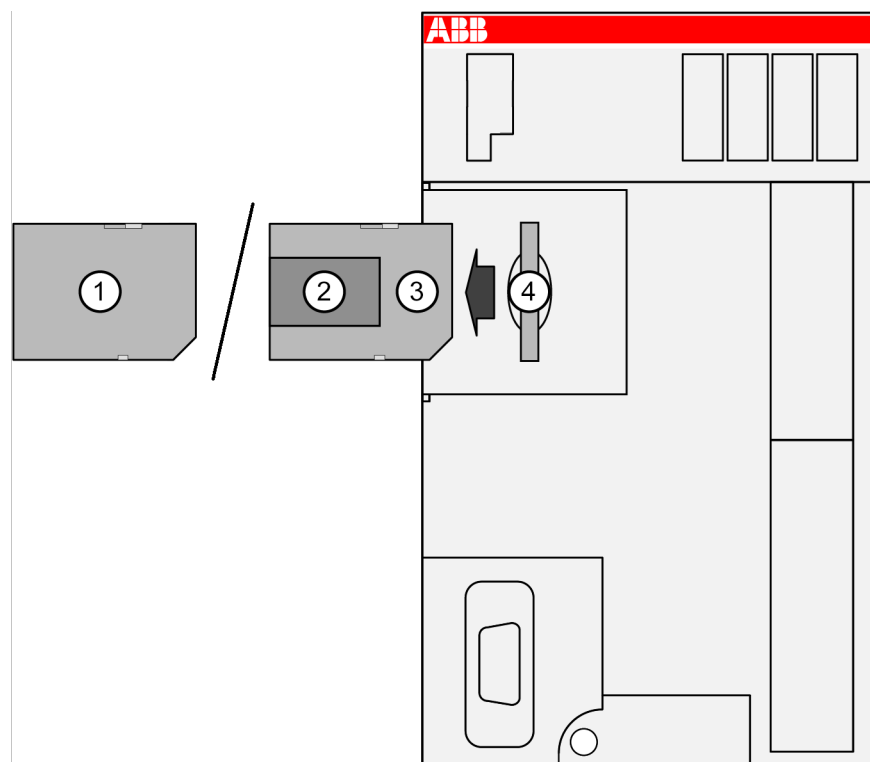
- ▷ To remove the memory card, push on the memory card until it moves forward. By this, the memory card is unlocked and can be removed.

AC500 V2 and AC500 V3



- 1 MC502 or MC5141 memory card
- 2 MC5102 micro memory card
- 3 TA5350-AD micro memory card adapter
- 4 Memory card slot

AC500-eCo V2



- 1 MC502 or MC5141 memory card
- 2 MC5102 micro memory card
- 3 TA5350-AD micro memory card adapter
- 4 MC503 memory card adapter

AC500-eCo V3



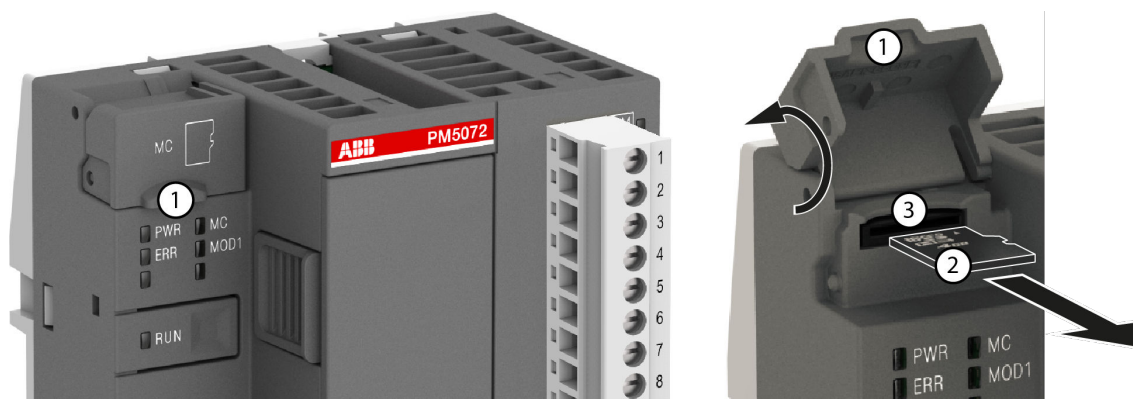
NOTICE!

Disturbed PLC operation

Do not remove the memory card when it is working!

Otherwise the memory card and/or files on it might get corrupted and/or normal PLC operation might be disturbed.

- Remove the memory card only when no black square (■) is shown next to MC in the display.

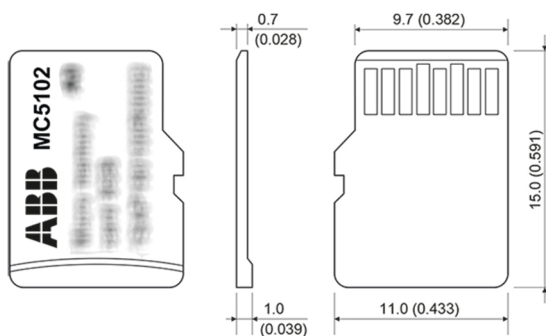


- 1 Micro memory card slot cover
- 2 Micro memory card
- 3 Micro memory card slot

1. Open the micro memory card slot cover by turning it upwards.
2. Micro memory card can be removed from the micro memory card slot by gripping and pulling with two fingers.
3. Close the micro memory card slot cover by turning it downwards.

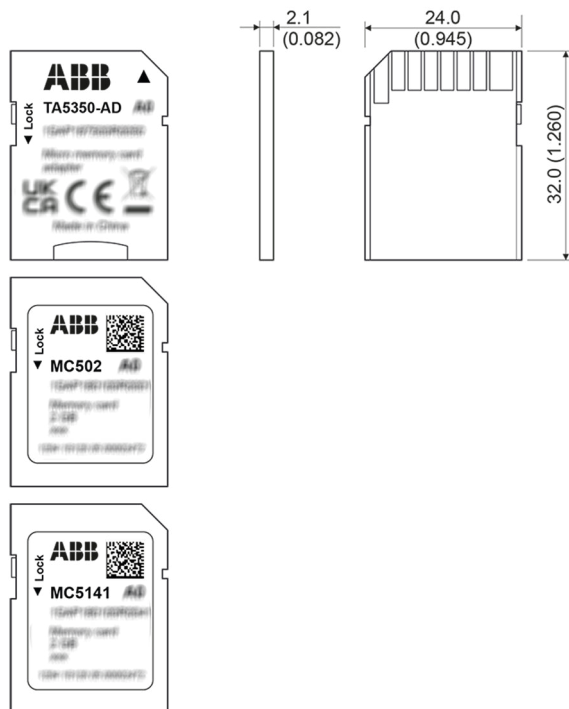
70.3 Dimensions

Micro memory card



The dimensions are in mm and in brackets in inch.

Memory card /
Micro memory
card adapter



The dimensions are in mm and in brackets in inch.

70.4 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

70.5 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

70.6 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

71 PM5012-x-ETH

- PM5012-T-ETH
- PM5012-R-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.



Terminal block set for PM50x2

Processor modules PM50x2 CPU are not delivered with terminal blocks.

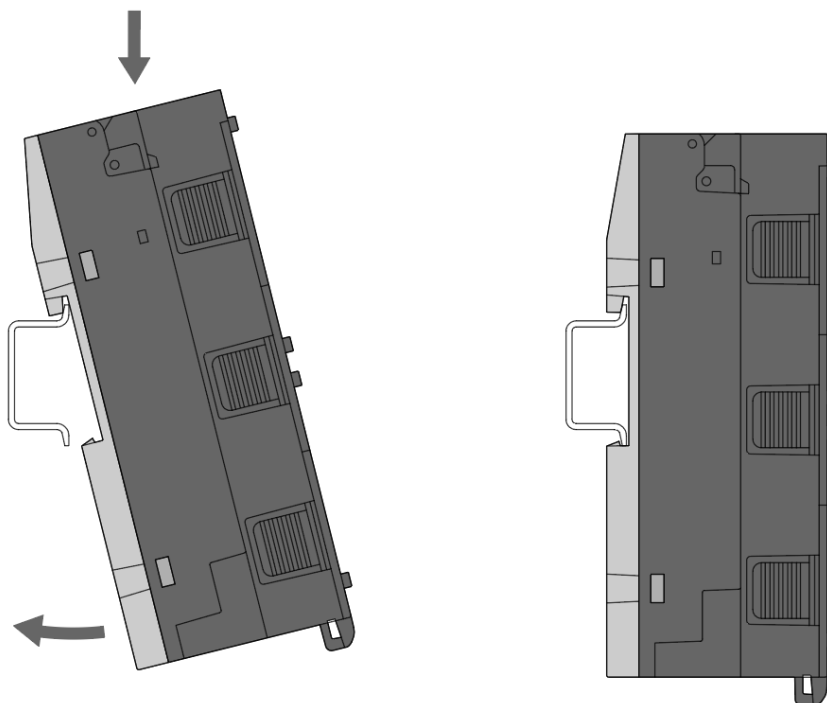
Screw terminal block set:

- TA5211-TSCL-B (1SAP187400R0001) for PM5012-x-ETH
- TA5212-TSCL (1SAP187400R0004) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

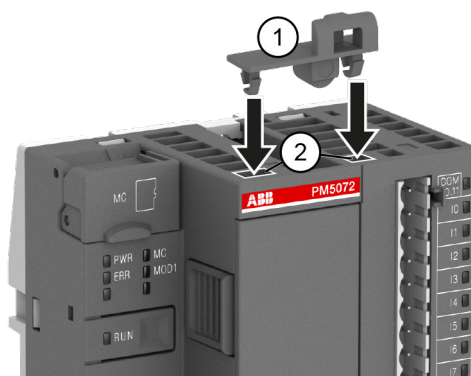
Spring terminal block set:

- TA5211-TSPF-B (1SAP187400R0002) for PM5012-x-ETH
- TA5212-TSPF (1SAP187400R0005) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

71.1 Assembly

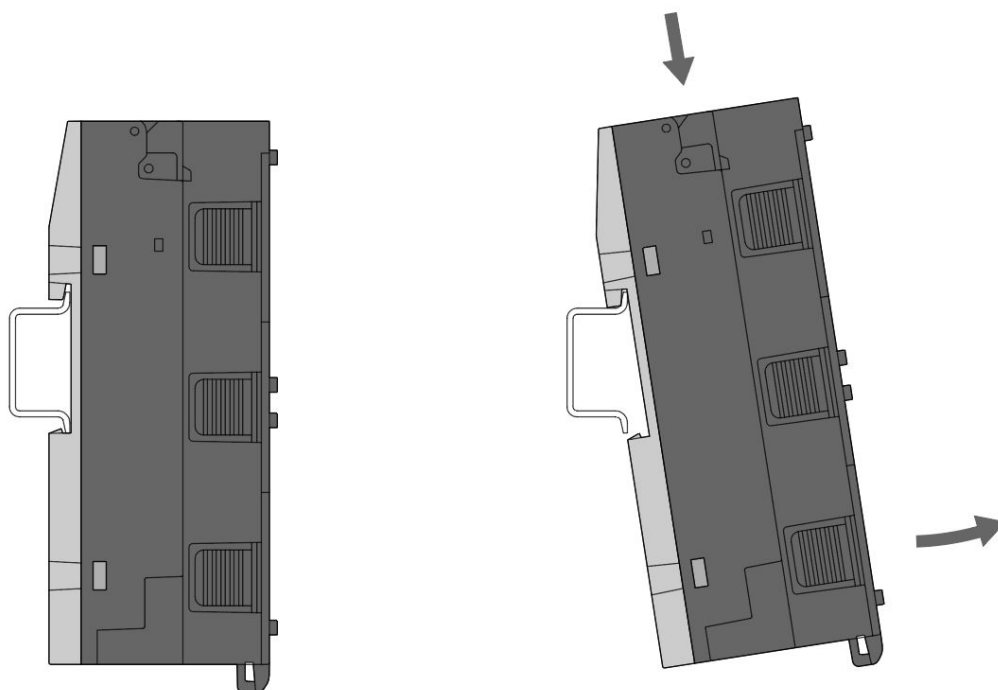


71.1.1 Assembly TA5301-CFA

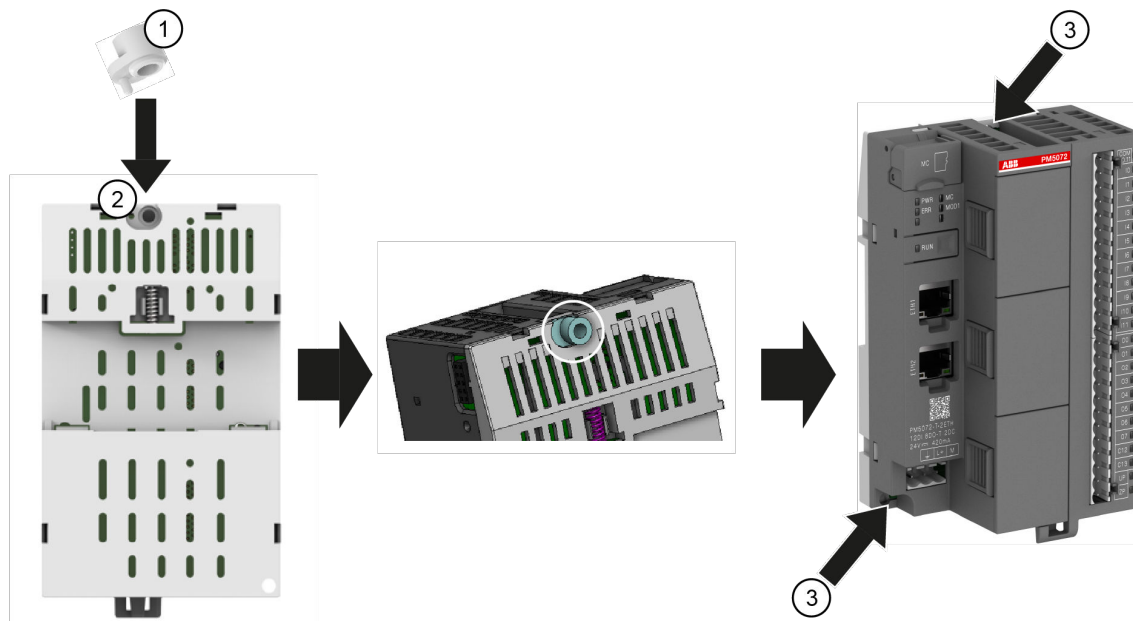


- 1 TA5301-CFA cable fixing accessory
 - 2 2 openings on the PM50x2 processor module
- ▷ Insert the TA5301-CFA cable fixing accessory into the two openings on the PM50x2 processor module marked white in the figure.

71.2 Disassembly



71.3 Assembly with screws



- 1 TA543 screw mounting accessory
- 2 Slot for TA543 screw mounting accessory
- 3 2 holes for screw mounting

1. Insert the TA543 screw mounting accessory into the slot on the back side of the processor module.



NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA543 screw mounting accessory (1SAP182800R0001) is mandatory to prevent bending and damage to the module.

2. Fasten the processor module with 2 screws (M4, max 1.2 Nm) from the front side.



With screw mounting, the processor module is grounded through the screws.

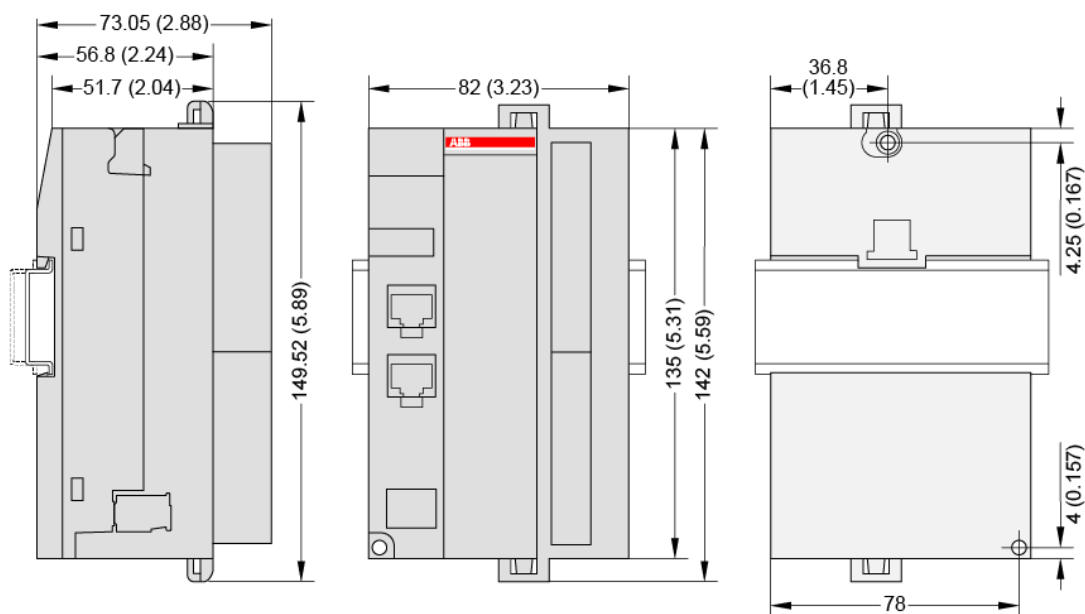
It is necessary that

- *the screws have a conductive surface (e.g. steel zinc-plated or brass nickel-plated)*
- *the mounting plate is grounded*
- *the screws have a good electrical contact to the mounting plate*



To prevent the screw from loosening after prolonged use, a thread lock washer is highly recommended.

71.4 Dimensions



The dimensions are in mm and in brackets in inch.

71.5 Connections

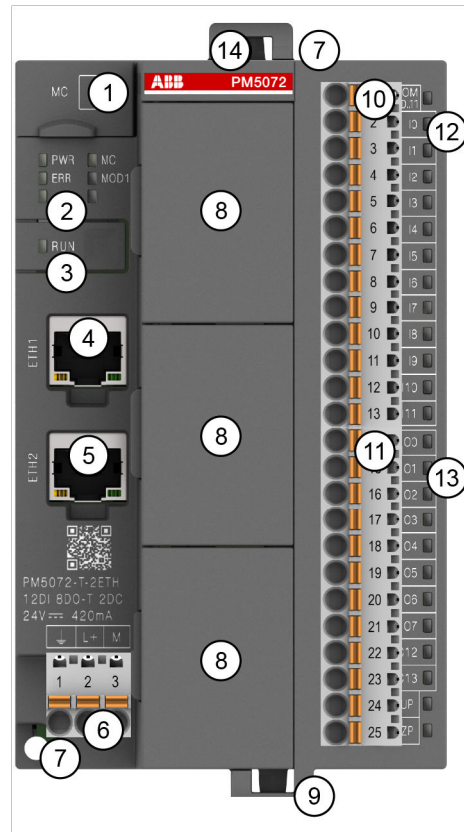


Fig. 82: Example: PM5072-T-2ETH

- 1 Micro memory card slot
- 2 5 LEDs to display the states of the processor module (Power, Error, Run, MC, MOD1)
- 3 RUN button
- 4 RJ45 female connector for Ethernet1 connection
- 5 RJ45 female connector for Ethernet2 connection (available for PM50x2-T-2ETH)
- 6 3-pin terminal block for power supply 24 V DC
- 7 2 holes for screw mounting
- 8 Option board slot cover for option board slot (the number of available slots varies according to the CPU type)
- 9 Cable fixing
- 10 13-pin terminal block for onboard I/Os
- 11 12-pin terminal block for onboard I/Os (not available on PM5012-x-ETH)
- 12 12 LEDs to display the states of the signals
- 13 10 LEDs to display the states of the signals
- 14 Cable fixing accessory TA5301-CFA on the top of the housing (optional)



The processor module is shown with pluggable terminal blocks. These terminal blocks must be ordered separately.



*The cable fixing accessory on the top of the housing is optional.
Please use TA5301-CFA cable fixing accessory to provide strain relief.
It can also be used for AC500-eCo I/O modules.*



The PM50x2 processor modules are supplied with option board slot covers as standard.

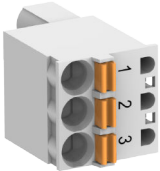
There are various TA51xx option boards for the processor modules that can be ordered separately.

Which and how many option boards can be plugged, depends on the respective processor module.

71.5.1 Power supply

The processor modules PM50x2 can be connected to the 24 V DC supply voltage via a removable 3-pin spring terminal block or a 3-pin screw terminal block.

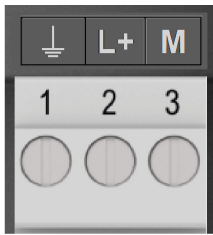
Table 6: Removable terminal block for the supply voltage 24 V DC

3-pin spring terminal block	3-pin screw terminal block
	

The terminal block is available as a set for AC500-eCo V3 processor modules.

Basic CPU (PM5012)		Standard CPUs (PM5032, PM5052) and Pro CPUs (PM5072, PM5082)	
Spring type	Screw type	Spring type	Screw type
TA5211-TSPF-B	TA5211-TSCL-B	TA5212-TSPF	TA5212-TSCL

Pin assignment

Pin Assignment	Pin	Label	Function	Description
 Terminal block inserted	1		FE	Functional earth
	2	L+	+24 V DC	Positive pin of the power supply voltage
	3	M	0 V	Negative pin of the power supply voltage



NOTICE!

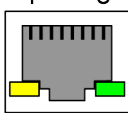
Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.

71.5.2 Ethernet network interface(s)

The Ethernet interface is carried out via a RJ45 jack.

Table 7: Pin assignment of the Ethernet interface

Interface	Pin	Description	
18 	1	Tx+	Transmit data +
	2	Tx-	Transmit data -
	3	Rx+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	Rx-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth

71.5.3 Onboard I/Os

71.5.3.1 Connections



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



NOTICE!

Risk of damaging the PLC modules!

The PLC modules must not be removed while the plant is connected to a power supply.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove or replace a module.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

- Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.
- Never connect any voltages or signals to reserved terminals (marked with ---). Reserved terminals may carry internal voltages.



When replacing a processor module, it is recommended to mark each wire connected to the onboard I/O terminal block before disconnecting it. This should make sure that the wires can be reconnected in the same order.

The connection is carried out by using removable 12-pin and 13-pin terminal blocks.

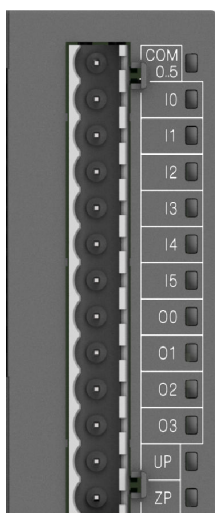


Table 8: Assignment of the terminals for PM5012-T-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	O0	Digital output signal O0 (5 kHz)
9	O1	Digital output signal O1 (5 kHz)
10	O2	Digital output signal O2 (5 kHz)
11	O3	Digital output signal O3 (5 kHz)
12	UP	Process supply voltage UP +24 V DC
13	ZP	Process supply voltage ZP 0 V DC



Table 9: Assignment of the terminals for PM5012-R-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	NO0	Normally-open relay contact of the output NO0
9	NO1	Normally-open relay contact of the output NO1
10	R0..1	Output common for signals NO0 to NO1

Terminal	Signal	Description
11	NO2	Normally-open relay contact of the output NO2
12	NO3	Normally-open relay contact of the output NO3
13	R2..3	Output common for signals NO2 to NO3

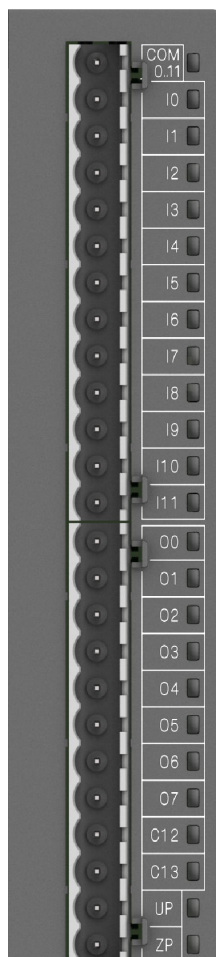


Table 10: Assignment of the terminals for PM5032-T-ETH, PM5052-T-ETH, PM5072-T-2ETH(W) and PM5082-T-2ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	O0	Digital output signal O0 (max. 5 kHz)
15	O1	Digital output signal O1 (max. 5 kHz)
16	O2	Digital output signal O2 (max. 5 kHz)
17	O3	Digital output signal O3 (max. 5 kHz)
18	O4	Digital output signal O4 PWM (max. 100 kHz), PTO (max. 200 kHz)
19	O5	Digital output signal O5 PWM (max. 100 kHz), PTO (max. 200 kHz)
20	O6	Digital output signal O6 PWM (max. 100 kHz), PTO (max. 200 kHz)
21	O7	Digital output signal O7 PWM (max. 100 kHz), PTO (max. 200 kHz)
22	C12	Digital input/output signal configurable C12
23	C13	Digital input/output signal configurable C13

Terminal	Signal	Description
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

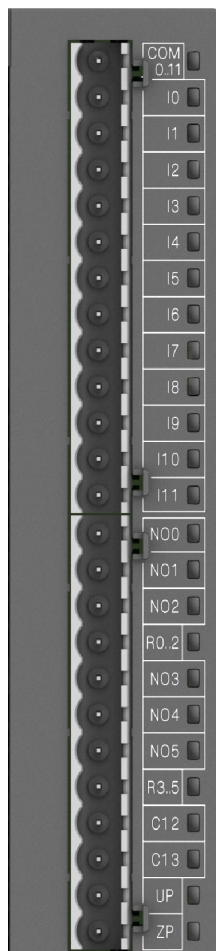


Table 11: Assignment of the terminals for PM5032-R-ETH and PM5052-R-ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	NO0	Normally-open relay contact of the output NO0
15	NO1	Normally-open relay contact of the output NO1
16	NO2	Normally-open relay contact of the output NO2
17	R0..2	Output common for signals NO0 to NO2
18	NO3	Normally-open relay contact of the output NO3
19	NO4	Normally-open relay contact of the output NO4
20	NO5	Normally-open relay contact of the output NO5
21	R3..5	Output common for signals NO3 to NO5
22	C12	Digital input/output signal configurable C12 PWM (max. 100 kHz), PTO (max. 200 kHz)
23	C13	Digital input/output signal configurable C13 PWM (max. 100 kHz), PTO (max. 200 kHz)
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

Block diagrams Table 12: Internal structure of the onboard I/Os

PM5012-T-ETH	PM5012-R-ETH	PM5032-ETH PM5052-T-ETH PM5072-T-2ETH(W) PM5082-T-2ETH	PM5032-R-ETH PM5052-R-ETH
COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 O0 8 O1 9 O2 10 O3 11 UP 12 ZP 13	COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 NO0 8 NO1 9 R0..1 10 NO2 11 NO3 12 R2..3 13	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 O0 14 O1 15 O2 16 O3 17 O4 18 O5 19 O6 20 O7 21 C12 22 C13 23 UP 24 ZP 25	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 NO0 14 NO1 15 NO2 16 R0..2 17 NO3 18 NO4 19 NO5 20 R3..5 21 C12 22 C13 23 UP 24 ZP 25

71.5.3.1.1 Connection of the digital inputs

The digital inputs can be used as source inputs or as sink inputs.

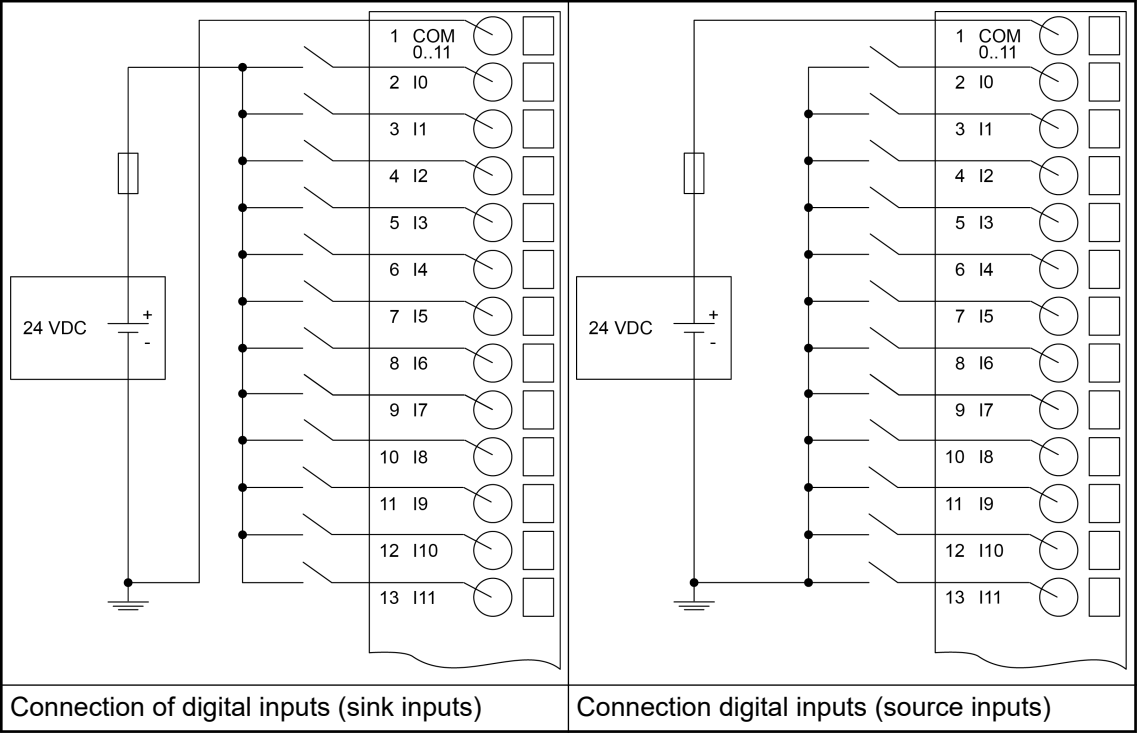


NOTICE!
Risk of malfunctions in the plant!

A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.

Table 13: Connection of the digital inputs to the PM50x2 processor modules



71.5.3.1.2 Connection of the digital transistor outputs (PM50xx-T-xETH only)

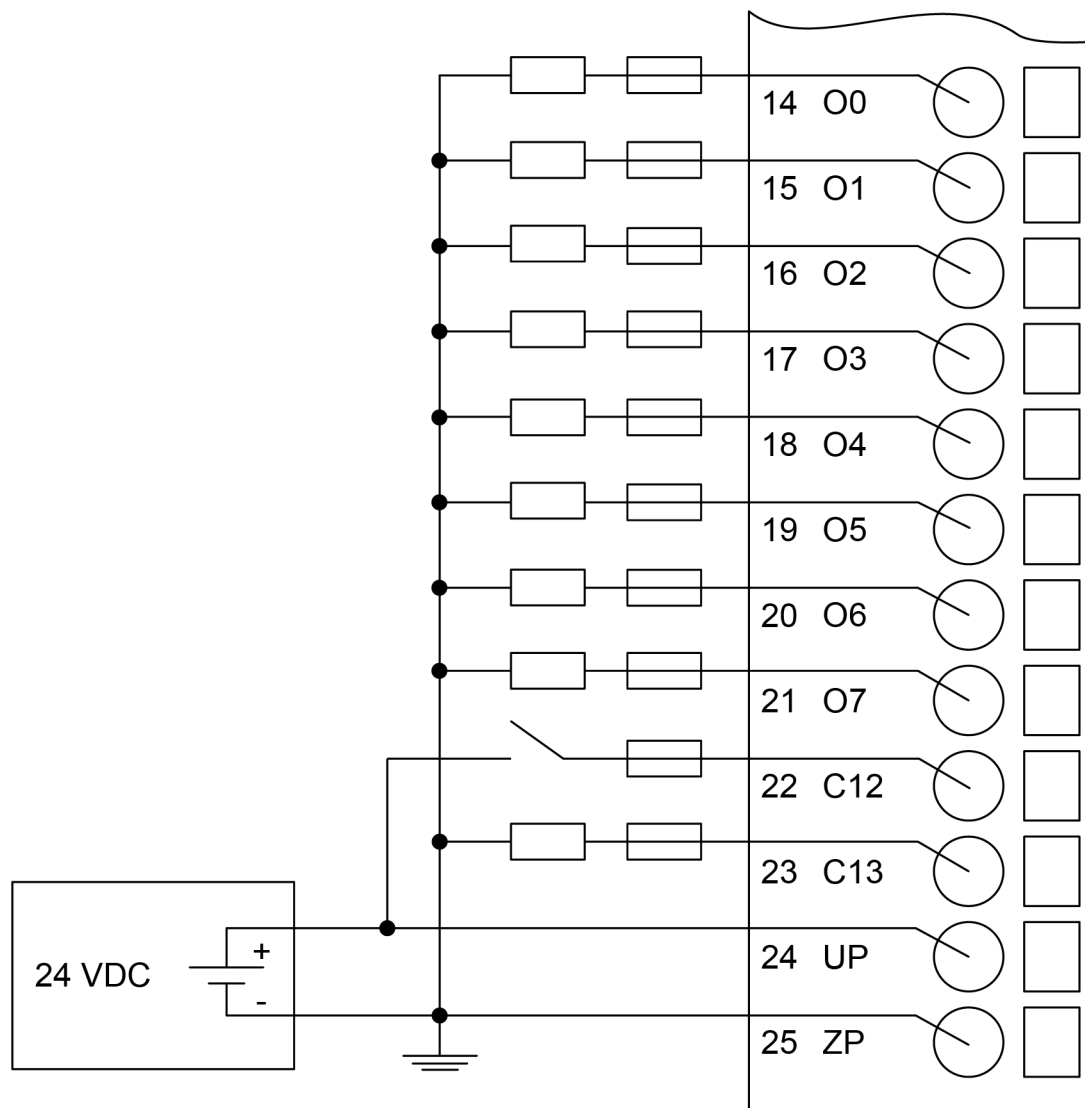


Fig. 83: Connection of digital transistor outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



CAUTION!

Risk of damaging the processor module!

The outputs are not protected against short circuit and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

71.5.3.1.3 Connection of the digital relay outputs (PM50xx-R-ETH only)

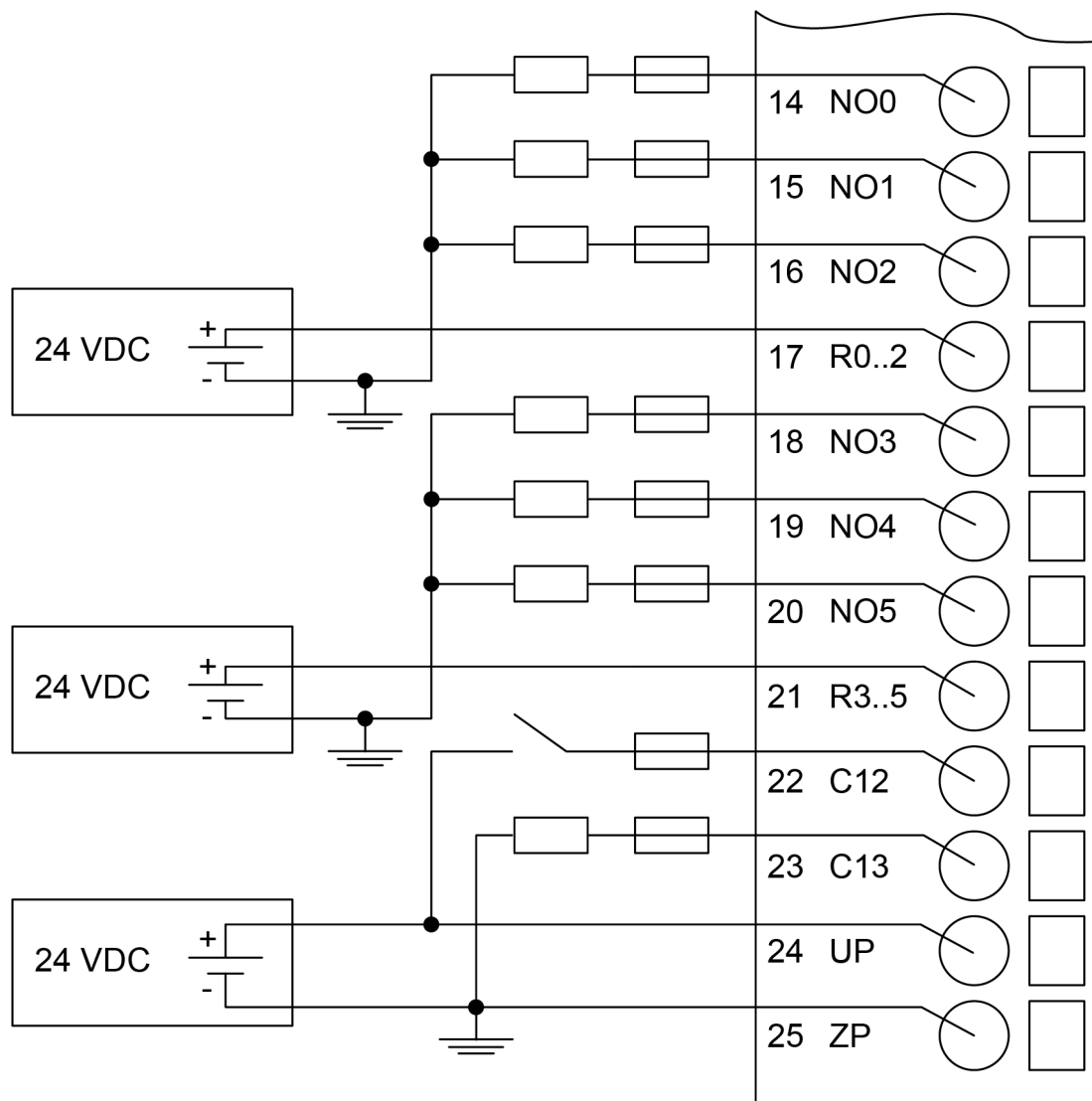


Fig. 84: Connection of digital relay outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



CAUTION!

Risk of damaging the processor module!

- Never short-circuit or overload the outputs.
- Never connect inductive loads without an external suppression against voltage peaks due to inductive kickback.
- Never connect voltages > 240 V. All outputs must be fed from the same phase.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

71.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

71.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

71.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

72 PM5032-x-ETH

- PM5032-T-ETH
- PM5032-R-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.



Terminal block set for PM50x2

Processor modules PM50x2 CPU are not delivered with terminal blocks.

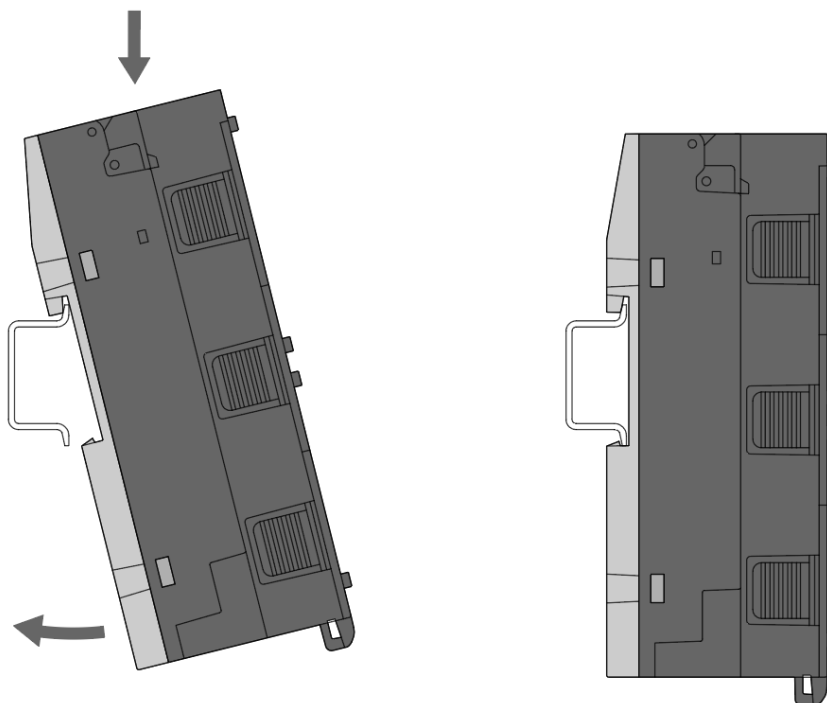
Screw terminal block set:

- TA5211-TSCL-B (1SAP187400R0001) for PM5012-x-ETH
- TA5212-TSCL (1SAP187400R0004) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

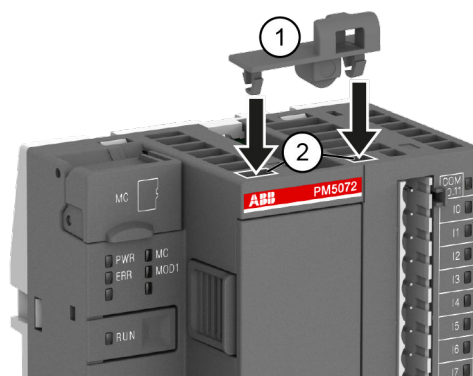
Spring terminal block set:

- TA5211-TSPF-B (1SAP187400R0002) for PM5012-x-ETH
- TA5212-TSPF (1SAP187400R0005) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

72.1 Assembly

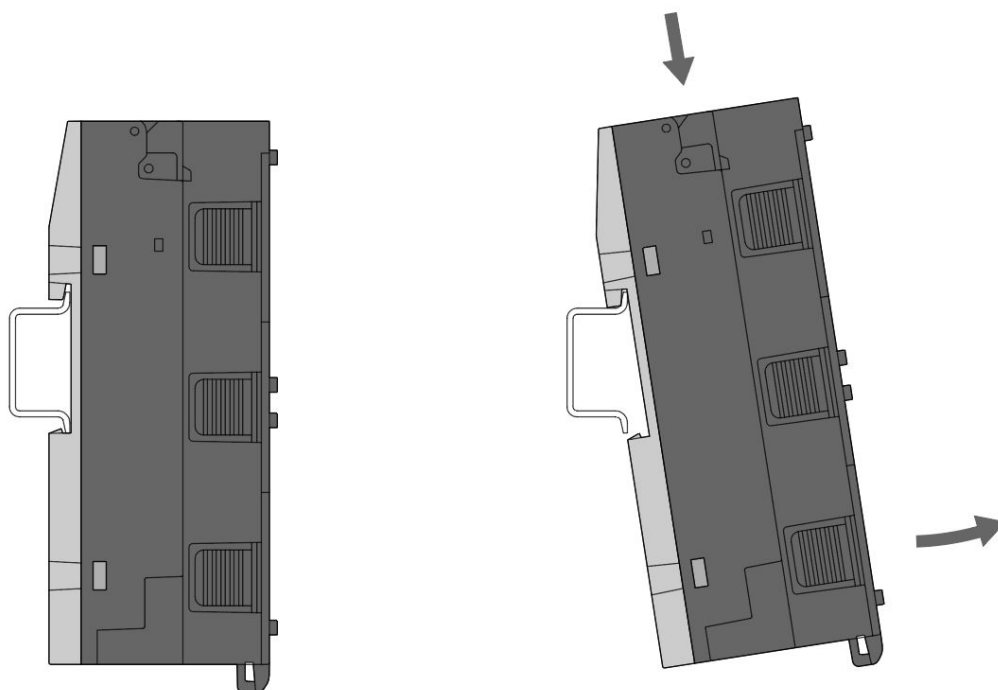


72.1.1 Assembly TA5301-CFA

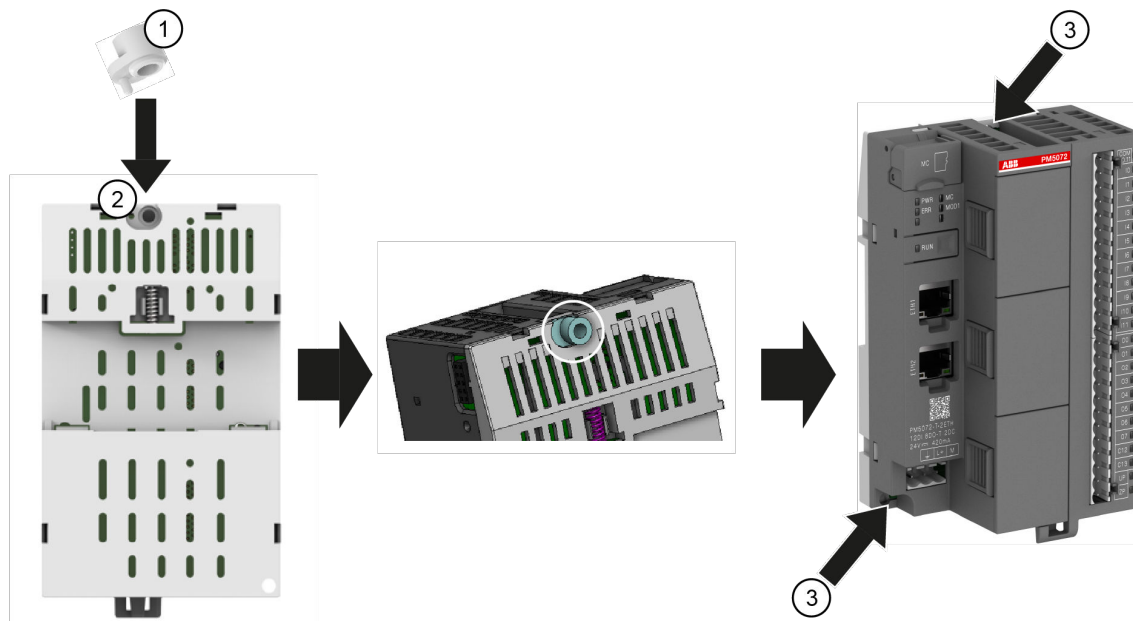


- 1 TA5301-CFA cable fixing accessory
 - 2 2 openings on the PM50x2 processor module
- ▷ Insert the TA5301-CFA cable fixing accessory into the two openings on the PM50x2 processor module marked white in the figure.

72.2 Disassembly



72.3 Assembly with screws



- 1 TA543 screw mounting accessory
- 2 Slot for TA543 screw mounting accessory
- 3 2 holes for screw mounting

1. Insert the TA543 screw mounting accessory into the slot on the back side of the processor module.



NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA543 screw mounting accessory (1SAP182800R0001) is mandatory to prevent bending and damage to the module.

2. Fasten the processor module with 2 screws (M4, max 1.2 Nm) from the front side.



With screw mounting, the processor module is grounded through the screws.

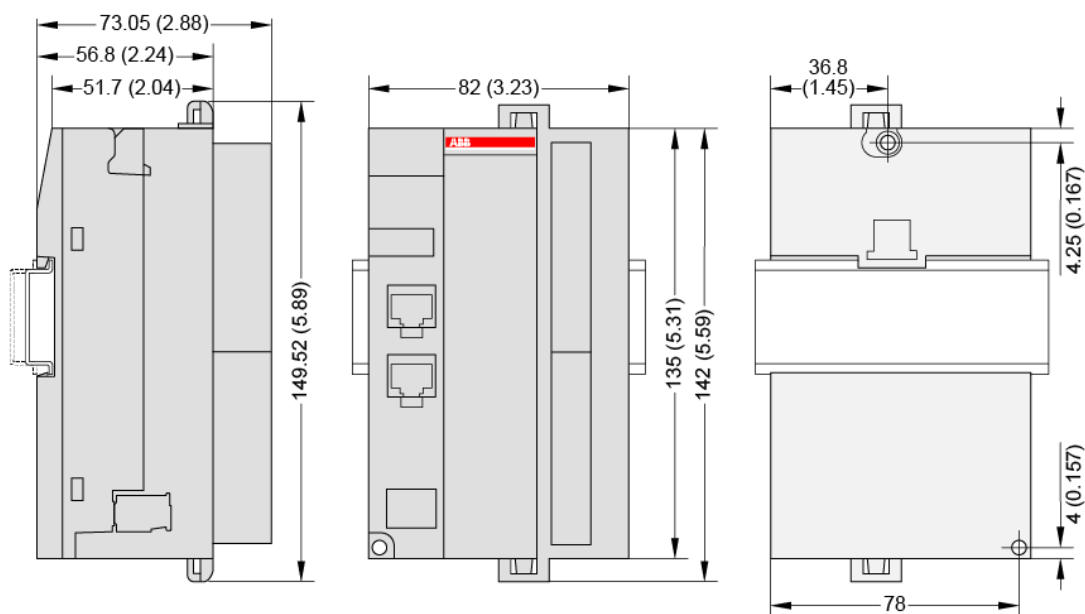
It is necessary that

- *the screws have a conductive surface (e.g. steel zinc-plated or brass nickel-plated)*
- *the mounting plate is grounded*
- *the screws have a good electrical contact to the mounting plate*



To prevent the screw from loosening after prolonged use, a thread lock washer is highly recommended.

72.4 Dimensions



The dimensions are in mm and in brackets in inch.

72.5 Connections

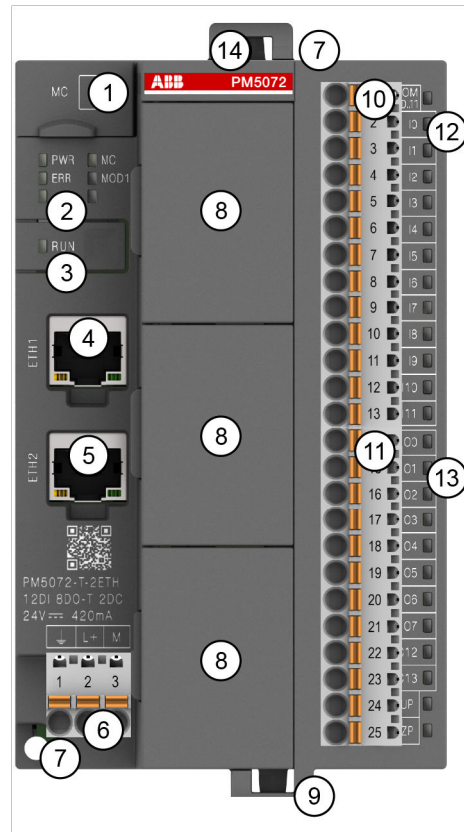


Fig. 85: Example: PM5072-T-2ETH

- 1 Micro memory card slot
- 2 5 LEDs to display the states of the processor module (Power, Error, Run, MC, MOD1)
- 3 RUN button
- 4 RJ45 female connector for Ethernet1 connection
- 5 RJ45 female connector for Ethernet2 connection (available for PM50x2-T-2ETH)
- 6 3-pin terminal block for power supply 24 V DC
- 7 2 holes for screw mounting
- 8 Option board slot cover for option board slot (the number of available slots varies according to the CPU type)
- 9 Cable fixing
- 10 13-pin terminal block for onboard I/Os
- 11 12-pin terminal block for onboard I/Os (not available on PM5012-x-ETH)
- 12 12 LEDs to display the states of the signals
- 13 10 LEDs to display the states of the signals
- 14 Cable fixing accessory TA5301-CFA on the top of the housing (optional)



The processor module is shown with pluggable terminal blocks. These terminal blocks must be ordered separately.



*The cable fixing accessory on the top of the housing is optional.
Please use TA5301-CFA cable fixing accessory to provide strain relief.
It can also be used for AC500-eCo I/O modules.*



The PM50x2 processor modules are supplied with option board slot covers as standard.

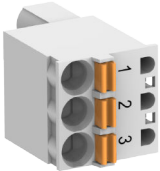
There are various TA51xx option boards for the processor modules that can be ordered separately.

Which and how many option boards can be plugged, depends on the respective processor module.

72.5.1 Power supply

The processor modules PM50x2 can be connected to the 24 V DC supply voltage via a removable 3-pin spring terminal block or a 3-pin screw terminal block.

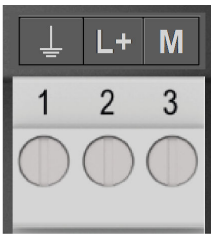
Table 14: Removable terminal block for the supply voltage 24 V DC

3-pin spring terminal block	3-pin screw terminal block
	

The terminal block is available as a set for AC500-eCo V3 processor modules.

Basic CPU (PM5012)		Standard CPUs (PM5032, PM5052) and Pro CPUs (PM5072, PM5082)	
Spring type	Screw type	Spring type	Screw type
TA5211-TSPF-B	TA5211-TSCL-B	TA5212-TSPF	TA5212-TSCL

Pin assignment

Pin Assignment	Pin	Label	Function	Description
 Terminal block inserted	1		FE	Functional earth
	2	L+	+24 V DC	Positive pin of the power supply voltage
	3	M	0 V	Negative pin of the power supply voltage



NOTICE!

Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.

72.5.2 Ethernet network interface(s)

The Ethernet interface is carried out via a RJ45 jack.

Table 15: Pin assignment of the Ethernet interface

Interface	Pin	Description	
1 8	1	Tx+	Transmit data +
	2	Tx-	Transmit data -
	3	Rx+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	Rx-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth

72.5.3 Onboard I/Os

72.5.3.1 Connections



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



NOTICE!

Risk of damaging the PLC modules!

The PLC modules must not be removed while the plant is connected to a power supply.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove or replace a module.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

- Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.
- Never connect any voltages or signals to reserved terminals (marked with ---). Reserved terminals may carry internal voltages.



When replacing a processor module, it is recommended to mark each wire connected to the onboard I/O terminal block before disconnecting it. This should make sure that the wires can be reconnected in the same order.

The connection is carried out by using removable 12-pin and 13-pin terminal blocks.

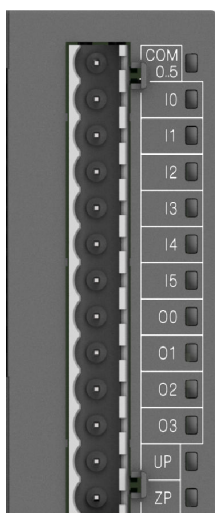


Table 16: Assignment of the terminals for PM5012-T-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	O0	Digital output signal O0 (5 kHz)
9	O1	Digital output signal O1 (5 kHz)
10	O2	Digital output signal O2 (5 kHz)
11	O3	Digital output signal O3 (5 kHz)
12	UP	Process supply voltage UP +24 V DC
13	ZP	Process supply voltage ZP 0 V DC



Table 17: Assignment of the terminals for PM5012-R-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	NO0	Normally-open relay contact of the output NO0
9	NO1	Normally-open relay contact of the output NO1
10	R0..1	Output common for signals NO0 to NO1

Terminal	Signal	Description
11	NO2	Normally-open relay contact of the output NO2
12	NO3	Normally-open relay contact of the output NO3
13	R2..3	Output common for signals NO2 to NO3

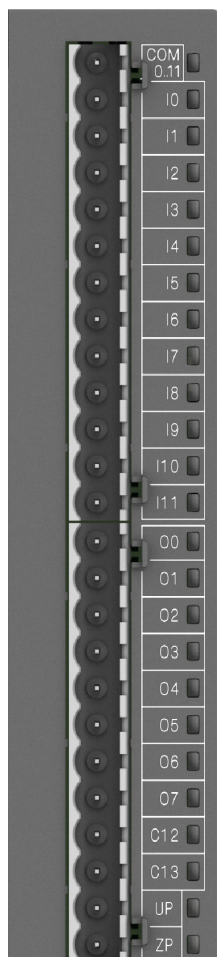


Table 18: Assignment of the terminals for PM5032-T-ETH, PM5052-T-ETH, PM5072-T-2ETH(W) and PM5082-T-2ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	O0	Digital output signal O0 (max. 5 kHz)
15	O1	Digital output signal O1 (max. 5 kHz)
16	O2	Digital output signal O2 (max. 5 kHz)
17	O3	Digital output signal O3 (max. 5 kHz)
18	O4	Digital output signal O4 PWM (max. 100 kHz), PTO (max. 200 kHz)
19	O5	Digital output signal O5 PWM (max. 100 kHz), PTO (max. 200 kHz)
20	O6	Digital output signal O6 PWM (max. 100 kHz), PTO (max. 200 kHz)
21	O7	Digital output signal O7 PWM (max. 100 kHz), PTO (max. 200 kHz)
22	C12	Digital input/output signal configurable C12
23	C13	Digital input/output signal configurable C13

Terminal	Signal	Description
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

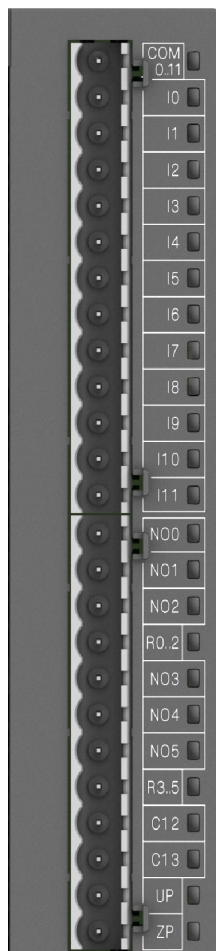


Table 19: Assignment of the terminals for PM5032-R-ETH and PM5052-R-ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	NO0	Normally-open relay contact of the output NO0
15	NO1	Normally-open relay contact of the output NO1
16	NO2	Normally-open relay contact of the output NO2
17	R0..2	Output common for signals NO0 to NO2
18	NO3	Normally-open relay contact of the output NO3
19	NO4	Normally-open relay contact of the output NO4
20	NO5	Normally-open relay contact of the output NO5
21	R3..5	Output common for signals NO3 to NO5
22	C12	Digital input/output signal configurable C12 PWM (max. 100 kHz), PTO (max. 200 kHz)
23	C13	Digital input/output signal configurable C13 PWM (max. 100 kHz), PTO (max. 200 kHz)
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

Block diagrams Table 20: Internal structure of the onboard I/Os

PM5012-T-ETH	PM5012-R-ETH	PM5032-ETH PM5052-T-ETH PM5072-T-2ETH(W) PM5082-T-2ETH	PM5032-R-ETH PM5052-R-ETH
COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 O0 8 O1 9 O2 10 O3 11 UP 12 ZP 13	COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 NO0 8 NO1 9 R0..1 10 NO2 11 NO3 12 R2..3 13	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 O0 14 O1 15 O2 16 O3 17 O4 18 O5 19 O6 20 O7 21 C12 22 C13 23 UP 24 ZP 25	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 NO0 14 NO1 15 NO2 16 R0..2 17 NO3 18 NO4 19 NO5 20 R3..5 21 C12 22 C13 23 UP 24 ZP 25

72.5.3.1.1 Connection of the digital inputs

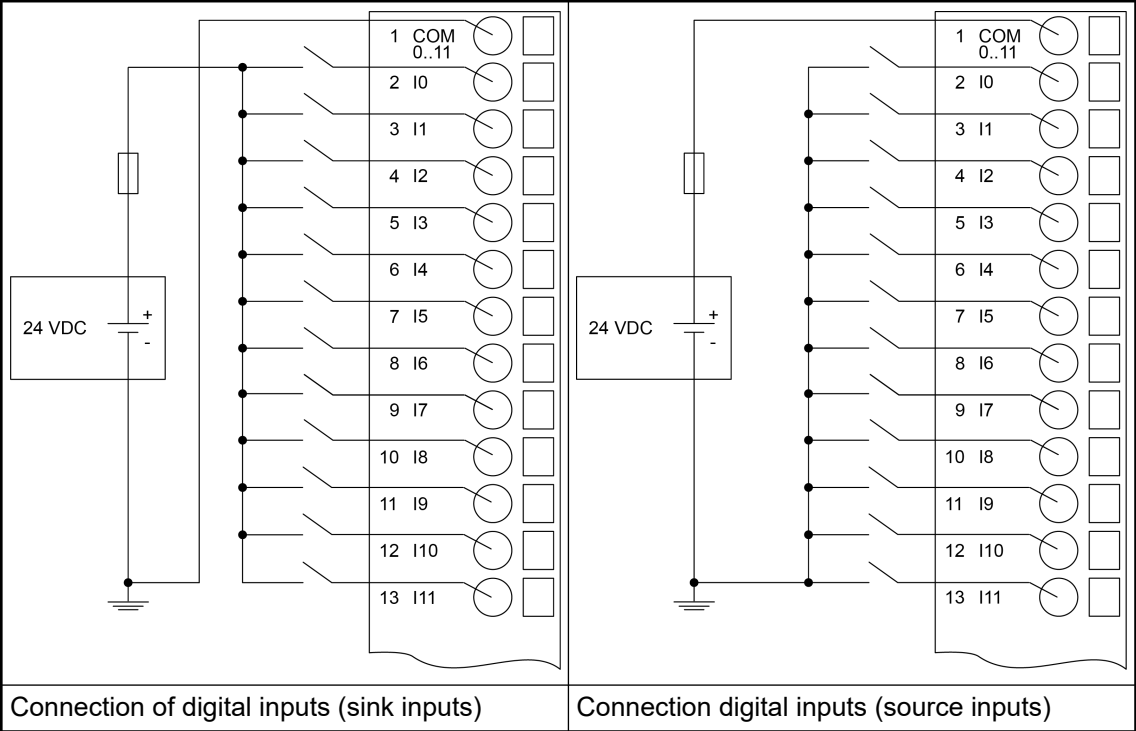
The digital inputs can be used as source inputs or as sink inputs.



NOTICE!
Risk of malfunctions in the plant!
A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.

Table 21: Connection of the digital inputs to the PM50x2 processor modules



72.5.3.1.2 Connection of the digital transistor outputs (PM50xx-T-xETH only)

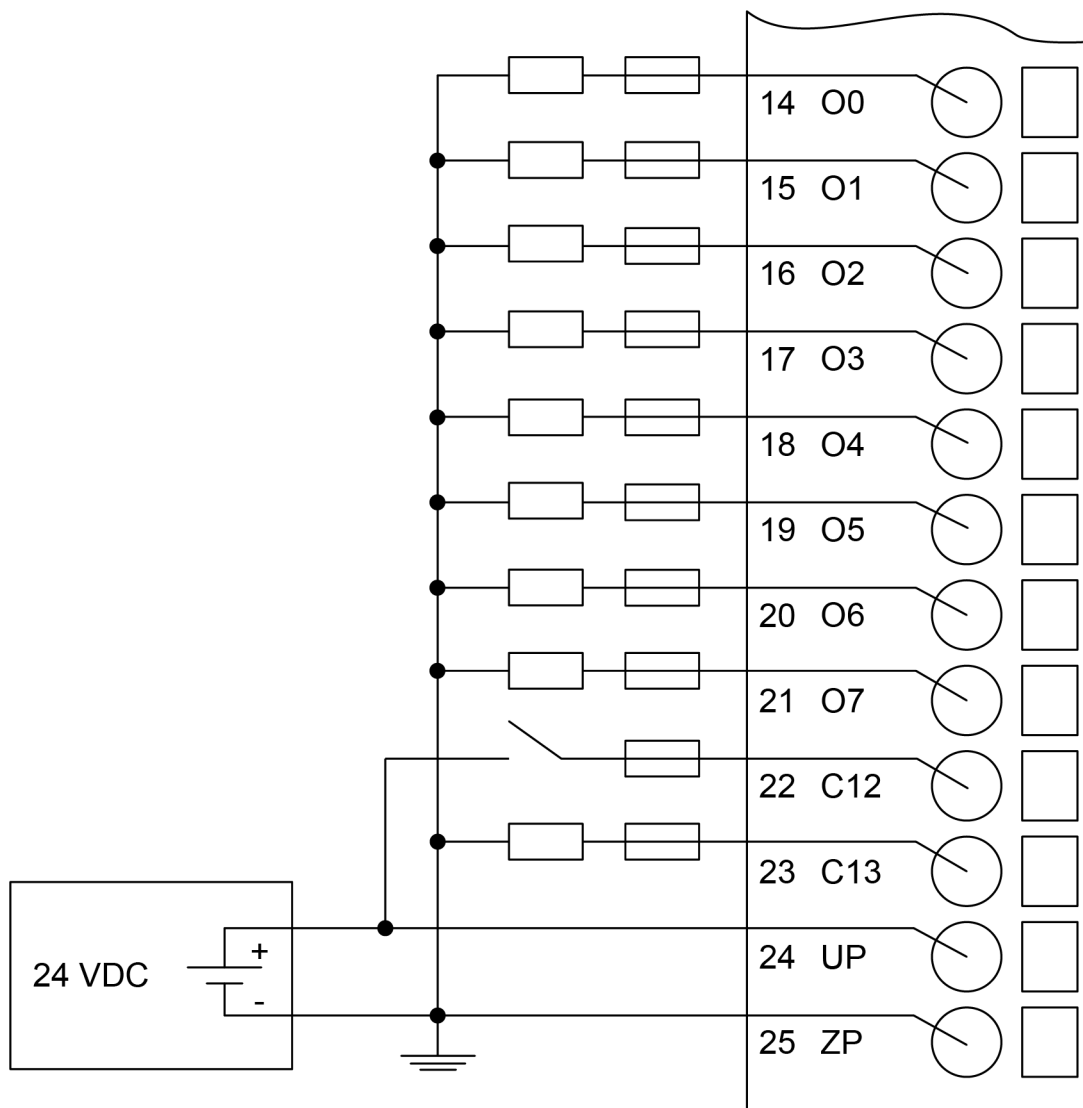


Fig. 86: Connection of digital transistor outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



CAUTION!

Risk of damaging the processor module!

The outputs are not protected against short circuit and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

72.5.3.1.3 Connection of the digital relay outputs (PM50xx-R-ETH only)

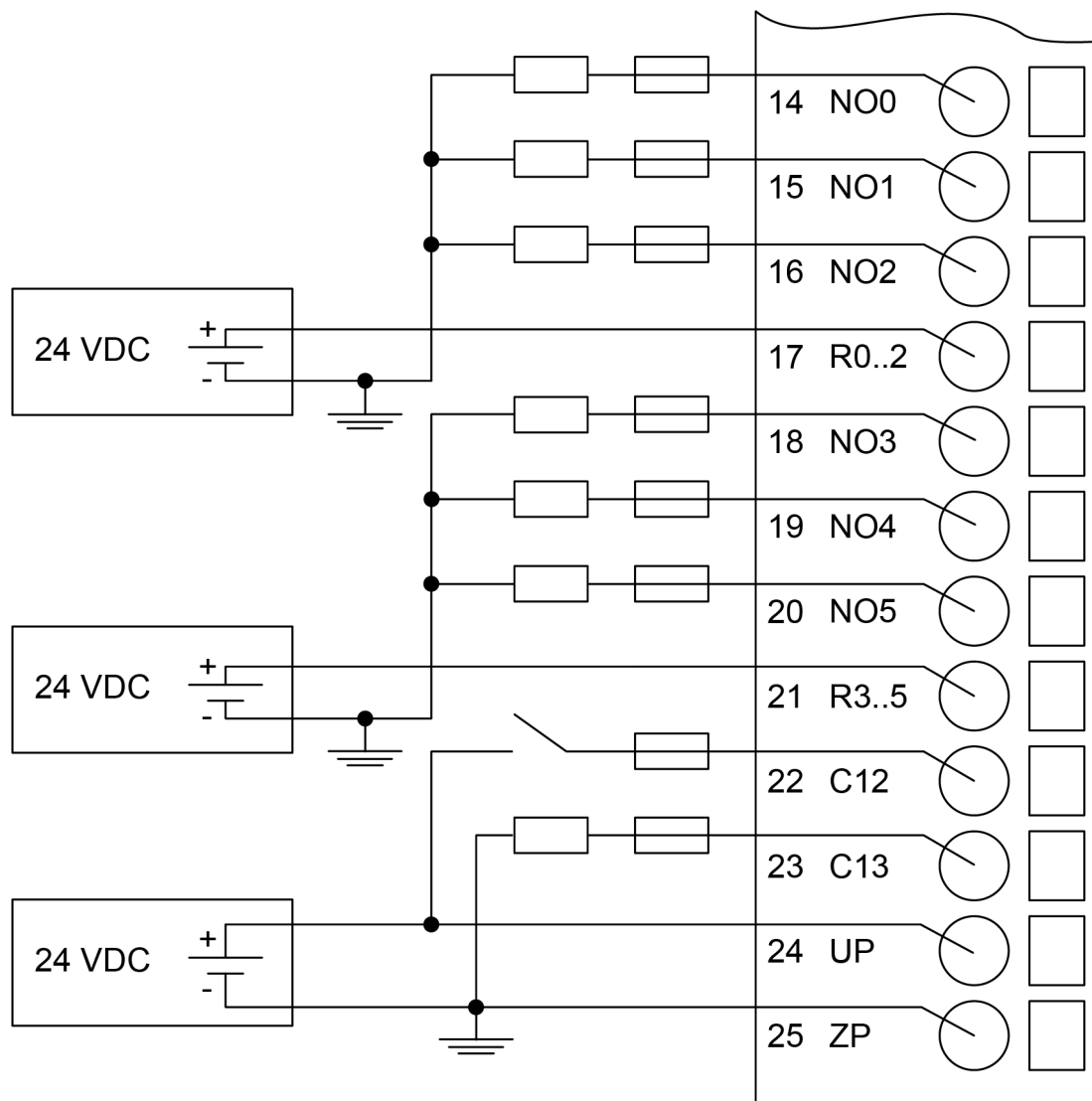


Fig. 87: Connection of digital relay outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



CAUTION!

Risk of damaging the processor module!

- Never short-circuit or overload the outputs.
- Never connect inductive loads without an external suppression against voltage peaks due to inductive kickback.
- Never connect voltages > 240 V. All outputs must be fed from the same phase.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

72.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

72.7 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

72.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

73 PM5052-x-ETH

- PM5052-T-ETH
- PM5052-R-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.



Terminal block set for PM50x2

Processor modules PM50x2 CPU are not delivered with terminal blocks.

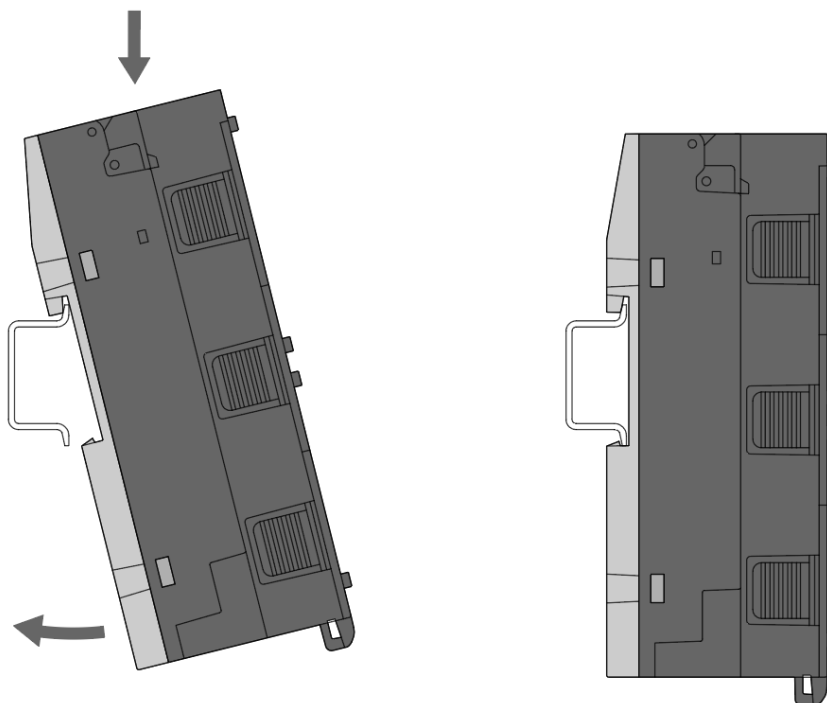
Screw terminal block set:

- TA5211-TSCL-B (1SAP187400R0001) for PM5012-x-ETH
- TA5212-TSCL (1SAP187400R0004) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

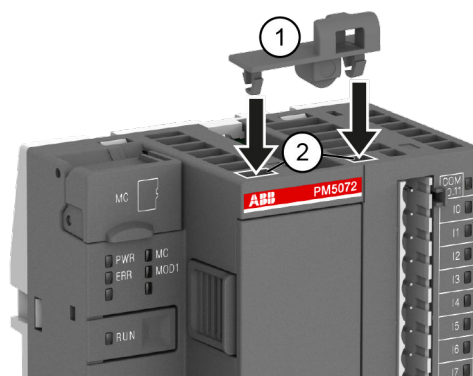
Spring terminal block set:

- TA5211-TSPF-B (1SAP187400R0002) for PM5012-x-ETH
- TA5212-TSPF (1SAP187400R0005) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

73.1 Assembly

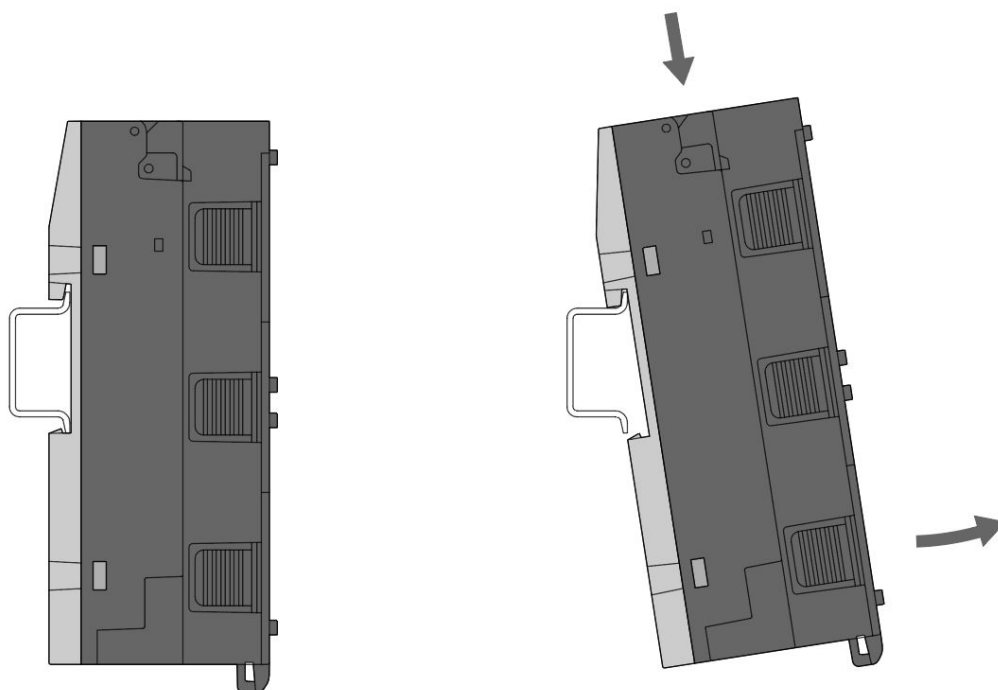


73.1.1 Assembly TA5301-CFA

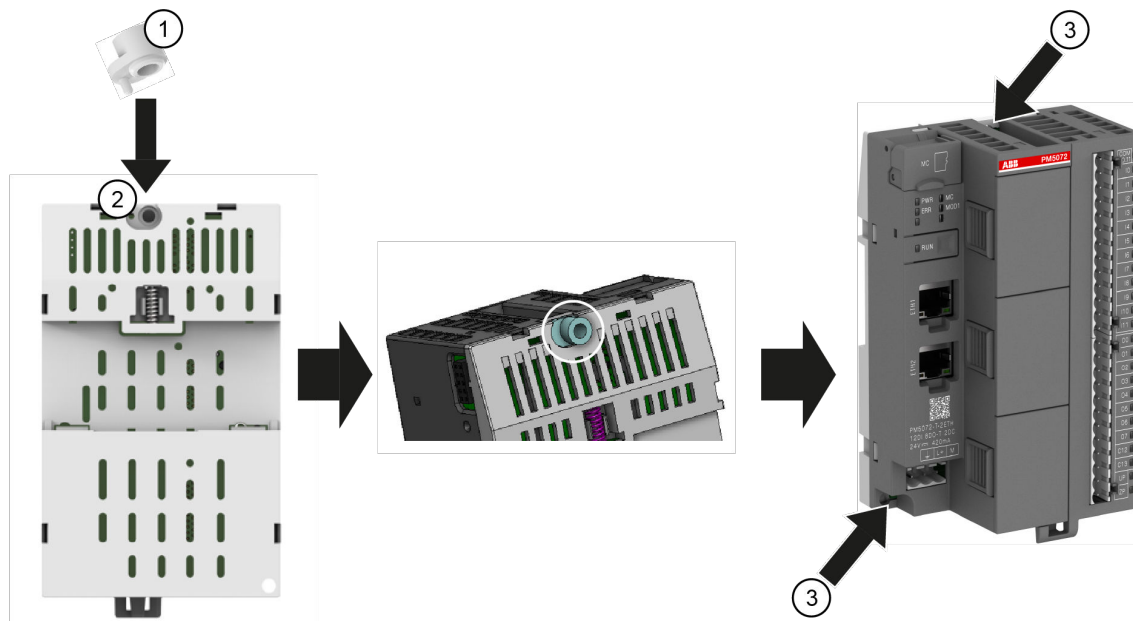


- 1 TA5301-CFA cable fixing accessory
 - 2 2 openings on the PM50x2 processor module
- ▷ Insert the TA5301-CFA cable fixing accessory into the two openings on the PM50x2 processor module marked white in the figure.

73.2 Disassembly



73.3 Assembly with screws



- 1 TA543 screw mounting accessory
- 2 Slot for TA543 screw mounting accessory
- 3 2 holes for screw mounting

1. Insert the TA543 screw mounting accessory into the slot on the back side of the processor module.



NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA543 screw mounting accessory (1SAP182800R0001) is mandatory to prevent bending and damage to the module.

2. Fasten the processor module with 2 screws (M4, max 1.2 Nm) from the front side.



With screw mounting, the processor module is grounded through the screws.

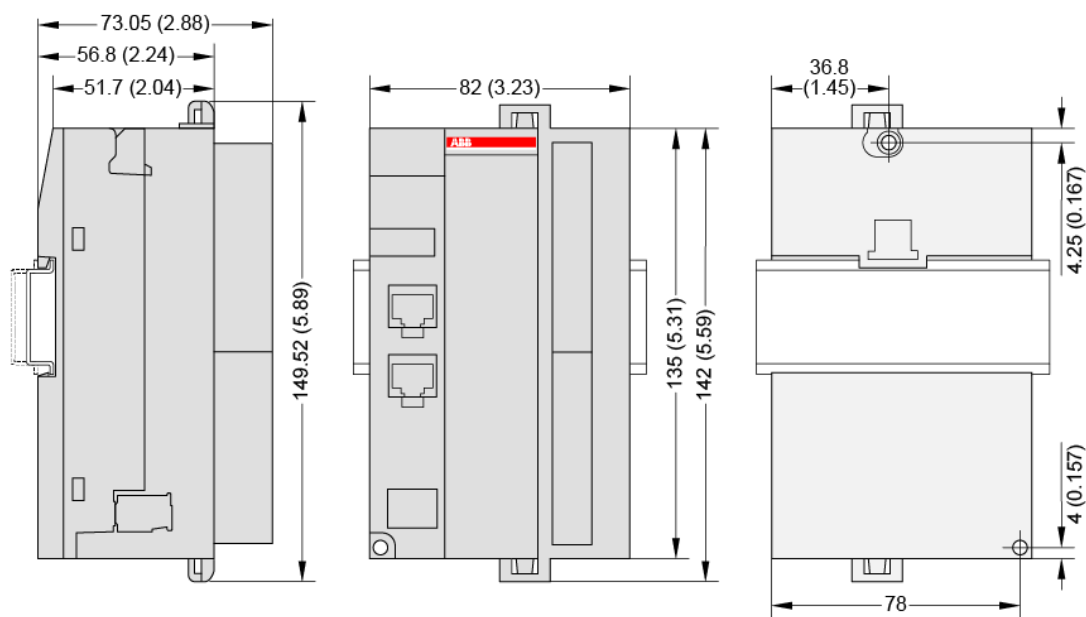
It is necessary that

- *the screws have a conductive surface (e.g. steel zinc-plated or brass nickel-plated)*
- *the mounting plate is grounded*
- *the screws have a good electrical contact to the mounting plate*



To prevent the screw from loosening after prolonged use, a thread lock washer is highly recommended.

73.4 Dimensions



The dimensions are in mm and in brackets in inch.

73.5 Connections

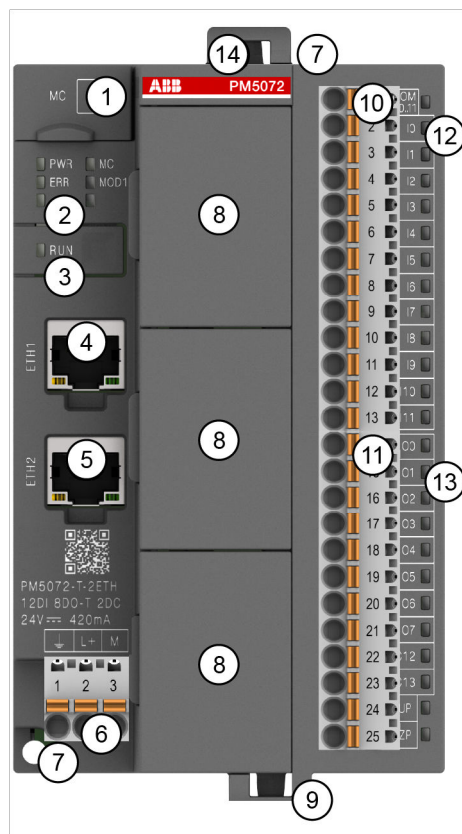


Fig. 88: Example: PM5072-T-2ETH

- 1 Micro memory card slot
- 2 5 LEDs to display the states of the processor module (Power, Error, Run, MC, MOD1)
- 3 RUN button
- 4 RJ45 female connector for Ethernet1 connection
- 5 RJ45 female connector for Ethernet2 connection (available for PM50x2-T-2ETH)
- 6 3-pin terminal block for power supply 24 V DC
- 7 2 holes for screw mounting
- 8 Option board slot cover for option board slot (the number of available slots varies according to the CPU type)
- 9 Cable fixing
- 10 13-pin terminal block for onboard I/Os
- 11 12-pin terminal block for onboard I/Os (not available on PM5012-x-ETH)
- 12 12 LEDs to display the states of the signals
- 13 10 LEDs to display the states of the signals
- 14 Cable fixing accessory TA5301-CFA on the top of the housing (optional)



The processor module is shown with pluggable terminal blocks. These terminal blocks must be ordered separately.



*The cable fixing accessory on the top of the housing is optional.
Please use TA5301-CFA cable fixing accessory to provide strain relief.
It can also be used for AC500-eCo I/O modules.*



The PM50x2 processor modules are supplied with option board slot covers as standard.

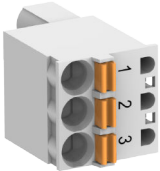
There are various TA51xx option boards for the processor modules that can be ordered separately.

Which and how many option boards can be plugged, depends on the respective processor module.

73.5.1 Power supply

The processor modules PM50x2 can be connected to the 24 V DC supply voltage via a removable 3-pin spring terminal block or a 3-pin screw terminal block.

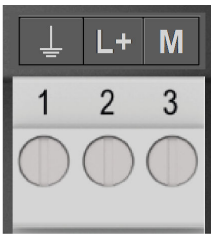
Table 22: Removable terminal block for the supply voltage 24 V DC

3-pin spring terminal block	3-pin screw terminal block
	

The terminal block is available as a set for AC500-eCo V3 processor modules.

Basic CPU (PM5012)		Standard CPUs (PM5032, PM5052) and Pro CPUs (PM5072, PM5082)	
Spring type	Screw type	Spring type	Screw type
TA5211-TSPF-B	TA5211-TSCL-B	TA5212-TSPF	TA5212-TSCL

Pin assignment

Pin Assignment	Pin	Label	Function	Description
 Terminal block inserted	1		FE	Functional earth
	2	L+	+24 V DC	Positive pin of the power supply voltage
	3	M	0 V	Negative pin of the power supply voltage



NOTICE!

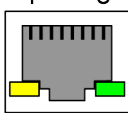
Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.

73.5.2 Ethernet network interface(s)

The Ethernet interface is carried out via a RJ45 jack.

Table 23: Pin assignment of the Ethernet interface

Interface	Pin	Description	
1 8 	1	Tx+	Transmit data +
	2	Tx-	Transmit data -
	3	Rx+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	Rx-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth

73.5.3 Onboard I/Os

73.5.3.1 Connections



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



NOTICE!

Risk of damaging the PLC modules!

The PLC modules must not be removed while the plant is connected to a power supply.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove or replace a module.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

- Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.
- Never connect any voltages or signals to reserved terminals (marked with ---). Reserved terminals may carry internal voltages.



When replacing a processor module, it is recommended to mark each wire connected to the onboard I/O terminal block before disconnecting it. This should make sure that the wires can be reconnected in the same order.

The connection is carried out by using removable 12-pin and 13-pin terminal blocks.

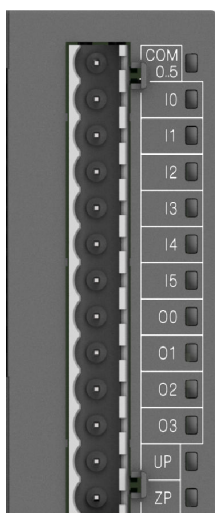


Table 24: Assignment of the terminals for PM5012-T-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	O0	Digital output signal O0 (5 kHz)
9	O1	Digital output signal O1 (5 kHz)
10	O2	Digital output signal O2 (5 kHz)
11	O3	Digital output signal O3 (5 kHz)
12	UP	Process supply voltage UP +24 V DC
13	ZP	Process supply voltage ZP 0 V DC



Table 25: Assignment of the terminals for PM5012-R-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	NO0	Normally-open relay contact of the output NO0
9	NO1	Normally-open relay contact of the output NO1
10	R0..1	Output common for signals NO0 to NO1

Terminal	Signal	Description
11	NO2	Normally-open relay contact of the output NO2
12	NO3	Normally-open relay contact of the output NO3
13	R2..3	Output common for signals NO2 to NO3

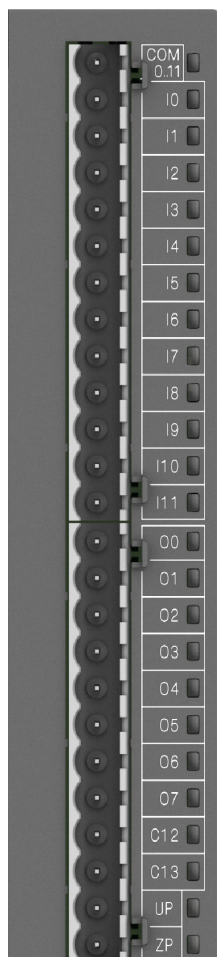


Table 26: Assignment of the terminals for PM5032-T-ETH, PM5052-T-ETH, PM5072-T-2ETH(W) and PM5082-T-2ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	O0	Digital output signal O0 (max. 5 kHz)
15	O1	Digital output signal O1 (max. 5 kHz)
16	O2	Digital output signal O2 (max. 5 kHz)
17	O3	Digital output signal O3 (max. 5 kHz)
18	O4	Digital output signal O4 PWM (max. 100 kHz), PTO (max. 200 kHz)
19	O5	Digital output signal O5 PWM (max. 100 kHz), PTO (max. 200 kHz)
20	O6	Digital output signal O6 PWM (max. 100 kHz), PTO (max. 200 kHz)
21	O7	Digital output signal O7 PWM (max. 100 kHz), PTO (max. 200 kHz)
22	C12	Digital input/output signal configurable C12
23	C13	Digital input/output signal configurable C13

Terminal	Signal	Description
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

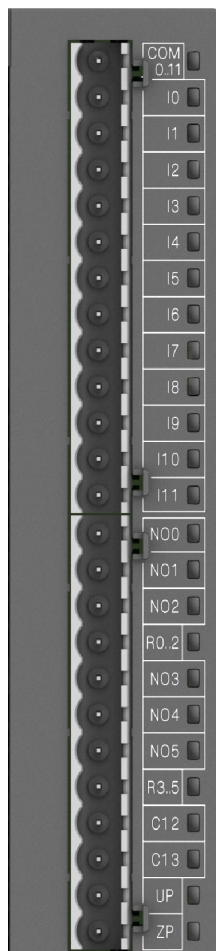


Table 27: Assignment of the terminals for PM5032-R-ETH and PM5052-R-ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	NO0	Normally-open relay contact of the output NO0
15	NO1	Normally-open relay contact of the output NO1
16	NO2	Normally-open relay contact of the output NO2
17	R0..2	Output common for signals NO0 to NO2
18	NO3	Normally-open relay contact of the output NO3
19	NO4	Normally-open relay contact of the output NO4
20	NO5	Normally-open relay contact of the output NO5
21	R3..5	Output common for signals NO3 to NO5
22	C12	Digital input/output signal configurable C12 PWM (max. 100 kHz), PTO (max. 200 kHz)
23	C13	Digital input/output signal configurable C13 PWM (max. 100 kHz), PTO (max. 200 kHz)
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

Block diagrams Table 28: Internal structure of the onboard I/Os

PM5012-T-ETH	PM5012-R-ETH	PM5032-ETH PM5052-T-ETH PM5072-T-2ETH(W) PM5082-T-2ETH	PM5032-R-ETH PM5052-R-ETH
COM 1 0..5 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 O0 8 O1 9 O2 10 O3 11 UP 12 ZP 13	COM 1 0..5 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 NO0 8 NO1 9 R0..1 10 NO2 11 NO3 12 R2..3 13	COM 1 0..11 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 O0 14 O1 15 O2 16 O3 17 O4 18 O5 19 O6 20 O7 21 C12 22 C13 23 UP 24 ZP 25	COM 1 0..11 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 NO0 14 NO1 15 NO2 16 R0..2 17 NO3 18 NO4 19 NO5 20 R3..5 21 C12 22 C13 23 UP 24 ZP 25

73.5.3.1.1 Connection of the digital inputs

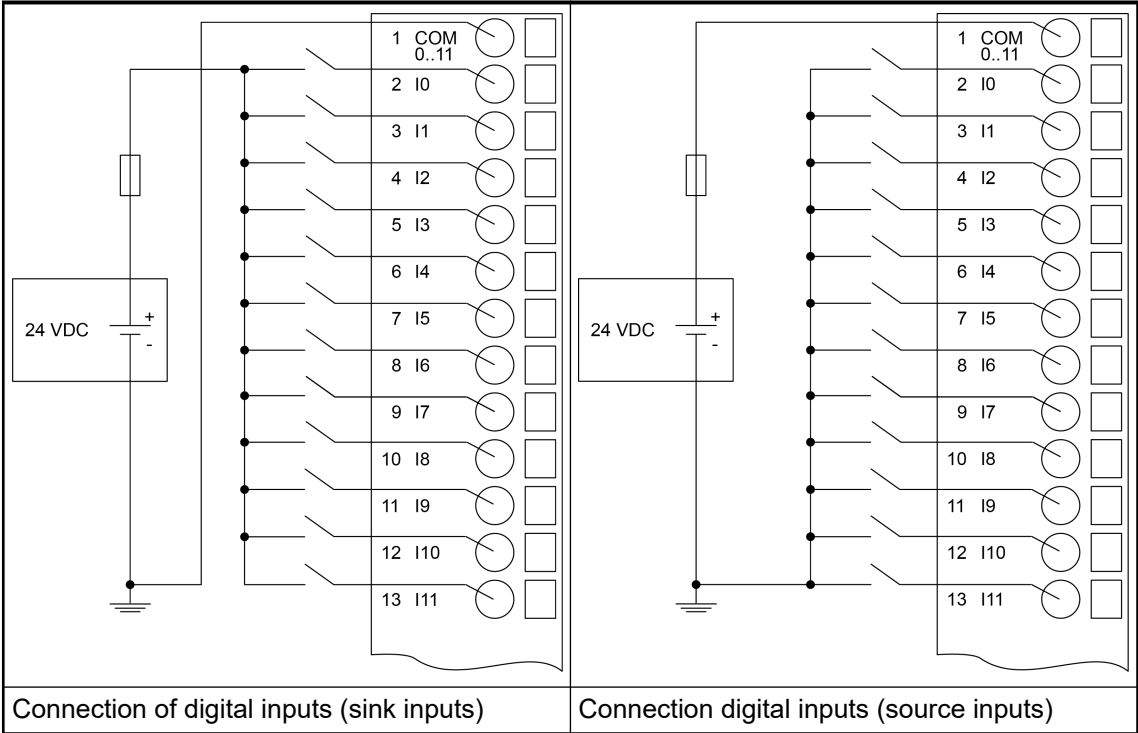
The digital inputs can be used as source inputs or as sink inputs.



NOTICE!
Risk of malfunctions in the plant!
A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.

Table 29: Connection of the digital inputs to the PM50x2 processor modules



73.5.3.1.2 Connection of the digital transistor outputs (PM50xx-T-xETH only)

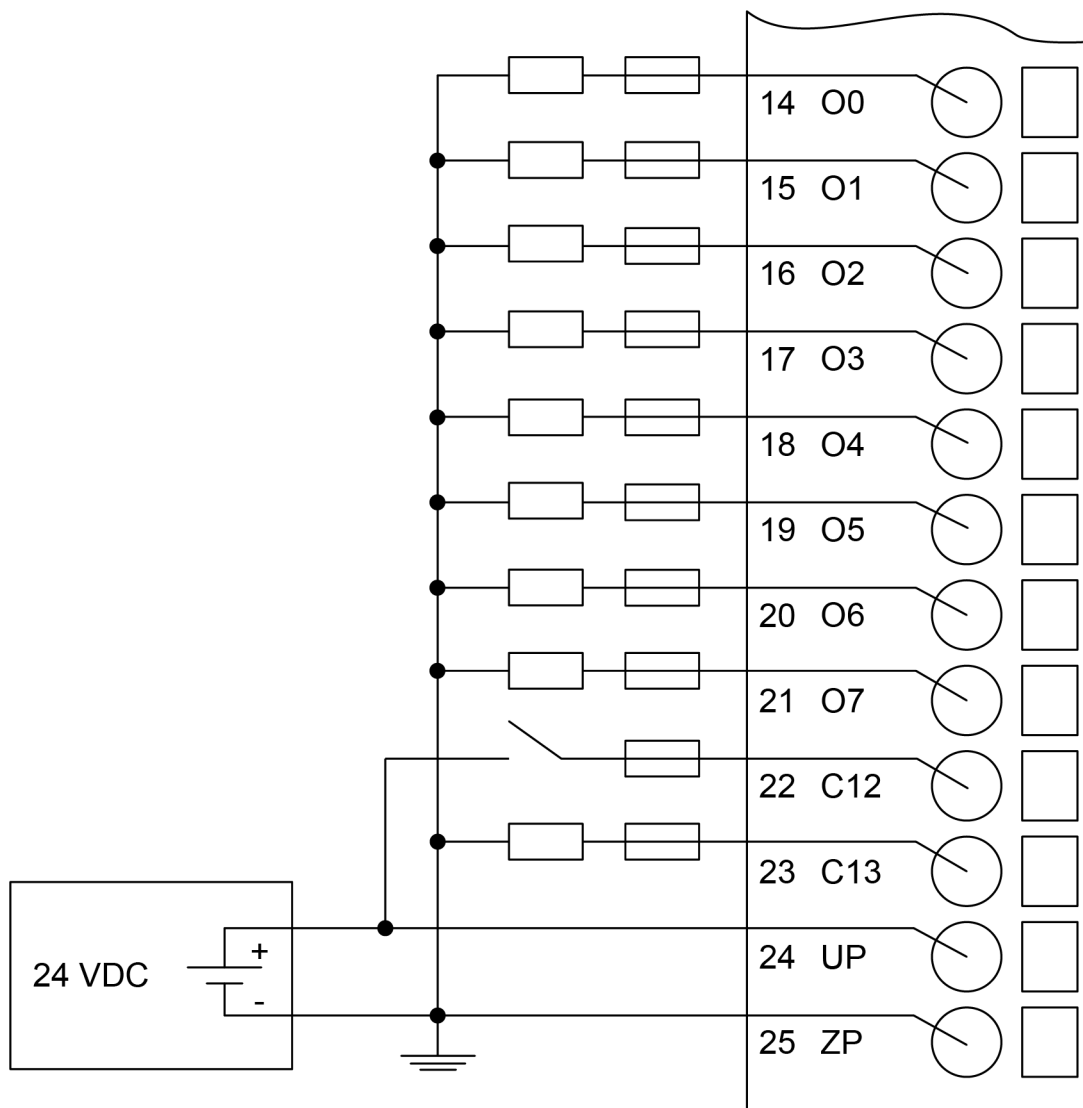


Fig. 89: Connection of digital transistor outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



CAUTION!

Risk of damaging the processor module!

The outputs are not protected against short circuit and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

73.5.3.1.3 Connection of the digital relay outputs (PM50xx-R-ETH only)

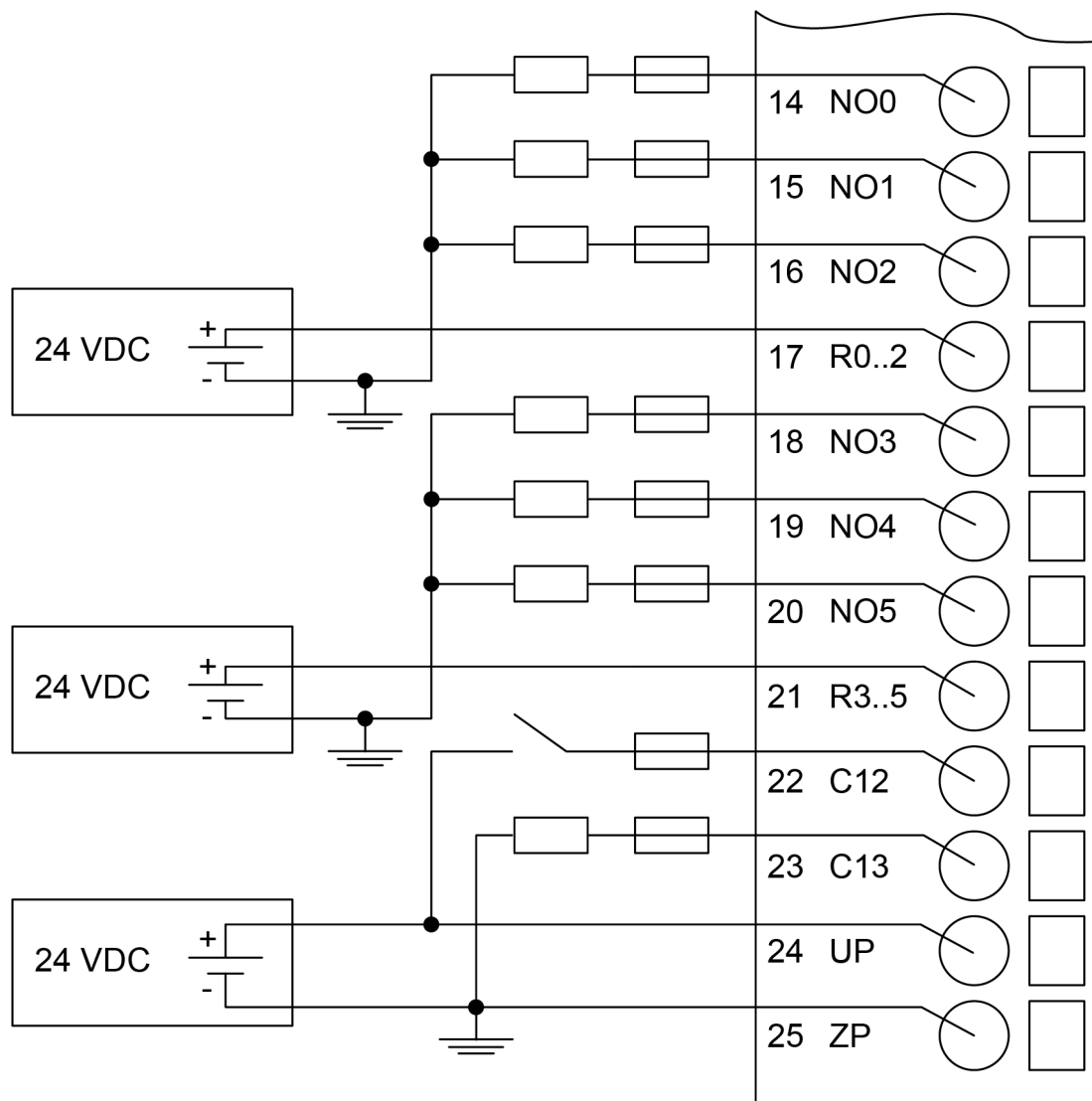


Fig. 90: Connection of digital relay outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



CAUTION!

Risk of damaging the processor module!

- Never short-circuit or overload the outputs.
- Never connect inductive loads without an external suppression against voltage peaks due to inductive kickback.
- Never connect voltages > 240 V. All outputs must be fed from the same phase.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

73.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

73.7 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

73.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

74 PM5072-T-2ETH(W)

- PM5072-T-2ETH
- PM5072-T-2ETHW



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.



Terminal block set for PM50x2

Processor modules PM50x2 CPU are not delivered with terminal blocks.

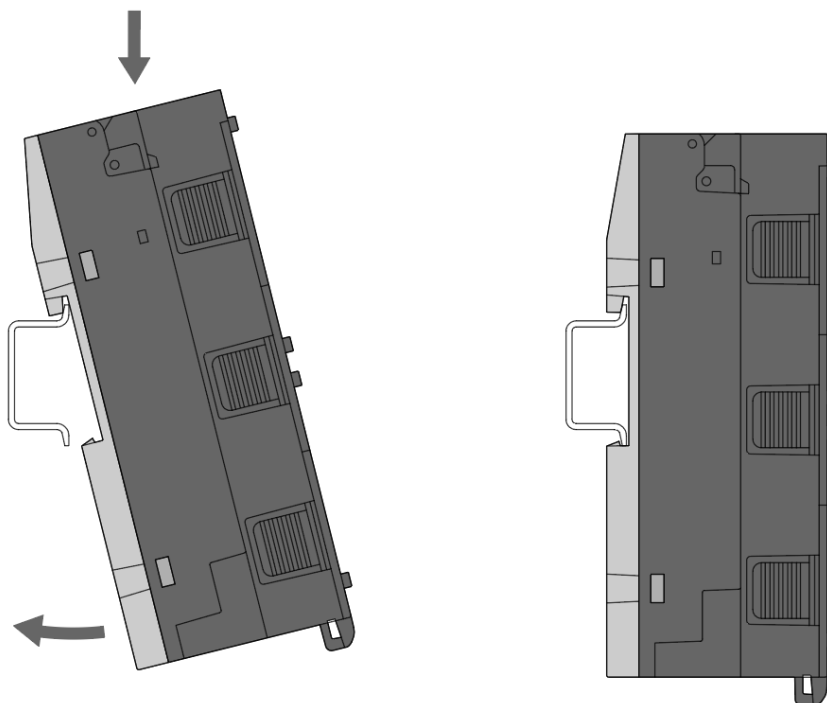
Screw terminal block set:

- TA5211-TSCL-B (1SAP187400R0001) for PM5012-x-ETH
- TA5212-TSCL (1SAP187400R0004) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

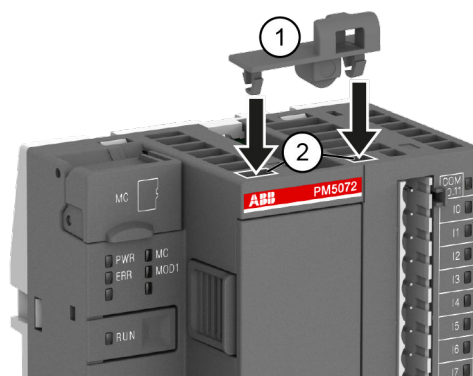
Spring terminal block set:

- TA5211-TSPF-B (1SAP187400R0002) for PM5012-x-ETH
- TA5212-TSPF (1SAP187400R0005) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

74.1 Assembly

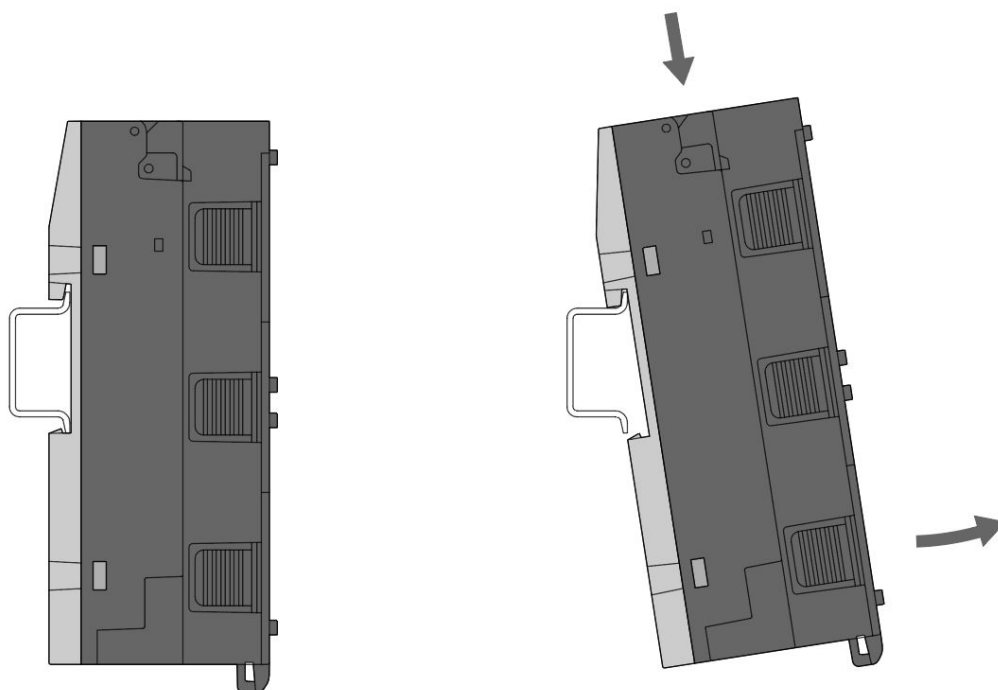


74.1.1 Assembly TA5301-CFA

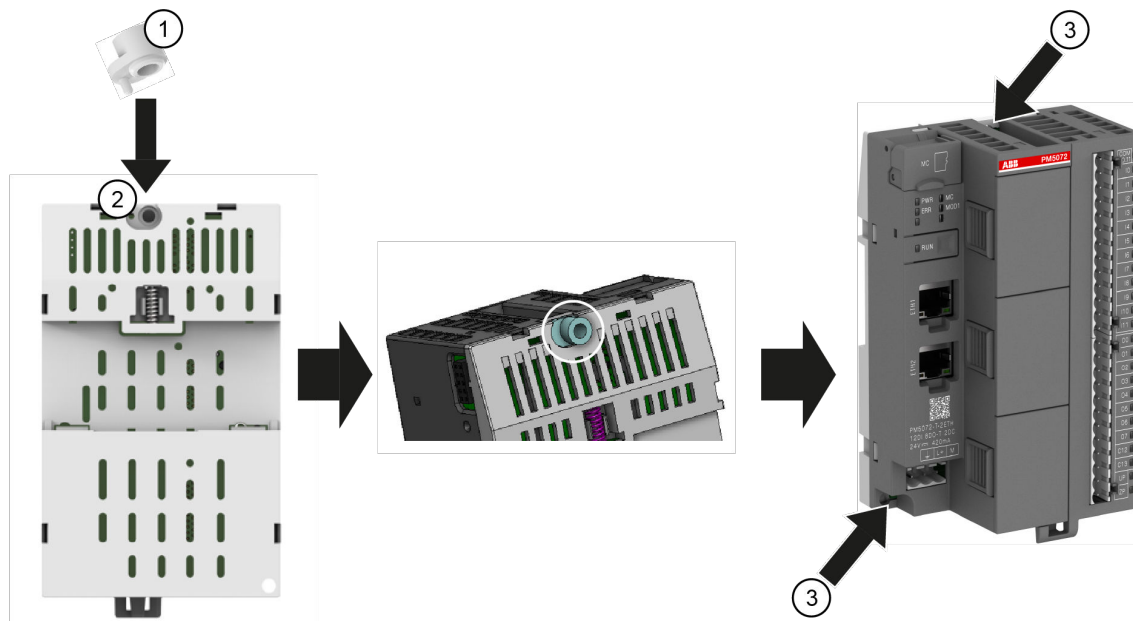


- 1 TA5301-CFA cable fixing accessory
 - 2 2 openings on the PM50x2 processor module
- ▷ Insert the TA5301-CFA cable fixing accessory into the two openings on the PM50x2 processor module marked white in the figure.

74.2 Disassembly



74.3 Assembly with screws



- 1 TA543 screw mounting accessory
- 2 Slot for TA543 screw mounting accessory
- 3 2 holes for screw mounting

1. Insert the TA543 screw mounting accessory into the slot on the back side of the processor module.



NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA543 screw mounting accessory (1SAP182800R0001) is mandatory to prevent bending and damage to the module.

2. Fasten the processor module with 2 screws (M4, max 1.2 Nm) from the front side.



With screw mounting, the processor module is grounded through the screws.

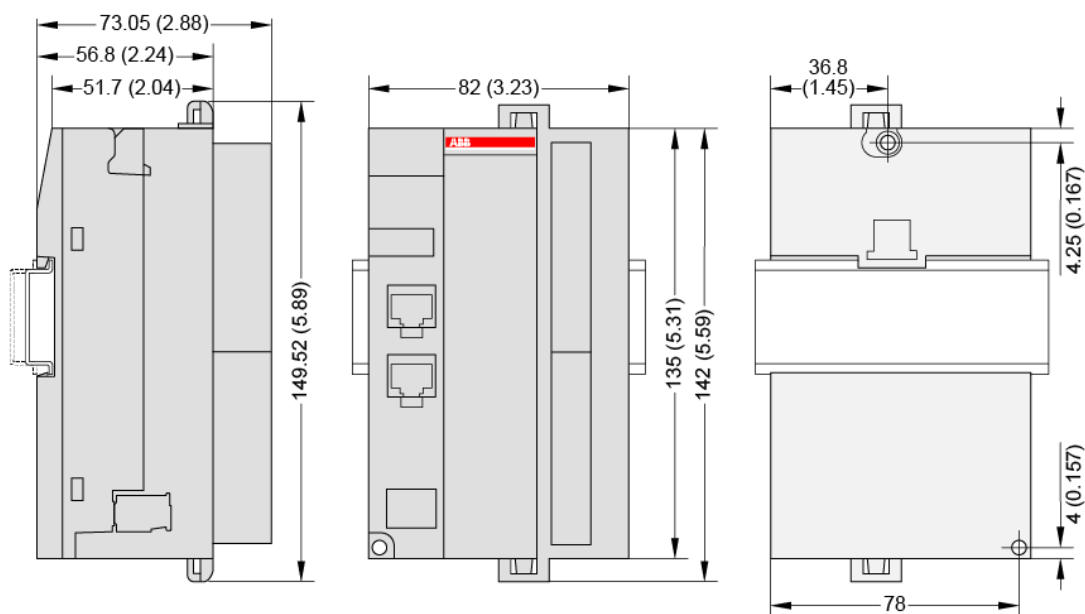
It is necessary that

- *the screws have a conductive surface (e.g. steel zinc-plated or brass nickel-plated)*
- *the mounting plate is grounded*
- *the screws have a good electrical contact to the mounting plate*



To prevent the screw from loosening after prolonged use, a thread lock washer is highly recommended.

74.4 Dimensions



The dimensions are in mm and in brackets in inch.

74.5 Connections

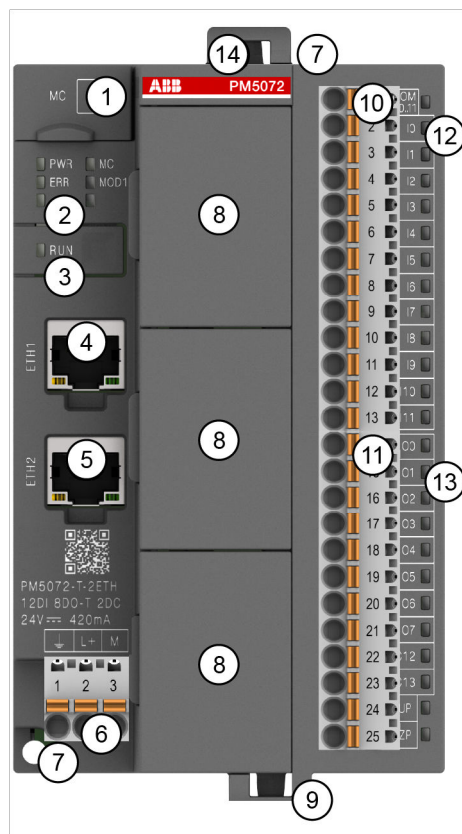


Fig. 91: Example: PM5072-T-2ETH

- 1 Micro memory card slot
- 2 5 LEDs to display the states of the processor module (Power, Error, Run, MC, MOD1)
- 3 RUN button
- 4 RJ45 female connector for Ethernet1 connection
- 5 RJ45 female connector for Ethernet2 connection (available for PM50x2-T-2ETH)
- 6 3-pin terminal block for power supply 24 V DC
- 7 2 holes for screw mounting
- 8 Option board slot cover for option board slot (the number of available slots varies according to the CPU type)
- 9 Cable fixing
- 10 13-pin terminal block for onboard I/Os
- 11 12-pin terminal block for onboard I/Os (not available on PM5012-x-ETH)
- 12 12 LEDs to display the states of the signals
- 13 10 LEDs to display the states of the signals
- 14 Cable fixing accessory TA5301-CFA on the top of the housing (optional)



The processor module is shown with pluggable terminal blocks. These terminal blocks must be ordered separately.



*The cable fixing accessory on the top of the housing is optional.
Please use TA5301-CFA cable fixing accessory to provide strain relief.
It can also be used for AC500-eCo I/O modules.*



The PM50x2 processor modules are supplied with option board slot covers as standard.

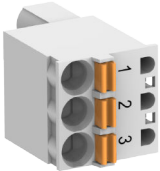
There are various TA51xx option boards for the processor modules that can be ordered separately.

Which and how many option boards can be plugged, depends on the respective processor module.

74.5.1 Power supply

The processor modules PM50x2 can be connected to the 24 V DC supply voltage via a removable 3-pin spring terminal block or a 3-pin screw terminal block.

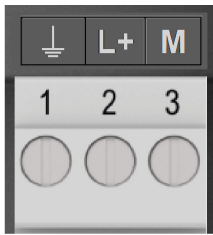
Table 30: Removable terminal block for the supply voltage 24 V DC

3-pin spring terminal block	3-pin screw terminal block
	

The terminal block is available as a set for AC500-eCo V3 processor modules.

Basic CPU (PM5012)		Standard CPUs (PM5032, PM5052) and Pro CPUs (PM5072, PM5082)	
Spring type	Screw type	Spring type	Screw type
TA5211-TSPF-B	TA5211-TSCL-B	TA5212-TSPF	TA5212-TSCL

Pin assignment

Pin Assignment	Pin	Label	Function	Description
 Terminal block inserted	1		FE	Functional earth
	2	L+	+24 V DC	Positive pin of the power supply voltage
	3	M	0 V	Negative pin of the power supply voltage



NOTICE!

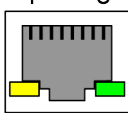
Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.

74.5.2 Ethernet network interface(s)

The Ethernet interface is carried out via a RJ45 jack.

Table 31: Pin assignment of the Ethernet interface

Interface	Pin	Description	
1 8 	1	Tx+	Transmit data +
	2	Tx-	Transmit data -
	3	Rx+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	Rx-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth

74.5.3 Onboard I/Os

74.5.3.1 Connections



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



NOTICE!

Risk of damaging the PLC modules!

The PLC modules must not be removed while the plant is connected to a power supply.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove or replace a module.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

- Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.
- Never connect any voltages or signals to reserved terminals (marked with ---). Reserved terminals may carry internal voltages.



When replacing a processor module, it is recommended to mark each wire connected to the onboard I/O terminal block before disconnecting it. This should make sure that the wires can be reconnected in the same order.

The connection is carried out by using removable 12-pin and 13-pin terminal blocks.

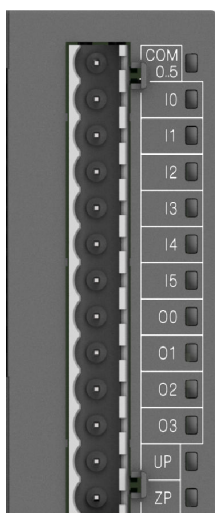


Table 32: Assignment of the terminals for PM5012-T-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	O0	Digital output signal O0 (5 kHz)
9	O1	Digital output signal O1 (5 kHz)
10	O2	Digital output signal O2 (5 kHz)
11	O3	Digital output signal O3 (5 kHz)
12	UP	Process supply voltage UP +24 V DC
13	ZP	Process supply voltage ZP 0 V DC



Table 33: Assignment of the terminals for PM5012-R-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	NO0	Normally-open relay contact of the output NO0
9	NO1	Normally-open relay contact of the output NO1
10	R0..1	Output common for signals NO0 to NO1

Terminal	Signal	Description
11	NO2	Normally-open relay contact of the output NO2
12	NO3	Normally-open relay contact of the output NO3
13	R2..3	Output common for signals NO2 to NO3

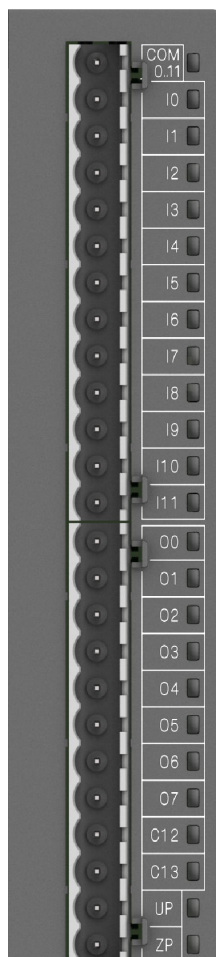


Table 34: Assignment of the terminals for PM5032-T-ETH, PM5052-T-ETH, PM5072-T-2ETH(W) and PM5082-T-2ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	O0	Digital output signal O0 (max. 5 kHz)
15	O1	Digital output signal O1 (max. 5 kHz)
16	O2	Digital output signal O2 (max. 5 kHz)
17	O3	Digital output signal O3 (max. 5 kHz)
18	O4	Digital output signal O4 PWM (max. 100 kHz), PTO (max. 200 kHz)
19	O5	Digital output signal O5 PWM (max. 100 kHz), PTO (max. 200 kHz)
20	O6	Digital output signal O6 PWM (max. 100 kHz), PTO (max. 200 kHz)
21	O7	Digital output signal O7 PWM (max. 100 kHz), PTO (max. 200 kHz)
22	C12	Digital input/output signal configurable C12
23	C13	Digital input/output signal configurable C13

Terminal	Signal	Description
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

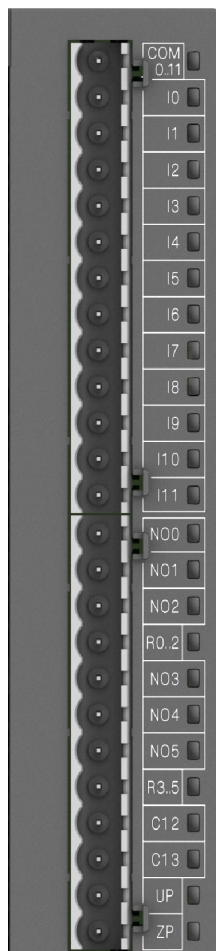


Table 35: Assignment of the terminals for PM5032-R-ETH and PM5052-R-ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	NO0	Normally-open relay contact of the output NO0
15	NO1	Normally-open relay contact of the output NO1
16	NO2	Normally-open relay contact of the output NO2
17	R0..2	Output common for signals NO0 to NO2
18	NO3	Normally-open relay contact of the output NO3
19	NO4	Normally-open relay contact of the output NO4
20	NO5	Normally-open relay contact of the output NO5
21	R3..5	Output common for signals NO3 to NO5
22	C12	Digital input/output signal configurable C12 PWM (max. 100 kHz), PTO (max. 200 kHz)
23	C13	Digital input/output signal configurable C13 PWM (max. 100 kHz), PTO (max. 200 kHz)
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

Block diagrams Table 36: Internal structure of the onboard I/Os

PM5012-T-ETH	PM5012-R-ETH	PM5032-ETH PM5052-T-ETH PM5072-T-2ETH(W) PM5082-T-2ETH	PM5032-R-ETH PM5052-R-ETH
COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 O0 8 O1 9 O2 10 O3 11 UP 12 ZP 13	COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 NO0 8 NO1 9 R0..1 10 NO2 11 NO3 12 R2..3 13	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 O0 14 O1 15 O2 16 O3 17 O4 18 O5 19 O6 20 O7 21 C12 22 C13 23 UP 24 ZP 25	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 NO0 14 NO1 15 NO2 16 R0..2 17 NO3 18 NO4 19 NO5 20 R3..5 21 C12 22 C13 23 UP 24 ZP 25

74.5.3.1.1 Connection of the digital inputs

The digital inputs can be used as source inputs or as sink inputs.



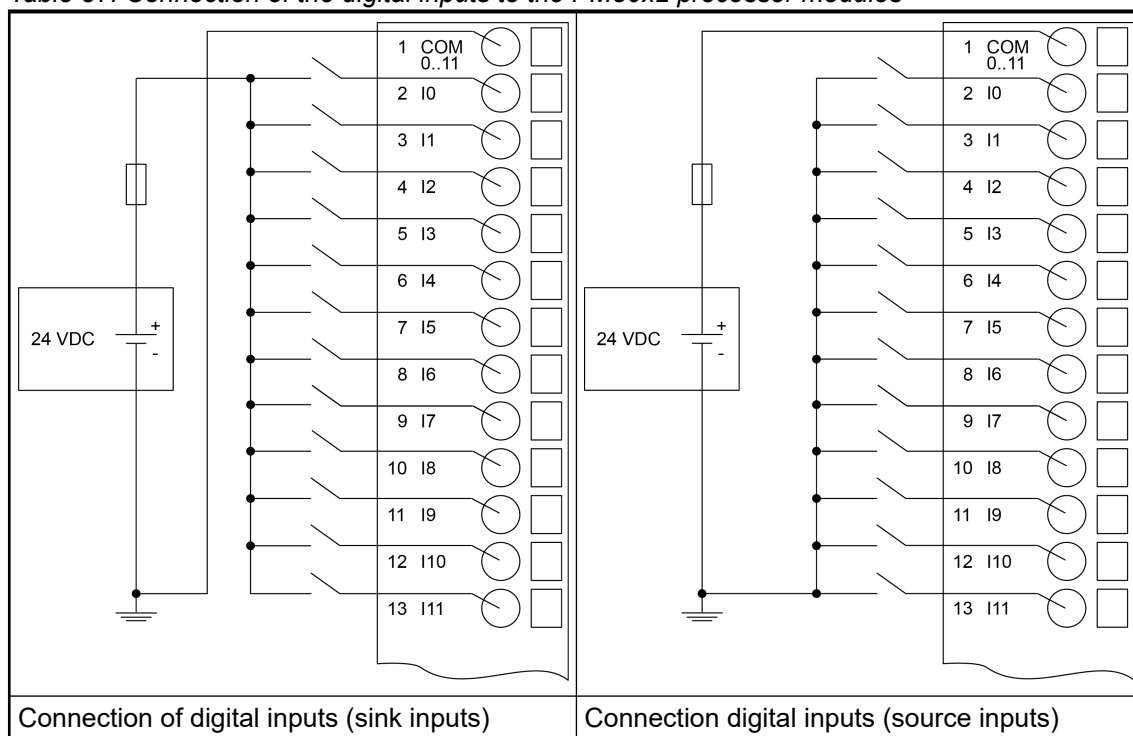
NOTICE!

Risk of malfunctions in the plant!

A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.

Table 37: Connection of the digital inputs to the PM50x2 processor modules



74.5.3.1.2 Connection of the digital transistor outputs (PM50xx-T-xETH only)

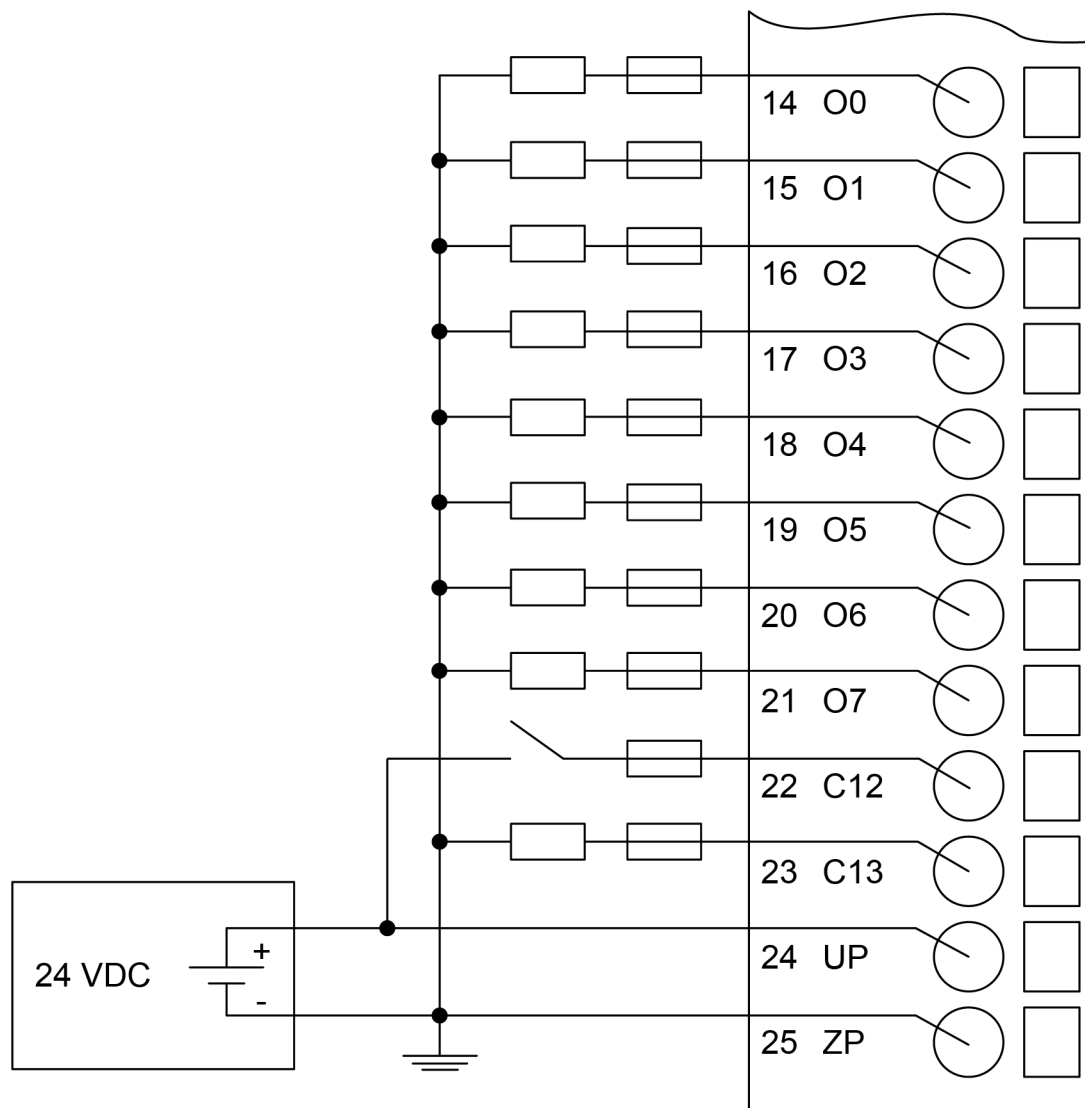


Fig. 92: Connection of digital transistor outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



CAUTION!

Risk of damaging the processor module!

The outputs are not protected against short circuit and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

74.5.3.1.3 Connection of the digital relay outputs (PM50xx-R-ETH only)

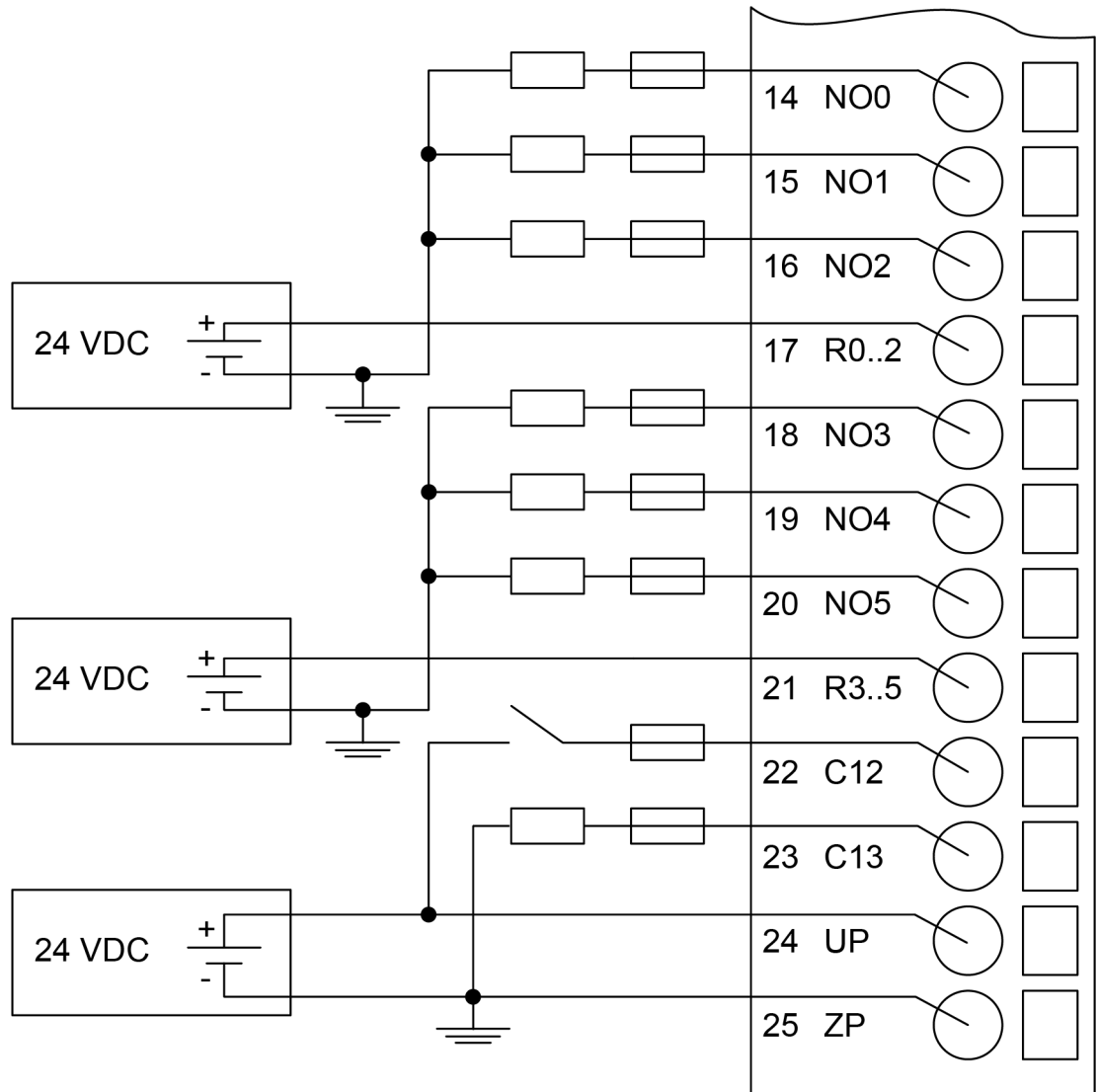


Fig. 93: Connection of digital relay outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



CAUTION!

Risk of damaging the processor module!

- Never short-circuit or overload the outputs.
- Never connect inductive loads without an external suppression against voltage peaks due to inductive kickback.
- Never connect voltages > 240 V. All outputs must be fed from the same phase.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

74.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

74.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

74.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

75 PM5082-T-2ETH

- PM5082-T-2ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.



Terminal block set for PM50x2

Processor modules PM50x2 CPU are not delivered with terminal blocks.

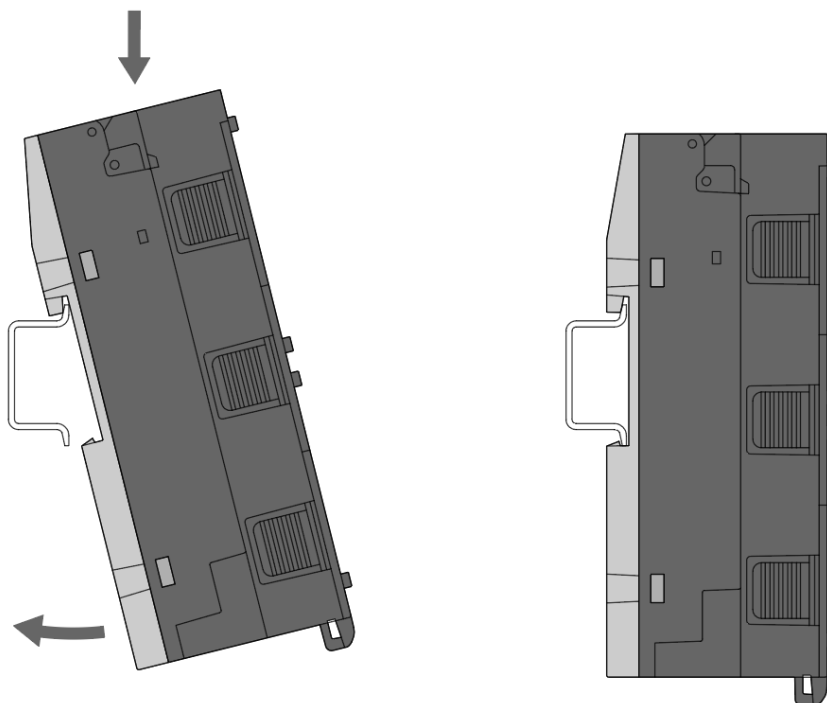
Screw terminal block set:

- TA5211-TSCL-B (1SAP187400R0001) for PM5012-x-ETH
- TA5212-TSCL (1SAP187400R0004) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

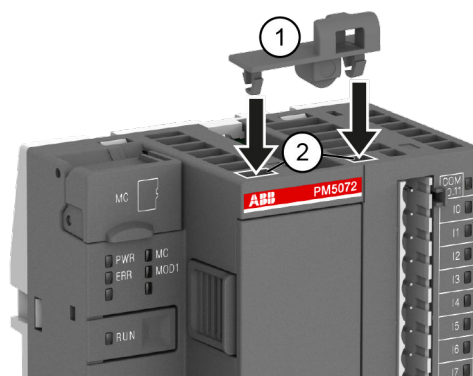
Spring terminal block set:

- TA5211-TSPF-B (1SAP187400R0002) for PM5012-x-ETH
- TA5212-TSPF (1SAP187400R0005) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

75.1 Assembly

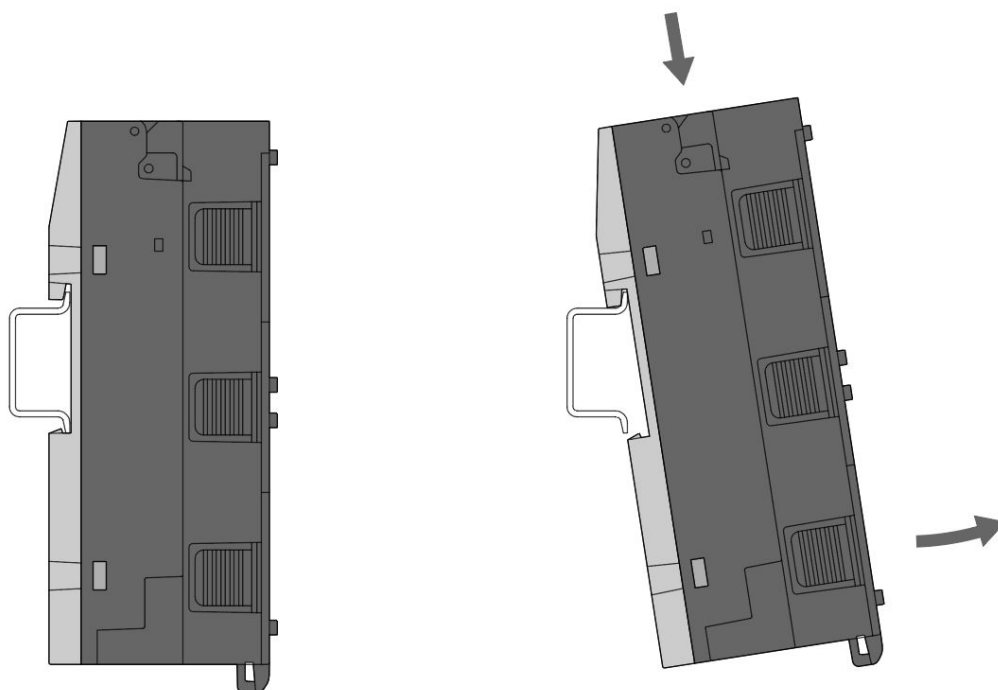


75.1.1 Assembly TA5301-CFA

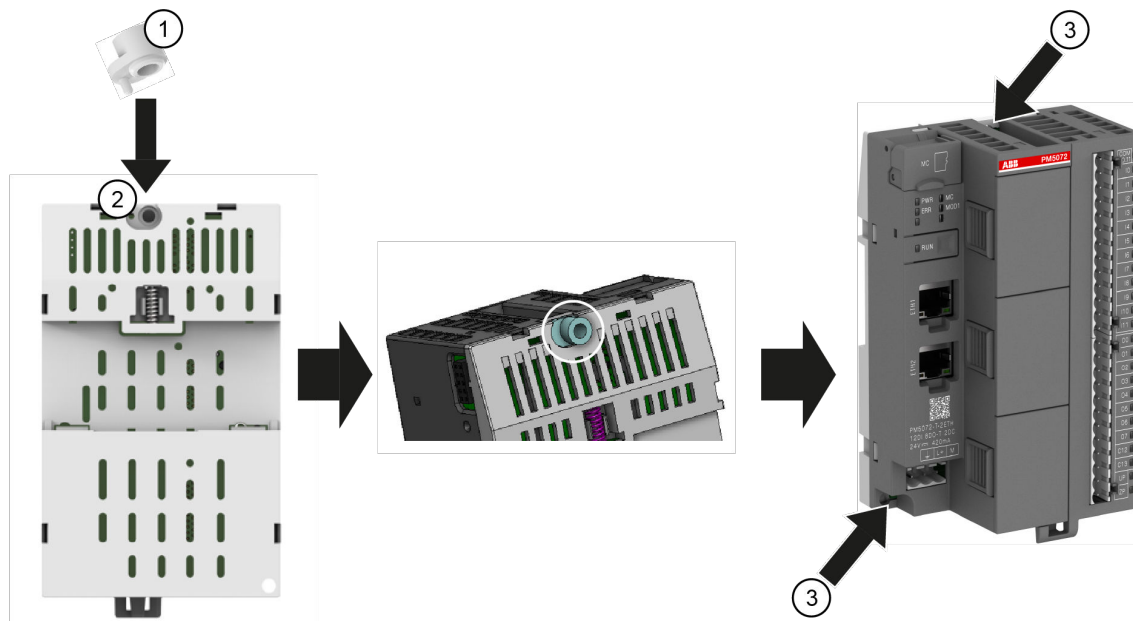


- 1 TA5301-CFA cable fixing accessory
 - 2 2 openings on the PM50x2 processor module
- ▷ Insert the TA5301-CFA cable fixing accessory into the two openings on the PM50x2 processor module marked white in the figure.

75.2 Disassembly



75.3 Assembly with screws



- 1 TA543 screw mounting accessory
- 2 Slot for TA543 screw mounting accessory
- 3 2 holes for screw mounting

1. Insert the TA543 screw mounting accessory into the slot on the back side of the processor module.



NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA543 screw mounting accessory (1SAP182800R0001) is mandatory to prevent bending and damage to the module.

2. Fasten the processor module with 2 screws (M4, max 1.2 Nm) from the front side.



With screw mounting, the processor module is grounded through the screws.

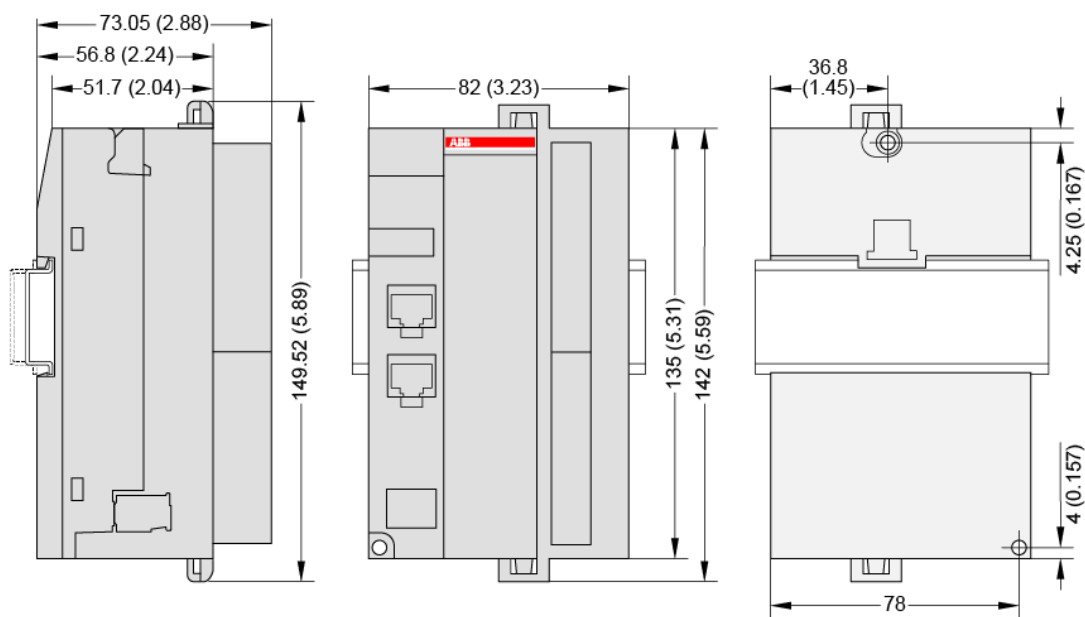
It is necessary that

- *the screws have a conductive surface (e.g. steel zinc-plated or brass nickel-plated)*
- *the mounting plate is grounded*
- *the screws have a good electrical contact to the mounting plate*



To prevent the screw from loosening after prolonged use, a thread lock washer is highly recommended.

75.4 Dimensions



The dimensions are in mm and in brackets in inch.

75.5 Connections

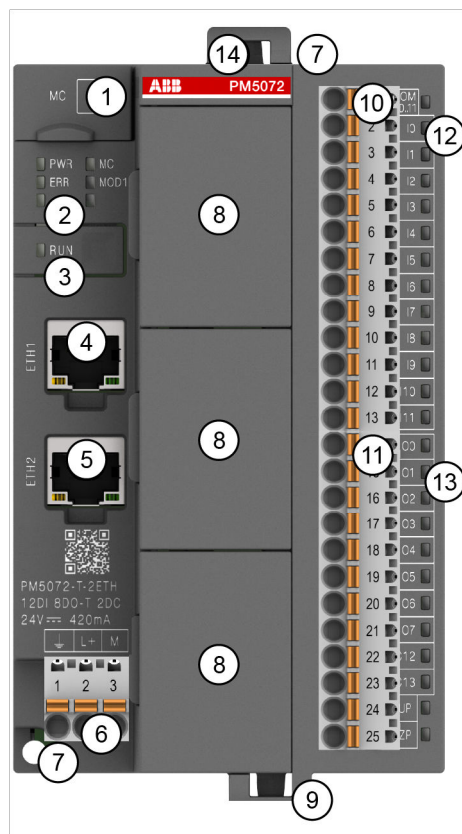


Fig. 94: Example: PM5072-T-2ETH

- 1 Micro memory card slot
- 2 5 LEDs to display the states of the processor module (Power, Error, Run, MC, MOD1)
- 3 RUN button
- 4 RJ45 female connector for Ethernet1 connection
- 5 RJ45 female connector for Ethernet2 connection (available for PM50x2-T-2ETH)
- 6 3-pin terminal block for power supply 24 V DC
- 7 2 holes for screw mounting
- 8 Option board slot cover for option board slot (the number of available slots varies according to the CPU type)
- 9 Cable fixing
- 10 13-pin terminal block for onboard I/Os
- 11 12-pin terminal block for onboard I/Os (not available on PM5012-x-ETH)
- 12 12 LEDs to display the states of the signals
- 13 10 LEDs to display the states of the signals
- 14 Cable fixing accessory TA5301-CFA on the top of the housing (optional)



The processor module is shown with pluggable terminal blocks. These terminal blocks must be ordered separately.



*The cable fixing accessory on the top of the housing is optional.
Please use TA5301-CFA cable fixing accessory to provide strain relief.
It can also be used for AC500-eCo I/O modules.*



The PM50x2 processor modules are supplied with option board slot covers as standard.

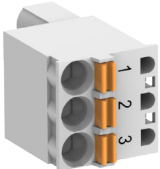
There are various TA51xx option boards for the processor modules that can be ordered separately.

Which and how many option boards can be plugged, depends on the respective processor module.

75.5.1 Power supply

The processor modules PM50x2 can be connected to the 24 V DC supply voltage via a removable 3-pin spring terminal block or a 3-pin screw terminal block.

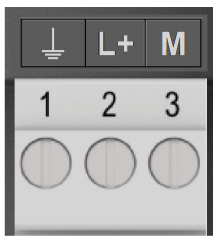
Table 38: Removable terminal block for the supply voltage 24 V DC

3-pin spring terminal block	3-pin screw terminal block
	

The terminal block is available as a set for AC500-eCo V3 processor modules.

Basic CPU (PM5012)		Standard CPUs (PM5032, PM5052) and Pro CPUs (PM5072, PM5082)	
Spring type	Screw type	Spring type	Screw type
TA5211-TSPF-B	TA5211-TSCL-B	TA5212-TSPF	TA5212-TSCL

Pin assignment

Pin Assignment	Pin	Label	Function	Description
 Terminal block inserted	1		FE	Functional earth
	2	L+	+24 V DC	Positive pin of the power supply voltage
	3	M	0 V	Negative pin of the power supply voltage



NOTICE!

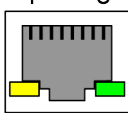
Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.

75.5.2 Ethernet network interface(s)

The Ethernet interface is carried out via a RJ45 jack.

Table 39: Pin assignment of the Ethernet interface

Interface	Pin	Description	
1 8 	1	Tx+	Transmit data +
	2	Tx-	Transmit data -
	3	Rx+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	Rx-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth

75.5.3 Onboard I/Os

75.5.3.1 Connections



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



NOTICE!

Risk of damaging the PLC modules!

The PLC modules must not be removed while the plant is connected to a power supply.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove or replace a module.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

- Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.
- Never connect any voltages or signals to reserved terminals (marked with ---). Reserved terminals may carry internal voltages.



When replacing a processor module, it is recommended to mark each wire connected to the onboard I/O terminal block before disconnecting it. This should make sure that the wires can be reconnected in the same order.

The connection is carried out by using removable 12-pin and 13-pin terminal blocks.

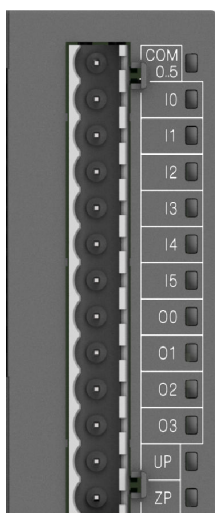


Table 40: Assignment of the terminals for PM5012-T-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	O0	Digital output signal O0 (5 kHz)
9	O1	Digital output signal O1 (5 kHz)
10	O2	Digital output signal O2 (5 kHz)
11	O3	Digital output signal O3 (5 kHz)
12	UP	Process supply voltage UP +24 V DC
13	ZP	Process supply voltage ZP 0 V DC



Table 41: Assignment of the terminals for PM5012-R-ETH:

Terminal	Signal	Description
1	COM 0..5	Input common for digital input signals I0 to I5
2	I0	Digital input signal I0 (5 kHz)
3	I1	Digital input signal I1 (5 kHz)
4	I2	Digital input signal I2 (5 kHz)
5	I3	Digital input signal I3 (5 kHz)
6	I4	Digital input signal I4 (5 kHz)
7	I5	Digital input signal I5 (5 kHz)
8	NO0	Normally-open relay contact of the output NO0
9	NO1	Normally-open relay contact of the output NO1
10	R0..1	Output common for signals NO0 to NO1

Terminal	Signal	Description
11	NO2	Normally-open relay contact of the output NO2
12	NO3	Normally-open relay contact of the output NO3
13	R2..3	Output common for signals NO2 to NO3

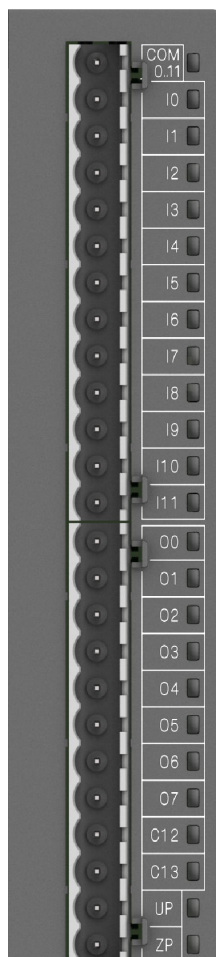


Table 42: Assignment of the terminals for PM5032-T-ETH, PM5052-T-ETH, PM5072-T-2ETH(W) and PM5082-T-2ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 (100 kHz) Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	O0	Digital output signal O0 (max. 5 kHz)
15	O1	Digital output signal O1 (max. 5 kHz)
16	O2	Digital output signal O2 (max. 5 kHz)
17	O3	Digital output signal O3 (max. 5 kHz)
18	O4	Digital output signal O4 PWM (max. 100 kHz), PTO (max. 200 kHz)
19	O5	Digital output signal O5 PWM (max. 100 kHz), PTO (max. 200 kHz)
20	O6	Digital output signal O6 PWM (max. 100 kHz), PTO (max. 200 kHz)
21	O7	Digital output signal O7 PWM (max. 100 kHz), PTO (max. 200 kHz)
22	C12	Digital input/output signal configurable C12
23	C13	Digital input/output signal configurable C13

Terminal	Signal	Description
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

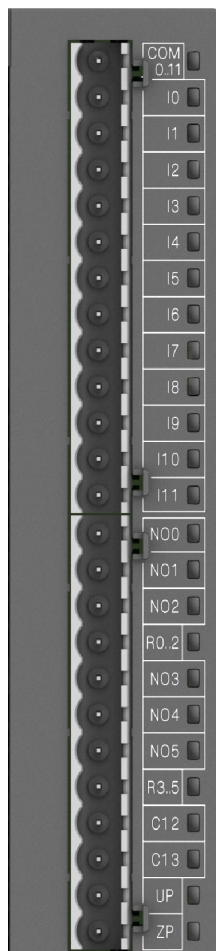


Table 43: Assignment of the terminals for PM5032-R-ETH and PM5052-R-ETH:

Terminal	Signal	Description
1	COM 0..11	Input common for digital input signals I0 to I11
2	I0	Digital input signal I0 (max. 5 kHz)
3	I1	Digital input signal I1 (max. 5 kHz)
4	I2	Digital input signal I2 (max. 5 kHz)
5	I3	Digital input signal I3 (max. 5 kHz)
6	I4	Digital input signal I4 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
7	I5	Digital input signal I5 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
8	I6	Digital input signal I6 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
9	I7	Digital input signal I7 Forward counter (max. 100 kHz), Encoder (max. 200 kHz)
10	I8	Digital input signal I8
11	I9	Digital input signal I9
12	I10	Digital input signal I10
13	I11	Digital input signal I11
14	NO0	Normally-open relay contact of the output NO0
15	NO1	Normally-open relay contact of the output NO1
16	NO2	Normally-open relay contact of the output NO2
17	R0..2	Output common for signals NO0 to NO2
18	NO3	Normally-open relay contact of the output NO3
19	NO4	Normally-open relay contact of the output NO4
20	NO5	Normally-open relay contact of the output NO5
21	R3..5	Output common for signals NO3 to NO5
22	C12	Digital input/output signal configurable C12 PWM (max. 100 kHz), PTO (max. 200 kHz)
23	C13	Digital input/output signal configurable C13 PWM (max. 100 kHz), PTO (max. 200 kHz)
24	UP	Process supply voltage UP +24 V DC
25	ZP	Process supply voltage ZP 0 V DC

Block diagrams Table 44: Internal structure of the onboard I/Os

PM5012-T-ETH	PM5012-R-ETH	PM5032-ETH PM5052-T-ETH PM5072-T-2ETH(W) PM5082-T-2ETH	PM5032-R-ETH PM5052-R-ETH
COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 O0 8 O1 9 O2 10 O3 11 UP 12 ZP 13	COM 0..5 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 NO0 8 NO1 9 R0..1 10 NO2 11 NO3 12 R2..3 13	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 O0 14 O1 15 O2 16 O3 17 O4 18 O5 19 O6 20 O7 21 C12 22 C13 23 UP 24 ZP 25	COM 0..11 1 I0 2 I1 3 I2 4 I3 5 I4 6 I5 7 I6 8 I7 9 I8 10 I9 11 I10 12 I11 13 NO0 14 NO1 15 NO2 16 R0..2 17 NO3 18 NO4 19 NO5 20 R3..5 21 C12 22 C13 23 UP 24 ZP 25

75.5.3.1.1 Connection of the digital inputs

The digital inputs can be used as source inputs or as sink inputs.



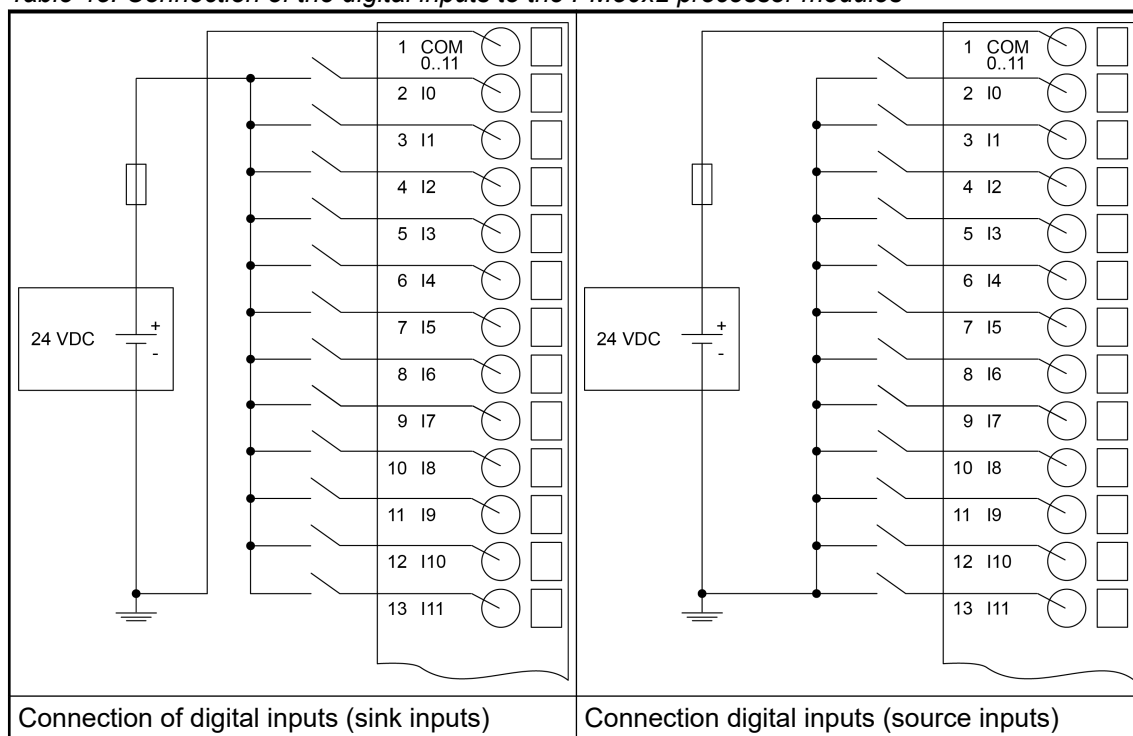
NOTICE!

Risk of malfunctions in the plant!

A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.

Table 45: Connection of the digital inputs to the PM50x2 processor modules



75.5.3.1.2 Connection of the digital transistor outputs (PM50xx-T-xETH only)

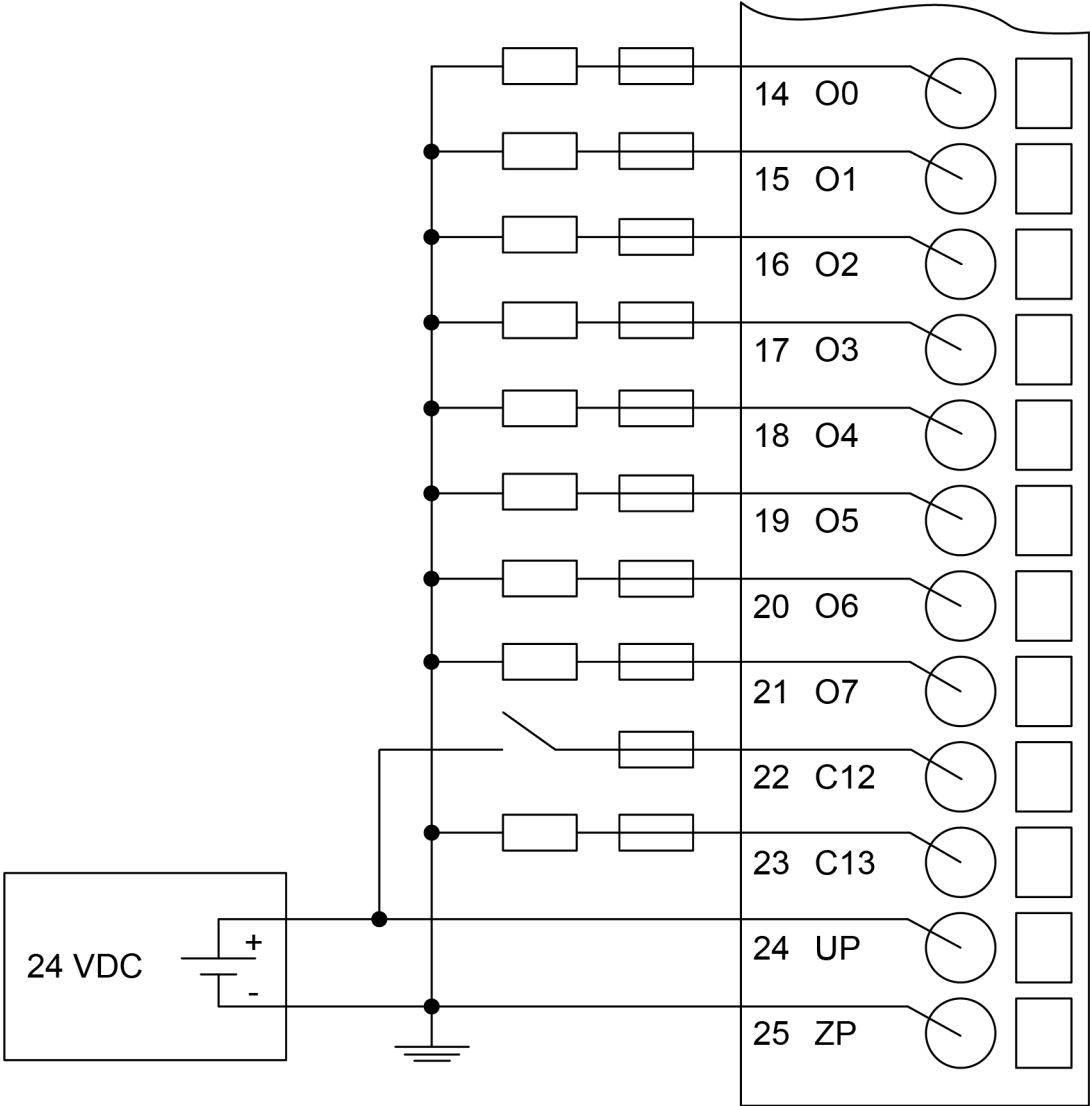


Fig. 95: Connection of digital transistor outputs and configurable digital inputs/outputs

C12 used as configurable digital input
C13 used as configurable digital transistor output



CAUTION!
Risk of damaging the processor module!

The outputs are not protected against short circuit and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

75.5.3.1.3 Connection of the digital relay outputs (PM50xx-R-ETH only)

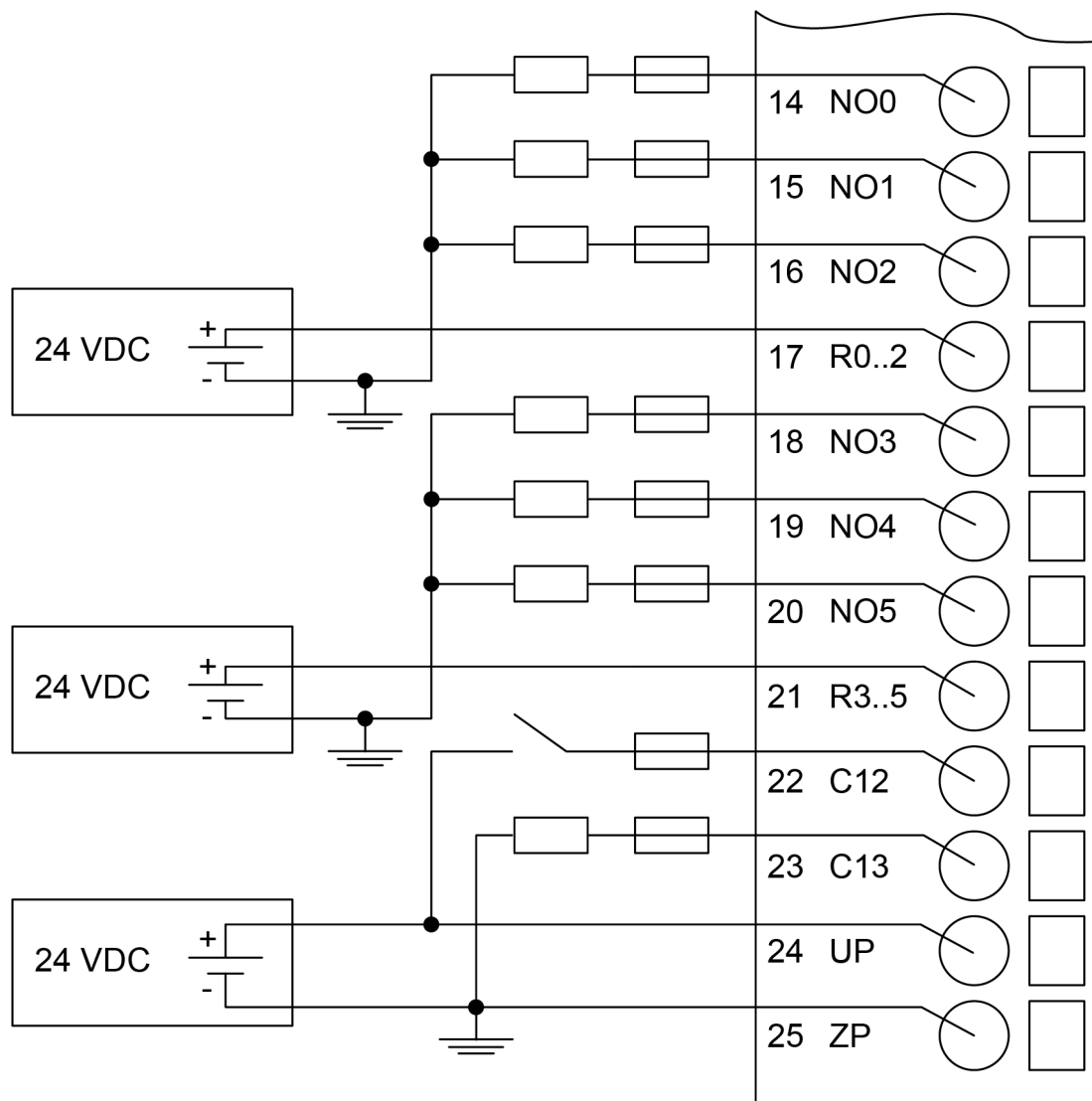


Fig. 96: Connection of digital relay outputs and configurable digital inputs/outputs

C12 used as configurable digital input

C13 used as configurable digital transistor output



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



CAUTION!

Risk of damaging the processor module!

- Never short-circuit or overload the outputs.
- Never connect inductive loads without an external suppression against voltage peaks due to inductive kickback.
- Never connect voltages > 240 V. All outputs must be fed from the same phase.
- Use an external fuse for each output.



The configurable digital channels (C12 and C13) used as digital inputs have the same electrical characteristics as standard digital inputs.

The configurable digital channels (C12 and C13) used as digital transistor outputs have the same electrical characteristics as standard digital outputs.

75.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

75.7 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

75.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

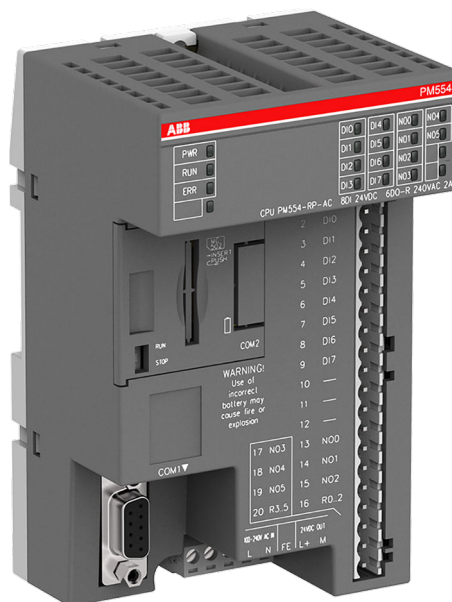
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

76 PM554-x(-x)

- PM554-TP
- PM554-TP-ETH
- PM554-RP
- PM554-RP-AC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

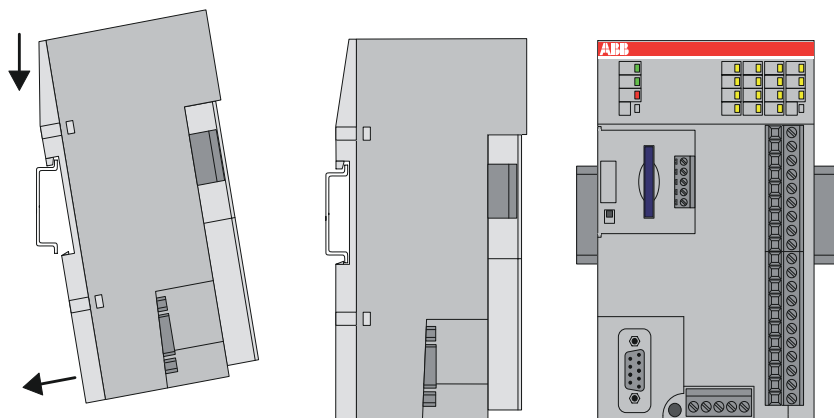
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

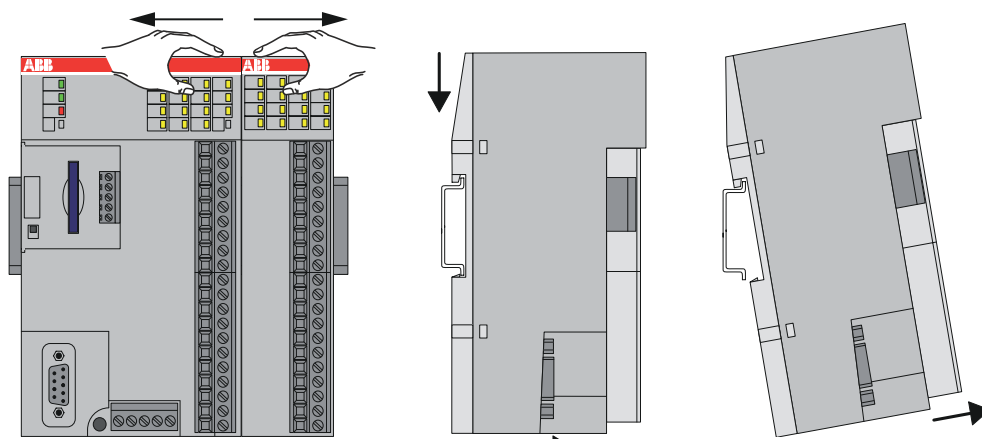
The module must not be connected to live voltages, while the cover for accessories is removed.

76.1 Assembly



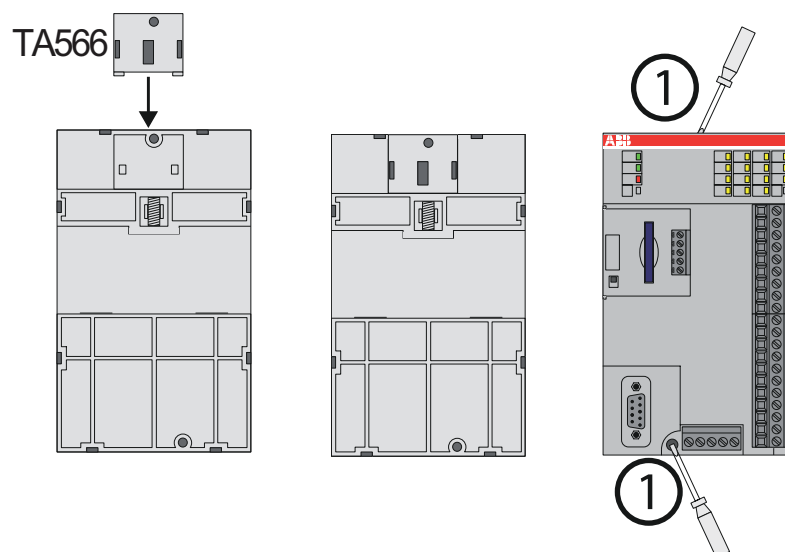
The module is put on the DIN rail above and then snapped-in below.

76.2 Disassembly



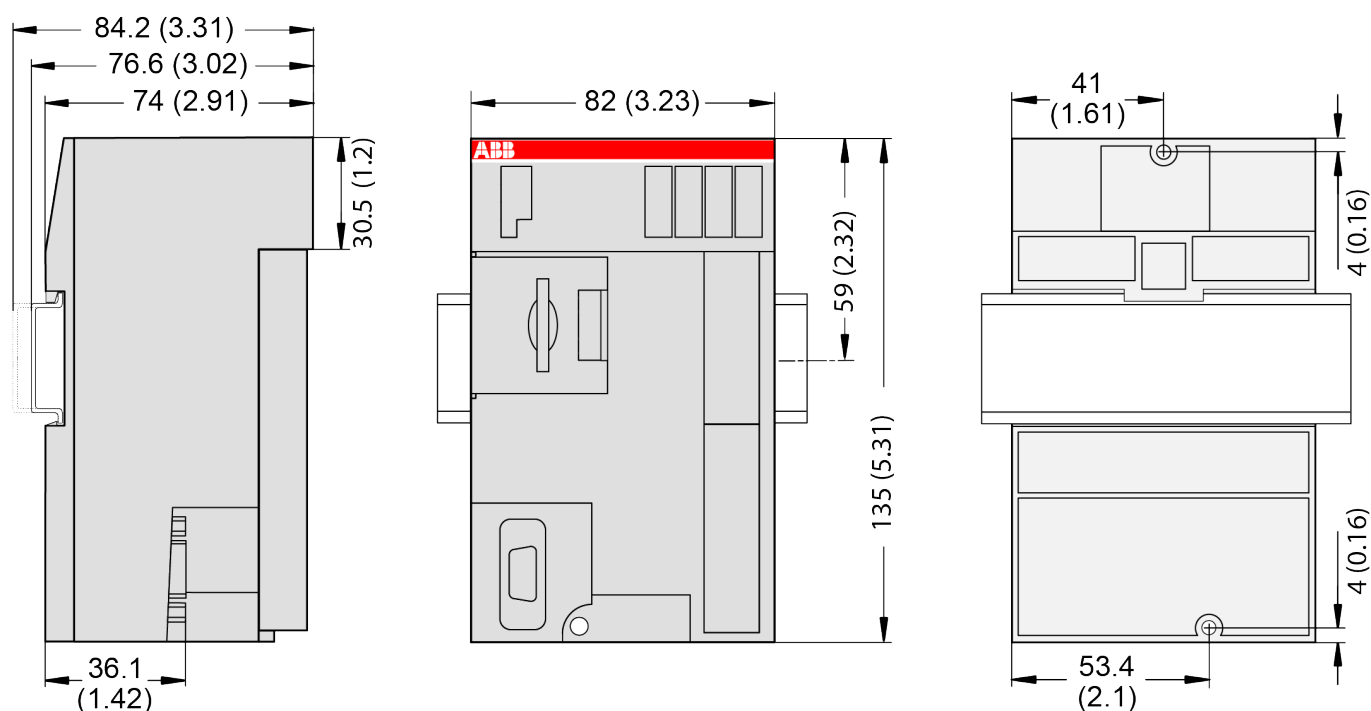
1. shove the modules from each other
2. pull down the module
3. remove the module

76.3 Assembly with screws



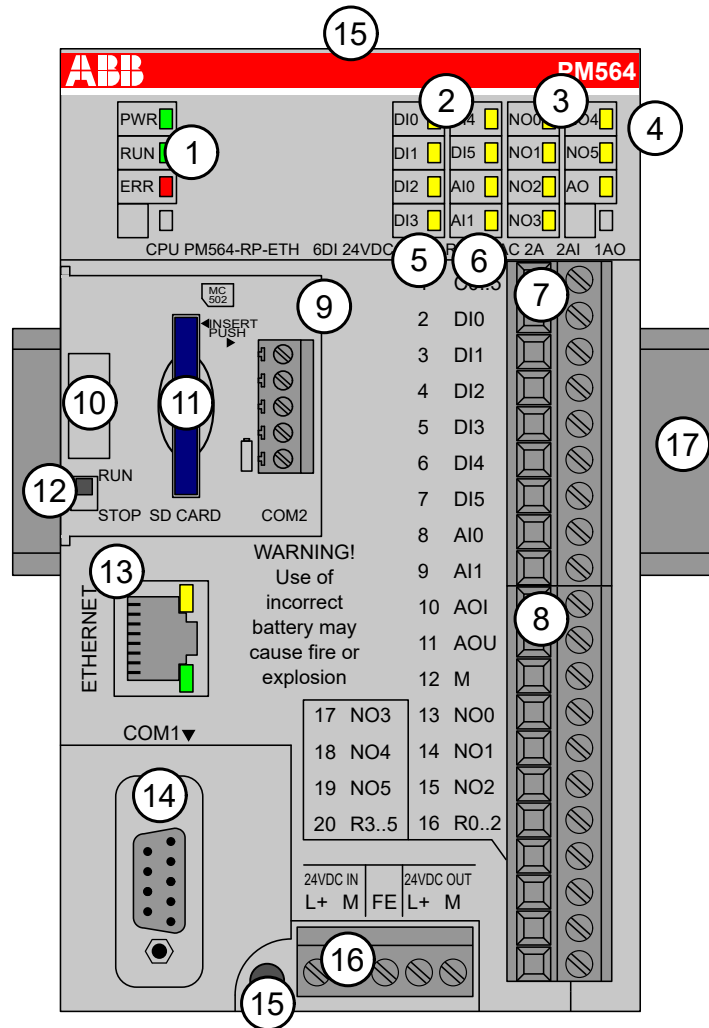
- 1 Fasten the module with two screws (max. diameter 4 mm)

76.4 Dimensions



The dimensions are in mm and in brackets in inch.

76.5 Connections



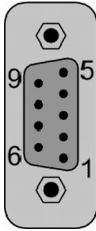
- 1 3 LEDs to display the states of the processor module
- 2 **PM55x-xP**: 8 yellow LEDs to display the states of the digital input signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital input signals, 2 yellow LEDs to display the states of the analog input signals.
- 3 **PM55x-xP**: 6 yellow LEDs to display the states of the digital output signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital output signals, 1 yellow LED to display the state of the analog output signal
- 4 I/O bus for connecting additional I/O modules
- 5 Terminal number
- 6 Signal name according to terminal number
- 7 Terminal block for input/output signals (9-pin)
- 8 Terminal block for input/output signals (11-pin)
- 9 Removable 5-pin connector for COM2 (optional)
- 10 Recess for opening the option board slot cover
- 11 Memory card slot (optional)
- 12 RUN/STOP switch
- 13 Ethernet interface (depending on model)
- 14 9-pin D-sub jack (COM1) for RS-485 connection
- 15 2 holes for wall-mounting with screws
- 16 Removable 5-pin connector for power supply (24 V DC or 100 V AC ... 240 V AC - depending on model)
- 17 DIN rail



The processor module is shown with pluggable terminal blocks mounted. These terminal blocks must be ordered separately.

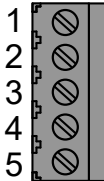
76.5.1 Serial interface COM1

Table 46: Pin assignment

Serial Interface	Pin	Signal	Description
	1	FE	Functional earth
	2	SGND	0 V power supply, internally connected to M terminal
	3	RxD/TxD-P	Receive/Transmit positive
	4	Reserved	Reserved, not connected
	5	SGND	0 V power supply, internally connected to M terminal
	6	+3.3 V	3.3 V power supply
	7	Reserved	Reserved, not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	Reserved	Reserved, not connected
	Shield	Cable shield	Functional earth

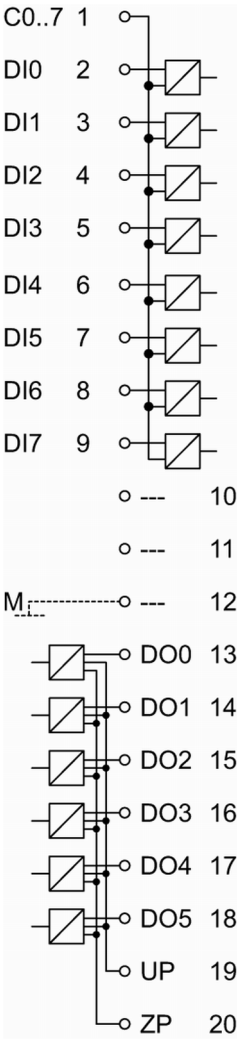
76.5.2 Serial interface COM2

Table 47: Pin assignment

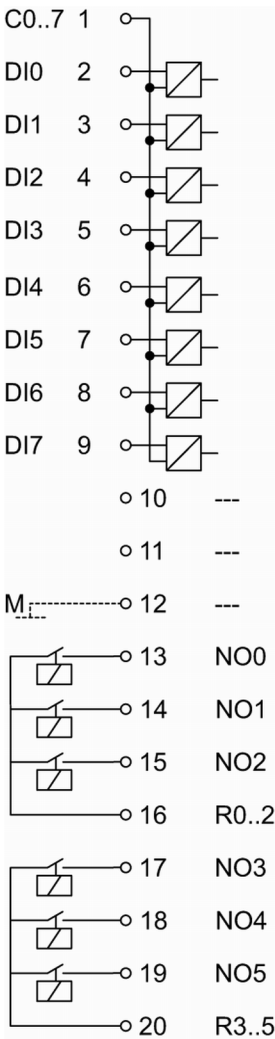
Serial Interface	Pin	Description
	1	Terminator P
	2	TxD/RxD-P
	3	TxD/RxD-N
	4	Terminator N
	5	Functional earth

76.5.3 Inputs/Outputs

PM554-TP



PM554-RP



76.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

76.7 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

76.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

77 PM556-TP-ETH

- PM556-TP-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

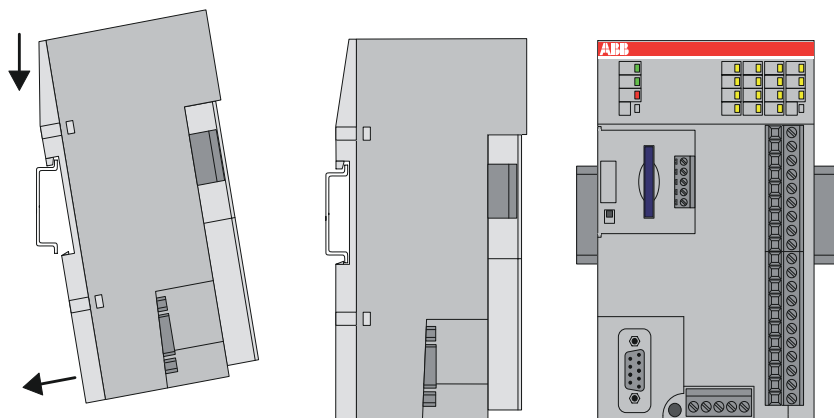
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

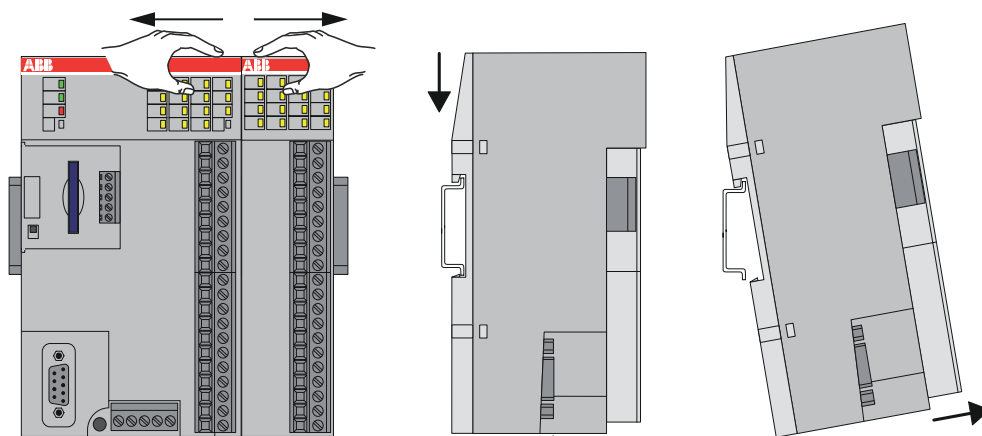
The module must not be connected to live voltages, while the cover for accessories is removed.

77.1 Assembly



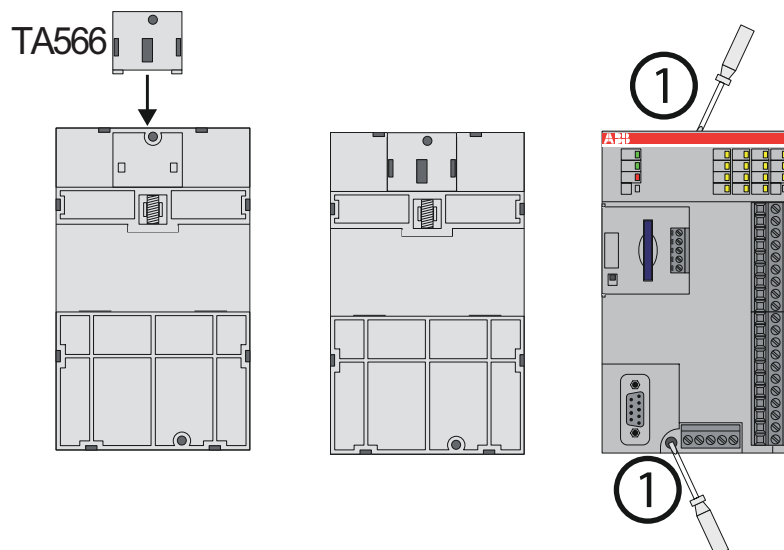
The module is put on the DIN rail above and then snapped-in below.

77.2 Disassembly



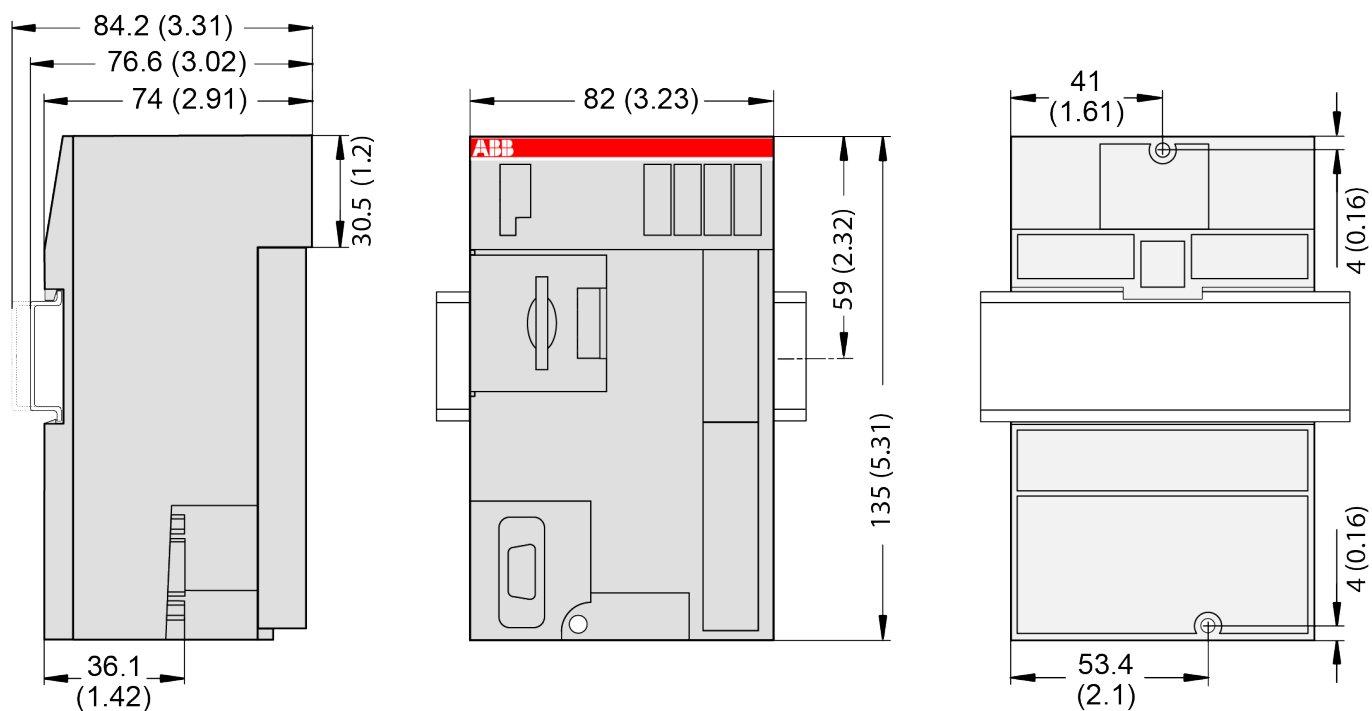
1. shove the modules from each other
2. pull down the module
3. remove the module

77.3 Assembly with screws



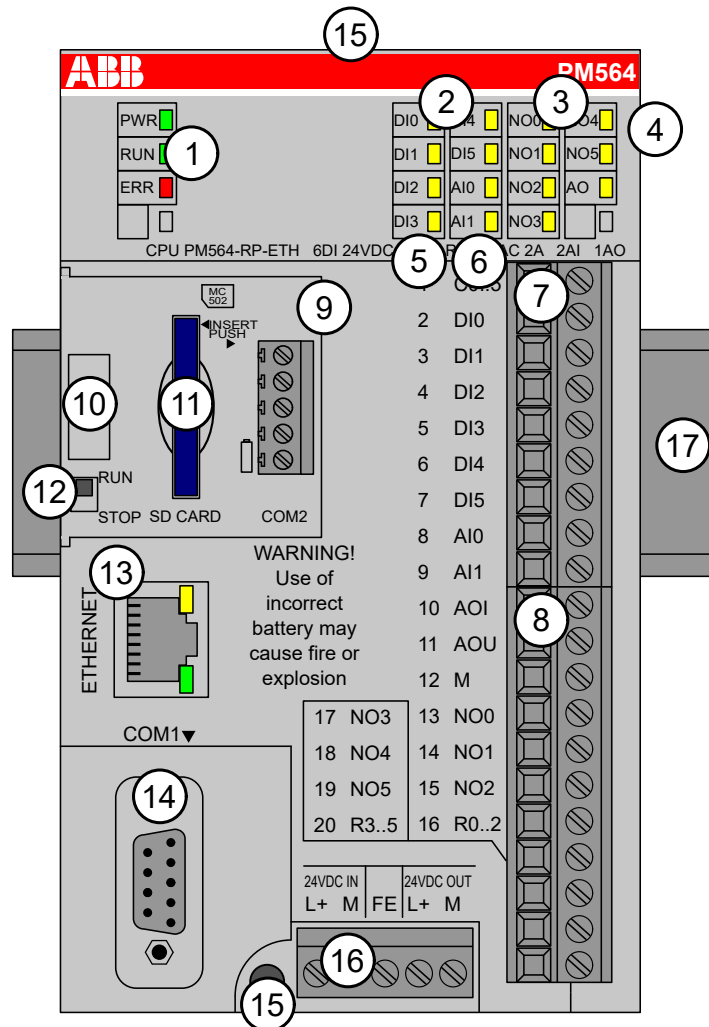
- 1 Fasten the module with two screws (max. diameter 4 mm)

77.4 Dimensions



The dimensions are in mm and in brackets in inch.

77.5 Connections



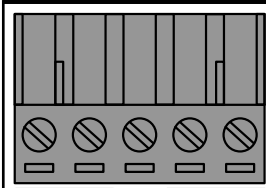
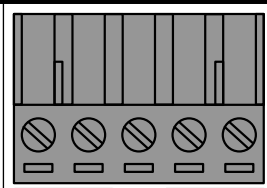
- 1 3 LEDs to display the states of the processor module
- 2 **PM55x-xP**: 8 yellow LEDs to display the states of the digital input signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital input signals, 2 yellow LEDs to display the states of the analog input signals.
- 3 **PM55x-xP**: 6 yellow LEDs to display the states of the digital output signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital output signals, 1 yellow LED to display the state of the analog output signal
- 4 I/O bus for connecting additional I/O modules
- 5 Terminal number
- 6 Signal name according to terminal number
- 7 Terminal block for input/output signals (9-pin)
- 8 Terminal block for input/output signals (11-pin)
- 9 Removable 5-pin connector for COM2 (optional)
- 10 Recess for opening the option board slot cover
- 11 Memory card slot (optional)
- 12 RUN/STOP switch
- 13 Ethernet interface (depending on model)
- 14 9-pin D-sub jack (COM1) for RS-485 connection
- 15 2 holes for wall-mounting with screws
- 16 Removable 5-pin connector for power supply (24 V DC or 100 V AC ... 240 V AC - depending on model)
- 17 DIN rail



The processor module is shown with pluggable terminal blocks mounted. These terminal blocks must be ordered separately.

77.5.1 Power Supply

Power supply Depending on the variant, the processor modules can be connected to the following supply voltages:

 24VDC IN L+ M FE L+ M 24 V DC	 100-240VAC IN L N FE L+ M 100 V AC ... 240 V AC
--	---

The connection is established via a removable 5-pin terminal block. As the terminal block is also available as a spare part (inside TA570 Spare Part Set for AC500-eCo processor modules).

The 24 V DC variant contains 2 L+ and M terminals. The L+ terminal on the left side is the input and the right side is the output. The M terminals are internally interconnected. The supply can be easily looped through to the onboard digital inputs.



NOTICE!
Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.



CAUTION!
Risk of damaging the processor module!

Excess currents at 24 V DC output (24 V DC processor module variant) will damage the processor module.

Use an appropriate fuse within 24 V DC input connection.

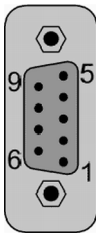
The 100 V AC ... 240 V AC variant contains an internal power supply with a wide-range input. It provides a 24 V DC output at the terminals L+ and M which can be used to supply the onboard digital inputs.



The voltage output at 100 V AC ... 240 V AC variants can provide 180 mA max. The output is protected against overload by a self-resetting fuse (PTC).

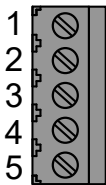
77.5.2 Serial interface COM1

Table 48: Pin assignment

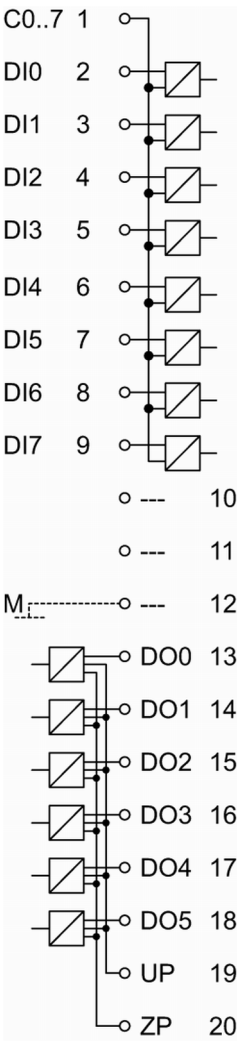
Serial Interface	Pin	Signal	Description
	1	FE	Functional earth
	2	SGND	0 V power supply, internally connected to M terminal
	3	RxD/TxD-P	Receive/Transmit positive
	4	Reserved	Reserved, not connected
	5	SGND	0 V power supply, internally connected to M terminal
	6	+3.3 V	3.3 V power supply
	7	Reserved	Reserved, not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	Reserved	Reserved, not connected
	Shield	Cable shield	Functional earth

77.5.3 Serial interface COM2

Table 49: Pin assignment

Serial Interface	Pin	Description
	1	Terminator P
	2	TxD/RxD-P
	3	TxD/RxD-N
	4	Terminator N
	5	Functional earth

77.5.4 Inputs/Outputs



77.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

77.7 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

77.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

78 PM5630-2ETH(-XC)

- PM5630-2ETH
- PM5630-2ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 50: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

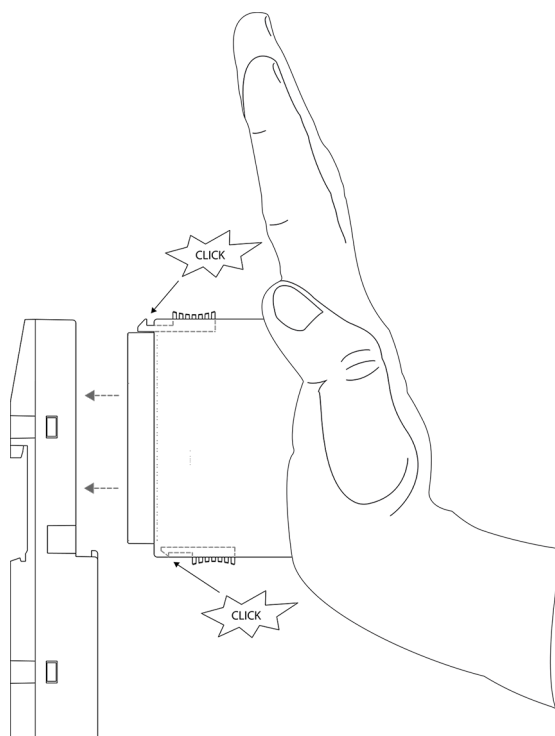
Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾

Remarks:

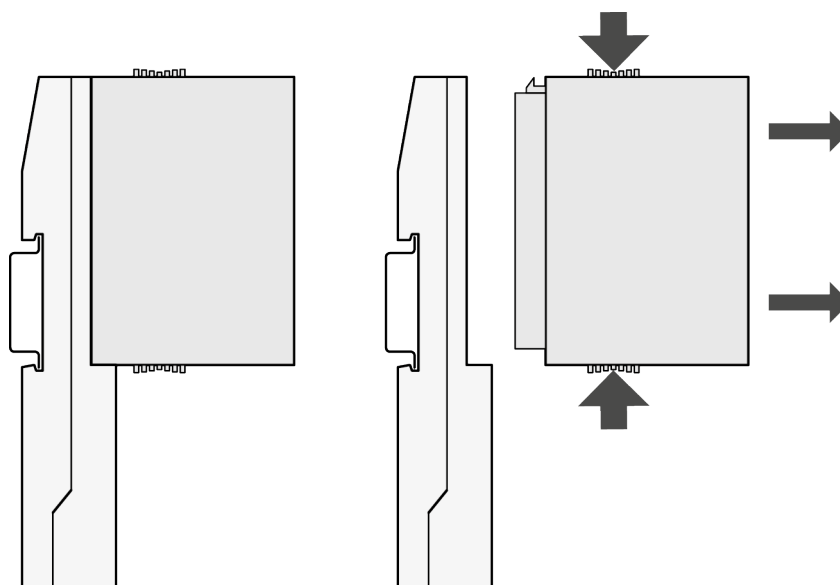
The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base.

¹⁾ PM567x must have an index $\geq$ C0.

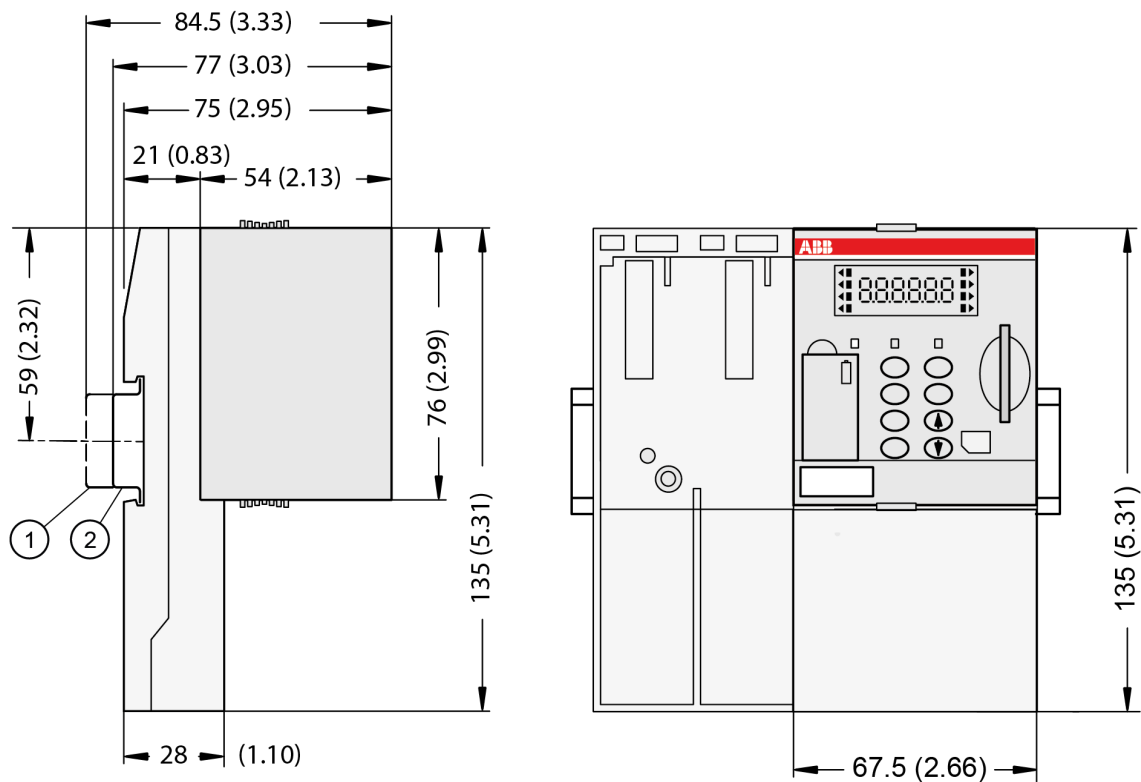
78.1 Assembly



78.2 Disassembly



78.3 Dimensions

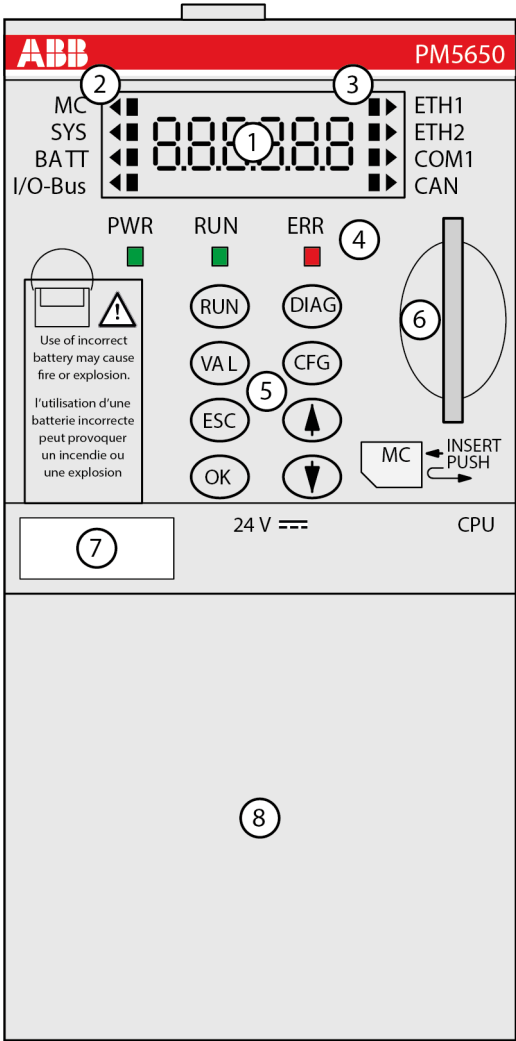


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

78.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

 Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 51: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots

Processor module	PM5630	PM5650	PM5670	PM5675
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index $\geq$ C0.				

78.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

78.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

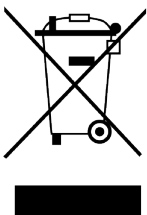
ko

참고
이러한 기기는

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

78.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

79 PM564-x(-x)

- PM564-TP
- PM564-TP-ETH
- PM564-RP
- PM564-RP-AC
- PM564-RP-ETH
- PM564-RP-ETH-AC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

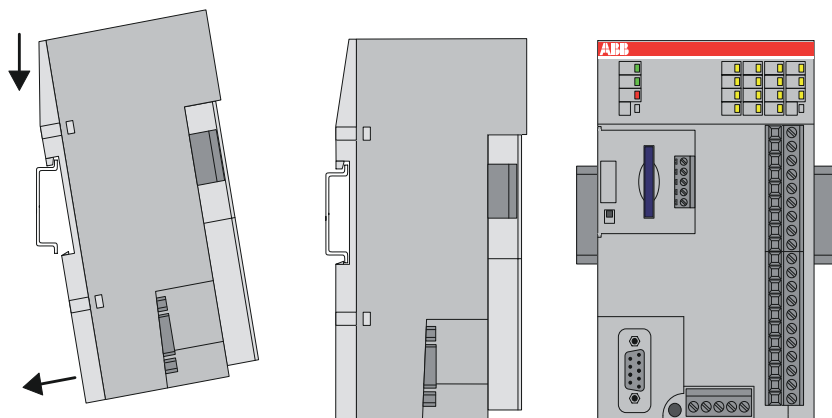
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

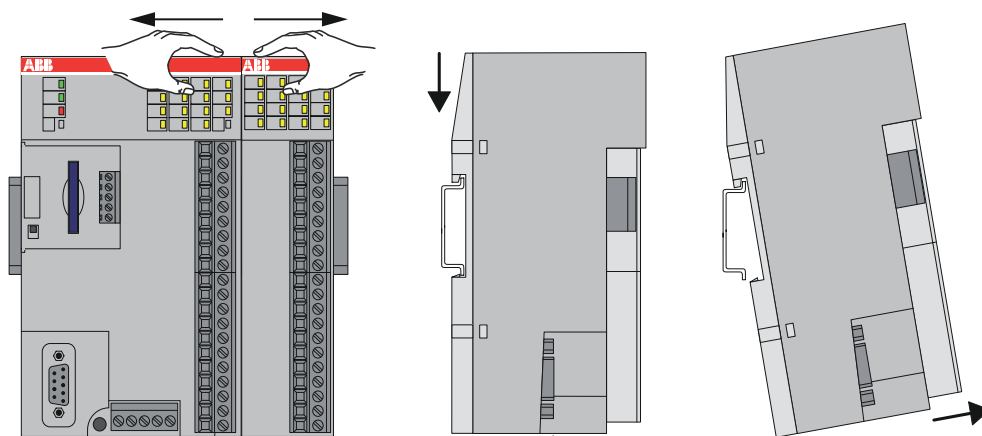
The module must not be connected to live voltages, while the cover for accessories is removed.

79.1 Assembly



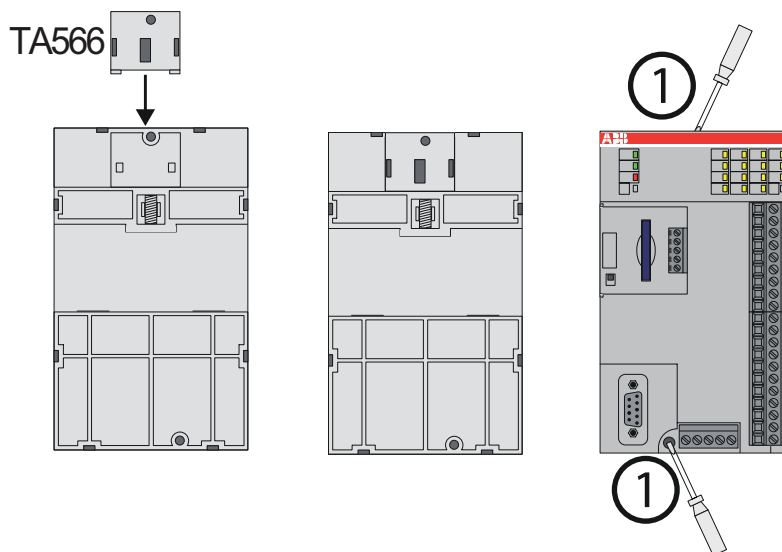
The module is put on the DIN rail above and then snapped-in below.

79.2 Disassembly



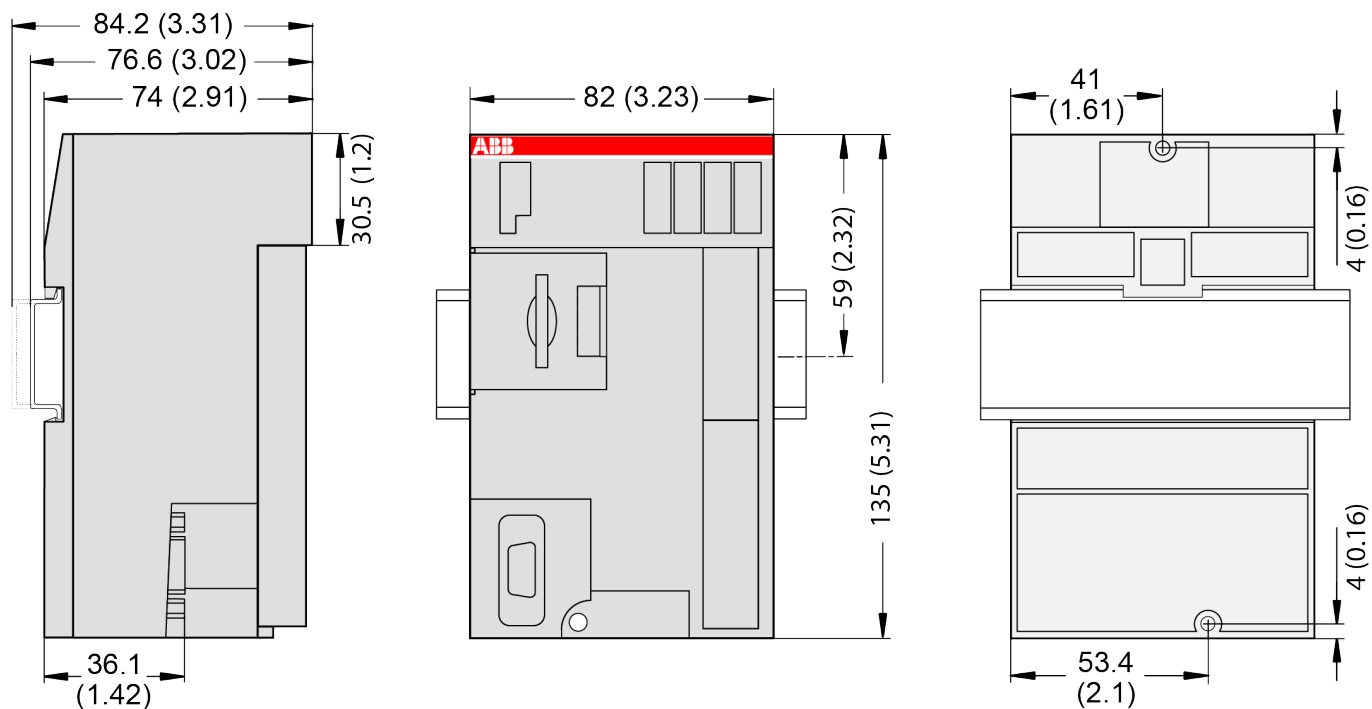
1. shove the modules from each other
2. pull down the module
3. remove the module

79.3 Assembly with screws



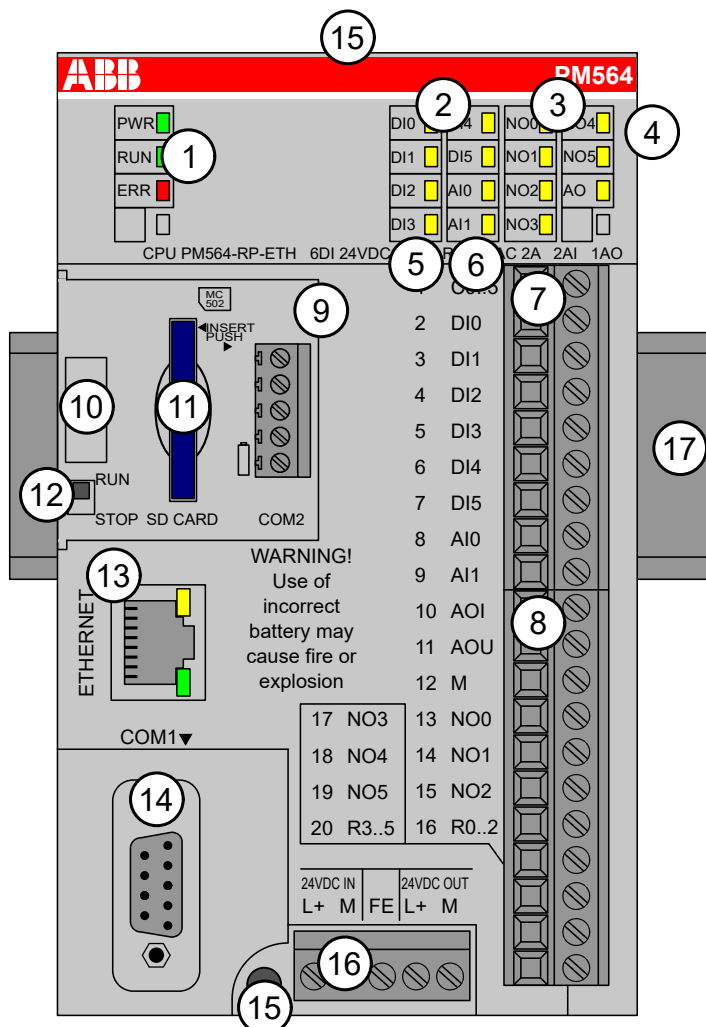
- 1 Fasten the module with two screws (max. diameter 4 mm)

79.4 Dimensions



The dimensions are in mm and in brackets in inch.

79.5 Connections



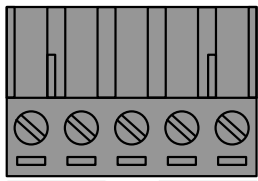
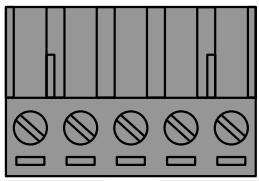
- 1 3 LEDs to display the states of the processor module
- 2 **PM55x-xP**: 8 yellow LEDs to display the states of the digital input signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital input signals, 2 yellow LEDs to display the states of the analog input signals.
- 3 **PM55x-xP**: 6 yellow LEDs to display the states of the digital output signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital output signals, 1 yellow LED to display the state of the analog output signal
- 4 I/O bus for connecting additional I/O modules
- 5 Terminal number
- 6 Signal name according to terminal number
- 7 Terminal block for input/output signals (9-pin)
- 8 Terminal block for input/output signals (11-pin)
- 9 Removable 5-pin connector for COM2 (optional)
- 10 Recess for opening the option board slot cover
- 11 Memory card slot (optional)
- 12 RUN/STOP switch
- 13 Ethernet interface (depending on model)
- 14 9-pin D-sub jack (COM1) for RS-485 connection
- 15 2 holes for wall-mounting with screws
- 16 Removable 5-pin connector for power supply (24 V DC or 100 V AC ... 240 V AC - depending on model)
- 17 DIN rail



The processor module is shown with pluggable terminal blocks mounted. These terminal blocks must be ordered separately.

79.5.1 Power supply

Power supply Depending on the variant, the processor modules can be connected to the following supply voltages:

 24VDC IN 24VDC OUT L+ M FE L+ M	 100-240VAC IN 24VDC OUT L N FE L+ M
24 V DC	100 V AC ... 240 V AC

The connection is established via a removable 5-pin terminal block. As the terminal block is also available as a spare part (inside TA570 Spare Part Set for AC500-eCo processor modules).

The 24 V DC variant contains 2 L+ and M terminals. The L+ terminal on the left side is the input and the right side is the output. The M terminals are internally interconnected. The supply can be easily looped through to the onboard digital inputs.



NOTICE!

Risk of damaging the PLC due to improper voltage levels!

- Never exceed the maximum tolerance values for process and supply voltages.
 - Never fall below the minimum tolerance values for process and supply voltages.
- Observe the **system data** and the **technical data** of the used module.



CAUTION!

Risk of damaging the processor module!

Excess currents at 24 V DC output (24 V DC processor module variant) will damage the processor module.

Use an appropriate fuse within 24 V DC input connection.

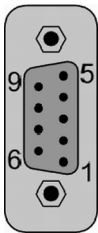
The 100 V AC ... 240 V AC variant contains an internal power supply with a wide-range input. It provides a 24 V DC output at the terminals L+ and M which can be used to supply the onboard digital inputs.



The voltage output at 100 V AC ... 240 V AC variants can provide 180 mA max. The output is protected against overload by a self-resetting fuse (PTC).

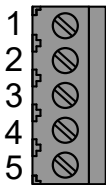
79.5.2 Serial interface COM1

Table 52: Pin assignment

Serial Interface	Pin	Signal	Description
Serial Interface 	1	FE	Functional earth
	2	SGND	0 V power supply, internally connected to M terminal
	3	RxD/TxD-P	Receive/Transmit positive
	4	Reserved	Reserved, not connected
	5	SGND	0 V power supply, internally connected to M terminal
	6	+3.3 V	3.3 V power supply
	7	Reserved	Reserved, not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	Reserved	Reserved, not connected
	Shield	Cable shield	Functional earth

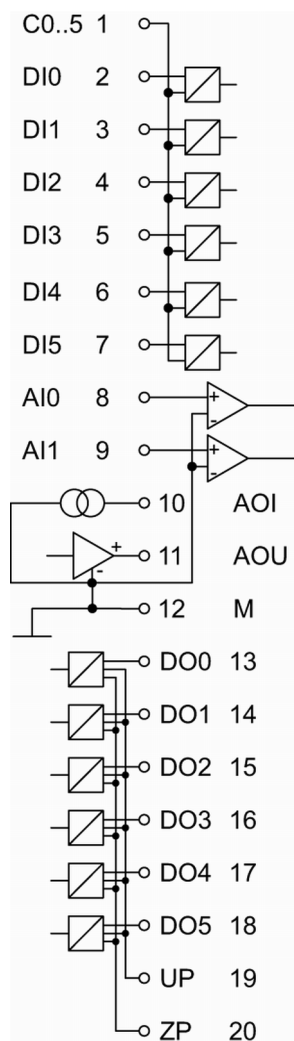
79.5.3 Serial interface COM2

Table 53: Pin assignment

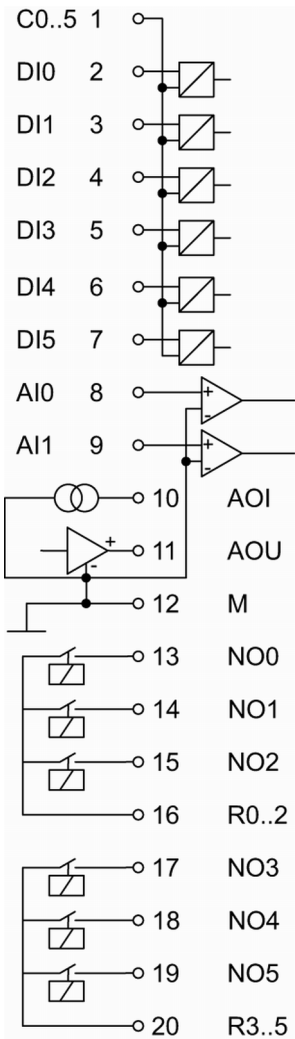
Serial Interface	Pin	Description
	1	Terminator P
	2	TxD/RxD-P
	3	TxD/RxD-N
	4	Terminator N
	5	Functional earth

79.5.4 Inputs/Outputs

PM564-TP



PM564-RP



79.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

79.7 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

79.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

80

PM5650-2ETH(-XC)

- PM5650-2ETH
- PM5650-2ETH-XC



CAUTION!
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

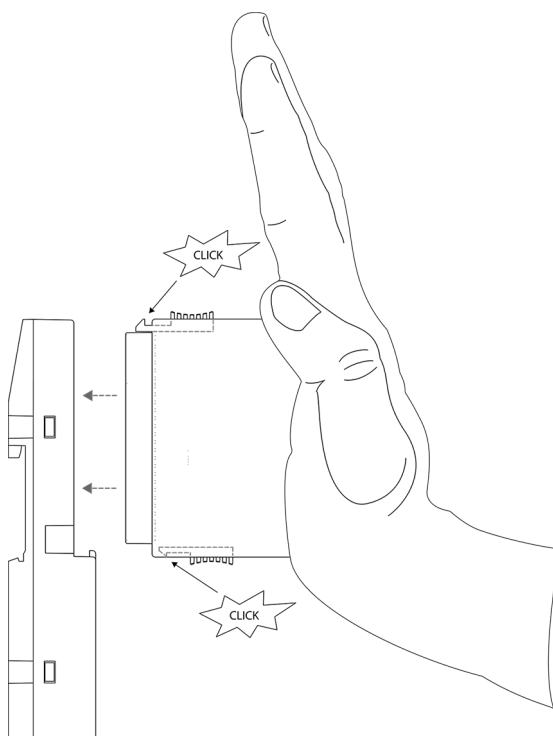


Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

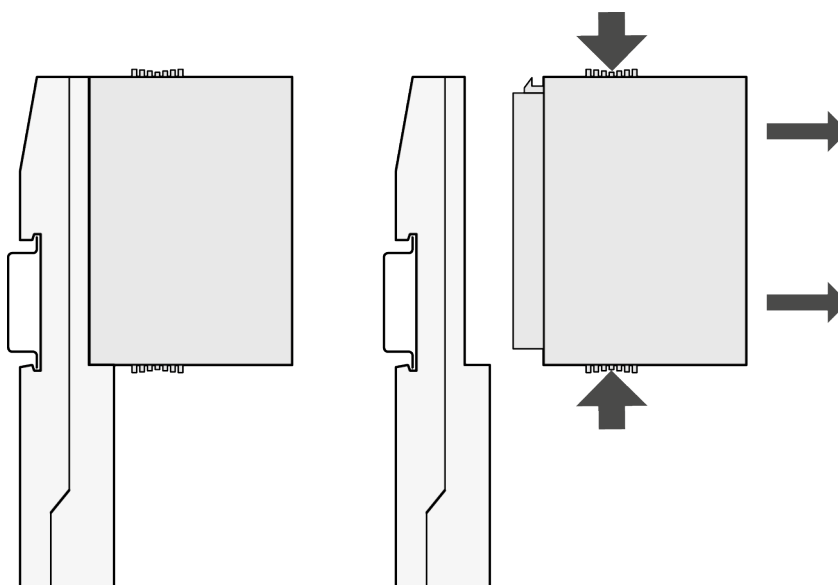
Table 54: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index ≥ C0.				

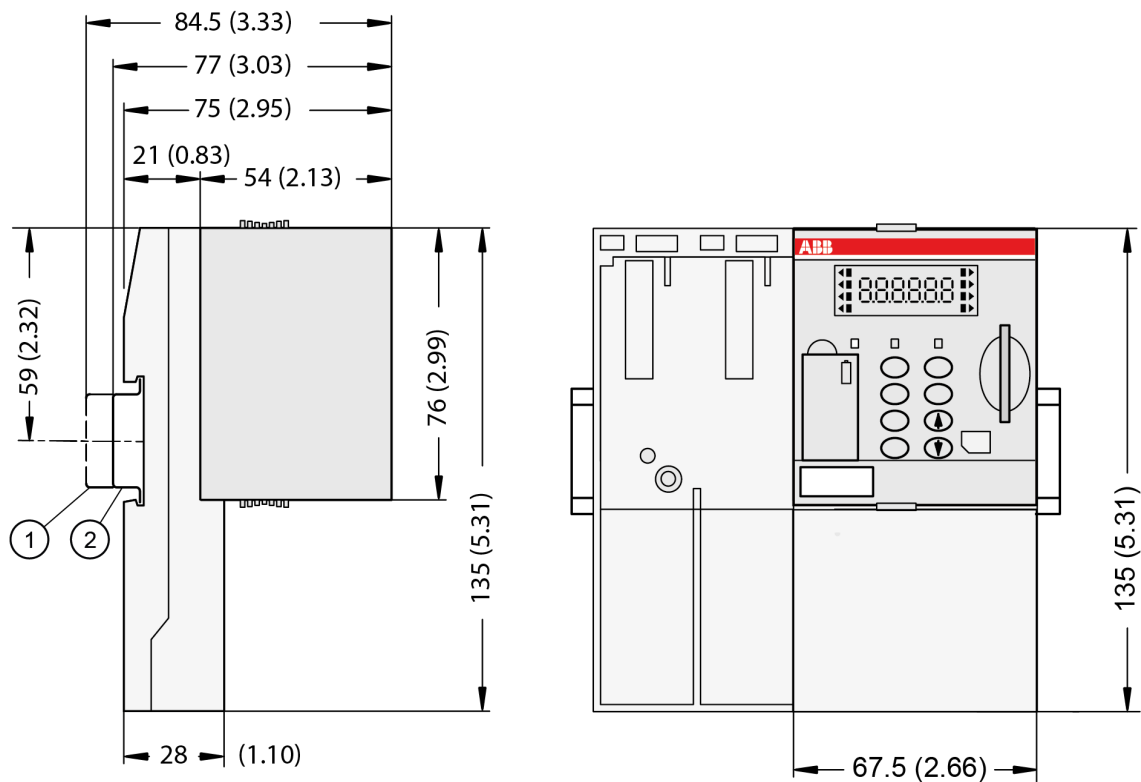
80.1 Assembly



80.2 Disassembly



80.3 Dimensions

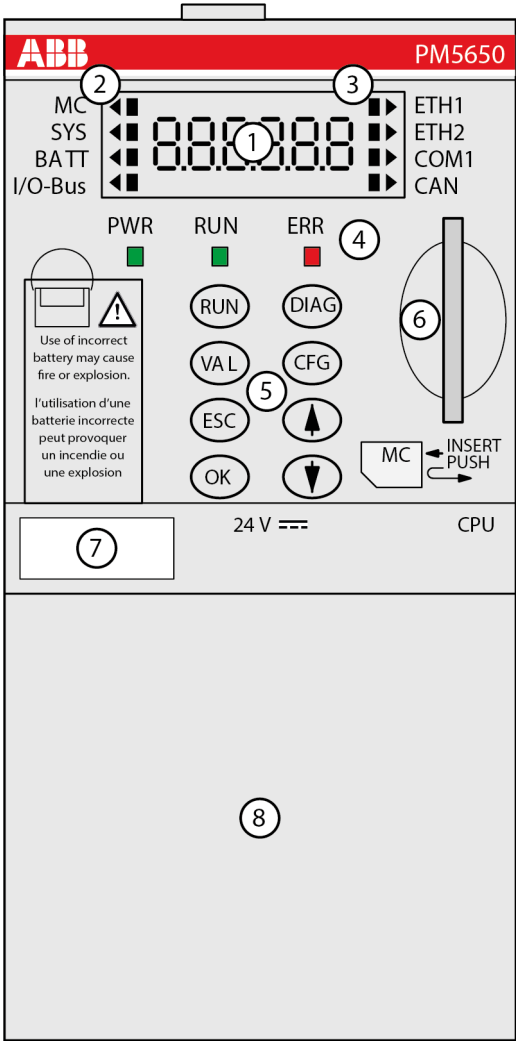


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

80.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

 Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 55: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots

Processor module	PM5630	PM5650	PM5670	PM5675
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index $\geq$ C0.				

80.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

80.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

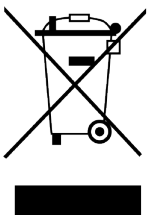
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

80.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

81 PM566-TP-ETH

- PM566-TP-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

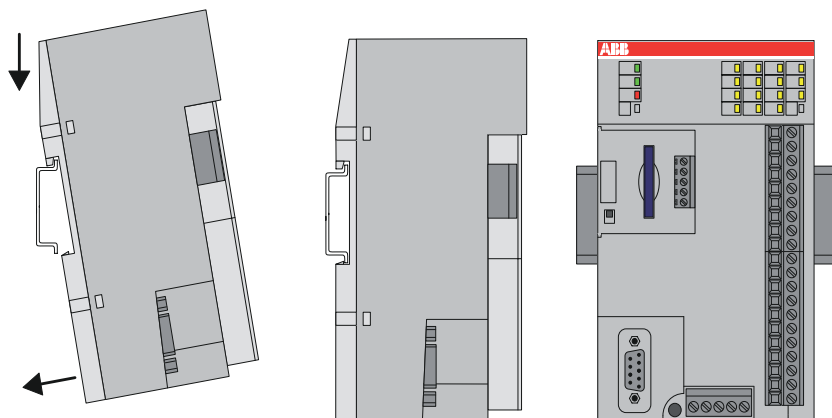
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

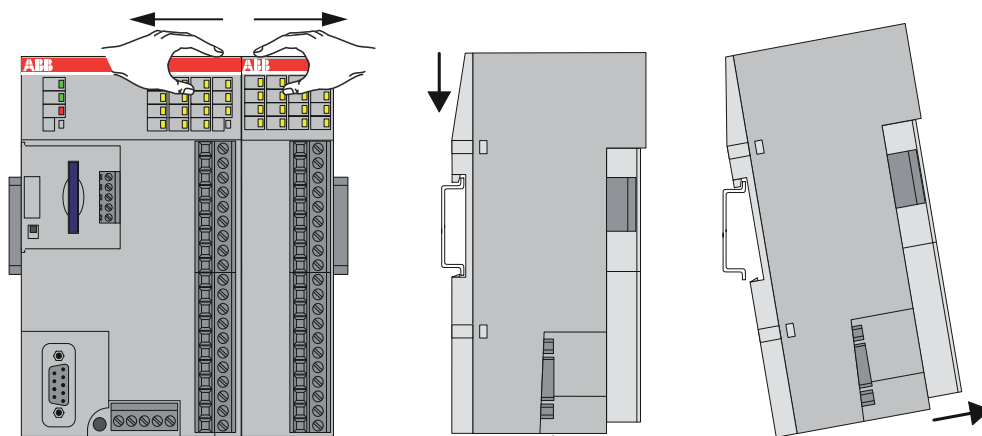
The module must not be connected to live voltages, while the cover for accessories is removed.

81.1 Assembly



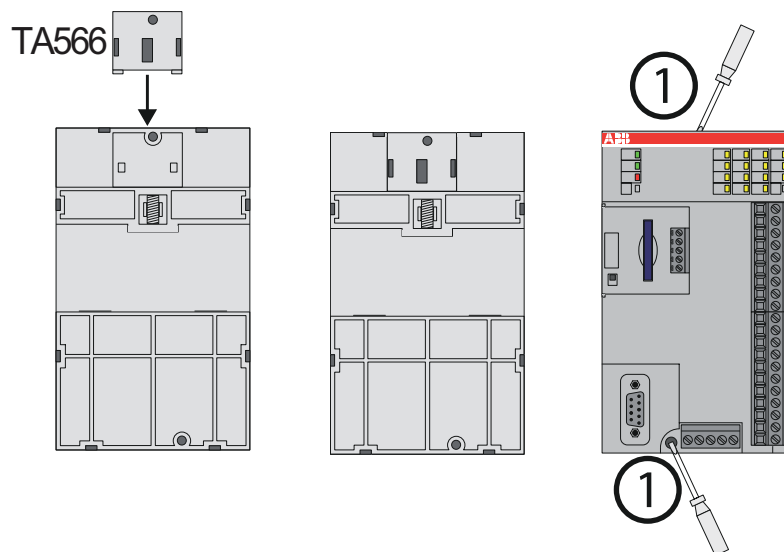
The module is put on the DIN rail above and then snapped-in below.

81.2 Disassembly



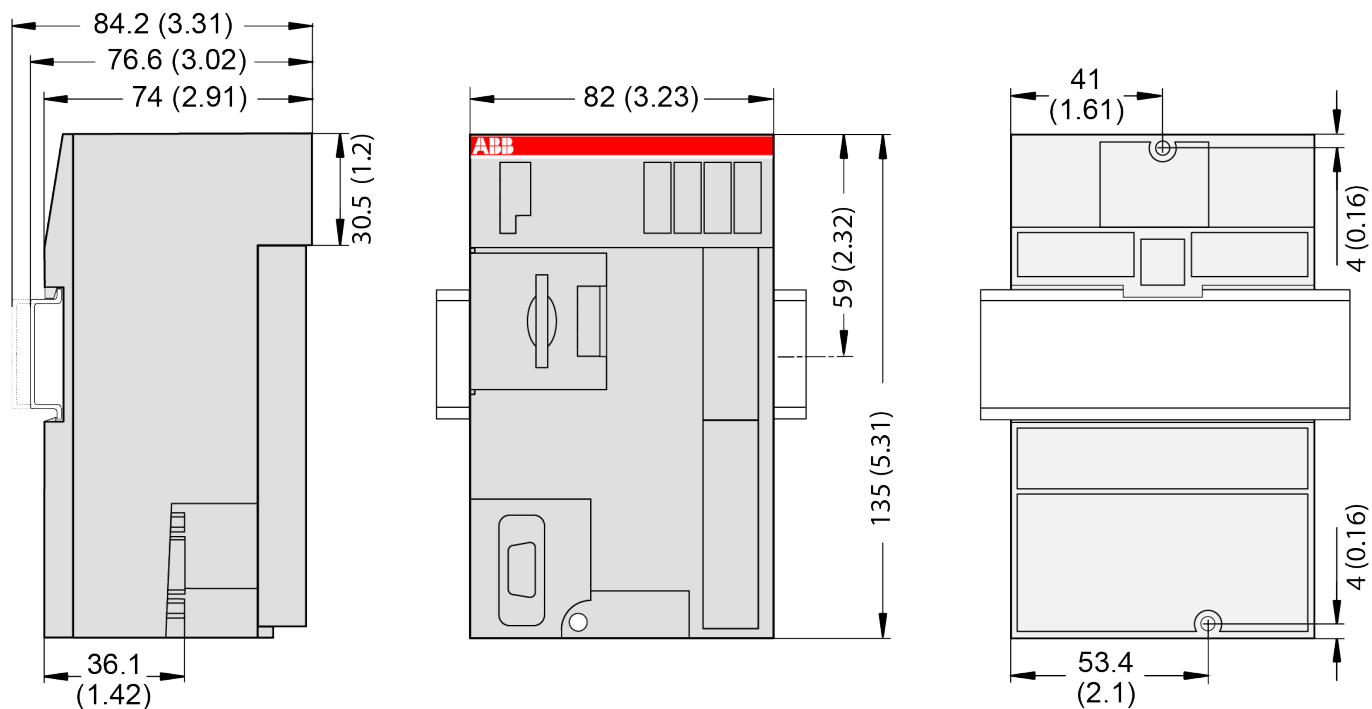
1. shove the modules from each other
2. pull down the module
3. remove the module

81.3 Assembly with screws



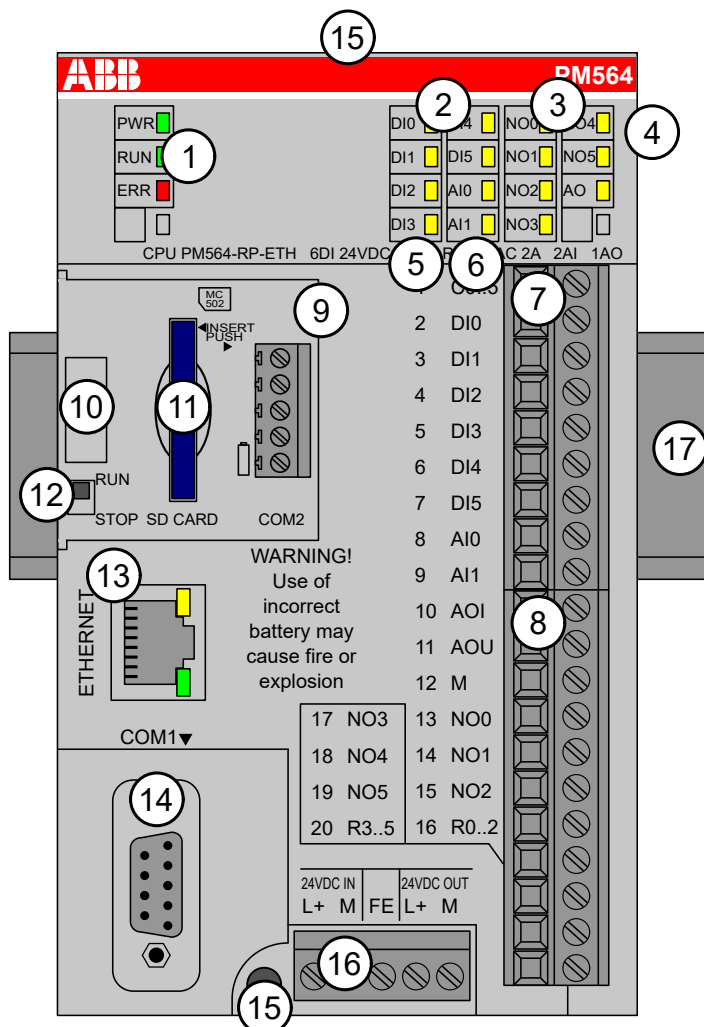
- 1 Fasten the module with two screws (max. diameter 4 mm)

81.4 Dimensions



The dimensions are in mm and in brackets in inch.

81.5 Connections



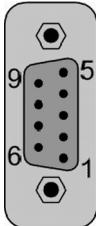
- 1 3 LEDs to display the states of the processor module
- 2 **PM55x-xP**: 8 yellow LEDs to display the states of the digital input signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital input signals, 2 yellow LEDs to display the states of the analog input signals.
- 3 **PM55x-xP**: 6 yellow LEDs to display the states of the digital output signals.
PM56x-xP: 6 yellow LEDs to display the states of the digital output signals, 1 yellow LED to display the state of the analog output signal
- 4 I/O bus for connecting additional I/O modules
- 5 Terminal number
- 6 Signal name according to terminal number
- 7 Terminal block for input/output signals (9-pin)
- 8 Terminal block for input/output signals (11-pin)
- 9 Removable 5-pin connector for COM2 (optional)
- 10 Recess for opening the option board slot cover
- 11 Memory card slot (optional)
- 12 RUN/STOP switch
- 13 Ethernet interface (depending on model)
- 14 9-pin D-sub jack (COM1) for RS-485 connection
- 15 2 holes for wall-mounting with screws
- 16 Removable 5-pin connector for power supply (24 V DC or 100 V AC ... 240 V AC - depending on model)
- 17 DIN rail



The processor module is shown with pluggable terminal blocks mounted. These terminal blocks must be ordered separately.

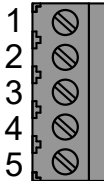
81.5.1 Serial interface COM1

Table 56: Pin assignment

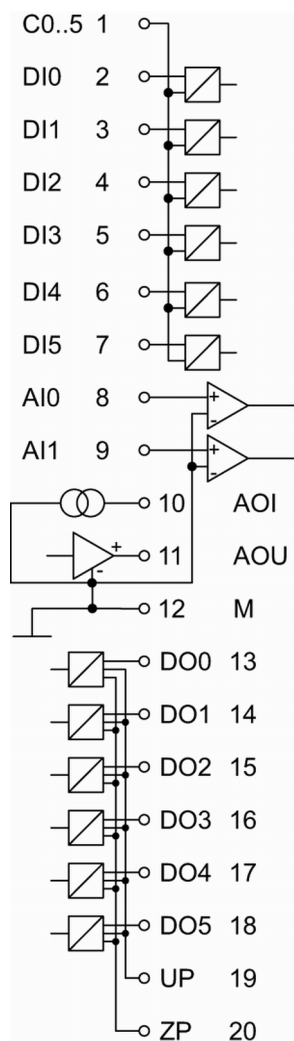
Serial Interface	Pin	Signal	Description
	1	FE	Functional earth
	2	SGND	0 V power supply, internally connected to M terminal
	3	RxD/TxD-P	Receive/Transmit positive
	4	Reserved	Reserved, not connected
	5	SGND	0 V power supply, internally connected to M terminal
	6	+3.3 V	3.3 V power supply
	7	Reserved	Reserved, not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	Reserved	Reserved, not connected
	Shield	Cable shield	Functional earth

81.5.2 Serial interface COM2

Table 57: Pin assignment

Serial Interface	Pin	Description
	1	Terminator P
	2	TxD/RxD-P
	3	TxD/RxD-N
	4	Terminator N
	5	Functional earth

81.5.3 Inputs/Outputs



81.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

81.7 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

81.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

82 PM5670-2ETH(-XC)

- PM5670-2ETH
- PM5670-2ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

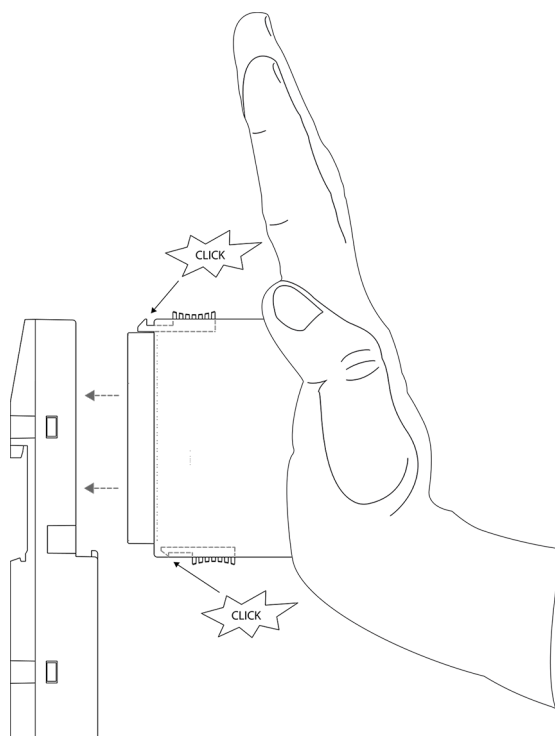


Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

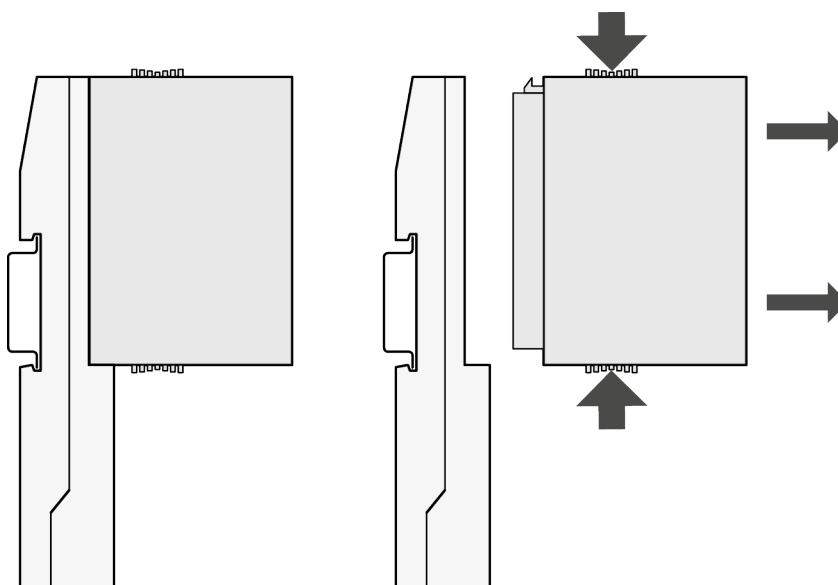
Table 58: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index $\geq$ C0.				

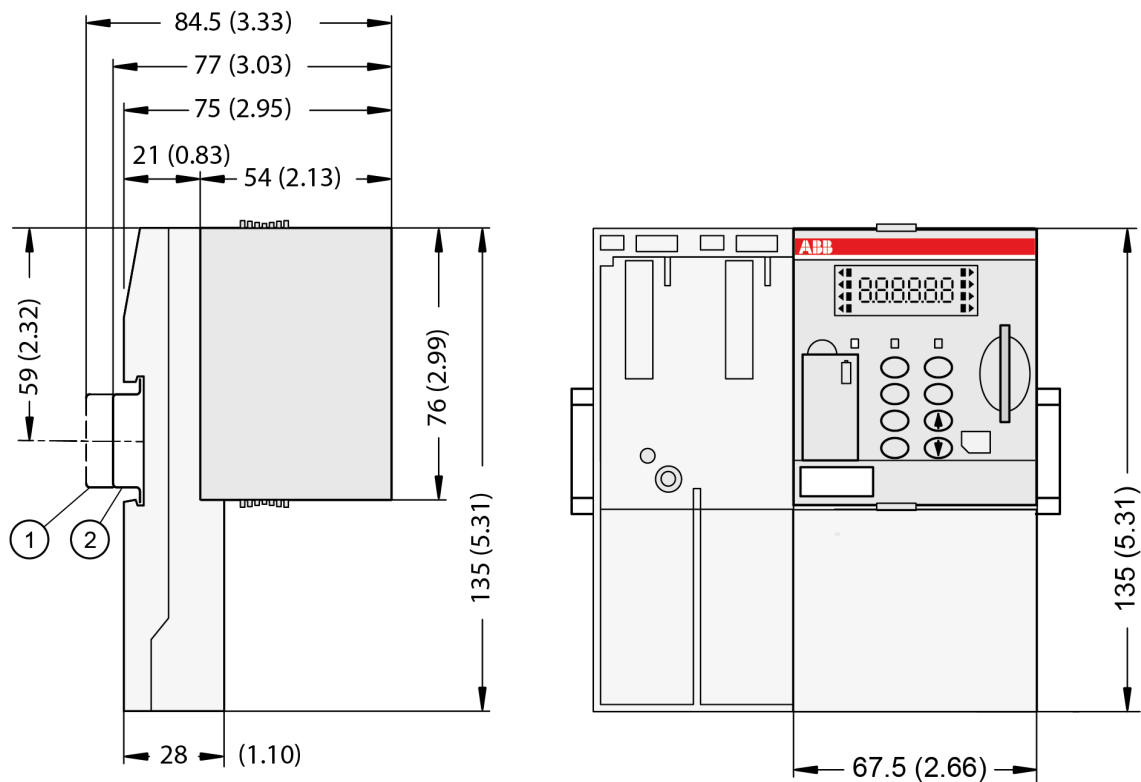
82.1 Assembly



82.2 Disassembly



82.3 Dimensions

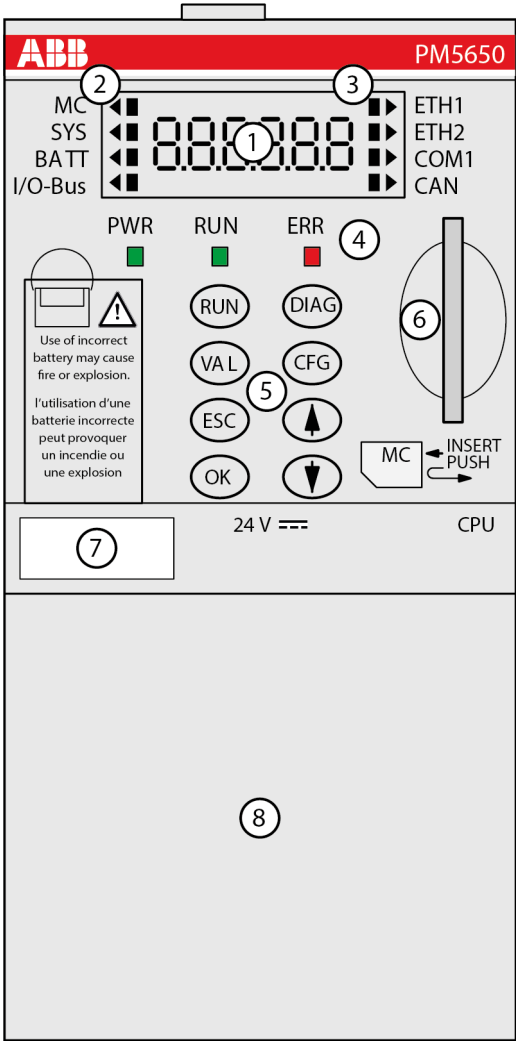


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

82.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

 Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 59: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots

Processor module	PM5630	PM5650	PM5670	PM5675
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index $\geq$ C0.				

82.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

82.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

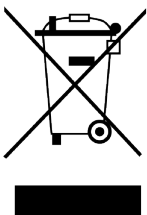
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

82.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

83 PM5675-2ETH(-XC)

- PM5675-2ETH
- PM5675-2ETH-XC



CAUTION!
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 60: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

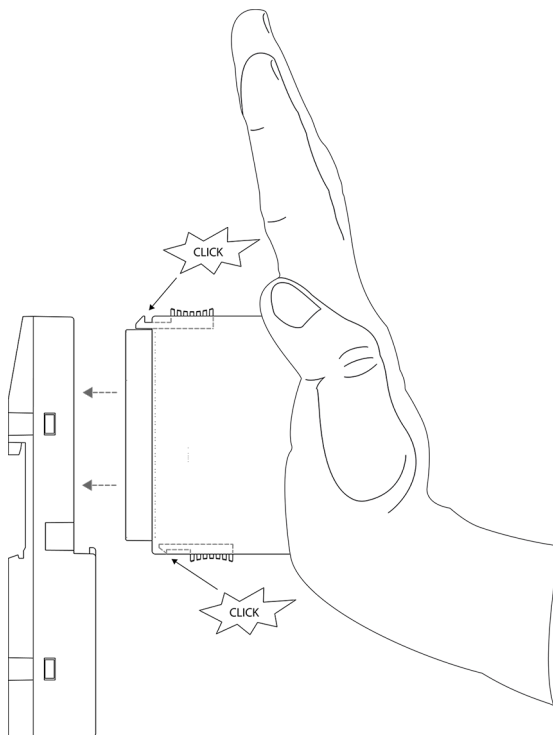
Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾

Remarks:

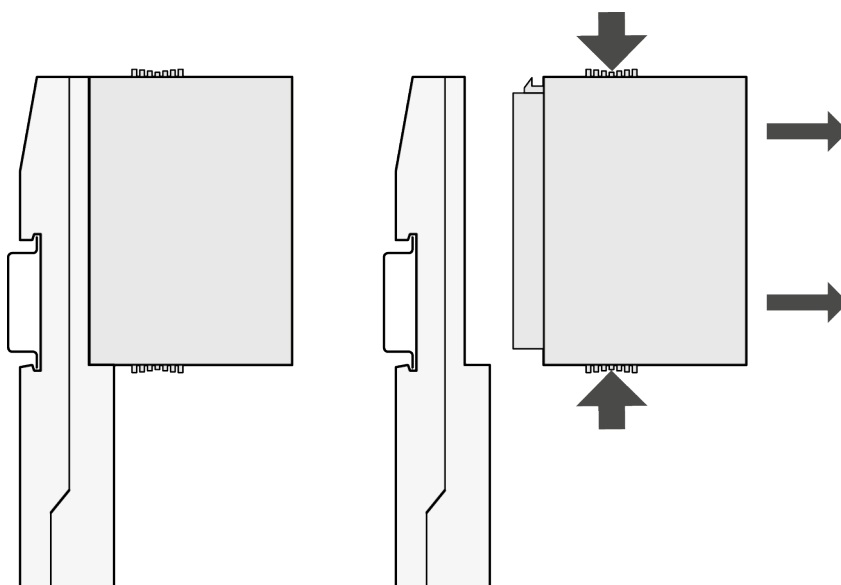
The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base.

¹⁾ PM567x must have an index $\geq$ C0.

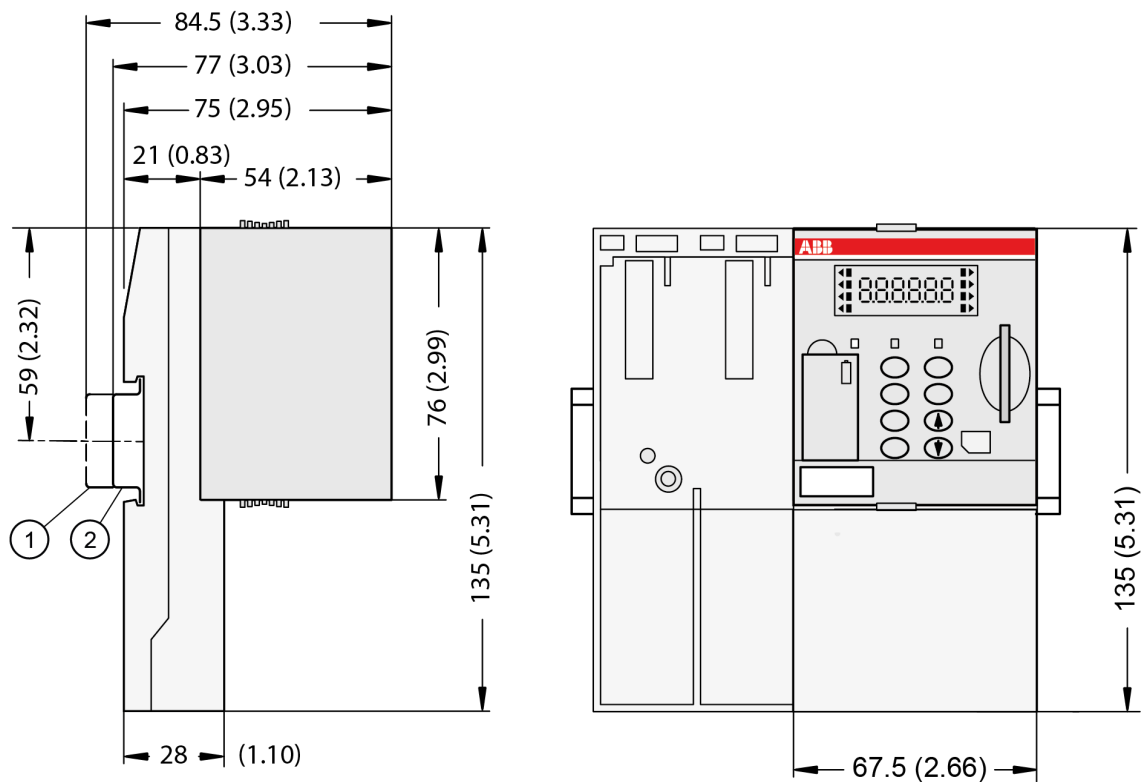
83.1 Assembly



83.2 Disassembly



83.3 Dimensions

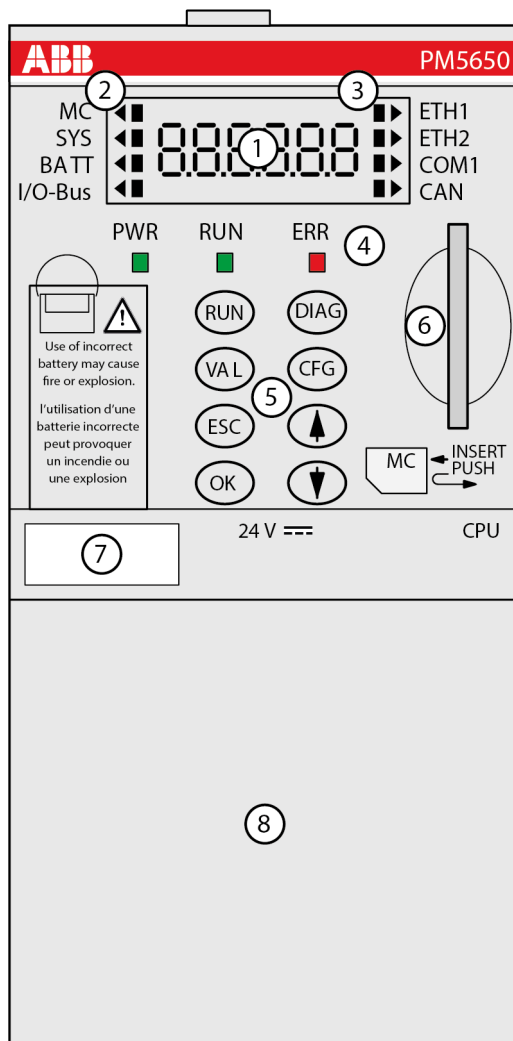


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

83.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version



Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 61: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots

Processor module	PM5630	PM5650	PM5670	PM5675
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index $\geq$ C0.				

83.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

83.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

ko

참고
이러한 기기는

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

83.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

84 PM572

- PM572



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

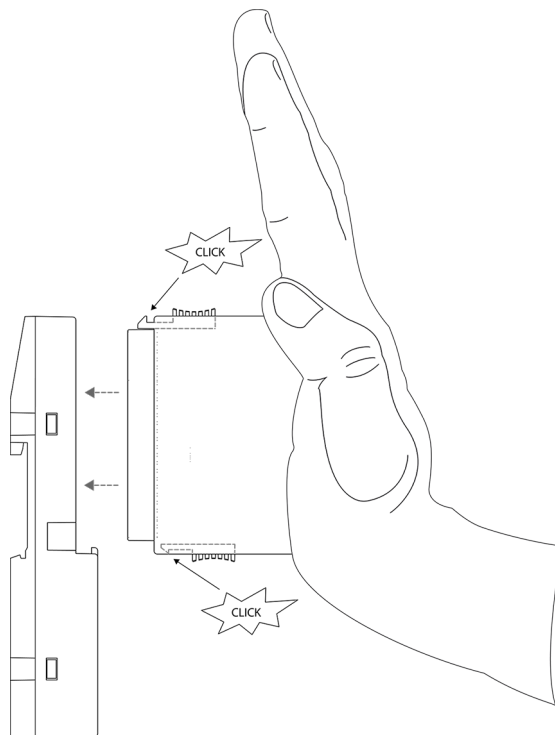


Processor module PM591-2ETH can only be used with TB523-2ETH.

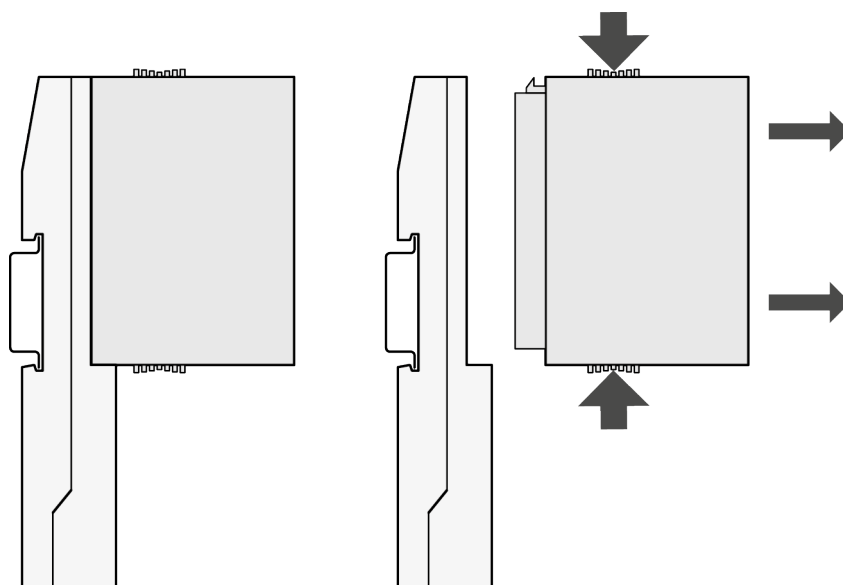


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

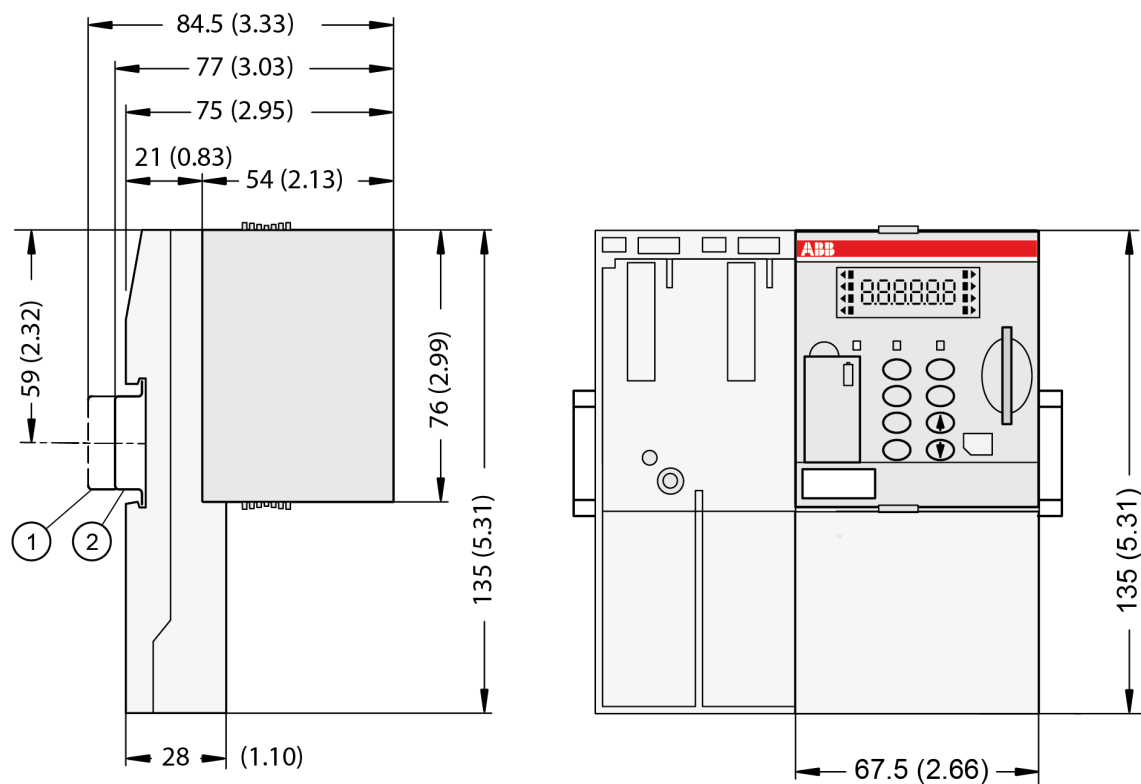
84.1 Assembly



84.2 Disassembly



84.3 Dimensions

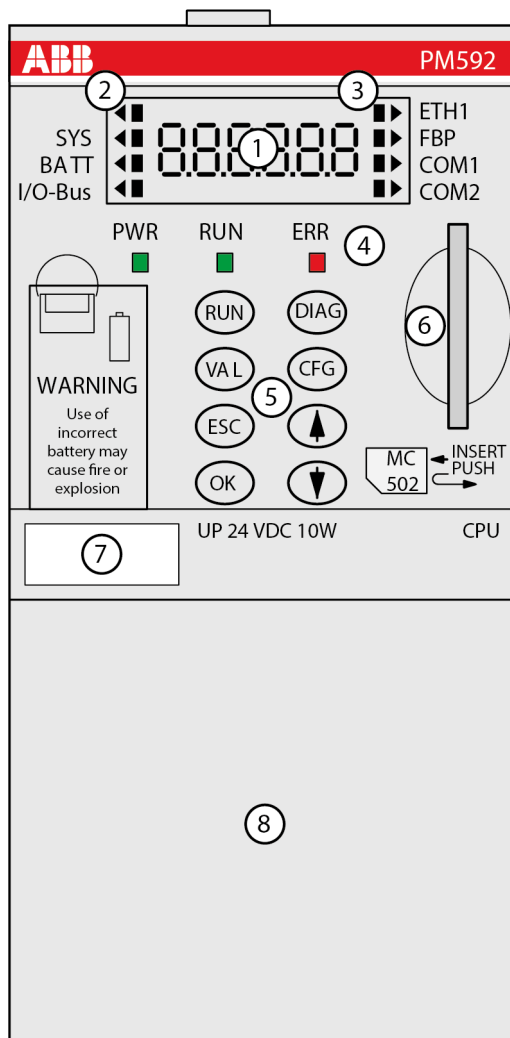


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

84.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

84.5 Cleaning



Cleaning instructions

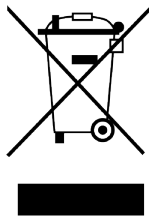
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

84.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

84.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

85 PM573-ETH(-XC)

- PM573-ETH
- PM573-ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

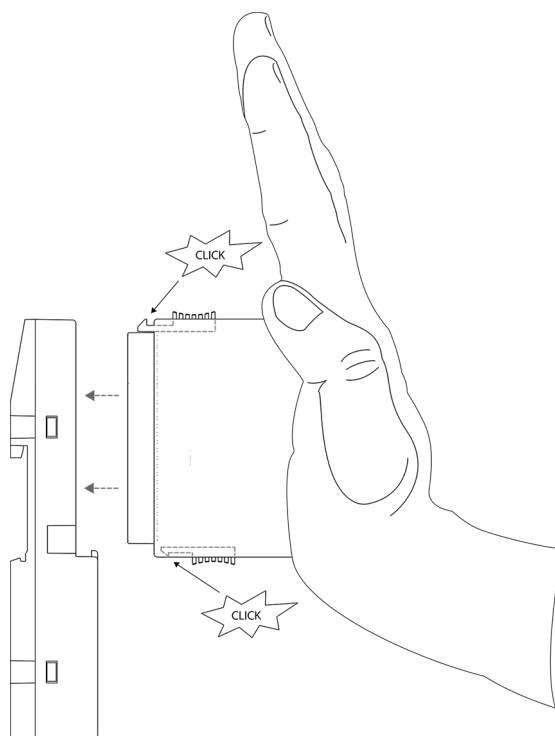


Processor module PM591-2ETH can only be used with TB523-2ETH.

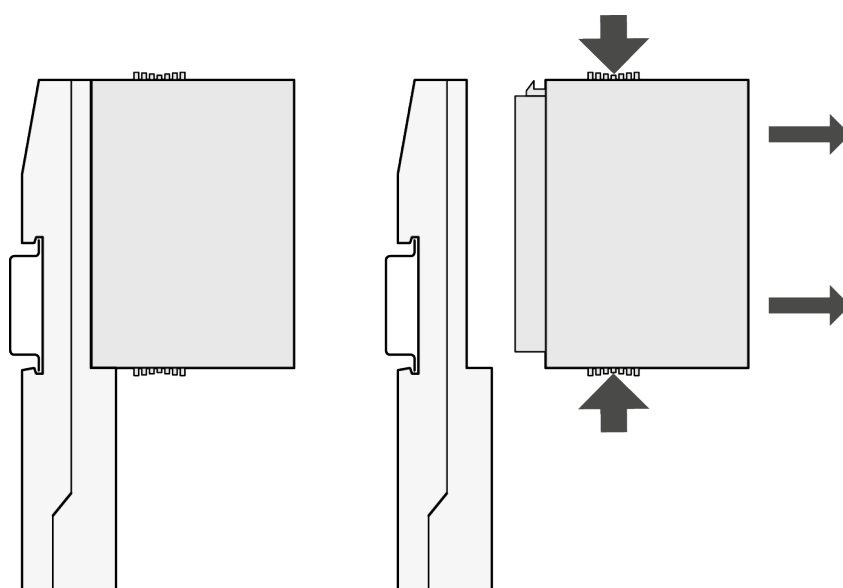


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

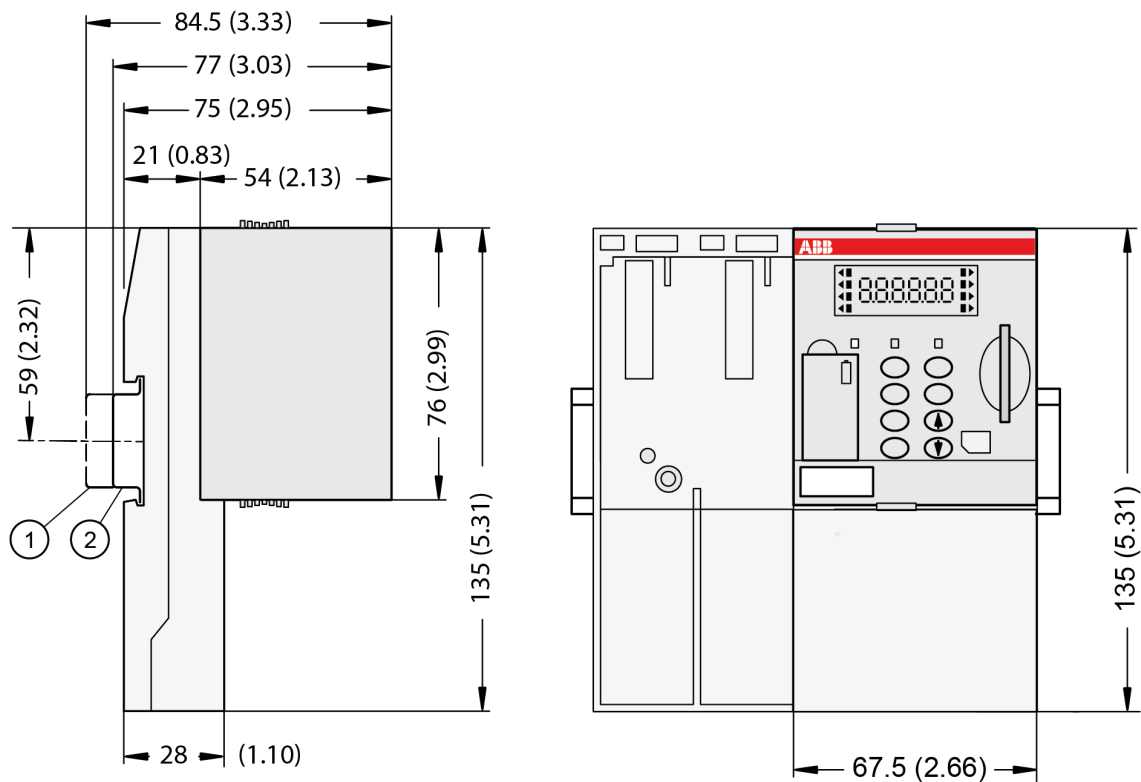
85.1 Assembly



85.2 Disassembly

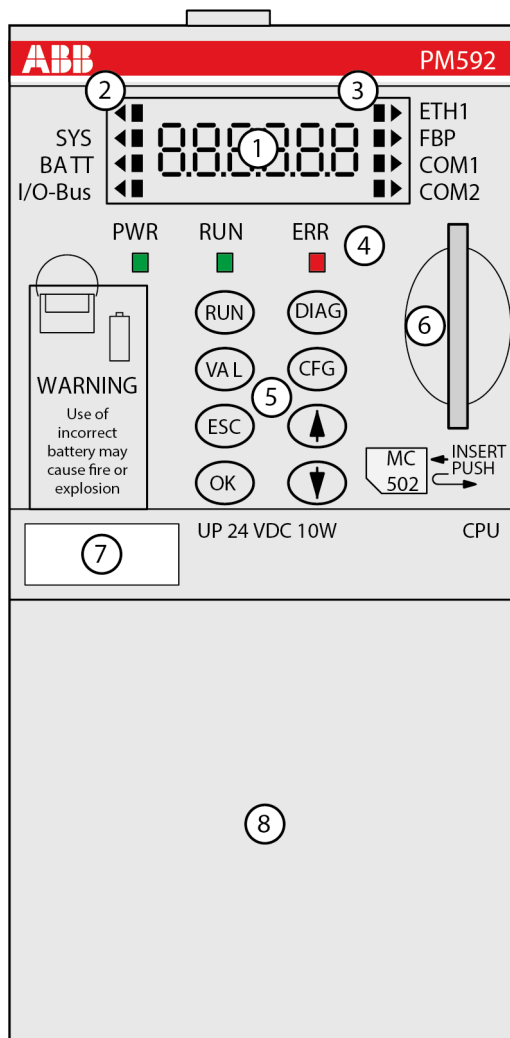


85.3 Dimensions



The dimensions are in mm and in brackets in inch.

85.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

85.5 Cleaning



Cleaning instructions

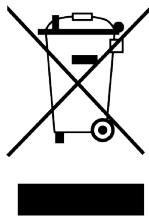
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

85.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

85.7 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

86 PM582(-XC)

- PM582
- PM582-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

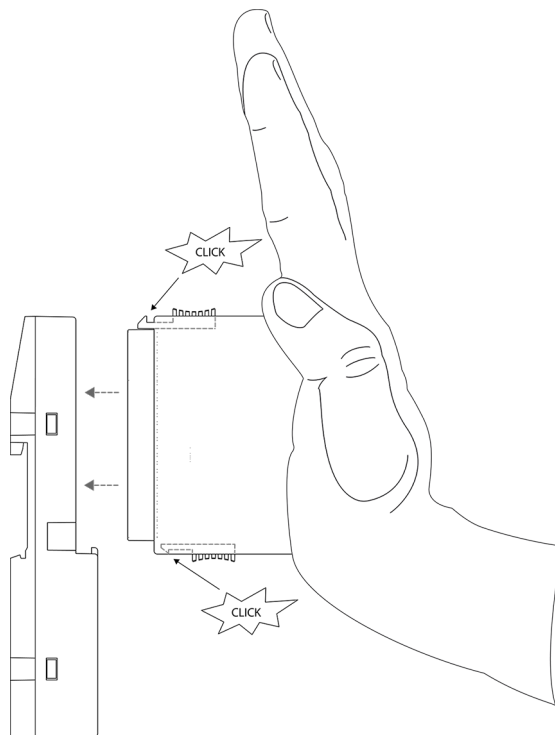


Processor module PM591-2ETH can only be used with TB523-2ETH.

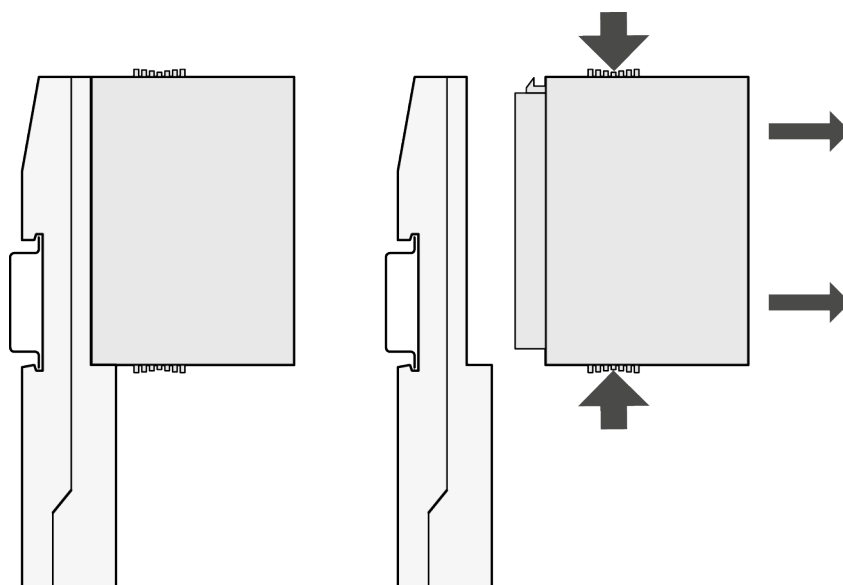


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

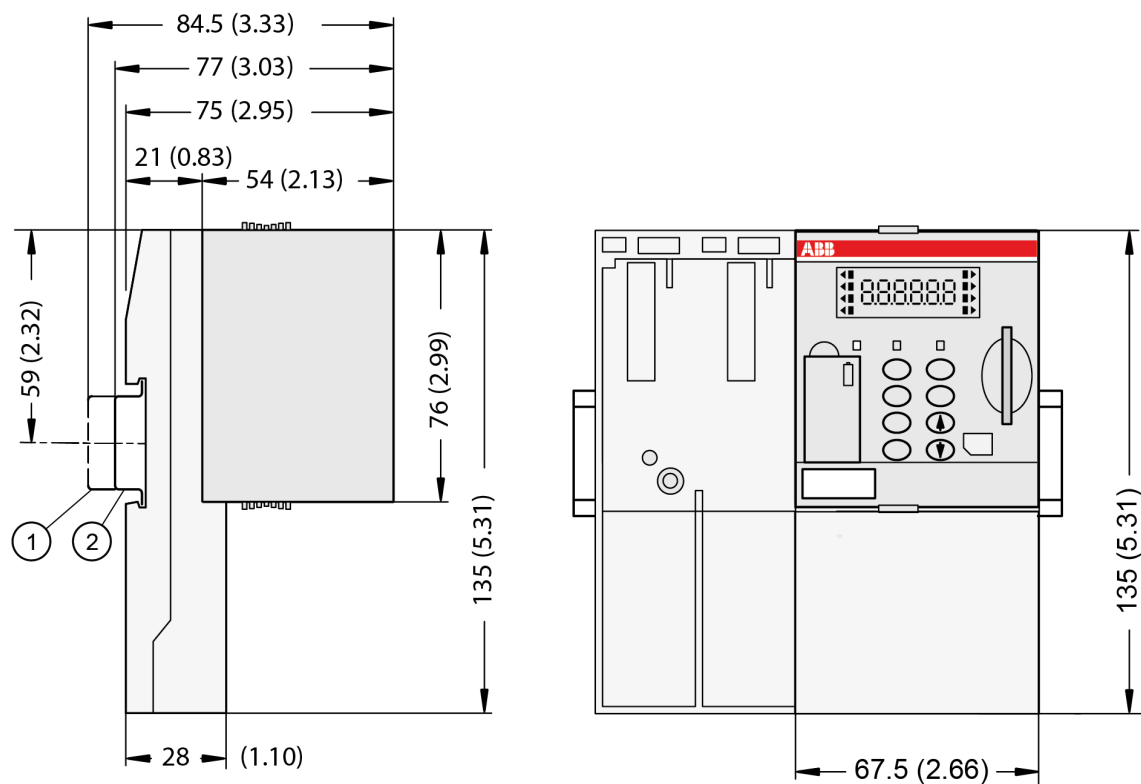
86.1 Assembly



86.2 Disassembly



86.3 Dimensions

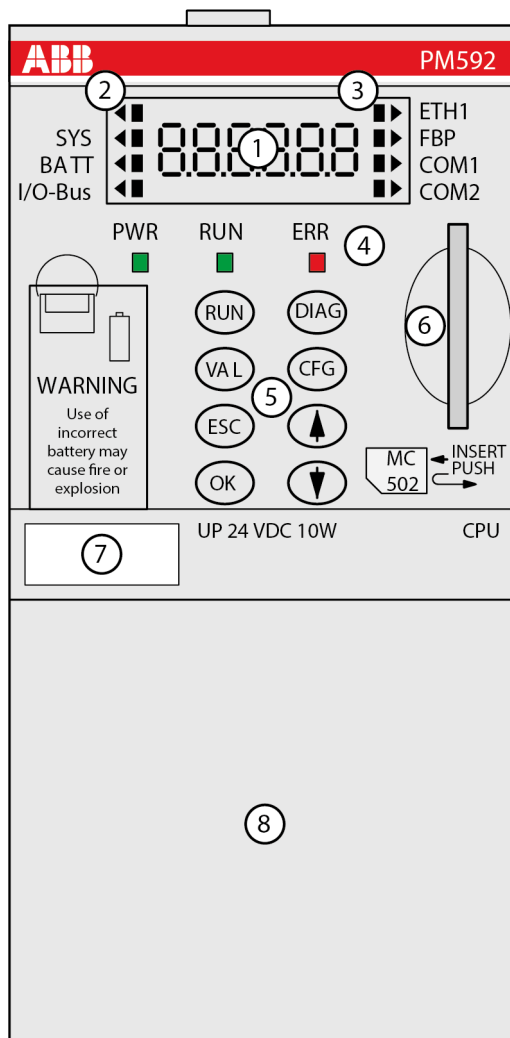


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

86.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

86.5 Cleaning



Cleaning instructions

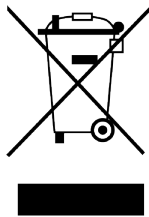
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

86.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

86.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

87 PM583-ETH(-XC)

- PM583-ETH
- PM583-ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

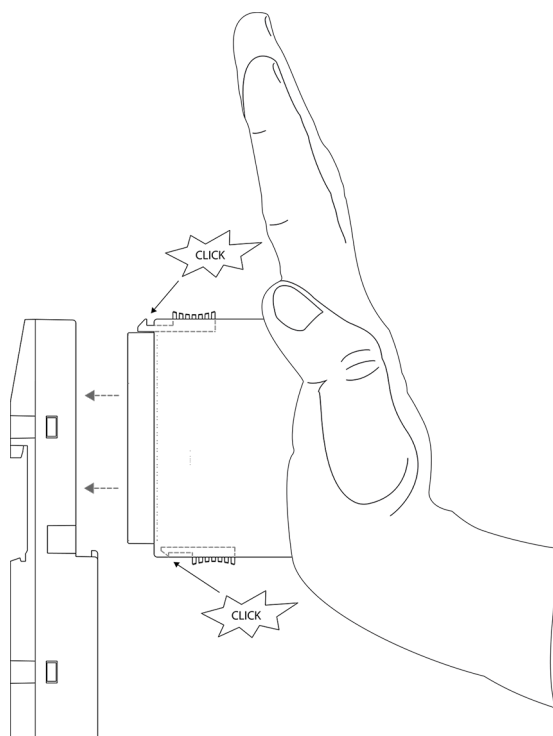


Processor module PM591-2ETH can only be used with TB523-2ETH.

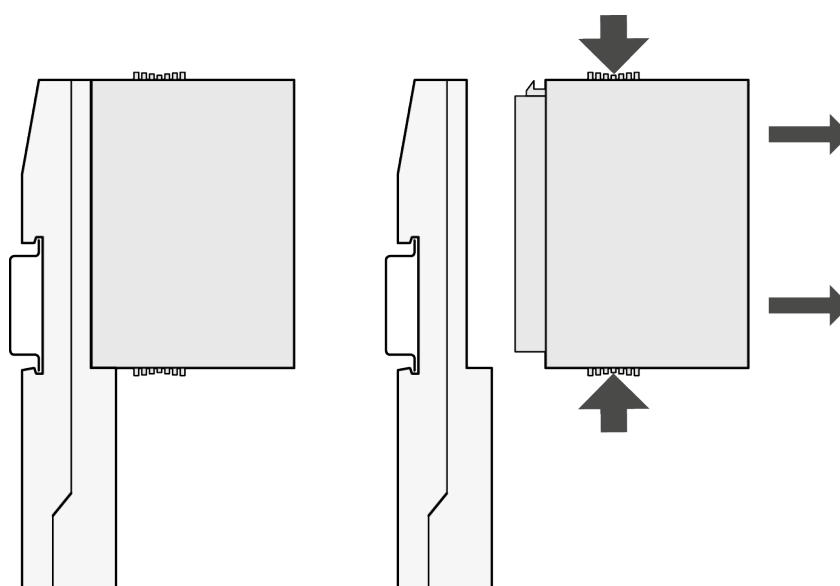


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

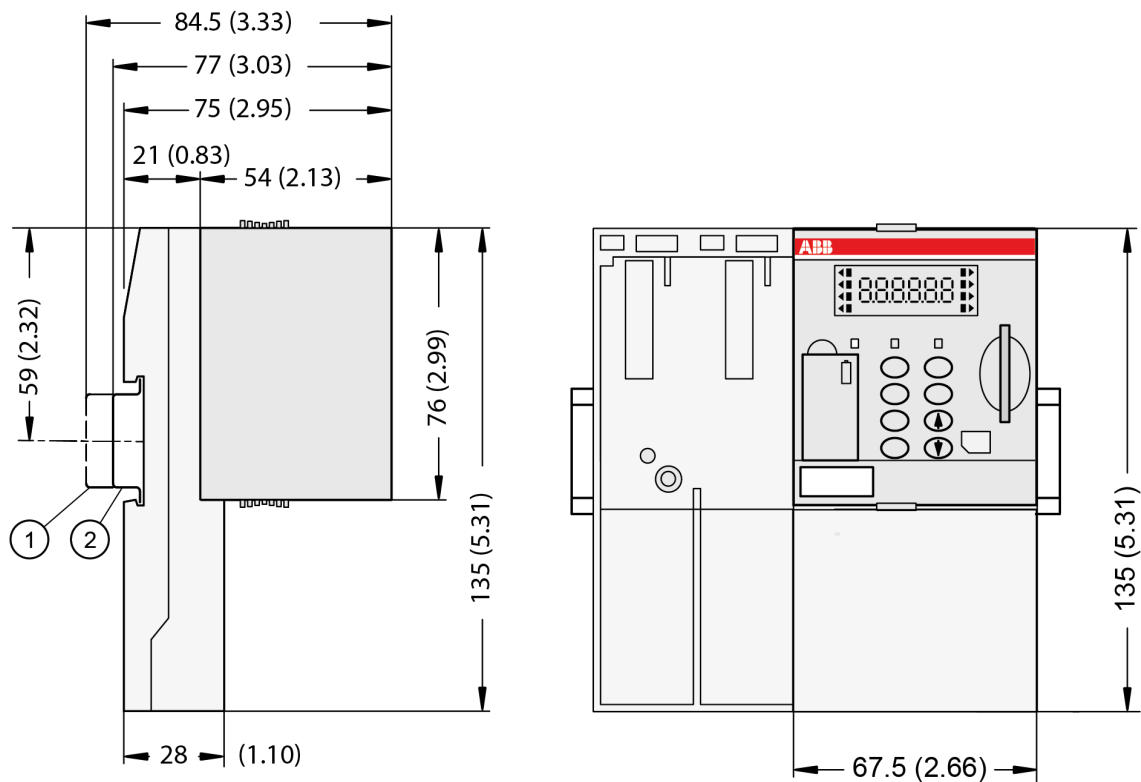
87.1 Assembly



87.2 Disassembly

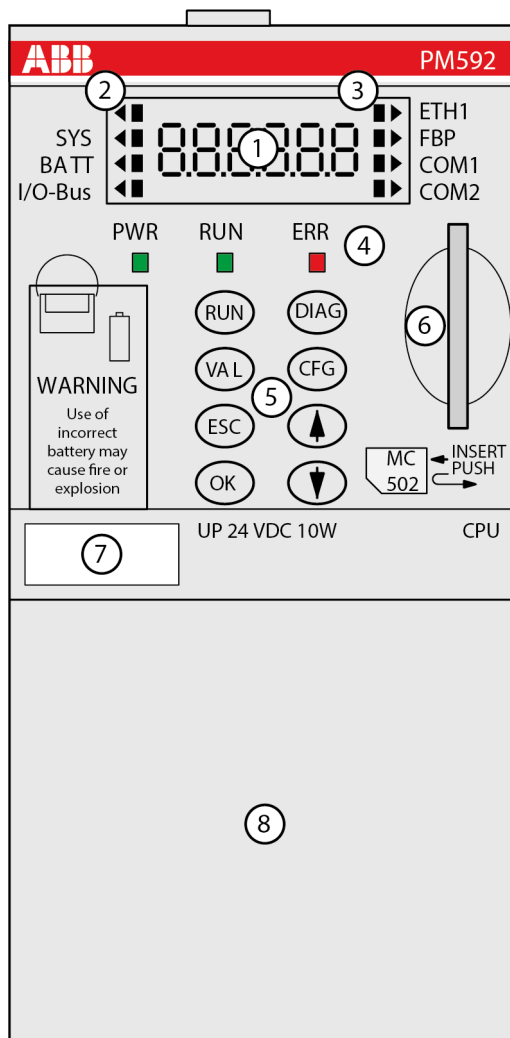


87.3 Dimensions



The dimensions are in mm and in brackets in inch.

87.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

87.5 Cleaning



Cleaning instructions

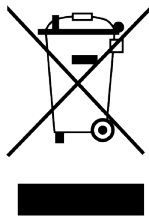
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

87.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

87.7 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

88 PM585-ETH

- PM585-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

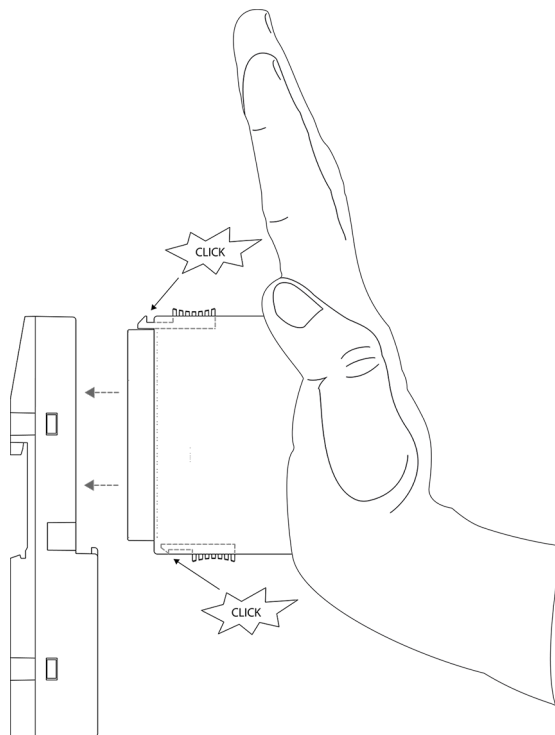


Processor module PM591-2ETH can only be used with TB523-2ETH.

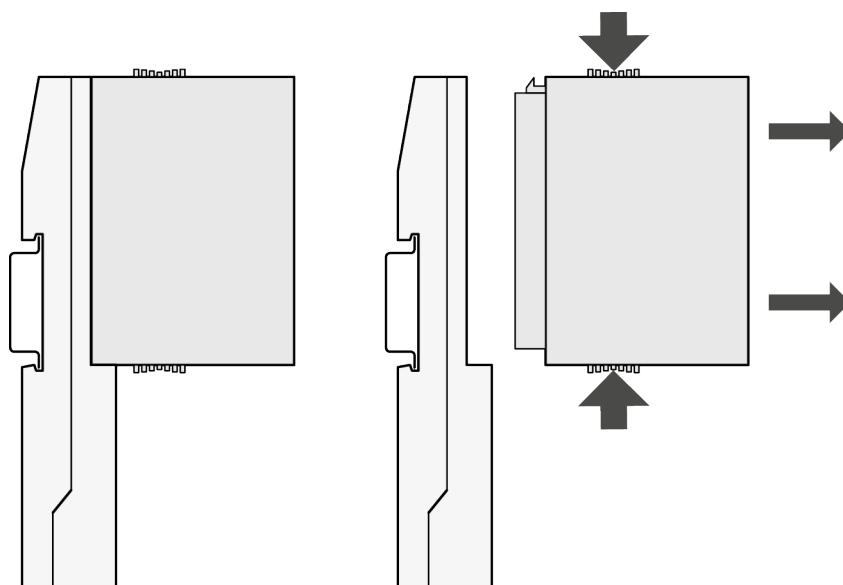


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

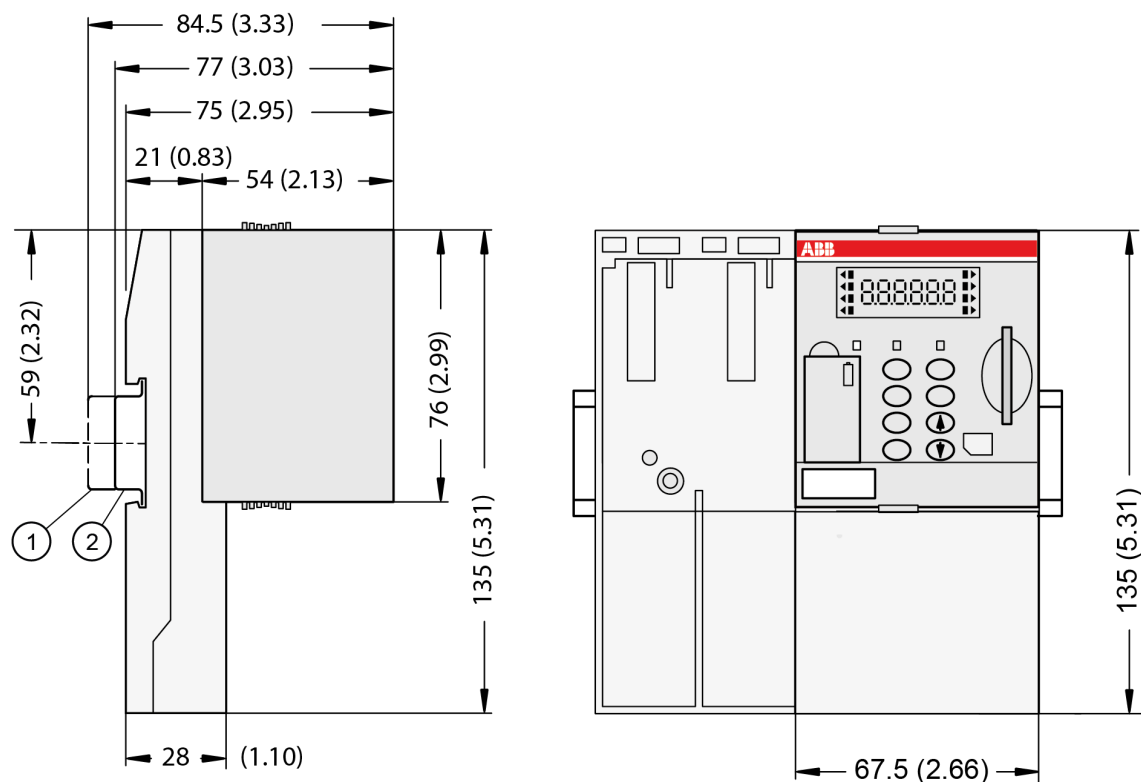
88.1 Assembly



88.2 Disassembly



88.3 Dimensions

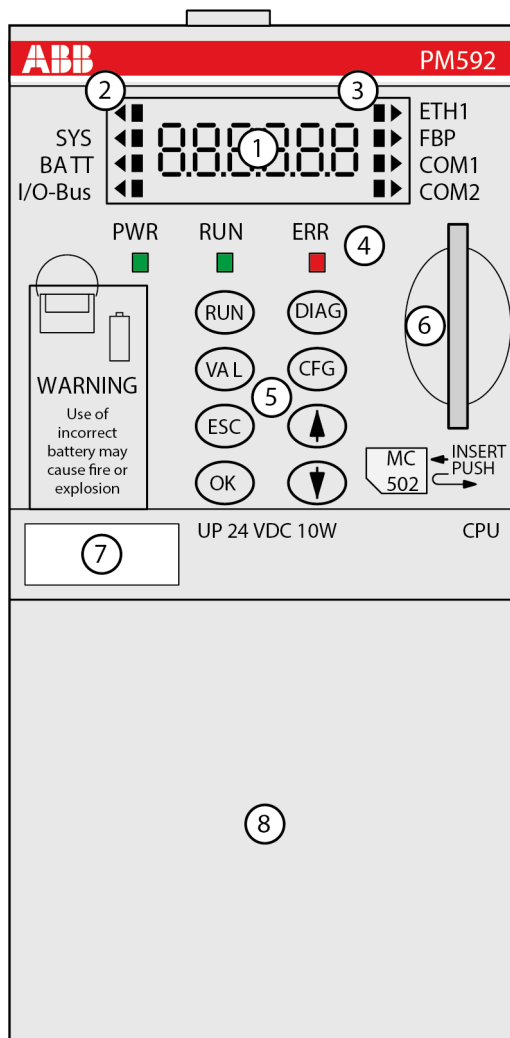


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

88.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

88.5 Cleaning



Cleaning instructions

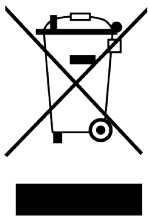
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

88.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

88.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

89 PM590-x

- PM590-ARCNET
- PM590-ETH



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

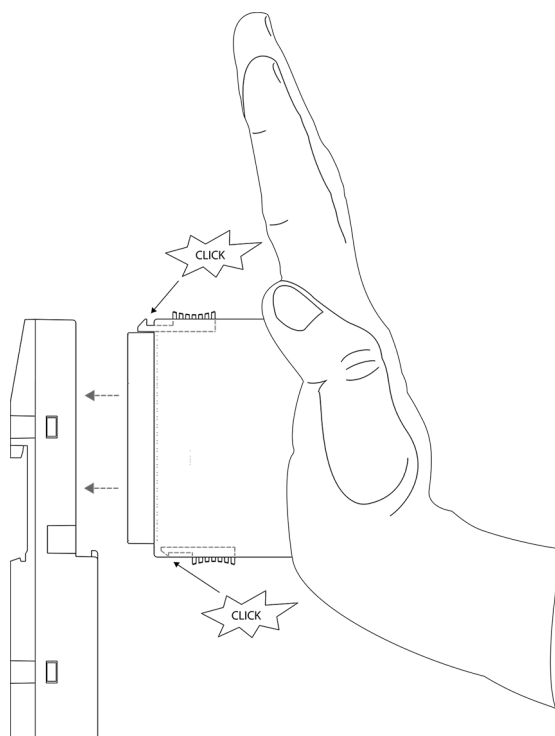


Processor module PM591-2ETH can only be used with TB523-2ETH.

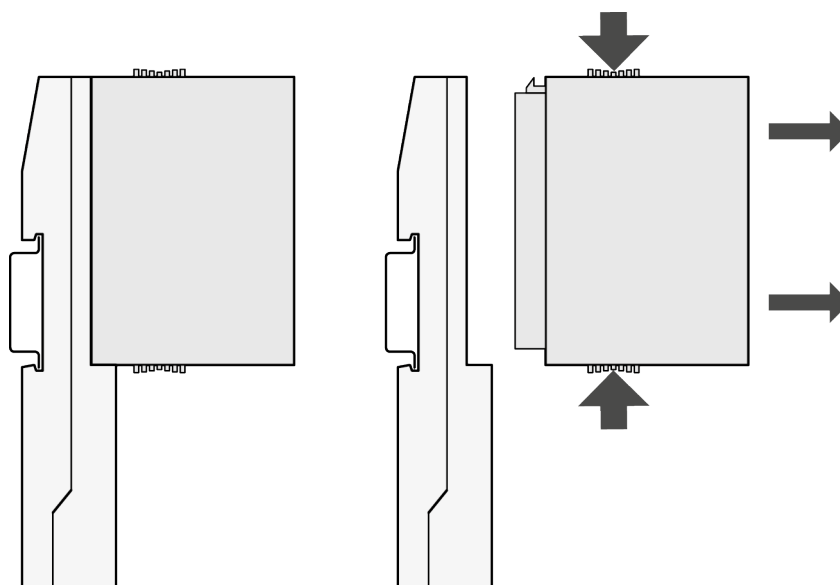


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

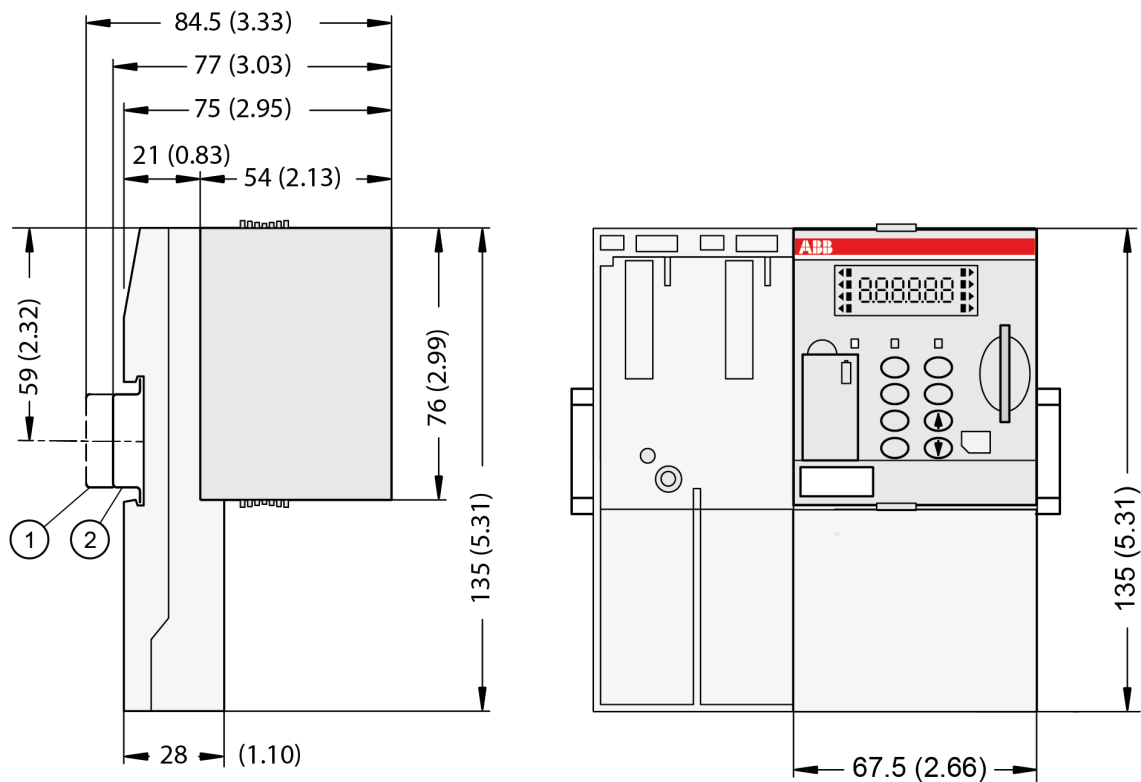
89.1 Assembly



89.2 Disassembly



89.3 Dimensions

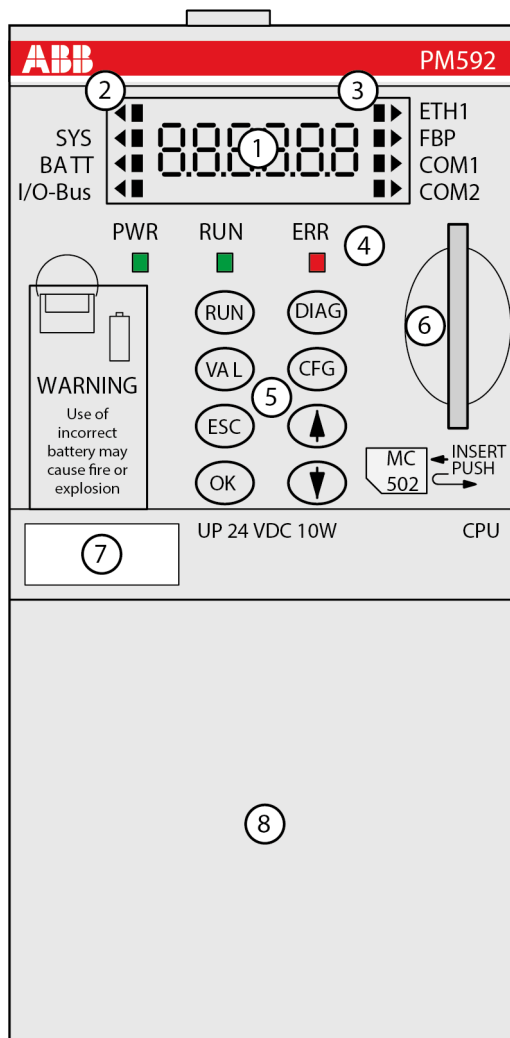


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

89.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

89.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

89.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

89.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

90 PM591-ETH(-XC)

- PM591-ETH
- PM591-ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

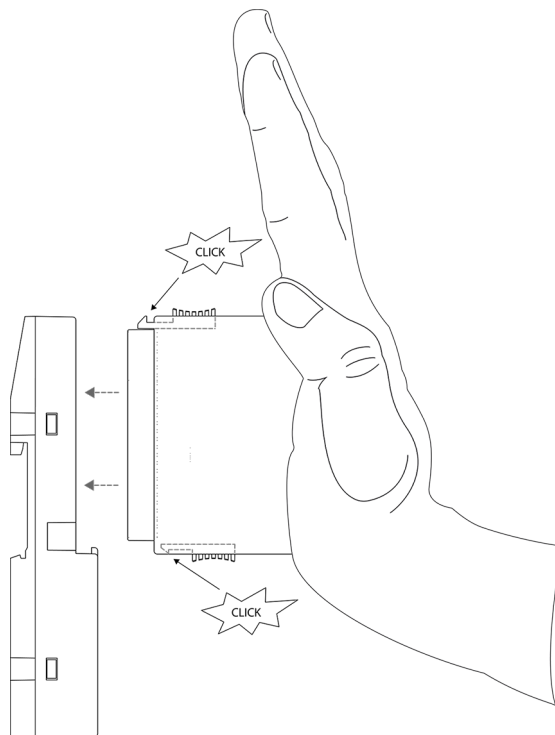


Processor module PM591-2ETH can only be used with TB523-2ETH.

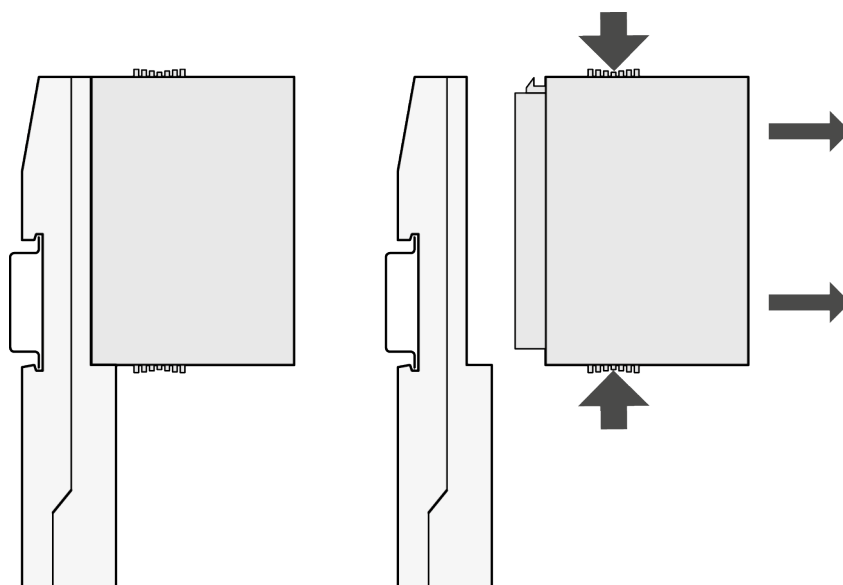


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

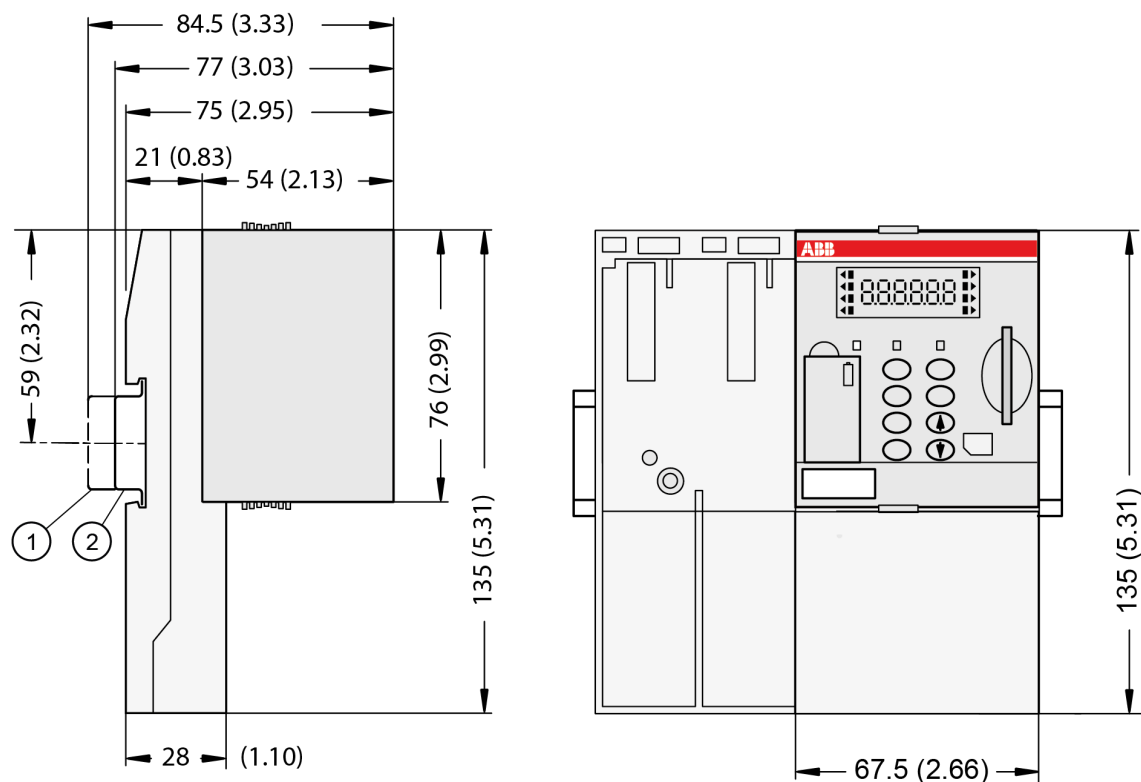
90.1 Assembly



90.2 Disassembly

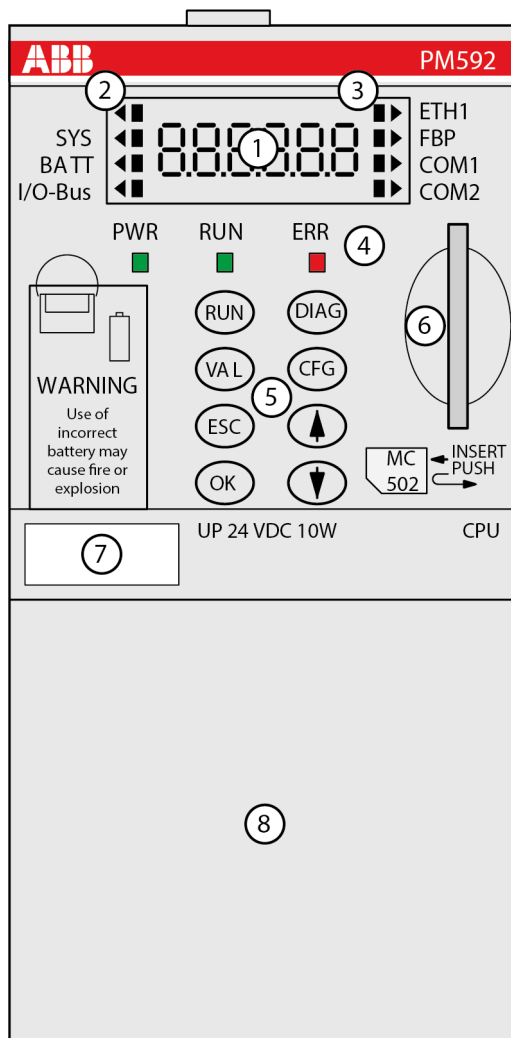


90.3 Dimensions



The dimensions are in mm and in brackets in inch.

90.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ✱ Sign for XC version

90.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

90.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

90.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

91 PM592-ETH(-XC)

- PM592-ETH
- PM592-ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



Processor modules PM57x-ETH, PM58x-ETH and PM59x-ETH with ordering No. 1SAPxxxxxxR0271 can only be used with terminal bases TB5xx with ordering No. 1SAPxxxxxxR0270.

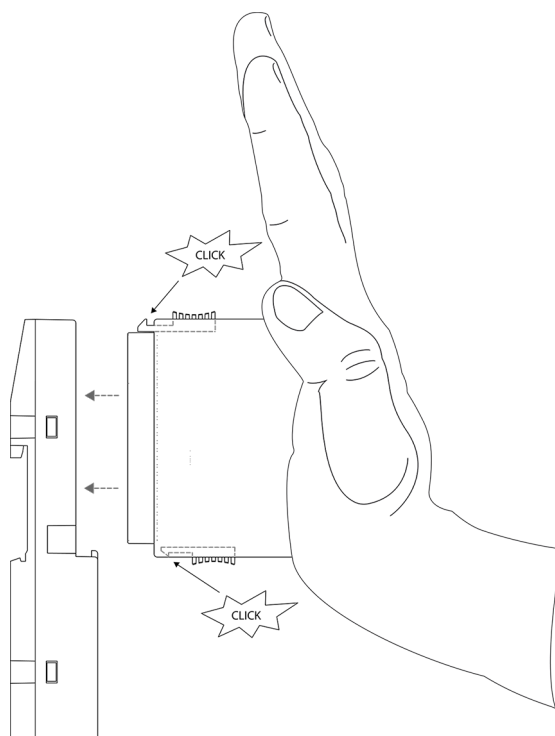


Processor module PM591-2ETH can only be used with TB523-2ETH.

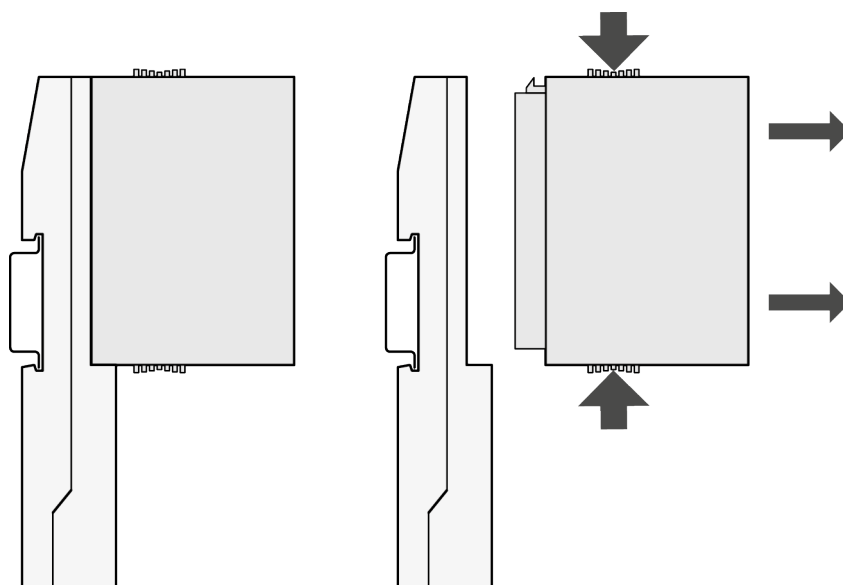


The processor modules PM59x-ETH can only be used with terminal bases TB5xx with product index C6 or higher. Otherwise, they should be updated to that index.

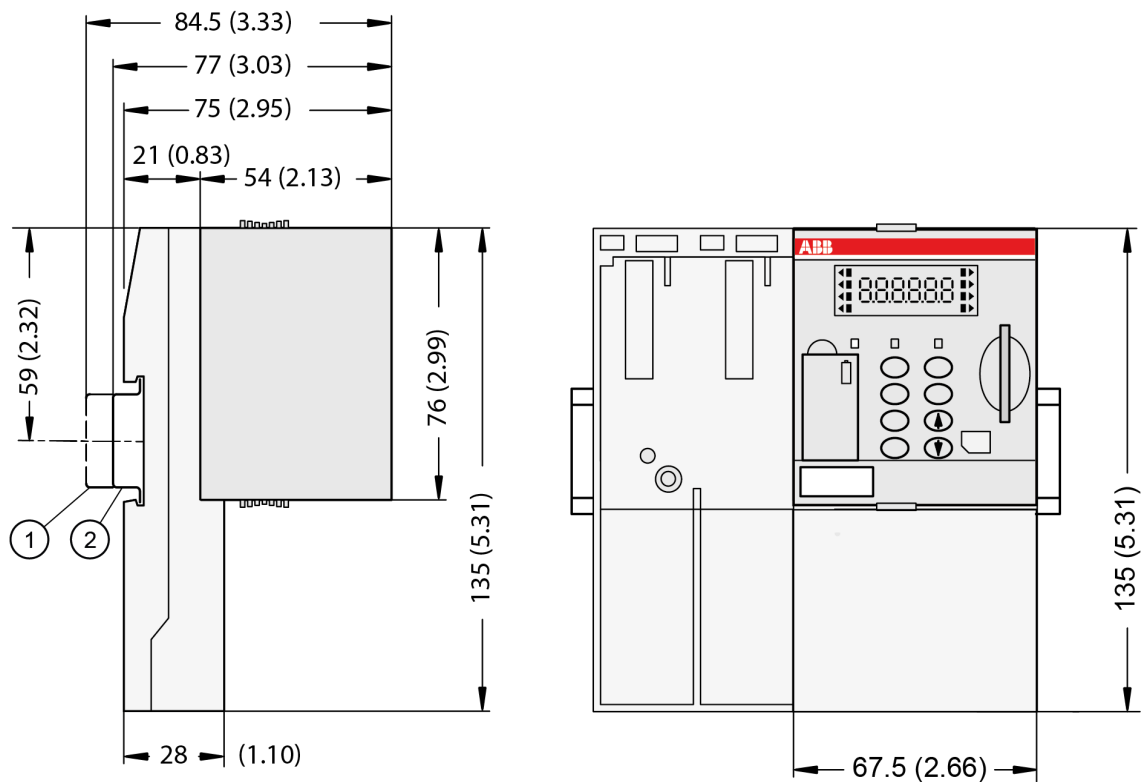
91.1 Assembly



91.2 Disassembly

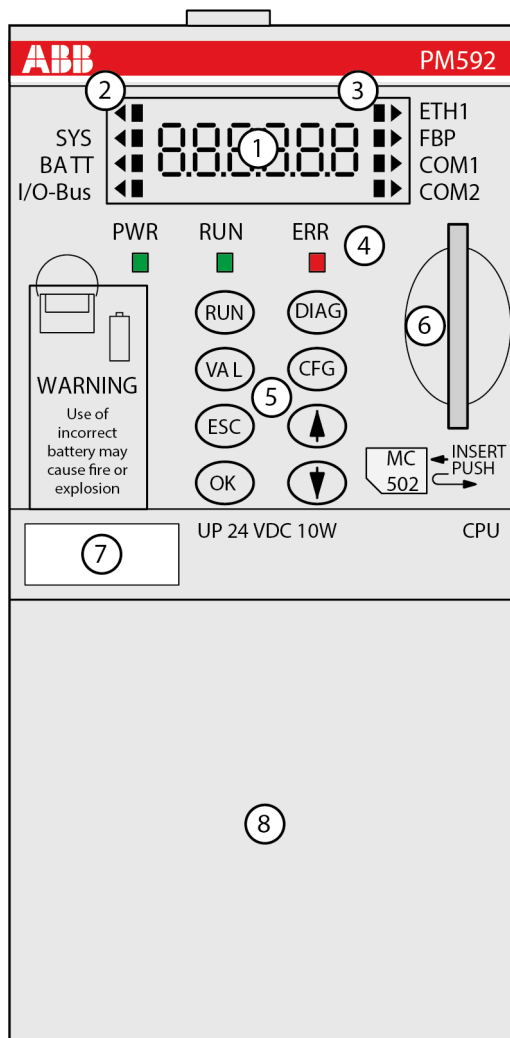


91.3 Dimensions



The dimensions are in mm and in brackets in inch.

91.4 Connections



- 1 Status displays (7-segment)
 - 2 Triangle displays for "Item"
 - 3 Square displays for "Status"
 - 4 Status LEDs
 - 5 Function keys
 - 6 Slot for memory card
 - 7 TA525: Label
 - 8 The connection part may be different on various terminal base types. See installation instructions of the specific terminal base suitable for this CPU for connection specifications.
- ❄ Sign for XC version

91.5 Cleaning



Cleaning instructions

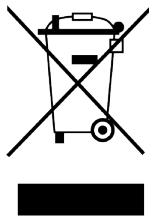
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

91.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

91.7 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

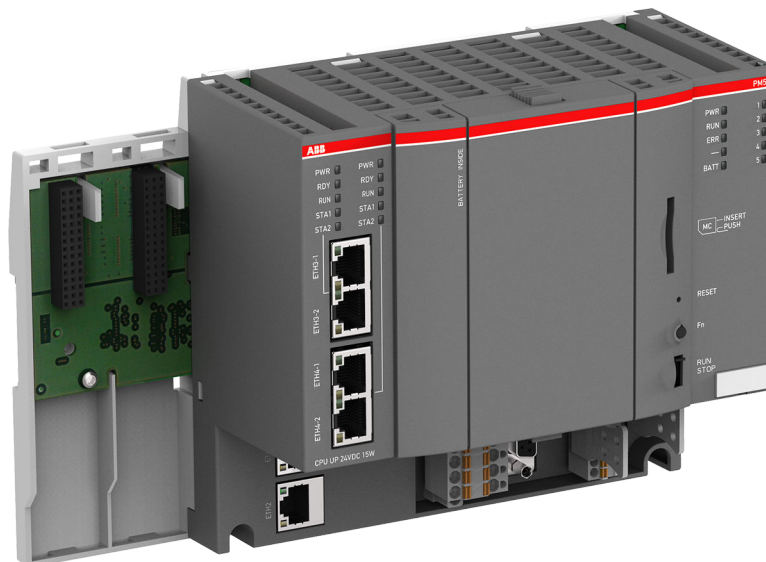
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

92 PM595-4ETH-x(-XC)

- PM595-4ETH-F
- PM595-4ETH-M-XC



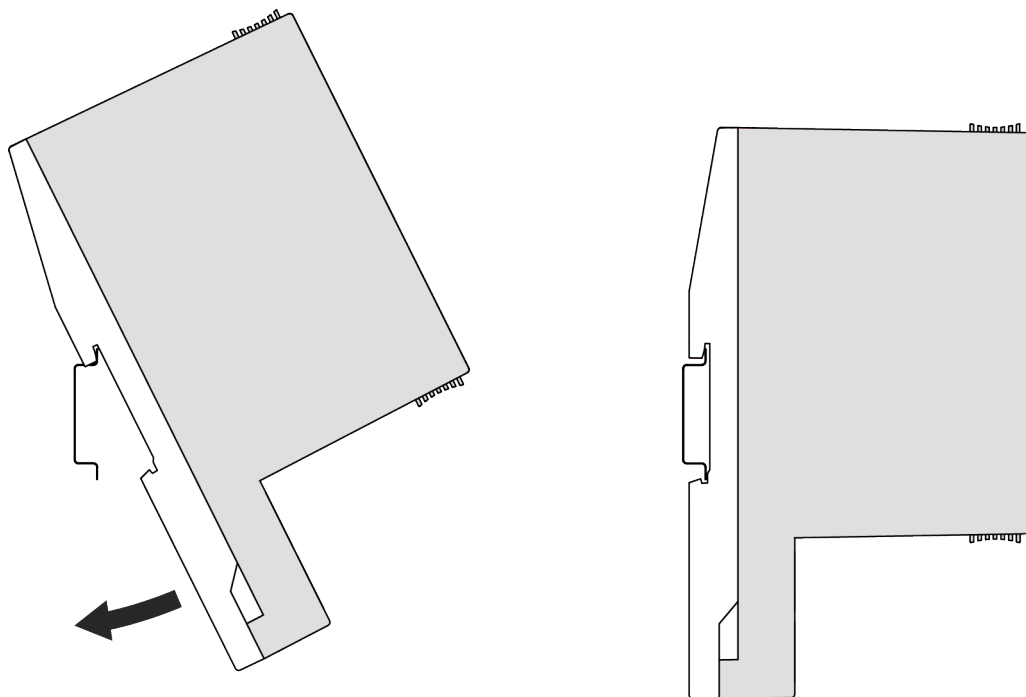
CAUTION!

Risk of injury and damaging the product!

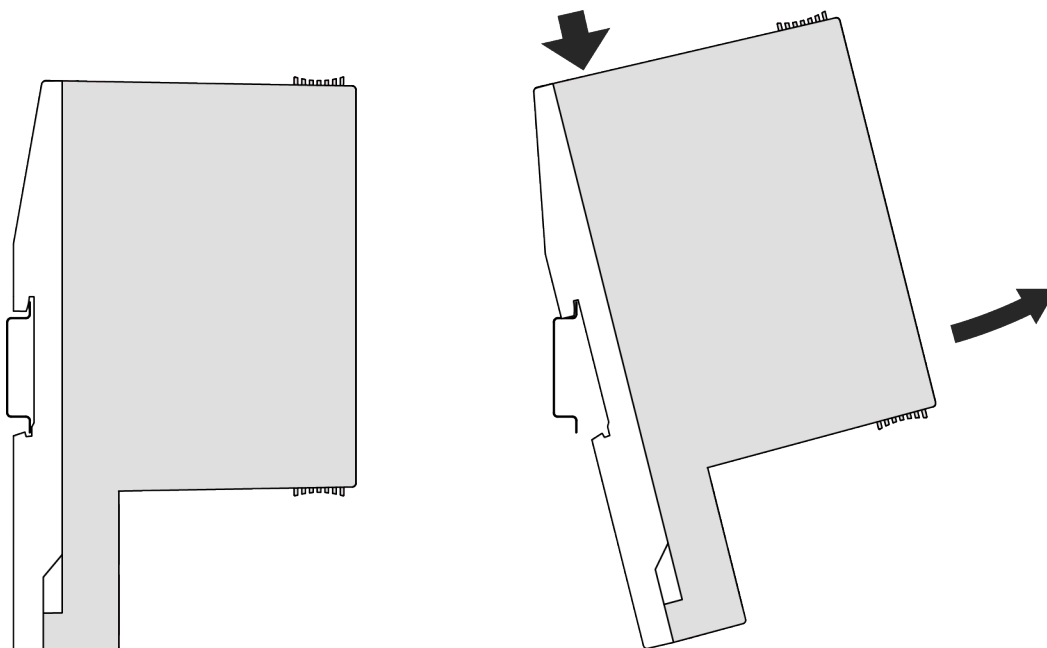
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

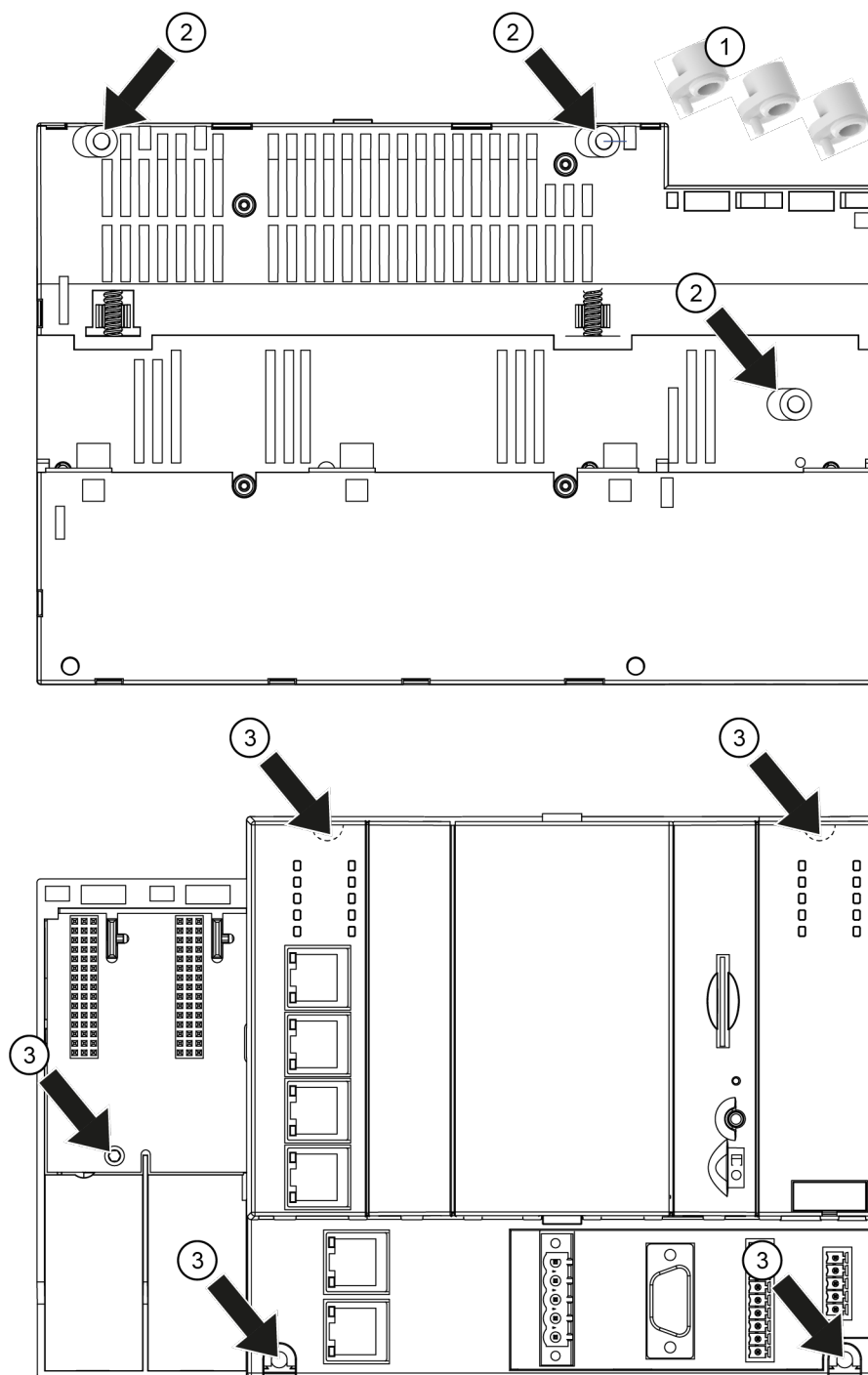
92.1 Assembly



92.2 Disassembly



92.3 Assembly with screws



- 1 3 parts of TA543 screw mounting accessory
- 2 3 slots for TA543 screw mounting accessory
- 3 5 holes for screw mounting

1. Insert 3 parts of the TA543 screw mounting accessory into the slots on the back side of the processor module.



NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA543 screw mounting accessory (1SAP182800R0001) is mandatory to prevent bending and damage to the module.

2. Fasten the processor module with 5 screws (M4, max 1.2 Nm) from the front side.



With screw mounting, the processor module is grounded through the screws.

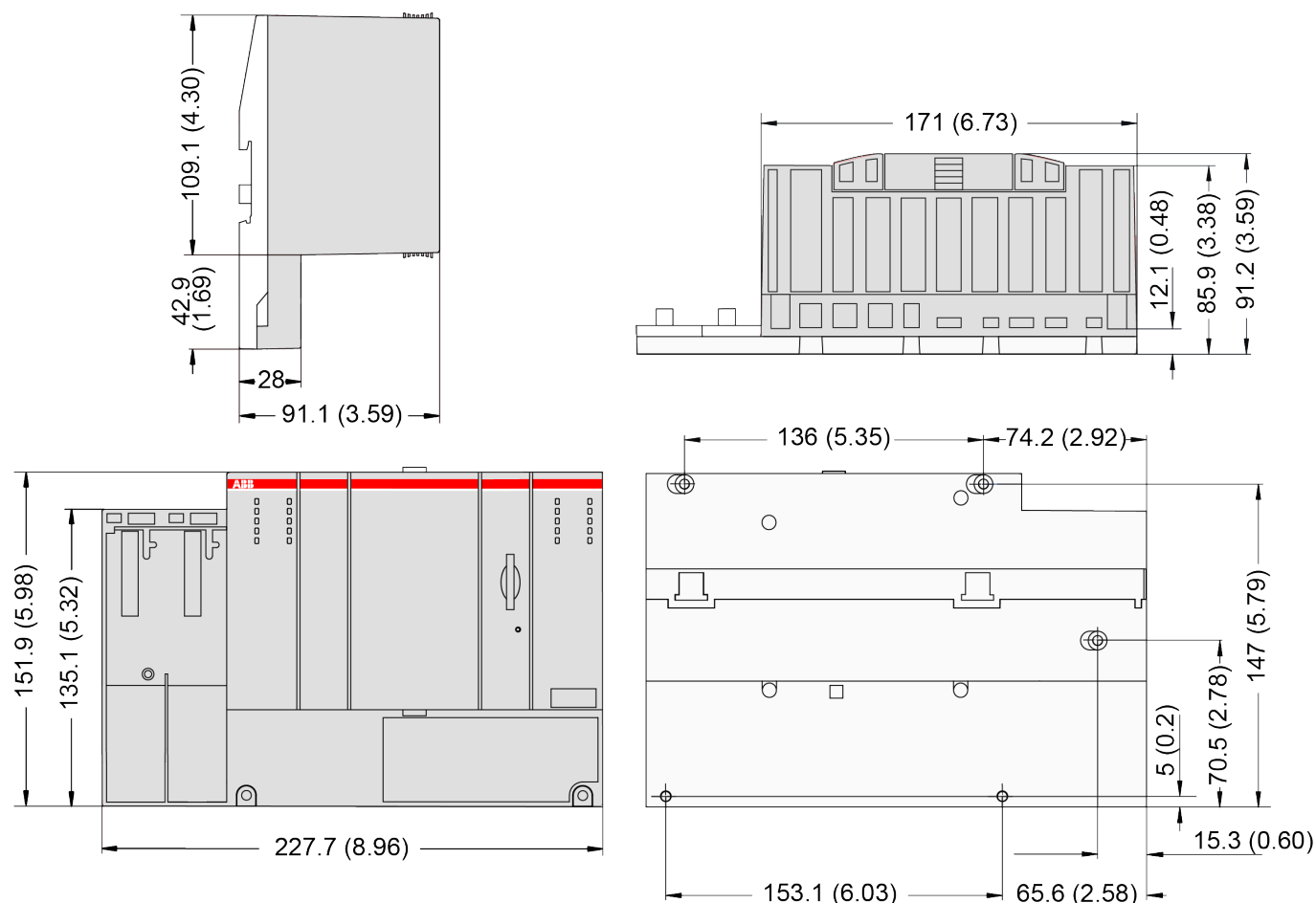
It is necessary that

- *the screws have a conductive surface (e.g. steel zinc-plated or brass nickel-plated)*
- *the mounting plate is grounded*
- *the screws have a good electrical contact to the mounting plate*



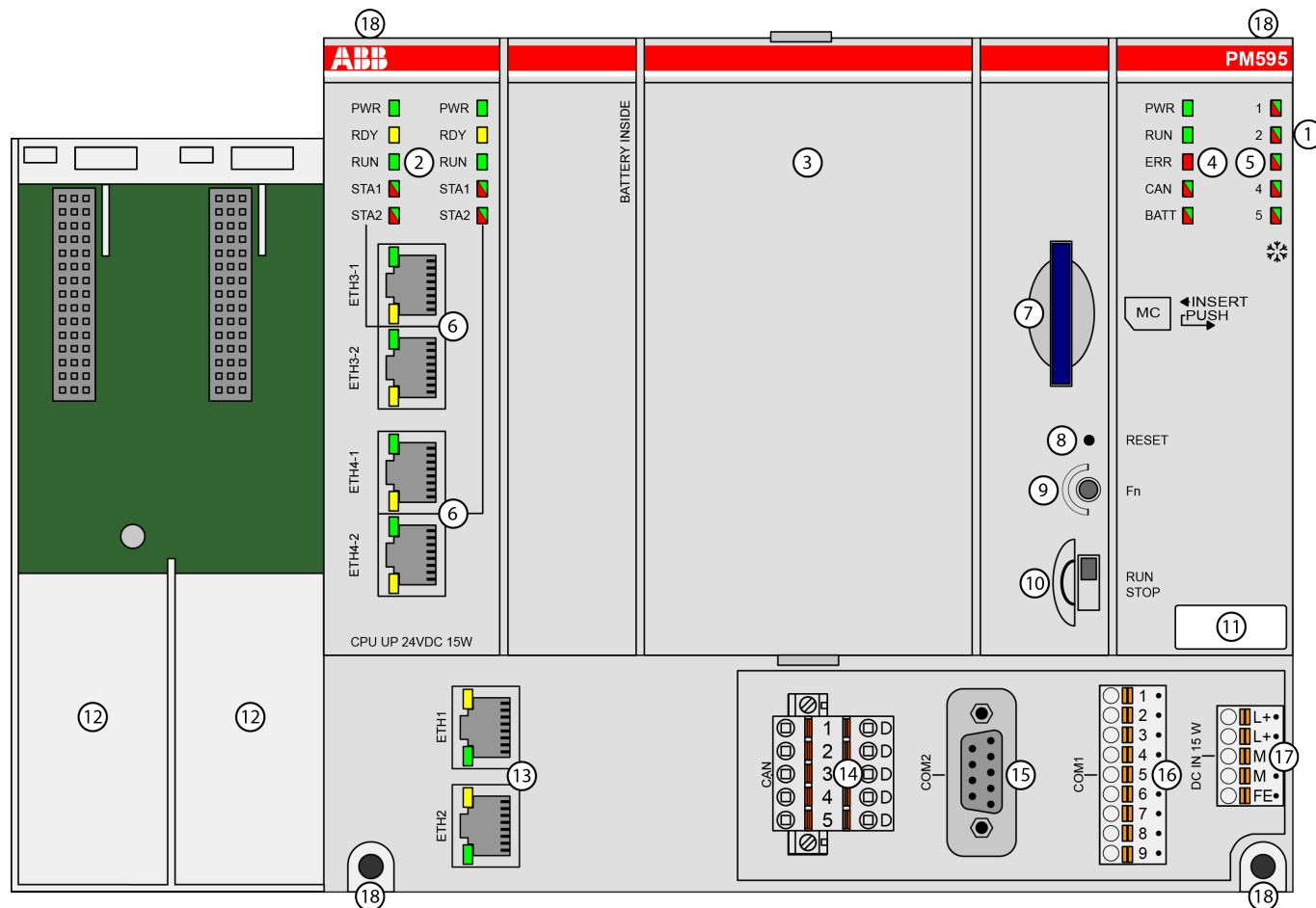
To prevent the screw from loosening after prolonged use, a thread lock washer is highly recommended.

92.4 Dimensions



The dimensions are in mm and in brackets in inch.

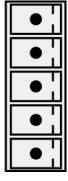
92.5 Connections



- | | |
|--|---|
| 1 I/O bus for connection of I/O modules | 11 Label |
| 2 2x 5 LEDs to display the states of the fieldbuses | 12 Slots for communication modules (max 2; unused slots must be covered with TA524) |
| 3 Cover for battery and display | 13 2 RJ45 interfaces for Ethernet connection |
| 4 5 LEDs to display the states of the processor module | 14 5-pin terminal block (reserved) |
| 5 5 LEDs (reserved) | 15 Serial interface COM2 (D-sub 9) |
| 6 2x2 RJ45 interfaces for fieldbuses | 16 Serial interface COM1 (9-pin terminal block, removable) |
| 7 Slot for memory card | 17 Power supply (5-pin terminal block, removable) |
| 8 Reset button | 18 5 holes for screw mounting |
| 9 Button (reserved) | *** Sign for XC version |
| 10 RUN/STOP switch | |

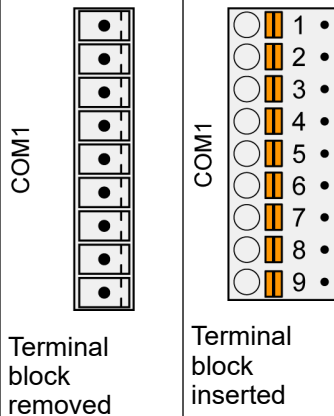
92.5.1 Power supply

Pin assignment

Pin Assignment	Label	Function	Description
 Terminal block removed	L+	+24 V DC	Positive pin of the power supply voltage
	L+	+24 V DC	Positive pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	FE	FE	Functional earth

92.5.2 Serial interface COM1

Pin assignment
(RS-485 /
RS-232)

	Pin	Signal	Interface	Description
 Terminal block removed Terminal block inserted	1	Terminator P	RS-485	Terminator P
	2	RxD/TxD-P	RS-485	Receive/Transmit, positive
	3	RxD/TxD-N	RS-485	Receive/Transmit, negative
	4	Terminator N	RS-485	Terminator N
	5	RTS	RS-232	Request to send (output)
	6	TxD	RS-232	Transmit data (output)
	7	SGND	Signal Ground	Signal Ground
	8	RxD	RS-232	Receive data (input)
	9	CTS	RS-232	Clear to send (input)



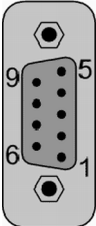
NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

92.5.3 Serial interface COM2

Pin assignment

Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!

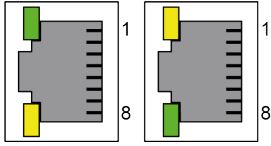
Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

92.5.4 Ethernet network interface

Pin assignment

	Pin	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

92.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

92.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

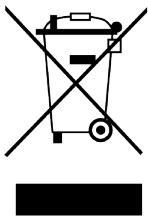
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

92.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

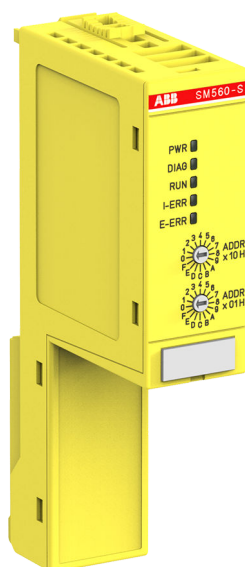
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

93 SM560-S(-FD-x)(-XC)

- SM560-S
- SM560-S-XC
- SM560-S-FD-1
- SM560-S-FD-1-XC
- SM560-S-FD-4
- SM560-S-FD-4-XC



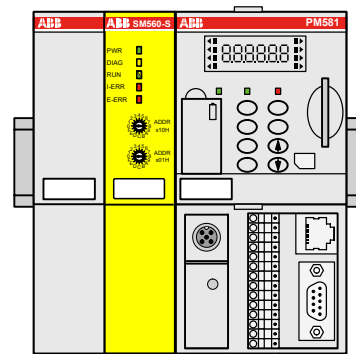
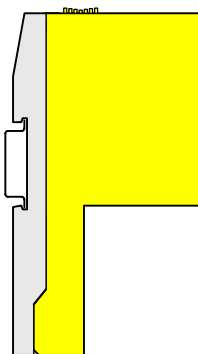
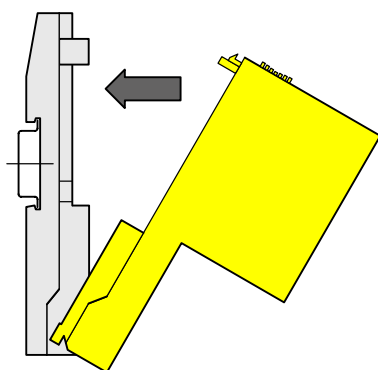
CAUTION!

Risk of injury and damaging the product!

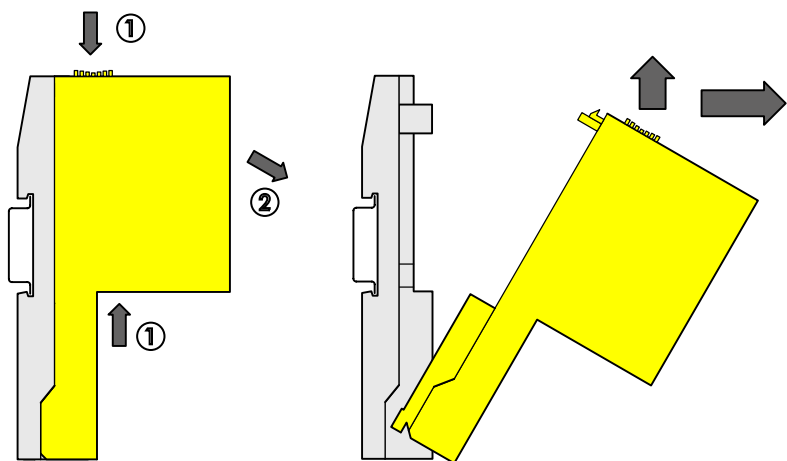
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

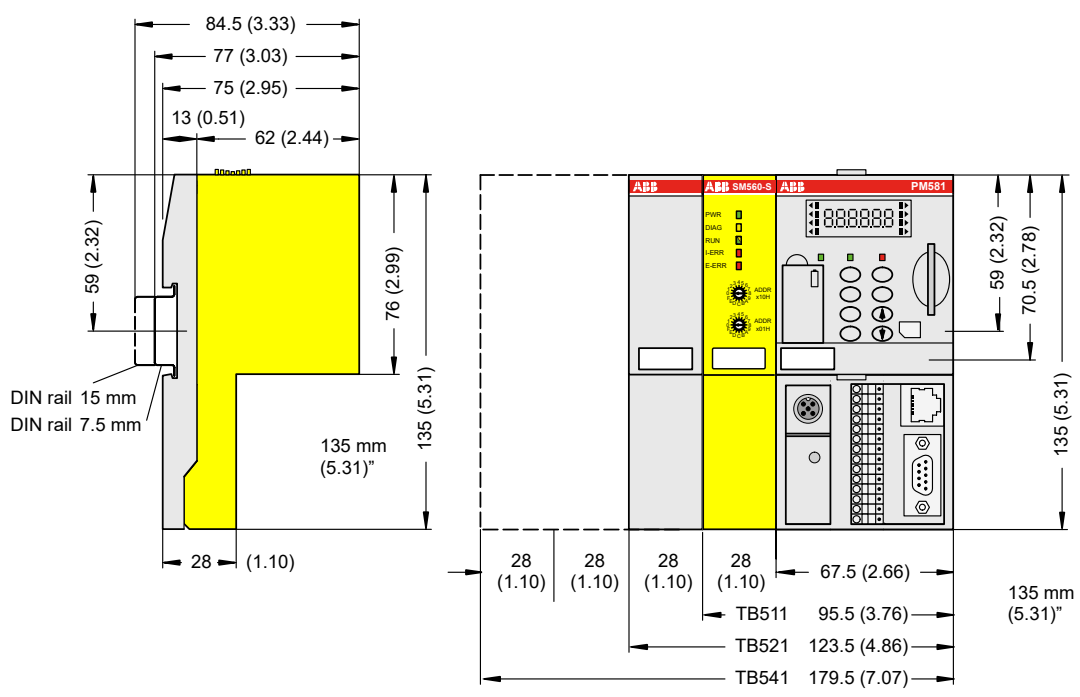
93.1 Assembly



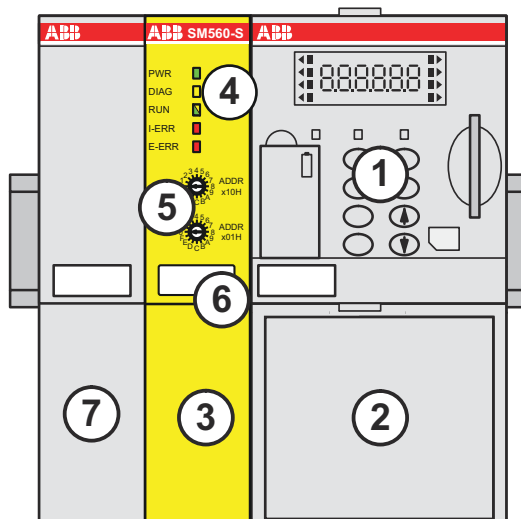
93.2 Disassembly



93.3 Dimensions



93.4 Connections



- 1 CPU
- 2 Connectors of the CPU
- 3 Safety CPU
- 4 System LEDs
- 5 2 rotary switches for address/configuration
- 6 TA525 Label
- 7 TA524 Dummy communication module
-  Sign for XC version

93.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

93.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

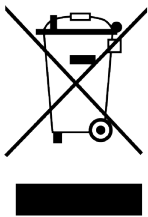
KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

93.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

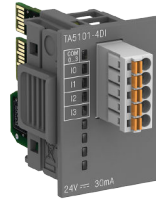
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

94 TA5101-4DI(W) - Option board for digital I/O extension

- TA5101-4DI
- TA5101-4DIW



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



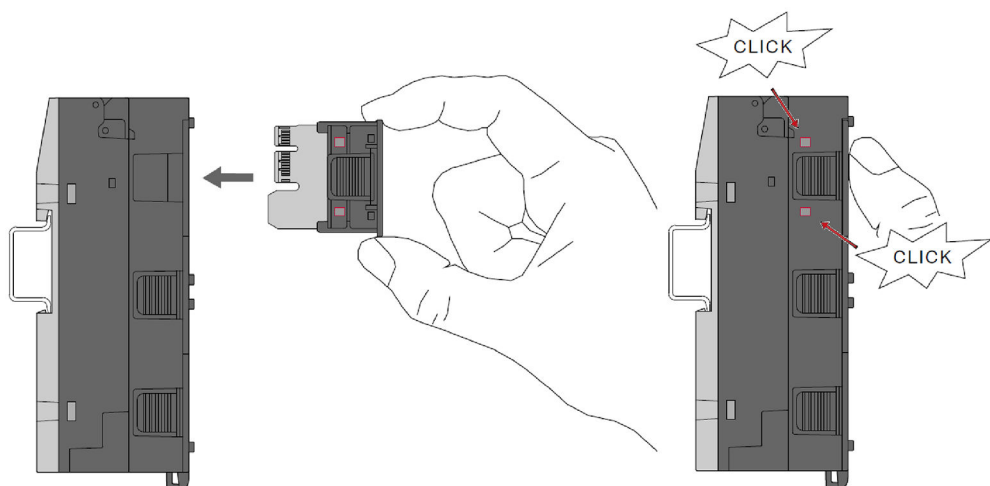
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

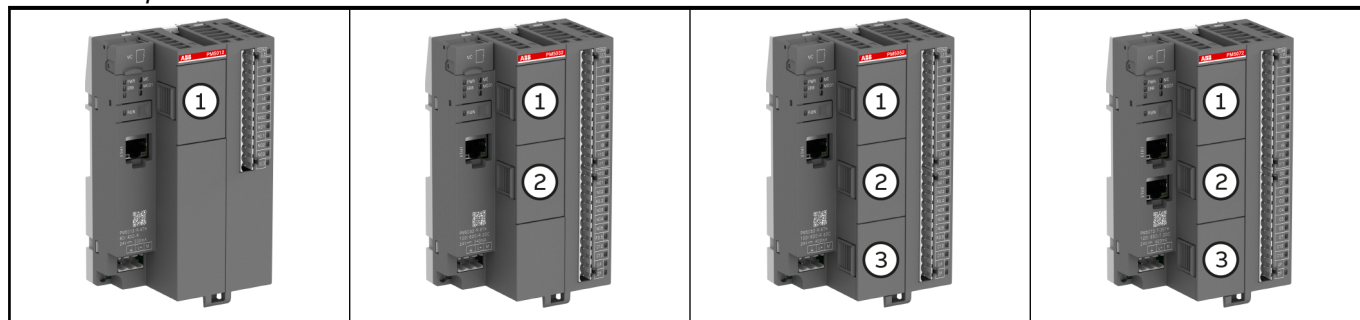
94.1 Assembly



94.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 62: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

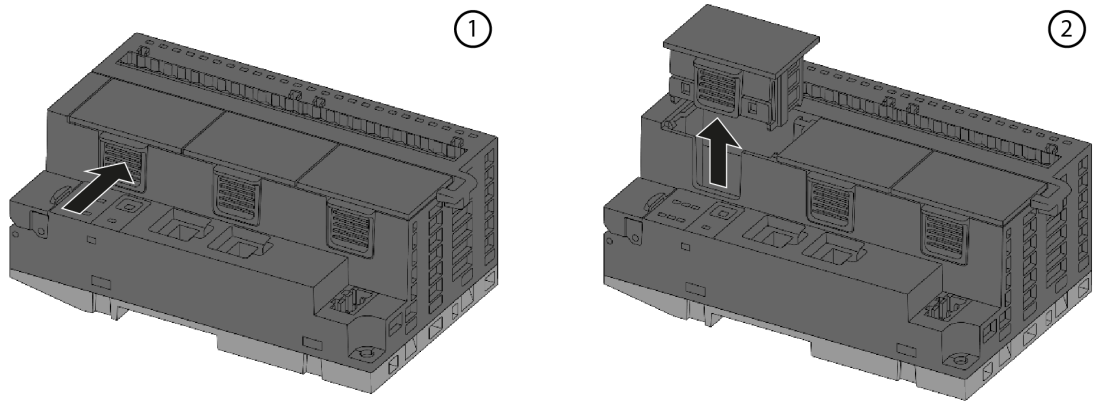
Table 63: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

94.2 Disassembly



CAUTION!

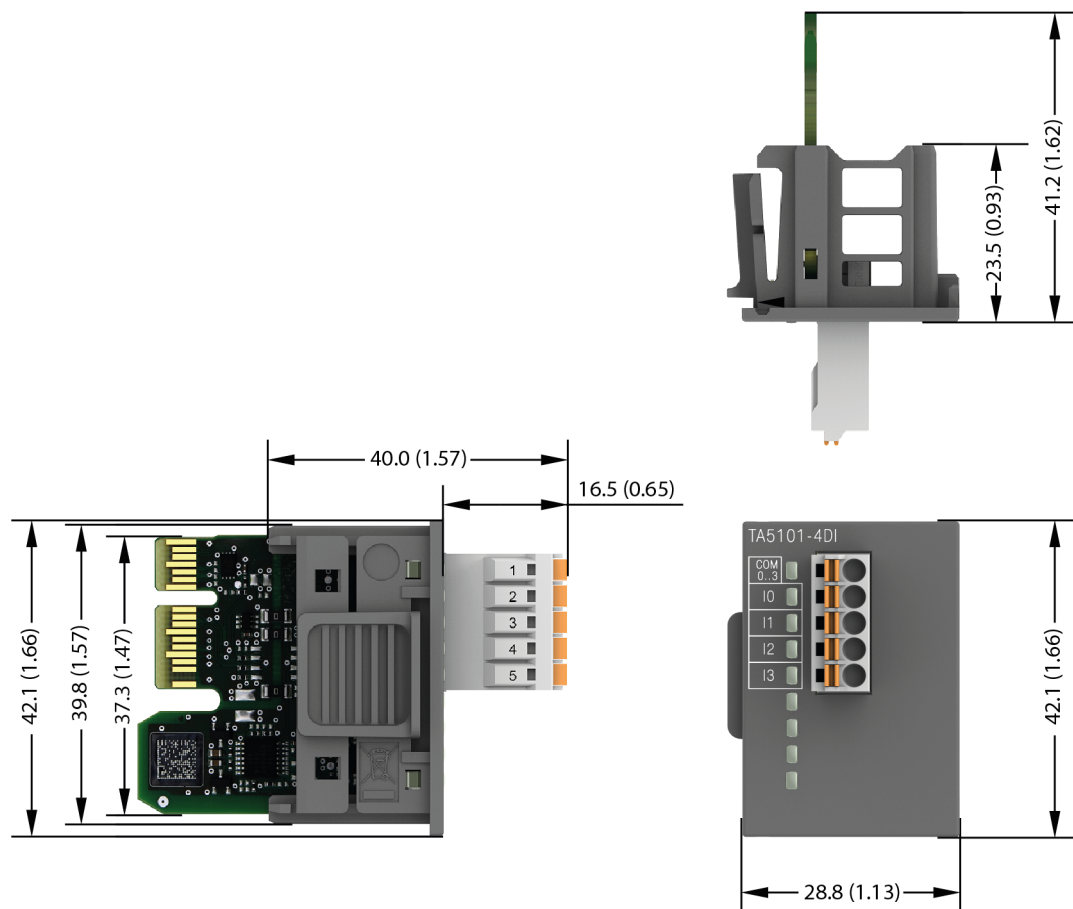
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.

If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

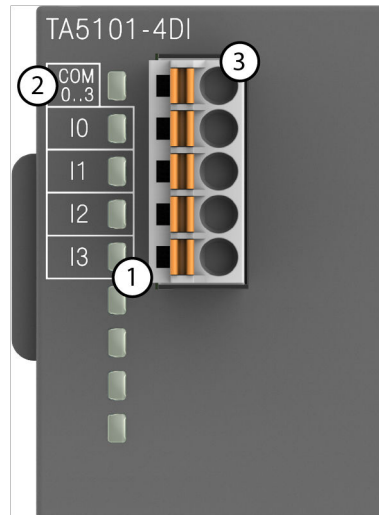
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

94.3 Dimensions



The dimensions are in mm and in brackets in inch.

94.4 Connections



- 1 4 yellow LEDs to display the signal states at the digital inputs I0 to I3
- 2 Allocation of signal name
- 3 5-pin terminal block for input signals



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.

The digital inputs can be used as source inputs or as sink inputs.



NOTICE!

Risk of malfunctions in the plant!

A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.



NOTICE!

Risk of malfunctions in the plant!

Only if L+/M of the CPU is available and the outputs are already configured in the AB program, the outputs will switch on as soon as the UP/ZP is available.

This must be considered in the application planning.



NOTICE!

Risk of damaging the I/O module!

The outputs are not protected against short circuits and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external 3 A fast-protection fuse for the outputs.

94.4.1 Inputs/Outputs

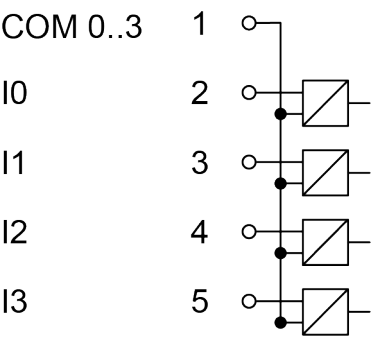
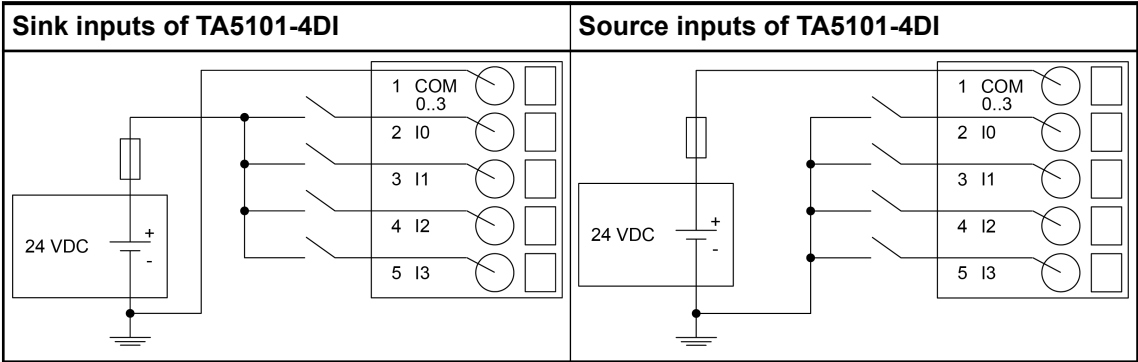


Table 64: Assignment of the terminals:

Terminal	Signal	Description
1	COM 0..3	Input common for signals I0 to I3
2	I0	Input signal I0
3	I1	Input signal I1
4	I2	Input signal I2
5	I3	Input signal I3

Table 65: Connection of the option board for digital I/O extension TA5101-4DI



94.5 Cleaning



Cleaning instructions

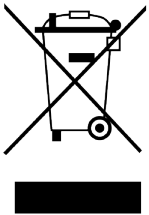
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

94.6 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

94.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

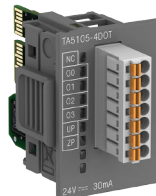
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

95 TA5105-4DOT(W) - Digital output module option board

- TA5105-4DOT
- TA5105-4DOTW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



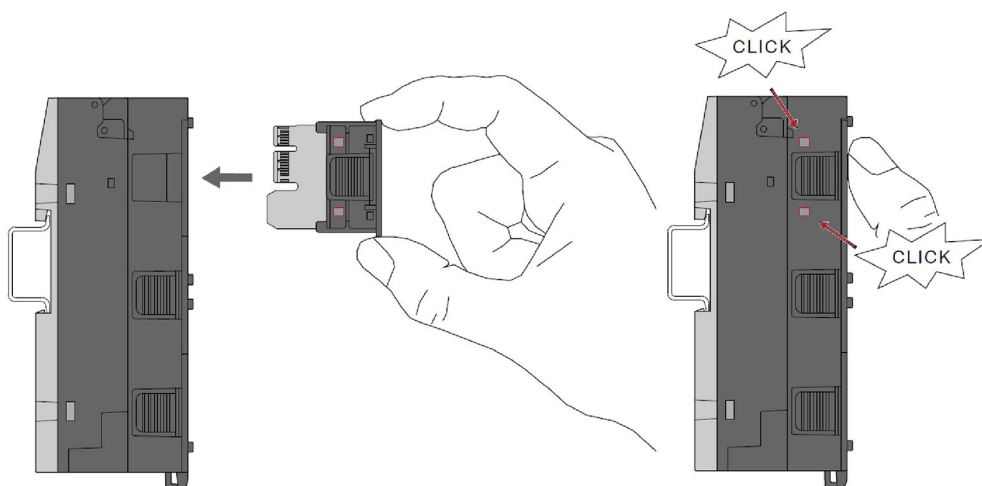
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

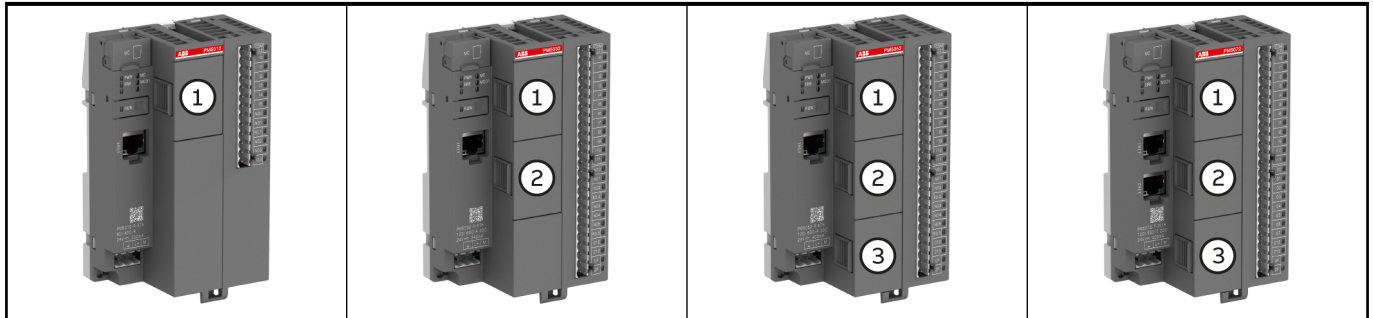
95.1 Assembly



95.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 66: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

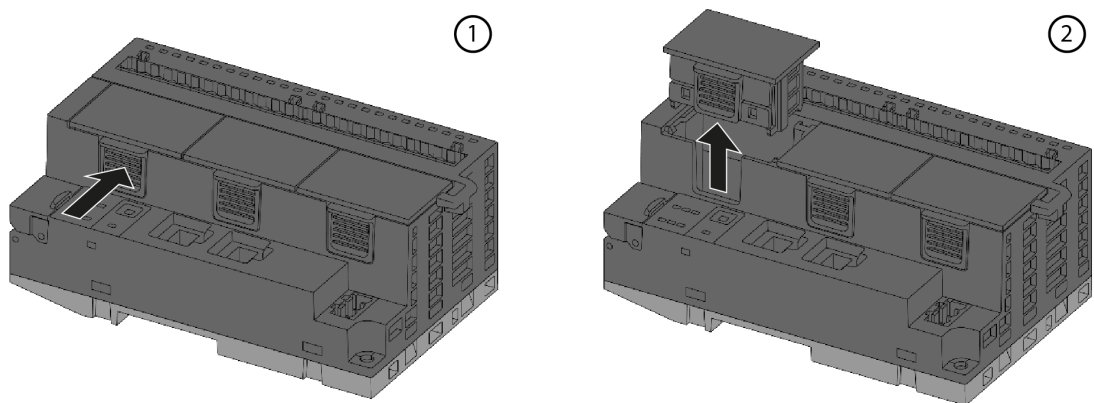
Table 67: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

95.2 Disassembly



CAUTION!

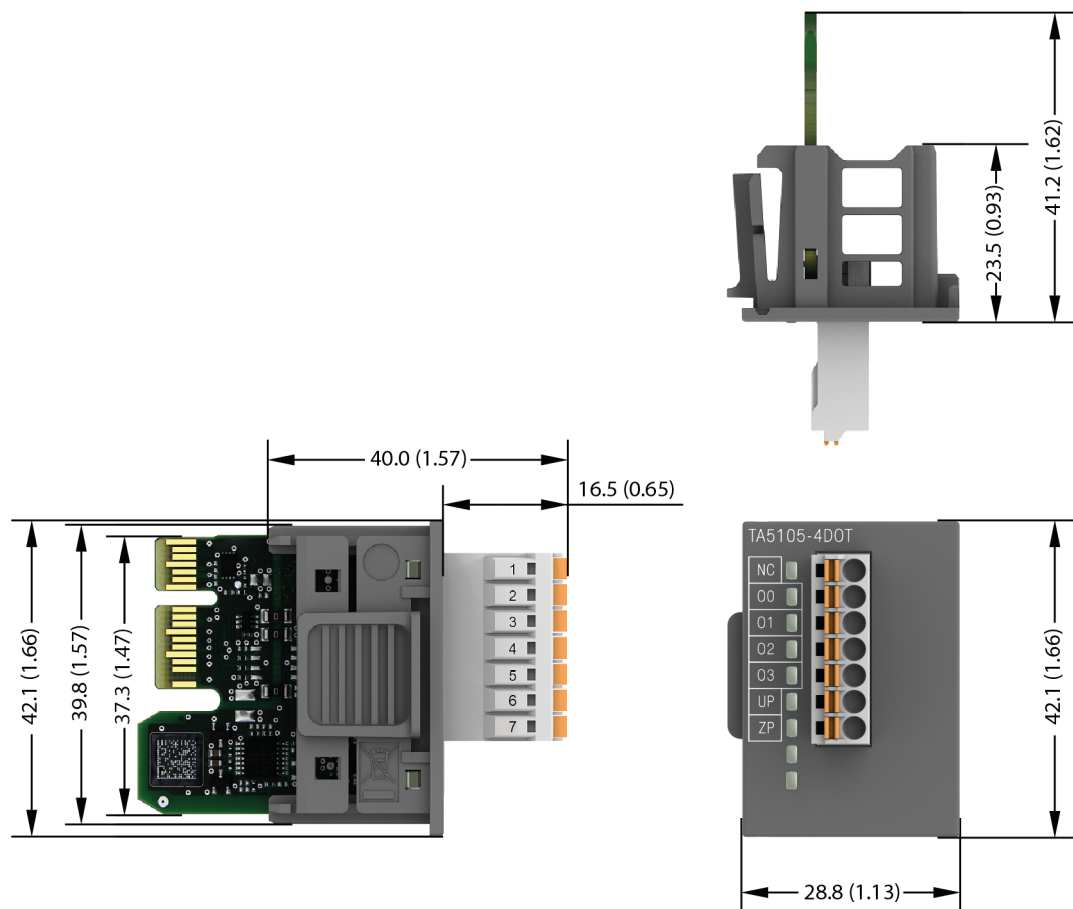
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.

If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

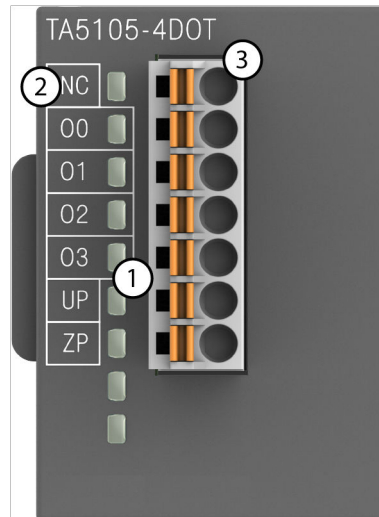
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

95.3 Dimensions



The dimensions are in mm and in brackets in inch.

95.4 Connections



- 1 4 yellow LEDs to display the signal states at the digital outputs O0 ... O3
- 2 Allocation of signal name
- 3 7-pin terminal block for output signals



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.

The digital inputs can be used as source inputs or as sink inputs.



NOTICE!

Risk of malfunctions in the plant!

A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.



NOTICE!

Risk of malfunctions in the plant!

Only if L+/M of the CPU is available and the outputs are already configured in the AB program, the outputs will switch on as soon as the UP/ZP is available.

This must be considered in the application planning.



NOTICE!

Risk of damaging the I/O module!

The outputs are not protected against short circuits and overload.

- Never short-circuit or overload the outputs.
- Never connect the outputs to other voltages.
- Use an external 3 A fast-protection fuse for the outputs.

95.4.1 Inputs/Outputs

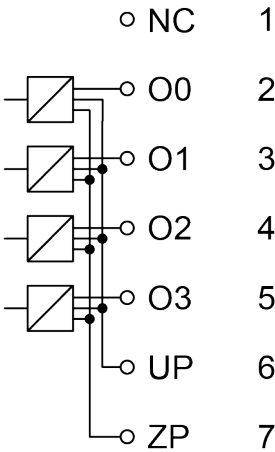


Table 68: Assignment of the terminals:

Terminal	Signal	Description
1	NC	Not connected
2	O0	Output signal O0
3	O1	Output signal O1
4	O2	Output signal O2
5	O3	Output signal O3
6	UP	Process supply voltage UP +24 V DC
7	ZP	Process supply voltage ZP 0 V DC

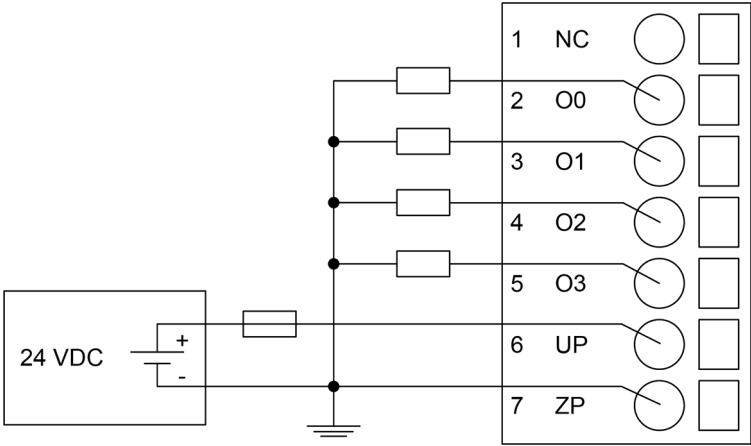


Fig. 97: Outputs of TA5105-4DOT

95.5 Cleaning

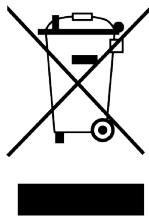


Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

95.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

95.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

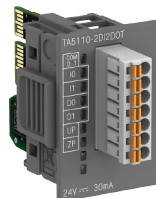
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

96 TA5110-2DI2DO(T/W) - Option board for digital I/O extension

- TA5110-2DI2DOT
- TA5110-2DI2DOW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



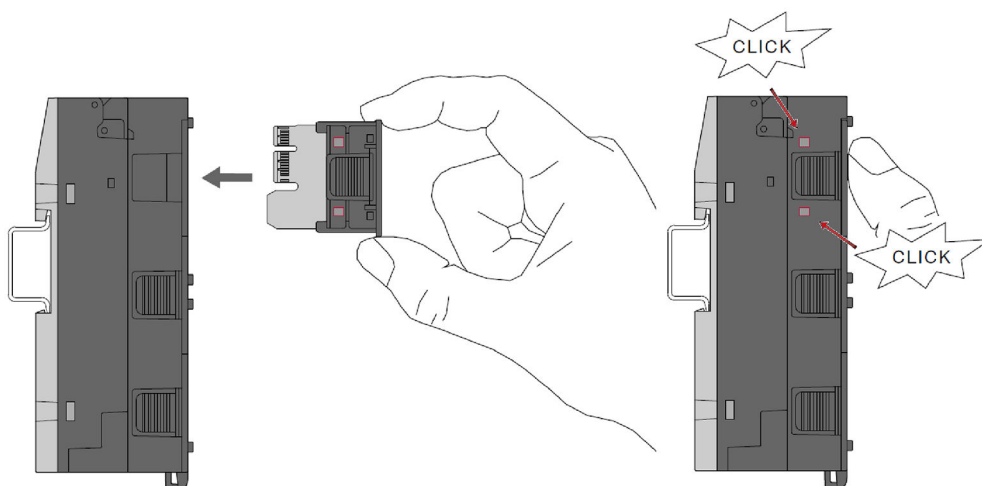
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

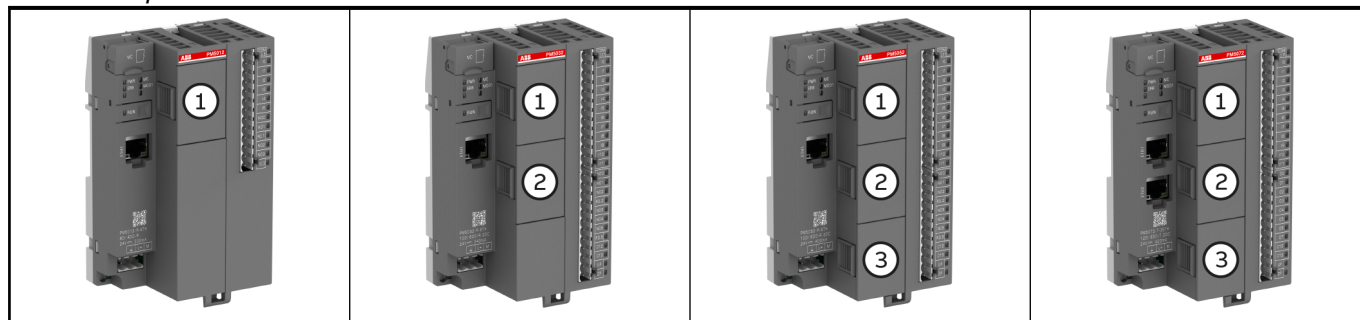
96.1 Assembly



96.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 69: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

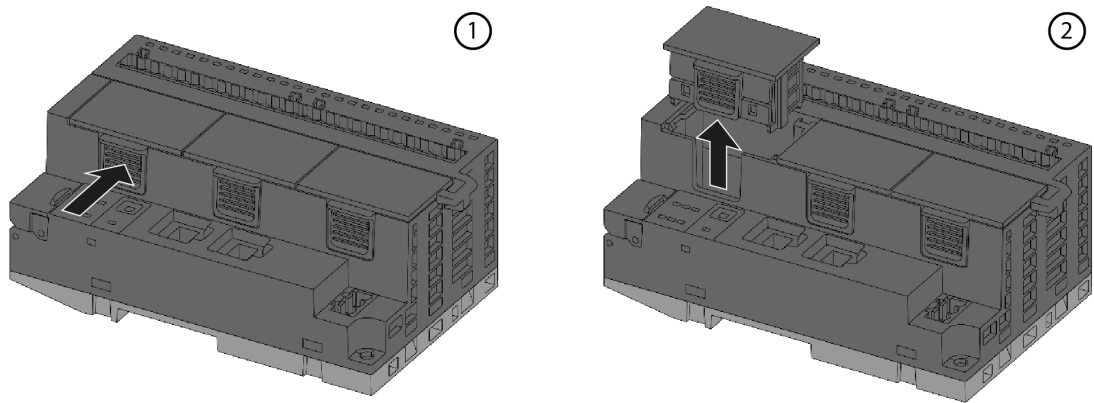
Table 70: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

96.2 Disassembly



CAUTION!

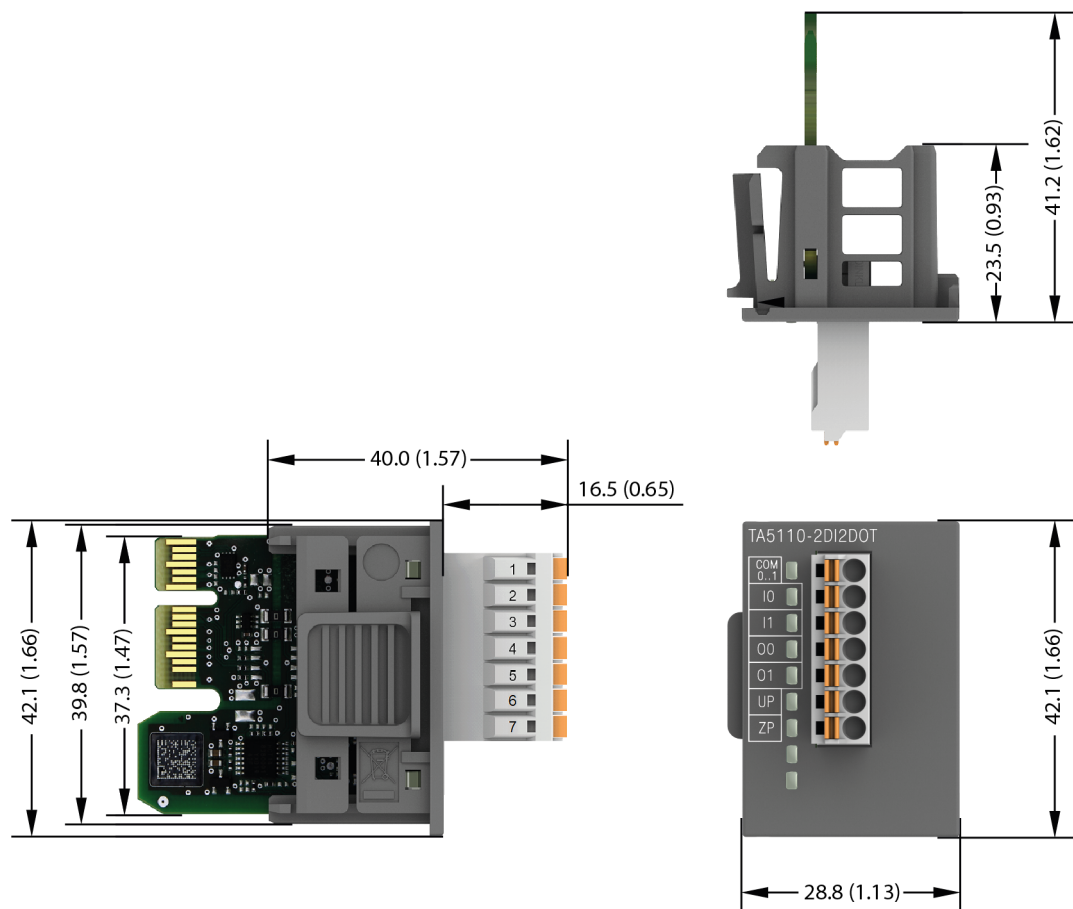
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.

If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

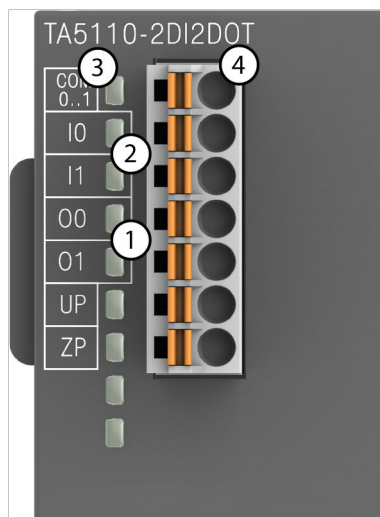
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

96.3 Dimensions



The dimensions are in mm and in brackets in inch.

96.4 Connections



- 1 2 yellow LEDs to display the signal states at the digital outputs O0 to O1
- 2 2 yellow LEDs to display the signal states at the digital inputs I0 to I1
- 3 Allocation of signal name
- 4 7-pin terminal block for input/output signals



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.

The digital inputs can be used as source inputs or as sink inputs.



NOTICE!

Risk of malfunctions in the plant!

A ground fault, e. g. caused by a damaged cable insulation, can bridge switches accidentally.

Use sink inputs when possible or make sure that, in case of error, there will be no risks to persons or plant.



NOTICE!

Risk of malfunctions in the plant!

Only if L+/M of the CPU is available and the outputs are already configured in the AB program, the outputs will switch on as soon as the UP/ZP is available.

This must be considered in the application planning.



NOTICE!
Risk of damaging the I/O module!

- The outputs are not protected against short circuits and overload.
- Never short-circuit or overload the outputs.
 - Never connect the outputs to other voltages.
 - Use an external 3 A fast-protection fuse for the outputs.

96.4.1 Inputs/Outputs

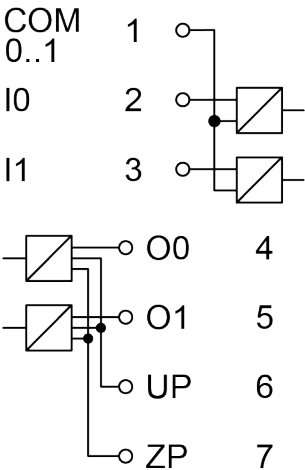
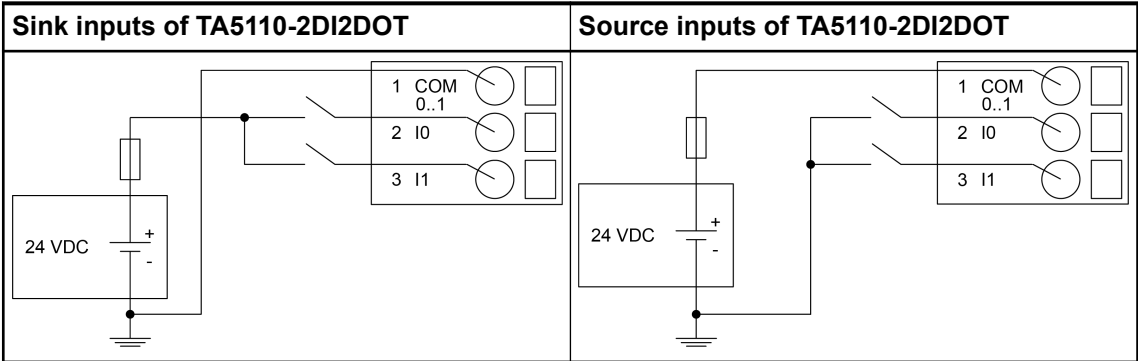


Table 71: Assignment of the terminals:

Terminal	Signal	Description
1	COM 0 ... 1	Input common for signals I0 to I1
2	I0	Input signal I0
3	I1	Input signal I1
4	O0	Output signal O0
5	O1	Output signal O1
6	UP	Process supply voltage UP +24 V DC
7	ZP	Process supply voltage ZP 0 V DC

Table 72: Connection for inputs of the option board for digital I/O extension TA5110-2DI2DOT



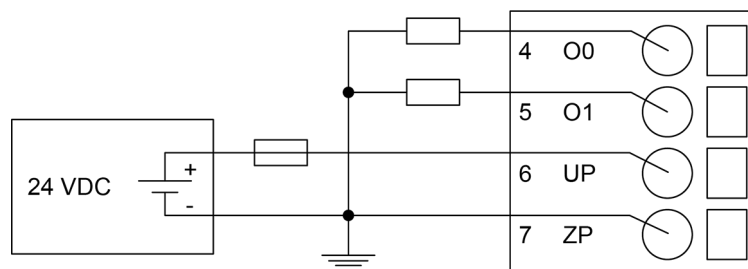


Fig. 98: Outputs of TA5110-2DI2DOT

96.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

96.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

96.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

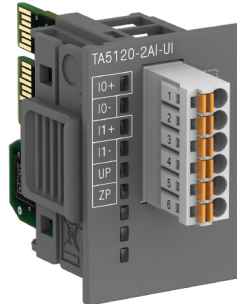
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

97 TA5120-2AI-UI(W) - Option board for analog I/O extension

- TA5120-2AI-UI
- TA5120-2AI-UIW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



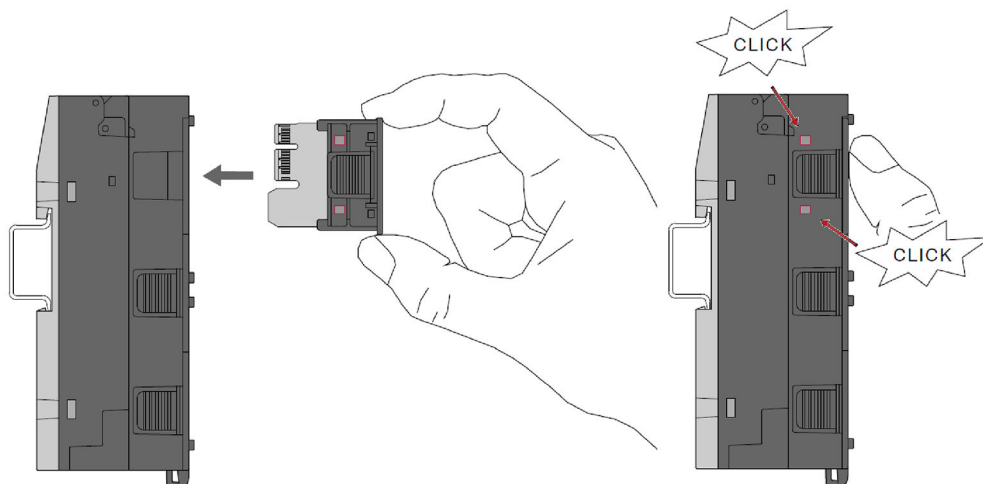
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

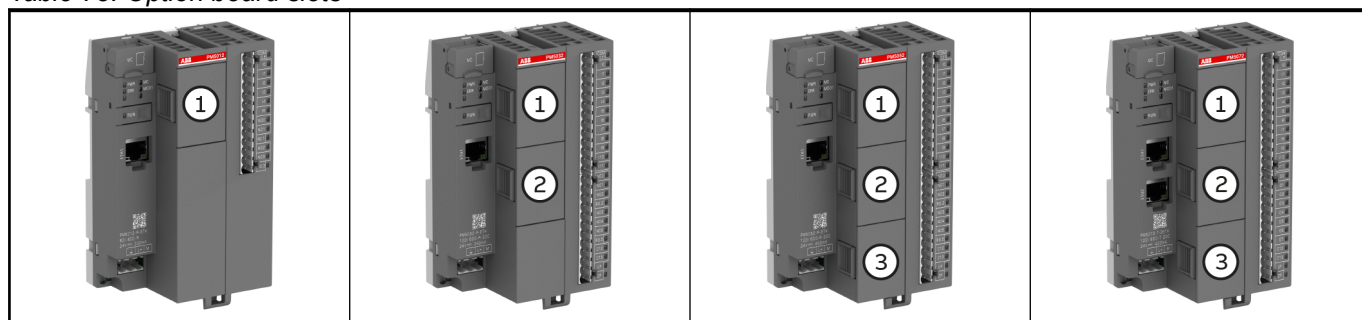
97.1 Assembly



97.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 73: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

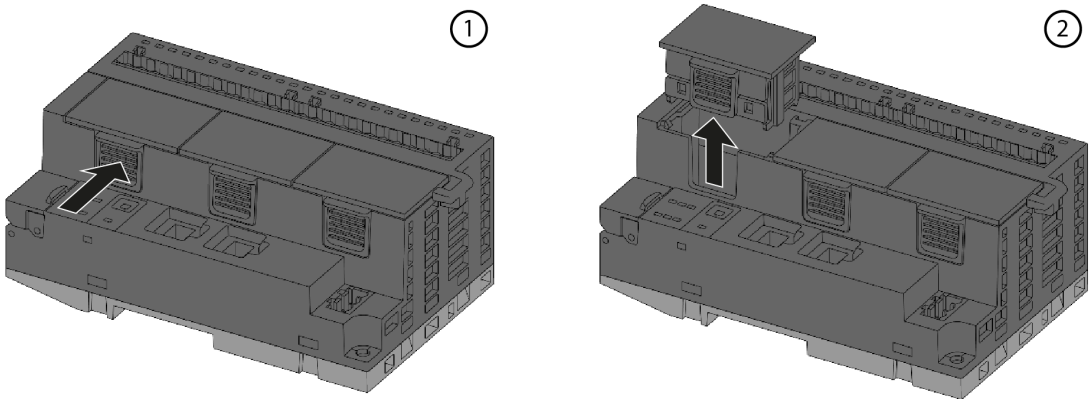
Table 74: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

97.2 Disassembly

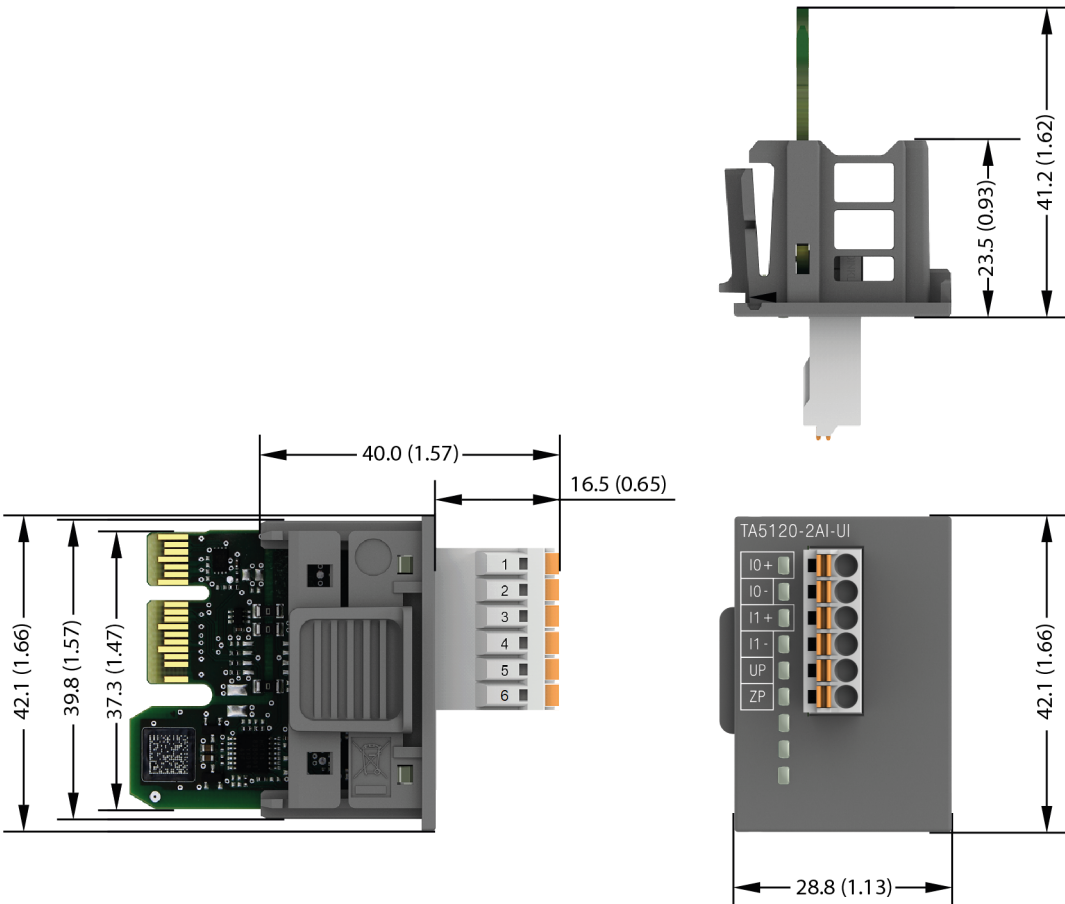


CAUTION!
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

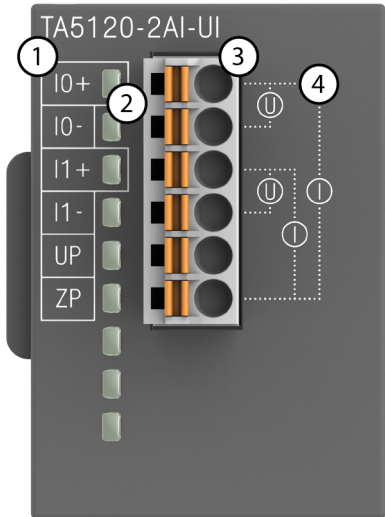
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

97.3 Dimensions



The dimensions are in mm and in brackets in inch.

97.4 Connections



- 1 Allocation of terminal and signal name
- 2 2 yellow LEDs to display the signal states at the analog inputs I0 and I1
- 3 6-pin terminal block for analog input signals and power supply (UP, ZP)
- 4 Input connection diagram for U and I

The option board TA5120-2AI-UI for analog input extension is plugged into an AC500-eCo V3 CPU PM50xx. Insert the module and press it into the slot until it clicks into place.

The electrical connection is carried out by using a removable 6-pin terminal block. For more information, please refer to the chapter **TA52xx(-x) - Terminal block sets** ↗ *Chapter 107* “TA52xx(-x) - Terminal block sets” on page 778.

Table 75: Assignment of the terminals:

Terminal	Signal	Description
1	I0+	Positive terminal of the analog input I0
2	I0-	Negative terminal of the analog input I0
3	I1+	Positive terminal of the analog input I1
4	I1-	Negative terminal of the analog input I1
5	UP	Process voltage UP = +24 V DC
6	ZP	Process voltage ZP = 0 V DC



CAUTION!

Analog sensors must be galvanically isolated against the ground. In order to avoid inaccuracy with the measuring results, the analog sensors should also be isolated against the power supply.



CAUTION!

The negative terminals of the analog inputs are electrically connected to each other. They form an "Analog Ground" signal for the module (AGND).



CAUTION!

There is no galvanic isolation between the analog circuitry and ZP/UP. Therefore, the analog sensors must be electrically isolated in order to avoid loops via the ground potential or the supply voltage (Voltage 0V...10 V).



For the open-circuit detection (wire break), each analog input channel is pulled up to "plus" by a high-resistance resistor. If nothing is connected, the maximum voltage will be read in then.

The internal power supply voltage for the module's circuitry is carried out via the connection to CPU. Thus, the current consumption from 24 V DC power supply at the terminals L+ and M of the CPU module increases by < 1 mA per TA5120-2AI-UI.

The external power supply connection is carried out via the terminals UP (+24 V DC) and ZP (0 V DC).



WARNING!

Removal/Insertion under power

The option boards are not designed for removal or insertion under power. Because of unforeseeable consequences, it is not allowed to plug or unplug option boards with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace an option board.

Disconnecting any powered option board while energized in a hazardous location could result in an electric arc, which could create a flammable ignition resulting in fire or explosion.

Make sure that power is removed and that the area has been thoroughly checked to ensure that flammable materials are not present prior to proceeding.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



Generally, analog signals must be laid in shielded cables. The cable shields must be grounded at both sides of the cables. In order to avoid unacceptable potential differences between different parts of the installation, low resistance equipotential bonding conductors must be laid.

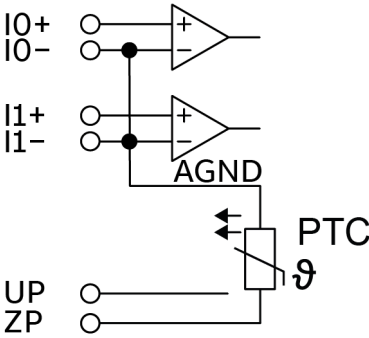


Fig. 99: Internal construction of the analog inputs



CAUTION!

By installing equipotential bonding conductors between the different parts of the system, it must be ensured that the potential difference between ZP and AGND never can exceed 1 V.



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

97.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

97.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

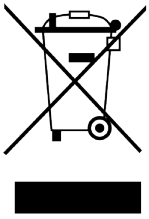
ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

97.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

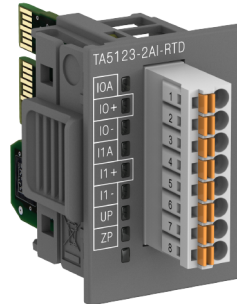
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

98 TA5123-2AI-RT(D/W) - Option board for analog I/O extension

- TA5123-2AI-RTD
- TA5123-2AI-RTW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



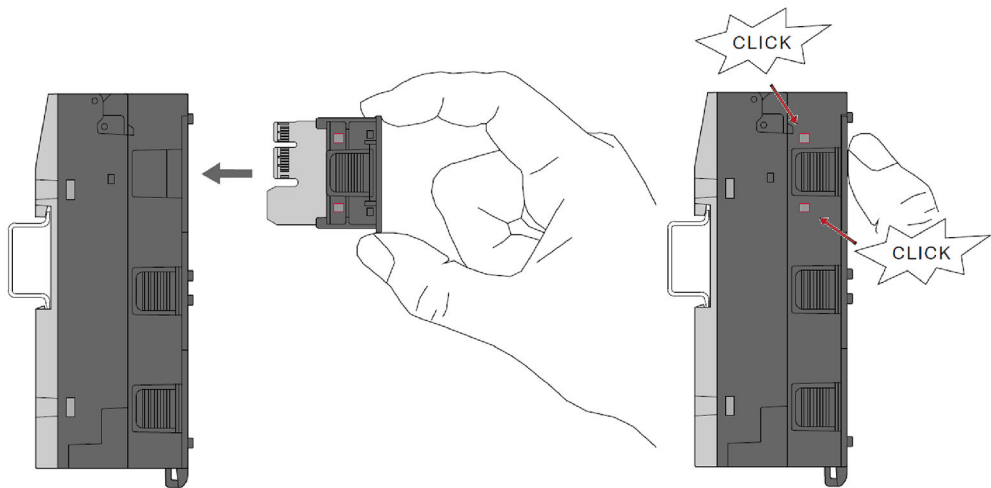
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

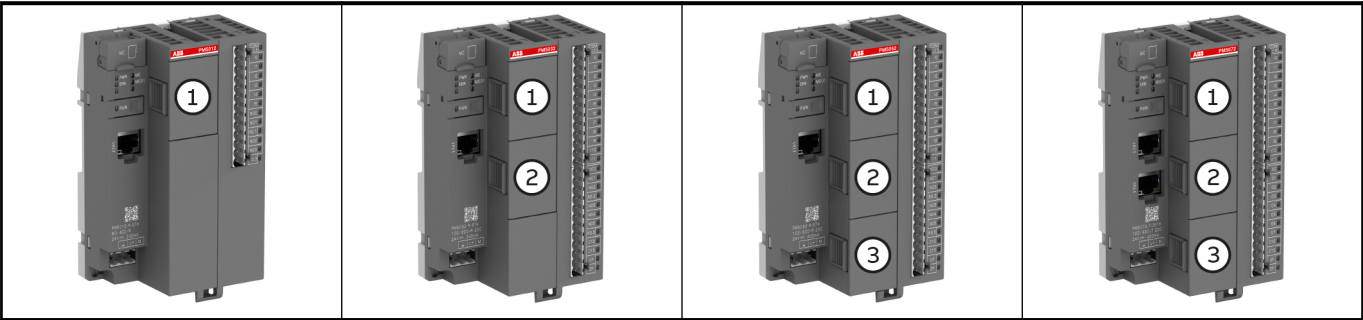
98.1 Assembly



98.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 76: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

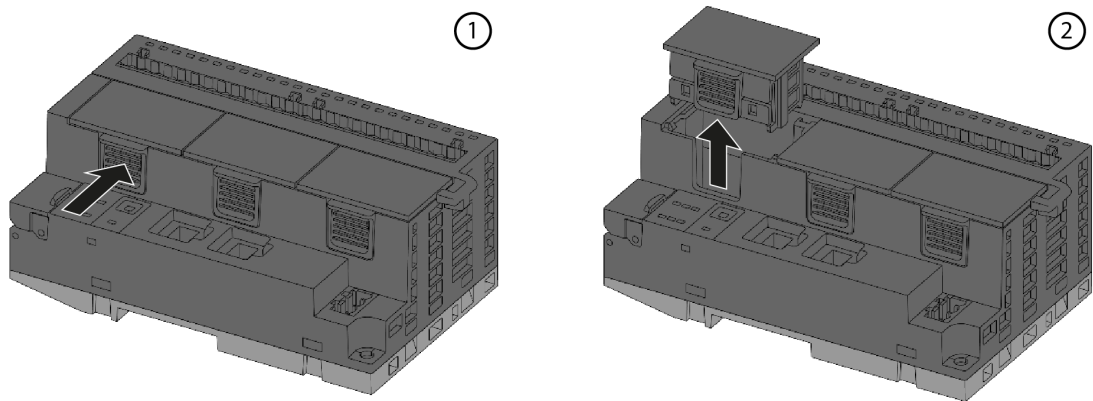
Table 77: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



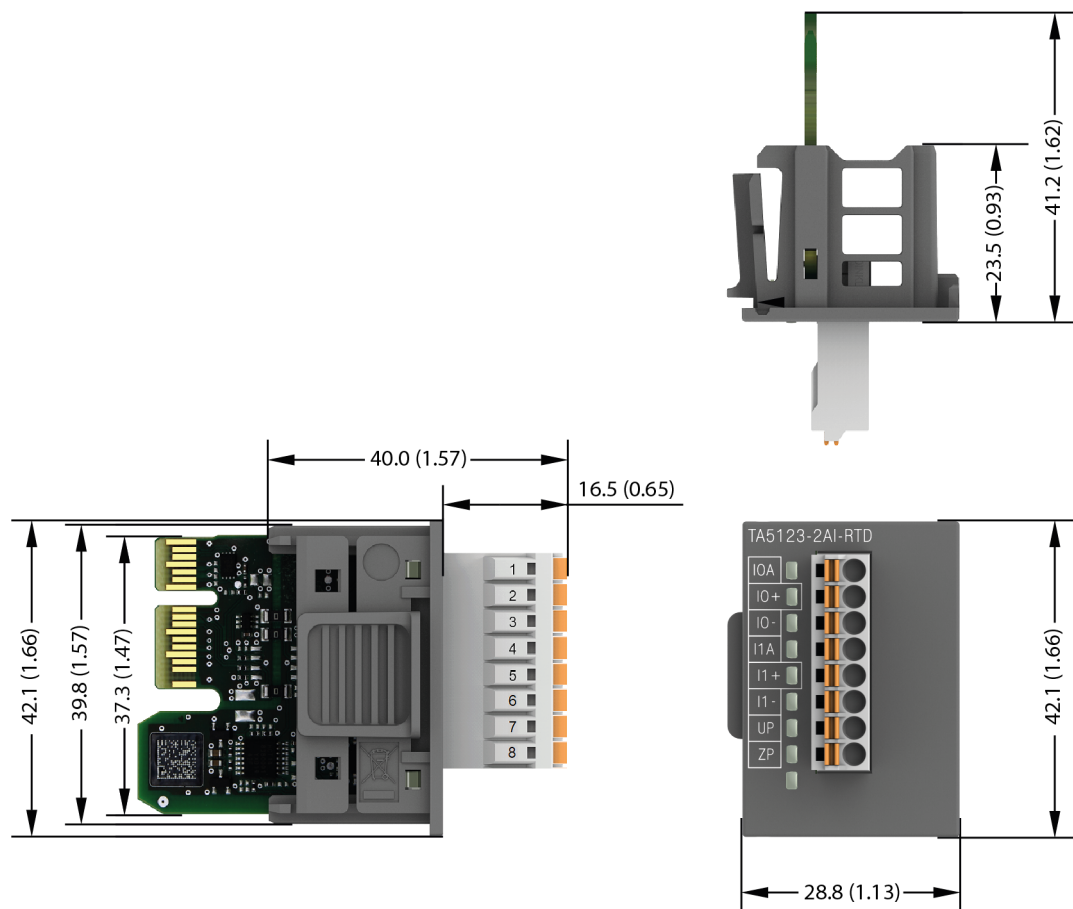
If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

98.2 Disassembly



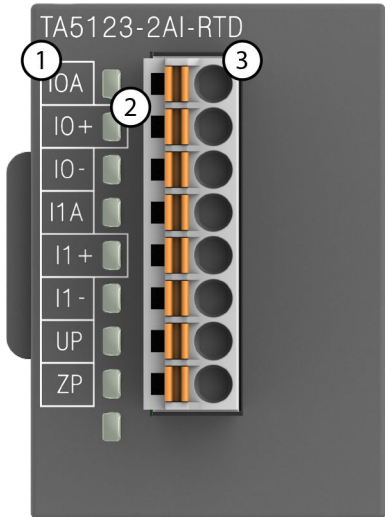
CAUTION!
Risk of injury and damaging the product!
Always plug in the option board slot cover when the option board is not inserted.
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

98.3 Dimensions



The dimensions are in mm and in brackets in inch.

98.4 Connections



- 1 Allocation of signal name
- 2 2 yellow LEDs to display the signal states at the analog inputs I0 and I1
- 3 8-pin terminal block for analog input signals and power supply (UP, ZP)

The option board TA5123-2AI-RTD for analog input extension is plugged into an AC500-eCo V3 CPU PM50x2. Insert the module and press it until it locks into place.

The electrical connection is carried out by using a removable 8-pin terminal block. For more information, please refer to the chapter **TA52xx(-x) - Terminal block sets** ↗ *Chapter 107 “TA52xx(-x) - Terminal block sets” on page 778.*

Table 78: Assignment of the terminals:

Terminal	Signal	Description
1	I0A	Connection A (supply) of the analog input I0
2	I0+	Positive terminal of the analog input I0
3	I0-	Negative terminal of the analog input I0
4	I1A	Connection A (supply) of the analog input I1
5	I1+	Positive terminal of the analog input I1
6	I1-	Negative terminal of the analog input I1
7	UP	Process voltage UP = +24 VDC
8	ZP	Process voltage ZP = 0 V



CAUTION!

Analog sensors must be galvanically isolated against the ground. In order to avoid inaccuracy with the measuring results, the analog sensors should also be isolated against the power supply.



CAUTION!

The negative terminals of the analog inputs are electrically connected to each other. They form an "Analog Ground" signal for the module.



CAUTION!

There is no galvanic isolation between the analog circuitry and ZP/UP. Therefore, the analog sensors must be electrically isolated in order to avoid loops via the earth potential or the supply voltage.



For the open-circuit detection (wire break), each analog input channel is pulled up to "plus" by a high-resistance resistor. If nothing is connected, the maximum voltage will be read in then.

The internal power supply voltage for the module's circuitry is carried out via the connection to CPU. Thus, the current consumption from 24 VDC power supply at the terminals L+ and M of the CPU module increases by $\ll 1$ mA per TA5123-2AI-RTD.

The external power supply connection is carried out via the UP (+24 VDC) and the ZP (0 VDC) terminals.



WARNING!

Removal/Insertion under power

The option boards are not designed for removal or insertion under power. Because of unforeseeable consequences, it is not allowed to plug or unplug option boards with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace an option board.

Disconnecting any powered option board while energized in a hazardous location could result in an electric arc, which could create a flammable ignition resulting in fire or explosion.

Make sure that power is removed and that the area has been thoroughly checked to ensure that flammable materials are not present prior to proceeding.



NOTICE!

Risk of damaging the PLC modules!

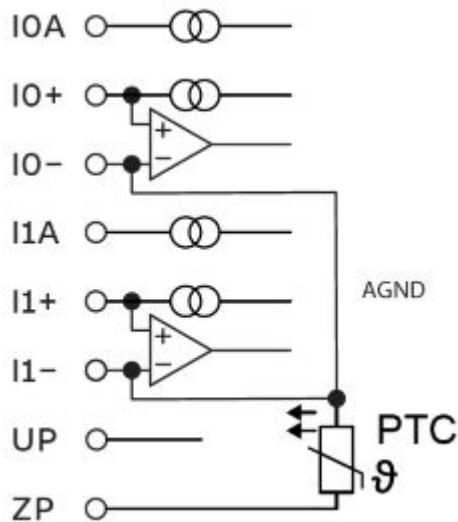
Overvoltages and short circuits might damage the PLC modules.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



Generally, analog signals must be laid in shielded cables. The cable shields must be grounded at both sides of the cables. In order to avoid unacceptable potential differences between different parts of the installation, low resistance equipotential bonding conductors must be laid.

The following block diagram shows the internal construction of the analog inputs:



CAUTION!

By installing equipotential bonding conductors between the different parts of the system, it must be ensured that the potential difference between ZP and AGND never can exceed 1 V.



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

98.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

98.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

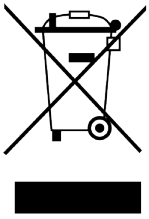
ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

98.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

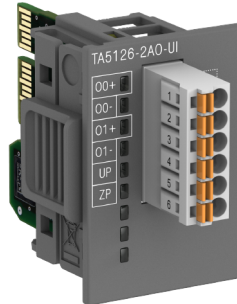
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

99 TA5126-2AO-UI(W) - Option board for analog I/O extension

- TA5126-2AO-UI
- TA5126-2AO-UIW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



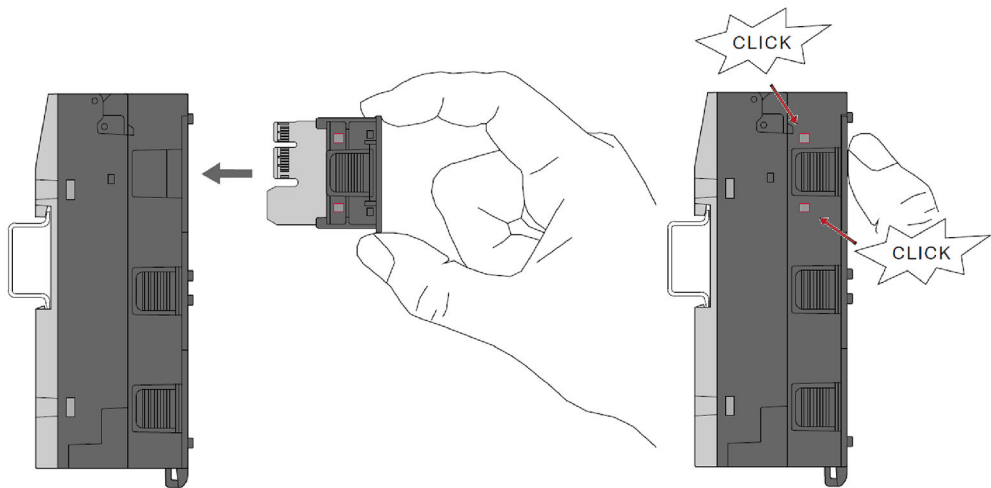
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

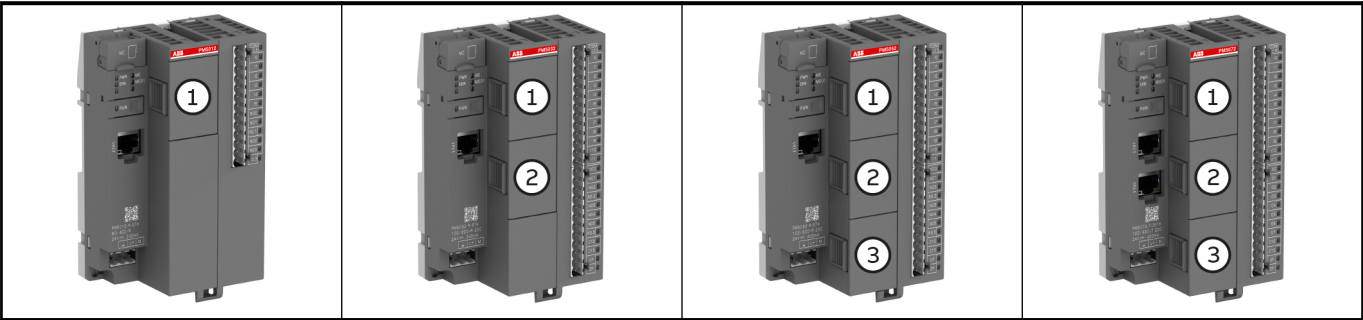
99.1 Assembly



99.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 79: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

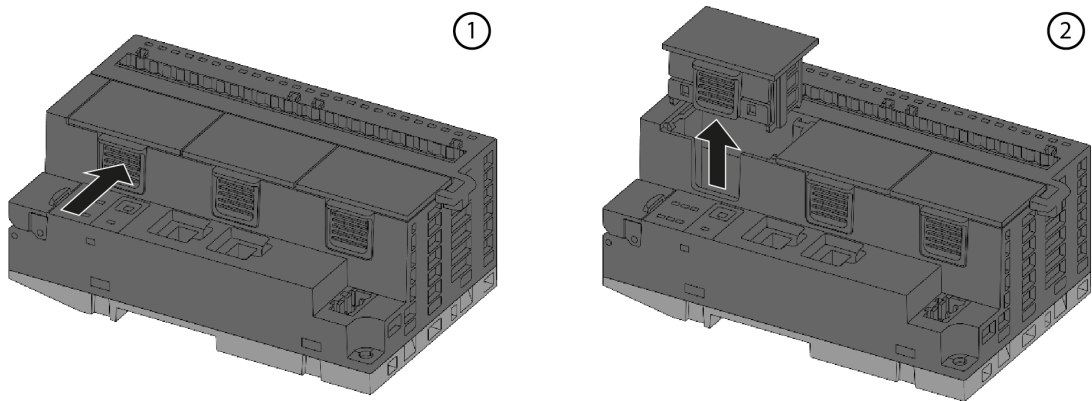
Table 80: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



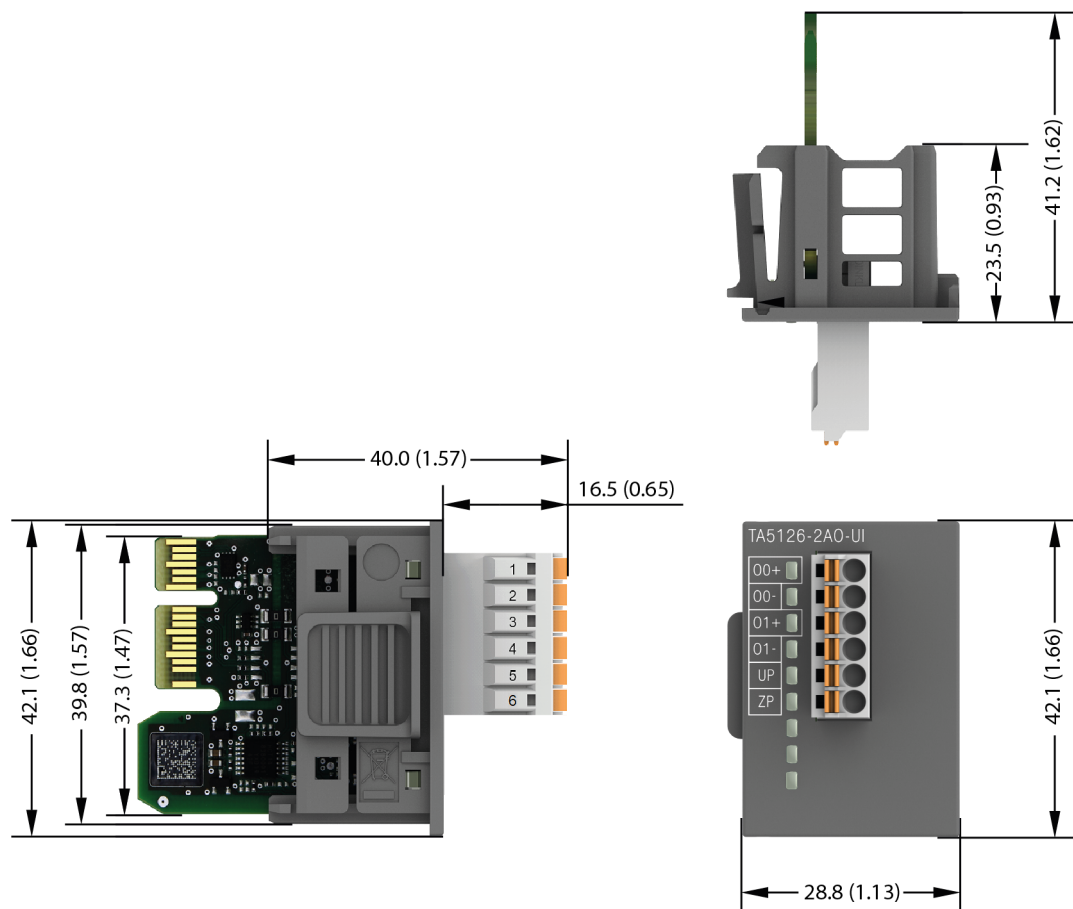
If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

99.2 Disassembly



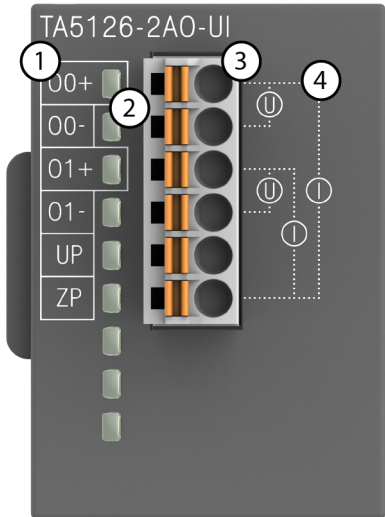
CAUTION!
Risk of injury and damaging the product!
Always plug in the option board slot cover when the option board is not inserted.
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

99.3 Dimensions



The dimensions are in mm and in brackets in inch.

99.4 Connections



- 1 Allocation of signal name
- 2 2 yellow LEDs to display the signal states at the analog outputs O0 and O1
- 3 6-pin terminal block for analog output signals and power supply (UP, ZP)
- 4 Output connection diagram for U and I

The option board TA5126-2AO-UI for analog output extension is plugged into an AC500-eCo V3 CPU PM50xx. Insert the module and press it into the slot until it clicks into place.

The electrical connection is carried out by using a removable 6-pin terminal block. For more information, please refer to the chapter **TA52xx(-x) - Terminal block sets** ↗ *Chapter 107 "TA52xx(-x) - Terminal block sets" on page 778.*

Table 81: Assignment of the terminals:

Terminal	Signal	Description
1	O0+	Positive terminal of the analog output O0
2	O0-	Negative terminal of the analog output O0
3	O1+	Positive terminal of the analog output O1
4	O1-	Negative terminal of the analog output O1
5	UP	Process voltage UP = +24 V DC
6	ZP	Process voltage ZP = 0 V DC



CAUTION!

Analog sensors must be galvanically isolated against the ground. In order to avoid inaccuracy with the measuring results, the analog sensors should also be isolated against the power supply.



CAUTION!

The negative terminals of the analog inputs are electrically connected to each other. They form an "Analog Ground" signal for the module (AGND).



CAUTION!

There is no galvanic isolation between the analog circuitry and ZP/UP. Therefore, the analog sensors must be electrically isolated in order to avoid loops via the ground potential or the supply voltage (Voltage 0V...10 V).



For the open-circuit detection (wire break), each analog input channel is pulled up to "plus" by a high-resistance resistor. If nothing is connected, the maximum voltage will be read in then.

The internal power supply voltage for the module's circuitry is carried out via the connection to CPU. Thus, the current consumption from 24 V DC power supply at the terminals L+ and M of the CPU module increases by < 1 mA per TA5126-2AO-UI.

The external power supply connection is carried out via the terminals UP (+24 V DC) and ZP (0 V DC).



WARNING!

Removal/Insertion under power

The option boards are not designed for removal or insertion under power. Because of unforeseeable consequences, it is not allowed to plug or unplug option boards with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace an option board.

Disconnecting any powered option board while energized in a hazardous location could result in an electric arc, which could create a flammable ignition resulting in fire or explosion.

Make sure that power is removed and that the area has been thoroughly checked to ensure that flammable materials are not present prior to proceeding.



NOTICE!

Risk of damaging the PLC modules!

Overvoltages and short circuits might damage the PLC modules.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.



Generally, analog signals must be laid in shielded cables. The cable shields must be grounded at both sides of the cables. In order to avoid unacceptable potential differences between different parts of the installation, low resistance equipotential bonding conductors must be laid.

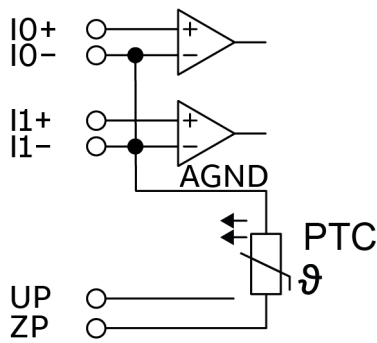


Fig. 100: Internal construction of the analog inputs



CAUTION!

By installing equipotential bonding conductors between the different parts of the system, it must be ensured that the potential difference between ZP and AGND never can exceed 1 V.



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

99.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

99.6 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

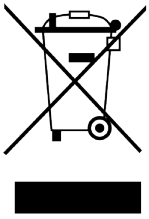
ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

99.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

100 TA5130-KNXPB(W) - Option board KNX adress push button

- TA5130-KNXPB
- TA5130-KNXPBW for wide temperature range



TA5130-KNXPB(W) option board is only intended to be used with PM5072-T-2ETH(W).

This option board can only be used once per CPU.

This option board is not supported by other AC500-eCo V3 PLCs.



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



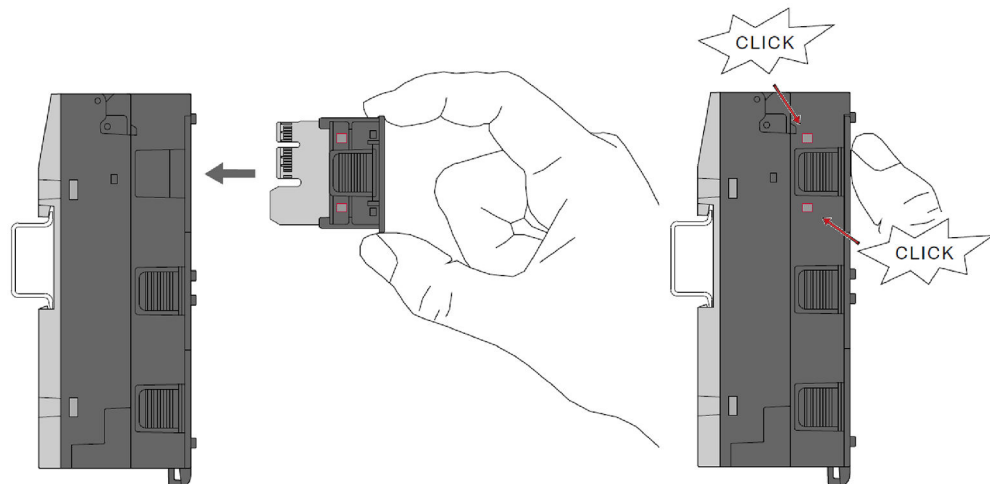
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

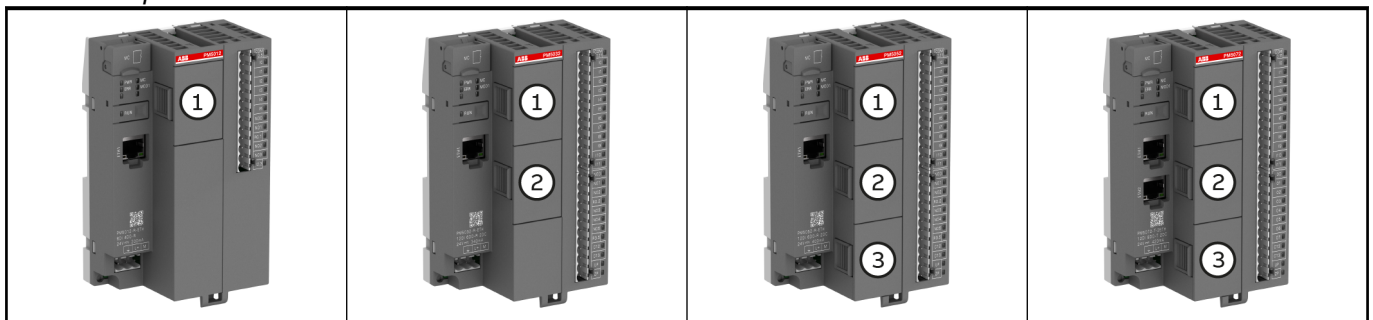
100.1 Assembly



100.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 82: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

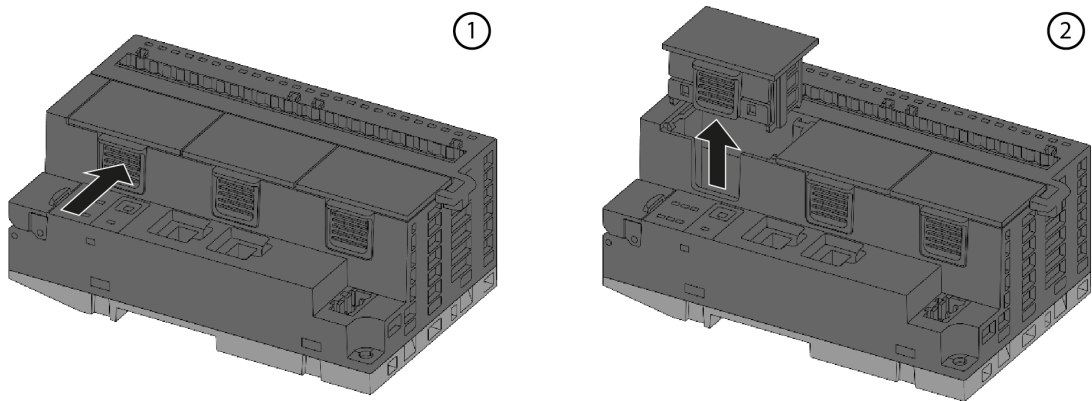
Table 83: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



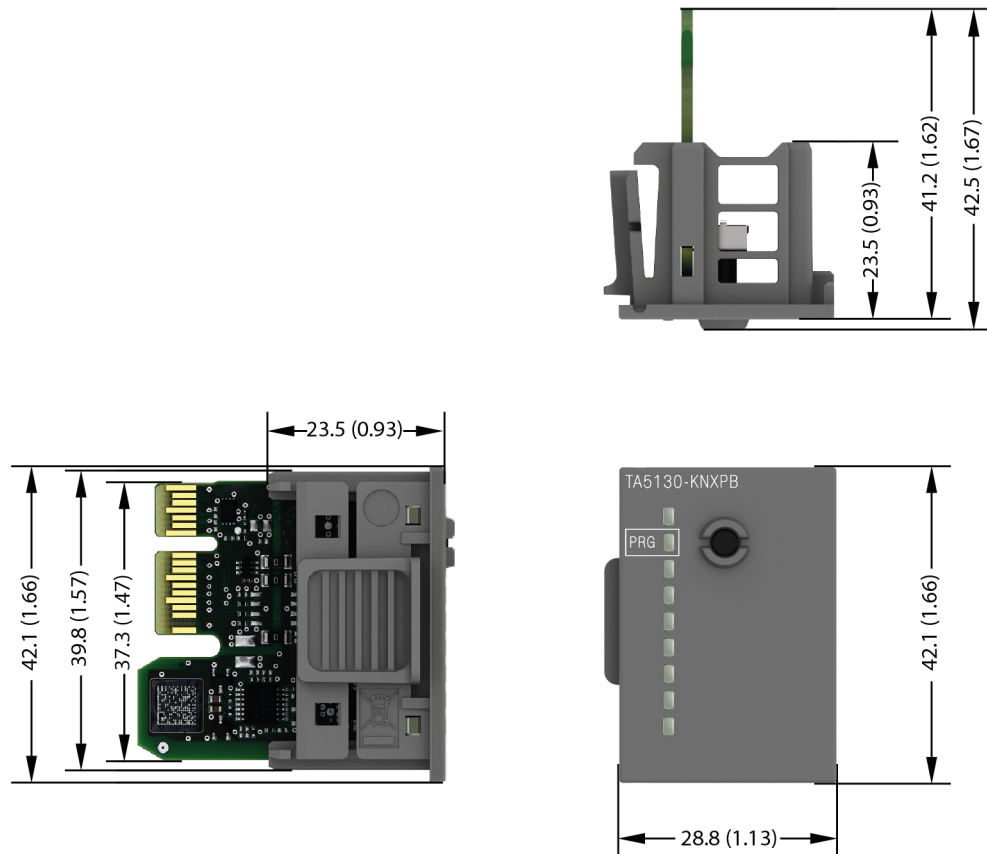
If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

100.2 Disassembly



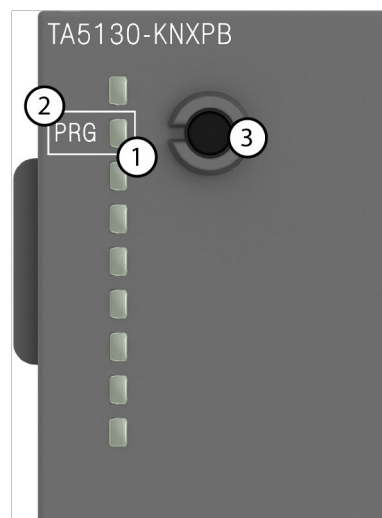
CAUTION!
Risk of injury and damaging the product!
Always plug in the option board slot cover when the option board is not inserted.
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

100.3 Dimensions



The dimensions are in mm and in brackets in inch.

100.4 Connections



- 1 State LED
- 2 Allocation of signal name
- 3 Connector

100.5 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

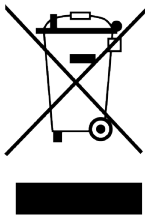
100.6 Certification



MSIP-REI-Abb-AC500

en	Note These devices correspond to:	en Devices with KCC sign on product sticker and packaging
ko	참고 이러한 기기는	ko 제품 스티커 및 포장에 KCC 표시가 된 기기
		KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
		KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

100.7 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

101 TA5131-RTC - Option board for real-time clock

- TA5131-RTC



This option board is only for the basic CPUs PM5012-T-ETH and PM5012-R-ETH.

All other AC500-eCo V3 CPUs have the real-time clock already integrated.



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



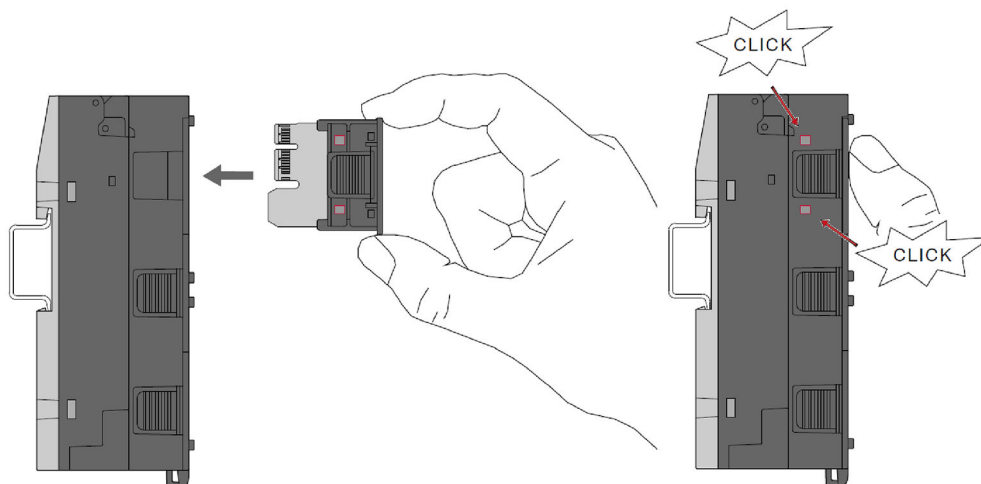
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

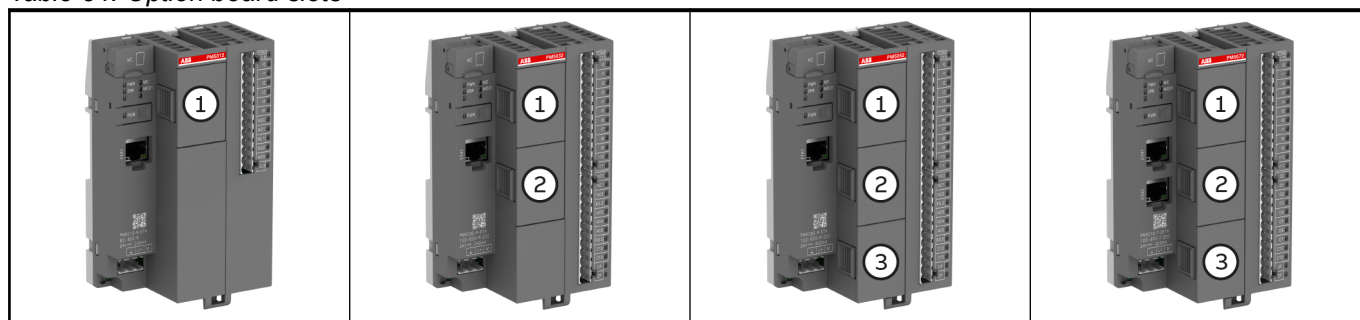
101.1 Assembly



101.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 84: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

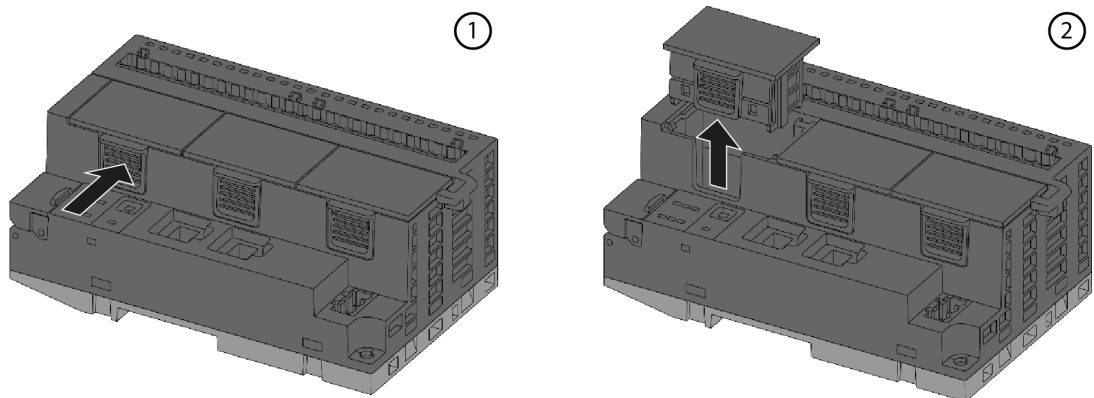
Table 85: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

101.2 Disassembly



CAUTION!

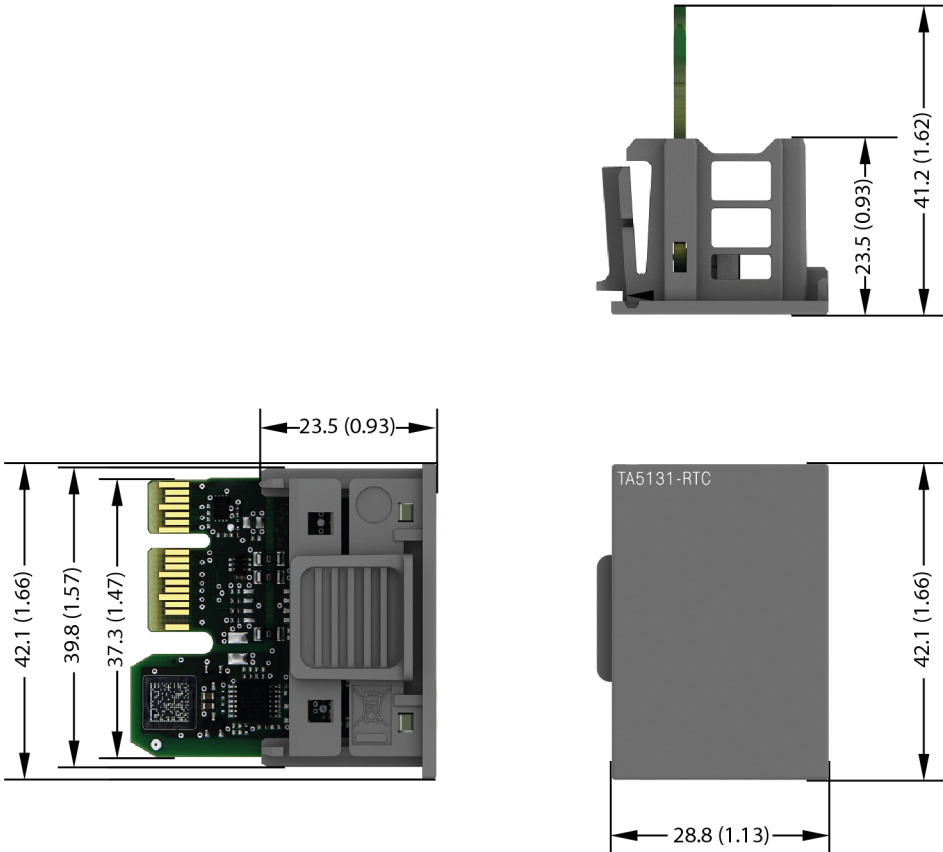
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.

If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

101.3 Dimensions



The dimensions are in mm and in brackets in inch.

101.4 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

101.5 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

101.6 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

102 TA514-SAFETY

- TA514-SAFETY



WARNING!

Risk of injury and damaging the product!

This training case is only intended to be used by skilled persons aware of the risks using electrical equipment and knowing the technical rules, codes and relevant standards.



WARNING!

Risk of injury and damaging the product!

- Only use the training case with the delivered power supply adapter
- Only use the training case for demonstration and training activities
- The operating temperature for training case is 0 °C ... + 40°C
- This training case is a class A device for EMC, because the main components (e.g. PLC) inside are designed for industrial applications. It can cause radio-interference in residential areas.

102.1 Assembly

1. Take out the power adapter



2. Connect the AC power cable



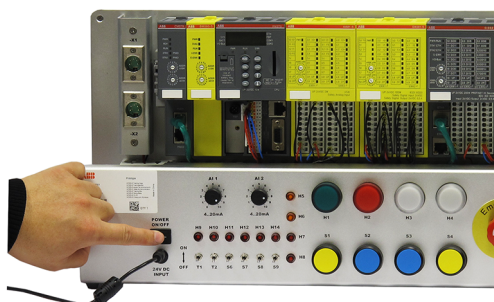
3. Connect the power adapter to socket 24 V DC input



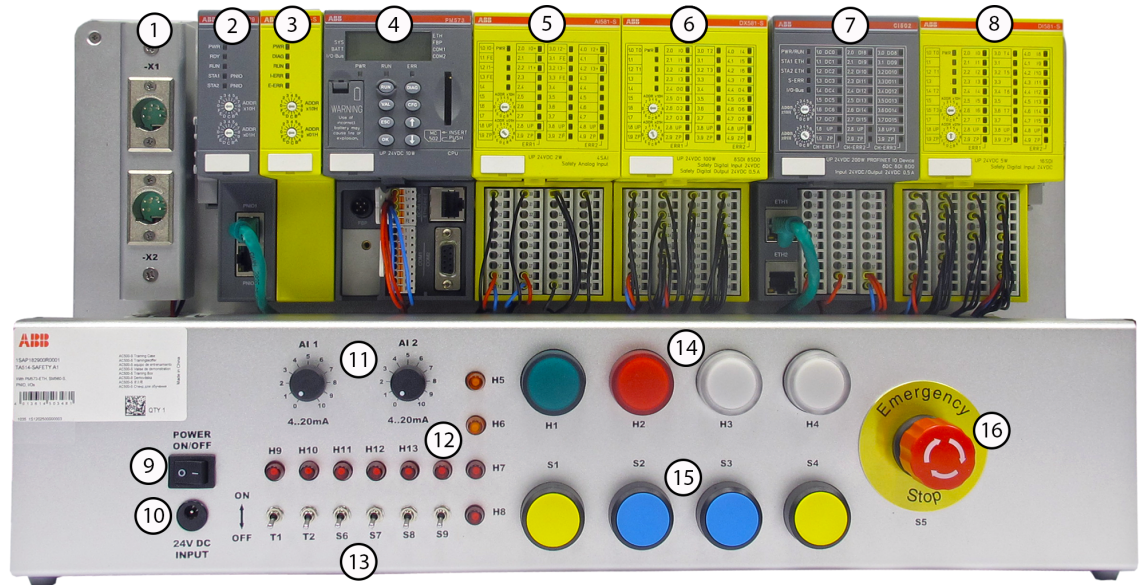
4. Connect AC power to socket



5. Switch on the power



102.2 Connections



- 1 Light curtain interface socket (2-channel)
- 2 Communication module CM579-PNIO
- 3 Safety CPU SM560-S
- 4 CPU unit PM573-ETH
- 5 Safety analog input module AI581-S
- 6 Digital safety I/O module DX581-S
- 7 PROFINETcommunication interface module CI502-PNIO
- 8 Safety digital input module DI581-S
- 9 24 V DC On/Off switch
- 10 24 V DC Power Supply
- 11 Analog potentiometer
- 12 Indicating LEDs
- 13 Switches for input simulation
- 14 Indicating lamps
- 15 Buttons for input simulation
- 16 Emergency Stop button

102.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

102.4 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

102.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

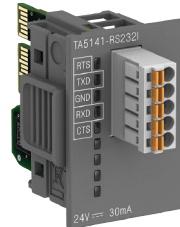
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

103 TA5141-RS232I(W) - Option board for COMx serial communication

- TA5141-RS232I
- TA5141-RS232IW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



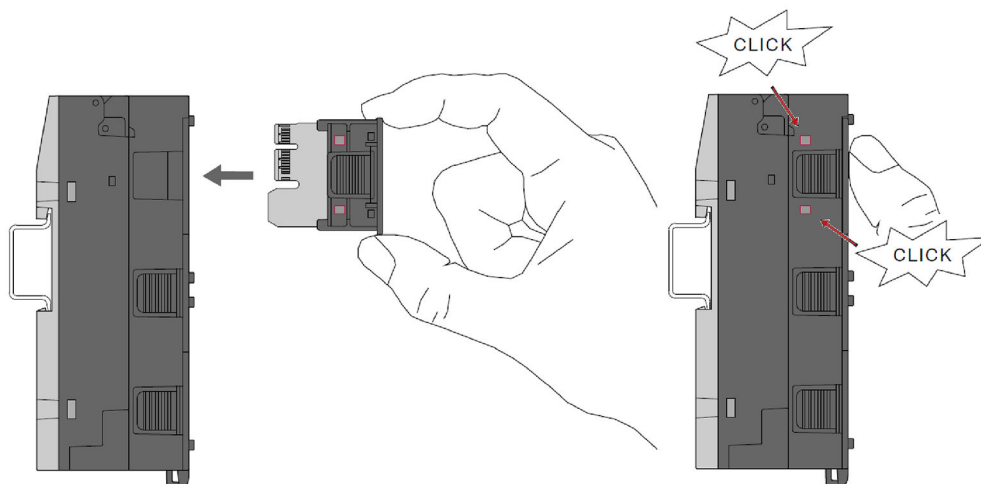
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

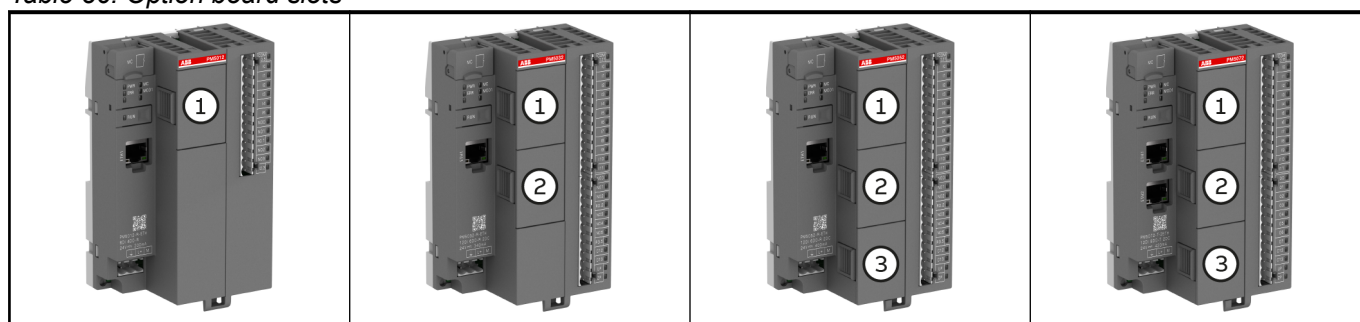
103.1 Assembly



103.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 86: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

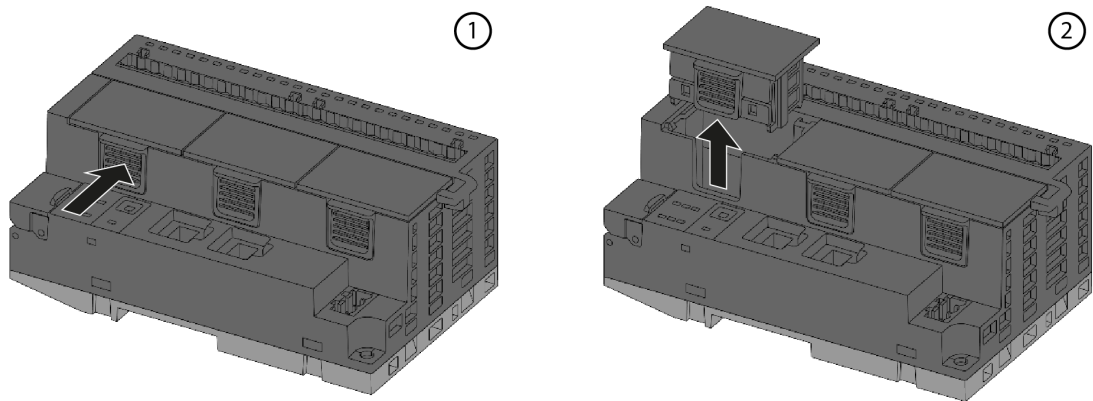
Table 87: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

103.2 Disassembly

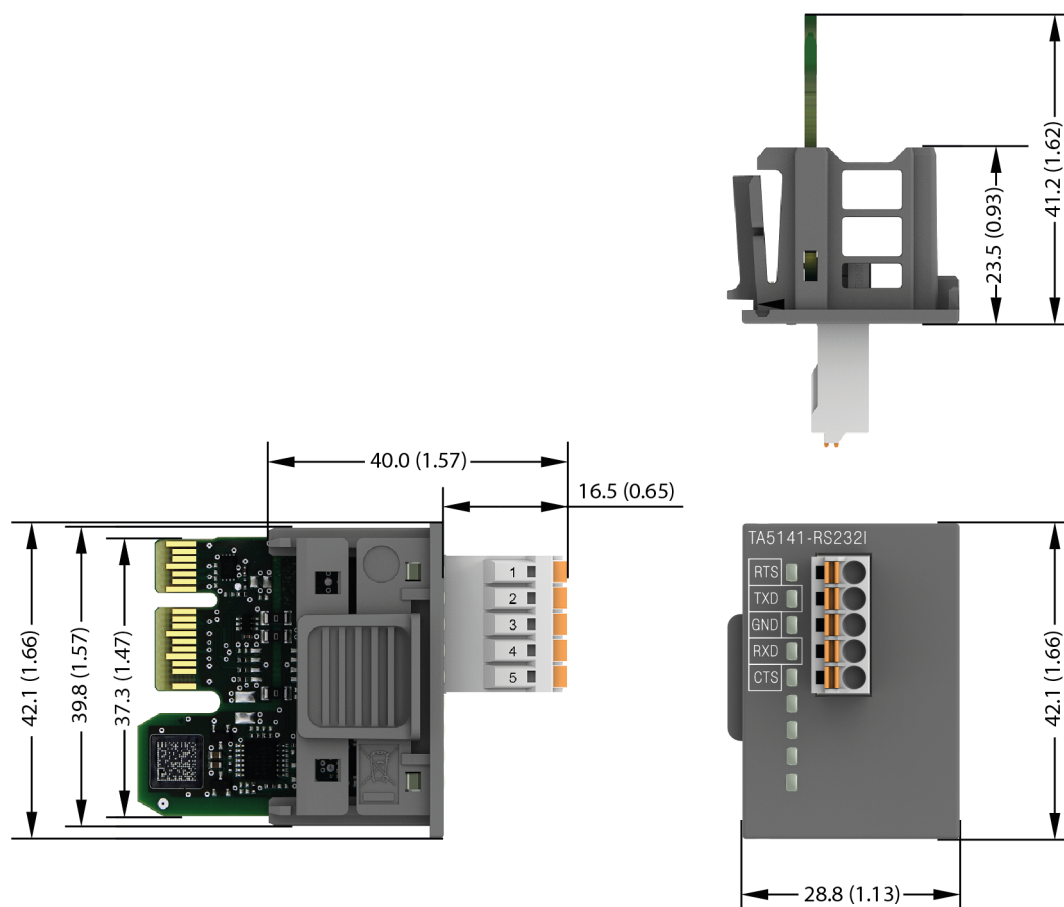


CAUTION!
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

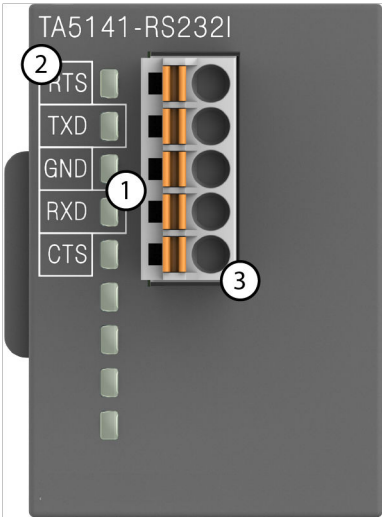
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

103.3 Dimensions



The dimensions are in mm and in brackets in inch.

103.4 Connections



- 1 2 LEDs for communication state display (TxD and RxD)
- 2 Allocation of signal name
- 3 5-pin terminal block for communication interface

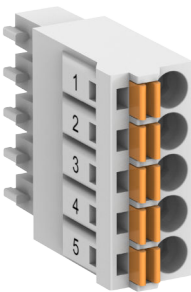
103.4.1 Serial interface

Serial interface
RS232I



NOTICE!
Damage to the serial communication interface by using 5-pin terminal block of the TA5101-4DI!
If the 5-pin terminal block of the TA5101-4DI option board is plugged into a option board for COMx serial communication TA5141-RS232I, TA5142-RS485I or TA5142-RS485, the communication interface will be damaged by the 24 V.
Please do not confuse the 5-pin terminal block of the TA5101-4DI with the 5-pin terminal block for serial communication interface of TA5141-RS232I, TA5142-RS485I or TA5142-RS485.

Table 88: TA5141-RS232I

Serial interface	Pin	Signal	Description
	1	RTS	Request To Send DCE is ready to accept data from the DTE
	2	TxD	Transmit data (output)
	3	GND	Common Ground
	4	RxD	Receive data (input)
	5	CTS	Clear To Send (input) DCE is ready to accept data from the DTE

103.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

103.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

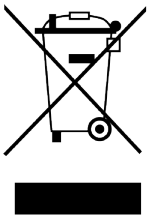
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

103.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

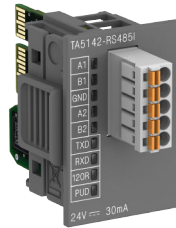
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

104 TA5142-RS485(I)(W) - Option board for COMx serial communication

- TA5142-RS485
- TA5142-RS485I
- TA5142-RS485W for wide temperature range
- TA5142-RS485IW for wide temperature range



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



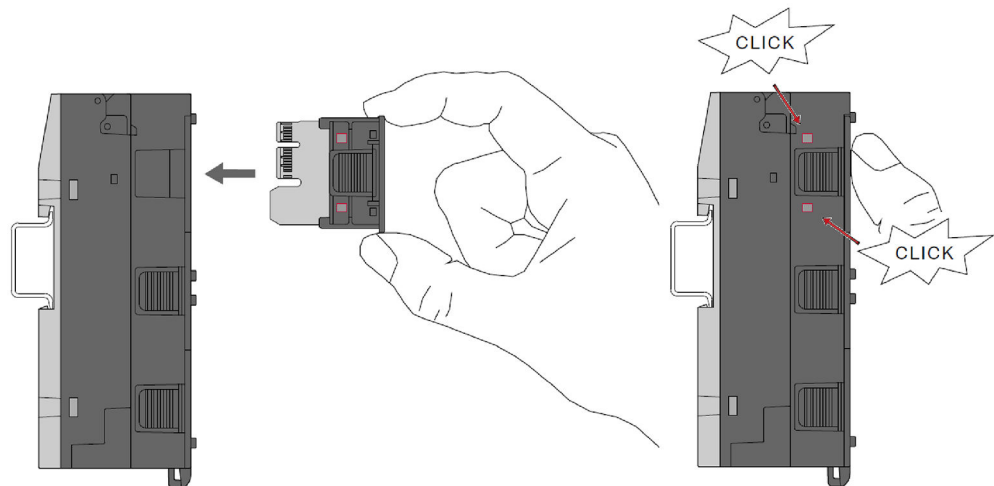
CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.

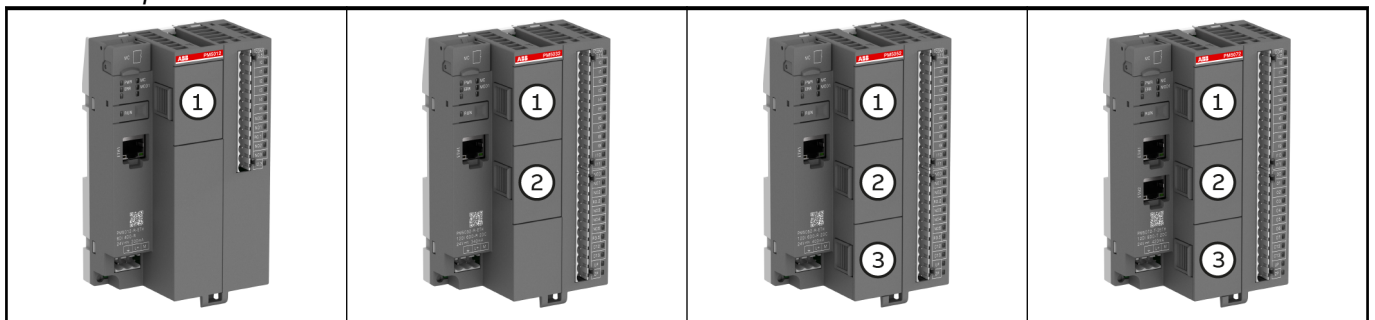
104.1 Assembly



104.1.1 Optimized mounting of the option boards

The AC500-eCo processor modules have up to 3 slots for option boards.

Table 89: Option board slots



The best thermal circulation is given on slot 3 (bottom slot), followed by slot 2 (middle slot) and then slot 1 (top slot).

The best mounting position of the option board depends on its power dissipation.



Rules for optimized mounting of the option boards

- The higher the power dissipation of the option board, the lower the mounting position should be selected.
- **The TA5126-2AO-UI option board has the highest power dissipation and must always be mounted at the lowest option board slot.**

The optimized mounting position can be easily determined with the help of this table.

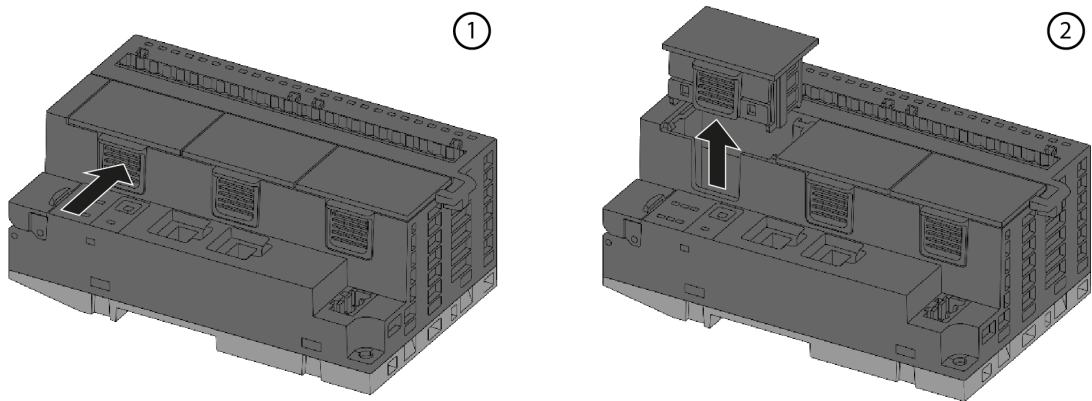
Table 90: Power dissipation of the option boards

Power dissipation of the option boards	Digital	Analog	Serial interface	Accessory
very small			TA5141-RS232I(W) TA5142-RS485I(W) TA5142-RS485(W)	TA5130-KNXPB(W) TA5131-RTC
small	TA5105-4DOT(W)	TA5123-2AI-RT(D/W)		
medium	TA5110-2DI2DO(T/W) TA5101-4DI(W)	TA5120-2AI-UI(W)		
large		TA5126-2AO-UI(W)		



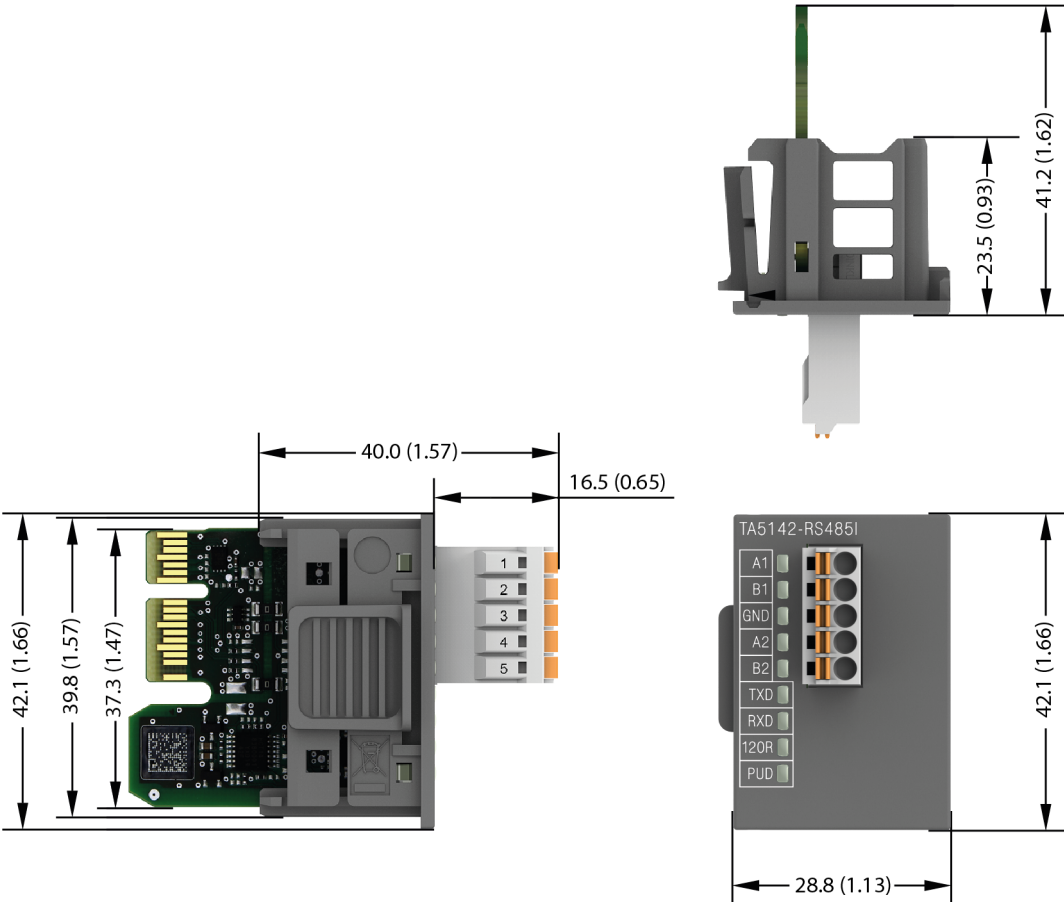
If the option boards to be mounted are in the same power dissipation level, then the slots can be freely selected.

104.2 Disassembly



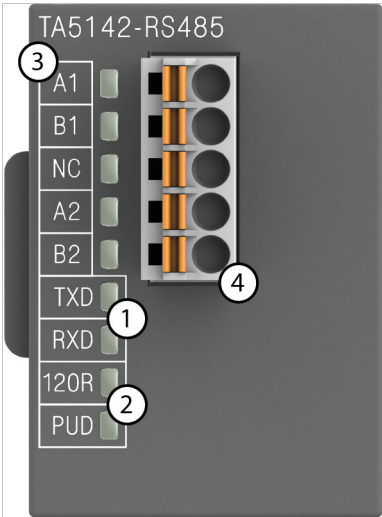
CAUTION!
Risk of injury and damaging the product!
Always plug in the option board slot cover when the option board is not inserted.
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).
Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

104.3 Dimensions



The dimensions are in mm and in brackets in inch.

104.4 Connections



- 1 2 LEDs for communication state display (TxD and RxD)
- 2 2 LEDs for termination state display
- 3 Allocation of signal name
- 4 5-pin terminal block for communication interface

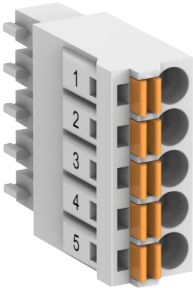
104.4.1 Serial interface

Serial interface
RS-485(I)



NOTICE!
Damage to the serial communication interface by using 5-pin terminal block of the TA5101-4DI!
If the 5-pin terminal block of the TA5101-4DI option board is plugged into a option board for COMx serial communication TA5141-RS232I, TA5142-RS485I or TA5142-RS485, the communication interface will be damaged by the 24 V.
Please do not confuse the 5-pin terminal block of the TA5101-4DI with the 5-pin terminal block for serial communication interface of TA5141-RS232I, TA5142-RS485I or TA5142-RS485.

Table 91: TA5142-RS485(I)

Serial interface	Pin	Signal
	1	A1 internally connected to A2
	2	B1 internally connected to B2
	3	GND
	4	A2 internally connected to A1
	5	B2 internally connected to B1

104.4.2 Bus termination configuration

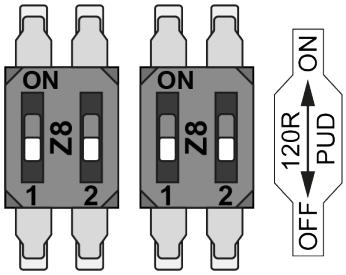
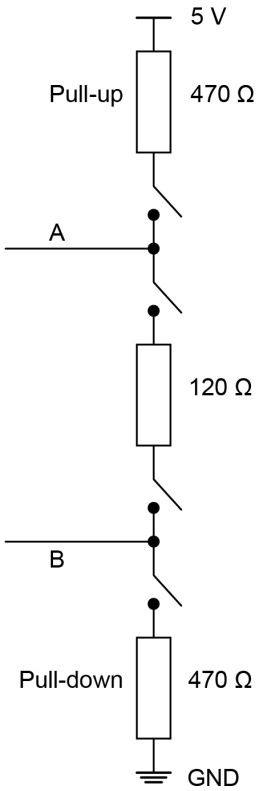


Bus termination configuration
The bus termination configuration is only available for TA5142-RS485I and TA5142-RS485.

Table 92: Configuration

Settings on the module	State of LEDs	Internal wiring diagram	Description
			Master at the bus line end, pull-up and pull-down activated, bus termination 120 Ω

Settings on the module	State of LEDs	Internal wiring diagram	Description
			Master within the bus line, pull-up and pull-down activated
			Slave at the bus line end, bus termination 120 Ω

Settings on the module	State of LEDs	Internal wiring diagram	Description
			Slave within the bus line

104.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

104.6 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

104.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

105 TA515-CASE / TA5450-CASE

- TA515-CASE
- TA5450-CASE



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

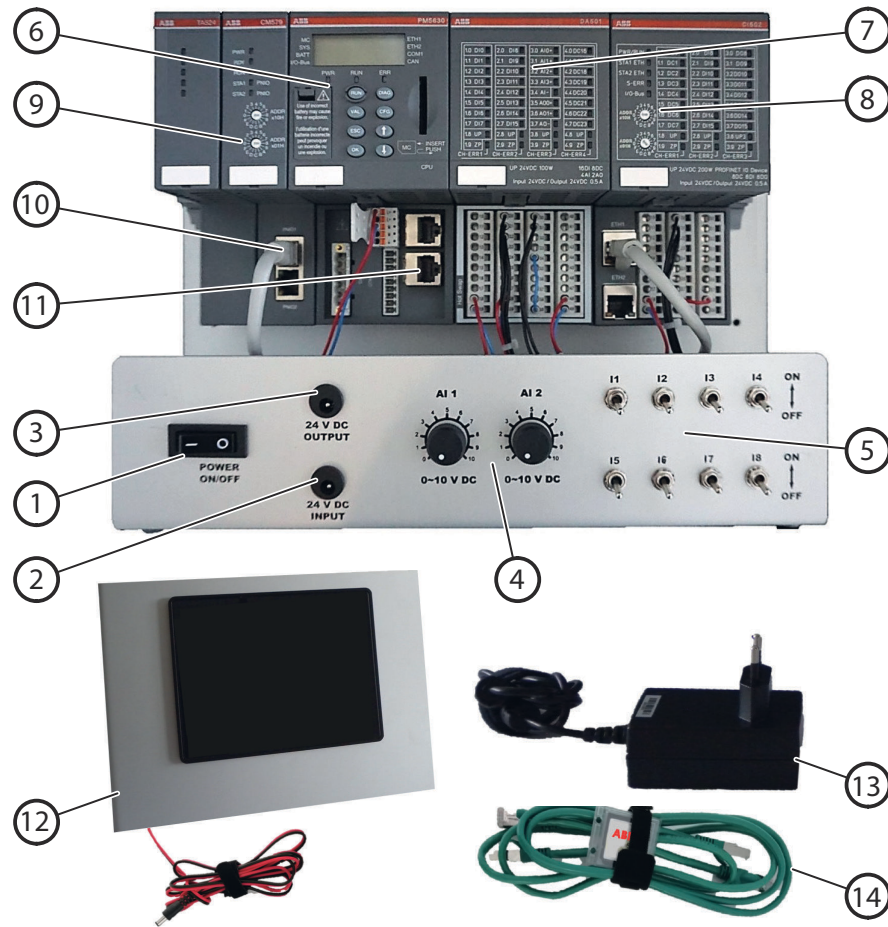


WARNING!

Risk of injury and damaging the product!

- Only use the training case with the delivered power supply adapter
- Only use the training case for demonstration and training activities
- The operating temperature for training case is 0 °C ... + 40°C
- This training case is a class A device for EMC, because the main components (e.g. PLC) inside are designed for industrial applications. It can cause radio-interference in residential areas.

105.1 Connections



- 1 24 V DC power switch
- 2 24 V DC power input socket
- 3 24 V DC power output socket
- 4 2 Potentiometers
- 5 8 switches
- 6 TA515-CASE: CPU PM585-ETH / TA5450-CASE: CPU PM5630-2ETH
- 7 Analog/digital I/O module DA501
- 8 Communication interface module CI502-PNIO
- 9 Communication module CM579-PNIO
- 10 PROFINET connection
- 11 TA515-CASE: TB521-ETH Ethernet Plug ETH1 for Panel connection / TA5450-CASE: TB5620-2ETH Ethernet Plug ETH2 for Panel connection
- 12 Panel with power supply cable
- 13 Power adapter, AC DC Power supply 24 Volt, 40 Watt, Type GE40I24-P1J
- 14 Ethernet cables and memory card containing demo program

105.1.1 System setup

Remove the system from the case and place it upright.

For initial start-up, remove the power supply unit (13) and the supplied socket adapters. Select the appropriate socket adapter and lock it firmly onto the power supply unit. Make sure that the mains voltage is within the input range of the power supply unit.

Connect the power supply unit to the mains socket and the cable plug to the power input socket (2). Connect the power supply cable of the control panel (12) to the output socket (3). Connect an Ethernet cable (14) on one side to the ETH0 Ethernet socket of the control panel (12) and on the other side to the Ethernet socket (11) of the terminal base. After switching on the power switch (1), the system starts loading the demo programs of PLC and control panel and is then ready to use the demo program.

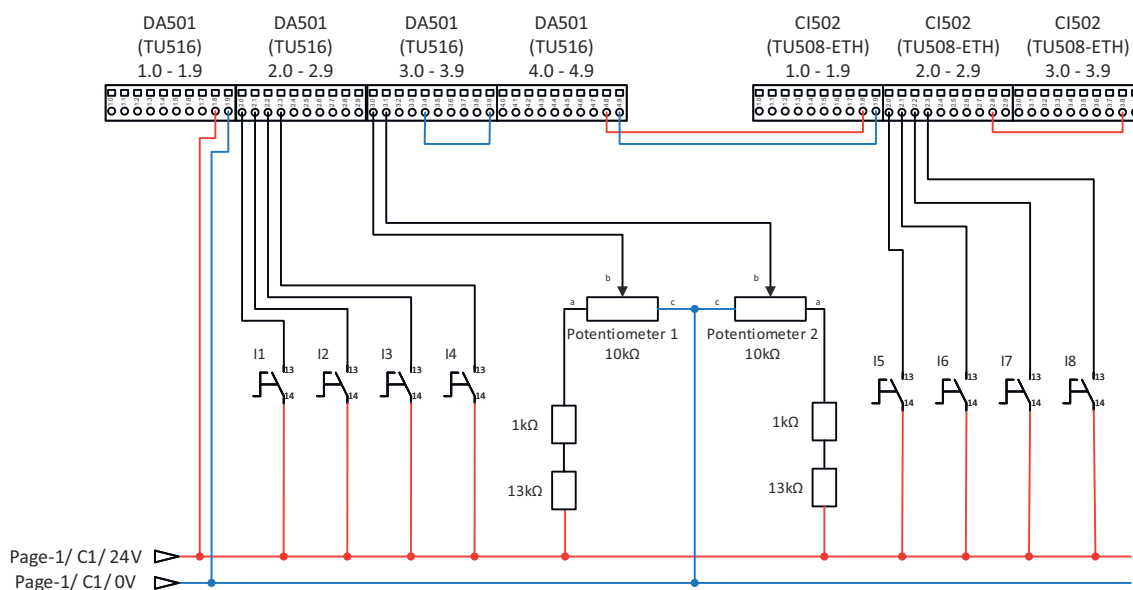
105.1.2 Features of demo program

The demo is ready for use when the CPU display is showing „run“ and the panel screen shows „CP600-Pro Demo Project“. Touching „Training Case“ opens the visualization of the input states of the I/O channels. The input status on the screen changes when potentiometer (4) or switches (5) are operated. The demo program in the PLC reads inputs and copies the input state to outputs. On the I/O modules can be observed that the status LED of outputs are following the input status. Touching the house symbol (upper right corner) closes the demo visualization. The other buttons on the panel screen open demos for features of the panel.

105.1.3 Restoring demo program

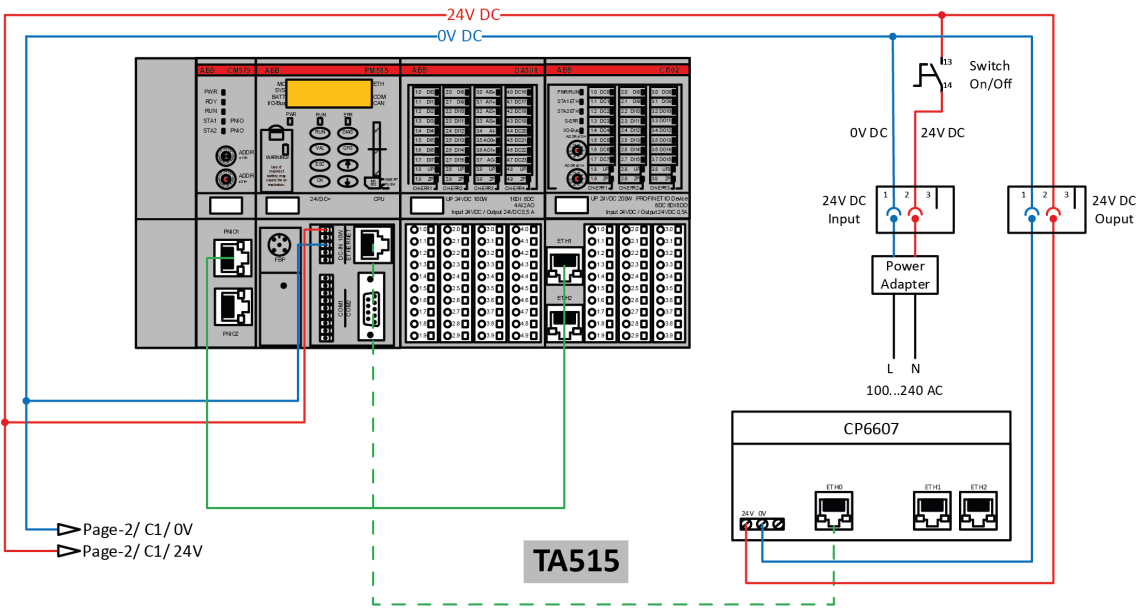
The training case is delivered with demo program installed. If needed, the demo program can be restored from the memory card. The QR code opens the operation instruction explaining configuration of components and procedure for loading the demo program into PLC and panel.

105.1.4 Power supply

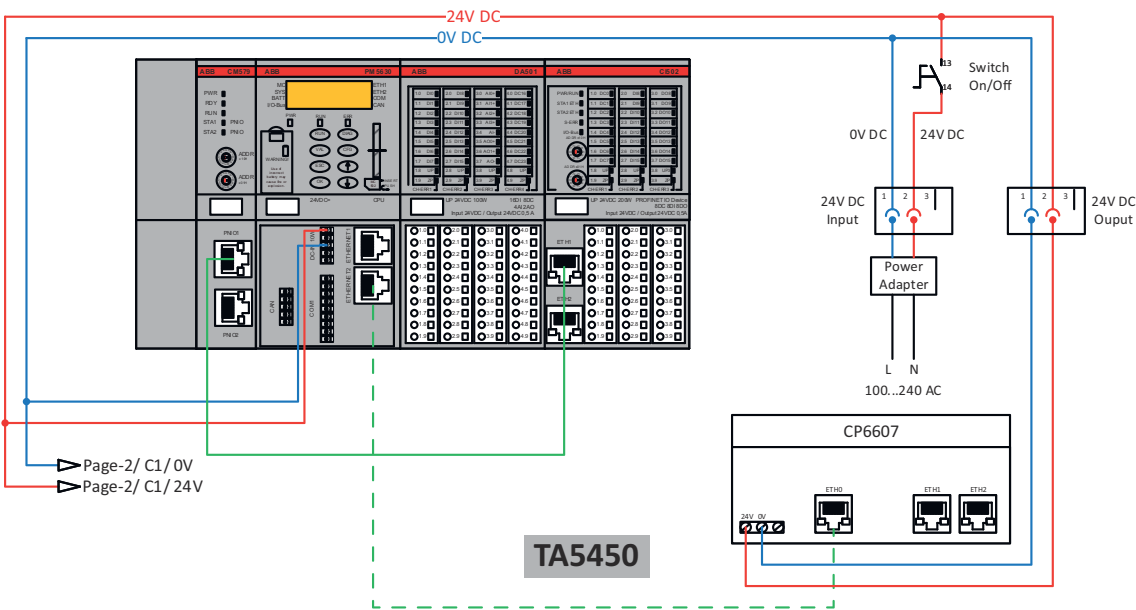


105.1.5 Inputs/Outputs

TA515



TA5450



105.2 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

105.3 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

105.4 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

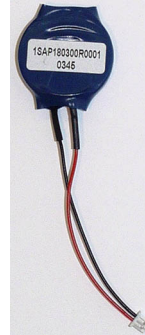
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

106 TA521 - Battery

- TA521



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



CAUTION!

This Lithium Battery is the only one which can be used with AC500 CPUs.

- Replace battery only with activated supply voltage.
- Don't use a battery older than 3 years for replacement (e.g. battery kept to long in stock).
- Lithium batteries must not be re-charged, not be disassembled and not be disposed of in fire.
- They must be stored in a dry place.
- Exhausted batteries must be recycled to respect the environment.

106.1 Assembly

Insertion



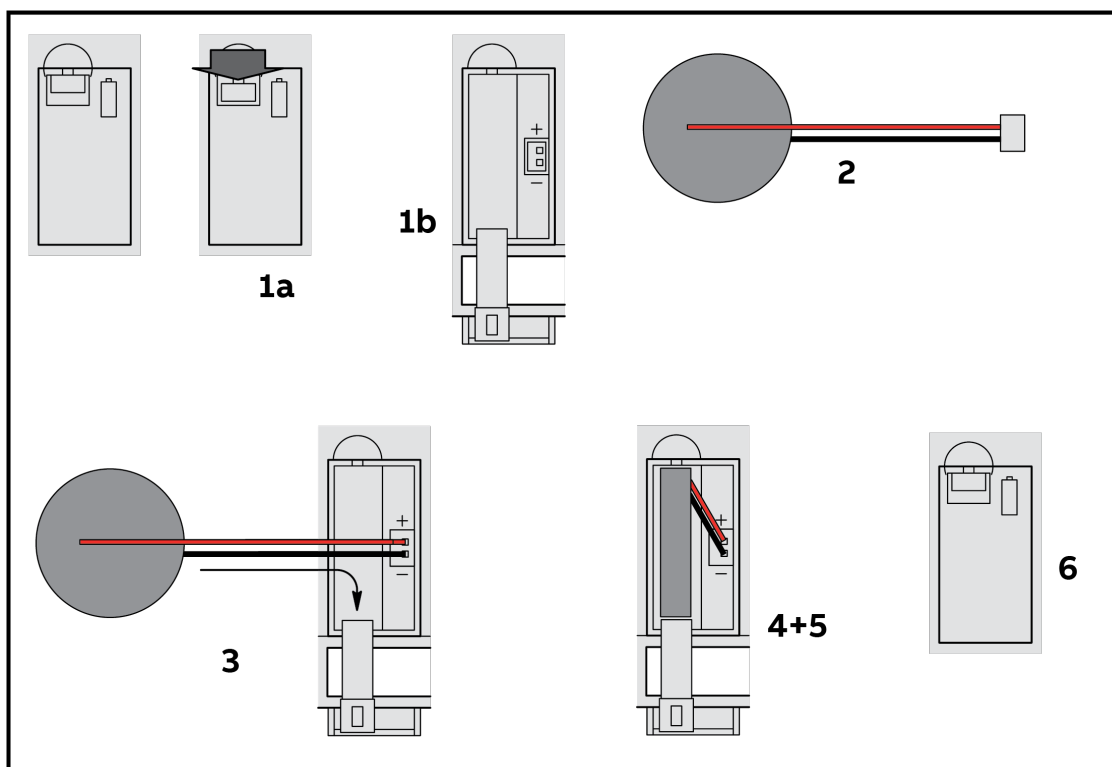
To ensure proper operation and to prevent data loss, the battery insertion or replacement must be always done with the system under power. Without battery and power supply there is no data buffering possible.



WARNING!

Risk of fire or explosion!

Use of incorrect Battery may cause fire or explosion.



1. Open the battery compartment with the small locking mechanism, press it down and slip down the door. The door is attached to the front face of the processor module and cannot be removed.
2. Remove the TA521 battery from its package and hold it by the small cable. Remove then the small connector from the socket, do this best by lifting it out with a screwdriver.
3. Insert the battery connector into the small connector port of the compartment. The connector is keyed to find the correct polarity (red = positive pole = above).
4. Insert first the cable and then the battery into the compartment, push it until it reaches the bottom of the compartment.
5. Arrange the cable in order not to inhibit the door to close.
6. Pull-up the door and press until the locking mechanism snaps.



In order to prevent data losses or problems, the battery should be replaced after 3 years of utilisation or at least as soon as possible after receiving the "low battery warning" indication.

Do not use a battery older than 3 years for replacement, do not keep batteries too long in stock.

Replacement of the battery



To ensure proper operation and to prevent data loss, the battery insertion or replacement must be always done with the system under power. Without battery and power supply there is no data buffering possible.

1. Open the battery compartment with the small locking mechanism, press it down and slip down the door. The door is attached to the front view of the processor module and cannot be removed.
2. Remove the old TA521 battery from the battery compartment by pulling it by the small cable. Remove then the small connector from the socket, do this best by lifting it out with a screwdriver.



3. Follow the previous instructions to insert a new battery.



CAUTION!
Risk of explosion!

Do not open, re-charge or disassemble lithium batteries. Attempting to charge lithium batteries will lead to overheating and can cause explosions.

Protect them from heat and fire and store them in a dry place.

Never short-circuit or operate lithium batteries with the polarities reversed. The batteries are likely to overheat and explode. Avoid unintentional short circuiting do not store batteries in metal containers and do not place them on metallic surfaces. Escaping lithium is a health hazard.



In order to prevent data losses or problems, the battery should be replaced after 3 years of utilisation or at least as soon as possible after receiving the "low battery warning" indication.

Do not use a battery older than 3 years for replacement, do not keep batteries too long in stock.

106.2 Certification



MSIP-REI-Abb-AC500

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

106.3 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

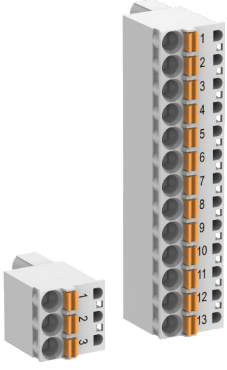
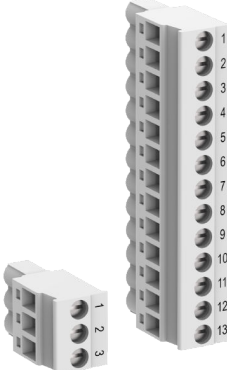
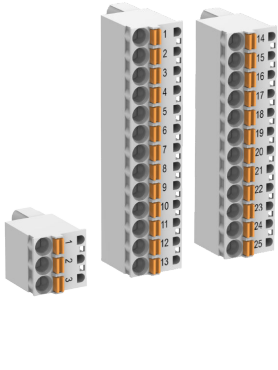
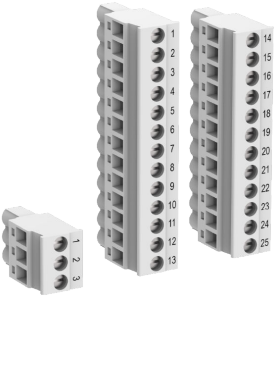
107 TA52xx(-x) - Terminal block sets

- TA5211-TSPF-B
- TA5211-TSCL-B
- TA5212-TSPF
- TA5212-TSCL
- TA5220-SPF5
- TA5220-SPF6
- TA5220-SPF7
- TA5220-SPF8

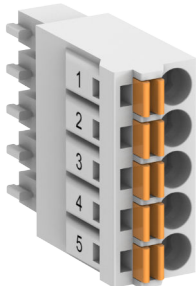
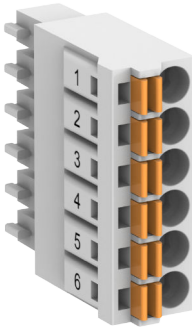
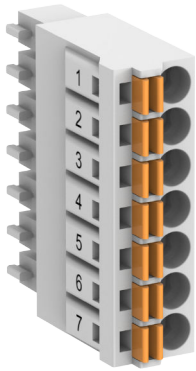
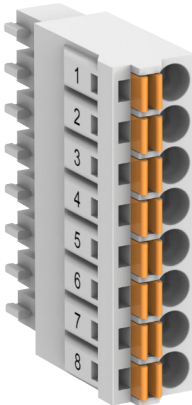
For the AC500-eCo V3 **Basic CPUs** a 3-pin terminal block for power supply and a 13-pin terminal block for I/O connectors are used.

For the AC500-eCo V3 **Standard CPUs** and **Pro CPUs** a 3-pin terminal block for power supply, a 13-pin terminal block and a 12-pin terminal block for I/O connectors are used.

For all CPUs there is a screw and a spring variant available.

Basic CPU		Standard and Pro CPUs	
Spring terminal TA5211-TSPF-B	Screw terminal TA5211-TSCL-B	Spring terminal TA5212-TSPF	Screw terminal TA5212-TSCL
			

Various removable spring terminal blocks are available for option boards.
The following spare parts are available (depending on the number of pins).

Spring terminals			
TA5220-SPF5	TA5220-SPF6	TA5220-SPF7	TA5220-SPF8
			



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



CAUTION!

Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.



Terminal block set for PM50x2

Processor modules PM50x2 CPU are not delivered with terminal blocks.

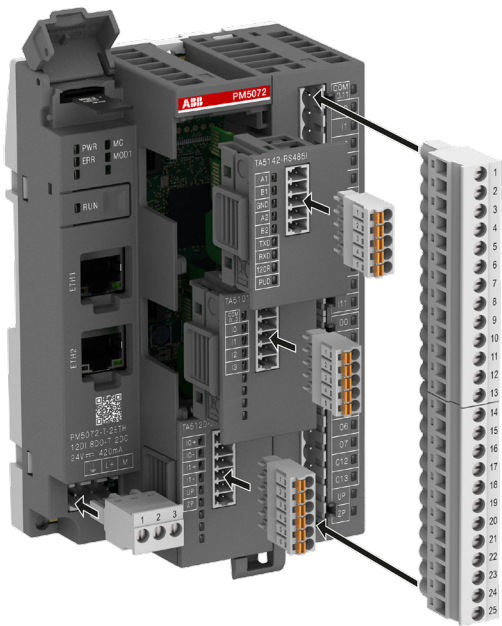
Screw terminal block set:

- TA5211-TSCL-B (1SAP187400R0001) for PM5012-x-ETH
- TA5212-TSCL (1SAP187400R0004) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

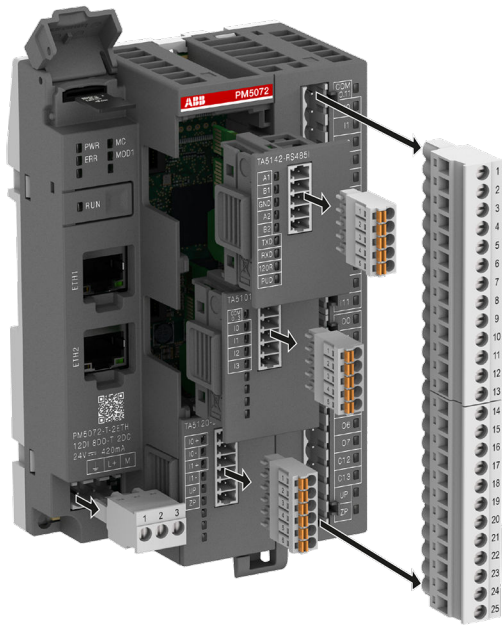
Spring terminal block set:

- TA5211-TSPF-B (1SAP187400R0002) for PM5012-x-ETH
- TA5212-TSPF (1SAP187400R0005) for PM5032-x-ETH, PM5052-x-ETH, PM5072-T-2ETH(W), PM5082-T-2ETH

107.1 Assembly



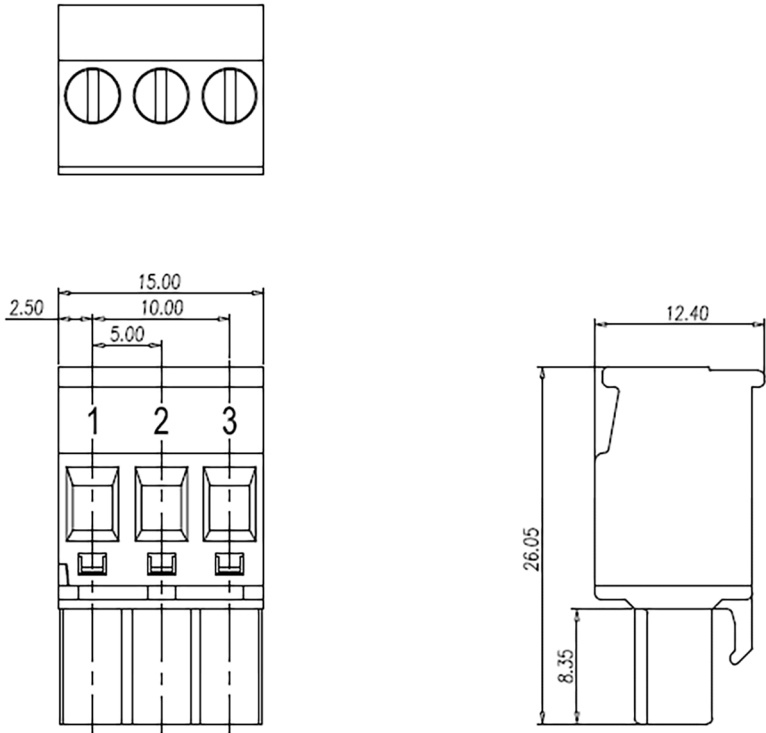
107.2 Disassembly



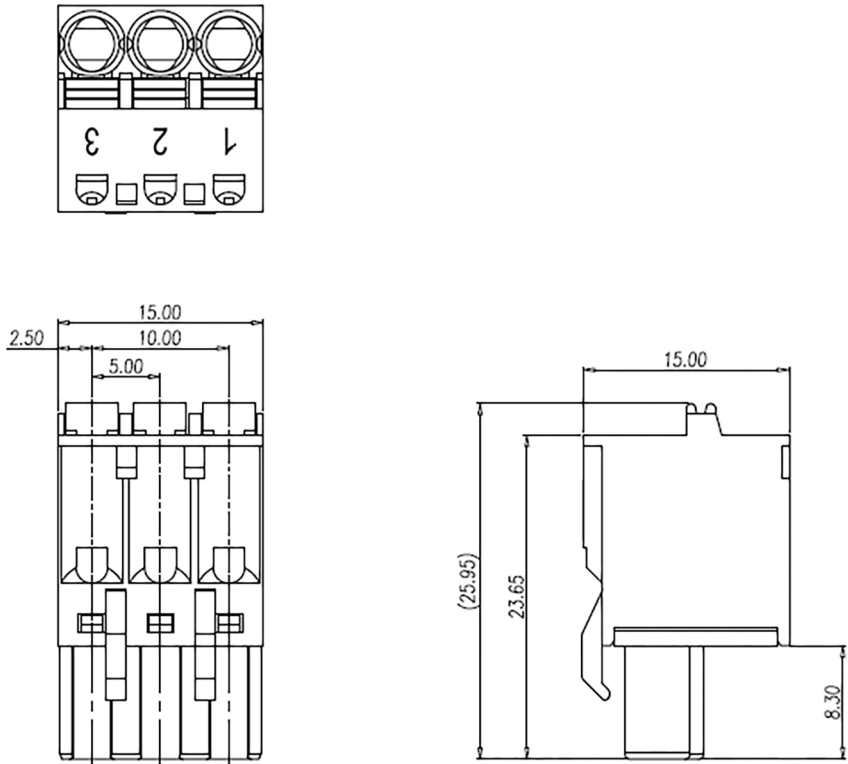
107.3 Dimensions

107.3.1 3-pin terminal block for power supply

Screw terminal

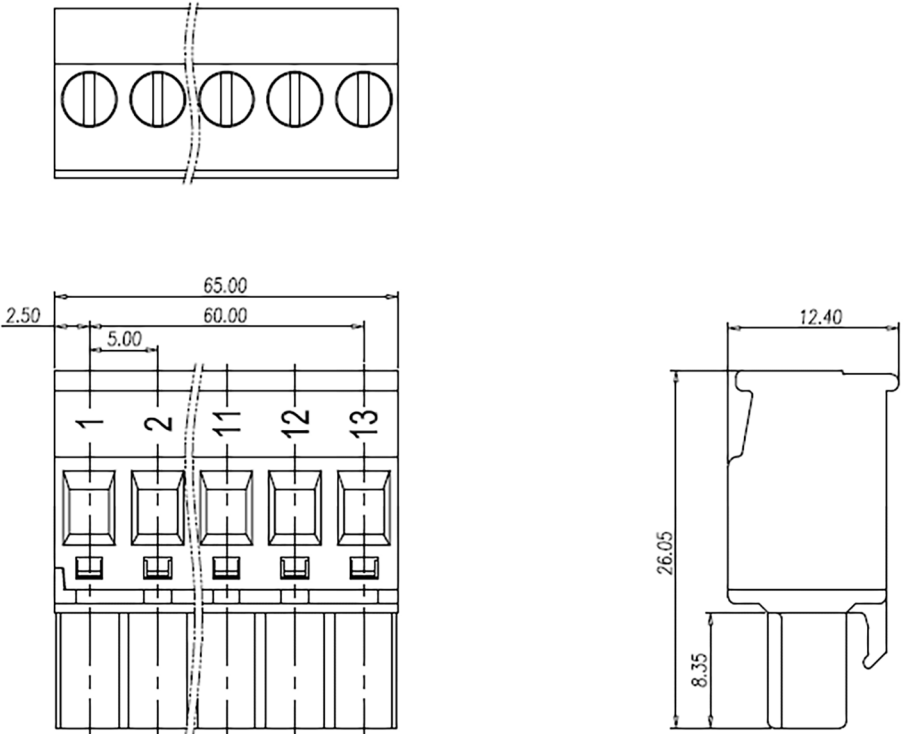


Spring terminal

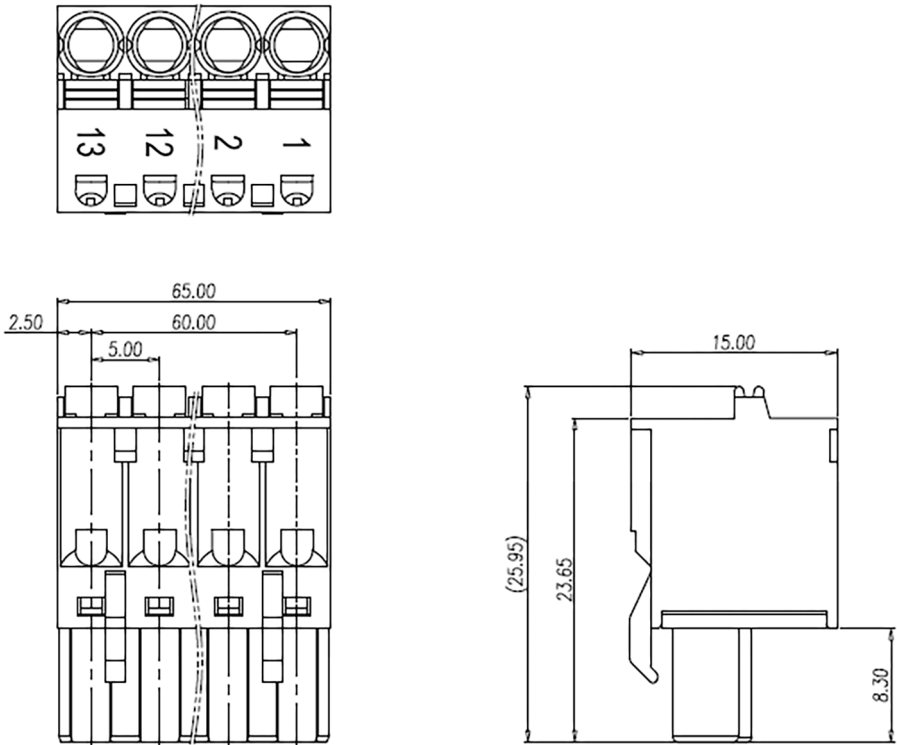


107.3.2 13-pin terminal block for I/O connectors

Screw terminal

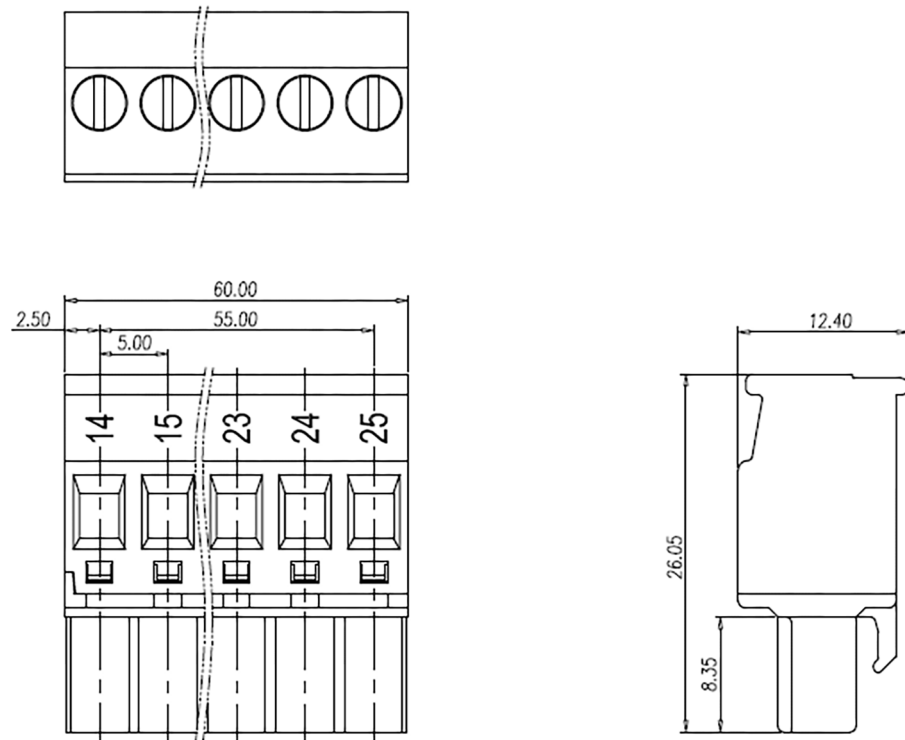


Spring terminal

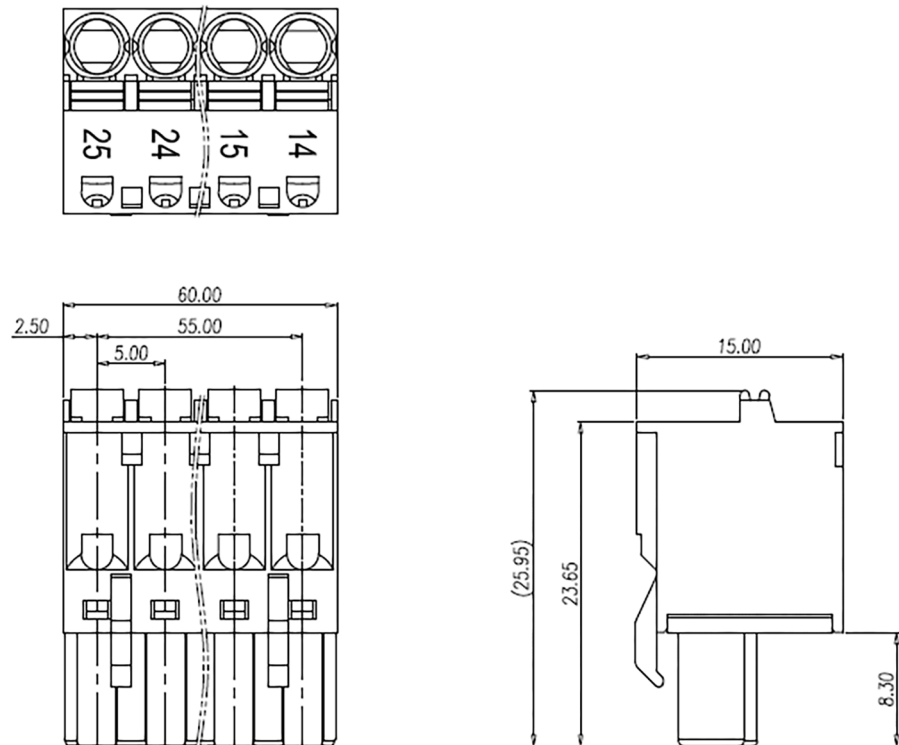


107.3.3 12-pin terminal block for I/O connectors

Screw terminal



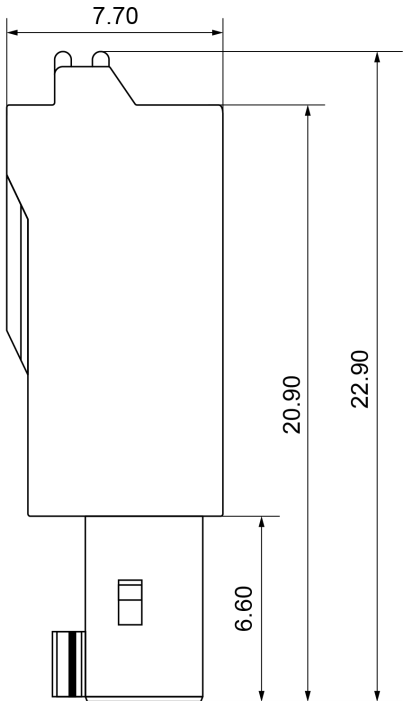
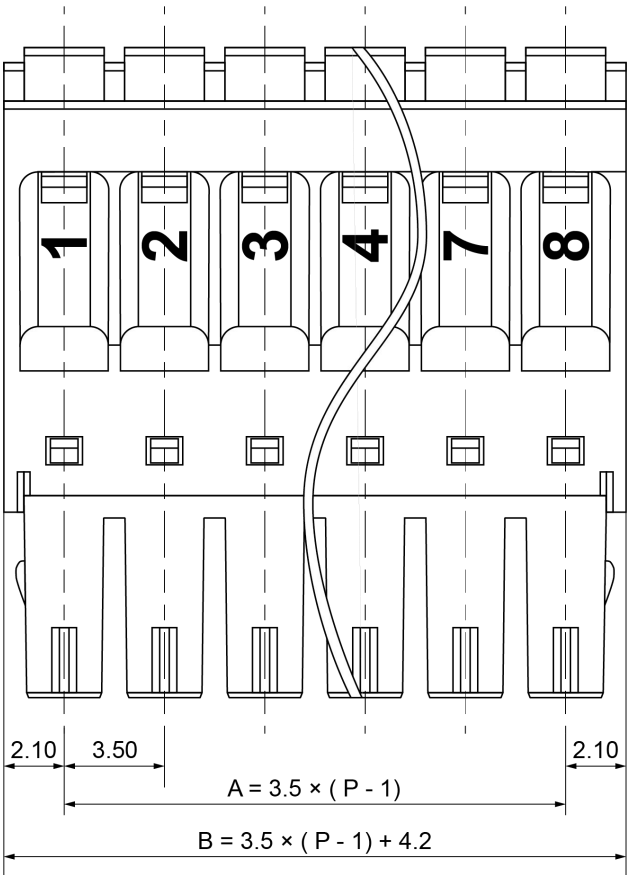
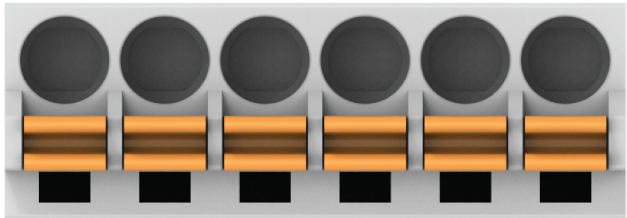
Spring terminal



107.3.4 x-pin terminal blocks for option boards



Only these x-pin terminal blocks are available for the option boards.
TA5220-SPF x , with $x = 5 \dots 8$



This results in these dimensions for the available spring terminal blocks.

Description	Pin	Length [mm]	Wide [mm]	Height [mm]
TA5220-SPF5	5	18.2	7.7	22.9
TA5220-SPF6	6	21.7	7.7	22.9
TA5220-SPF7	7	25.2	7.7	22.9
TA5220-SPF8	8	28.7	7.7	22.9

107.4 Connections



The connections are described in the PM50x2 processor module or in the TA51xx option boards.

107.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

107.6 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

107.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

108 TA5300-CVR - Option board slot cover

- TA5300-CVR



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.



CAUTION!

Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.

If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

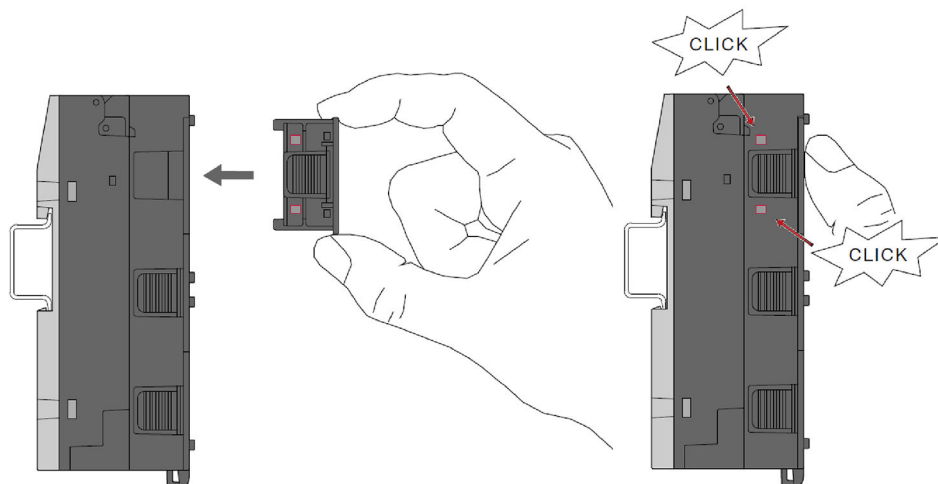


The AC500-eCo V3 processor modules are delivered with option board slot cover(s).

The option board slot cover has to be removed before inserting an option board.

The TA5300-CVR option board slot covers are available as spare parts.

108.1 Assembly



CAUTION!

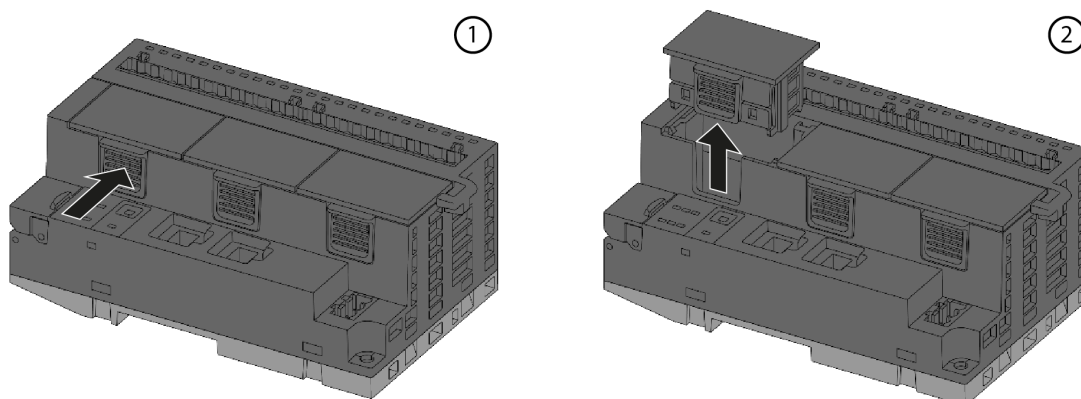
Risk of injury and damaging the product!

Always plug in the option board slot cover when the option board is not inserted.

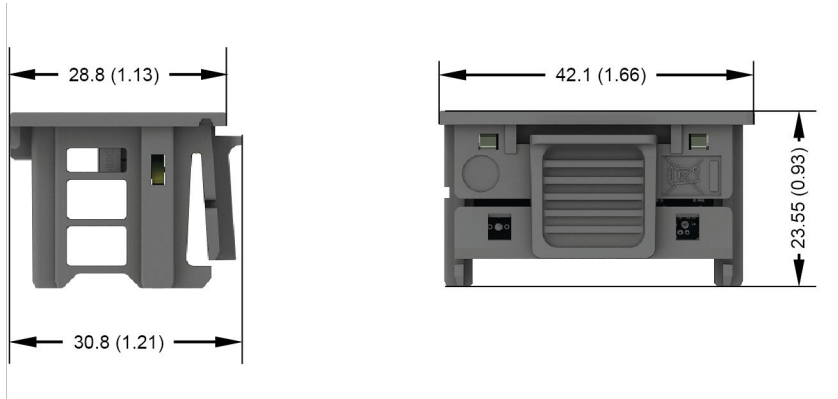
If the option board slot cover is lost, please order the replacement TA5300-CVR (1SAP187500R0001).

Never power up the CPU with uncovered option board slot, otherwise it may cause serious injury and/or damage the product.

108.2 Disassembly



108.3 Dimensions



The dimensions are in mm and in brackets in inch.

108.4 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

108.5 Certification



MSIP-REI-Abb-AC500

en Note
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging
ko 제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

108.6 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

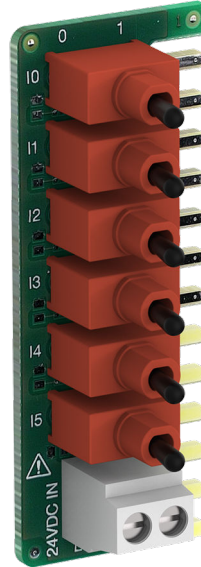
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

109 TA5400-SIM - Input simulator

- TA5400-SIM



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

109.1 Assembly

Insertion of the input simulator

1. Make sure that the power supply of the processor module is turned off.



CAUTION!

Risk of damaging the PLC modules!

The PLC modules can be damaged by overvoltages and short circuits.

Make sure, that all voltage sources (supply and process voltage) are switched off before you start working on the system.

Never connect voltages > 24 V DC to the terminal block of the TA5400-SIM input simulator.



CAUTION!

Risk of damaging the input simulator and/or PLC modules!

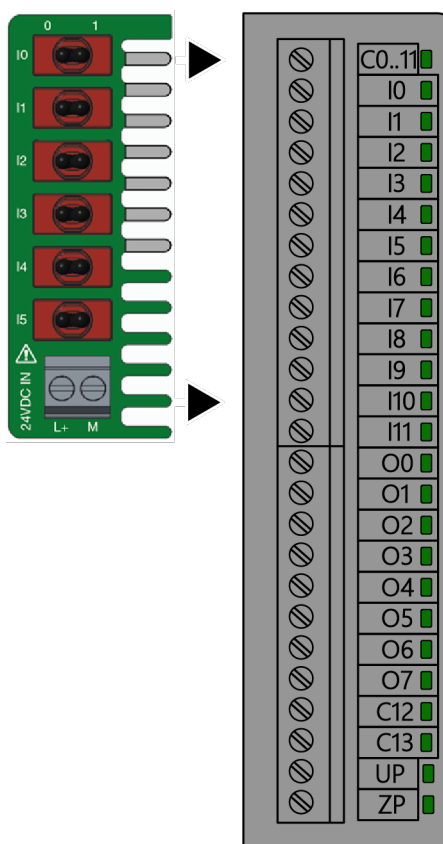
The TA5400-SIM input simulator may only be used with AC500-eCo V3 processor modules PM50x2.

Never use the input simulator with other devices.

The input simulator may only be used with screw-type terminal blocks.

The input simulator is only intended for testing and training purposes. Never use it within productive systems.

2. Make sure that all clamps of the onboard I/Os are totally open.
3. Insert the TA5400-SIM input simulator into the screw terminal block as shown in the figure.



4. Tighten all screws of the onboard I/O clamps.
5. Make sure all switches are in OFF state (0).
6. Connect 24 V DC to the power supply of the TA5400-SIM (L+ and M). Tighten the screws.

7. Connect the processor module power supply wires (24 V DC) ↗ *"Pin assignment"* on page 581.

109.2 Disassembly

Removal of the input simulator

1. Make sure that the power supply of the processor module is turned off.



CAUTION!

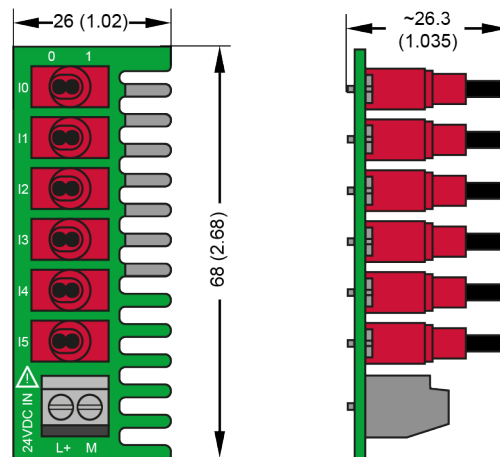
Risk of damaging the PLC modules!

The PLC modules can be damaged by overvoltages and short circuits.

Make sure that all voltage sources (supply and process voltage) are switched off before you start working on the system.

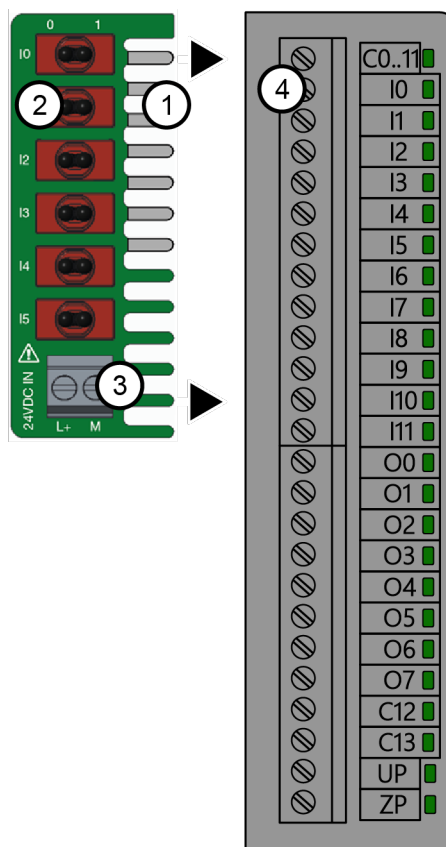
2. Disconnect the TA5400-SIM power supply wires (24 V DC) with a flat-blade screwdriver from the terminal block for power supply (L+ and M).
3. Loosen all screws of the onboard I/Os.
4. Remove the input simulator by pulling it to the left side.

109.3 Dimensions



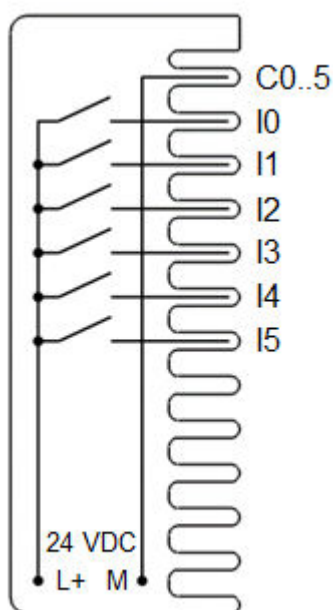
The dimensions are in mm and in brackets in inch.

109.4 Connections



- 1 Contacts for connecting the input simulator to the terminal block for I/O connectors
- 2 6 switches for the digital inputs DI0 ... DI5 (0 means opened switch, 1 means closed switch)
- 3 Screw terminal block for power supply
- 4 Screw terminal block(s) for I/O connectors

The diagram below shows the connection of the TA5400-SIM input simulator.





NOTICE!
Risk of damage to the TA5400-SIM input simulator!
Do not remove the terminal block while the TA5400-SIM input simulator is connected.

Do not apply mechanical forces to the input simulator when it is connected to the terminal block.

In both cases the input simulator could be damaged.

The TA5400-SIM input simulator can simulate 6 digital 24 V DC input signals to the digital inputs I0...I5 of the onboard I/Os.

With the TA5400-SIM input simulator, the digital 24 V DC inputs I0...I5 can be turned OFF and ON separately:

- If the lever of the switch is on the right side (1), the input is ON.
- If the lever of the switch is on the left side (0), the input is OFF.

109.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

109.6 Certification



MSIP-REI-Abb-AC500

en	Note These devices correspond to:	en Devices with KCC sign on product sticker and packaging
ko	참고 이러한 기기는	ko 제품 스티커 및 포장에 KCC 표시가 된 기기
		KN61000-6-2 “Immunity for industrial environments”, KN61000-6-4 “Emission standard for industrial environments”
		KN61000-6-2 “산업 환경에 대한 내성”, KN61000-6-4 “산업 환경 누출 기준”에 적합함

109.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

110 TA541 - Battery

- TA541



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



CAUTION!

This Lithium Battery is the only one which can be used with AC500 CPUs.

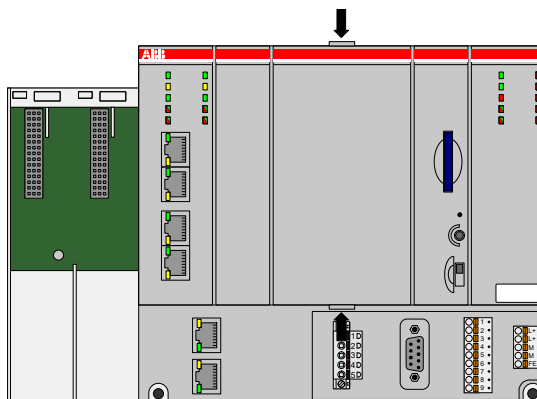
- Replace battery only with activated supply voltage.
- Don't use a battery older than 3 years for replacement (e.g. battery kept to long in stock).
- Lithium batteries must not be re-charged, not be disassembled and not be disposed of in fire.
- They must be stored in a dry place.
- Exhausted batteries must be recycled to respect the environment.

110.1 Assembly



The TA541 lithium battery is the only applicable battery for processor modules PM595.

1. Remove the front cover / display by pressing the marked areas with your fingers and pull it to the front.



2. Remove the old battery from the battery compartment by pulling it by the small cable. Remove then the small connector from the socket.



3. Remove the battery from its package and hold it by the small cable.



4. Insert the battery connector into the connector port of the PCB. The connector is keyed to find the correct polarity (red = positive pole = right side).



5. Insert the battery into the battery compartment on the left side as shown in the figure.



6. Re-assemble the front cover / display by pressing it straight from the front until it snaps in.



In order to prevent data losses or problems, the battery should be replaced after 3 years of utilisation or at least as soon as possible after receiving the "low battery warning" indication.

Do not use a battery older than 3 years for replacement, do not keep batteries too long in stock.

110.2 Certification

		MSIP-REI-Abb-AC500	
en	Note	en	Devices with KCC sign on product sticker and packaging
	These devices correspond to:	ko	제품 스티커 및 포장에 KCC 표시가 된 기기
ko	참고 이러한 기기는		KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
			KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

110.3 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

111 TA561-RTC - Real-time clock adapter

- TA561-RTC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

Removal/Insertion under power

The devices are not designed for removal or insertion under power. Because of unforeseeable consequences, it is not allowed to plug or unplug devices with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace a module.

Disconnecting any powered devices while energized in a hazardous location could result in an electric arc, which could create a flammable ignition resulting in fire or explosion.

Make sure that power is removed and that the area has been thoroughly checked to ensure that flammable materials are not present prior to proceeding.

The devices must not be opened when in operation. The same applies to the network interfaces.



CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.



CAUTION!

Risk of explosion!

Do not open, re-charge or disassemble lithium batteries. Attempting to charge lithium batteries will lead to overheating and can cause explosions.

Protect them from heat and fire and store them in a dry place.

Never short-circuit or operate lithium batteries with the polarities reversed. The batteries are likely to overheat and explode. Avoid unintentional short circuiting do not store batteries in metal containers and do not place them on metallic surfaces. Escaping lithium is a health hazard.

111.1 Battery Replacement

Replacement of the battery



WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.

1. Switch off power supply of the system and verify that the CPU is powerless.



⇒ LEDs (PWR, RUN, ERR) must be off.

2. Remove the option board slot cover.



⇒ Remove the option board slot cover of the CPU totally by pushing it to the outer side.



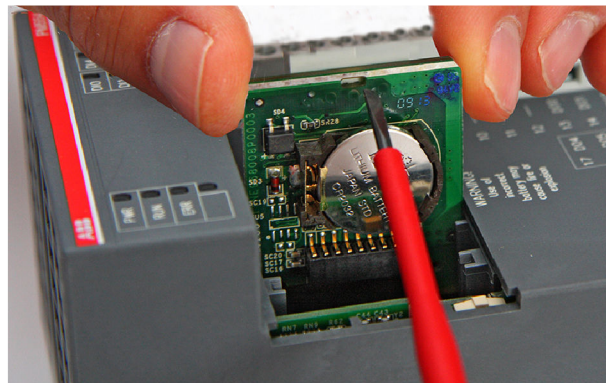
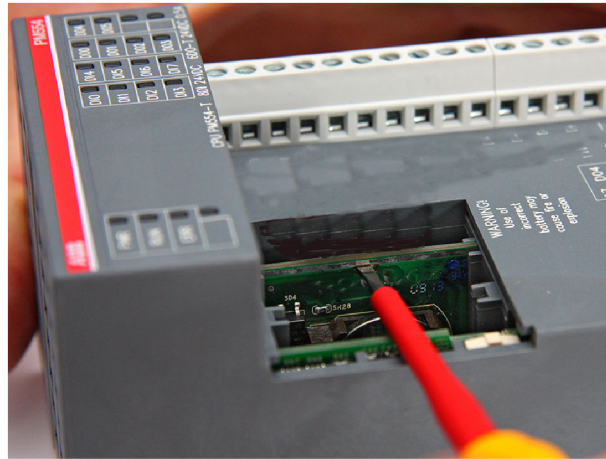
NOTICE!

Avoidance of electrostatic charging

PLC devices and equipment are sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Observe the following rules when handling the system:

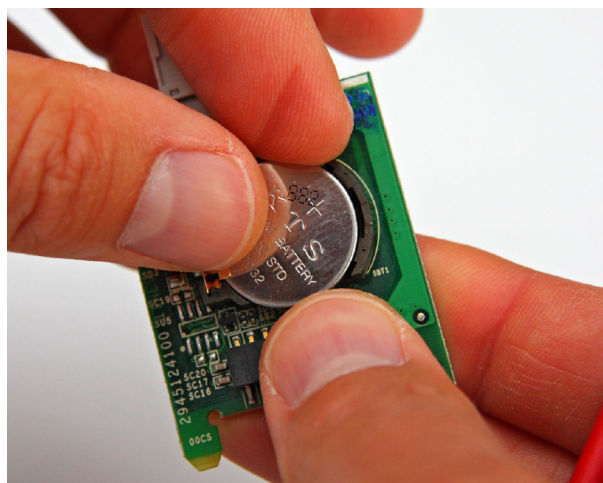
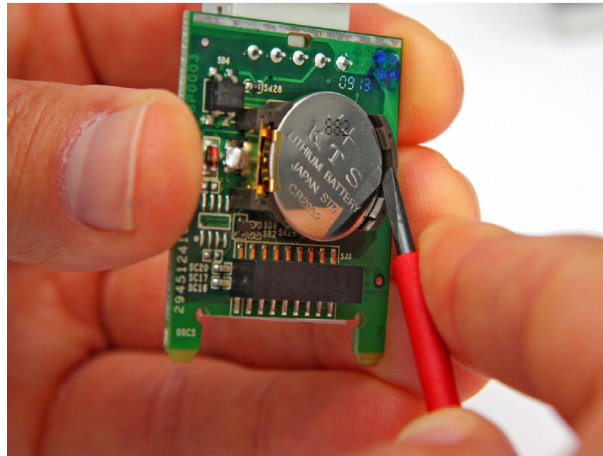
- Touch a grounded object to discharge potential static.
- Wear an approved grounding wrist strap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- If available, use a static-safe workstation.
- When not in use, store the equipment in appropriate static-safe packaging.

3. Remove the option board from the CPU by lifting it up with a screwdriver.



Remove memory card (if installed) / terminal block (COM2).

4. Remove the battery.



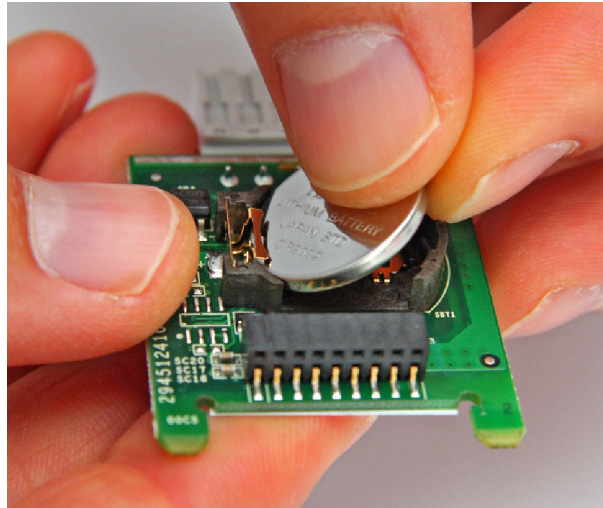
ATTENTION!

Lithium batteries must not be recharged, not be disassembled and not be disposed of in fire.

Exhausted batteries must be recycled to respect the environment.

Dispose of battery properly according to disposal procedures for lithium batteries.

5. Insert replacement battery.



ATTENTION!

A standard battery CR2032 can be used for **TA561-RTC** and **TA562-RS-RTC**.

Nominal voltage: **3 V DC**.

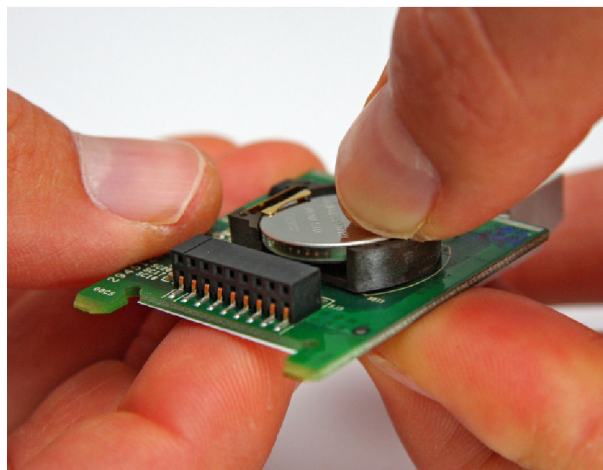
Required capacity: **230 mAh**.

Required temperature range for discharge: **0 °C ... +70 °C**.

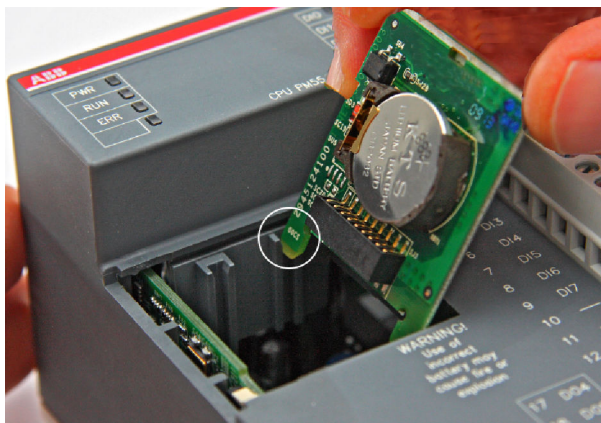
After replacement of the battery, the real-time clock (RTC) date and time must be set again by the user.

Don't use a battery older than 3 years for replacement (e.g. battery kept too long in stock).

Batteries must be stored in a dry place.



6. Insert option board into the CPU.



- ⇒ Insert the adapter TA56x-RTC into the slot on the right of the CPU.



Make sure that the 2 noses of the extension module fit to the holes of the CPU PCB.

See white circle in figure above.



7. Refit the option board slot cover of the CPU.



⇒



Remember to re-insert a memory card first if it has been removed previously.

8. Only now the CPU can be connected to power.



Set the time of the real-time clock.

111.2 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

111.3 Certification



MSIP-REI-Abb-AC500-eCo

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

111.4 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

112 TA562-RS(-x) / TA569-RS(-x) - Adapter

- TA562-RS
- TA562-RS-RTC
- TA569-RS-ISO



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



WARNING!

Removal/Insertion under power

The devices are not designed for removal or insertion under power. Because of unforeseeable consequences, it is not allowed to plug or unplug devices with the power being ON.

Make sure that all voltage sources (supply and process voltage) are switched off before you

- connect or disconnect any signal or terminal block
- remove, mount or replace a module.

Disconnecting any powered devices while energized in a hazardous location could result in an electric arc, which could create a flammable ignition resulting in fire or explosion.

Make sure that power is removed and that the area has been thoroughly checked to ensure that flammable materials are not present prior to proceeding.

The devices must not be opened when in operation. The same applies to the network interfaces.



CAUTION!

Risk of damaging the product!

Option boards are sensitive electronic devices. Wrong handling can damage the product.

- ESD (electrostatic discharge) protection measures are required when handling the option board.
- Do not touch contacts and circuit board.



CAUTION!

Risk of explosion!

Do not open, re-charge or disassemble lithium batteries. Attempting to charge lithium batteries will lead to overheating and can cause explosions.

Protect them from heat and fire and store them in a dry place.

Never short-circuit or operate lithium batteries with the polarities reversed. The batteries are likely to overheat and explode. Avoid unintentional short circuiting do not store batteries in metal containers and do not place them on metallic surfaces. Escaping lithium is a health hazard.

112.1 Battery Replacement

Replacement of the battery



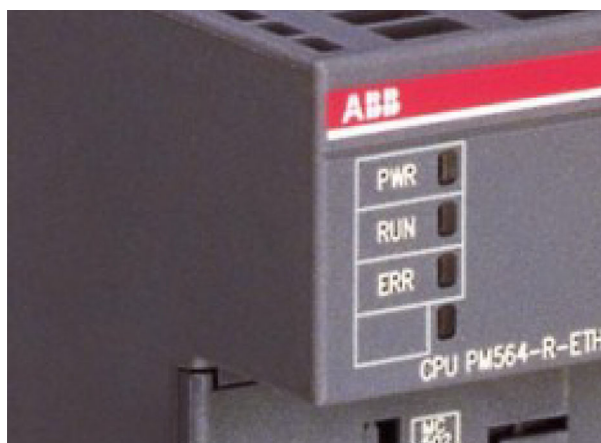
WARNING!

Risk of death by electric shock!

Hazardous voltages can be present at the terminals of the module.

Make sure that all voltage sources (supply voltage and process supply voltage) are switched off before you begin with operations on the system.

1. Switch off power supply of the system and verify that the CPU is powerless.



⇒ LEDs (PWR, RUN, ERR) must be off.

2. Remove the option board slot cover.



⇒ Remove the option board slot cover of the CPU totally by pushing it to the outer side.



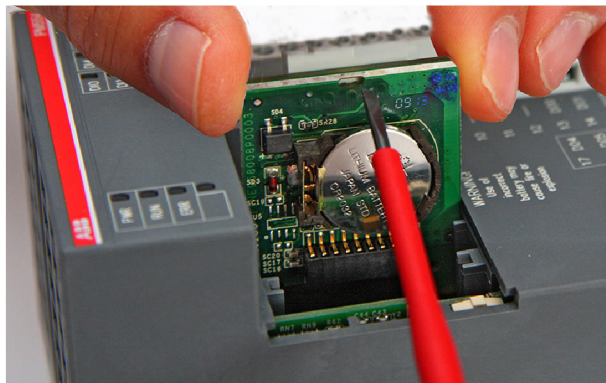
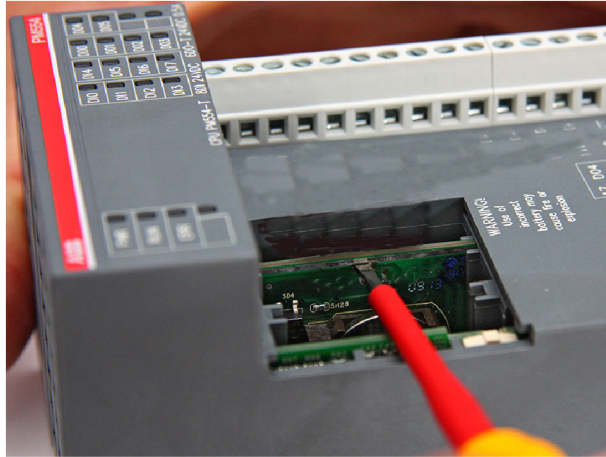
NOTICE!

Avoidance of electrostatic charging

PLC devices and equipment are sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Observe the following rules when handling the system:

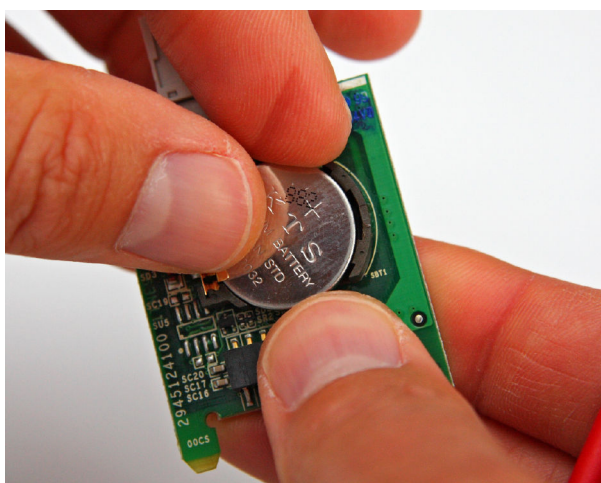
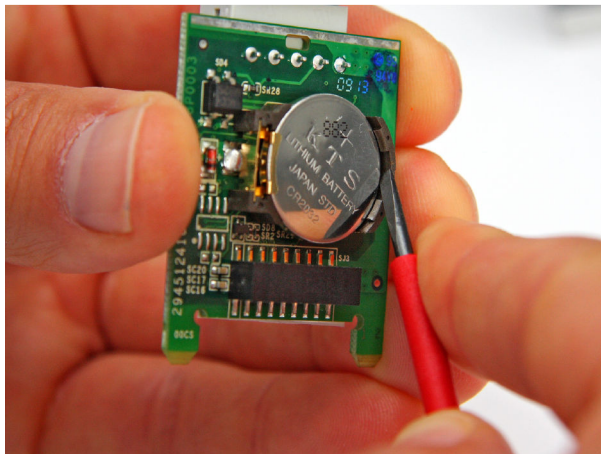
- Touch a grounded object to discharge potential static.
- Wear an approved grounding wrist strap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- If available, use a static-safe workstation.
- When not in use, store the equipment in appropriate static-safe packaging.

3. Remove the option board from the CPU by lifting it up with a screwdriver.



Remove memory card (if installed) / terminal block (COM2).

4. Remove the battery.



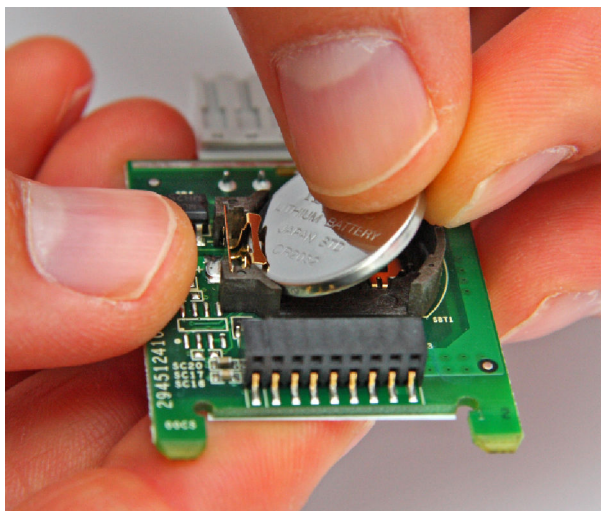
ATTENTION!

Lithium batteries must not be recharged, not be disassembled and not be disposed of in fire.

Exhausted batteries must be recycled to respect the environment.

Dispose of battery properly according to disposal procedures for lithium batteries.

5. Insert replacement battery.



ATTENTION!

A standard battery CR2032 can be used for **TA561-RTC** and **TA562-RS-RTC**.

Nominal voltage: **3 V DC**.

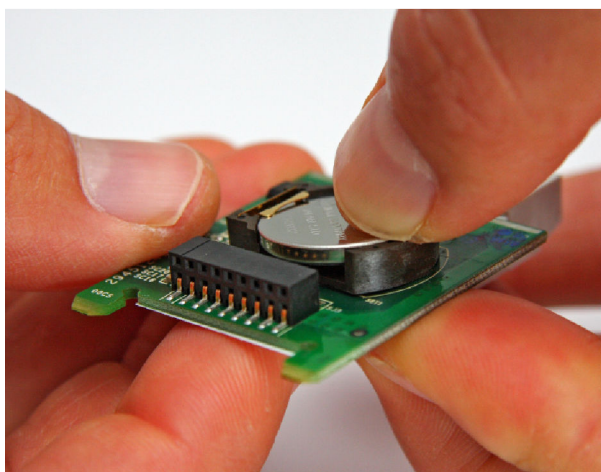
Required capacity: **230 mAh**.

Required temperature range for discharge: **0 °C ... +70 °C**.

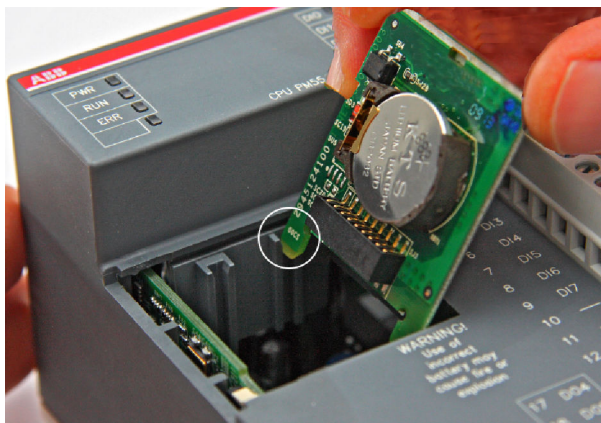
After replacement of the battery, the real-time clock (RTC) date and time must be set again by the user.

Don't use a battery older than 3 years for replacement (e.g. battery kept too long in stock).

Batteries must be stored in a dry place.



6. Insert option board into the CPU.



- ⇒ Insert the adapter TA56x-RTC into the slot on the right of the CPU.



Make sure that the 2 noses of the extension module fit to the holes of the CPU PCB.

See white circle in figure above.



7. Refit the option board slot cover of the CPU.



Remember to re-insert a memory card first if it has been removed previously.

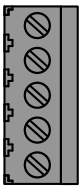
8. Only now the CPU can be connected to power.



Set the time of the real-time clock.

112.2 Connections

Table 93: Pin assignment

Serial Interface	Pin	Description
	1	Terminator P
	2	TxD/RxD-P
	3	TxD/RxD-N
	4	Terminator N
	5	Functional earth

112.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

112.4 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

112.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

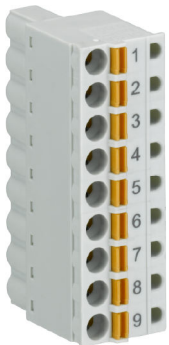
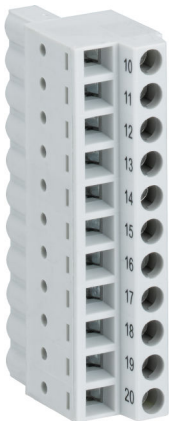
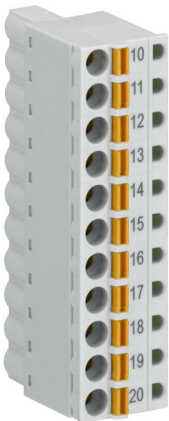
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

113 TA563-TA565 - Terminal block sets

- TA563-9
- TA563-11
- TA564-9
- TA564-11
- TA565-9
- TA565-11

The TA563-TA565 terminal blocks are used to connect process signals and process voltages to AC500-eCo I/O modules and AC500-eCo processor modules (with -P extension inside their type designator only).

Screw terminals with cable insertion on the side	Screw terminals with cable insertion on the front	Spring terminals with cable insertion on the front
TA563-9 	TA564-9 	TA565-9 
TA563-11 	TA564-11 	TA565-11 



WARNING!

For screw terminals only: Danger of death by electric shock!

The IP 20 protection degree is only provided if all terminal screws are tightened.

Tighten all screws of unused load terminals of relay outputs if voltages > 24 V are connected to the relay group.



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

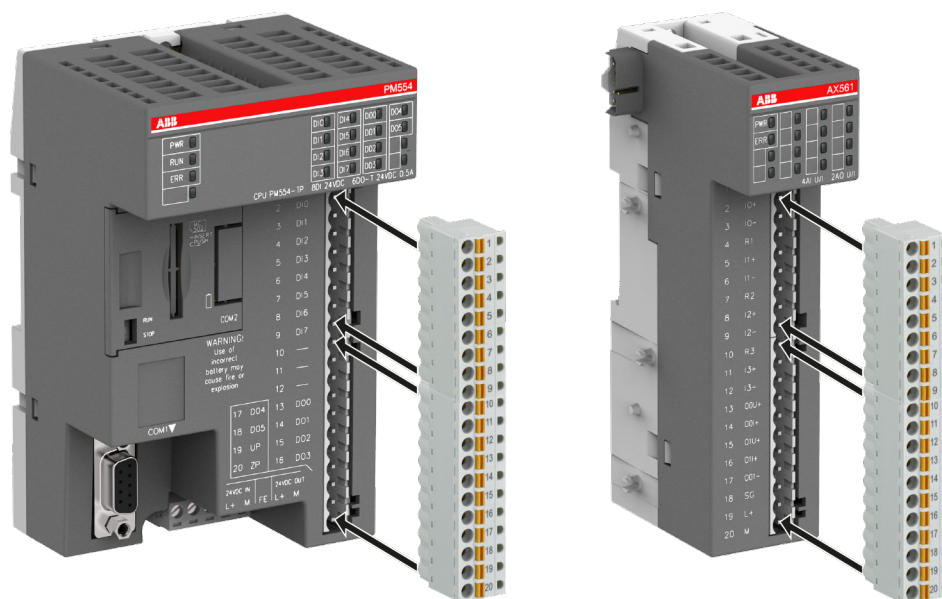


CAUTION!

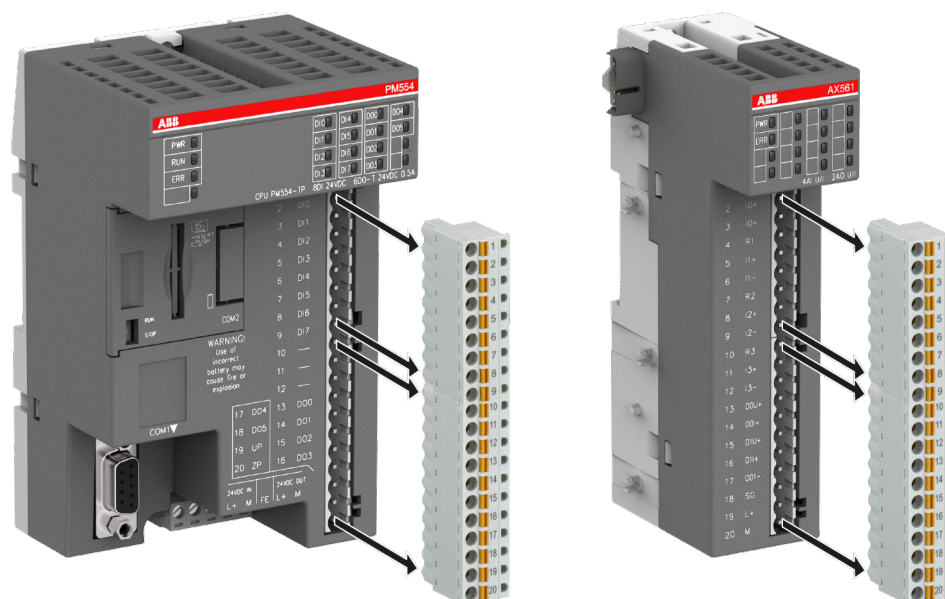
Risk of injury and damaging the module when using unapproved terminal blocks!

Only use terminal blocks approved by ABB to avoid injury and damage to the module.

113.1 Assembly

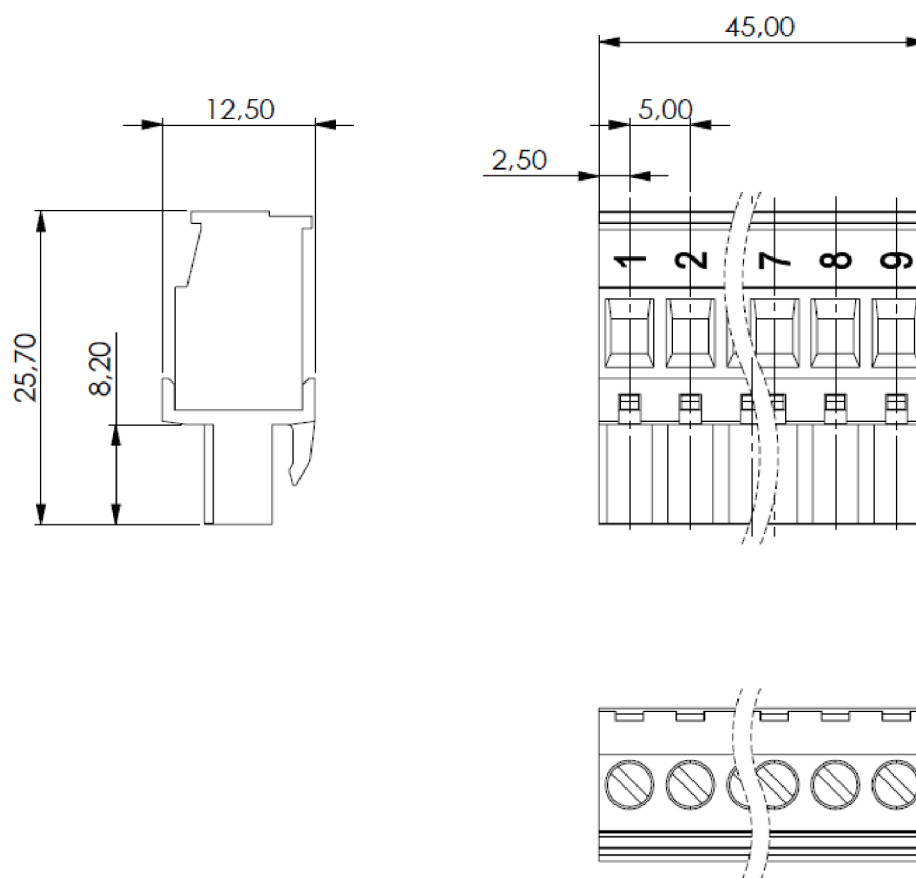


113.2 Disassembly

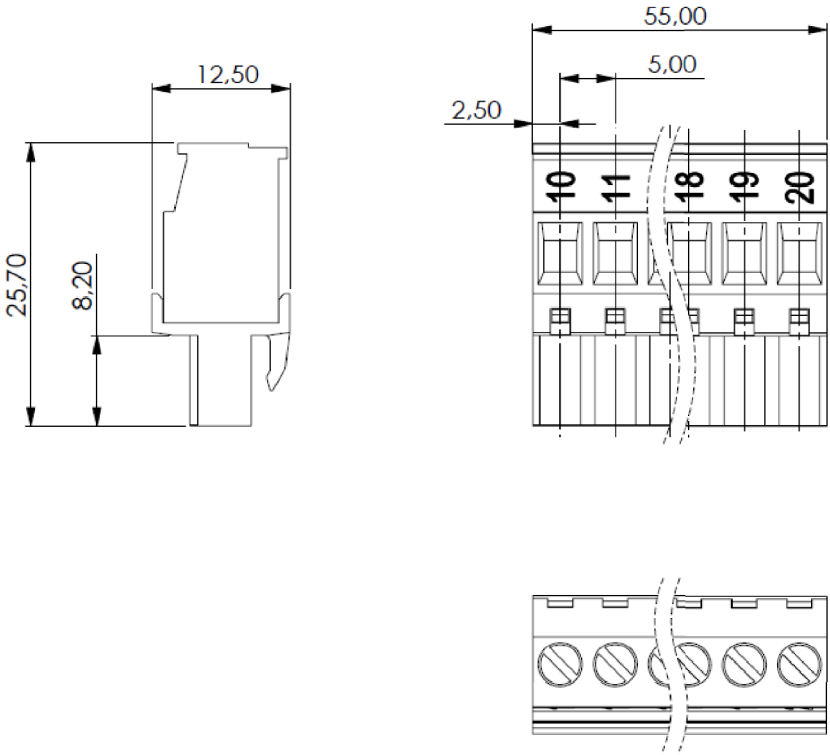


113.3 Dimensions

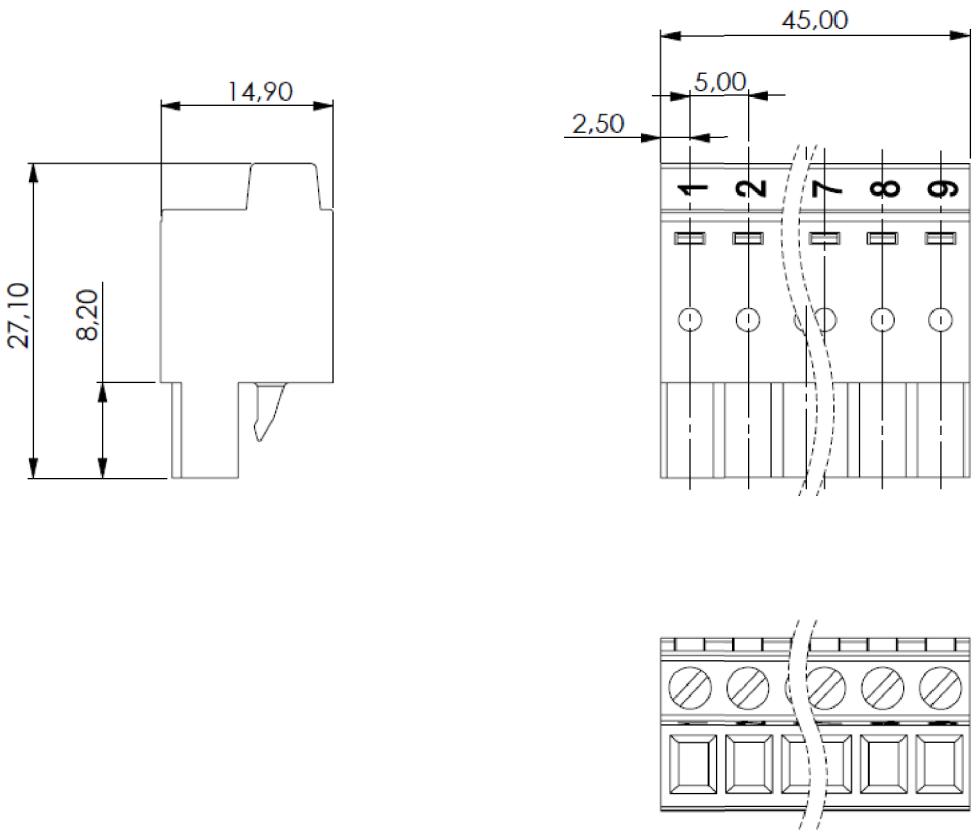
TA563-9



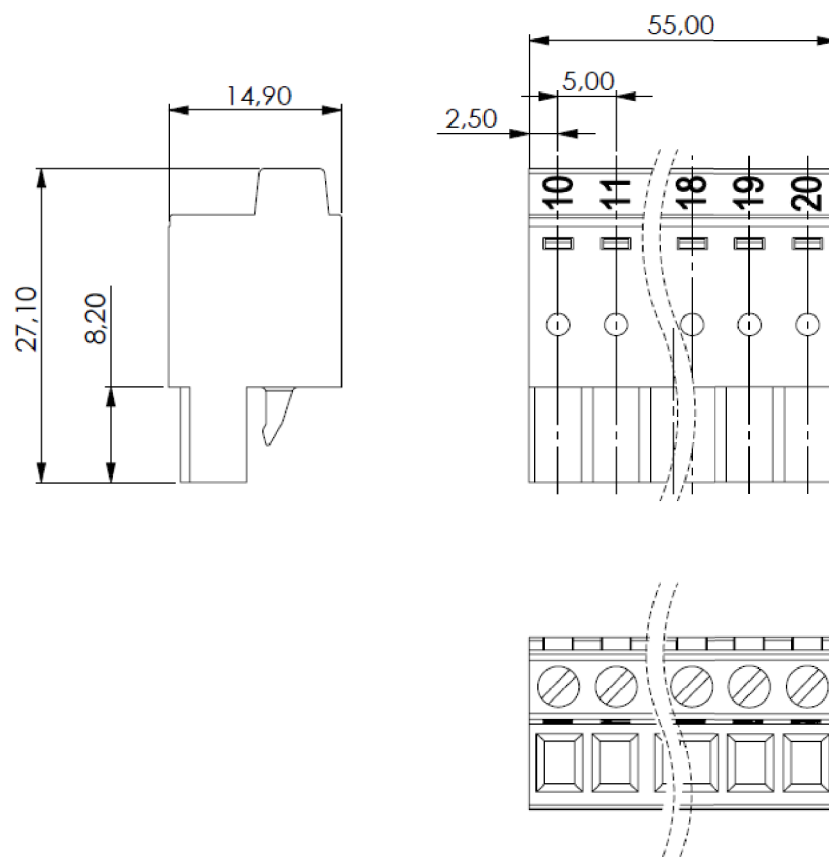
TA563-11



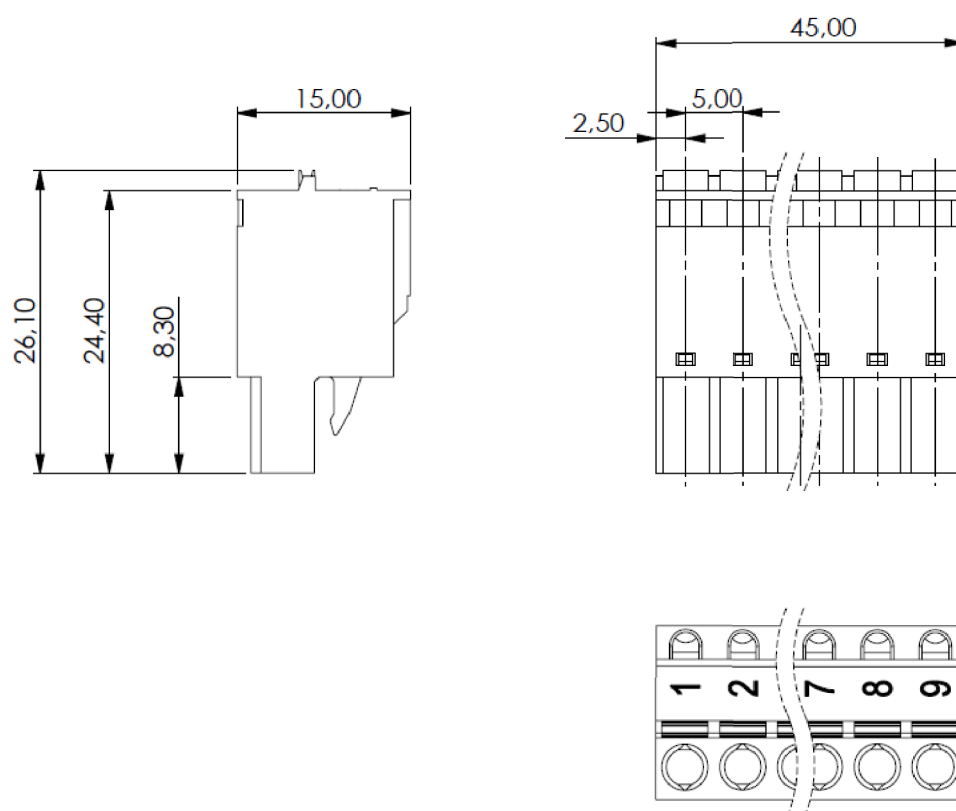
TA564-9



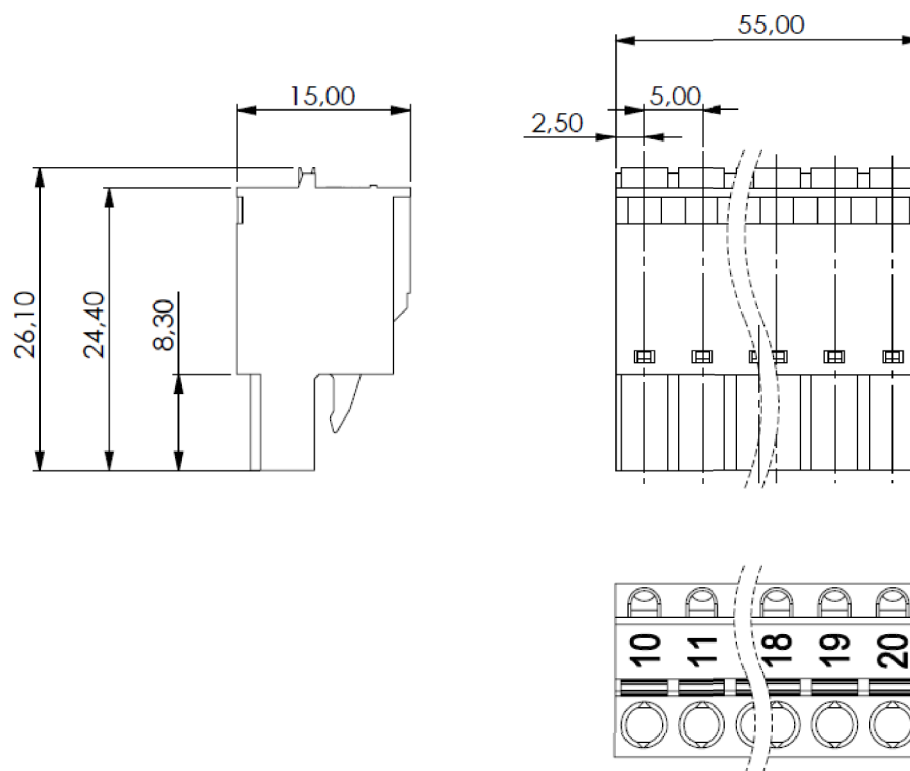
TA564-11



TA565-9



TA565-11



113.4 Connections



The connections are described in the AC500-eCo V2 processor modules (PM55x-xP and PM56x-xP) or in the AC500-eCo V2 I/O modules.

113.5 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

113.6 Certification

	MSIP-REI-Abb-AC500	en Devices with KCC sign on product sticker and packaging ko 제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

113.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

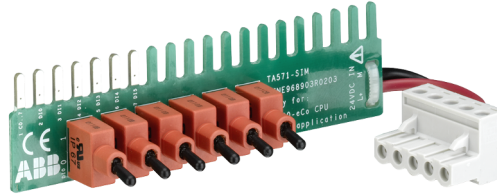
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

114 TA571-SIM - Input simulator

- TA571-SIM



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

114.1 Assembly

Insertion of the input simulator

1. Make sure that the power supply of the processor module is turned off.



CAUTION!

Risk of damaging the PLC modules!

The PLC modules can be damaged by overvoltages and short circuits. Make sure that all voltage sources (supply and process voltage) are switched off before you begin with operations on the system. Never connect any voltages > 24 V DC to pins 4/5 of the terminal block of input simulator TA571-SIM.



CAUTION!

Risk of damaging the input simulator or PLC modules!

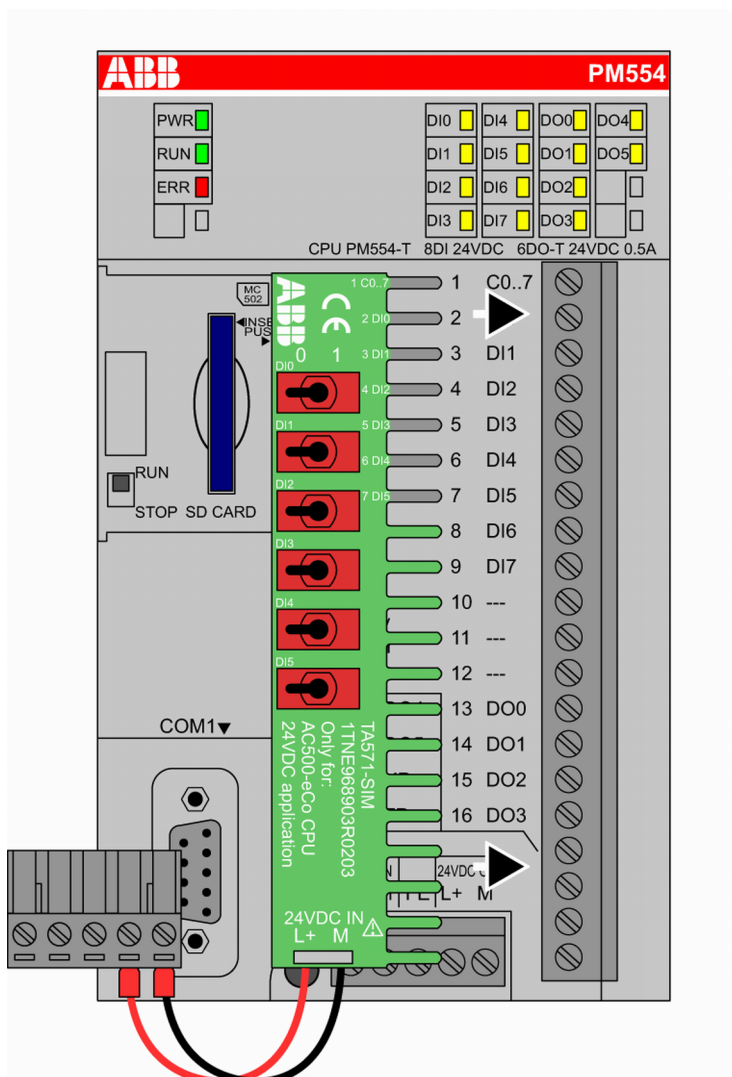
The input simulator must only be used with AC500-eCo processor modules PM55x and PM56x. Never use the input simulator with other devices.



The input simulator must only be used for test and training purposes. Never use it within productive plants.

2. Remove the terminal block for power supply from the processor module by a flat-blade screwdriver.
3. Make sure that all clamps of the onboard I/Os are totally open.

4. Use a flat-blade screwdriver to unplug the terminal block for power supply of the processor module.
5. Insert the input simulator as shown in the figure.



6. Tighten all screws of the onboard I/O clamps (max. torque 1.2 Nm).
7. Plug in the terminal block for power supply of the TA571-SIM to the connector of the processor module.
8. Connect the CPU power supply wires (24 V DC or 100 V AC ... 240 V AC).

114.2 Disassembly

Removal of the input simulator

1. Make sure that the power supply of the processor module is turned off.



CAUTION!

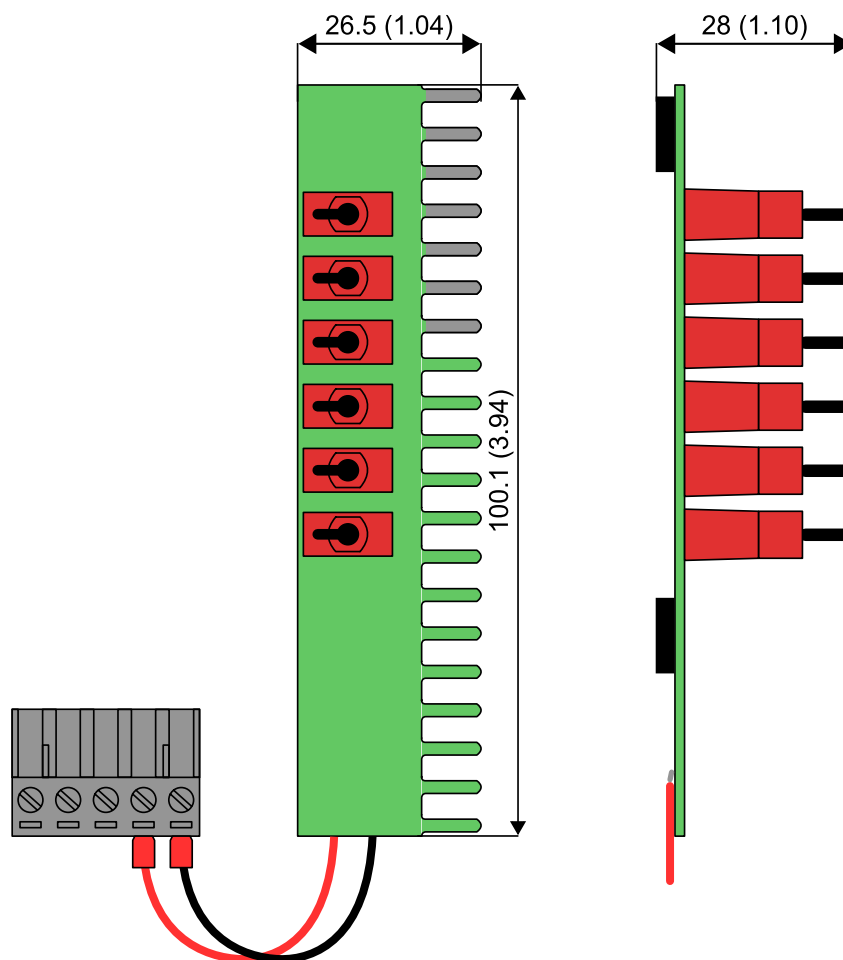
Risk of damaging the PLC modules!

The PLC modules can be damaged by overvoltages and short circuits. Make sure that all voltage sources (supply and process voltage) are switched off before you begin with operations on the system.

2. Disconnect the processor module power supply wires (24 V DC or 100 V AC ... 240 V AC) from the terminal block for power supply.

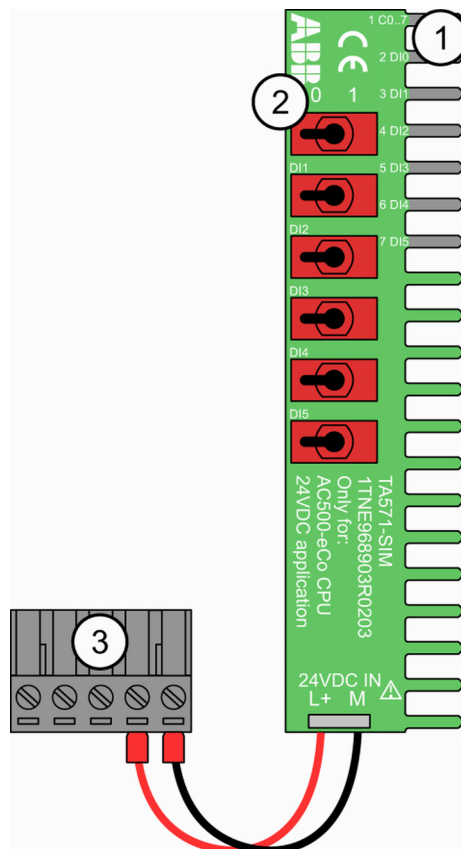
3. Unplug the terminal block for power supply with a flat-blade screwdriver of the power connector.
4. Loosen all screws of the onboard I/Os.
5. Remove the input simulator by pulling it to the left side.

114.3 Dimensions



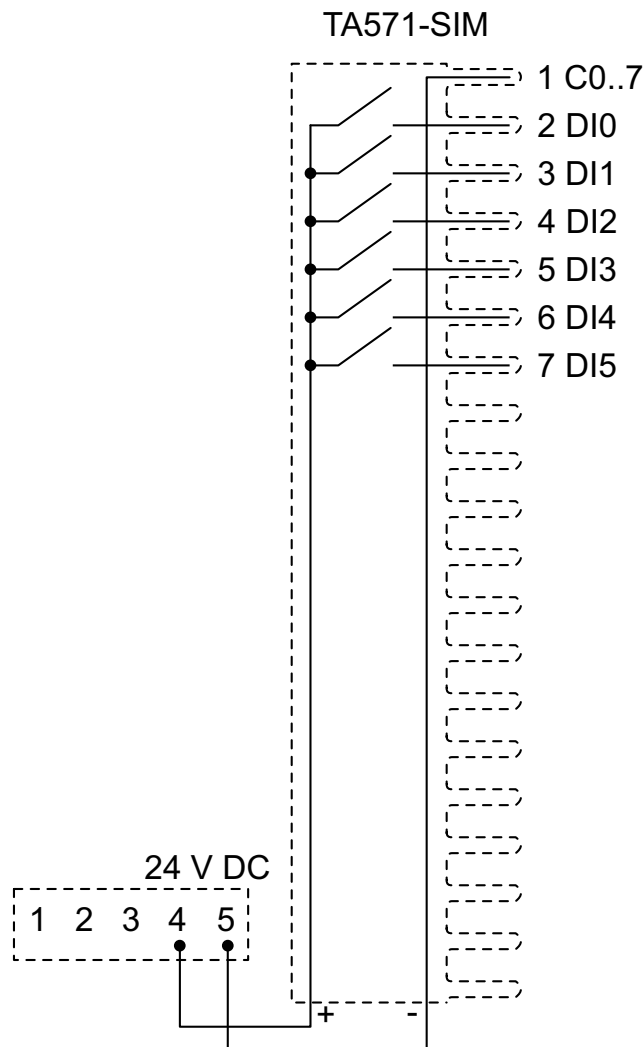
The dimensions are in mm and in brackets in inch.

114.4 Connections



- 1 Contacts to connect to clamps of onboard I/Os
- 2 6 switches for the digital inputs DI0 ... DI5 (0 means opened switch, 1 means closed switch)
- 3 Terminal block for power supply connector of processor module PM55x/PM56x

114.4.1 Inputs



114.5 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

114.6 Certification



MSIP-REI-Abb-AC500-eCo

en **Note**
These devices correspond to:

ko 참고
이러한 기기는

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 “Immunity for industrial environments”,
KN61000-6-4 “Emission standard for industrial environments”

KN61000-6-2 “산업 환경에 대한 내성”,
KN61000-6-4 “산업 환경 누출 기준”에 적합함

114.7 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

115 TB511-x(-XC)

- TB511-ARCNET
- TB511-ETH
- TB511-ETH-XC



CAUTION!

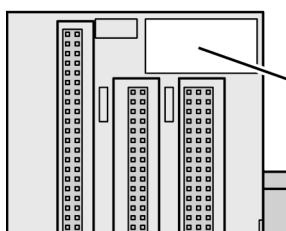
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

XC version

XC = eXtreme Conditions



ABB

1SAP3...

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX

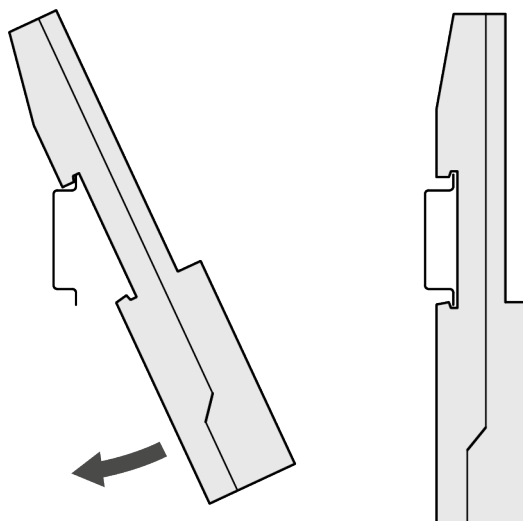


Extreme conditions

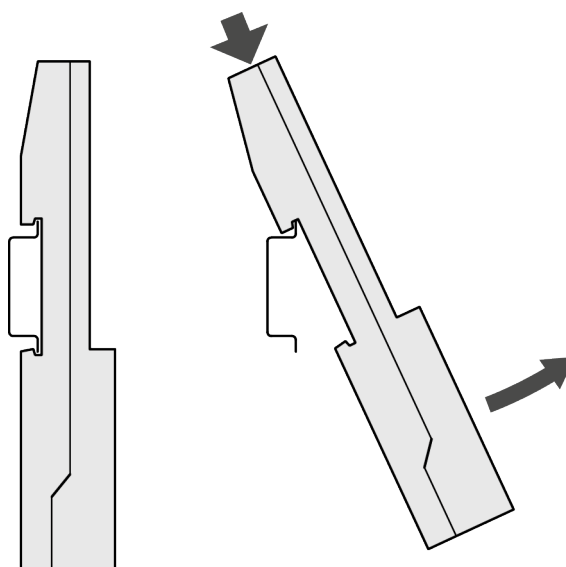
Terminal bases for use in extreme ambient conditions have no  sign for XC version.

The figure 3 in the Part no. 1SAP3... (label) identifies the XC version.

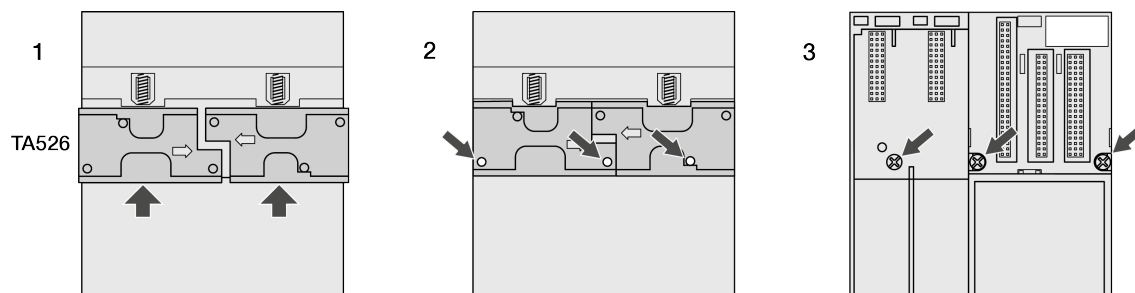
115.1 Assembly



115.2 Disassembly



115.3 Assembly with screws





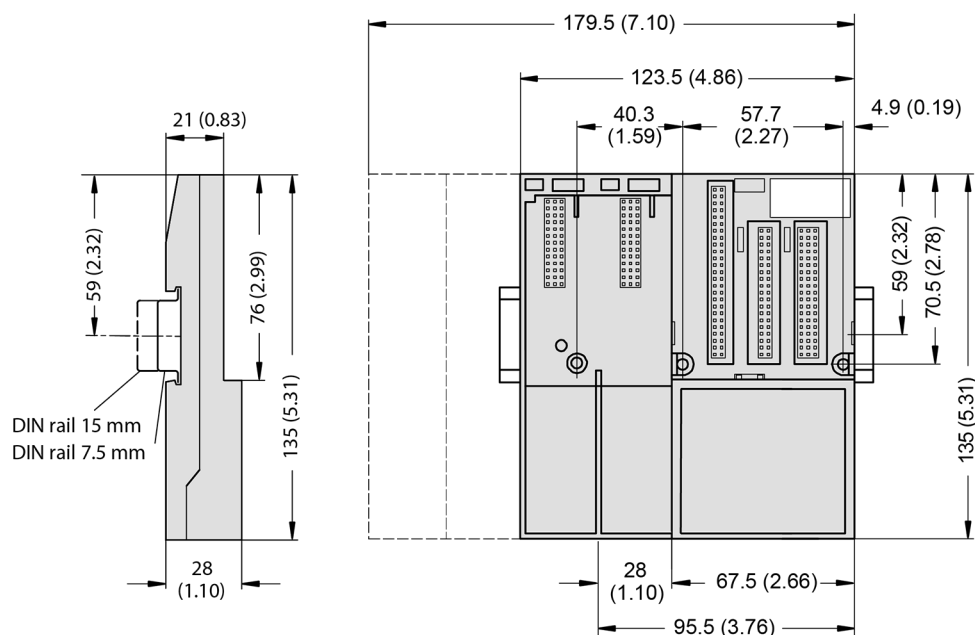
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

115.4 Dimensions

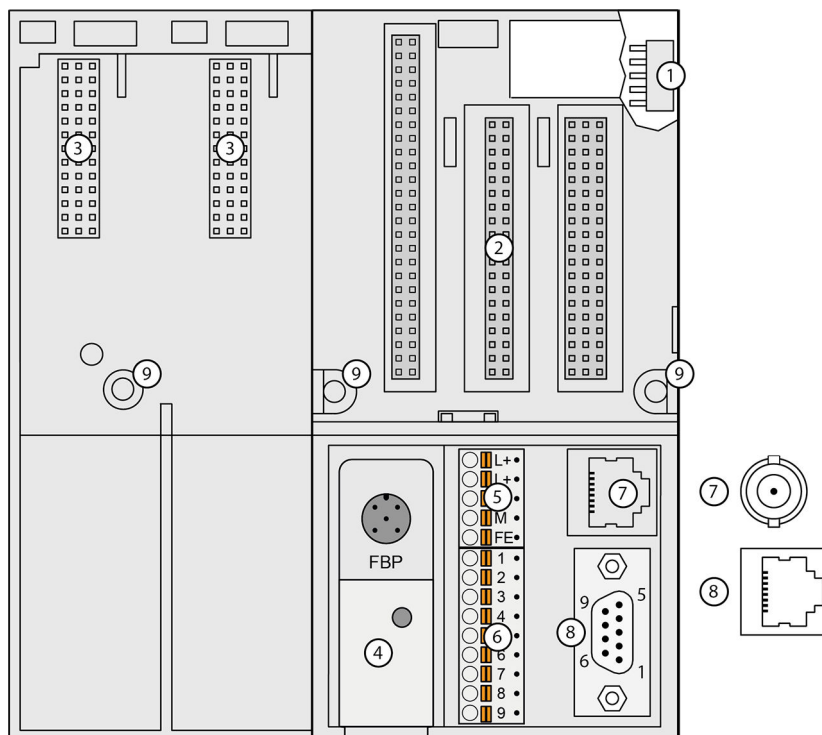


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

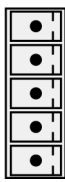
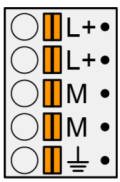
115.5 Connections



- 1 I/O bus (10-pin, female) to connect the I/O terminal units
- 2 One available slot for the processor module
- 3 Slots for communication modules (TB511-xxx: 1 slot, TB521-xxx: 2 slots, TB541-xx: 4 slots)
- 4 Interface for FieldBusPlug, not for terminal base TB523-2ETH
- 5 Power supply (5-pin terminal block, removable)
- 6 Serial interface COM1 (9-pin terminal block, removable)
- 7 Network interfaces: TB5xx-ETH: Ethernet, TB5xx-ARCNET: ARCNET
- 8 TB5x1: Serial interface COM2 (D-sub 9, female), TB523-2ETH: second Ethernet network interface
- 9 Holes for screw mounting

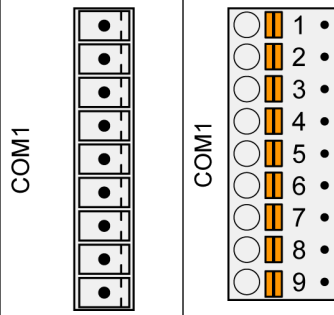
115.5.1 Power supply

Pin assignment

Pin Assignment	Label	Function	Description
 24 V Terminal block removed  24 V Terminal block inserted	L+	+24 V DC	Positive pin of the power supply voltage
	L+	+24 V DC	Positive pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	⏏	FE	Functional earth

115.5.2 Serial interface COM1

Pin assignment
(RS-485 /
RS-232)

	Pin	Signal	Interface	Description
	1	Terminator P	RS-485	Terminator P
	2	RxD/TxD-P	RS-485	Receive/Transmit, positive
	3	RxD/TxD-N	RS-485	Receive/Transmit, negative
	4	Terminator N	RS-485	Terminator N
	5	RTS	RS-232	Request to send (output)
	6	TxD	RS-232	Transmit data (output)
	7	SGND	Signal Ground	Signal Ground
	8	RxD	RS-232	Receive data (input)
	9	CTS	RS-232	Clear to send (input)



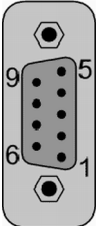
NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

115.5.3 Serial interface COM2

Pin assignment

Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

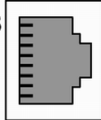
Protect unused connectors and slots with TA535 protective caps for XC devices.

115.5.4 ARCNET network interface



115.5.5 Ethernet network interface

Pin assignment

	PIN	Signal	Description
 RJ45	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

115.5.6 Neutral FBP interface

Pin assignment in serial mode

FieldBusPlug	Pin	Signal	Description
	1	+24 V	Standard power supply
	2	Diagnosis pin	
	3	0 V	Standard power supply
	4	Serial data	
	5	Serial data	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

115.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

115.7 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

115.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

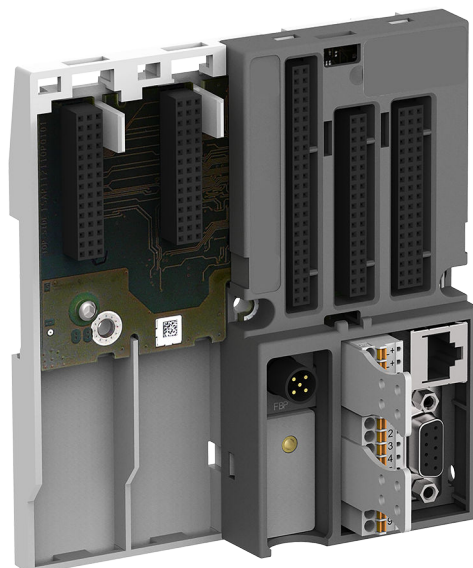
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

116 TB521-x(-XC)

- TB521-ARCNET
- TB521-ETH
- TB521-ETH-XC



CAUTION!

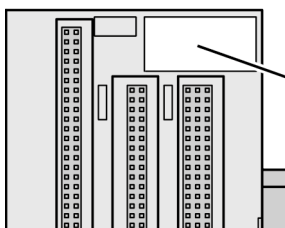
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

XC version

XC = eXtreme Conditions



ABB

1SAP3...

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

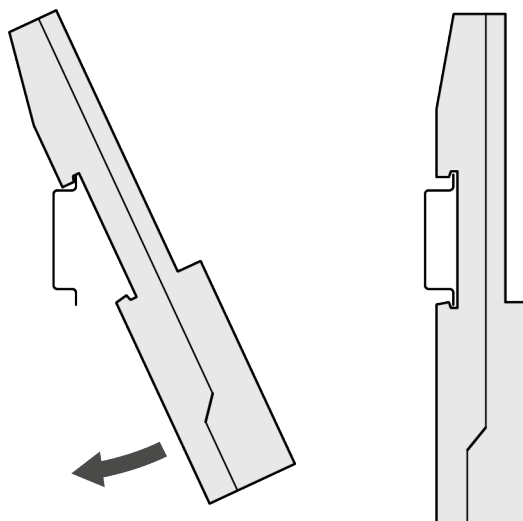


Extreme conditions

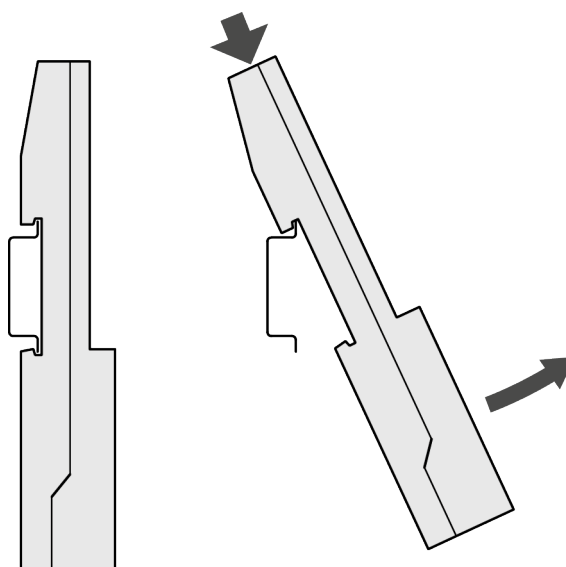
Terminal bases for use in extreme ambient conditions have no ❄️ sign for XC version.

The figure 3 in the Part no. 1SAP3... (label) identifies the XC version.

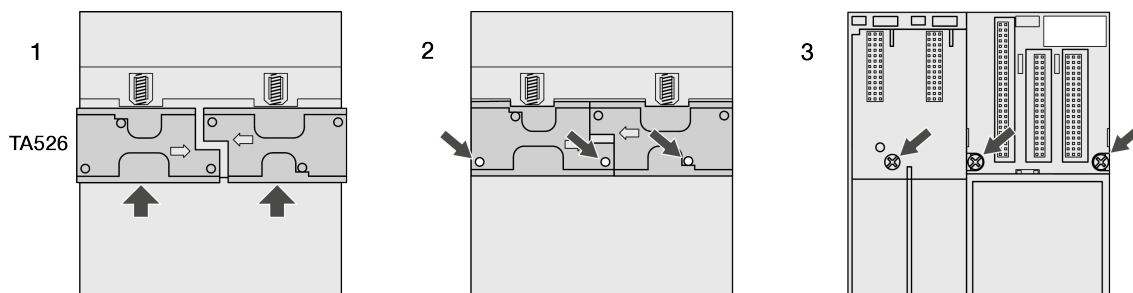
116.1 Assembly



116.2 Disassembly



116.3 Assembly with screws





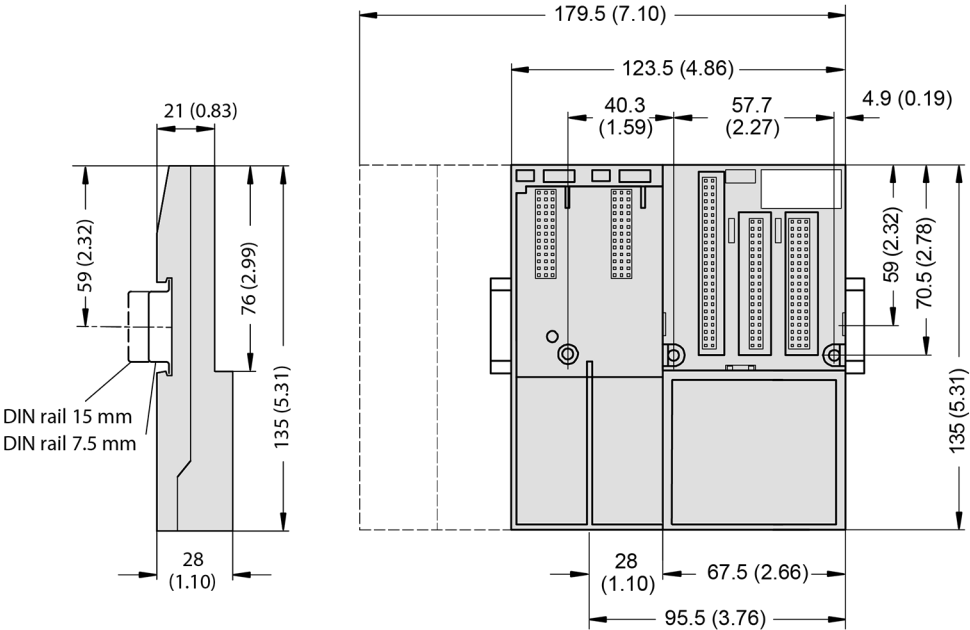
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

116.4 Dimensions

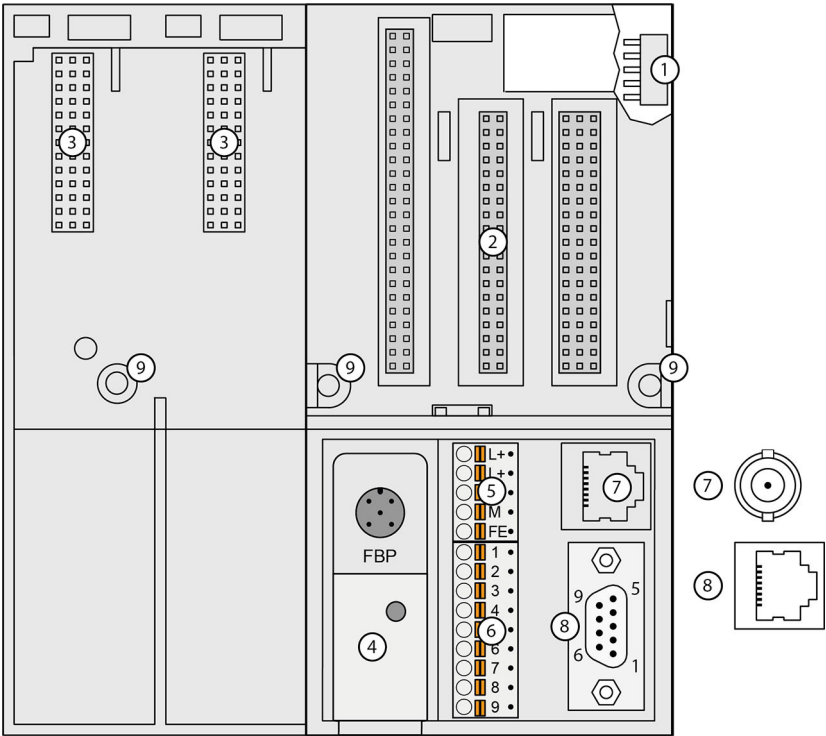


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

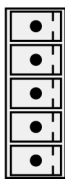
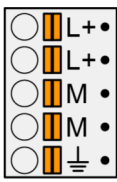
116.5 Connections



- 1 I/O bus (10-pin, female) to connect the I/O terminal units
- 2 One available slot for the processor module
- 3 Slots for communication modules (TB511-xxx: 1 slot, TB521-xxx: 2 slots, TB541-xx: 4 slots)
- 4 Interface for FieldBusPlug, not for terminal base TB523-2ETH
- 5 Power supply (5-pin terminal block, removable)
- 6 Serial interface COM1 (9-pin terminal block, removable)
- 7 Network interfaces: TB5xx-ETH: Ethernet, TB5xx-ARCNET: ARCNET
- 8 TB5x1: Serial interface COM2 (D-sub 9, female), TB523-2ETH: second Ethernet network interface
- 9 Holes for screw mounting

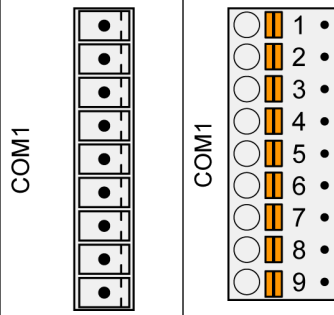
116.5.1 Power supply

Pin assignment

Pin Assignment		Label	Function	Description
24 V  Terminal block removed 24 V  Terminal block inserted	L+	L+	+24 V DC	Positive pin of the power supply voltage
	L+	L+	+24 V DC	Positive pin of the power supply voltage
	M	M	0 V	Negative pin of the power supply voltage
	M	M	0 V	Negative pin of the power supply voltage
	FE	FE	FE	Functional earth

116.5.2 Serial interface COM1

Pin assignment
(RS-485 /
RS-232)

	Pin	Signal	Interface	Description
 Terminal block removed	1	Terminator P	RS-485	Terminator P
	2	RxD/TxD-P	RS-485	Receive/Transmit, positive
	3	RxD/TxD-N	RS-485	Receive/Transmit, negative
	4	Terminator N	RS-485	Terminator N
	5	RTS	RS-232	Request to send (output)
	6	TxD	RS-232	Transmit data (output)
	7	SGND	Signal Ground	Signal Ground
	8	RxD	RS-232	Receive data (input)
	9	CTS	RS-232	Clear to send (input)



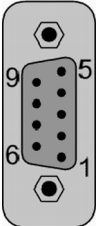
NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

116.5.3 Serial interface COM2

Pin assignment

Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

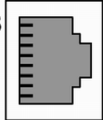
Protect unused connectors and slots with TA535 protective caps for XC devices.

116.5.4 ARCNET network interface



116.5.5 Ethernet network interface

Pin assignment

	PIN	Signal	Description
 RJ45	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

116.5.6 Neutral FBP interface

Pin assignment
in serial mode

FieldBusPlug	Pin	Signal	Description
	1	+24 V	Standard power supply
	2	Diagnosis pin	
	3	0 V	Standard power supply
	4	Serial data	
	5	Serial data	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

116.6 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

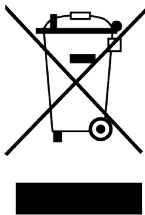
116.7 Certification



MSIP-REI-Abb-AC500

en	Devices with KCC sign on product sticker and packaging	
ko	제품 스티커 및 포장에 KCC 표시가 된 기기	
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

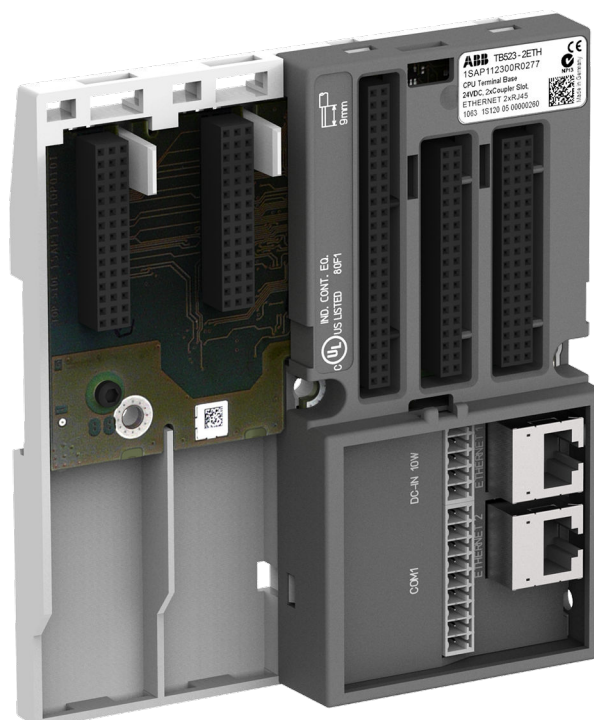
116.8 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

117 TB523-2ETH

- TB523-2ETH



CAUTION!

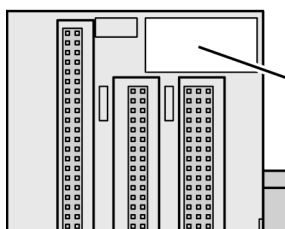
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

XC version

XC = eXtreme Conditions



ABB

1SAP3...

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

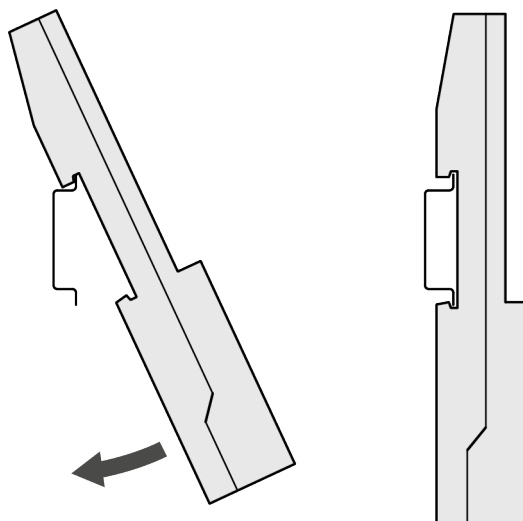


Extreme conditions

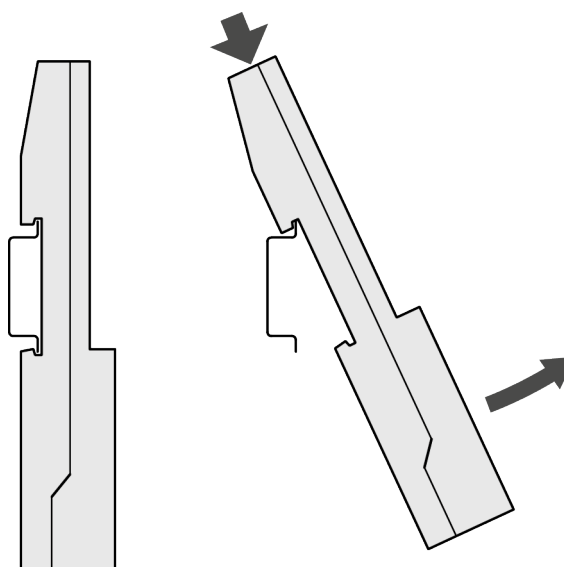
Terminal bases for use in extreme ambient conditions have no ☼ sign for XC version.

The figure 3 in the Part no. 1SAP3... (label) identifies the XC version.

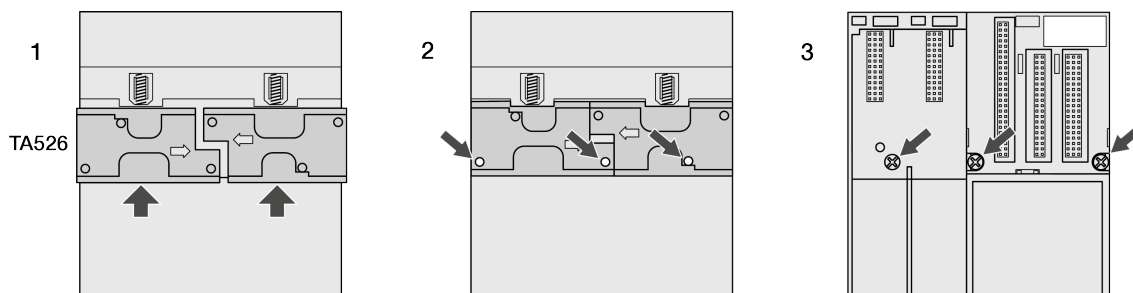
117.1 Assembly



117.2 Disassembly



117.3 Assembly with screws





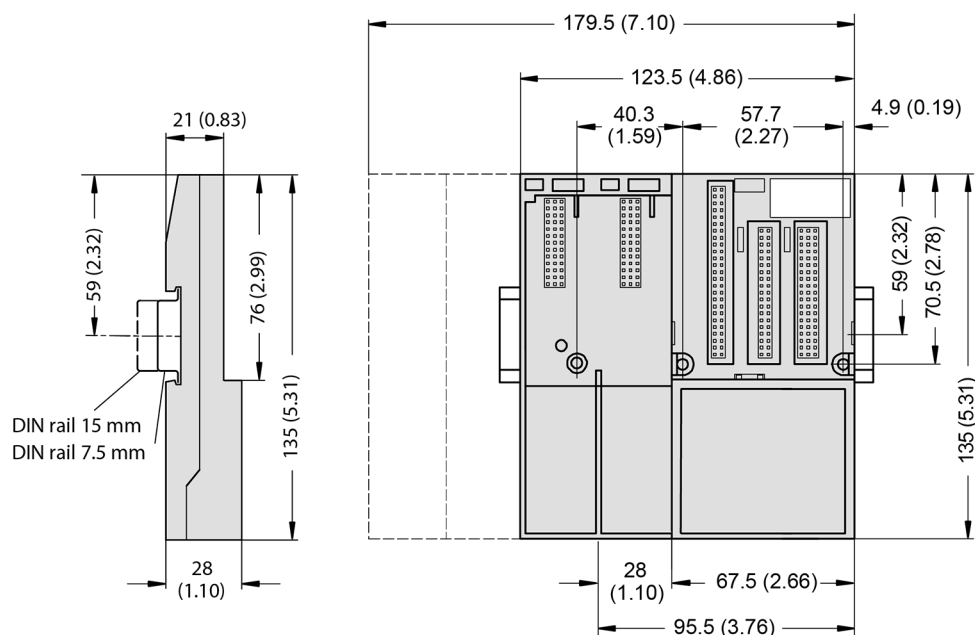
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

117.4 Dimensions

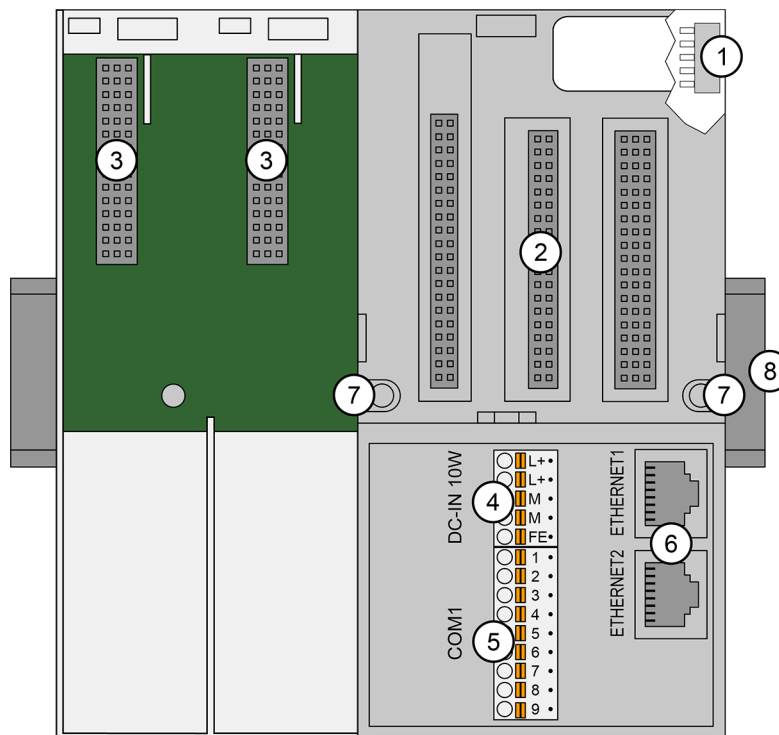


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

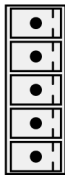
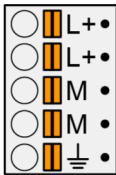
117.5 Connections



- 1 I/O bus (10-pin, female) to connect the I/O terminal units
- 2 One available slot for the processor module
- 3 Slots for communication modules
- 4 Power supply (5-pin terminal block, removable)
- 5 Serial interface COM1 (9-pin terminal block, removable)
- 6 Ethernet network interfaces
- 7 Holes for wall mounting with screws
- 8 DIN rail

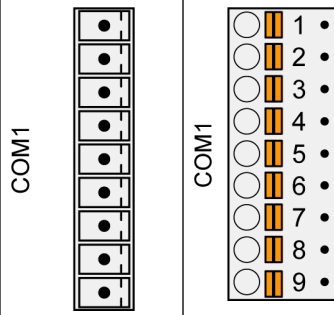
117.5.1 Power supply

Pin assignment

Pin Assignment		Label	Function	Description
 24 V  24 V Terminal block removed		L+	+24 V DC	Positive pin of the power supply voltage
		L+	+24 V DC	Positive pin of the power supply voltage
		M	0 V	Negative pin of the power supply voltage
		M	0 V	Negative pin of the power supply voltage
			FE	Functional earth

117.5.2 Serial interface COM1

Pin assignment
(RS-485 /
RS-232)

	Pin	Signal	Interface	Description
 COM1 Terminal block removed Terminal block inserted	1	Terminator P	RS-485	Terminator P
	2	RxD/TxD-P	RS-485	Receive/Transmit, positive
	3	RxD/TxD-N	RS-485	Receive/Transmit, negative
	4	Terminator N	RS-485	Terminator N
	5	RTS	RS-232	Request to send (output)
	6	TxD	RS-232	Transmit data (output)
	7	SGND	Signal Ground	Signal Ground
	8	RxD	RS-232	Receive data (input)
	9	CTS	RS-232	Clear to send (input)



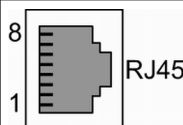
NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

117.5.3 Ethernet network interface

Pin assignment

	PIN	Signal	Description
 RJ45	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

117.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

117.7 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

117.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

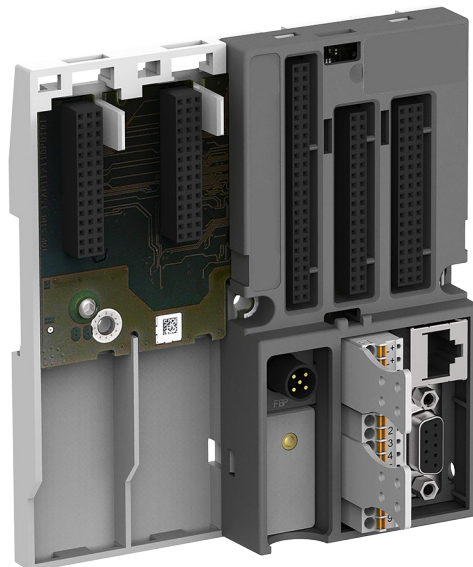
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

118 TB541-ETH(-XC)

- TB541-ETH
- TB541-ETH-XC



CAUTION!

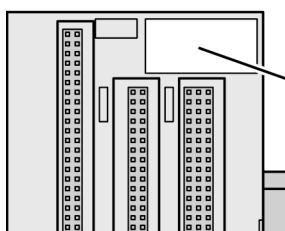
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

XC version

XC = eXtreme Conditions



ABB

1SAP3...

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

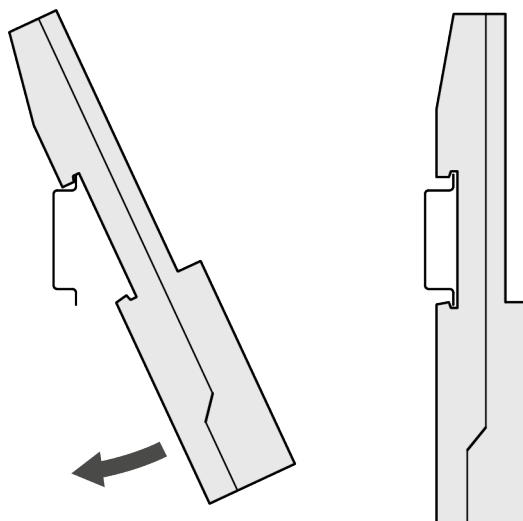


Extreme conditions

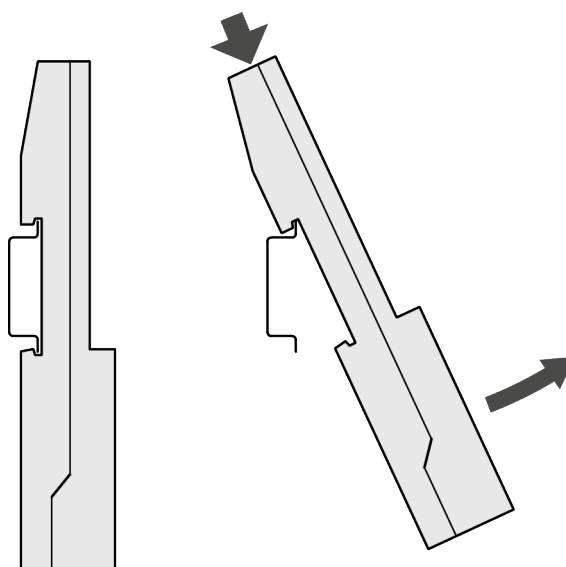
Terminal bases for use in extreme ambient conditions have no ❄️ sign for XC version.

The figure 3 in the Part no. 1SAP3... (label) identifies the XC version.

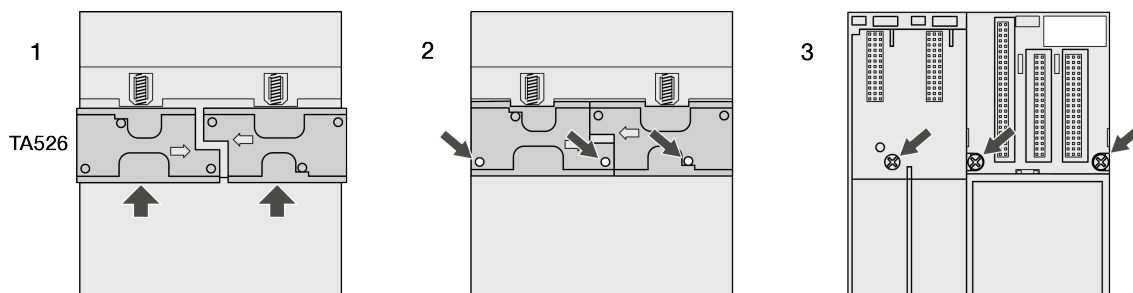
118.1 Assembly



118.2 Disassembly



118.3 Assembly with screws





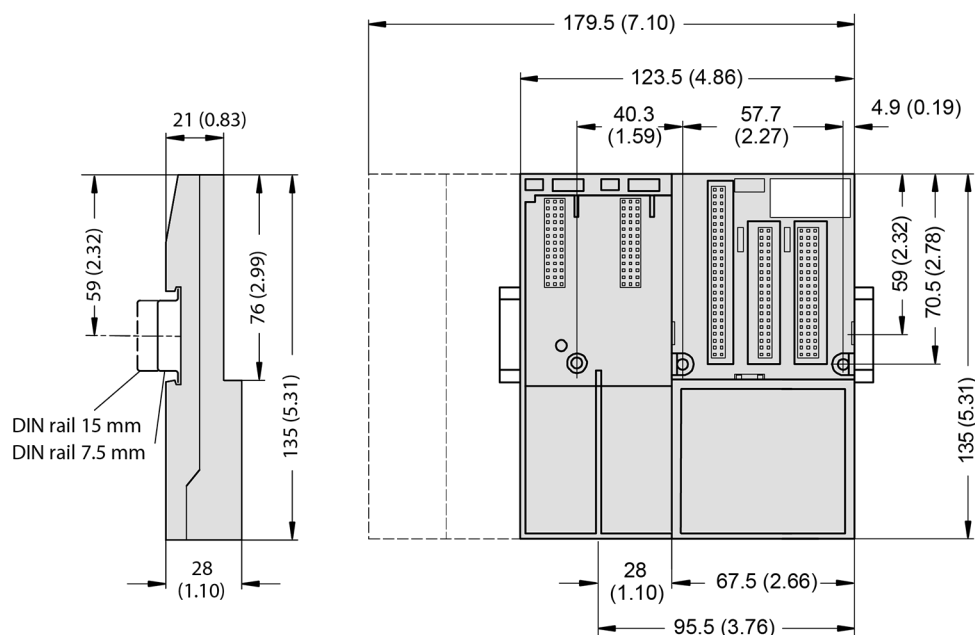
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

118.4 Dimensions

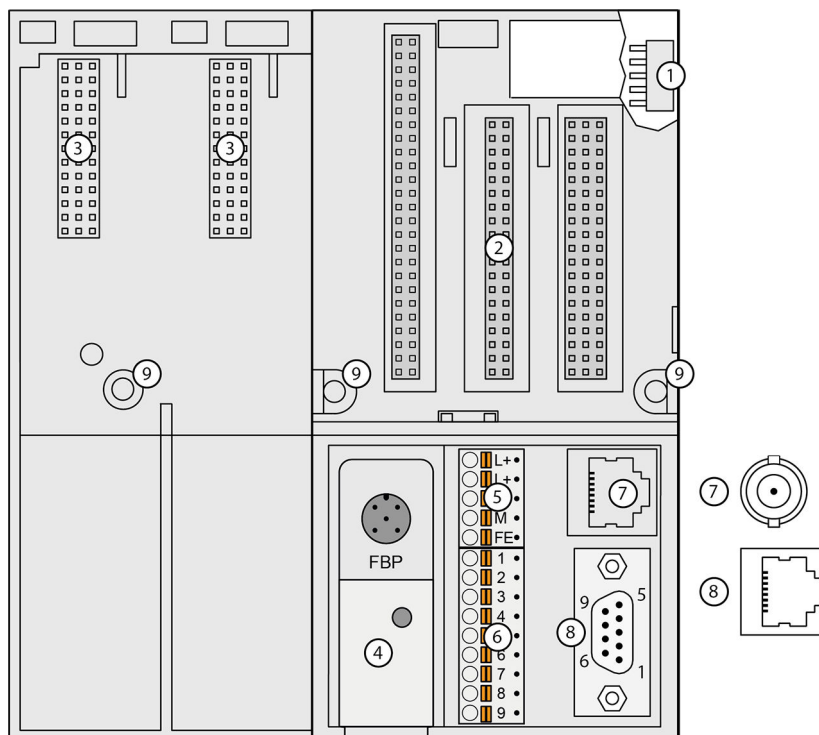


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

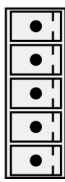
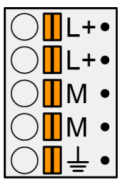
118.5 Connections



- 1 I/O bus (10-pin, female) to connect the I/O terminal units
- 2 One available slot for the processor module
- 3 Slots for communication modules (TB511-xxx: 1 slot, TB521-xxx: 2 slots, TB541-xx: 4 slots)
- 4 Interface for FieldBusPlug, not for terminal base TB523-2ETH
- 5 Power supply (5-pin terminal block, removable)
- 6 Serial interface COM1 (9-pin terminal block, removable)
- 7 Network interfaces: TB5xx-ETH: Ethernet, TB5xx-ARCNET: ARCNET
- 8 TB5x1: Serial interface COM2 (D-sub 9, female), TB523-2ETH: second Ethernet network interface
- 9 Holes for screw mounting

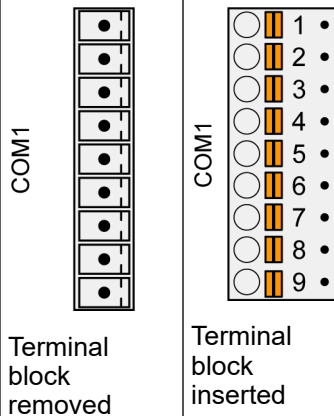
118.5.1 Power supply

Pin assignment

Pin Assignment	Label	Function	Description
 24 V Terminal block removed  24 V Terminal block inserted	L+	+24 V DC	Positive pin of the power supply voltage
	L+	+24 V DC	Positive pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	⏏	FE	Functional earth

118.5.2 Serial interface COM1

Pin assignment
(RS-485 /
RS-232)

	Pin	Signal	Interface	Description
 Terminal block removed Terminal block inserted	1	Terminator P	RS-485	Terminator P
	2	RxD/TxD-P	RS-485	Receive/Transmit, positive
	3	RxD/TxD-N	RS-485	Receive/Transmit, negative
	4	Terminator N	RS-485	Terminator N
	5	RTS	RS-232	Request to send (output)
	6	TxD	RS-232	Transmit data (output)
	7	SGND	Signal Ground	Signal Ground
	8	RxD	RS-232	Receive data (input)
	9	CTS	RS-232	Clear to send (input)



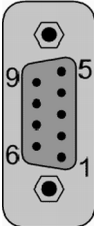
NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

118.5.3 Serial interface COM2

Pin assignment

Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

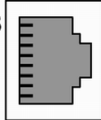
Protect unused connectors and slots with TA535 protective caps for XC devices.

118.5.4 ARCNET network interface



118.5.5 Ethernet network interface

Pin assignment

	PIN	Signal	Description
 RJ45	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

118.5.6 Neutral FBP interface

Pin assignment
in serial mode

FieldBusPlug	Pin	Signal	Description
	1	+24 V	Standard power supply
	2	Diagnosis pin	
	3	0 V	Standard power supply
	4	Serial data	
	5	Serial data	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

118.6 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

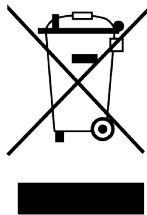
118.7 Certification



MSIP-REI-Abb-AC500

en	Note These devices correspond to:	en Devices with KCC sign on product sticker and packaging
ko	참고 이러한 기기는	ko 제품 스티커 및 포장에 KCC 표시가 된 기기
		KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
		KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

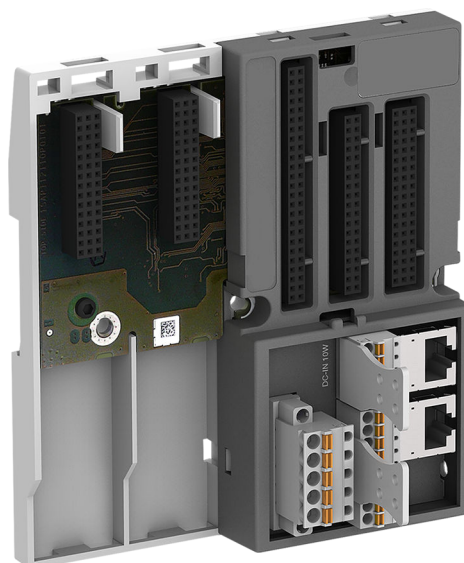
118.8 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

119 TB56xx-2ETH(-XC)

- TB5600-2ETH
- TB5600-2ETH-XC
- TB5610-2ETH
- TB5610-2ETH-XC
- TB5620-2ETH
- TB5620-2ETH-XC
- TB5640-2ETH
- TB5640-2ETH-XC
- TB5660-2ETH
- TB5660-2ETH-XC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.



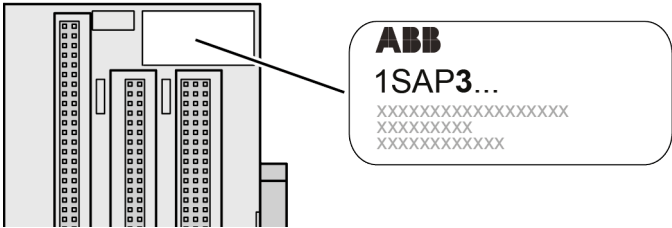
Processor modules PM56xx-2ETH can only be used with TB56xx-2ETH terminal bases.

Table 94: Combination of TB56xx-2ETH(-XC) and PM56xx(-XC)

Processor module	PM5630	PM5650	PM5670	PM5675
TB5600-2ETH	0 slot	0 slot	0 slot	0 slot
TB5610-2ETH	1 slot	1 slot	1 slot	1 slot
TB5620-2ETH	2 slots	2 slots	2 slots	2 slots
TB5640-2ETH	-	4 slots	4 slots	4 slots
TB5660-2ETH	-	-	6 slots ¹⁾	6 slots ¹⁾
Remarks: The slots can be used for connecting communication modules or AC500-S modules. Note that only one AC500-S module can be connected at one terminal base. ¹⁾ PM567x must have an index $\geq$ C0.				

XC version

XC = eXtreme Conditions



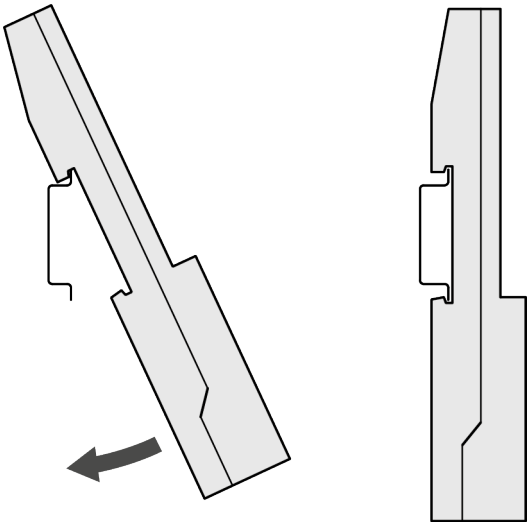


Extreme conditions

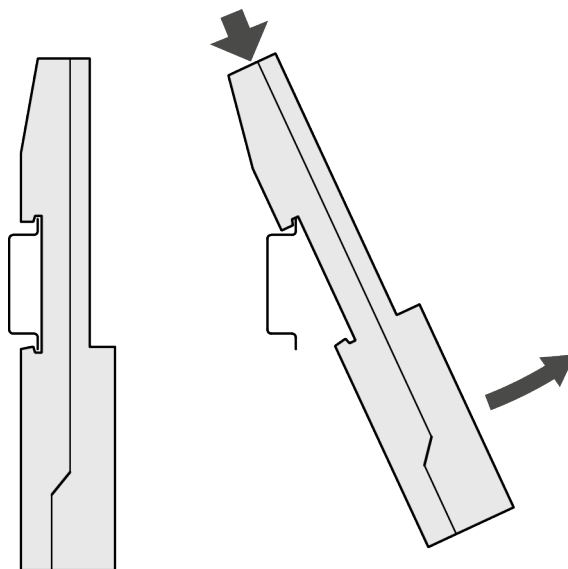
Terminal bases for use in extreme ambient conditions have no ❄️ sign for XC version.

The figure 3 in the Part no. 1SAP3... (label) identifies the XC version.

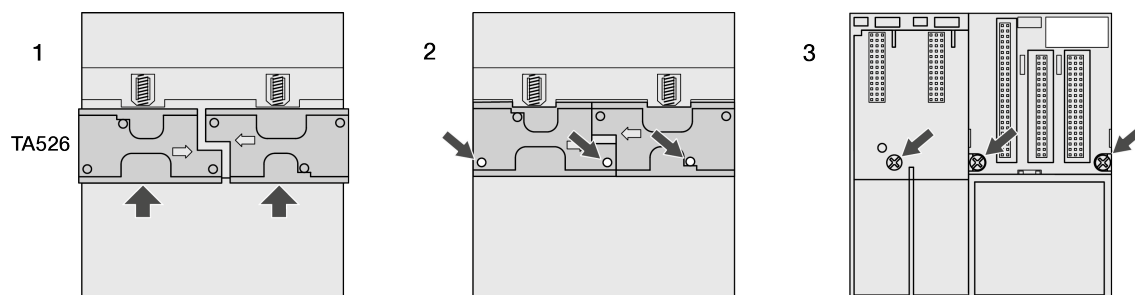
119.1 Assembly



119.2 Disassembly



119.3 Assembly with screws



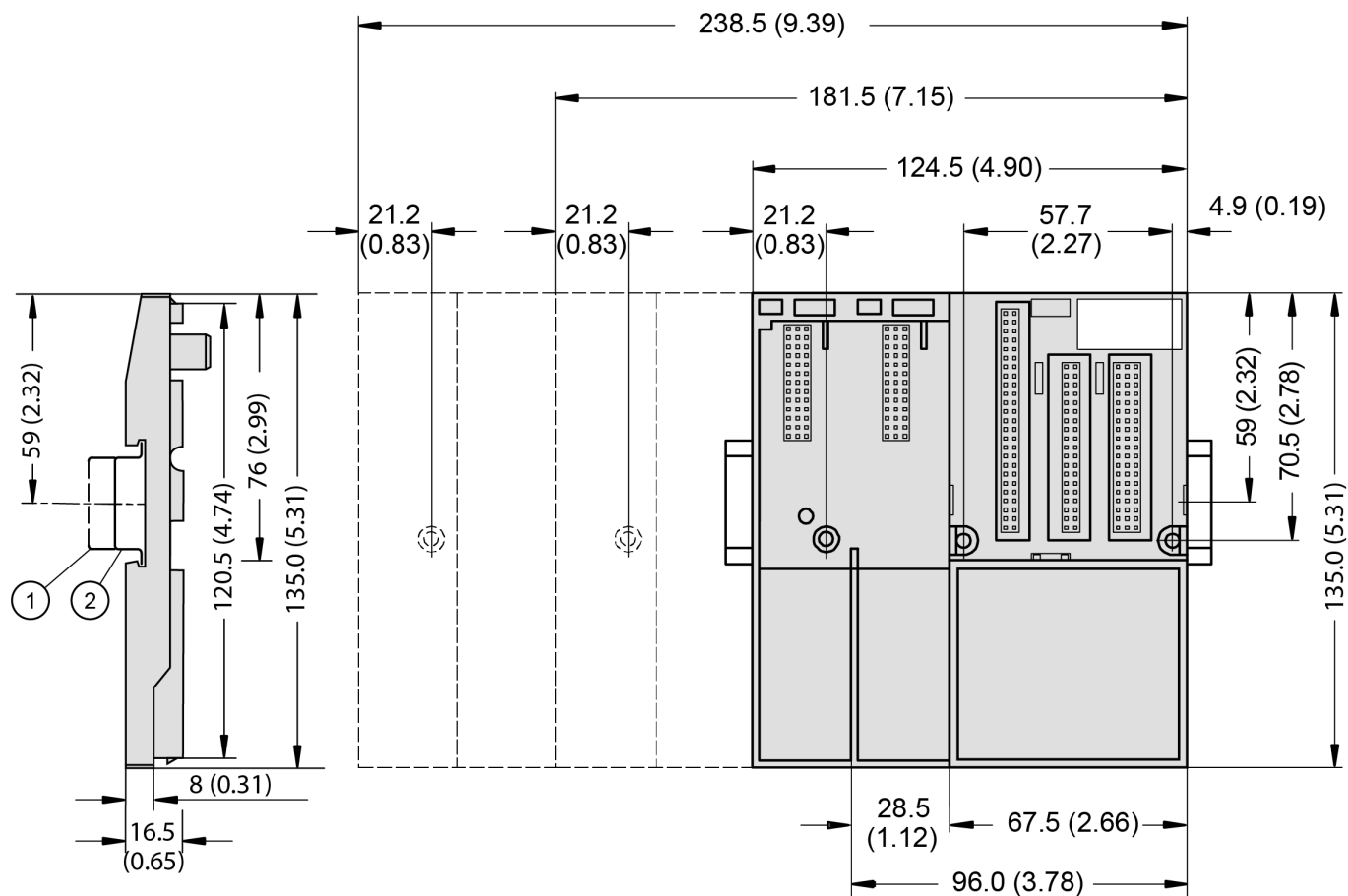
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

119.4 Dimensions

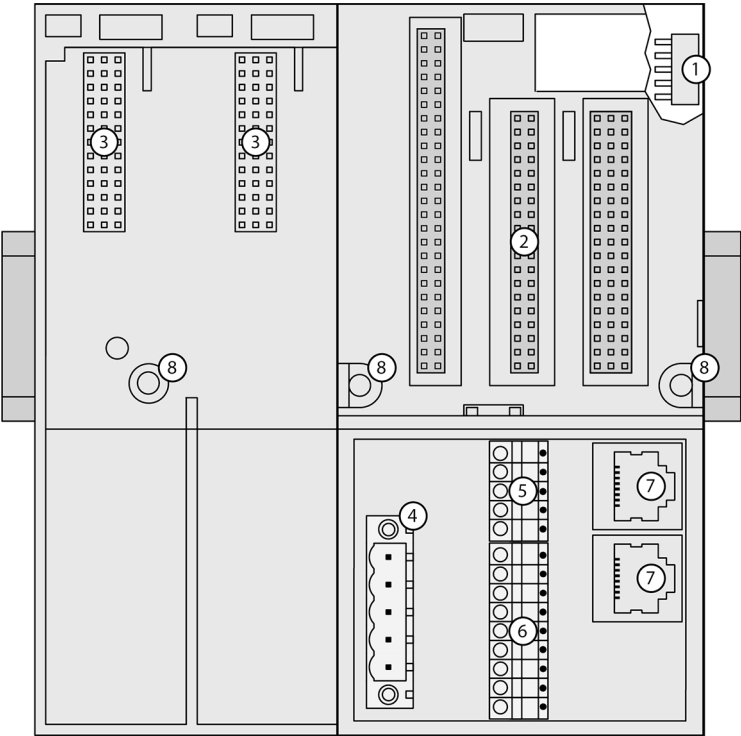


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

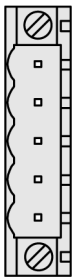
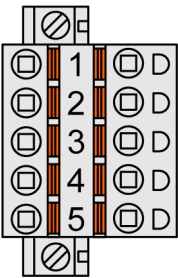
119.5 Connections



- 1 I/O bus (10-pin, female) to connect the I/O terminal units
- 2 One available slot for the processor module
- 3 Slots for communication modules
- 4 Interface for CAN (5-pin terminal block, removable)
- 5 Power supply (5-pin terminal block, removable)
- 6 Serial interface COM1 (9-pin terminal block, removable)
- 7 RJ45 female connector for Ethernet connection
- 8 Holes for screw mounting

119.5.1 CAN interface

Pin assignment

Interface		PIN	Signal	Description
 CAN Terminal block removed		1	CAN_GND	CAN reference potential
		2	CAN_L	Bus line, receive/transmit line, LOW
		3	CAN_SHLD	Shield of the bus line
		4	CAN_H	Bus line, receive/transmit line, HIGH
		5	NC	Not connected

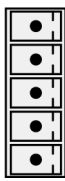
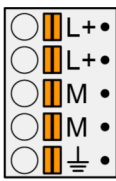


NOTICE!
Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

119.5.2 Power supply

Pin assignment

Pin Assignment	Label	Function	Description
 Terminal block removed	L+	+24 V DC	Positive pin of the power supply voltage
	L+	+24 V DC	Positive pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
	M	0 V	Negative pin of the power supply voltage
		FE	Functional earth
 Terminal block inserted			

119.5.3 Serial interface COM1

Pin assignment (RS-485 / RS-232)

Pin	Signal	Interface	Description
1	Terminator P	RS-485	Terminator P
2	RxD/TxD-P	RS-485	Receive/Transmit, positive
3	RxD/TxD-N	RS-485	Receive/Transmit, negative
4	Terminator N	RS-485	Terminator N
5	RTS	RS-232	Request to send (output)
6	TxD	RS-232	Transmit data (output)
7	SGND	Signal Ground	Signal Ground
8	RxD	RS-232	Receive data (input)
9	CTS	RS-232	Clear to send (input)



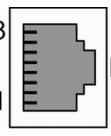
NOTICE!

Unused connector!

Make sure that the terminal block is always connected to the terminal base or communication module, even if you do not use the interface.

119.5.4 Ethernet network interface

Pin assignment

	Pin	Signal	Description
 RJ45	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

119.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

119.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

119.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

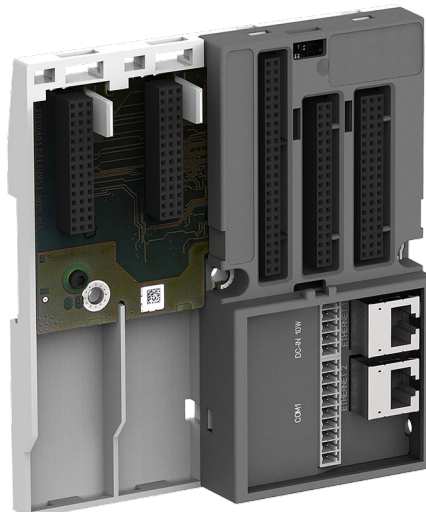
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

120 TF501-CMS(-XC)

- TF501-CMS
- TF501-CMS-XC



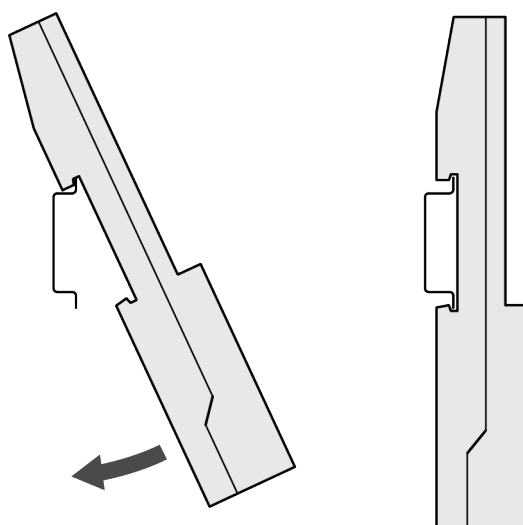
CAUTION!

Risk of injury and damaging the product!

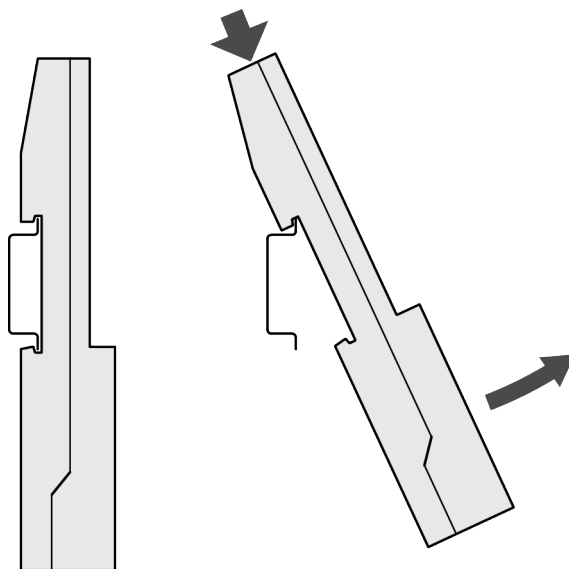
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

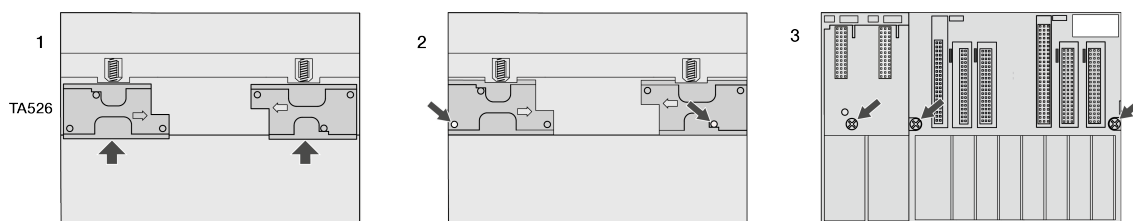
120.1 Assembly



120.2 Disassembly



120.3 Assembly with screws



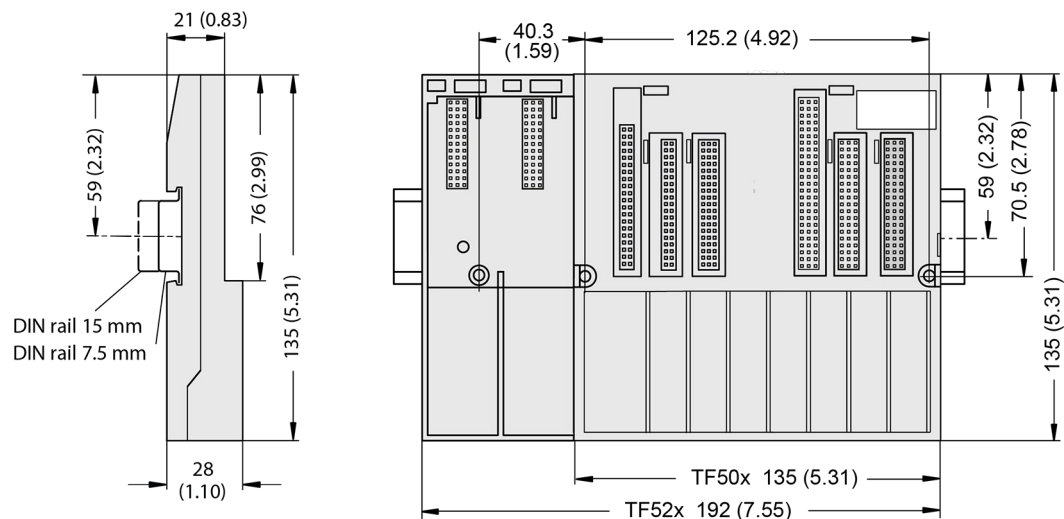
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

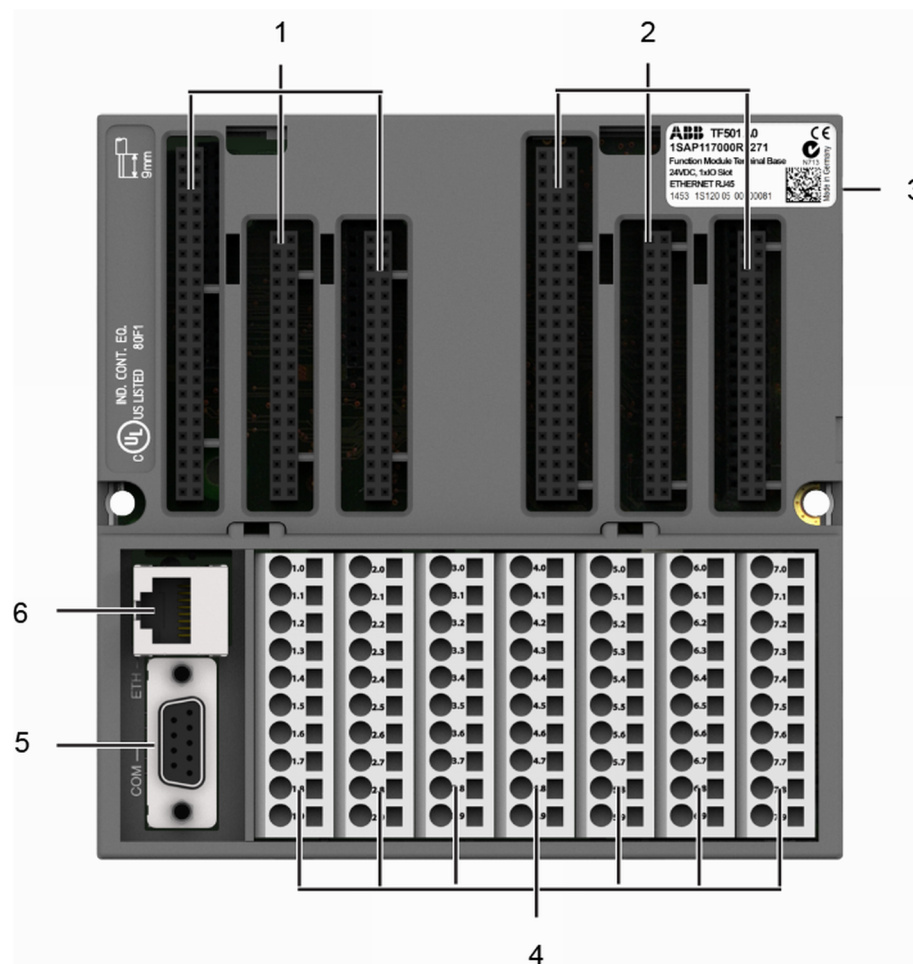
1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

120.4 Dimensions



The dimensions are in mm and in brackets in inch.

120.5 Connections



- 1 Slots for PM592-ETH
- 2 Slots for FM502-CMS
- 3 I/O bus to galvanically connect the terminal units
- 4 Terminal blocks for analog/digital inputs/outputs
- 5 Serial interface COM1
- 6 Ethernet network interface



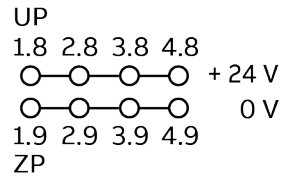
All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

Table 95: Function module terminal base - pin assignment

1.0 FE	2.0 AI0-	3.0 AI0+	4.0 SH	5.0 AI8-	6.0 AI8+	7.0 SH
1.1 A+	2.1 AI1-	3.1 AI1+	4.1 SH	5.1 AI9-	6.1 AI9+	7.1 SH
1.2 A-	2.2 AI2-	3.2 AI2+	4.2 SH	5.2 AI10-	6.2 AI10+	7.2 SH
1.3 B+	2.3 AI3-	3.3 AI3+	4.3 SH	5.3 AI11-	6.3 AI11+	7.3 SH
1.4 B-	2.4 AI4-	3.4 AI4+	4.4 SH	5.4 AI12-	6.4 AI12+	7.4 SH
1.5 Z+	2.5 AI5-	3.5 AI5+	4.5 SH	5.5 AI13-	6.5 AI13+	7.5 SH
1.6 Z-	2.6 AI6-	3.6 AI6+	4.6 SH	5.6 AI14-	6.6 AI14+	7.6 SH
1.7 5V	2.7 AI7-	3.7 AI7+	4.7 SH	5.7 AI15-	6.7 AI15+	7.7 SH

1.8 L+	2.8 DI0	3.8 DC2	4.8 L+	5.8 L+	6.8 L+	7.8 L+
1.9 M	2.9 DI1	3.9 DC3	4.9 M	5.9 M	6.9 M	7.9 M

120.5.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

120.5.2 Ethernet network interface

Pin assignment

	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

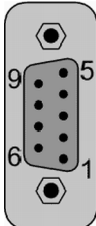
Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

120.5.3 Serial interface COM1

Pin assignment

Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

120.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

120.7 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

120.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

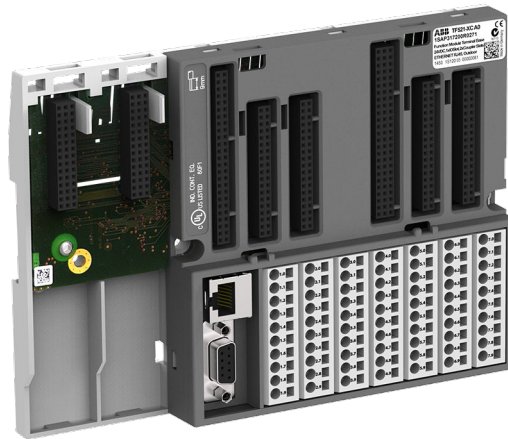
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

121 TF521-CMS(-XC)

- TF521-CMS
- TF521-CMS-XC



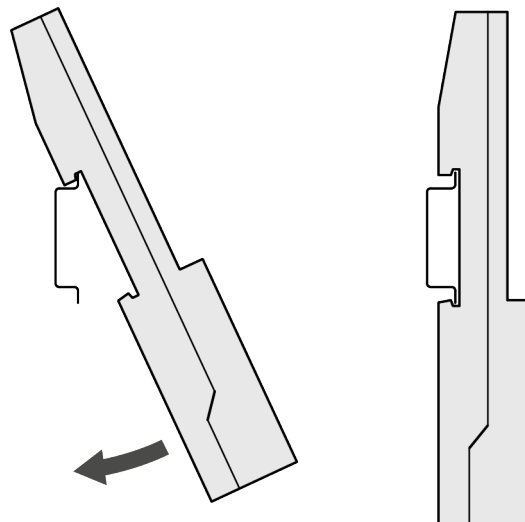
CAUTION!

Risk of injury and damaging the product!

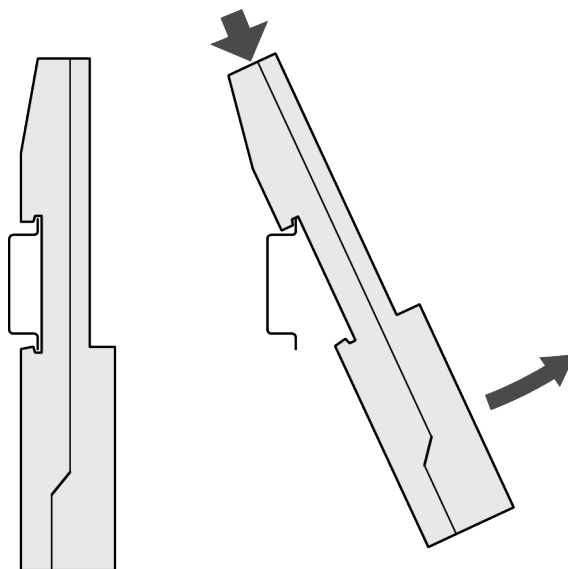
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

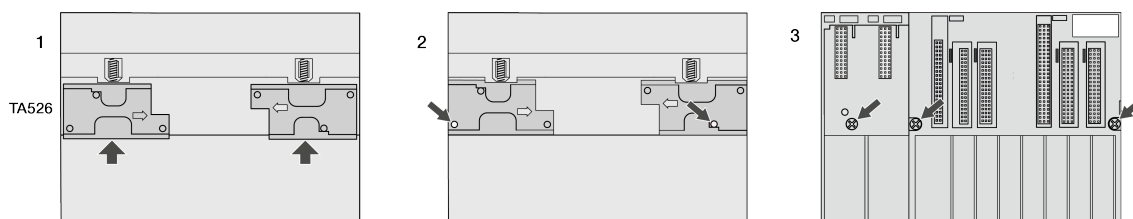
121.1 Assembly



121.2 Disassembly



121.3 Assembly with screws



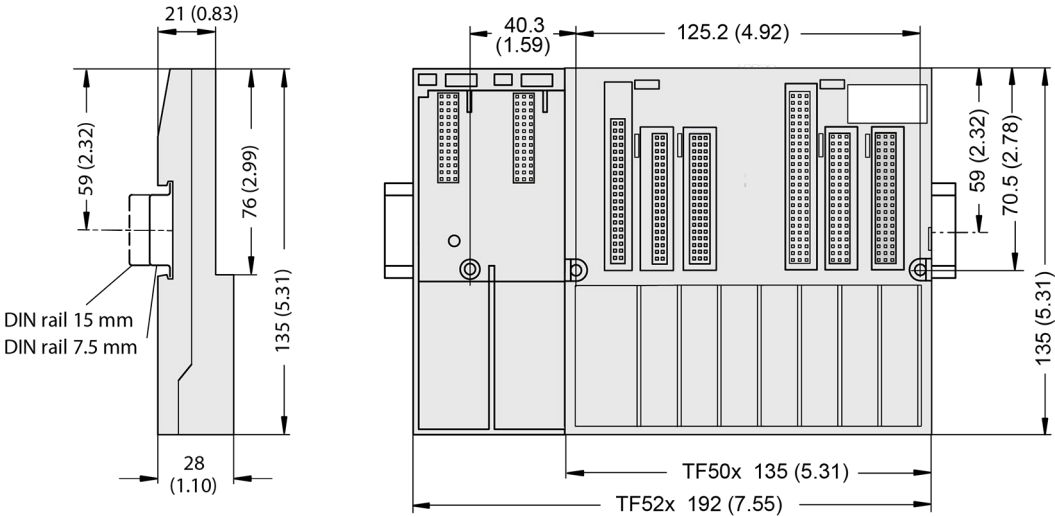
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

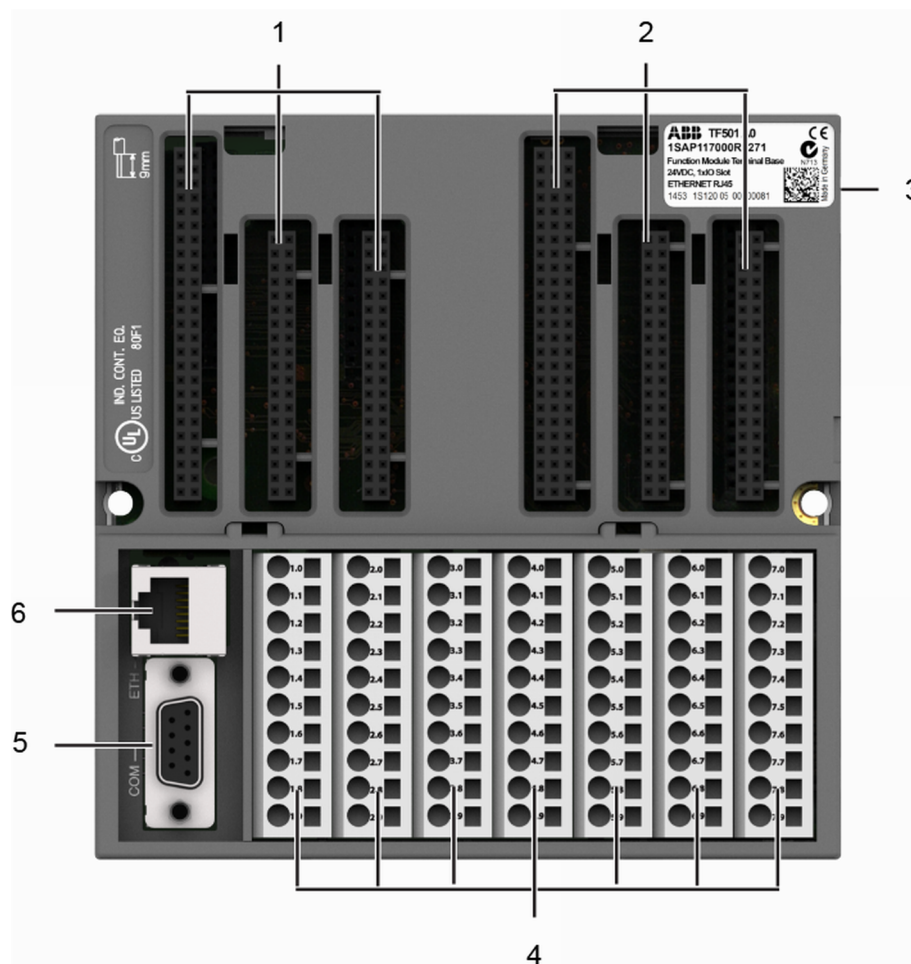
1. TA526 are snapped on the rear side of the module like DIN rails. One TA526 is turned by 180°.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

121.4 Dimensions



The dimensions are in mm and in brackets in inch.

121.5 Connections



- 1 Slots for PM592-ETH
- 2 Slots for FM502-CMS
- 3 I/O bus to galvanically connect the terminal units
- 4 Terminal blocks for analog/digital inputs/outputs
- 5 Serial interface COM1
- 6 Ethernet network interface



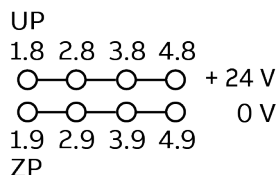
All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

Table 96: Function module terminal base - pin assignment

1.0 FE	2.0 AI0-	3.0 AI0+	4.0 SH	5.0 AI8-	6.0 AI8+	7.0 SH
1.1 A+	2.1 AI1-	3.1 AI1+	4.1 SH	5.1 AI9-	6.1 AI9+	7.1 SH
1.2 A-	2.2 AI2-	3.2 AI2+	4.2 SH	5.2 AI10-	6.2 AI10+	7.2 SH
1.3 B+	2.3 AI3-	3.3 AI3+	4.3 SH	5.3 AI11-	6.3 AI11+	7.3 SH
1.4 B-	2.4 AI4-	3.4 AI4+	4.4 SH	5.4 AI12-	6.4 AI12+	7.4 SH
1.5 Z+	2.5 AI5-	3.5 AI5+	4.5 SH	5.5 AI13-	6.5 AI13+	7.5 SH
1.6 Z-	2.6 AI6-	3.6 AI6+	4.6 SH	5.6 AI14-	6.6 AI14+	7.6 SH
1.7 5V	2.7 AI7-	3.7 AI7+	4.7 SH	5.7 AI15-	6.7 AI15+	7.7 SH

1.8 L+	2.8 DI0	3.8 DC2	4.8 L+	5.8 L+	6.8 L+	7.8 L+
1.9 M	2.9 DI1	3.9 DC3	4.9 M	5.9 M	6.9 M	7.9 M

121.5.1 Process supply voltage



CAUTION!

The process supply voltage must be included in the grounding concept (e. g. grounding of the negative terminal).

121.5.2 Ethernet network interface

Pin assignment

	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!

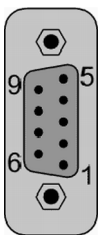
Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

121.5.3 Serial interface COM1

Pin assignment

Serial Interface	Pin	Signal	Interface	Description	
	1	FE	-	Functional earth	
	2	TxD	RS-232	Transmit data	Output
	3	RxD/TxD-P	RS-485	Receive/Transmit	Positive
	4	RTS	RS-232	Request to send	Output
	5	SGND	Signal ground	0 V supply out	
	6	+5 V	-	5 V supply out	
	7	RxD	RS-232	Receive data	Input
	8	RxD/TxD-N	RS-485	Receive/Transmit	Negative
	9	CTS	RS-232	Clear to send	Input
	Shield	FE	-	Functional earth	



NOTICE!

Risk of corrosion!

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

121.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

121.7 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

121.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

122 TK503

- TK503



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

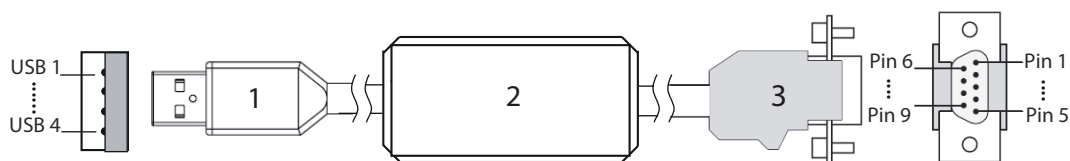
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



Once you have installed the device driver of the cable in your Windows system, make sure that you always use the same USB port on your computer.

Otherwise, Windows will ask you to install the driver a second time if you connect the cable to a different USB port of your computer.

122.1 Connections



- 1 USB connector type A (PC side)
- 2 USB/RS-485 converter
- 3 D-sub, 9-pin, (RS-485, PLC side)

Table 97: TK503 programming cable wiring USB pin

USB pin	Signal	Description
USB 1	VBUS	USB power
USB 2	-D	USB data negative
USB 3	+D	USB data positive
USB 4	GND	Ground

Table 98: TK503 programming cable wiring D-sub, 9-pin

Pin	Signal	Description
Pin 1	FE	Functional earth
Pin 2	-	Not connected
Pin 3	RXD/TXD-P	Receive/Transmit positive
Pin 4	-	Not connected
Pin 5	SGND	Signal ground
Pin 6	3.3 V/5 V	Power supply
Pin 7	-	Not connected
Pin 8	RXD/TXD-N	Receive/Transmit negative
Pin 9	-	Not connected

122.2 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

122.3 Certification



MSIP-REI-Abb-AC500-eCo

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 KCC 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

122.4 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

123 TK504

- TK504



CAUTION!
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

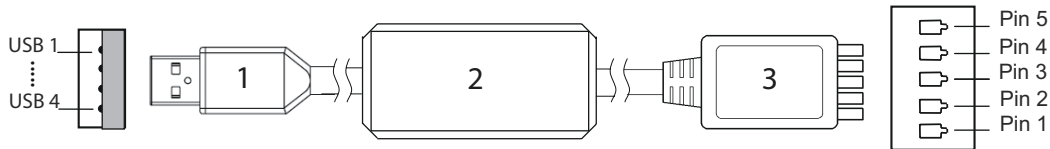
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.



Once you have installed the device driver of the cable in your Windows system, make sure that you always use the same USB port on your computer.

Otherwise, Windows will ask you to install the driver a second time if you connect the cable to a different USB port of your computer.

123.1 Connections



- 1 USB connector type A (PC side)
- 2 USB/RS-485 converter
- 3 Terminal block, 5-pin, (RS-485, PLC side)

Table 99: TK504 programming cable wiring USB pin

USB pin	Signal	Description
USB 1	VBUS	USB power
USB 2	-D	USB data negative

USB pin	Signal	Description
USB 3	+D	USB data positive
USB 4	GND	Ground

Table 100: TK504 programming cable wiring Terminal block, 5-pin

Pin	Signal	Description
Pin 1	-	Not connected
Pin 2	RXD/TXD-P	Receive/Transmit positive
Pin 3	RXD/TXD-N	Receive/Transmit negative
Pin 4	-	Not connected
Pin 5	FE	Functional earth

123.2 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

123.3 Certification



MSIP-REI-Abb-AC500-eCo

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

123.4 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

124 TK506

- TK506



CAUTION!

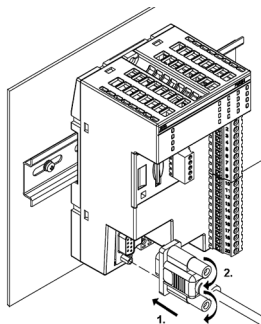
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

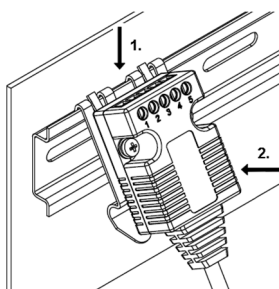
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Read product documentation carefully before wiring. Improper wiring or wrong terminal block from other devices can damage the product!
- Only by qualified personnel.

124.1 Assembly

Assembly to the CPU



Assembly on a DIN rail



Assembly on a metal plate

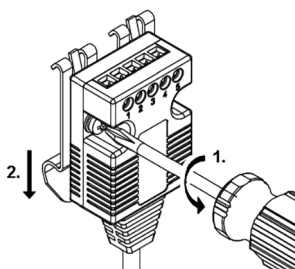


Fig. 101: Phillips No.1 M4

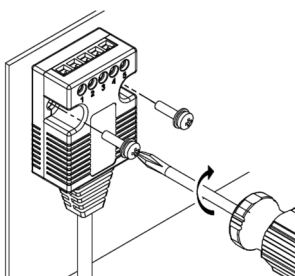
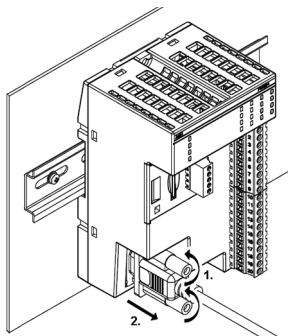


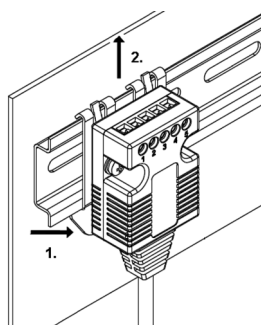
Fig. 102: Phillips No.1 M4 1.2 Nm

124.2 Disassembly

Disassembly from the CPU



Disassembly from a DIN rail



Disassembly from a metal plate

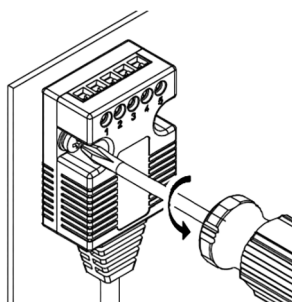


Fig. 103: Phillips No.1 M4

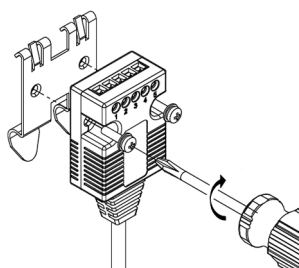
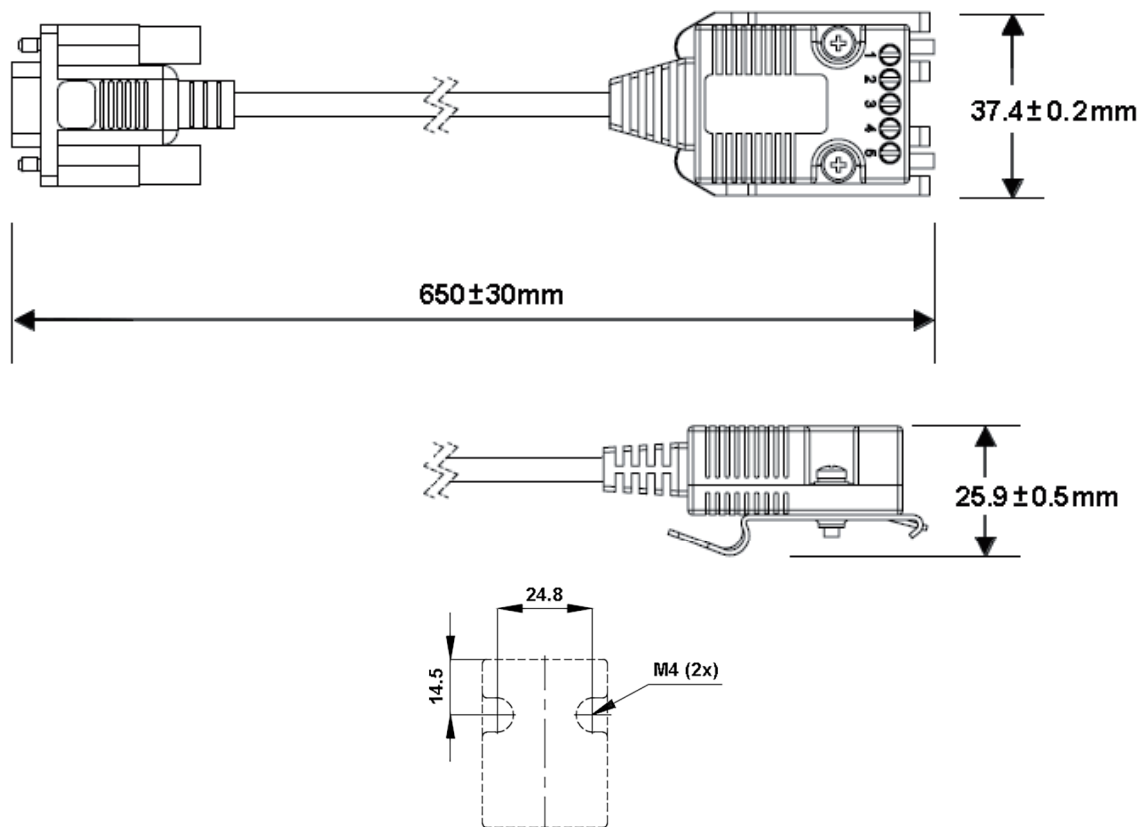


Fig. 104: Phillips No.1 M4 1.2 Nm

124.3 Dimensions



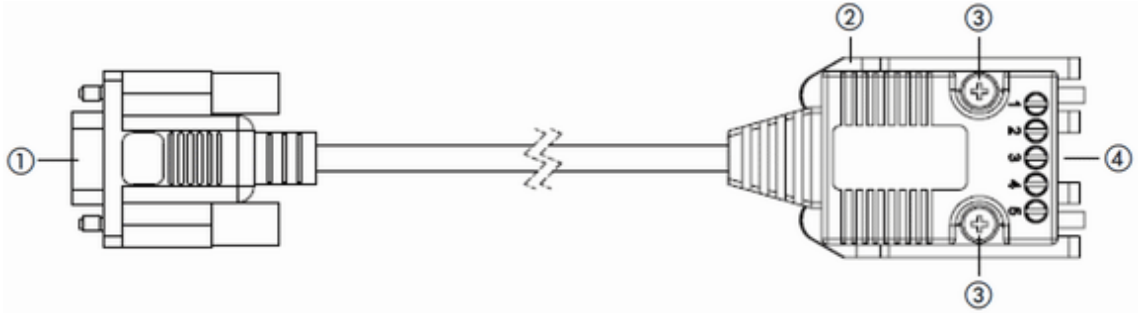
The dimensions are in mm and in brackets in inch.

124.4 Connections



CPUs for this application must be PM554 / PM564 with index version A3 or above

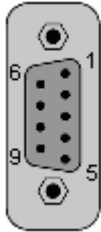
- Isolated side: 5-pin terminal
- AC500-eCo-side: D-sub 9-pin, male
- Length 0.6 m



- 1 D-sub 9-pin, male, RS-485
- 2 DIN rail mounting spring
- 3 Holes for mounting with 2x M4 screws
- 4 5-pin terminal, screw-type, RS-485

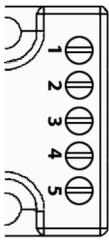
124.4.1 D-sub 9-pin, RS-485

Pin assignment

Interface	PIN	Signal	Description
	3	RxD/TxD-P	Receive/transmit positive
	5	GND	0V of 3.3V power supply
	6	3.3V	3.3V input power supply
	8	RxD/TxD-N	Receive/transmit negative

124.4.2 Interface (Terminal 5-pin, RS-485)

Pin assignment

	PIN	Signal	Description
	1	Terminator P	Terminator positive
	2	RxD/TxD-P	Receive/transmit positive
	3	RxD/TxD-N	Receive/transmit negative
	4	Terminator N	Terminator negative
	5	FE	Functional earth (internally connected to DIN rail spring)

124.5 Cleaning

**Cleaning instructions**

Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

124.6 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

124.7 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

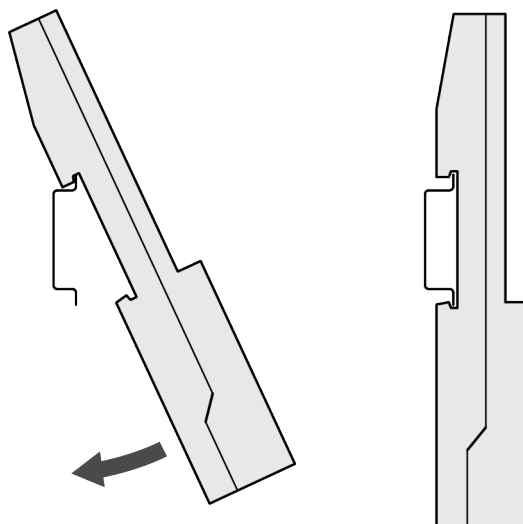
- [illegible]



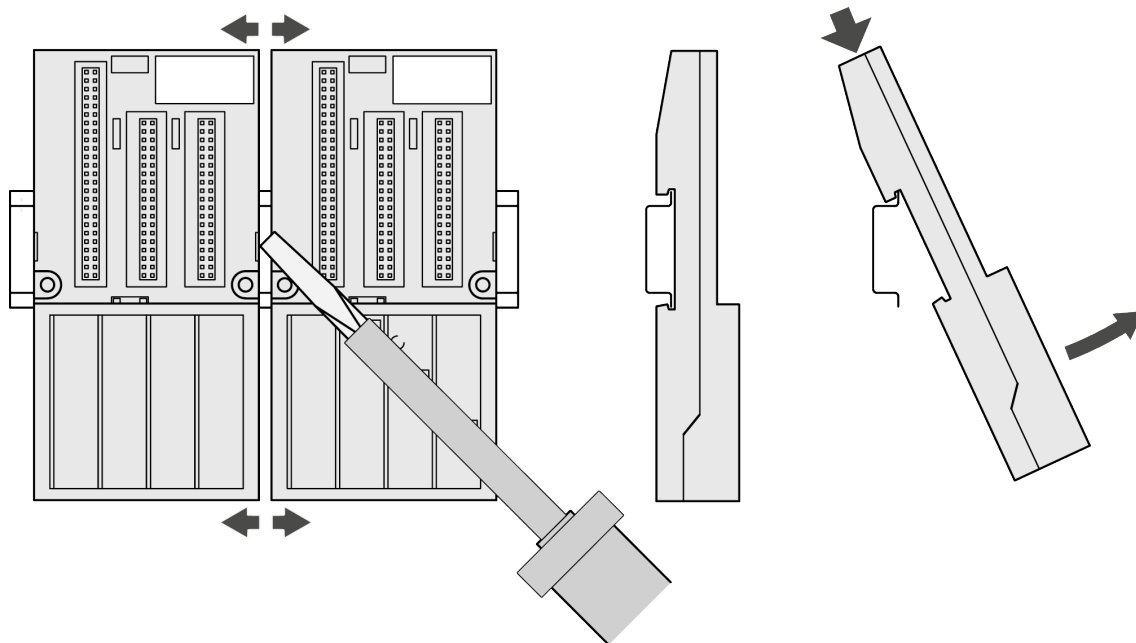
Risk of injury and damaging the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

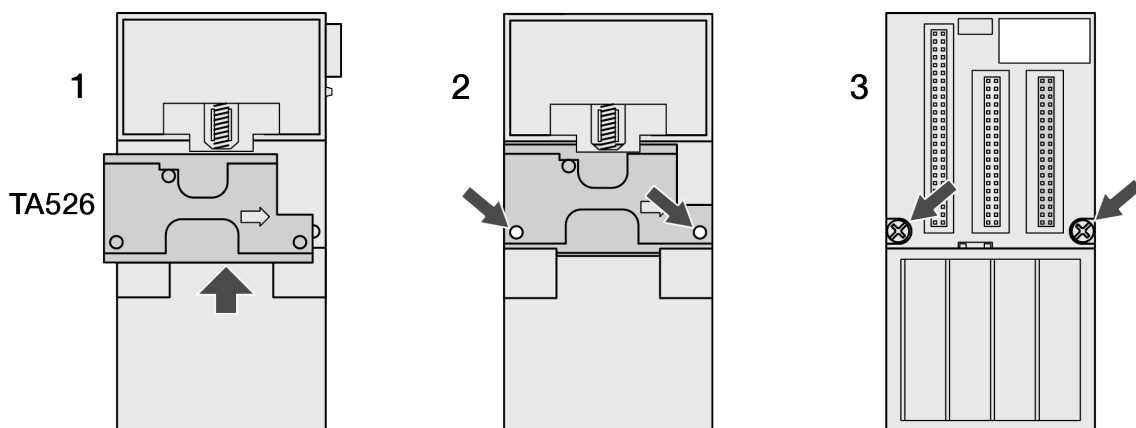
125.1 Assembly



125.2 Disassembly



125.3 Assembly with screws



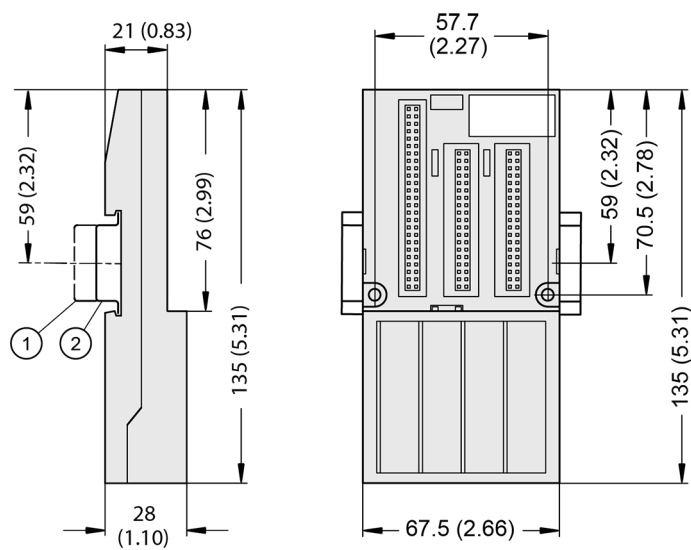
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

125.4 Dimensions

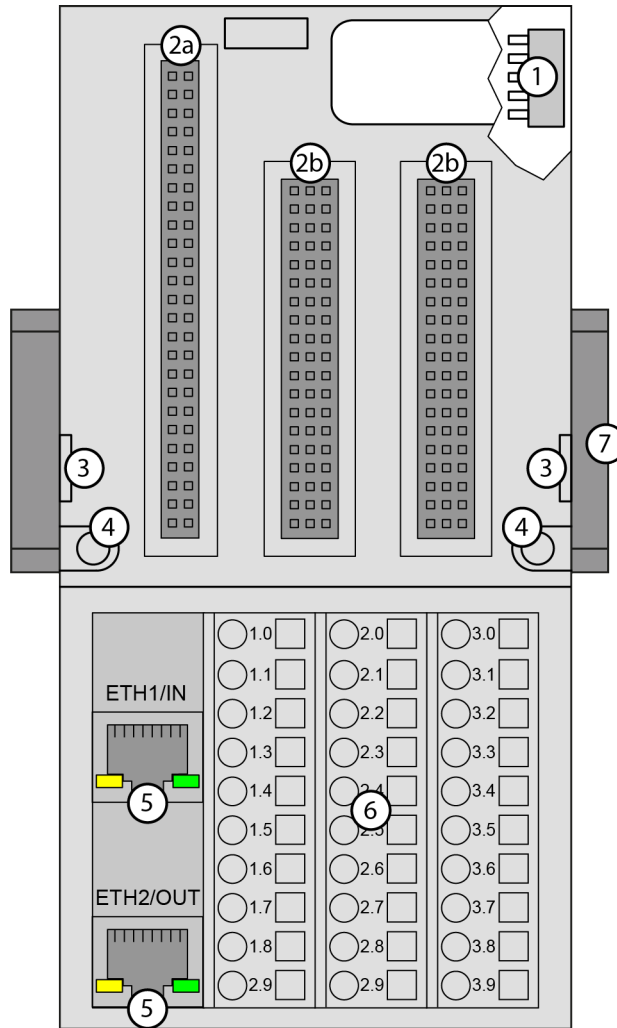


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

125.5 Connections



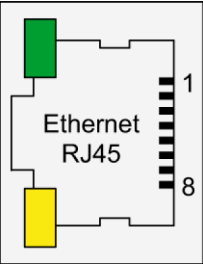
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2x 25 pins) to connect the inserted Ethernet communication interface module
- 2b Plug (3x 19 pins) to connect the inserted Ethernet communication interface module
- 3 With a screwdriver, inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 2 RJ45 interfaces with indication LEDs for connection with the Ethernet network
- 6 30 terminals for signals and process supply voltages (UP and UP3)
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

125.5.1 Ethernet network interface

Pin assignment

Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

125.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

125.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

125.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

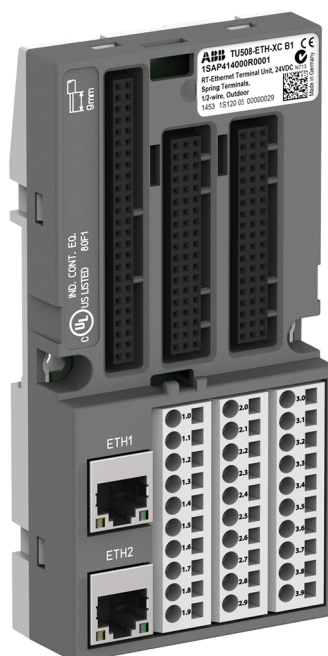
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

126 TU508-ETH(-XC)

- TU508-ETH
- TU508-ETH-XC



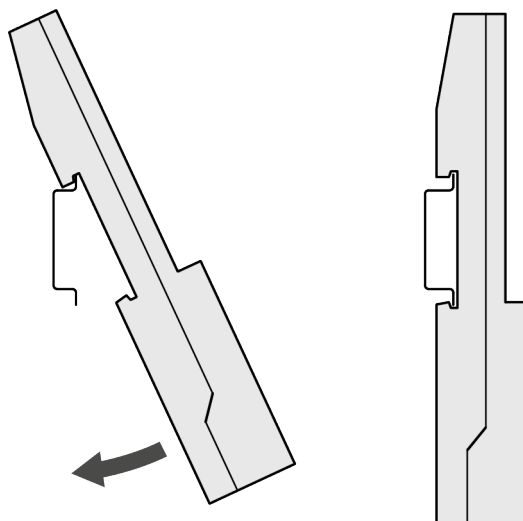
CAUTION!

Risk of injury and damaging the product!

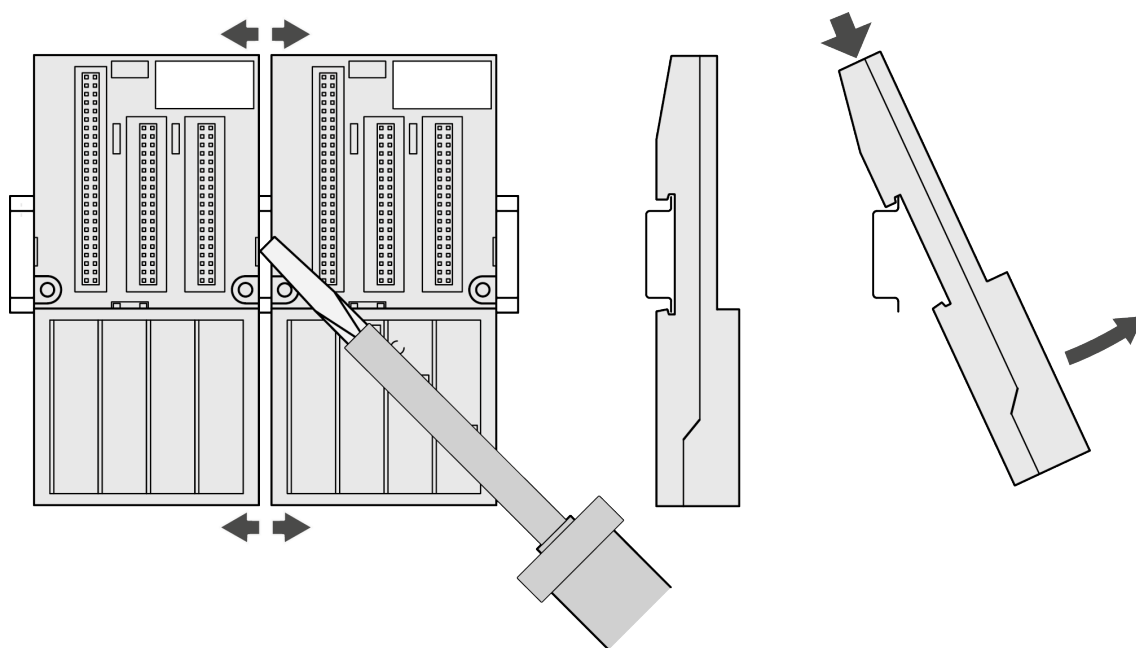
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

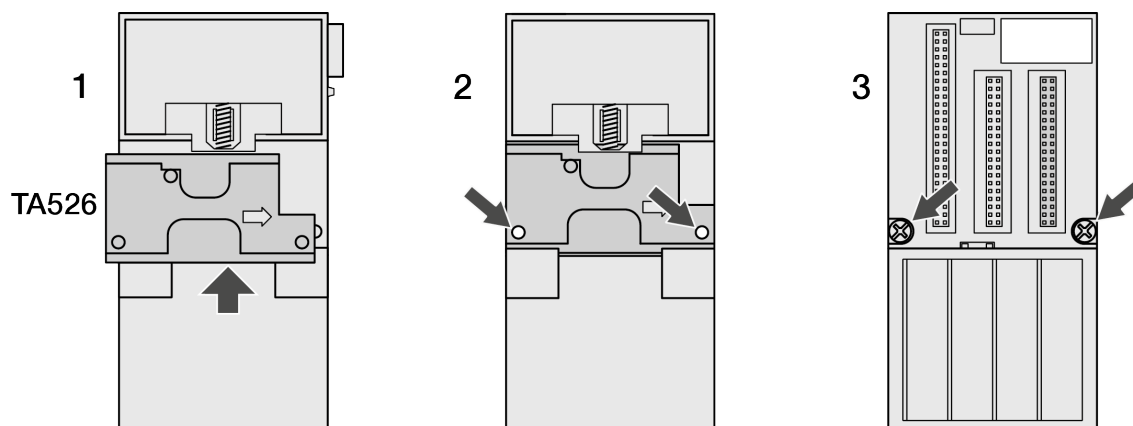
126.1 Assembly



126.2 Disassembly



126.3 Assembly with screws



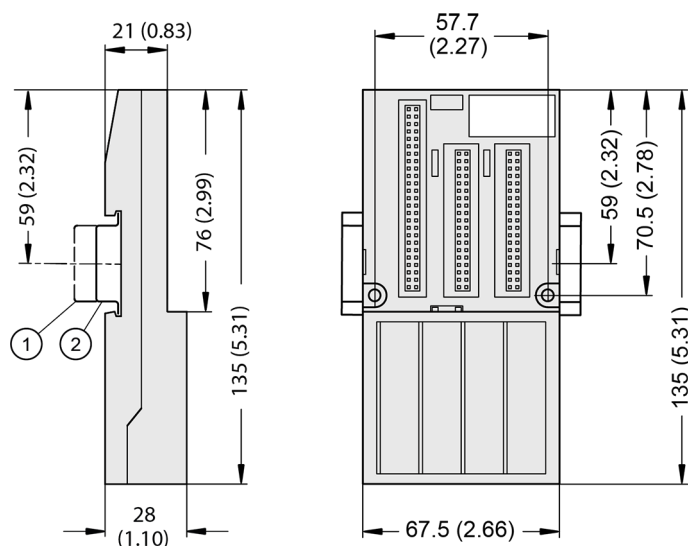
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

126.4 Dimensions

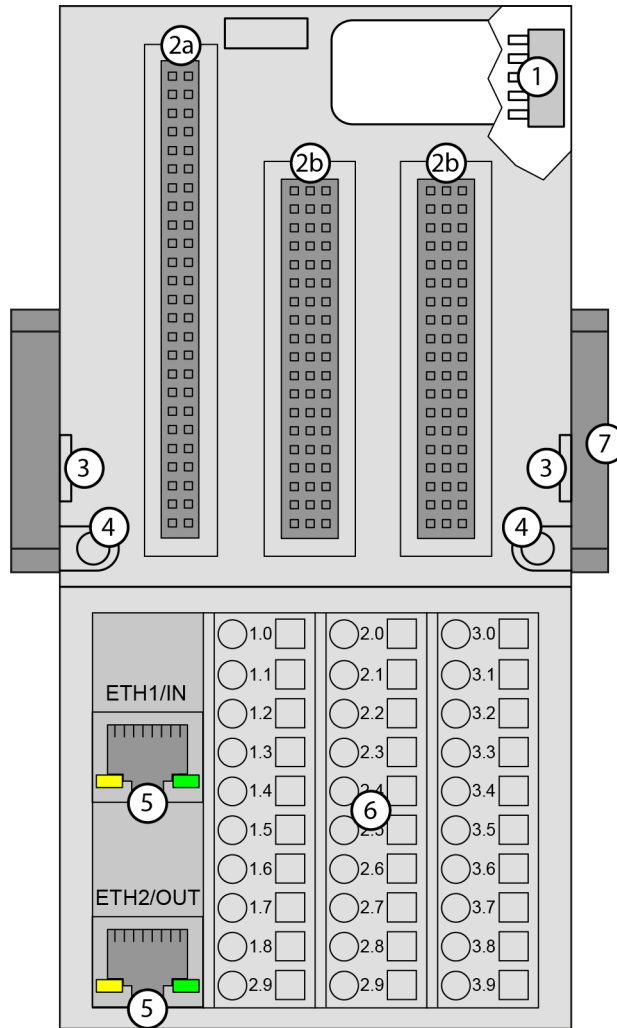


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

126.5 Connections



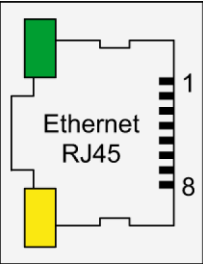
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2x 25 pins) to connect the inserted Ethernet communication interface module
- 2b Plug (3x 19 pins) to connect the inserted Ethernet communication interface module
- 3 With a screwdriver, inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 2 RJ45 interfaces with indication LEDs for connection with the Ethernet network
- 6 30 terminals for signals and process supply voltages (UP and UP3)
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

126.5.1 Ethernet network interface

Pin assignment

Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

126.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

126.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

126.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

127 TU509

- TU509



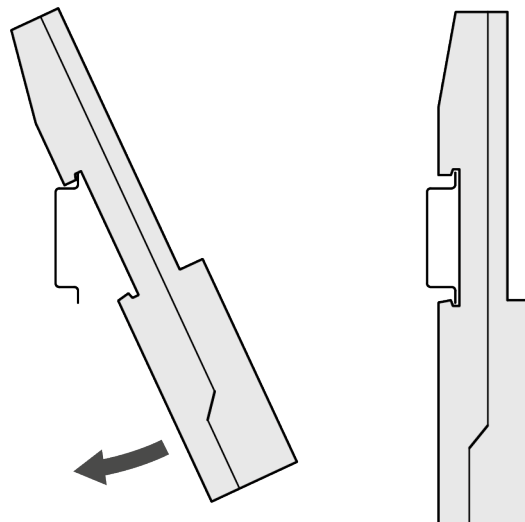
CAUTION!

Risk of injury and damaging the product!

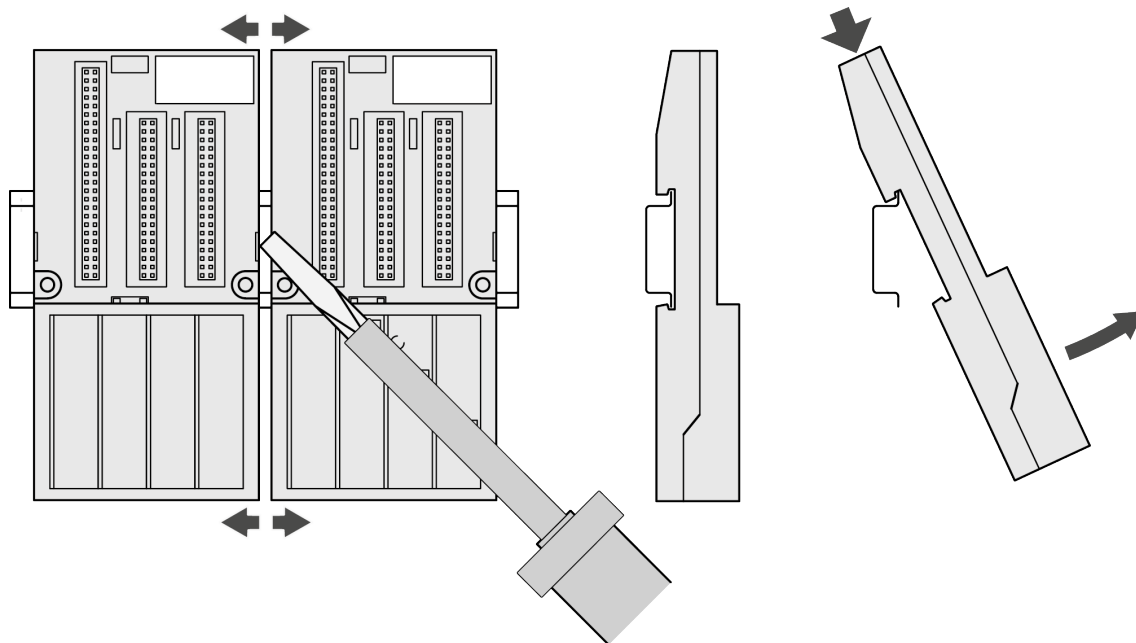
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

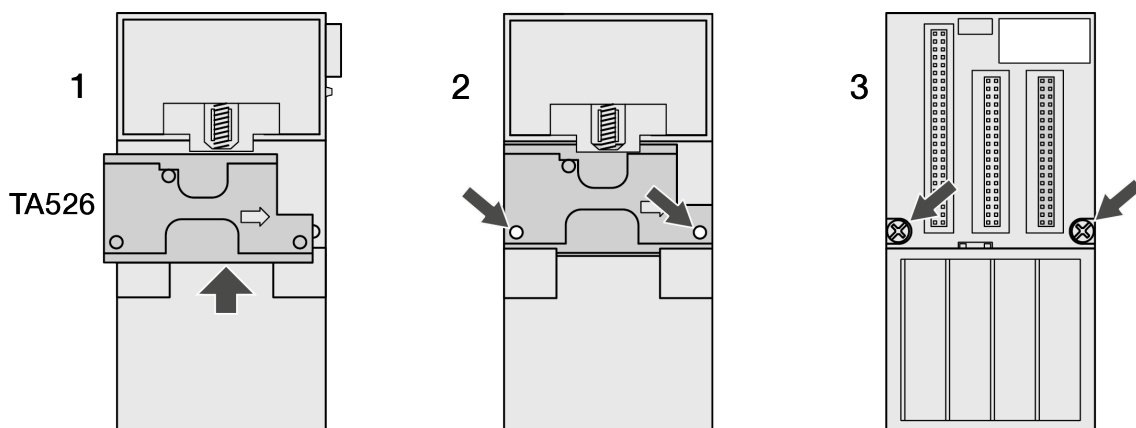
127.1 Assembly



127.2 Disassembly



127.3 Assembly with screws



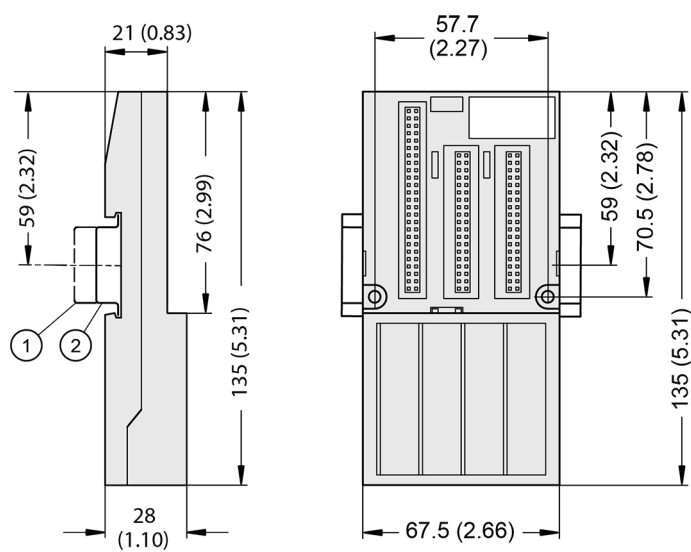
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

127.4 Dimensions

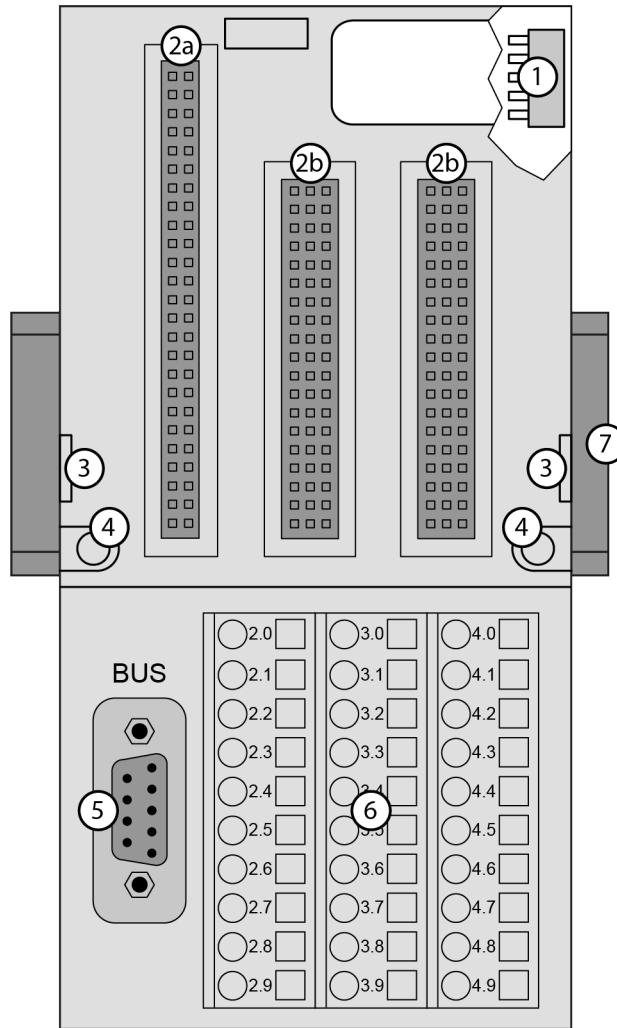


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

127.5 Connections



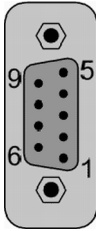
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2 25 pins) to connect the inserted communication interface module
- 2b Plug (3 19 pins) to connect the inserted communication interface module
- 3 With a screwdriver, inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 D-sub 9 (female) for connection with the PROFIBUS network
- 6 30 terminals for signals and process supply voltages (UP and UP3)
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

127.5.1 Bus interface

Pin assignment

Interface	PIN	DP (PROFIBUS)	CN (CANopen)
	1	-	-
	2	-	CAN-
	3	B	CAN_GND
	4	-	-
	5	DGND	-
	6	VP (5V)	-
	7	-	CAN+
	8	A	-
	9	-	-



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

127.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

127.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

127.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

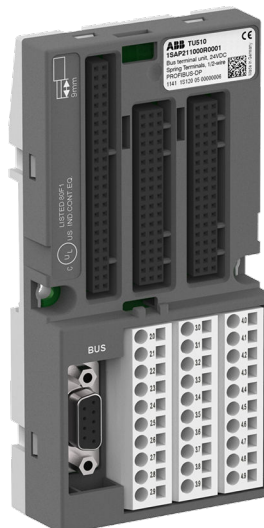
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

128 TU510(-XC)

- TU510
- TU510-XC



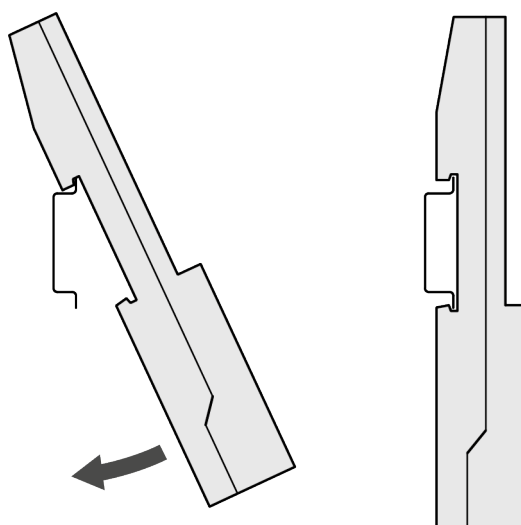
CAUTION!

Risk of injury and damaging the product!

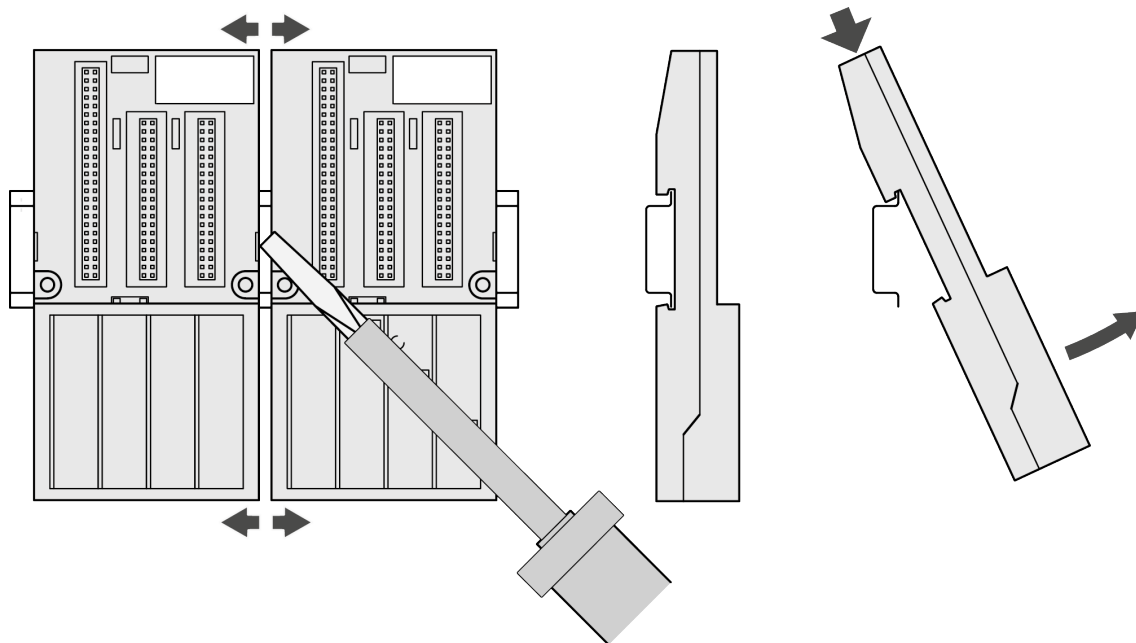
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

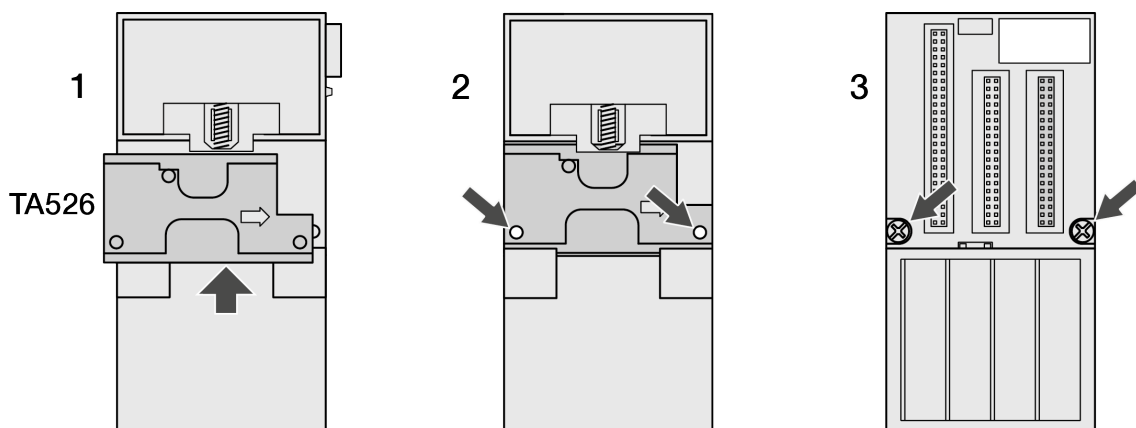
128.1 Assembly



128.2 Disassembly



128.3 Assembly with screws



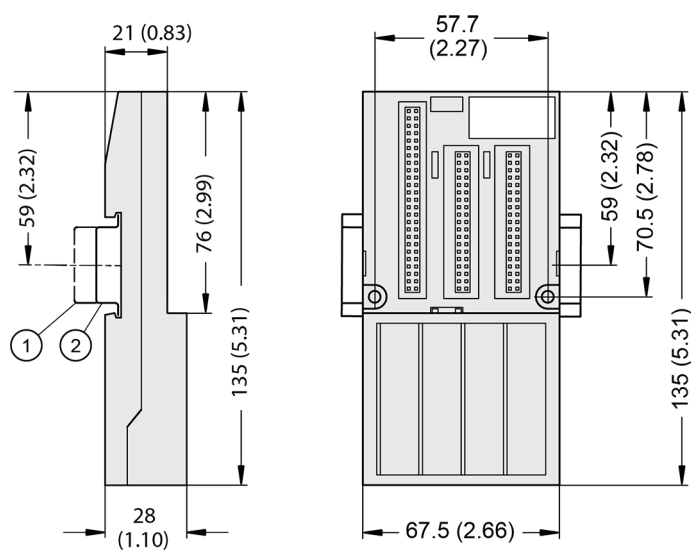
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

128.4 Dimensions

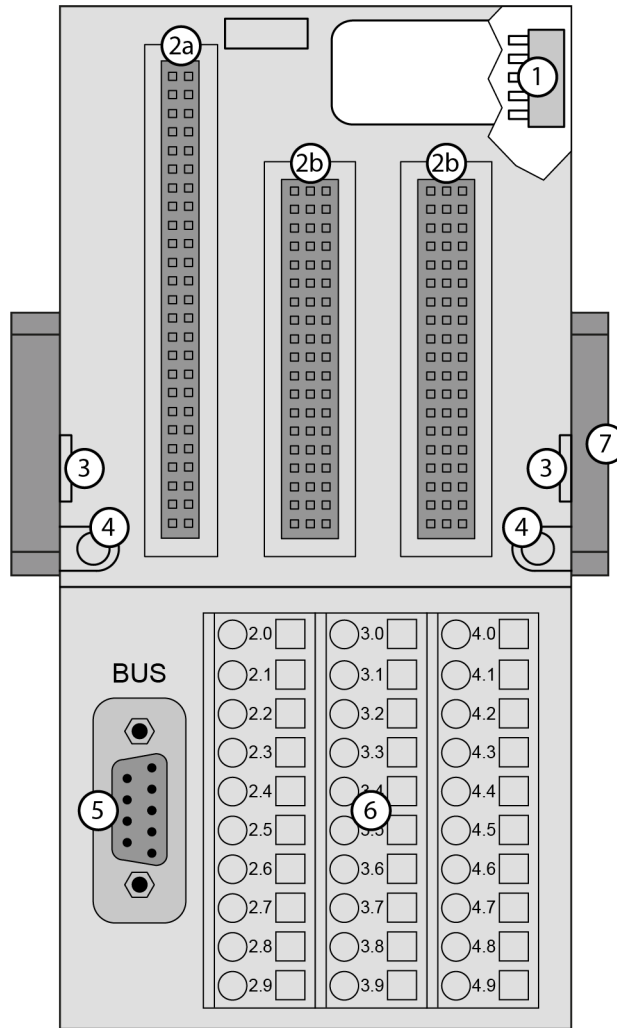


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

128.5 Connections



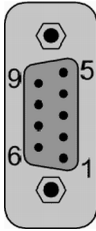
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2 25 pins) to connect the inserted communication interface module
- 2b Plug (3 19 pins) to connect the inserted communication interface module
- 3 With a screwdriver, inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 D-sub 9 (female) for connection with the PROFIBUS network
- 6 30 terminals for signals and process supply voltages (UP and UP3)
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

128.5.1 Bus interface

Pin assignment

Interface	PIN	DP (PROFIBUS)	CN (CANopen)
	1		
	2		CAN-
	3	B	CAN_GND
	4		
	5	DGND	
	6	VP (5V)	
	7		CAN+
	8	A	
	9		



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

128.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

128.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

128.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

129 TU515 24 V DC

- TU515 24 V DC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

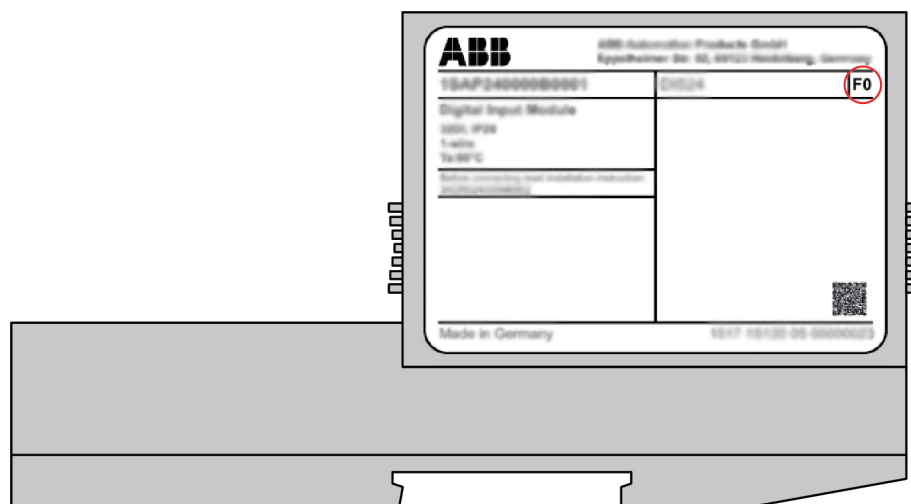
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!



The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.

**NOTICE!****Risk of damage to I/O modules!**

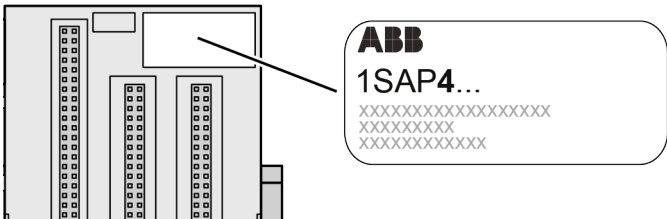
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2

Device	Min. required device index for I/O module as of FW Version 3.0.14
DX531	D2
DX561	B2
DX571	B3
FM562	A1

XC version **XC = eXtreme Conditions**



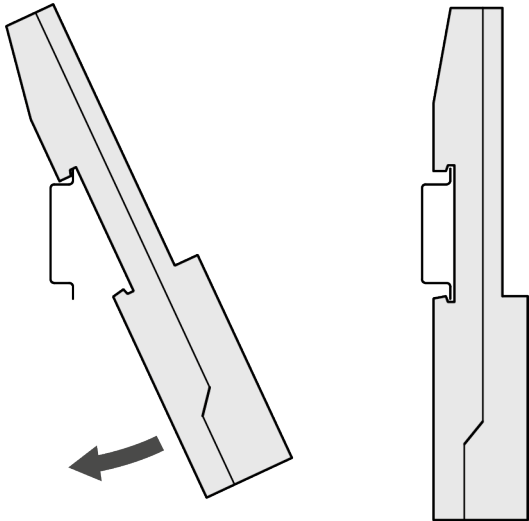


Extreme conditions

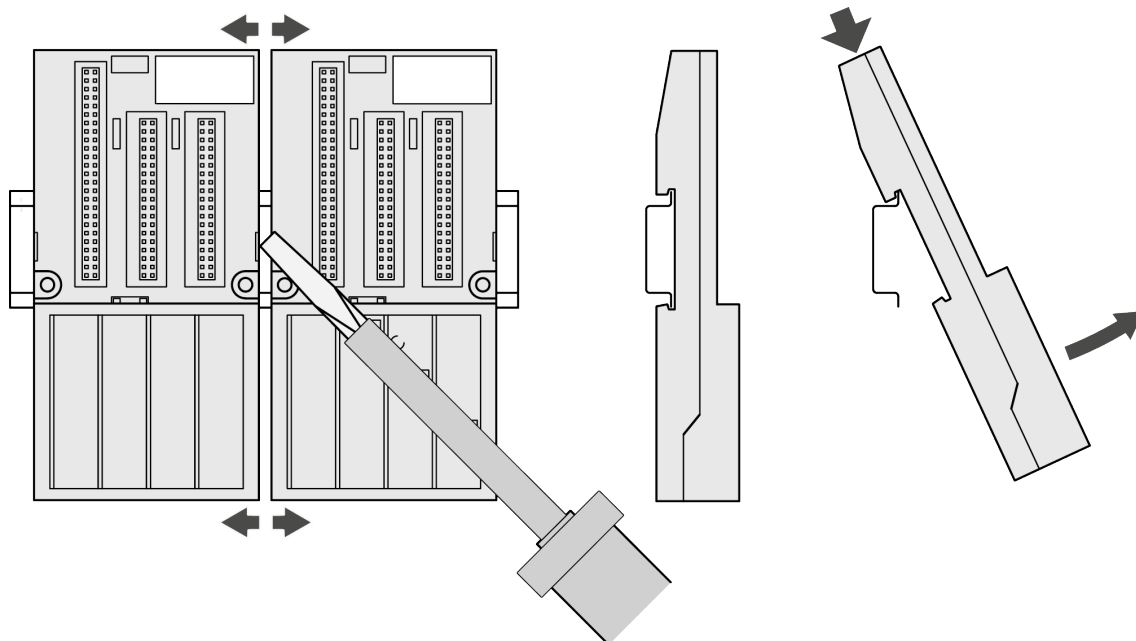
Terminal units for use in extreme ambient conditions have no  sign for XC version.

The figure **4** in the Part no. 1SAP4... (label) identifies the XC version.

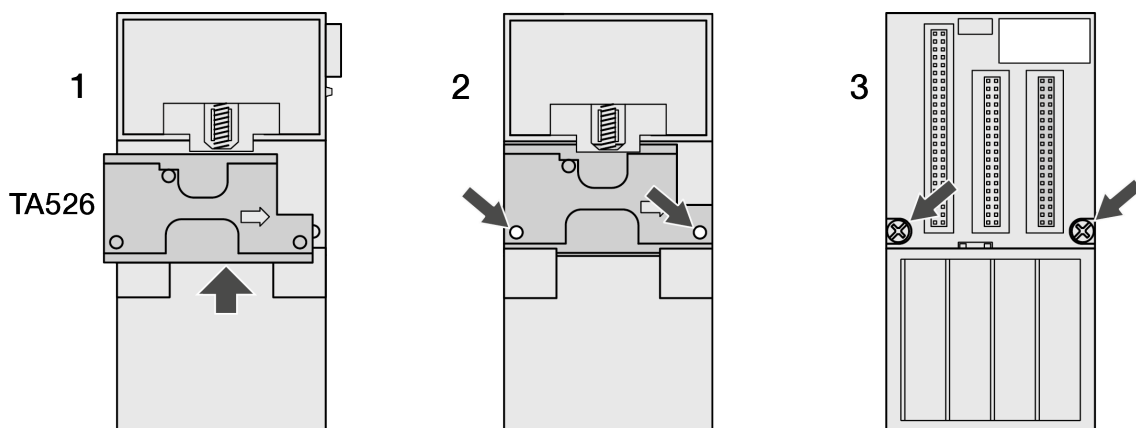
129.1 Assembly



129.2 Disassembly



129.3 Assembly with screws



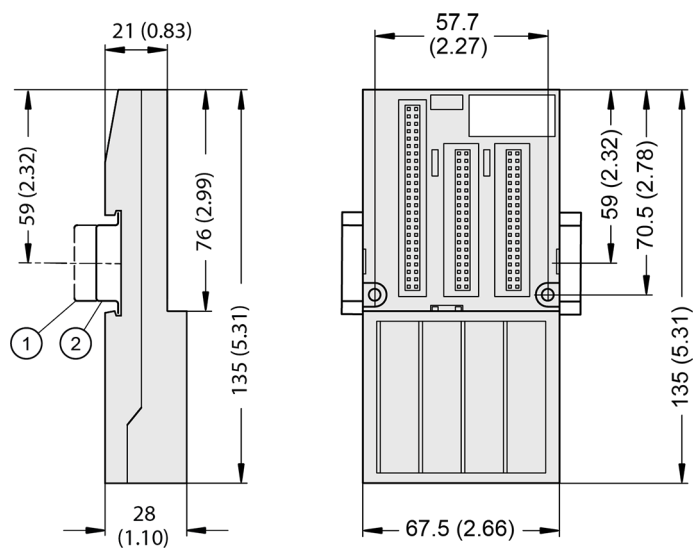
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

129.4 Dimensions

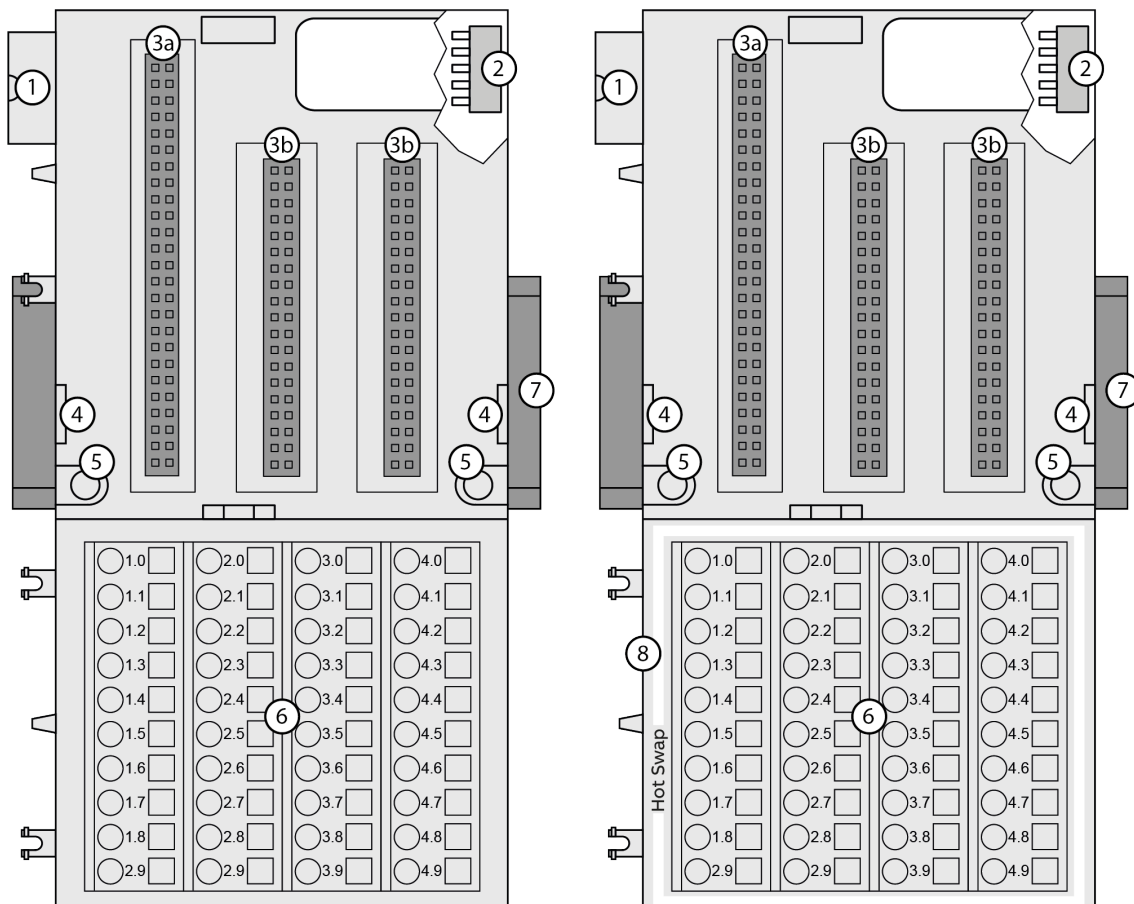


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

129.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3a Plug (2 x 25 pins) to connect the inserted I/O modules
- 3b Plug (2 x 19 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 terminals for signals and process supply voltage
- 7 DIN rail
- 8 White border signifies hot swap capability of the terminal unit

129.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

129.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

129.8 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

130 TU516(-H)(-XC) 24 V DC

- TU516 24 V DC
- TU516-XC 24 V DC
- TU516-H 24 V DC
- TU516-H-XC 24 V DC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

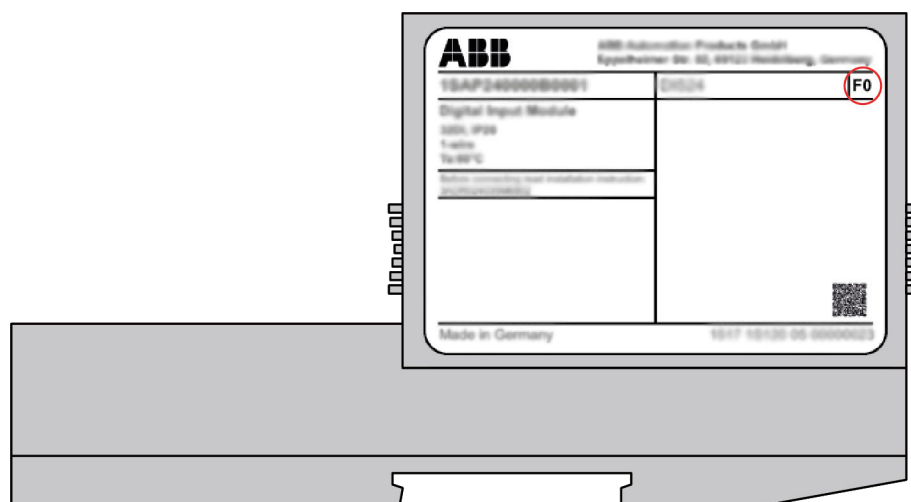
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

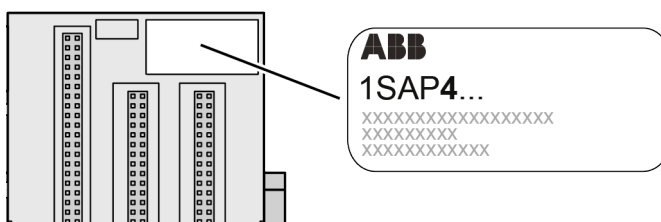
Risk of damage to I/O modules!

Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

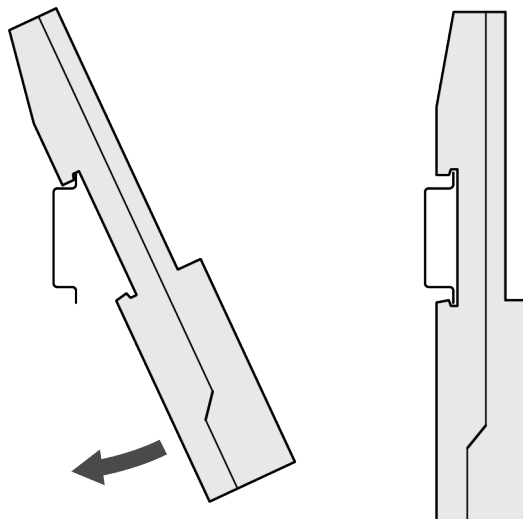
Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

XC version**XC = eXtreme Conditions****Extreme conditions**

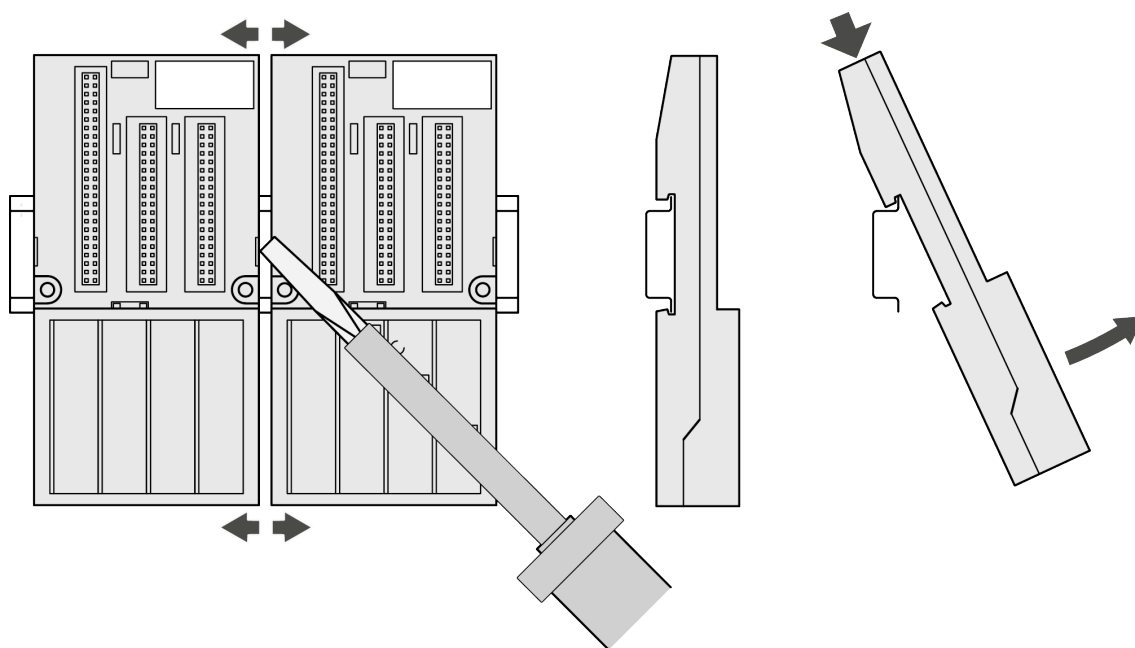
Terminal units for use in extreme ambient conditions have no ☀ sign for XC version.

The figure **4** in the Part no. 1SAP**4**... (label) identifies the XC version.

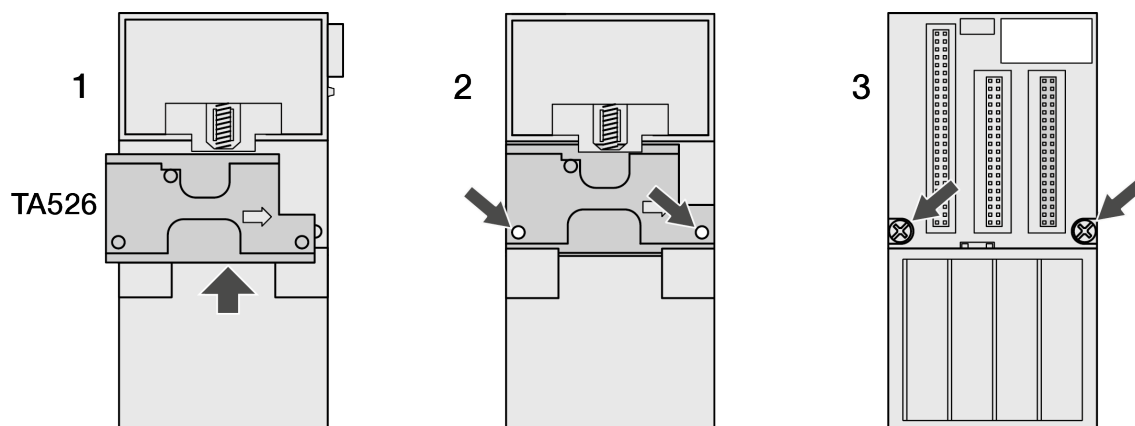
130.1 Assembly



130.2 Disassembly



130.3 Assembly with screws



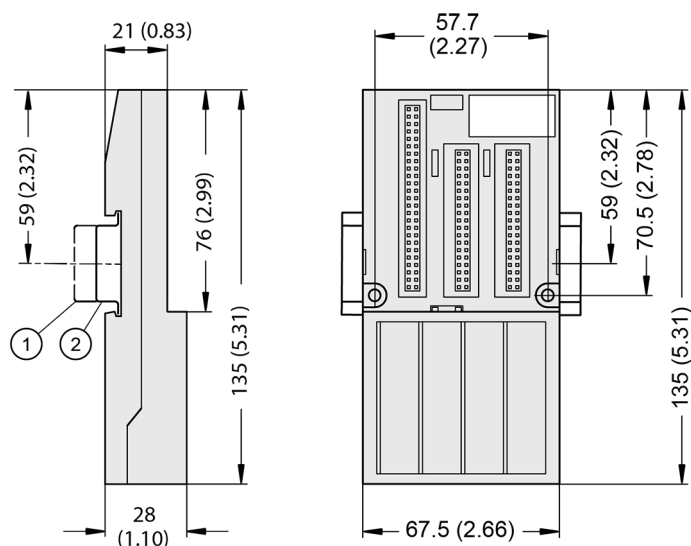
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

130.4 Dimensions

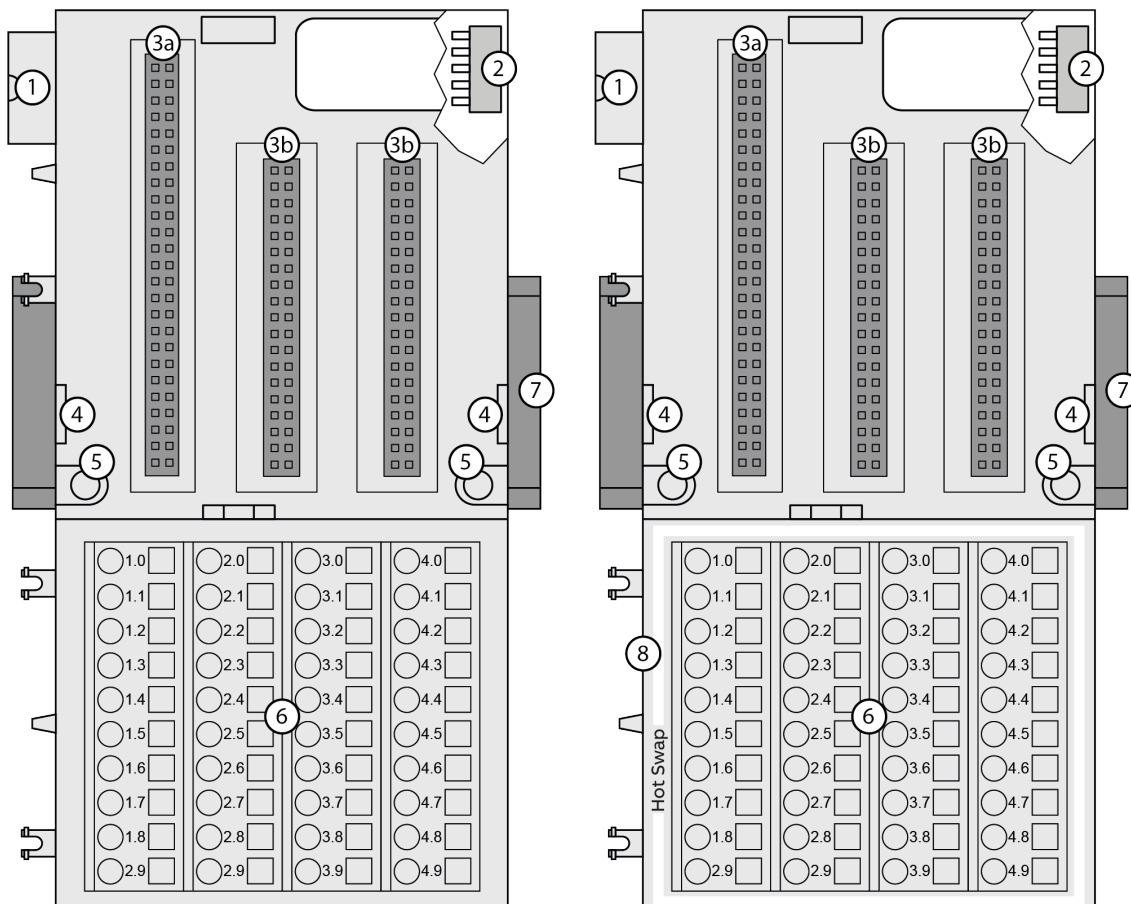


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

130.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3a Plug (2 x 25 pins) to connect the inserted I/O modules
- 3b Plug (2 x 19 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 terminals for signals and process supply voltage
- 7 DIN rail
- 8 White border signifies hot swap capability of the terminal unit



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

130.6 Cleaning



Cleaning instructions

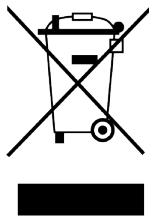
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

130.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

130.8 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

131 TU517

- TU517



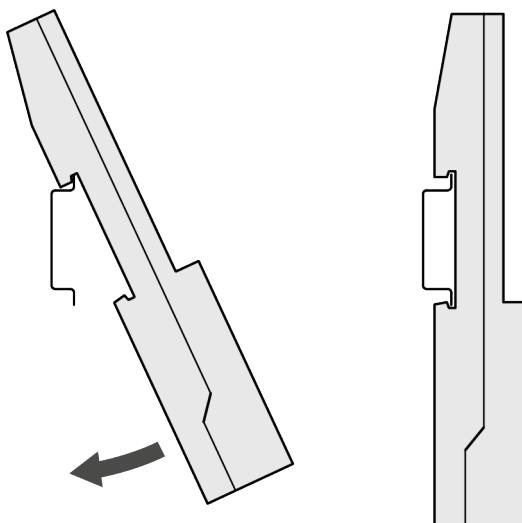
CAUTION!

Risk of injury and damaging the product!

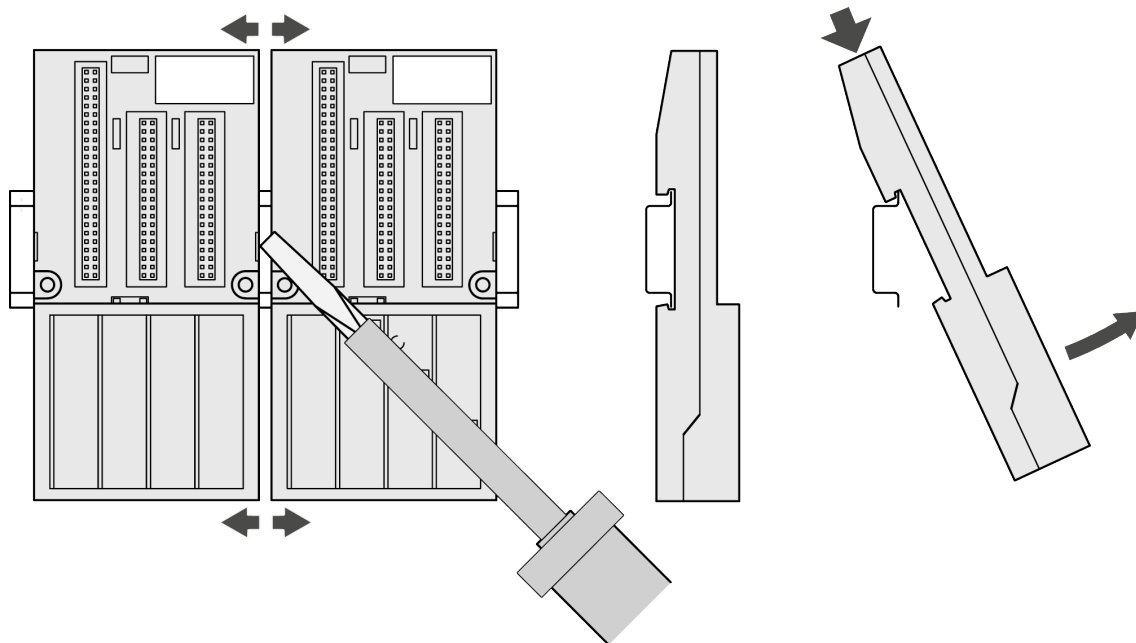
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

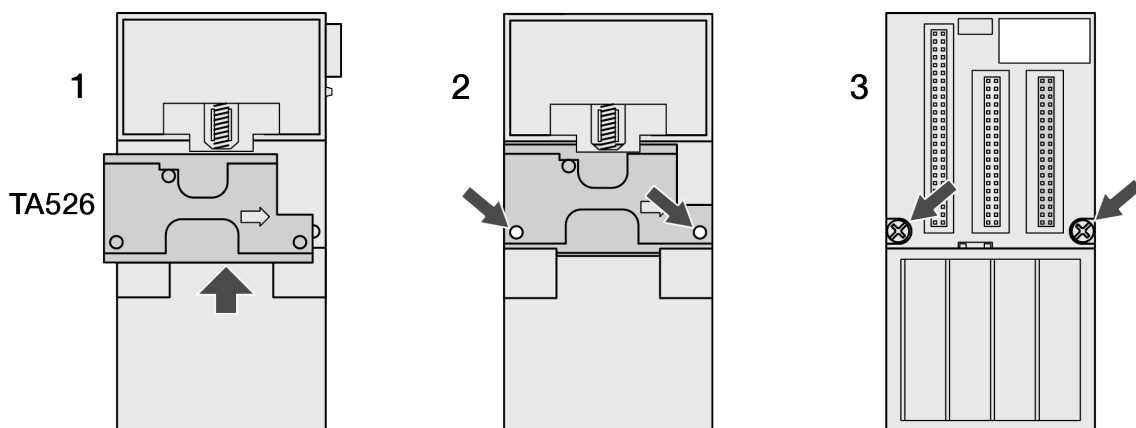
131.1 Assembly



131.2 Disassembly



131.3 Assembly with screws



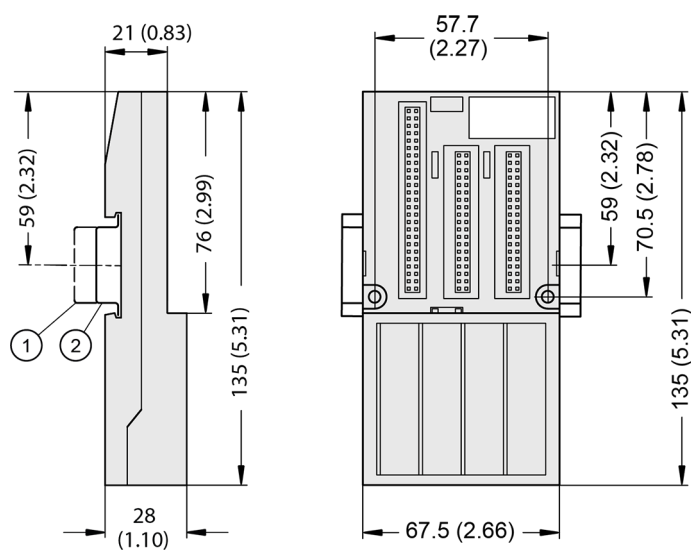
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

131.4 Dimensions

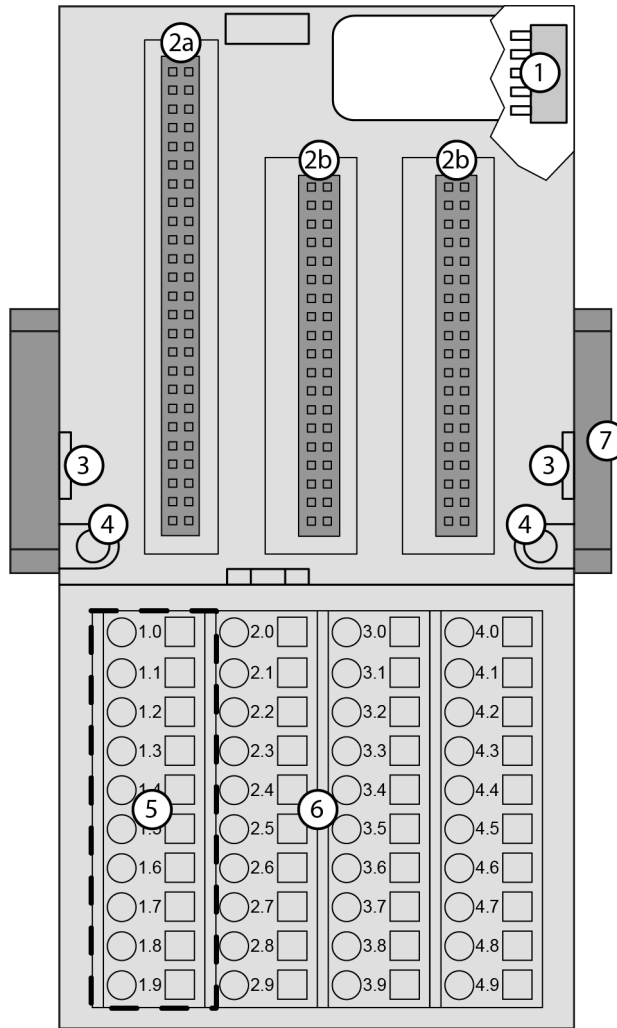


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

131.5 Connections



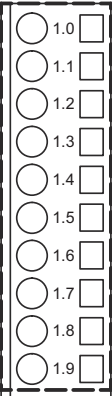
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2 25 pins) to connect the inserted communication interface module
- 2b Plug (2 19 pins) to connect the inserted communication interface module
- 3 With a screwdriver, inserted in this place, the terminal unit and the adjacent I/O terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 10 terminals for connection with the bus system
- 6 30 terminals for signals and process supply voltages (UP and UP3)
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

131.5.1 Bus interface

Pin assignment

Interface	PIN	DP (PROFIBUS)	CN (CANopen)
	1.0	B	CAN+
	1.1	B	CAN+
	1.2	A	CAN-
	1.3	A	CAN-
	1.4	TermB	Term+
	1.5	TermB	Term+
	1.6	TermA	Term-
	1.7	TermA	Term-
	1.8	DGND	CAN_GND
	1.9	DGND	CAN_GND



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

131.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

131.7 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

131.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

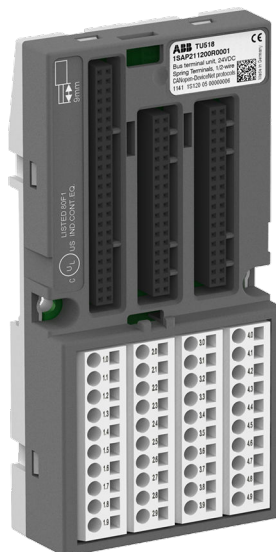
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

132 TU518(-XC)

- TU518
- TU518-XC



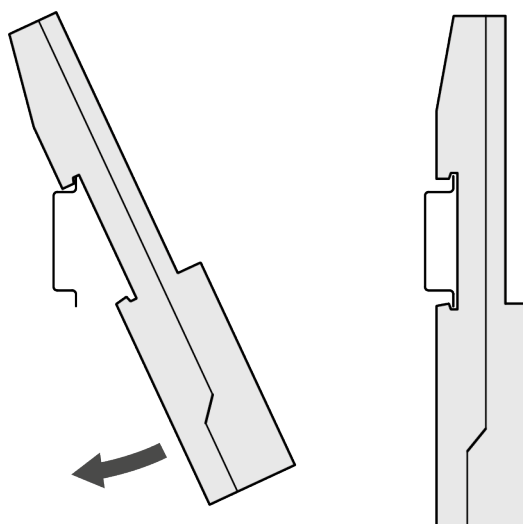
CAUTION!

Risk of injury and damaging the product!

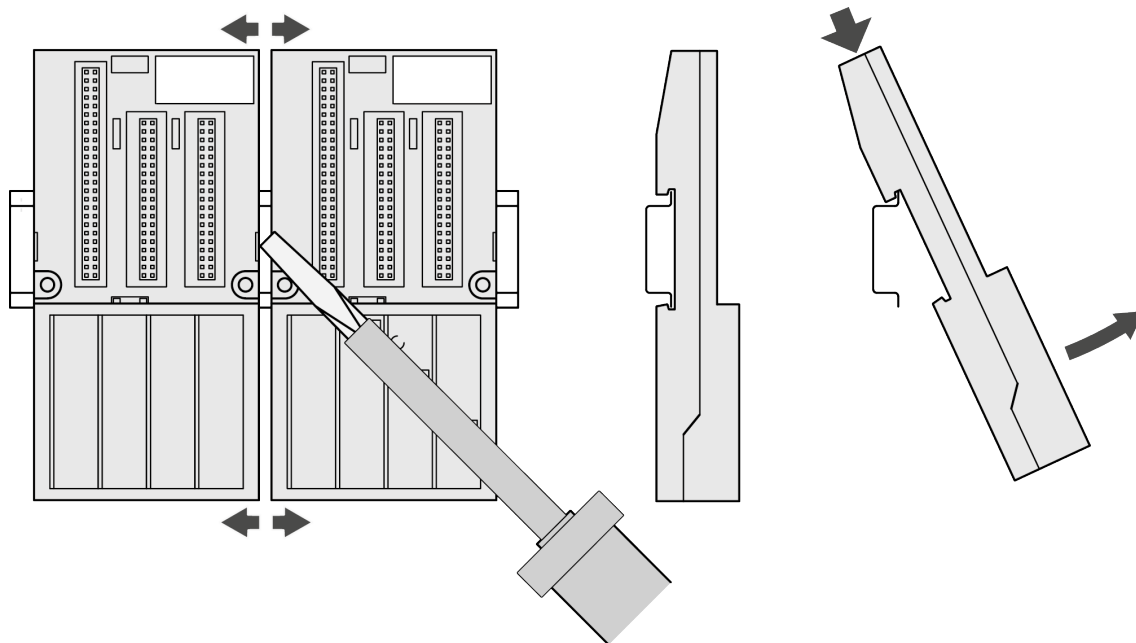
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

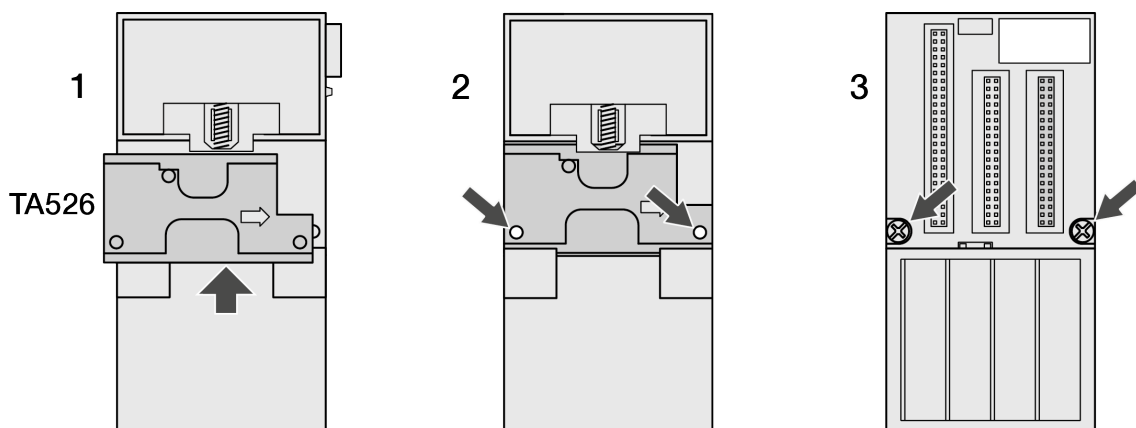
132.1 Assembly



132.2 Disassembly



132.3 Assembly with screws



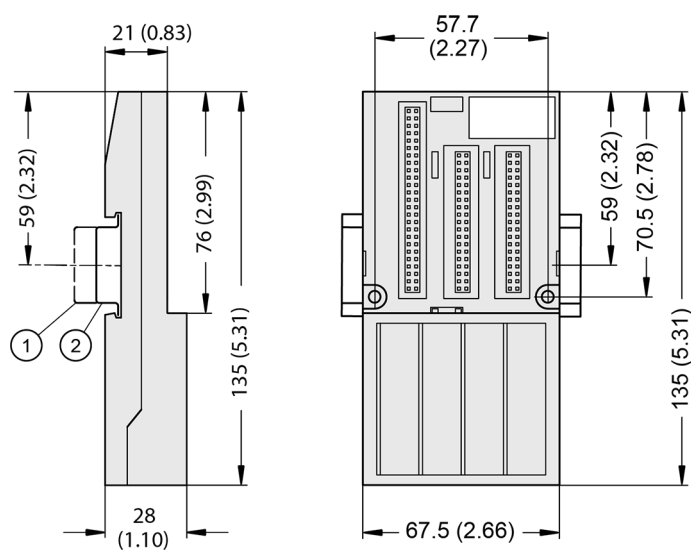
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

132.4 Dimensions

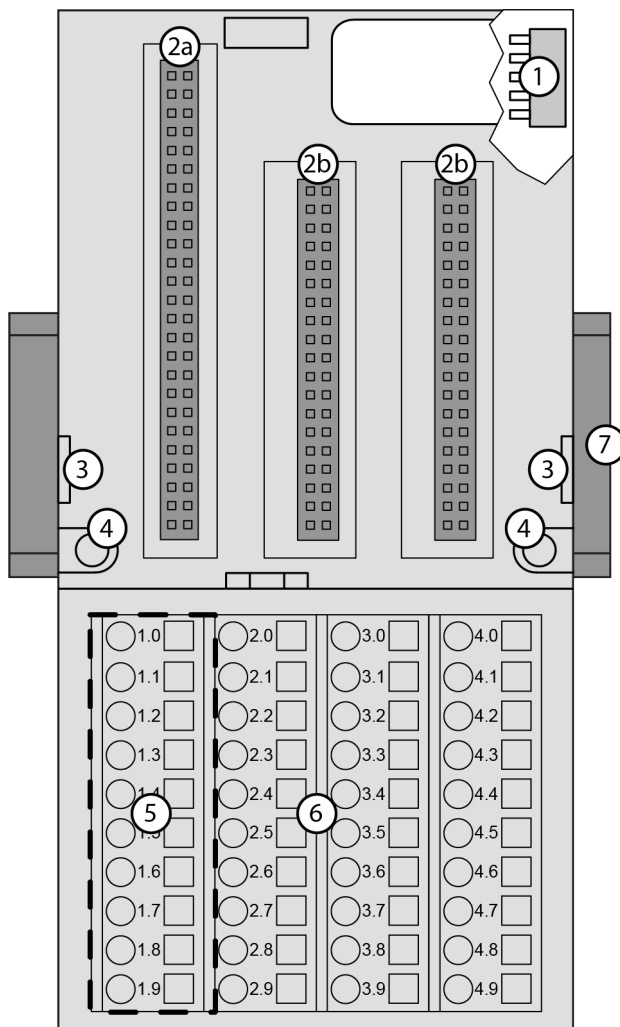


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

132.5 Connections



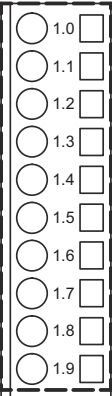
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2 25 pins) to connect the inserted communication interface module
- 2b Plug (2 19 pins) to connect the inserted communication interface module
- 3 With a screwdriver, inserted in this place, the terminal unit and the adjacent I/O terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 10 terminals for connection with the bus system
- 6 30 terminals for signals and process supply voltages (UP and UP3)
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

132.5.1 Bus interface

Pin assignment

Interface	PIN	DP (PROFIBUS)	CN (CANopen)
	1.0	B	CAN+
	1.1	B	CAN+
	1.2	A	CAN-
	1.3	A	CAN-
	1.4	TermB	Term+
	1.5	TermB	Term+
	1.6	TermA	Term-
	1.7	TermA	Term-
	1.8	DGND	CAN_GND
	1.9	DGND	CAN_GND



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

132.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

132.7 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

132.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

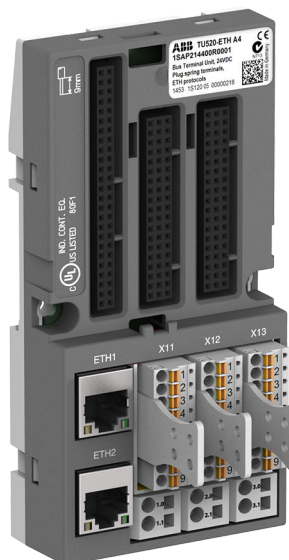
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

133 TU520-ETH(-XC)

- TU520-ETH
- TU520-ETH-XC



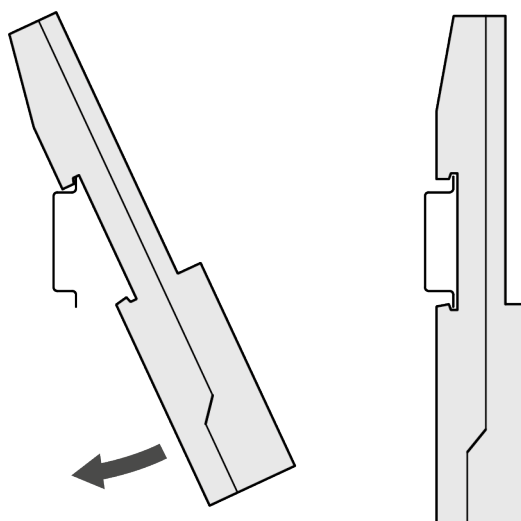
CAUTION!

Risk of injury and damaging the product!

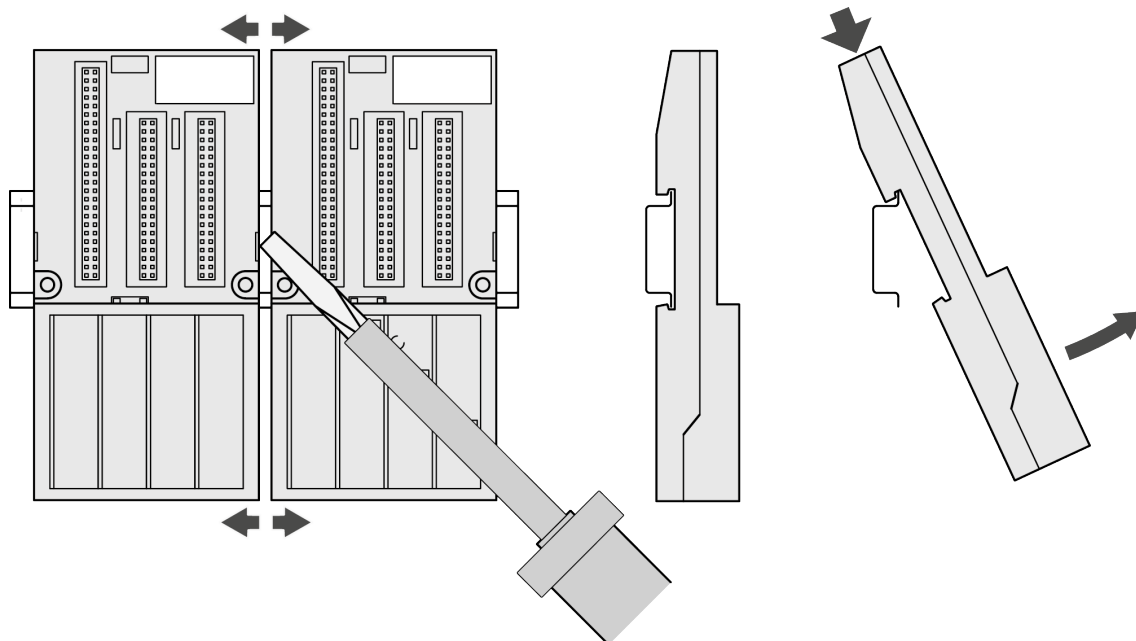
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

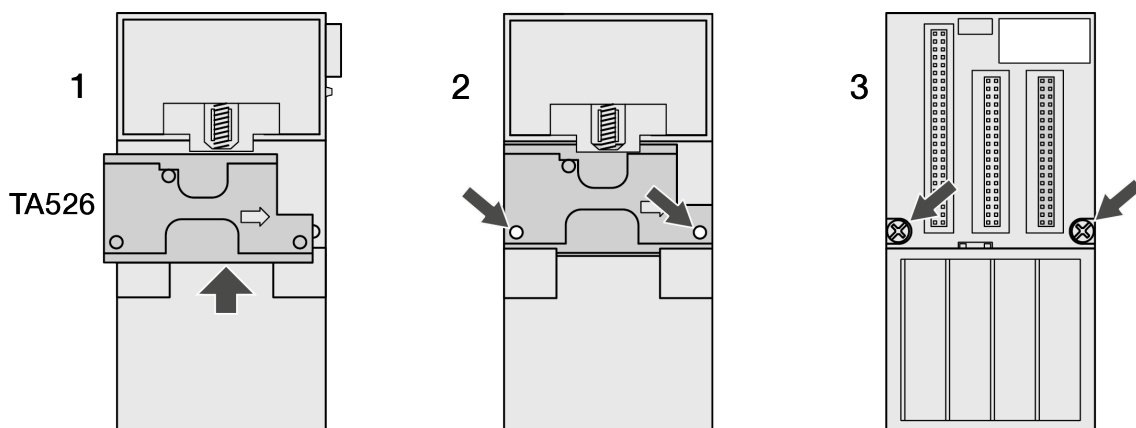
133.1 Assembly



133.2 Disassembly



133.3 Assembly with screws



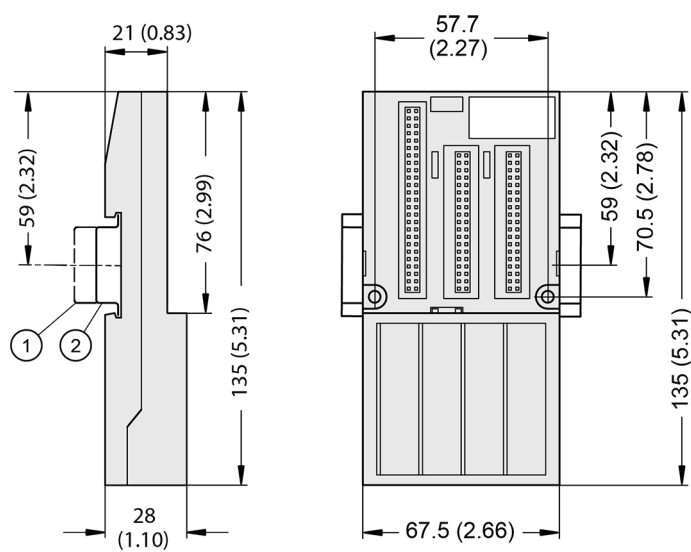
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

133.4 Dimensions

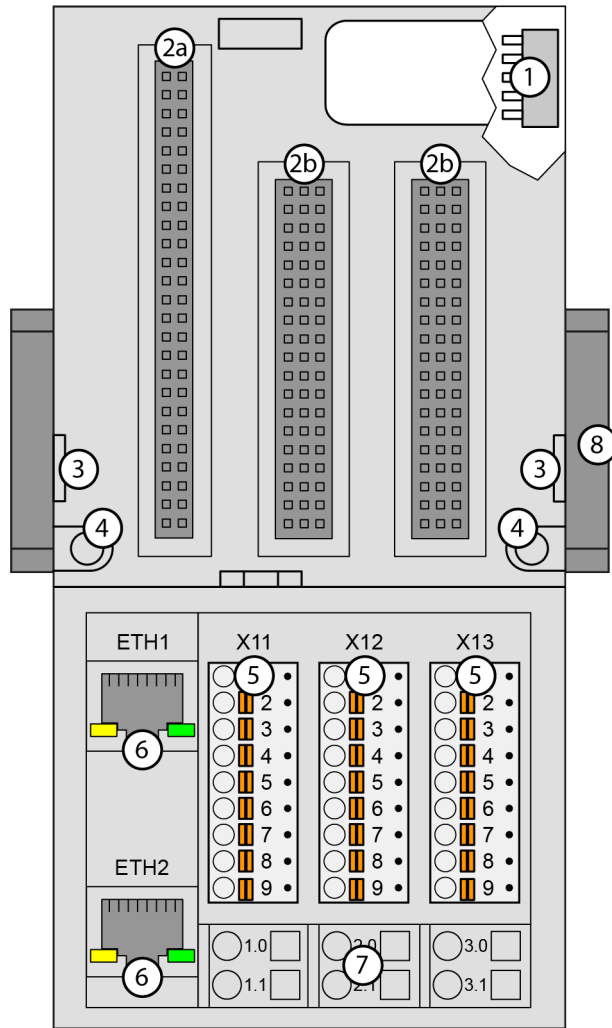


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

133.5 Connections



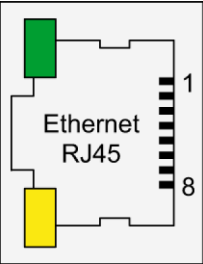
- 1 I/O bus (10 pins, female) to connect the first terminal unit
- 2a Plug (2 25 pins) to connect the inserted PROFINET communication interface module
- 2b Plug (3 19 pins) to connect the inserted PROFINET communication interface module
- 3 With a screwdriver, inserted in this place, the PROFINET I/O terminal unit and the adjacent I/O terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 3 removable connectors to connect the subordinated bus systems
- 6 2 RJ45 interfaces with indication LEDs for connection with the PROFINET network
- 7 6 spring terminals for process supply voltage (UP)
- 8 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

133.5.1 Ethernet network interface

Pin assignment

Interface	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NC	Not connected
	5	NC	Not connected
	6	RxD-	Receive data -
	7	NC	Not connected
	8	NC	Not connected
	Shield	Cable shield	Functional earth



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

133.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

133.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

133.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

134 TU531 230 V AC

- TU531 230 V AC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!
Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.
Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap
System requirements for hot swapping of I/O modules:

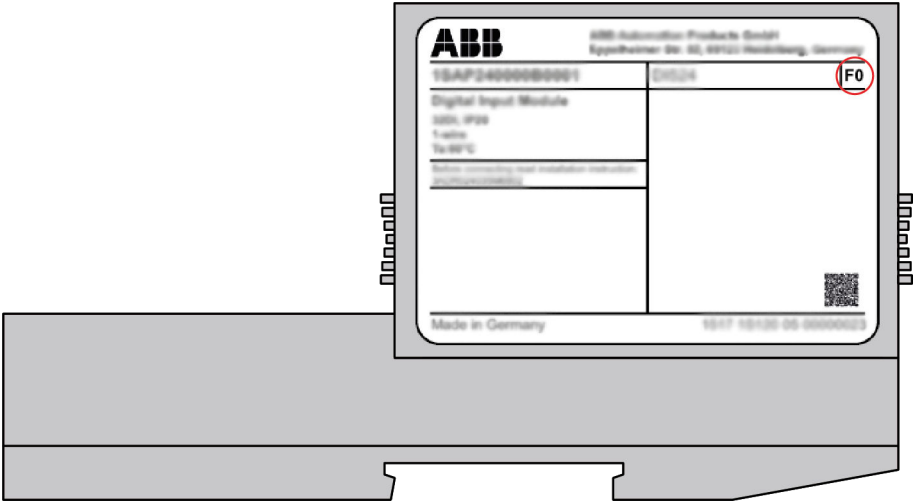
- Types of terminal units that support hot swapping of I/O modules have the appendix **TU5xx-H**.
- I/O modules as of index **F0**.

The following I/O bus masters support hot swapping of attached I/O modules:

- Communication interface modules **CI5xx** as of index **F0**.
- Processor modules **PM56xx-2ETH** with firmware version as of **V3.2.0**.



Hot swap is not supported by **AC500-eCo V3 CPU!**



The index of the module is in the right corner of the label.



NOTICE!
Risk of damage to I/O modules!

Modules with index below **F0** can be damaged when inserted or removed from the terminal unit in a powered system.

**NOTICE!****Risk of damage to I/O modules!**

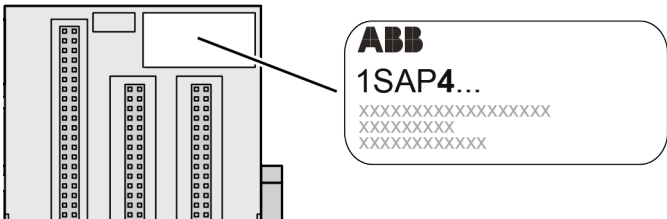
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2

Device	Min. required device index for I/O module as of FW Version 3.0.14
DX531	D2
DX561	B2
DX571	B3
FM562	A1

XC version **XC = eXtreme Conditions**



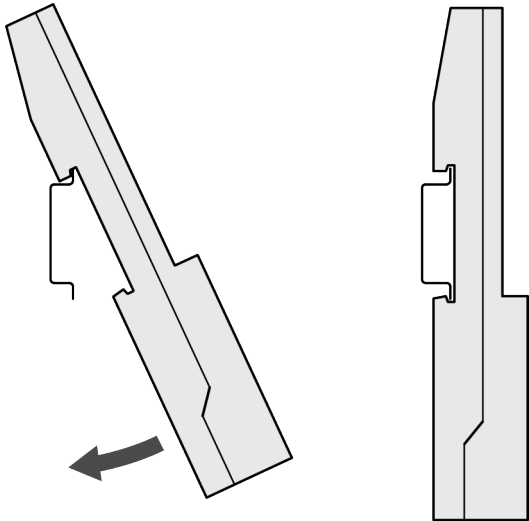


Extreme conditions

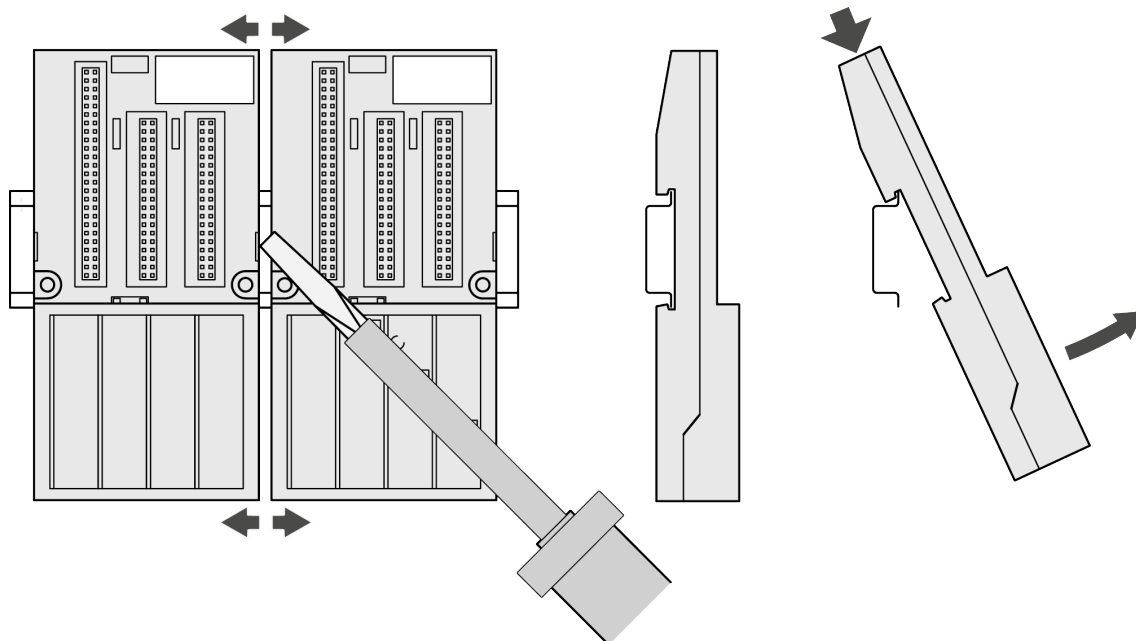
Terminal units for use in extreme ambient conditions have no  sign for XC version.

The figure **4** in the Part no. 1SAP4... (label) identifies the XC version.

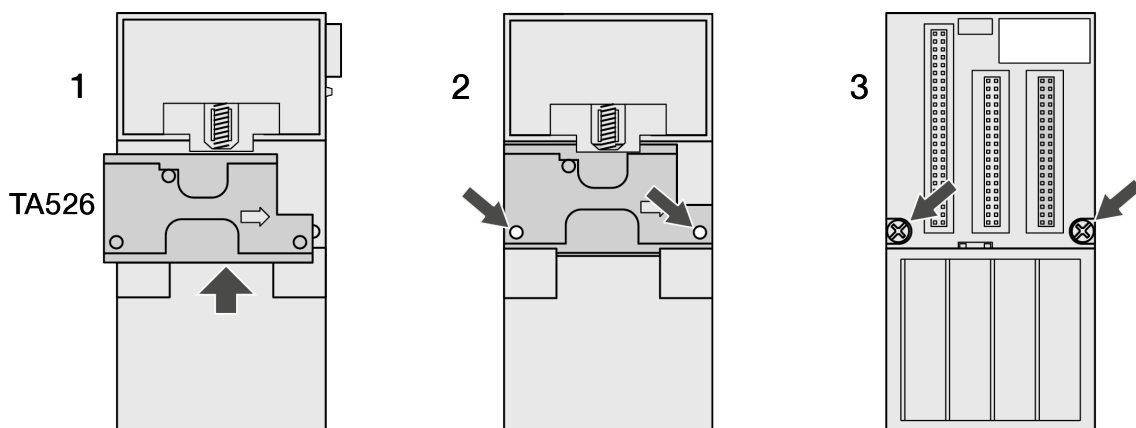
134.1 Assembly



134.2 Disassembly



134.3 Assembly with screws



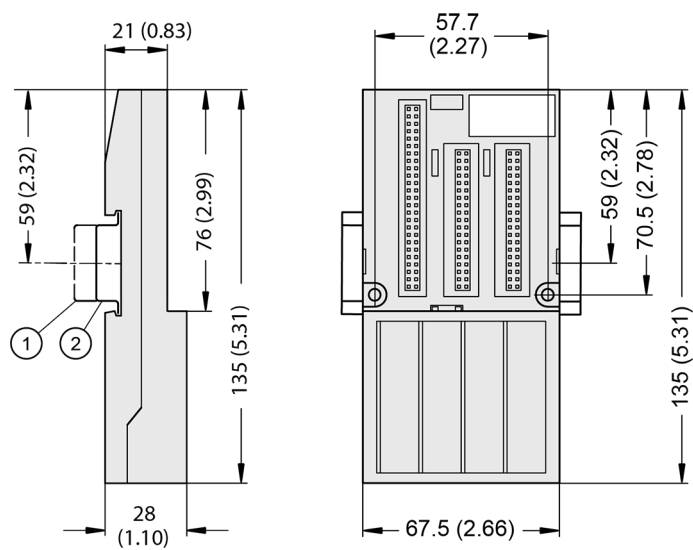
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

134.4 Dimensions

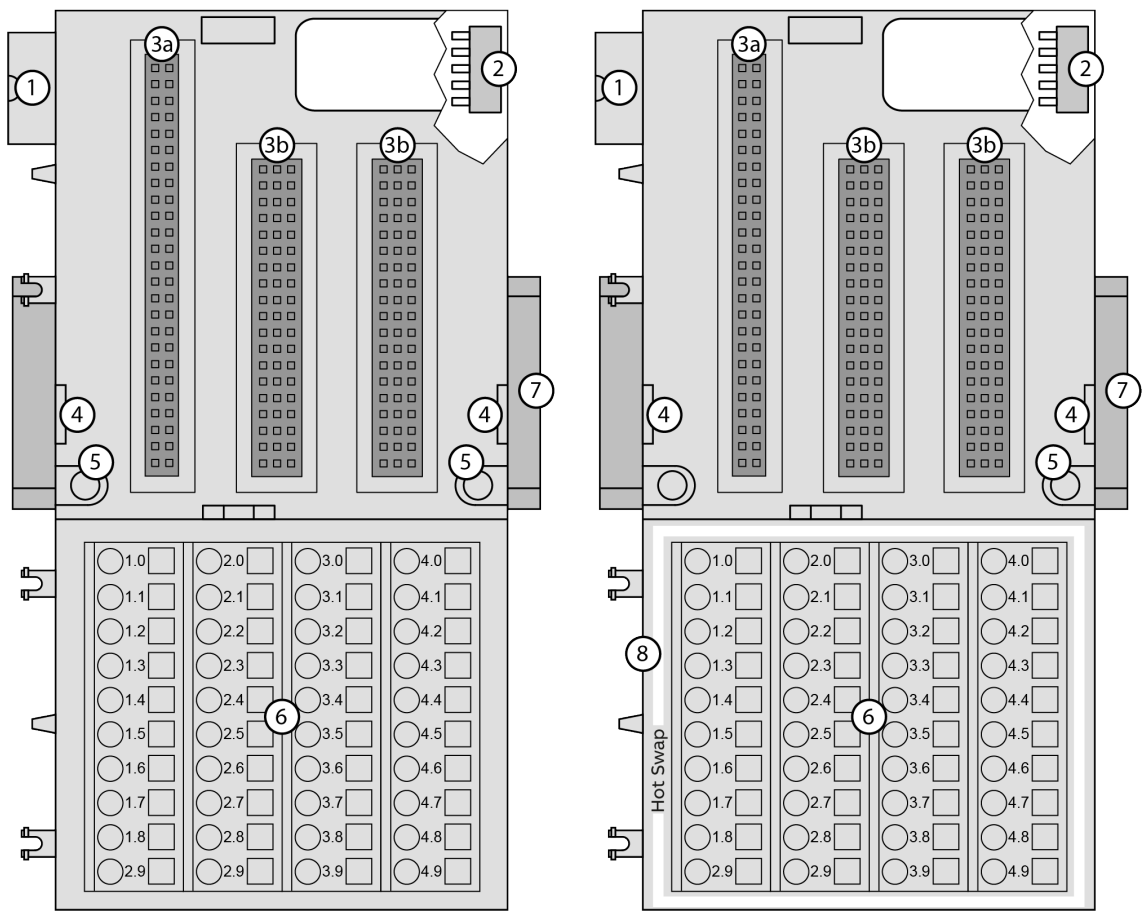


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

134.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3a Plug (2 x 25 pins) to connect the inserted I/O modules
- 3b Plug (3 x 19 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent I/O terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 terminals for signals and process supply voltage
- 7 DIN rail
- 8 White border signifies hot swap capability of the terminal unit

134.6 Cleaning

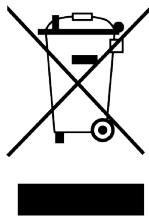


Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

134.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

134.8 Recycling



	Disposal and recycling information <i>This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.</i> <i>The symbol indicates that this product must be recycled/disposed of separately from other household waste.</i> <i>It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.</i> <i>The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.</i> <i>For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.</i>
---	--

135 TU532(-H)(-XC) 230 V AC

- TU532 230 V AC
- TU532-XC 230 V AC
- TU532-H 230 V AC
- TU532-H-XC 230 V AC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

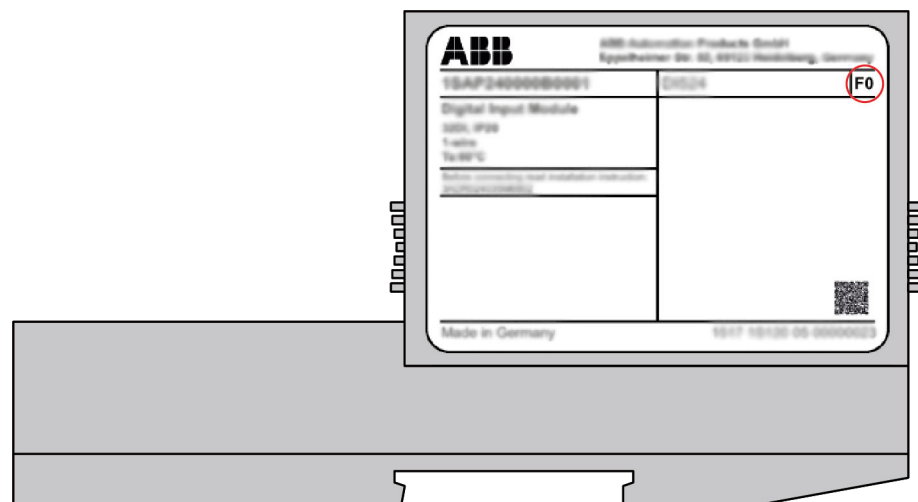
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

Risk of damage to I/O modules!

Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

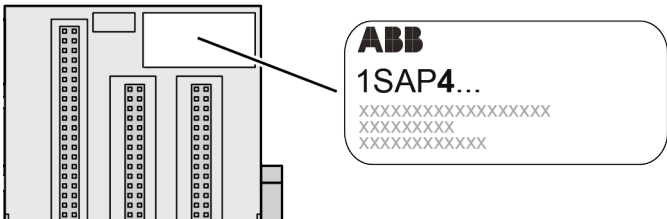
For min. required device index see table below.

Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

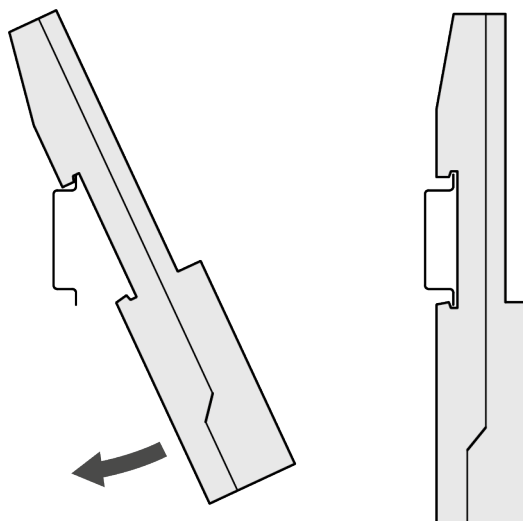
XC version

XC = eXtreme Conditions

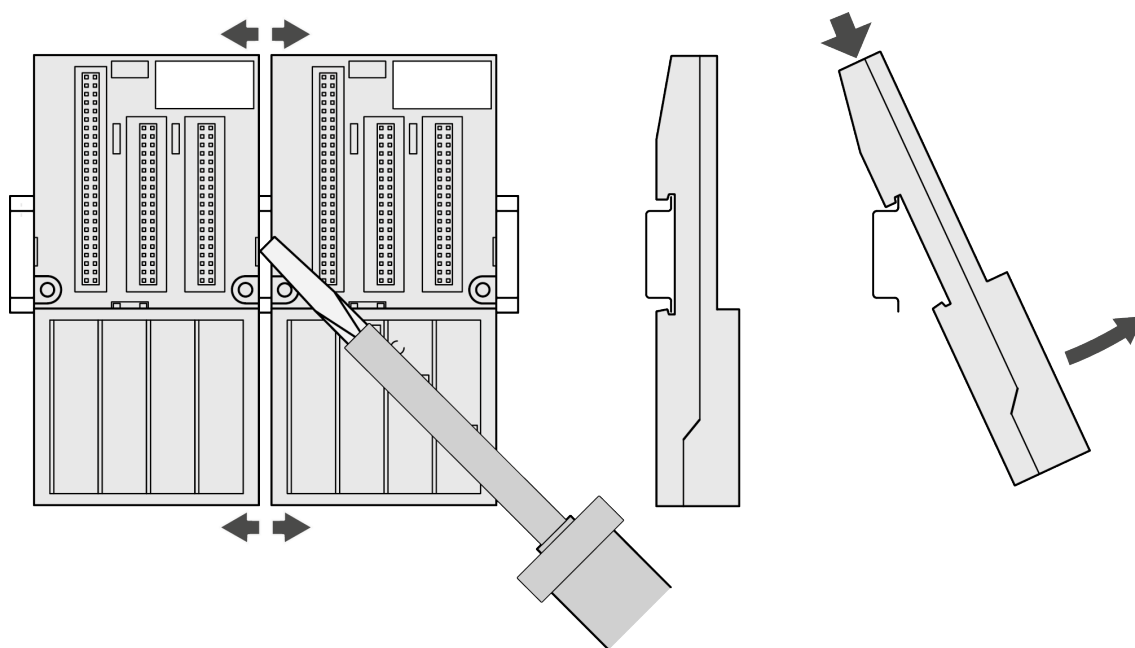


Extreme conditions
Terminal units for use in extreme ambient conditions have no ☼ sign for XC version.
The figure **4** in the Part no. 1SAP**4**... (label) identifies the XC version.

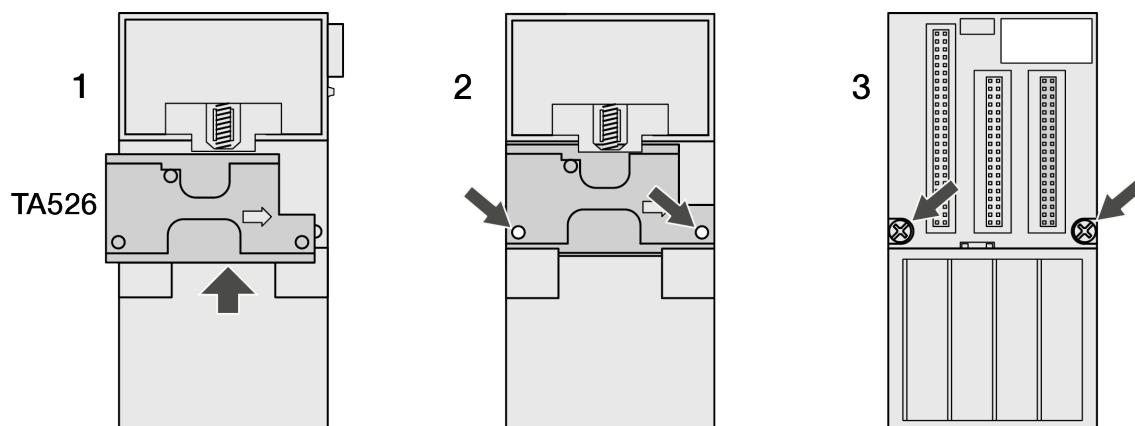
135.1 Assembly



135.2 Disassembly



135.3 Assembly with screws



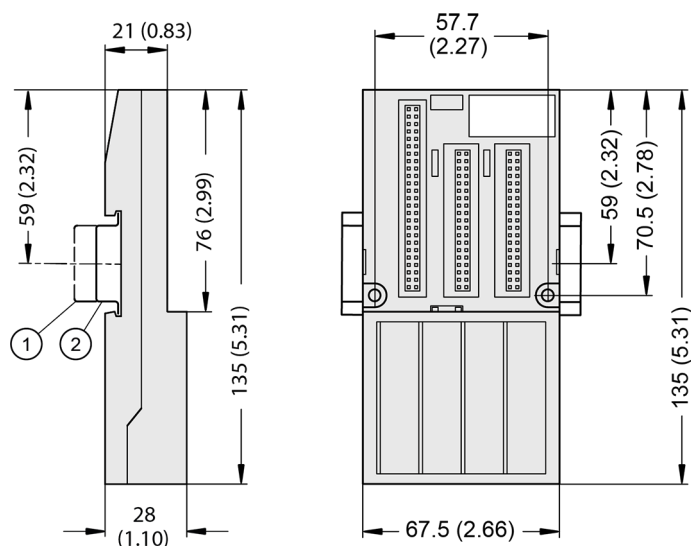
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

135.4 Dimensions

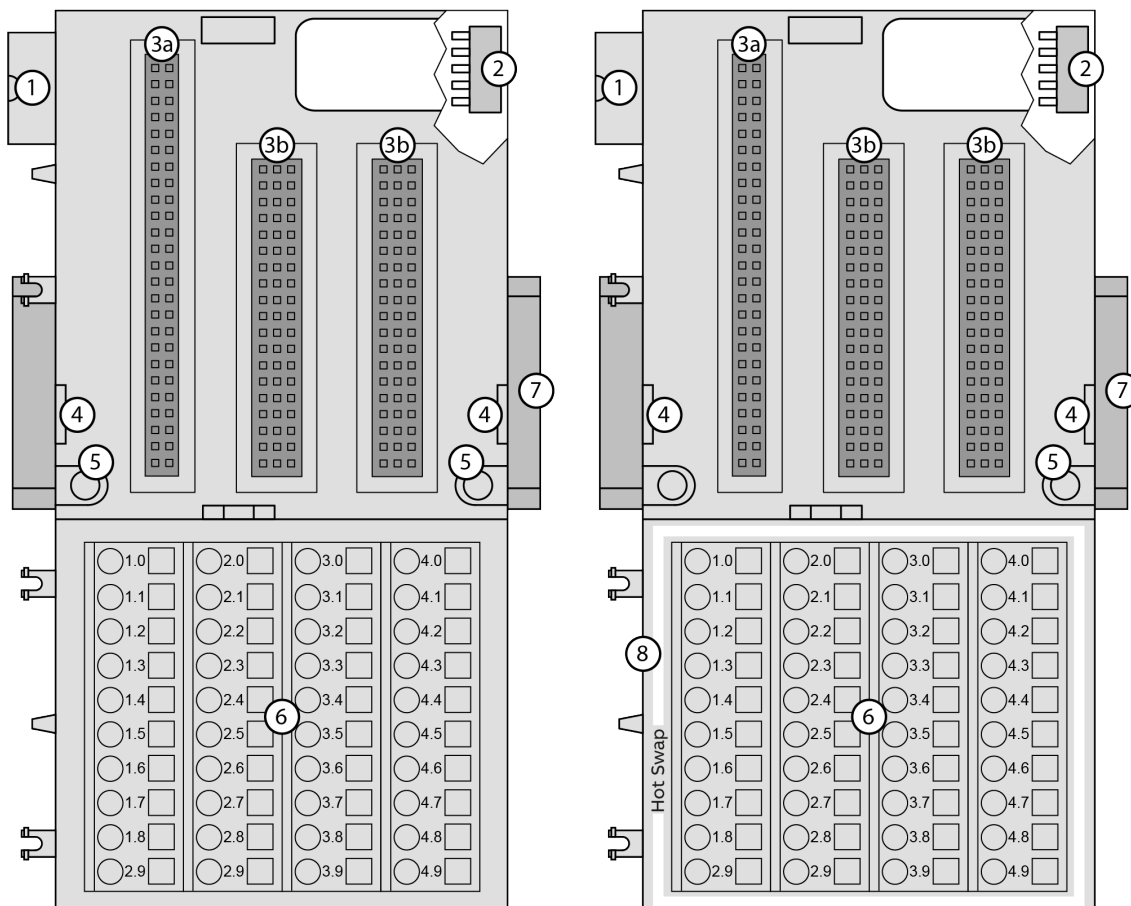


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

135.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3a Plug (2 x 25 pins) to connect the inserted I/O modules
- 3b Plug (3 x 19 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent I/O terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 terminals for signals and process supply voltage
- 7 DIN rail
- 8 White border signifies hot swap capability of the terminal unit



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

135.6 Cleaning



Cleaning instructions

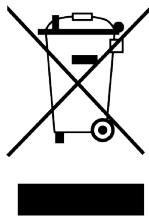
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

135.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

135.8 Recycling



	Disposal and recycling information <i>This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.</i> <i>The symbol indicates that this product must be recycled/disposed of separately from other household waste.</i> <i>It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.</i> <i>The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.</i> <i>For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.</i>
---	--

136 TU541 24 V DC

- TU541 24 V DC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.



WARNING!

Electric shock due to negligent behavior during hot swapping!

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.



NOTICE!

Risk of damage to I/O modules!

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap



Hot swap

System requirements for hot swapping of I/O modules:

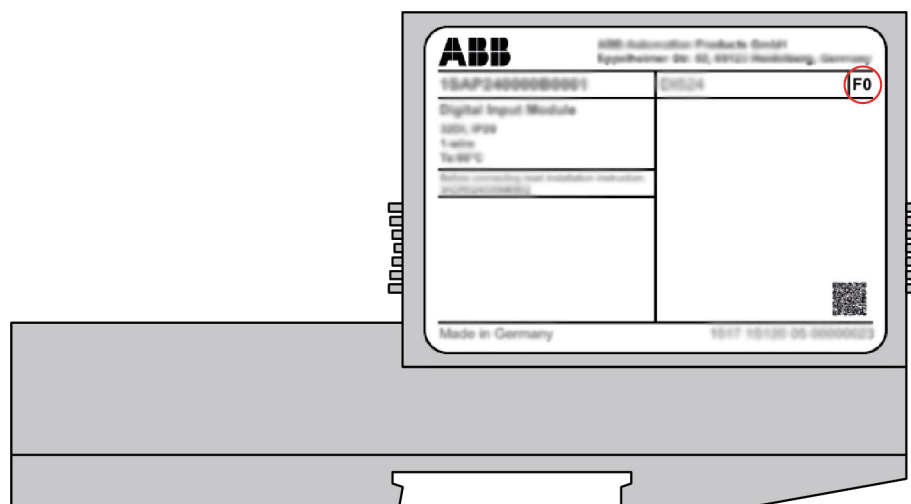
- Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-**H**.
- I/O modules as of index F0.

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!



The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.

**NOTICE!****Risk of damage to I/O modules!**

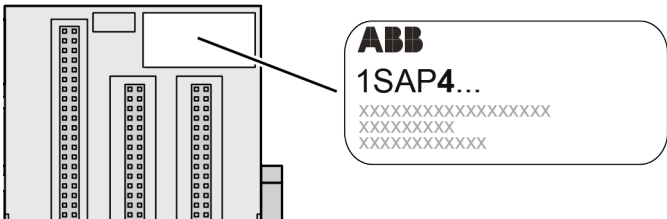
Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2

Device	Min. required device index for I/O module as of FW Version 3.0.14
DX531	D2
DX561	B2
DX571	B3
FM562	A1

XC version **XC = eXtreme Conditions**



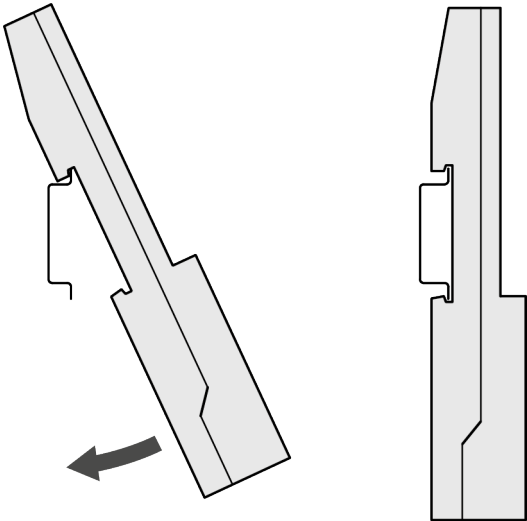


Extreme conditions

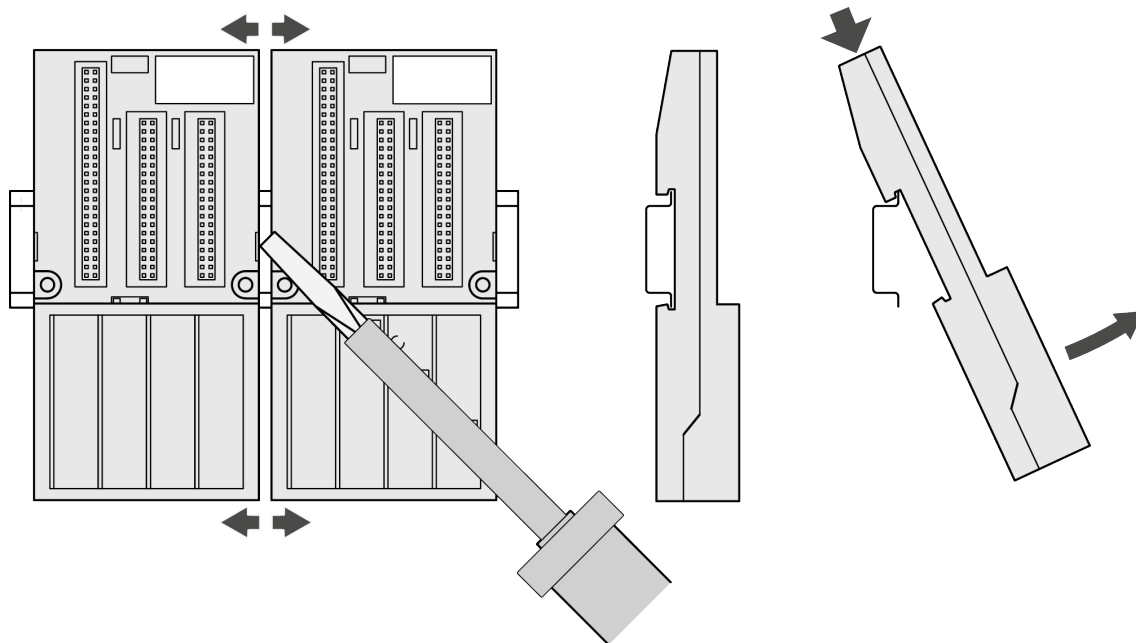
Terminal units for use in extreme ambient conditions have no  sign for XC version.

The figure **4** in the Part no. 1SAP4... (label) identifies the XC version.

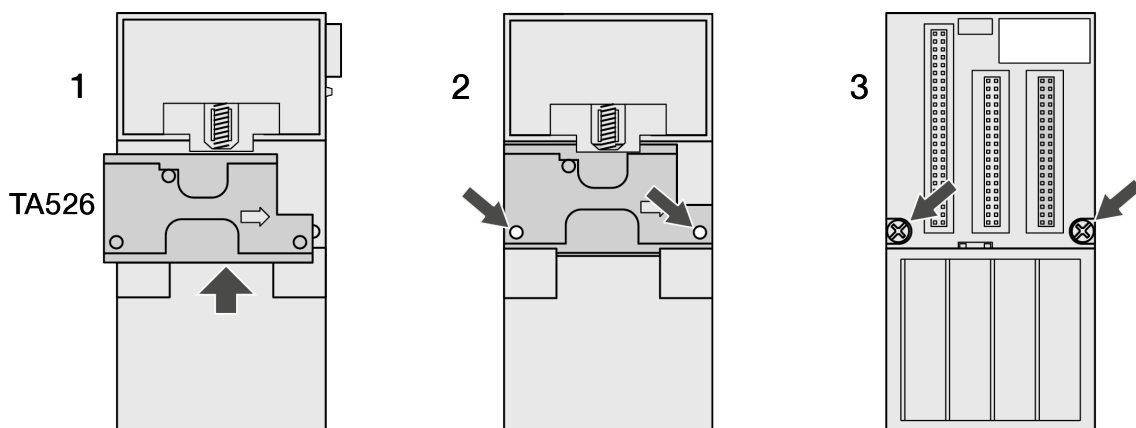
136.1 Assembly



136.2 Disassembly



136.3 Assembly with screws



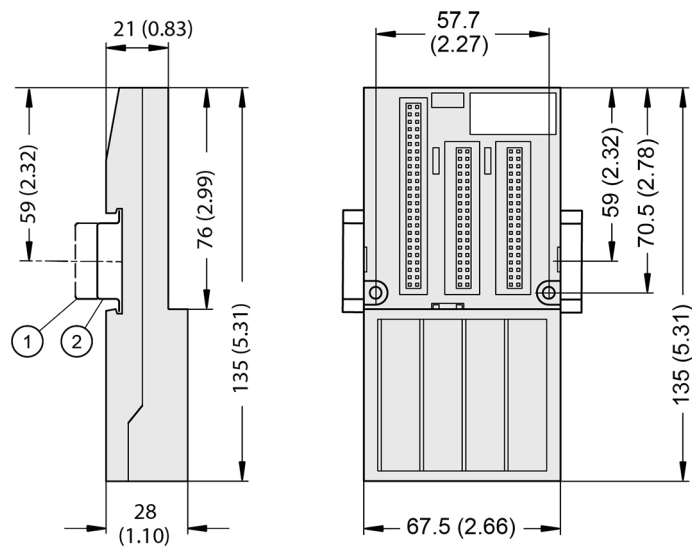
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

136.4 Dimensions

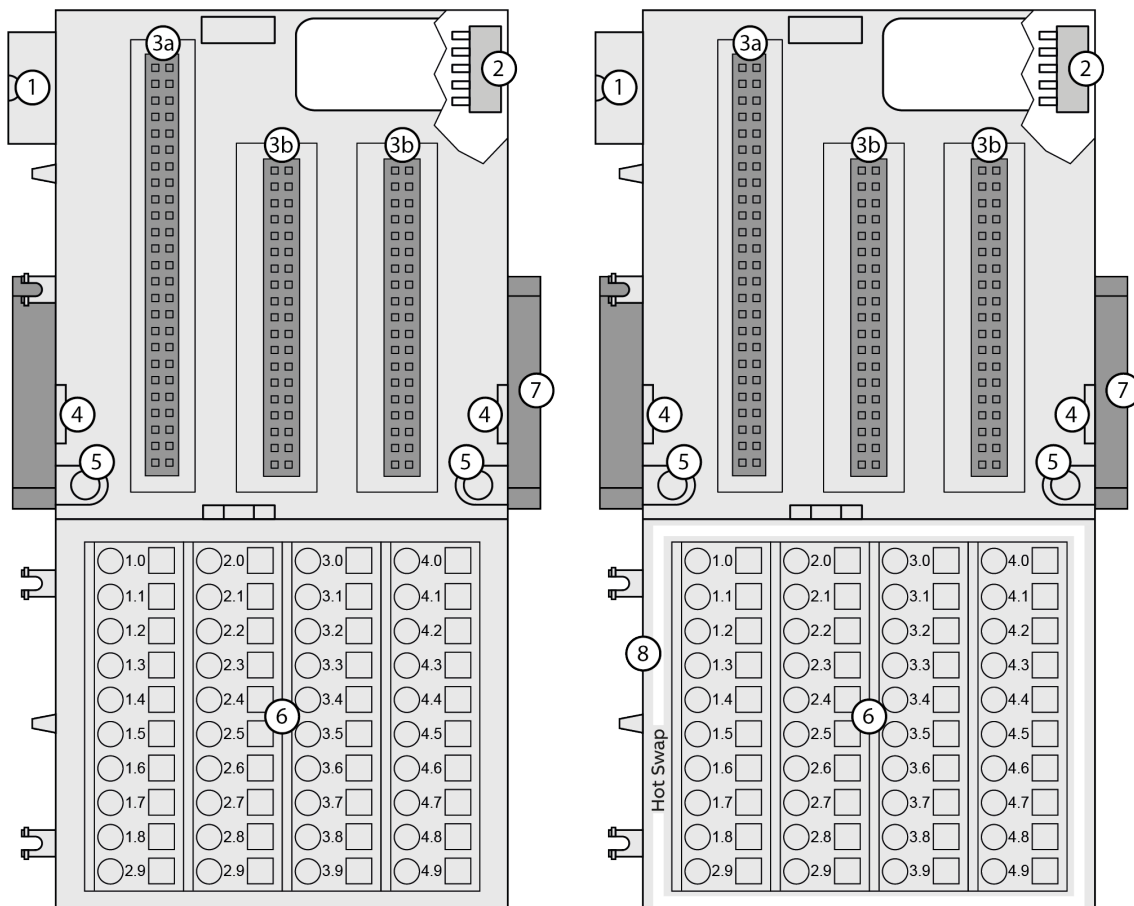


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

136.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3a Plug (2 x 25 pins) to connect the inserted I/O modules
- 3b Plug (2 x 19 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 terminals for signals and process supply voltage
- 7 DIN rail
- 8 White border signifies hot swap capability of the terminal unit

136.6 Cleaning



Cleaning instructions

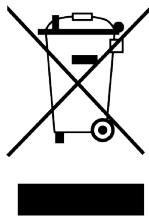
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

136.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

136.8 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

137 TU542(-H)(-XC) 24 V DC

- TU542 24 V DC
- TU542-XC 24 V DC
- TU542-H 24 V DC
- TU542-H-XC 24 V DC



CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

Hot swap



WARNING!

Risk of explosion or fire in hazardous environments during hot swapping!

Hot swap must not be performed in flammable environments to avoid life-threatening injury and property damage resulting from fire or explosion.

**WARNING!****Electric shock due to negligent behavior during hot swapping!**

To avoid electric shock

- make sure the following conditions apply:
 - Digital outputs are not under load.
 - Input/output voltages above safety extra low voltage/ protective extra low voltage (SELV/PELV) are switched off.
 - Modules are fully interlocked with the terminal unit with both snap-fits engaged before switching on loads or input/output voltage.
- Never touch exposed contacts (dangerous voltages).
- Stay away from electrical contacts to avoid arc discharge.
- Do not operate a mechanical installation improperly.

**NOTICE!****Risk of damage to I/O modules!**

Hot swapping is only allowed for I/O modules.

Processor modules and communication interface modules must not be removed or inserted during operation.

H = Hot swap

**Hot swap**

System requirements for hot swapping of I/O modules:

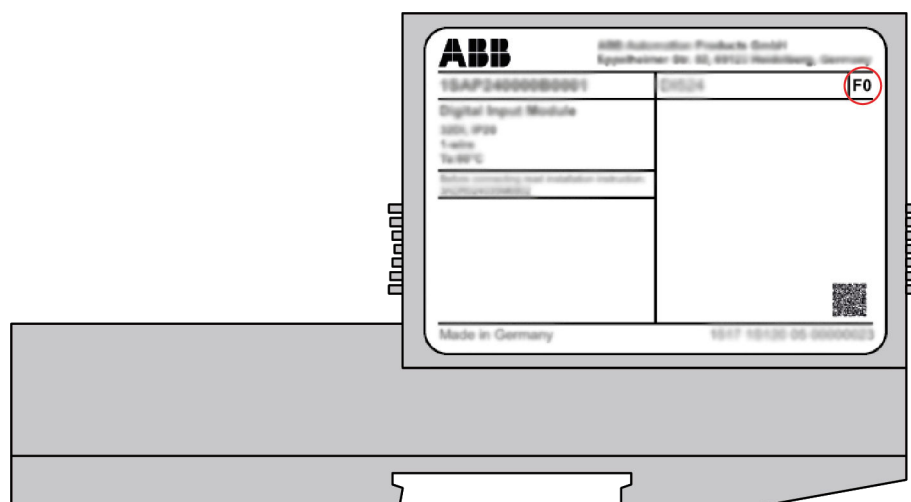
- *Types of terminal units that support hot swapping of I/O modules have the appendix TU5xx-H.*
- *I/O modules as of index F0.*

The following I/O bus masters support hot swapping of attached I/O modules:

- *Communication interface modules CI5xx as of index F0.*
- *Processor modules PM56xx-2ETH with firmware version as of V3.2.0.*



Hot swap is not supported by AC500-eCo V3 CPU!





The index of the module is in the right corner of the label.



NOTICE!

Risk of damage to I/O modules!

Modules with index below F0 can be damaged when inserted or removed from the terminal unit in a powered system.



NOTICE!

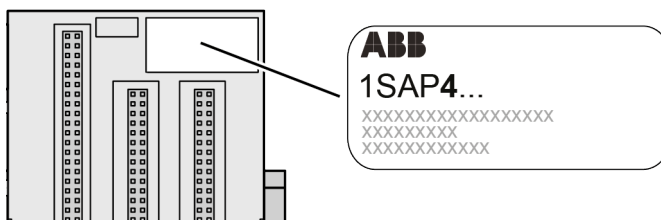
Risk of damage to I/O modules!

Do not perform hot swapping if any I/O module with firmware version lower than 3.0.14 is part of the I/O configuration.

For min. required device index see table below.

Device	Min. required device index for I/O module as of FW Version 3.0.14
AC522(-XC)	F0
AI523 (-XC)	D2
AI531	D4
AI531-XC	D2
AI561	B2
AI562	B2
AI563	B3
AO523 (-XC)	D2
AO561	B2
AX521 (-XC)	D2
AX522 (-XC)	D2
AX561	B2
CD522 (-XC)	D1
DA501 (-XC)	D2
DA502 (-XC)	F0
DC522 (-XC)	D2
DC523 (-XC)	D2
DC532 (-XC)	D2
DC562	A2
DI524 (-XC)	D2
DI561	B2
DI562	B2
DI571	B2
DI572	A1

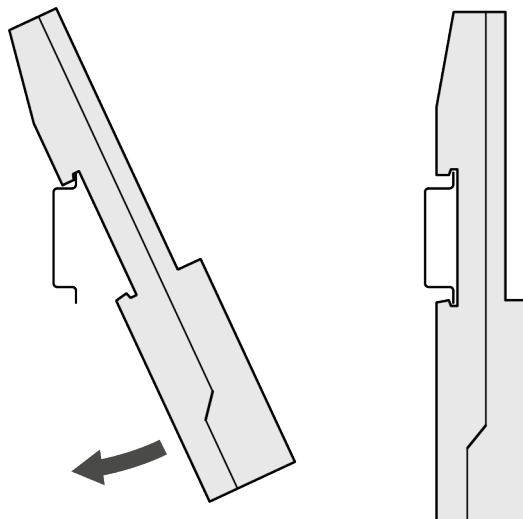
Device	Min. required device index for I/O module as of FW Version 3.0.14
DO524 (-XC)	A3
DO526	A2
DO526-XC	A0
DO561	B2
DO562	A2
DO571	B3
DO572	B2
DO573	A1
DX522 (-XC)	D2
DX531	D2
DX561	B2
DX571	B3
FM562	A1

XC version**XC = eXtreme Conditions****Extreme conditions**

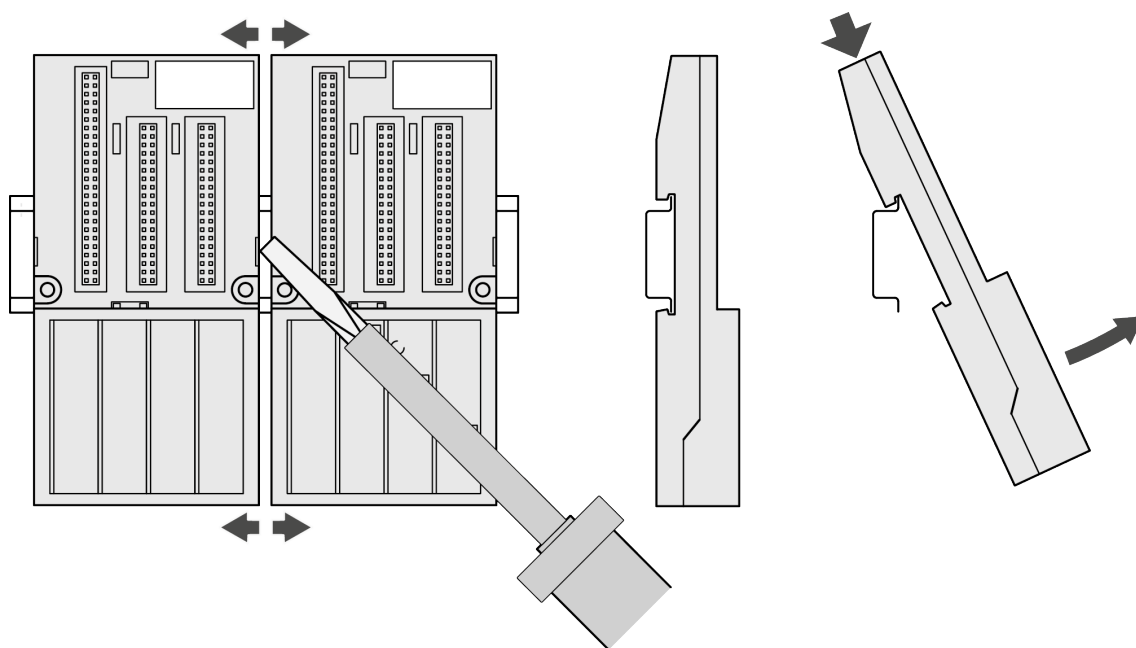
Terminal units for use in extreme ambient conditions have no ☼ sign for XC version.

The figure **4** in the Part no. 1SAP**4**... (label) identifies the XC version.

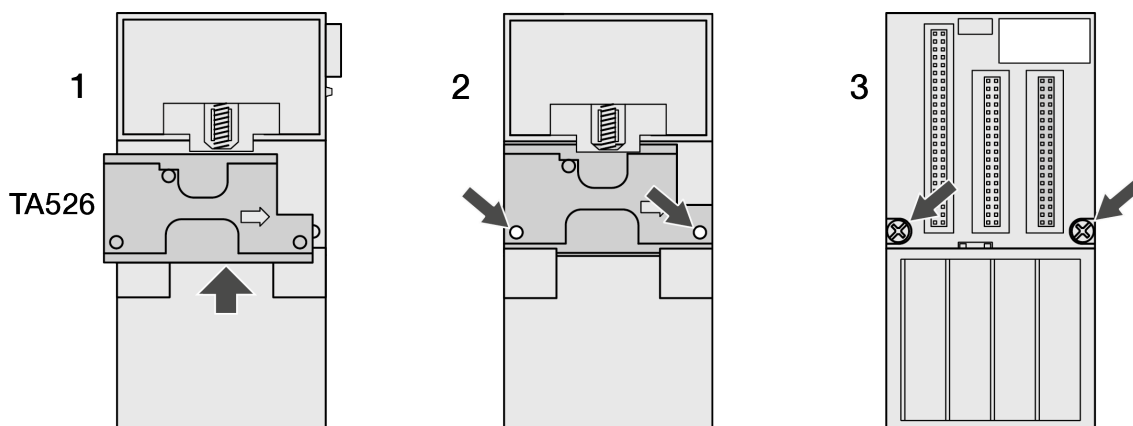
137.1 Assembly



137.2 Disassembly



137.3 Assembly with screws



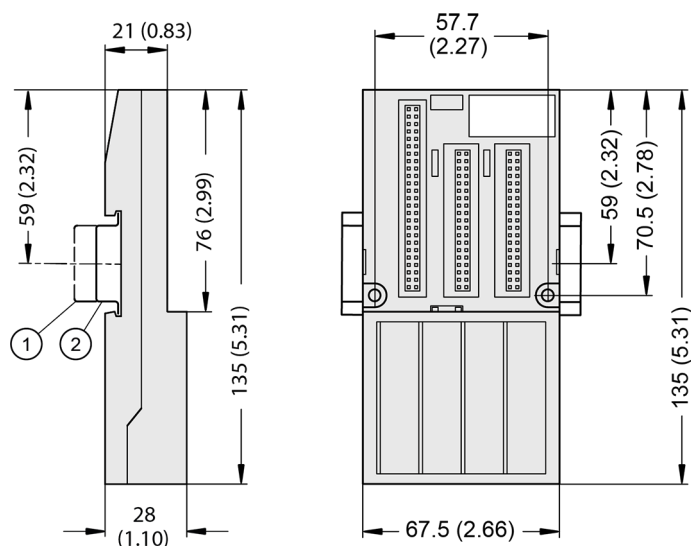
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

137.4 Dimensions

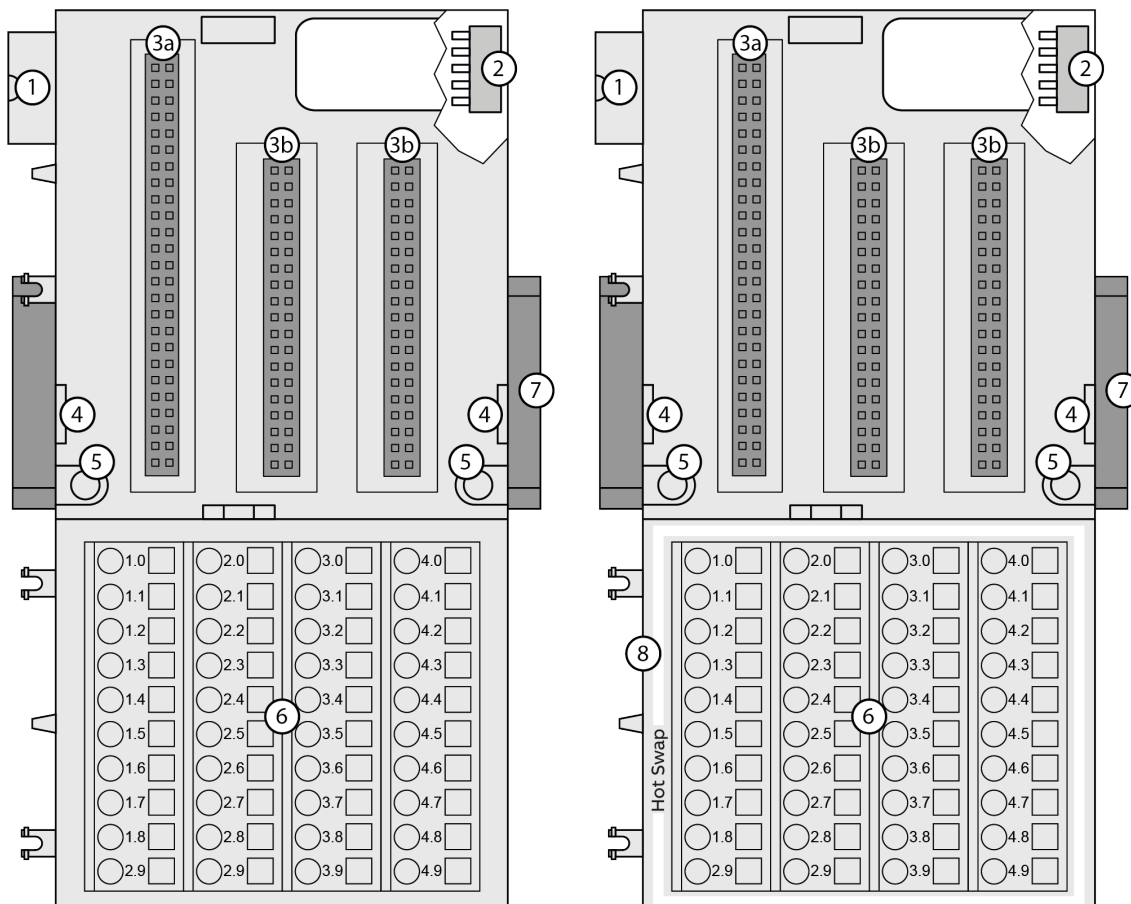


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

137.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3a Plug (2 x 25 pins) to connect the inserted I/O modules
- 3b Plug (2 x 19 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 terminals for signals and process supply voltage
- 7 DIN rail
- 8 White border signifies hot swap capability of the terminal unit



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

137.6 Cleaning



Cleaning instructions

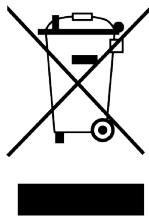
Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

137.7 Certification

		en	Devices with KCC sign on product sticker and packaging
MSIP-REI-Abb-AC500		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

137.8 Recycling





Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

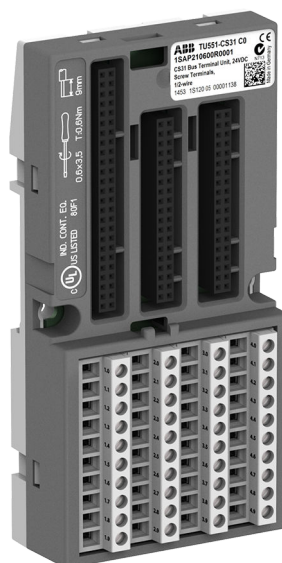
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

138 TU551-CS31

- TU551-CS31



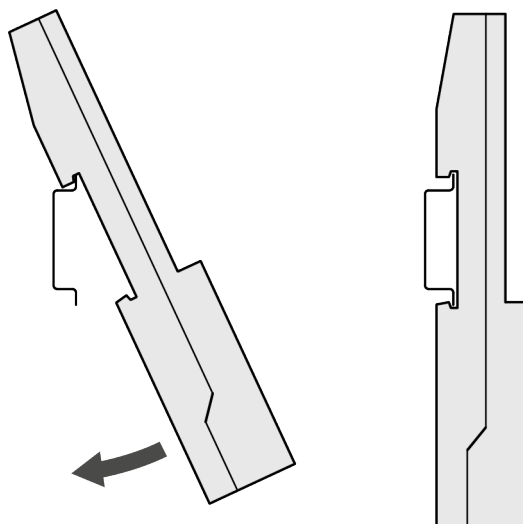
CAUTION!

Risk of injury and damaging the product!

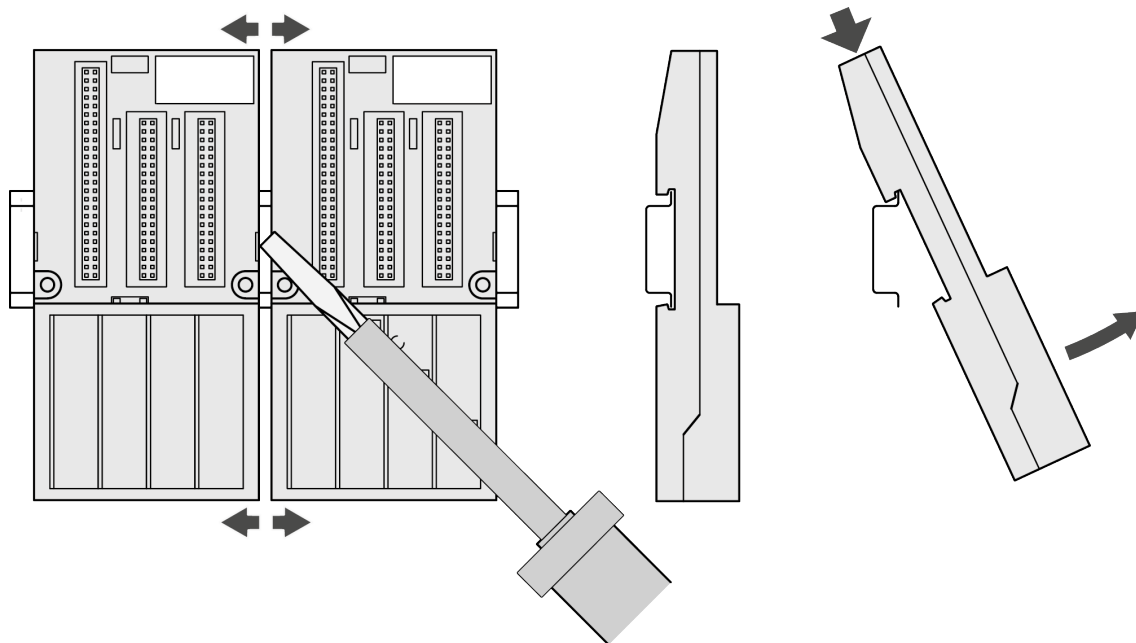
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

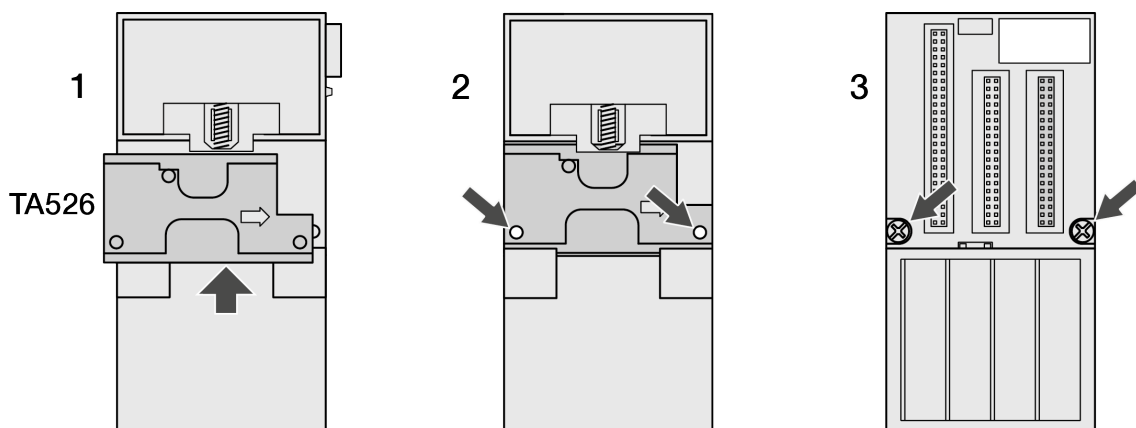
138.1 Assembly



138.2 Disassembly



138.3 Assembly with screws



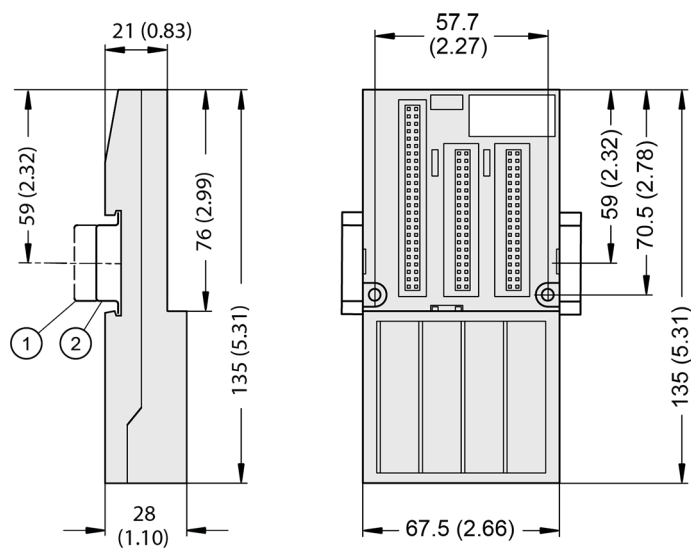
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

138.4 Dimensions

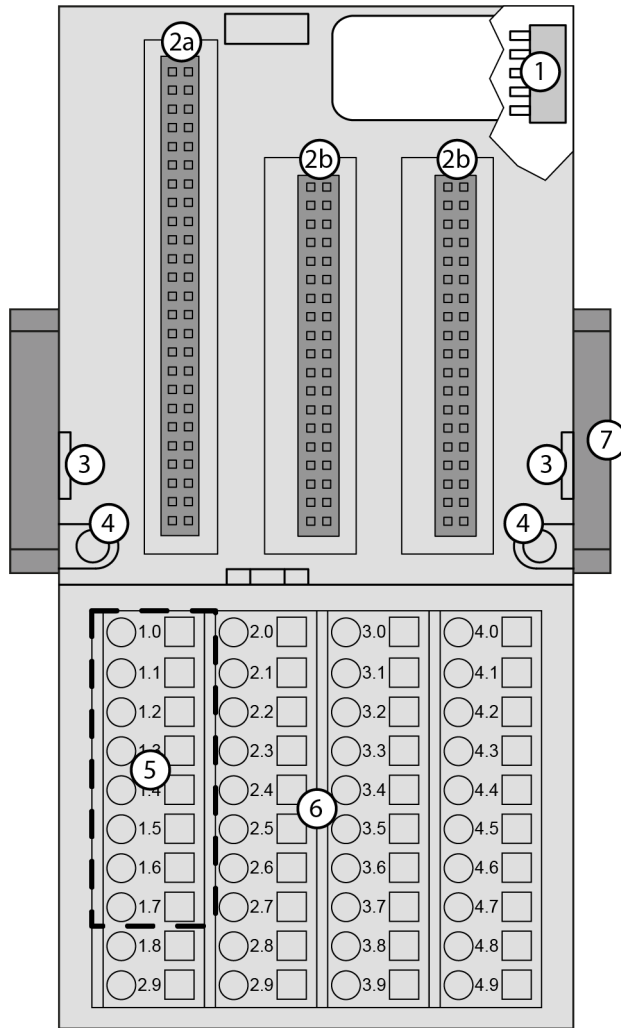


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

138.5 Connections



- 1 I/O bus (10 pins, female) to connect other terminal units
- 2a Plug (2 25 pins) to connect the inserted I/O modules
- 2b Plug (2 19 pins) to connect the inserted I/O modules
- 3 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 CS31 bus interface
- 6 30 terminals for signals and process supply voltage
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

138.6 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

138.7 Certification



MSIP-REI-Abb-AC500

en **Devices with KCC sign on product sticker and packaging**

ko 제품 스티커 및 포장에 **KCC** 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",

KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

138.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

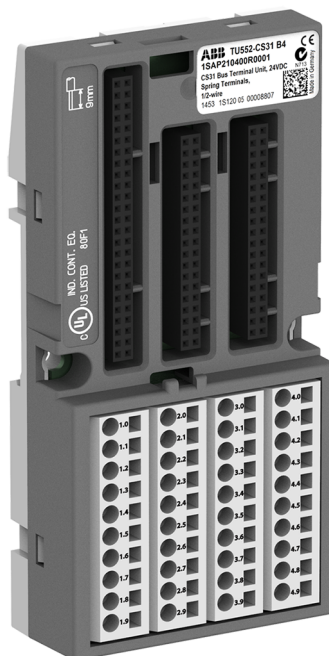
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

139 TU552-CS31(-XC)

- TU552-CS31
- TU552-CS31-XC



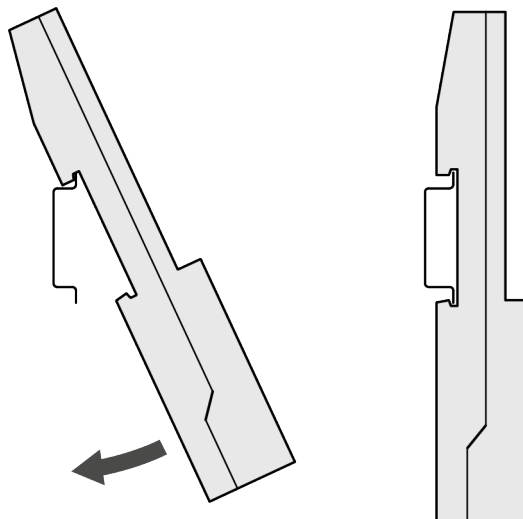
CAUTION!

Risk of injury and damaging the product!

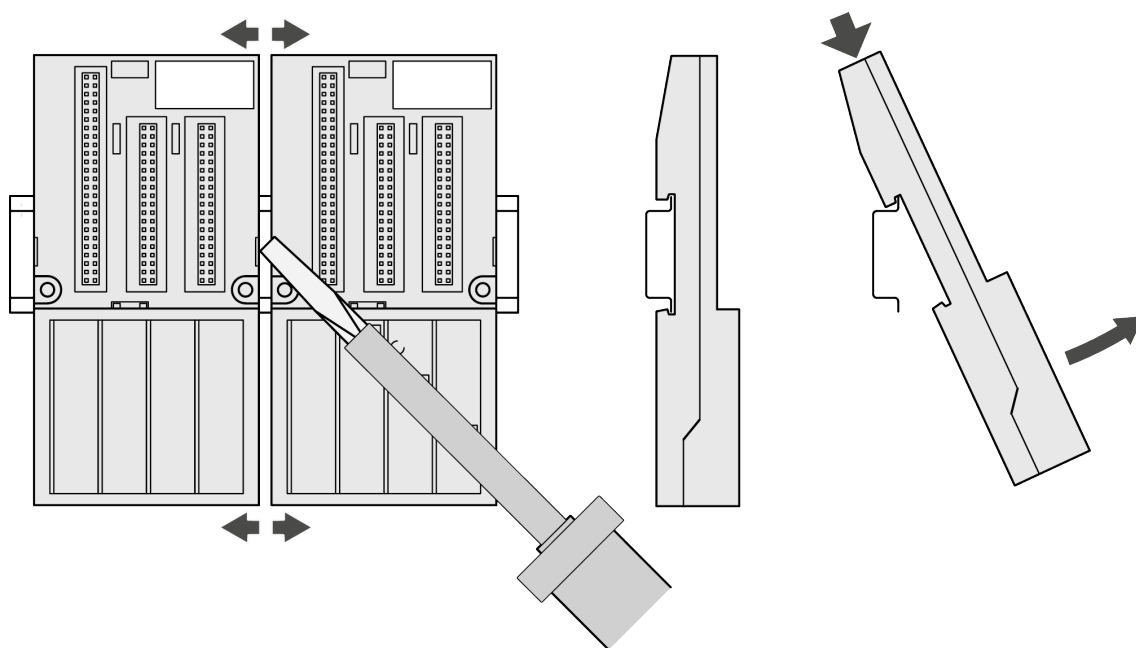
Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

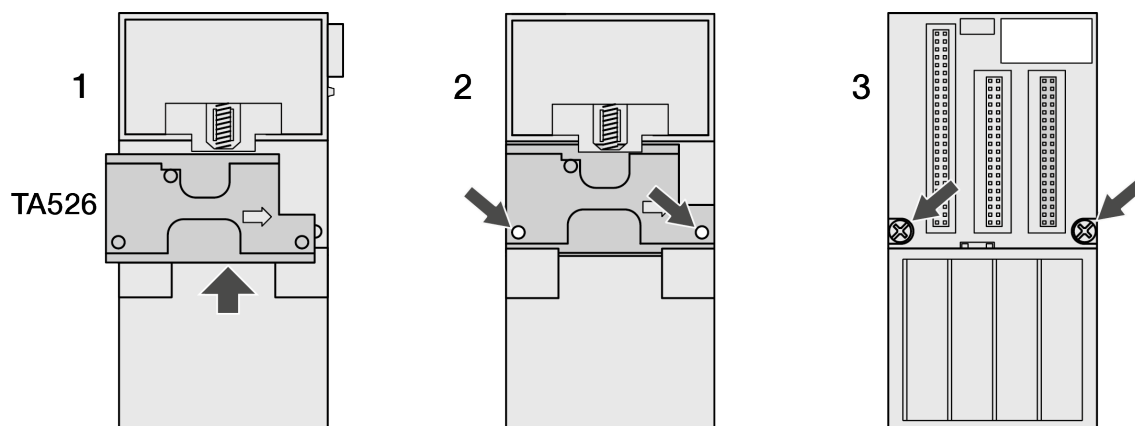
139.1 Assembly



139.2 Disassembly



139.3 Assembly with screws



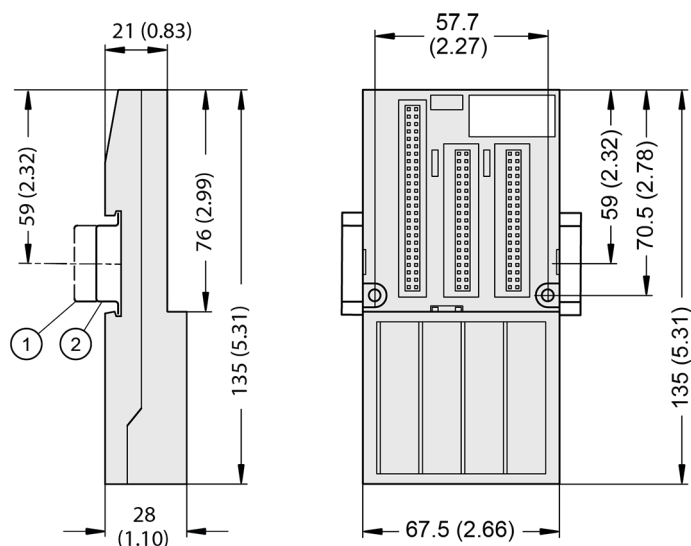
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

139.4 Dimensions

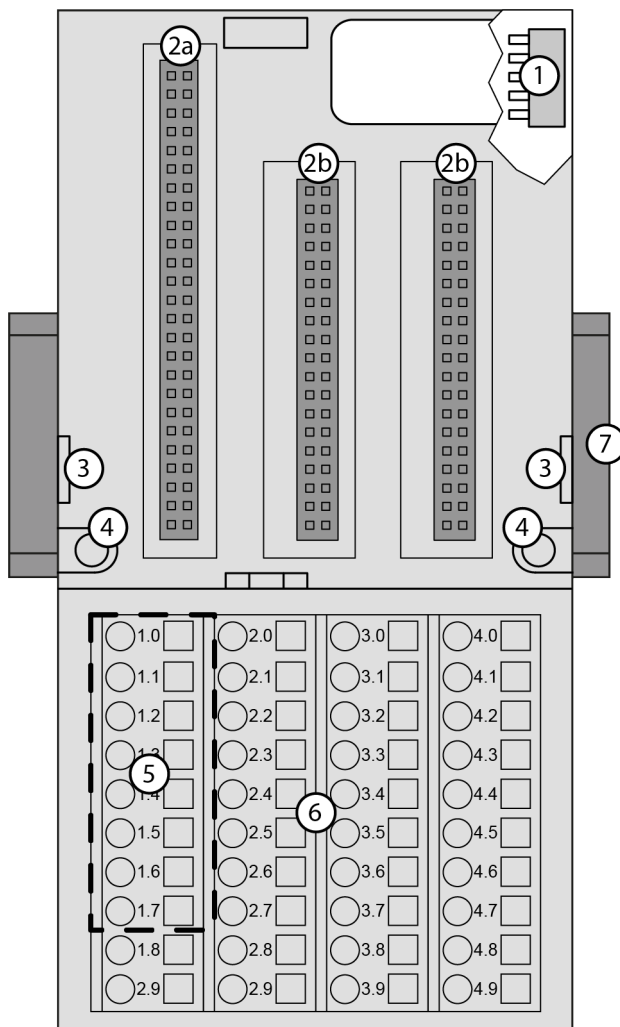


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

139.5 Connections



- 1 I/O bus (10 pins, female) to connect other terminal units
- 2a Plug (2 25 pins) to connect the inserted I/O modules
- 2b Plug (2 19 pins) to connect the inserted I/O modules
- 3 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 4 2 holes for wall mounting
- 5 CS31 bus interface
- 6 30 terminals for signals and process supply voltage
- 7 DIN rail



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

139.5.1 Bus interface

Pin assignment

	1.0		R1	R1	Resistor + (end-of-line)
	1.1		R2	R2	Resistor - (end-of-line)
	1.2		B1	B1	CS31 bus +
	1.3		B2	B2	CS31 bus -
	1.4		FE	FE	Functional earth
	1.5		B1	B1	CS31 bus +
	1.6		B2	B2	CS31 bus -
	1.7		FE	FE	Functional earth
	1.8		UP	UP	24 V DC process voltage
	1.9		ZP	ZP	0 V process voltage



In corrosive environment, please protect unused connectors using the TA535 accessory.
Not supplied with this device.

139.6 Cleaning



Cleaning instructions
Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.

139.7 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging
ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en **Note**
These devices correspond to: **KN61000-6-2** "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko 참고
이러한 기기는 **KN61000-6-2** "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

139.8 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

140 TU582-S(-XC) 24 V DC

- TU582-S 24 V DC
- TU582-S-XC 24 V DC



CAUTION!

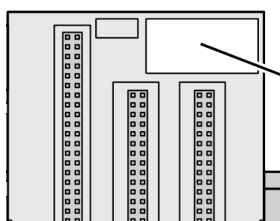
Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

XC version

XC = eXtreme Conditions



ABB

1SAP4...

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX

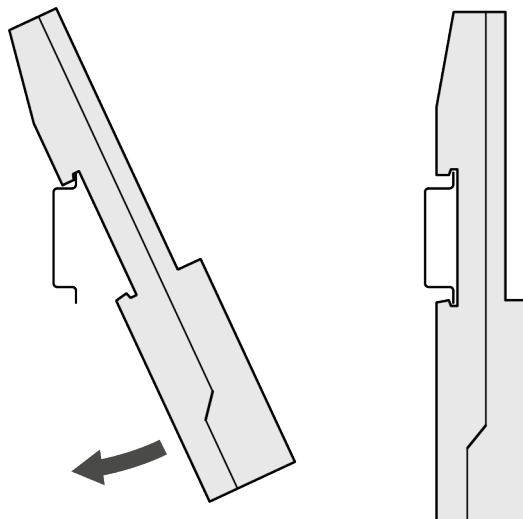


Extreme conditions

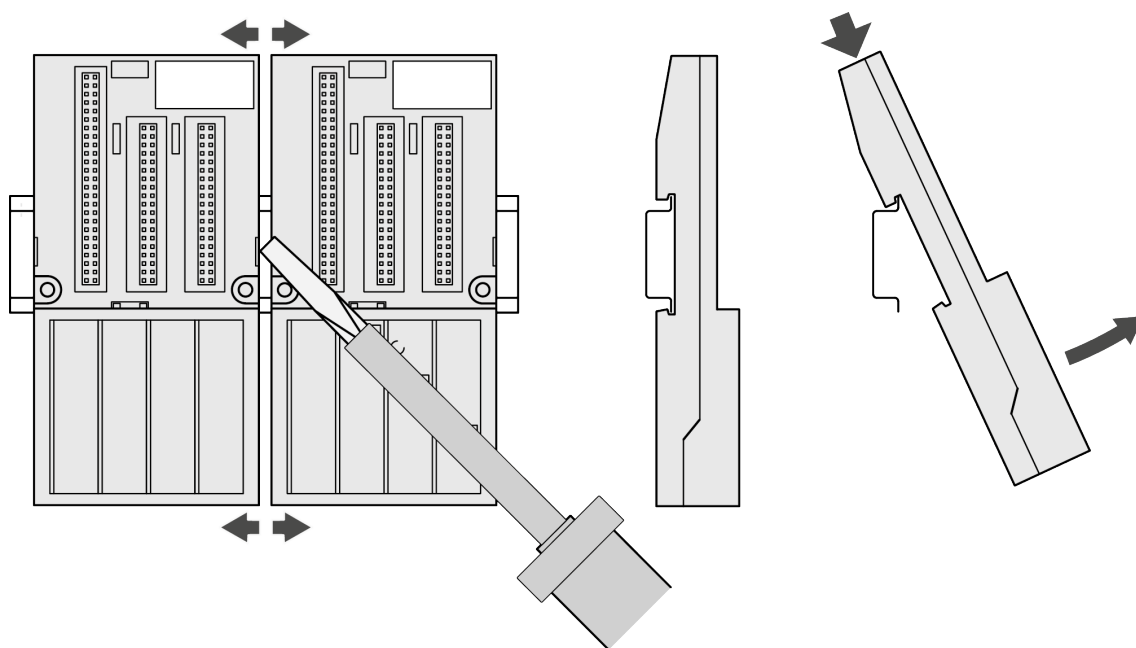
Terminal units for use in extreme ambient conditions have no ❄️ sign for XC version.

The figure 4 in the Part no. 1SAP4... (label) identifies the XC version.

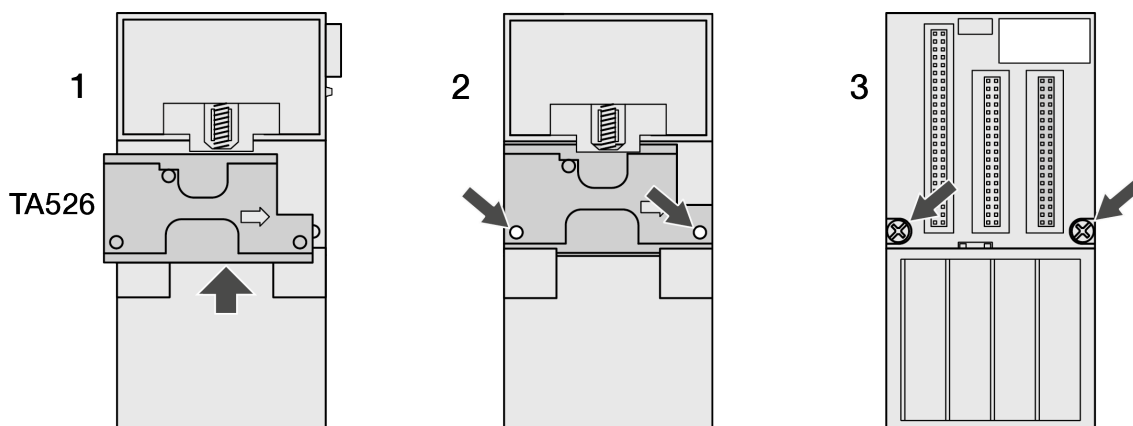
140.1 Assembly



140.2 Disassembly



140.3 Assembly with screws



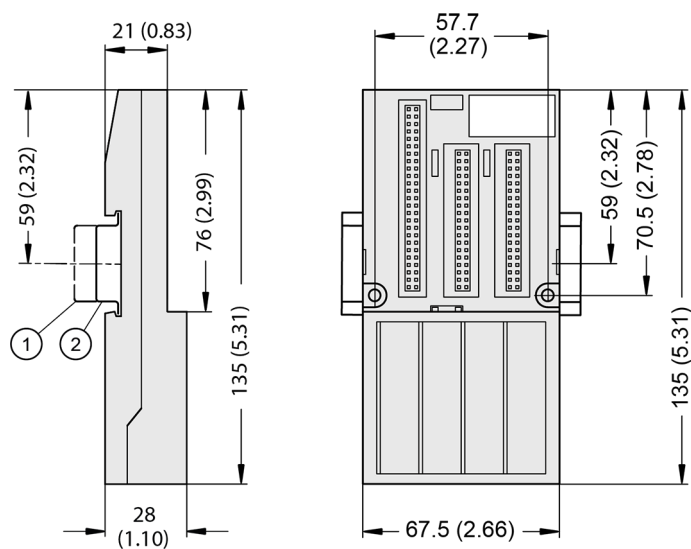
NOTICE!

Use screw mounting accessory to avoid damage!

For screw mounting, the use of the TA526 screw mounting accessory (1SAP180800R0001) is mandatory to prevent bending and damage to the module.

1. TA526 is snapped on the rear side of the module like DIN rails.
2. Fasten module with screws (M4, max 1.2 Nm) from the front side.

140.4 Dimensions

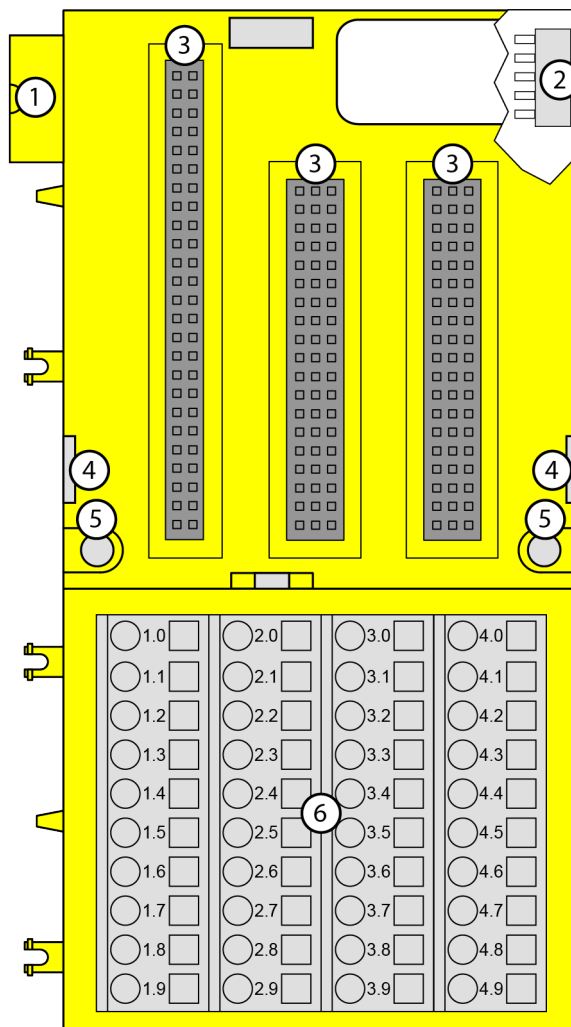


- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

140.5 Connections



- 1 I/O bus (10 pins, male) to connect the previous terminal unit, the CPU terminal base or the communication interface module to the terminal unit
- 2 I/O bus (10 pins, female) to connect other terminal units
- 3 Plug (1x 50 pins and 2x 57 pins) to connect the inserted I/O modules
- 4 With a screwdriver inserted in this place, the terminal unit and the adjacent terminal unit can be shoved from each other
- 5 Holes for screw mounting
- 6 40 spring terminals for signals and process supply voltage



AC500-S safety user manual

For a detailed description of the connection of the module, please refer to the "AC500-S safety user manual".



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

140.6 Cleaning



Cleaning instructions
*Do not use cleaning agent for cleaning the device.
Use a damp cloth instead.*

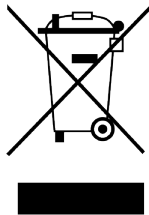
140.7 Certification



MSIP-REI-Abb-AC500

en	Note These devices correspond to:	en Devices with KCC sign on product sticker and packaging
ko	참고 이러한 기기는	ko 제품 스티커 및 포장에 KCC 표시가 된 기기
		KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"
		KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함

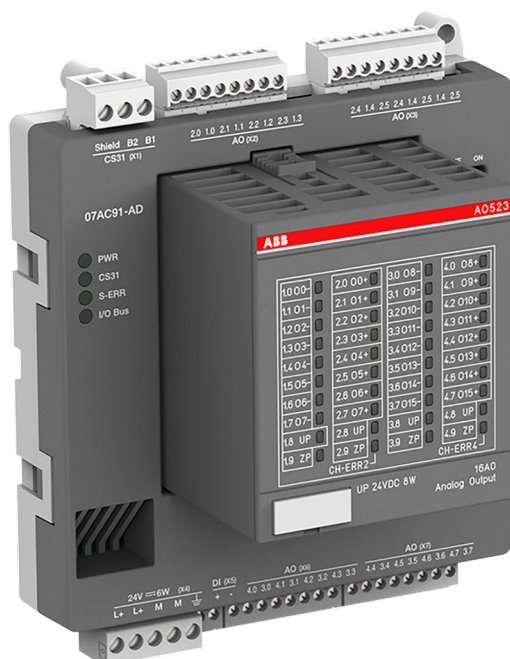
140.8 Recycling



Disposal and recycling information
This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.
The symbol indicates that this product must be recycled/disposed of separately from other household waste.
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.
The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.
For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

141 07AC91-AD

- 07AC91-AD



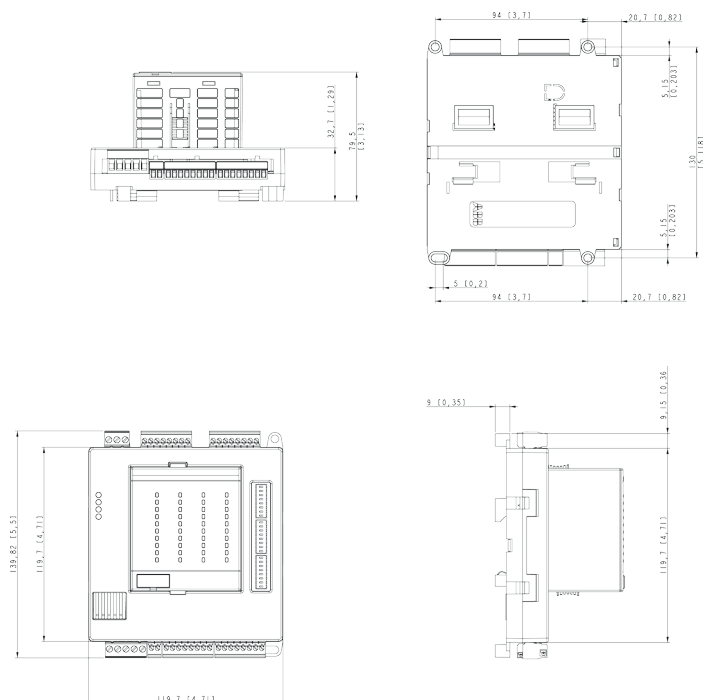
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

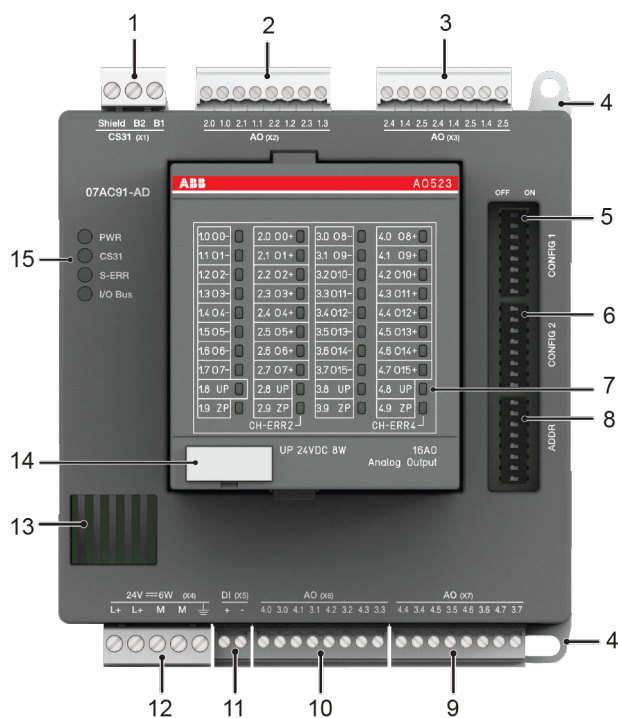
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

141.1 Dimensions



The dimensions are in mm and in brackets in inch.

141.2 Connections



- 1 Connection for CS31 bus (X1)
- 2 Analog outputs (X2): 0 ... 10 V, 0 ... 20 mA
- 3 Analog outputs (X3): 0 ... 10 V

- 4 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 5 DIP switch for CONFIG1
- 6 DIP switch for CONFIG2
- 7 Status LEDs for AO523
- 8 DIP switch for ADDR
- 9 Analog outputs (X7): 0 ... 10 V
- 10 Analog outputs (X6): 0 ... 10 V, 0 ... 20 mA
- 11 Enabling input for analog outputs (X5)
- 12 Supply 24 V DC (incl. AO523)
- 13 Ventilation
- 14 TA525: Label
- 15 4 Status LEDs



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

141.2.1 DIP switch for CONFIG1

	Switcher number	ON	OFF
	S1	S1 + S2: AO	see 1)
	S2	0...20 mA	0...+10V
	S3	S3 + S4: AO	see 1)
	S4	0...20 mA	0...+10V
	S5	S5 + S6: AO	see 1)
	S6	NC	0...+10V
	S7	S7 + S8: AO	see 1)
	S8	NC	0...+10V

1) Switch must be set to ON in order to initialize the device.

2) Switch must be set to OFF.

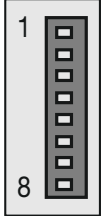
141.2.2 DIP switch for CONFIG2

	Switcher number	ON	OFF
	S1	S1 + S2: AO	see 1)
	S2	0...20 mA	0...+10V
	S3	S3 + S4: AO	see 1)
	S4	0...20 mA	0...+10V
	S5	S5 + S6: AO	see 1)
	S6	NC	0...+10V
	S7	S7 + S8: AO	see 1)
	S8	NC	0...+10V

1) Switch must be set to ON in order to initialize the device.

2) Switch must be set to OFF.

141.2.3 DIP switch for ADDR

	Switcher number	ON	OFF
	S1	8-bit	see 1)
	S2	NC	NC
	S3	No monitoring range limits	0
	S4	ADDR: 8	0
	S5	ADDR: 4	0
	S6	ADDR: 2	0
	S7	ADDR: 1	0
	S8	see 2)	NC

1) Switch must be set to ON in order to initialize the device.

2) Switch must be set to OFF.

141.2.4 Plug connection

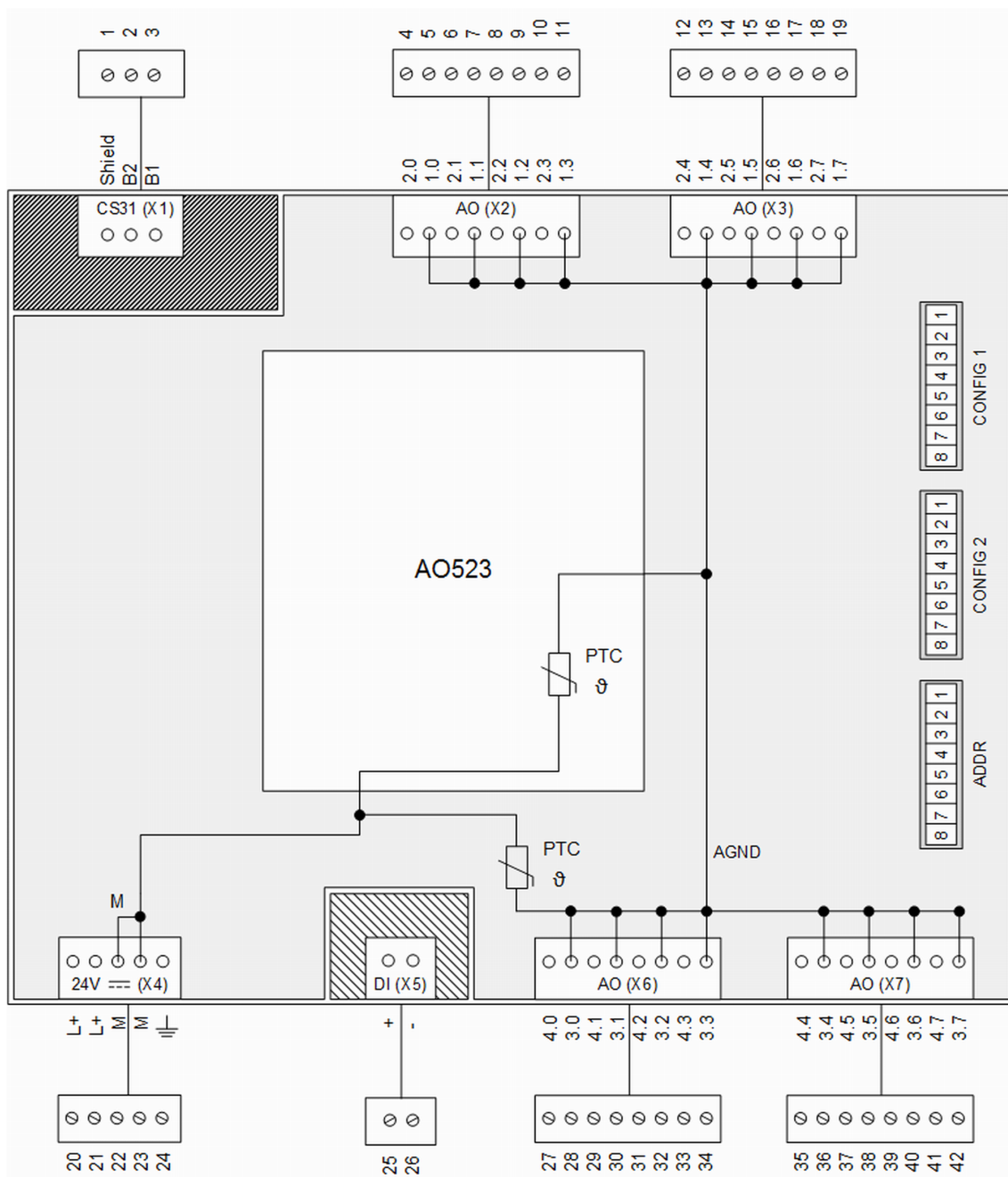


Table 101: Pin assignment CS31 bus (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / Shield	1	No internal connection
X1 / B2	2	BUS 2
X1 / B1	3	BUS 1

Table 102: Pin assignment AO (X2)

Connector / Terminal	Pin	Assignment / Signal
X2 / 2.0	4	AO523 / O0+
X2 / 1.0	5	AO523 / O0- (AGND)

Connector / Terminal	Pin	Assignment / Signal
X2 / 2.1	6	AO523 / O1+
X2 / 1.1	7	AO523 / O1- (AGND)
X2 / 2.2	8	AO523 / O2+
X2 / 1.2	9	AO523 / O2- (AGND)
X2 / 2.3	10	AO523 / O3+
X2 / 1.3	11	AO523 / O3- (AGND)

Table 103: Pin assignment AO (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / 2.4	12	AO523 / -
X3 / 1.4	13	AO523 / O4- (AGND)
X3 / 2.5	14	AO523 / -
X3 / 1.5	15	AO523 / O5- (AGND)
X3 / 2.6	16	AO523 / -
X3 / 1.6	17	AO523 / O6- (AGND)
X3 / 2.7	18	AO523 / -
X3 / 1.7	19	AO523 / O7- (AGND)

Table 104: Pin assignment 24 V DC 9W (X4)

Connector / Terminal	Pin	Assignment / Signal
X4 / L+	20	L+
X4 / L+	21	L+
X4 / M	22	M
X4 / M	23	M
X4 / FE	24	FE

Table 105: Pin assignment DI (X5)

Connector / Terminal	Pin	Assignment / Signal
X5 / +	25	IN+
X5 / -	26	IN- (galvanic isolated ground)

Table 106: Pin assignment AO (X6)

Connector / Terminal	Pin	Assignment / Signal
X6 / 4.0	27	AO523 / O8+
X6 / 3.0	28	AO523 / O8- (AGND)
X6 / 4.1	29	AO523 / O9+
X6 / 3.1	30	AO523 / O9- (AGND)
X6 / 4.2	31	AO523 / O10+
X6 / 3.2	32	AO523 / O10- (AGND)
X6 / 4.3	33	AO523 / O11+
X6 / 3.3	34	AO523 / O11- (AGND)

Table 107: Pin assignment AO (X7)

Connector / Terminal	Pin	Assignment / Signal
X7 / 4.4	35	AO523 / O12+
X7 / 3.4	36	AO523 / O12- (AGND)
X7 / 4.5	37	AO523 / O13+
X7 / 3.5	38	AO523 / O13- (AGND)
X7 / 4.6	39	AO523 / O14+
X7 / 3.6	40	AO523 / O14- (AGND)
X7 / 4.7	41	AO523 / O15+
X7 / 3.7	42	AO523 / O15- (AGND)

141.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

141.4 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

141.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

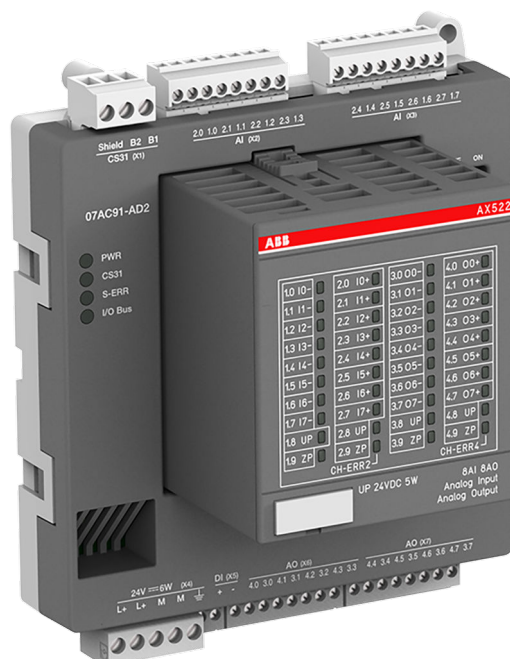
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

142 07AC91-AD2

- 07AC91-AD2



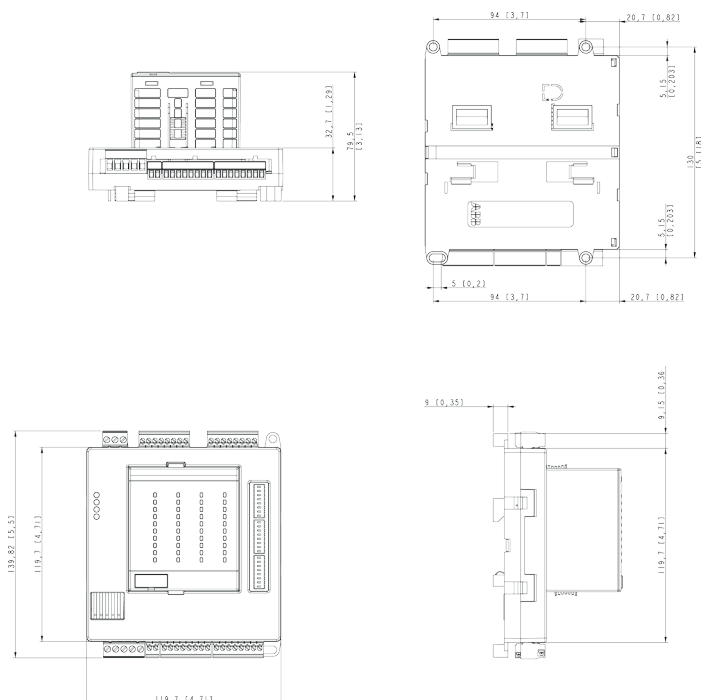
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

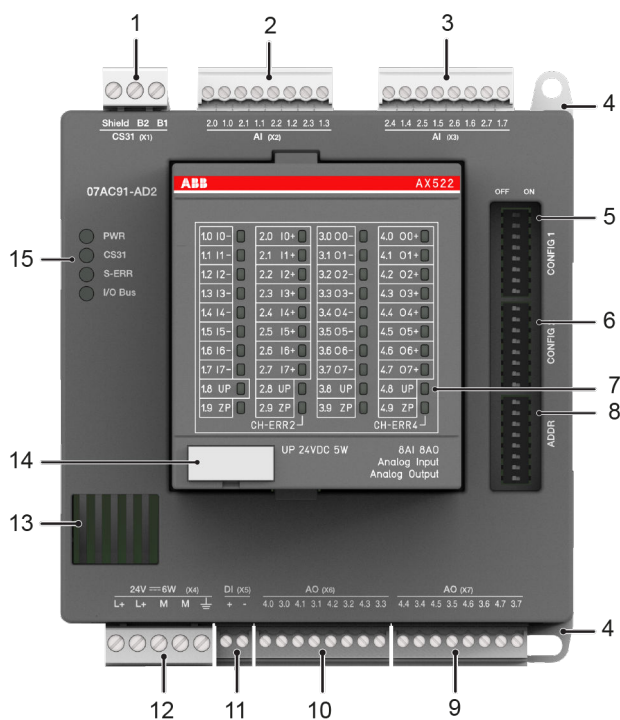
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

142.1 Dimensions



The dimensions are in mm and in brackets in inch.

142.2 Connections



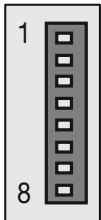
- 1 Connection for CS31 bus (X1)
- 2 Analog inputs (X2): -10 V...+10 V, 0...20 mA
- 3 Analog inputs (X3): -10 V...+10 V, 0...20 mA

- 4 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 5 DIP switch for CONFIG1
- 6 DIP switch for CONFIG2
- 7 Status LEDs for AX522
- 8 DIP switch for ADDR
- 9 Analog outputs (X7): -10 V...+10 V
- 10 Analog outputs (X6): -10 V...+10 V, 0...20 mA
- 11 Enabling input for analog outputs (X5)
- 12 Supply 24 V DC (incl. AX522)
- 13 Ventilation
- 14 TA525: Label
- 15 4 Status LEDs



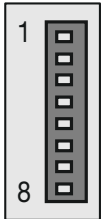
All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

142.2.1 DIP switch for CONFIG1

	Switcher number	ON	OFF
	S1	0...20 mA	-10V...+10V
	S2	0...20 mA	-10V...+10V
	S3	0...20 mA	-10V...+10V
	S4	0...20 mA	-10V...+10V
	S5	0...20 mA	-10V...+10V
	S6	0...20 mA	-10V...+10V
	S7	0...20 mA	-10V...+10V
	S8	0...20 mA	-10V...+10V

- 1) Switch must be set to OFF.
- 2) Switch must be set to ON in order to initialize the device.

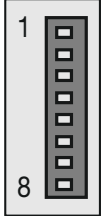
142.2.2 DIP switch for CONFIG2

	Switcher number	ON	OFF
	S1	0...20 mA	-10V...+10V
	S2	0...20 mA	-10V...+10V
	S3	0...20 mA	-10V...+10V
	S4	0...20 mA	-10V...+10V
	S5	see 1)	-10V...+10V
	S6	see 1)	-10V...+10V
	S7	see 1)	-10V...+10V
	S8	see 1)	-10V...+10V

- 1) Switch must be set to OFF.

2) Switch must be set to ON in order to initialize the device.

142.2.3 DIP switch for ADDR

	Switcher number	ON	OFF
	S1	8-bit	see 2)
	S2	NC	NC
	S3	monitoring range limits	0
	S4	ADDR: 8	0
	S5	ADDR: 4	0
	S6	ADDR: 2	0
	S7	ADDR: 1	0
	S8	NC	NC

1) Switch must be set to OFF.

2) Switch must be set to ON in order to initialize the device.

142.2.4 Plug connection

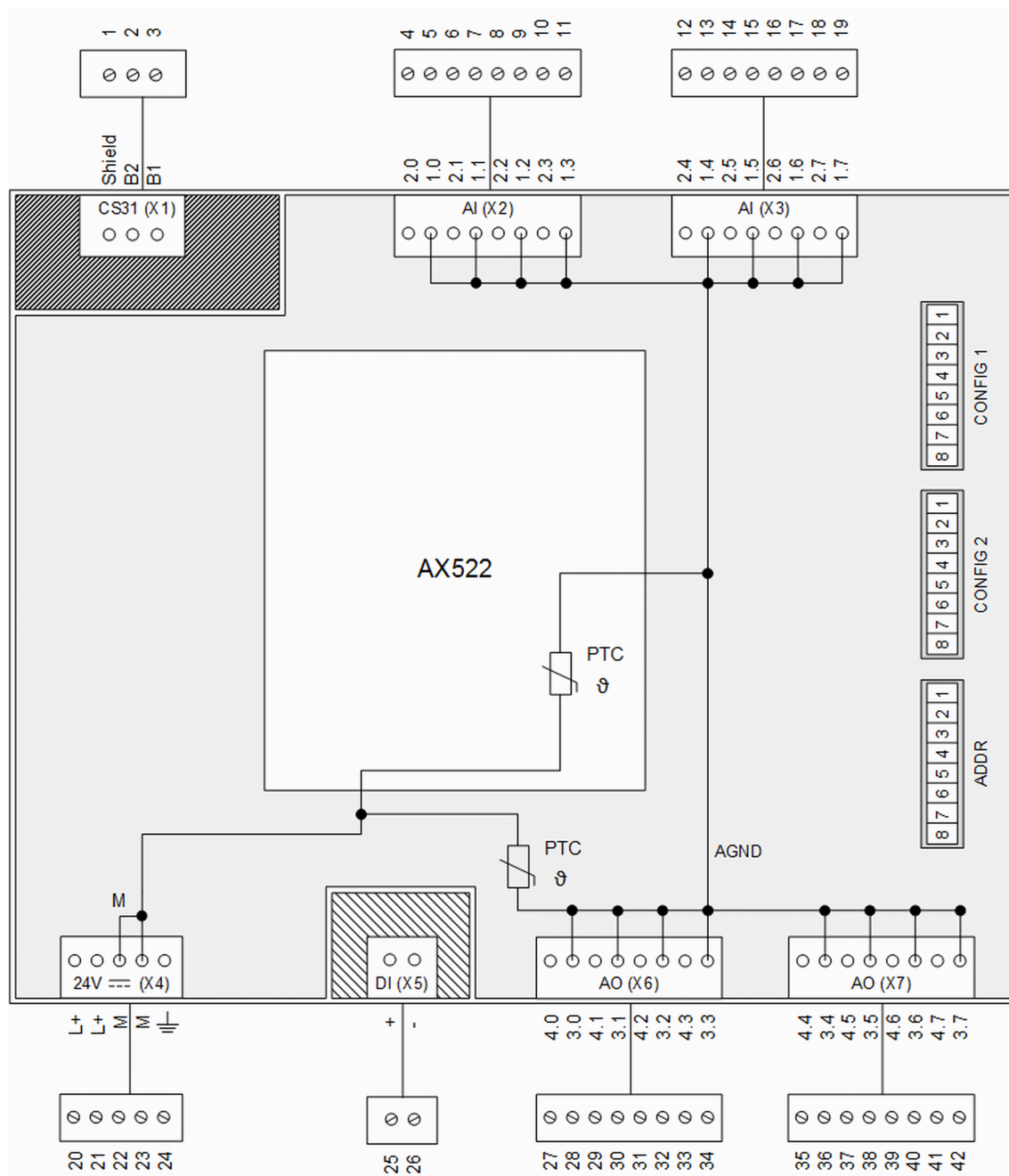


Table 108: Pin assignment CS31 bus (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / Shield	1	No internal connection
X1 / B2	2	BUS 2
X1 / B1	3	BUS 1

Table 109: Pin assignment AI (X2)

Connector / Terminal	Pin	Assignment / Signal
X2 / 2.0	4	AX522 / IO+
X2 / 1.0	5	AX522 / IO- (AGND)

Connector / Terminal	Pin	Assignment / Signal
X2 / 2.1	6	AX522 / I1+
X2 / 1.1	7	AX522 / I1- (AGND)
X2 / 2.2	8	AX522 / I2+
X2 / 1.2	9	AX522 / I2- (AGND)
X2 / 2.3	10	AX522 / I3+
X2 / 1.3	11	AX522 / I3- (AGND)

Table 110: Pin assignment AI (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / 2.4	12	AX522 / I4+
X3 / 1.4	13	AX522 / I4- (AGND)
X3 / 2.5	14	AX522 / I5+
X3 / 1.5	15	AX522 / I5- (AGND)
X3 / 2.6	16	AX522 / I6+
X3 / 1.6	17	AX522 / I6- (AGND)
X3 / 2.7	18	AX522 / I7+
X3 / 1.7	19	AX522 / I7- (AGND)

Table 111: Pin assignment 24 V DC 6W (X4)

Connector / Terminal	Pin	Assignment / Signal
X4 / L+	20	L+
X4 / L+	21	L+
X4 / M	22	M
X4 / M	23	M
X4 / FE	24	FE

Table 112: Pin assignment DI (X5)

Connector / Terminal	Pin	Assignment / Signal
X5 / +	25	IN+
X5 / -	26	IN- (galvanic isolated ground)

Table 113: Pin assignment AO (X6)

Connector / Terminal	Pin	Assignment / Signal
X6 / 4.0	27	AX522 / O0+
X6 / 3.0	28	AX522 / O0- (AGND)
X6 / 4.1	29	AX522 / O1+
X6 / 3.1	30	AX522 / O1- (AGND)
X6 / 4.2	31	AX522 / O2+
X6 / 3.2	32	AX522 / O2- (AGND)
X6 / 4.3	33	AX522 / O3+
X6 / 3.3	34	AX522 / O3- (AGND)

Table 114: Pin assignment AO (X7)

Connector / Terminal	Pin	Assignment / Signal
X7 / 4.4	35	AX522 / O4+
X7 / 3.4	36	AX522 / O4- (AGND)
X7 / 4.5	37	AX522 / O5+
X7 / 3.5	38	AX522 / O5- (AGND)
X7 / 4.6	39	AX522 / O6+
X7 / 3.6	40	AX522 / O6- (AGND)
X7 / 4.7	41	AX522 / O7+
X7 / 3.7	42	AX522 / O7- (AGND)



The outputs on connector X7 cannot be configured as current outputs.

142.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

142.4 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

142.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

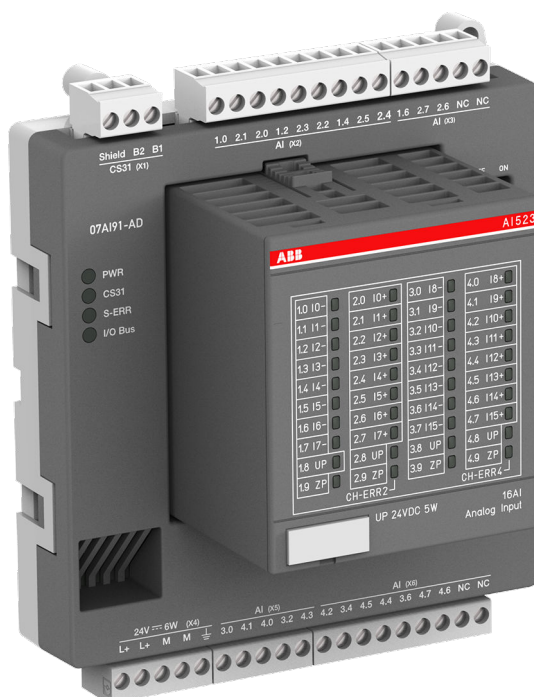
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

143 07AI91-AD

- 07AI91-AD



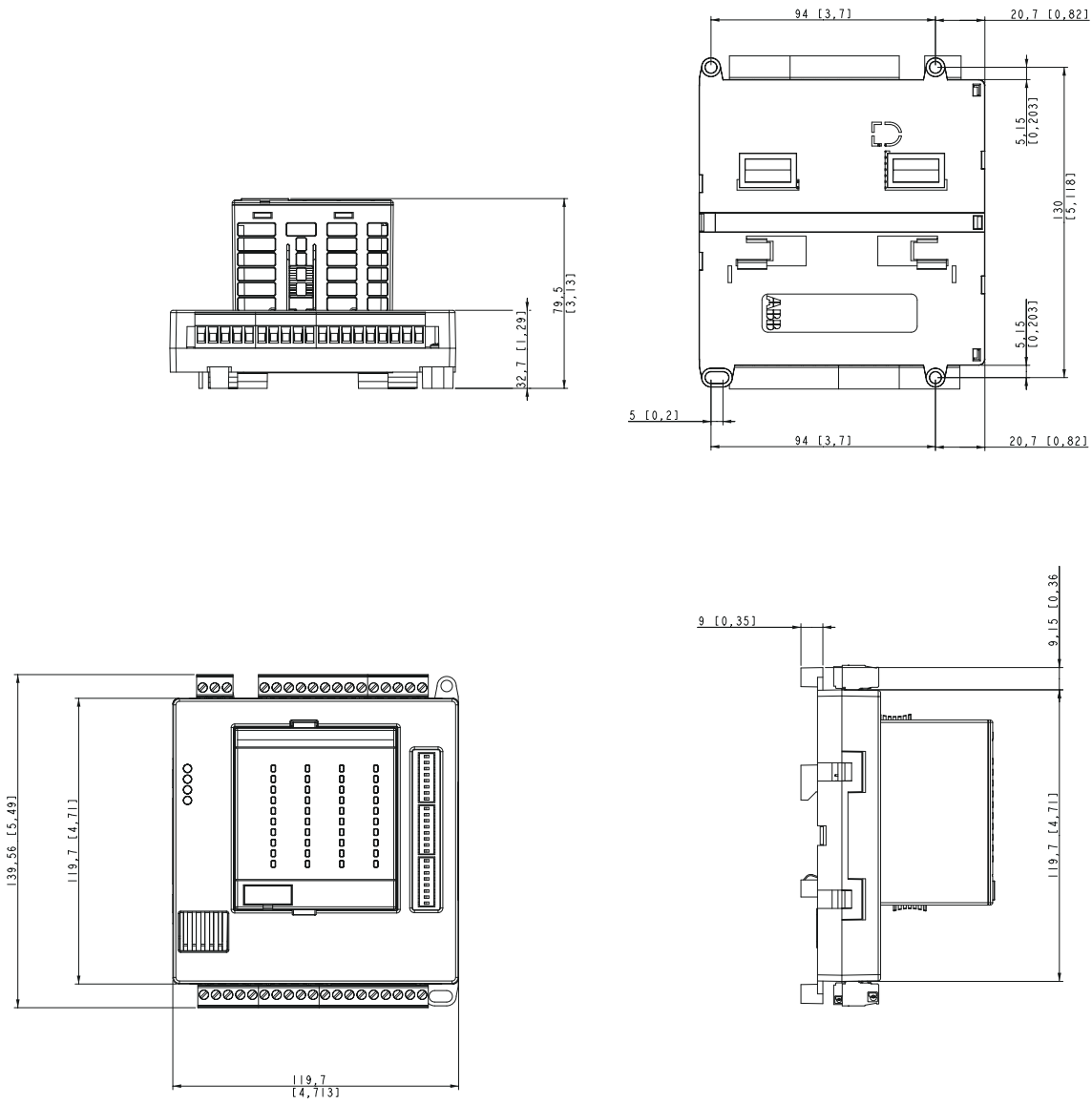
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

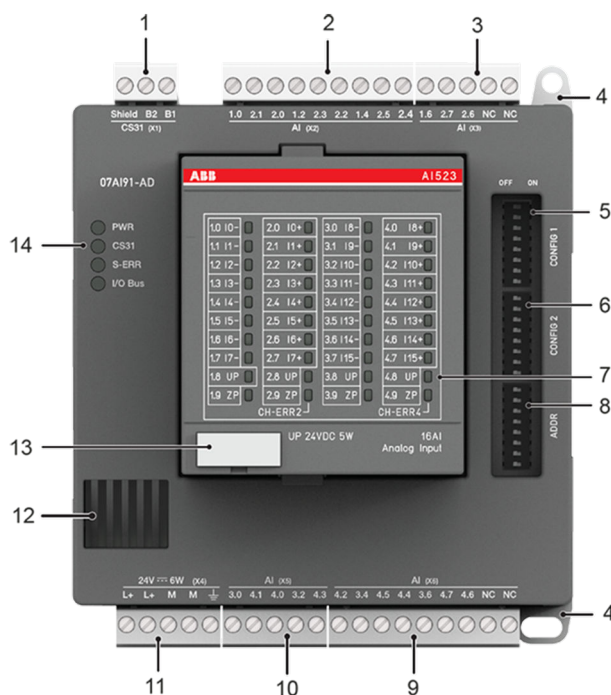
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

143.1 Dimensions



The dimensions are in mm and in brackets in inch.

143.2 Connections



- 1 Connection for CS31 bus (X1)
- 2 Analog inputs (X2). 2.5 AI (± 10 V differential, ± 5 V differential, temperature measurement PT100 / PT1000, 4...20 mA and 0...20 mA with external resistor)
- 3 Analog inputs (X3). 1.5 AI (± 10 V differential, ± 5 V differential, temperature measurement PT100 / PT1000, 4...20 mA and 0...20 mA with external resistor)
- 4 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 5 DIP switch for CONFIG1
- 6 DIP switch for CONFIG2
- 7 Status LEDs for AI523
- 8 DIP switch for ADDR
- 9 Analog inputs (X6). 2.5 AI (± 10 V differential, ± 5 V differential, temperature measurement PT100 / PT1000, 4...20 mA and 0...20 mA with external resistor)
- 10 Analog inputs (X5). 1.5 AI (± 10 V differential, ± 5 V differential, temperature measurement PT100 / PT1000, 4...20 mA and 0...20 mA with external resistor)
- 11 Supply 24 V DC (incl. AI523)
- 12 Ventilation
- 13 TA525: Label
- 14 4 Status LEDs of complete device



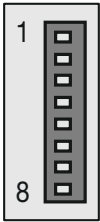
In contrast to the existing device, the following measuring ranges are not available in the replacement device: ± 500 mV, ± 50 mV. Temperature measurement with thermocouples is also not possible.

The replacement device does not perform a self-calibration.

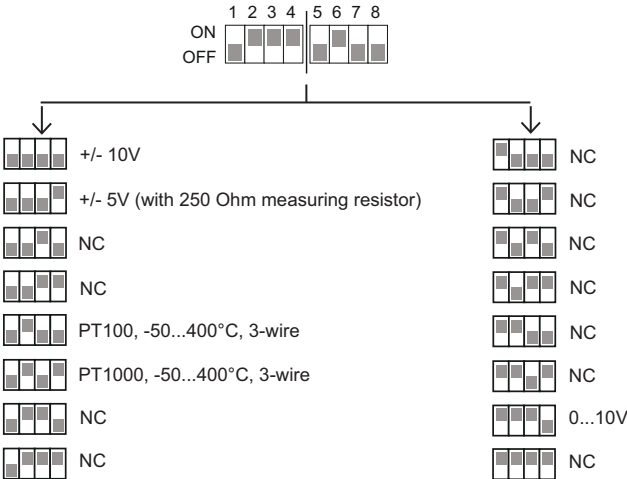


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

143.2.1 DIP switch for CONFIG1 / CONFIG2



Configuration options for DIP switches CONFIG1 and CONFIG2. Configuration in blocks of 4 switches.

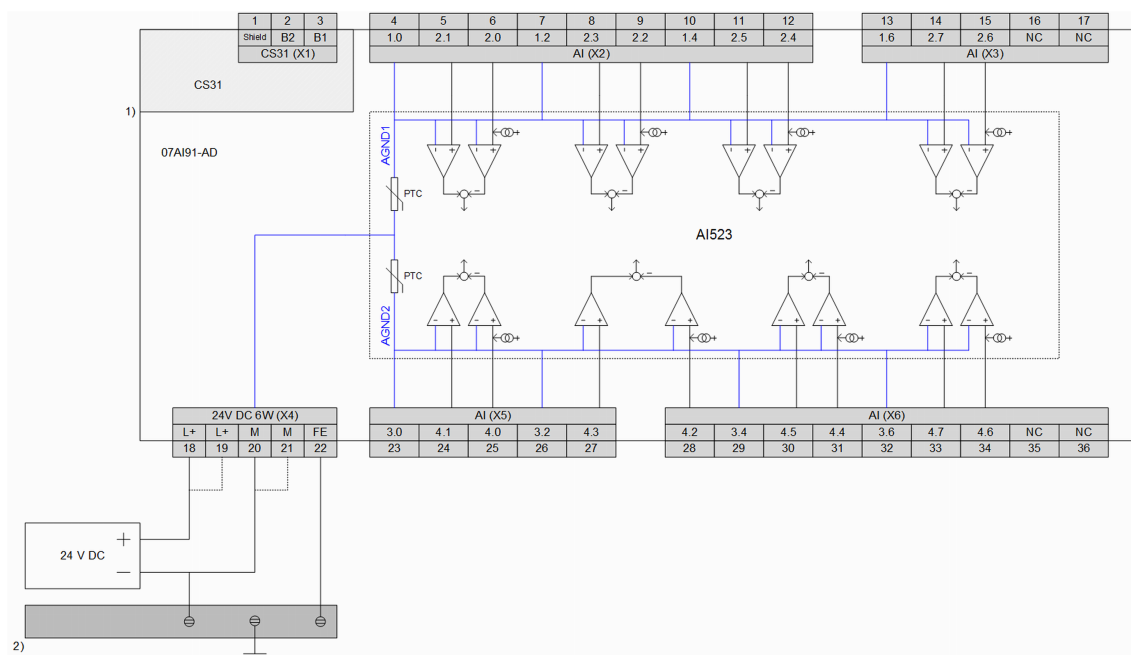


143.2.2 DIP switch for ADDR

	Switcher number	ON	OFF
	S1	NC	NC
	S2	NC	NC
	S3	CS31	see 1)
	S4	ADDR: 8	0
	S5	ADDR: 4	0
	S6	ADDR: 2	0
	S7	ADDR: 1	0
	S8	NC	NC

1) Switch must be set to ON in order to initialize the device.

143.2.3 Plug connection



- 1) Galvanic isolation
- 2) Control cabinet grounding

Table 115: Pin assignment CS31 bus (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / Shield	1	No internal connection
X1 / B2	2	BUS 2
X1 / B1	3	BUS 1

Table 116: Pin assignment AI (X2)

Connector / Terminal	Pin	Assignment / Signal
X2 / 1.0	4	AI523 / I0- (AGND1)
X2 / 2.1	5	AI523 / I1+
X2 / 2.0	6	AI523 / I0+
X2 / 1.2	7	AI523 / I2- (AGND1)
X2 / 2.3	8	AI523 / I3+
X2 / 2.2	9	AI523 / I2+
X2 / 1.4	10	AI523 / I4- (AGND1)
X2 / 2.5	11	AI523 / I5+
X2 / 2.4	12	AI523 / I4+

Table 117: Pin assignment AI (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / 1.6	13	AI523 / I6- (AGND1)
X3 / 2.7	14	AI523 / I7+
X3 / 2.6	15	AI523 / I6+

Connector / Terminal	Pin	Assignment / Signal
X3 / NC	16	Not connected
X3 / NC	17	Not connected

Table 118: Pin assignment 24 V DC 6W (X4)

Connector / Terminal	Pin	Assignment / Signal
X4 / L+	18	L+
X4 / L+	19	L+
X4 / M	20	M
X4 / M	21	M
X4 / FE	22	FE

Table 119: Pin assignment AI (X5)

Connector / Terminal	Pin	Assignment / Signal
X5 / 3.0	23	AI523 / I8- (AGND2)
X5 / 4.1	24	AI523 / I9+
X5 / 4.0	25	AI523 / I8+
X5 / 3.2	26	AI523 / I10- (AGND2)
X5 / 4.3	27	AI523 / I11+

Table 120: Pin assignment AI (X6)

Connector / Terminal	Pin	Assignment / Signal
X6 / 4.2	28	AI523 / I10+
X6 / 3.4	29	AI523 / I12- (AGND2)
X6 / 4.5	30	AI523 / I13+
X6 / 4.4	31	AI523 / I12+
X6 / 3.6	32	AI523 / I14- (AGND2)
X6 / 4.7	33	AI523 / I15+
X6 / 4.6	34	AI523 / I14+
X6 / NC	35	Not connected
X6 / NC	36	Not connected

143.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

143.4 Certification

 MSIP-REI-Abb-AC500		en	Devices with KCC sign on product sticker and packaging
		ko	제품 스티커 및 포장에 KCC 표시가 된 기기
en	Note These devices correspond to:	KN61000-6-2 "Immunity for industrial environments", KN61000-6-4 "Emission standard for industrial environments"	
ko	참고 이러한 기기는	KN61000-6-2 "산업 환경에 대한 내성", KN61000-6-4 "산업 환경 누출 기준"에 적합함	

143.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

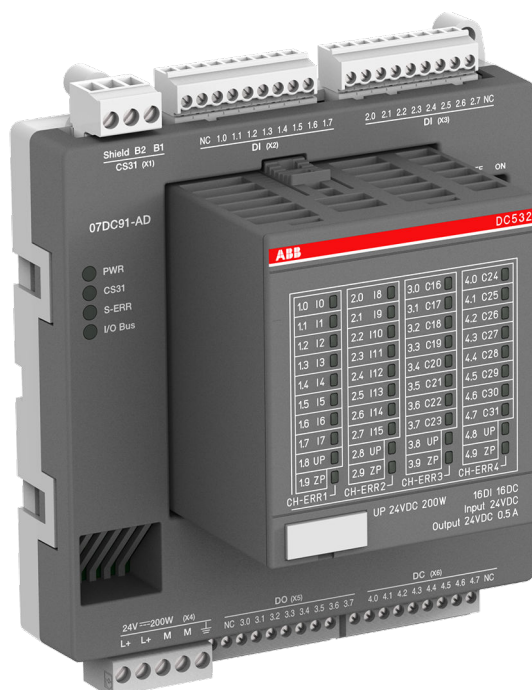
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

144 07DC91-AD

- 07DC91-AD



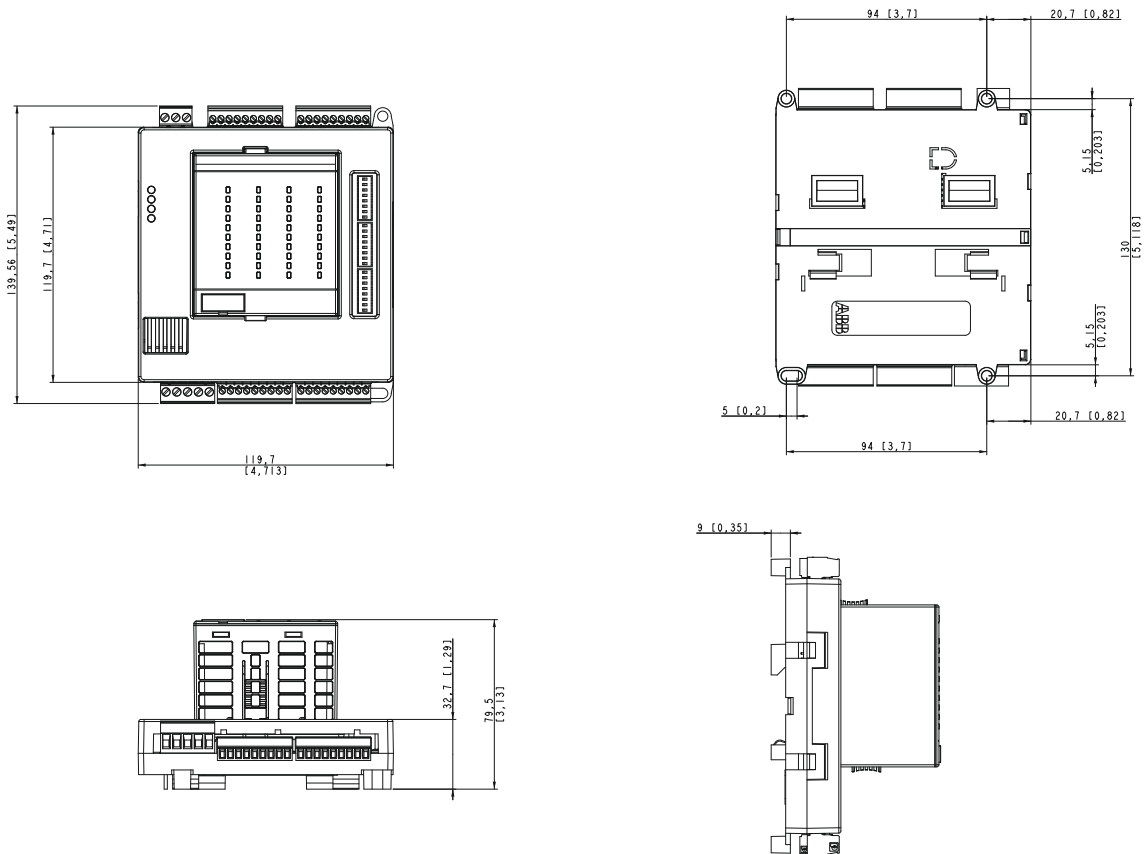
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

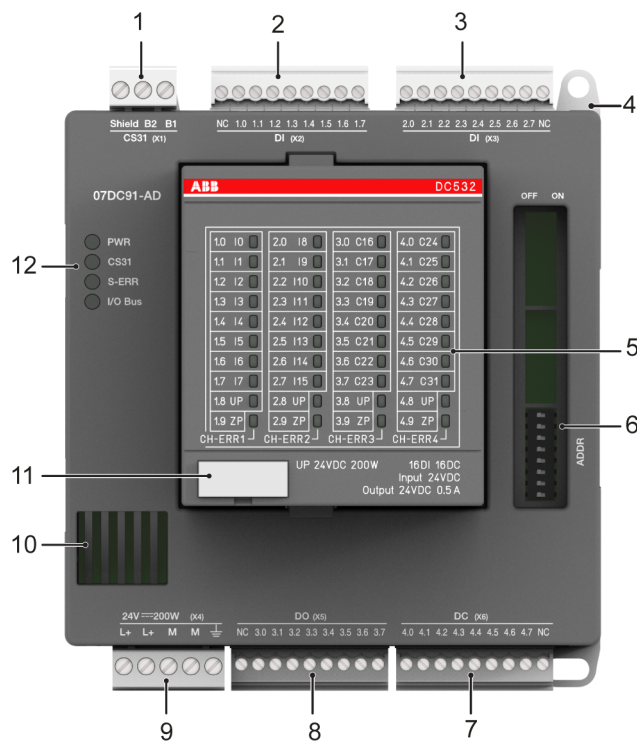
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

144.1 Dimensions



The dimensions are in mm and in brackets in inch.

144.2 Connections



- 1 Connection for CS31 bus (X1)
- 2 8 digital inputs 24 V DC (X2)
- 3 8 digital inputs 24 V DC (X3)
- 4 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 5 Status LEDs for DC532
- 6 DIP switch for address setting (ADDR)
- 7 8 digital inputs/outputs 24 V DC / 0.5 A (X6)
- 8 8 digital outputs (X5)
- 9 Supply 24 V DC (X4)
- 10 Ventilation
- 11 TA525: Label
- 12 4 Status LEDs

All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

144.2.1 DIP switch for ADDR

	Switcher number	ON	OFF
	S1	16 I / 16 O	16 I / 8 O / 8 DC
	S2	ADDR: 32	0
	S3	ADDR: 16	0
	S4	ADDR: 8	0
	S5	ADDR: 4	0

	Switcher number	ON	OFF
	S6	ADDR: 2	0
	S7	ADDR: 1	0
	S8	NC	NC

144.2.2 Plug connection

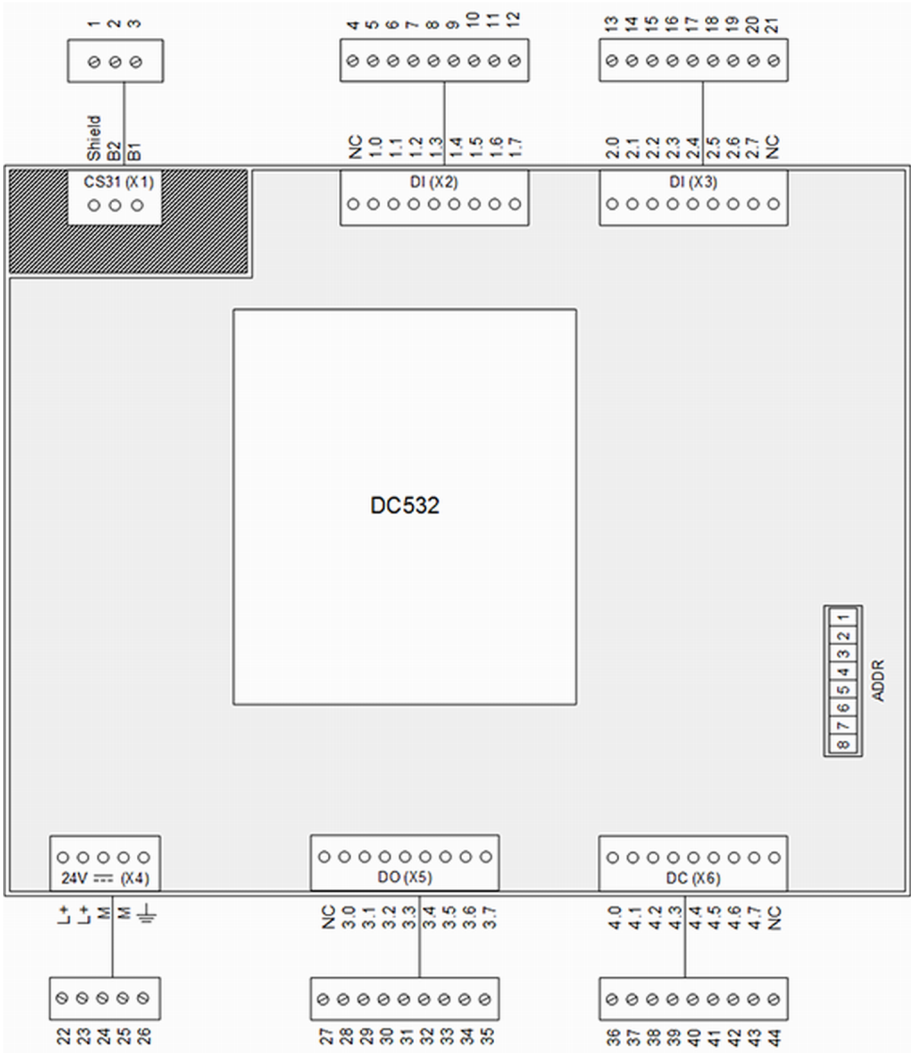


Table 121: Pin assignment CS31 bus (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / Shield	1	No internal connection
X1 / B2	2	BUS 2
X1 / B1	3	BUS 1

Table 122: Pin assignment DI (X2)

Connector / Terminal	Pin	Assignment / Signal
X2 / NC	4	No internal connection
X2 / 1.0	5	DC532 / I0
X2 / 1.1	6	DC532 / I1
X2 / 1.2	7	DC532 / I2
X2 / 1.3	8	DC532 / I3
X2 / 1.4	9	DC532 / I4
X2 / 1.5	10	DC532 / I5
X2 / 1.6	11	DC532 / I6
X2 / 1.7	12	DC532 / I7

Table 123: Pin assignment DI (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / 2.0	13	DC532 / I8
X3 / 2.1	14	DC532 / I9
X3 / 2.2	15	DC532 / I10
X3 / 2.3	16	DC532 / I11
X3 / 2.4	17	DC532 / I12
X3 / 2.5	18	DC532 / I13
X3 / 2.6	19	DC532 / I14
X3 / 2.7	20	DC532 / I15
X3 / NC	21	No internal connection

Table 124: Pin assignment 24 V DC 200 W (X4)

Connector / Terminal	Pin	Assignment / Signal
X4 / L+	22	L+
X4 / L+	23	L+
X4 / M	24	M
X4 / M	25	M
X4 / FE	26	FE

Table 125: Pin assignment DO (X5)

Connector / Terminal	Pin	Assignment / Signal
X5 / NC	27	No internal connection
X5 / 3.0	28	DC532 / C16
X5 / 3.1	29	DC532 / C17
X5 / 3.2	30	DC532 / C18
X5 / 3.3	31	DC532 / C19
X5 / 3.4	32	DC532 / C20
X5 / 3.5	33	DC532 / C21
X5 / 3.6	34	DC532 / C22
X5 / 3.7	35	DC532 / C23

Table 126: Pin assignment DC (X6)

Connector / Terminal	Pin	Assignment / Signal
X6 / 4.0	36	DC532 / C24
X6 / 4.1	37	DC532 / C25
X6 / 4.2	38	DC532 / C26
X6 / 4.3	39	DC532 / C27
X6 / 4.4	40	DC532 / C28
X6 / 4.5	41	DC532 / C29
X6 / 4.6	42	DC532 / C30
X6 / 4.7	43	DC532 / C31
X6 / NC	44	No internal connection

144.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

144.4 Certification



MSIP-REI-Abb-AC500

en

Note

These devices correspond to:

ko

참고
이러한 기기는

en

Devices with KCC sign on product sticker and packaging

ko

제품 스티커 및 포장에 **KCC** 표시가 된 기기

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

144.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

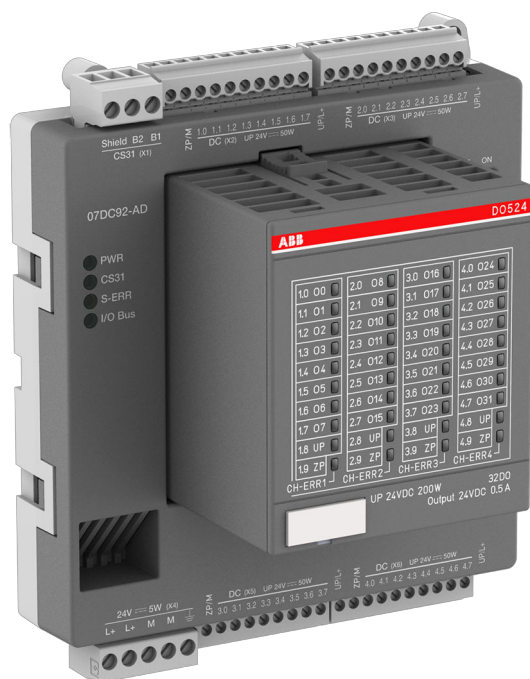
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

145 07DC92-AD

- 07DC92-AD



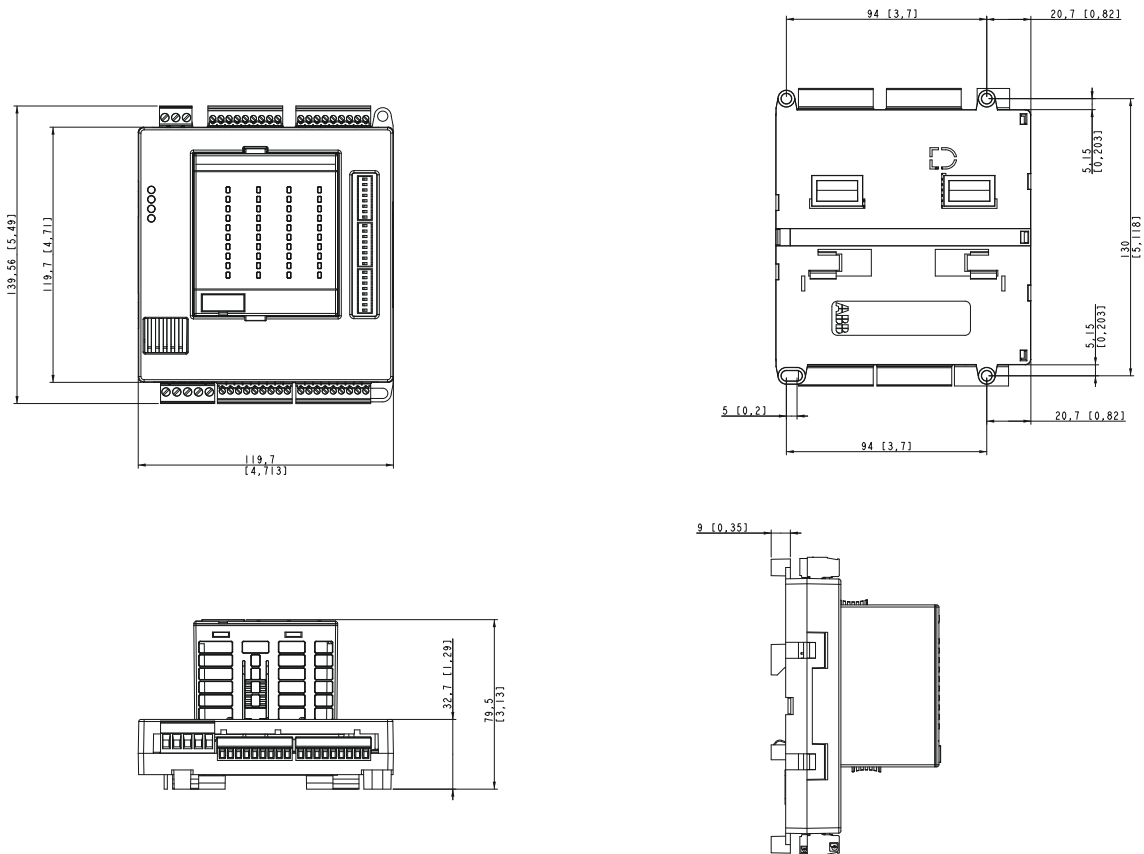
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

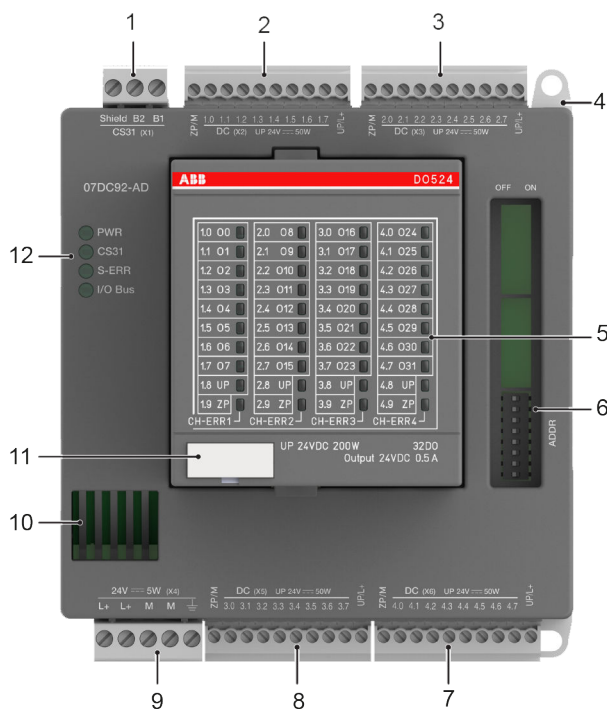
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

145.1 Dimensions



The dimensions are in mm and in brackets in inch.

145.2 Connections



- 1 Connector X1: CS31 bus
- 2 Connector X2: 8 DC + voltage supply (incl. DO524)
- 3 Connector X3: 8 DC + voltage supply (incl. DO524)
- 4 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 5 Status LEDs for DO524
- 6 DIP switch for address setting (ADDR)
- 7 Connector X6: 8 DC + voltage supply (incl. DO524)
- 8 Connector X5: 8 DC + voltage supply (incl. DO524)
- 9 Connector X4: Voltage supply (incl. DO524)
- 10 Ventilation
- 11 TA525: Label
- 12 4 LEDs to display the status of the complete 07DC92-AD device



All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

145.2.1 DIP switch for ADDR

	Switcher number	ON	OFF
	S1	32 DO	32 DC
	S2	ADDR: 32	0
	S3	ADDR: 16	0
	S4	ADDR: 8	0
	S5	ADDR: 4	0
	S6	ADDR: 2	0

	Switcher number	ON	OFF
	S7	ADDR: 1	0
	S8	NC	NC

145.2.2 Plug connection

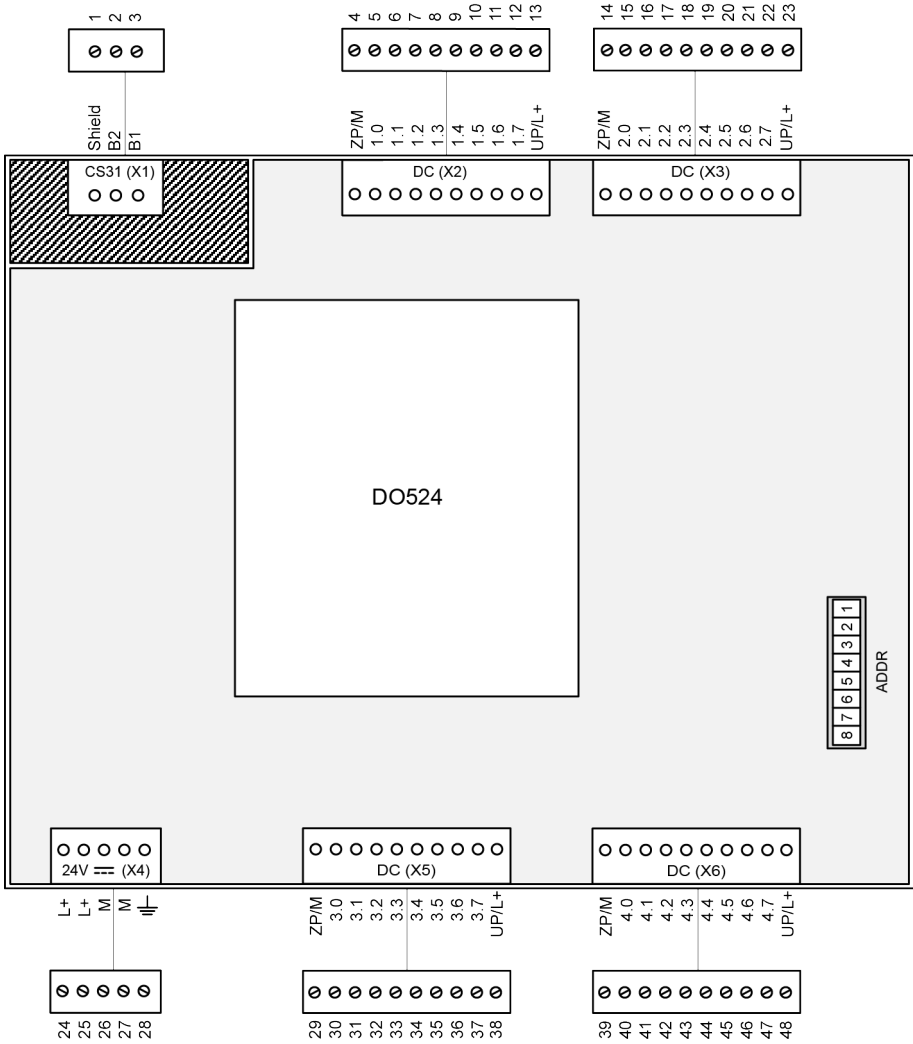


Table 127: Pin assignment CS31 bus (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / Shield	1	No internal connection
X1 / B2	2	BUS 2
X1 / B1	3	BUS 1

Table 128: Pin assignment DC (X2)

Connector / Terminal	Pin	Assignment / Signal
X2 / ZP/M	4	ZP/M
X2 / 1.0	5	DO524 / O0

Connector / Terminal	Pin	Assignment / Signal
X2 / 1.1	6	DO524 / O1
X2 / 1.2	7	DO524 / O2
X2 / 1.3	8	DO524 / O3
X2 / 1.4	9	DO524 / O4
X2 / 1.5	10	DO524 / O5
X2 / 1.6	11	DO524 / O6
X2 / 1.7	12	DO524 / O7
X2 / UP/L+	13	UP/L+

Table 129: Pin assignment DC (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / ZP/M	14	ZP/M
X3 / 2.0	15	DO524 / O8
X3 / 2.1	16	DO524 / O9
X3 / 2.2	17	DO524 / O10
X3 / 2.3	18	DO524 / O11
X3 / 2.4	19	DO524 / O12
X3 / 2.5	20	DO524 / O13
X3 / 2.6	21	DO524 / O14
X3 / 2.7	22	DO524 / O15
X3 / UP/L+	23	UP/L+

Table 130: Pin assignment 24 V DC (X4)

Connector / Terminal	Pin	Assignment / Signal
X4 / L+	24	L+
X4 / L+	25	L+
X4 / M	26	M
X4 / M	27	M
X4 / FE	28	FE

Table 131: Pin assignment DC (X5)

Connector / Terminal	Pin	Assignment / Signal
X5 / ZP/M	29	ZP/M
X5 / 3.0	30	DO524 / O16
X5 / 3.1	31	DO524 / O17
X5 / 3.2	32	DO524 / O18
X5 / 3.3	33	DO524 / O19
X5 / 3.4	34	DO524 / O20
X5 / 3.5	35	DO524 / O21
X5 / 3.6	36	DO524 / O22
X5 / 3.7	37	DO524 / O23
X5 / UP/L+	38	UP/L+

Table 132: Pin assignment DC (X6)

Connector / Terminal	Pin	Assignment / Signal
X6 / ZP/M	39	ZP/M
X6 / 4.0	40	DO524 / O24
X6 / 4.1	41	DO524 / O25
X6 / 4.2	42	DO524 / O26
X6 / 4.3	43	DO524 / O27
X6 / 4.4	44	DO524 / O28
X6 / 4.5	45	DO524 / O29
X6 / 4.6	46	DO524 / O30
X6 / 4.7	47	DO524 / O31
X6 / UP/L+	48	UP/L+

145.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

145.4 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

145.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

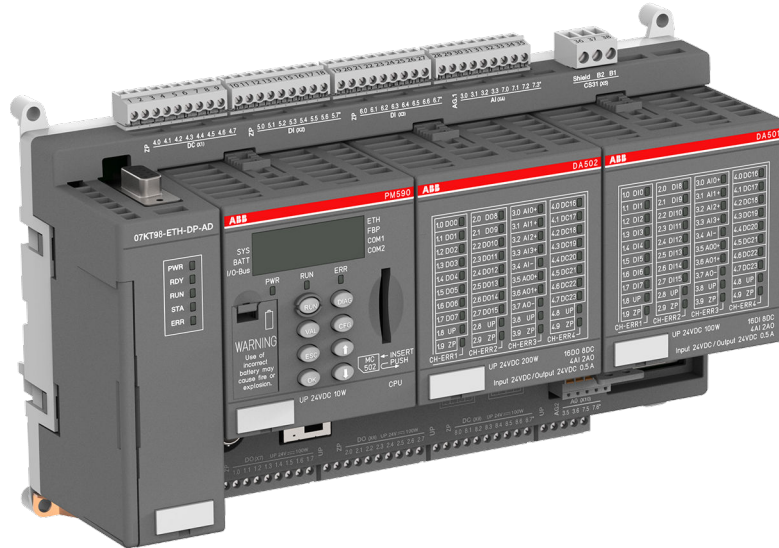
It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

146 07KT9x-AD

- 07KT9x-AD



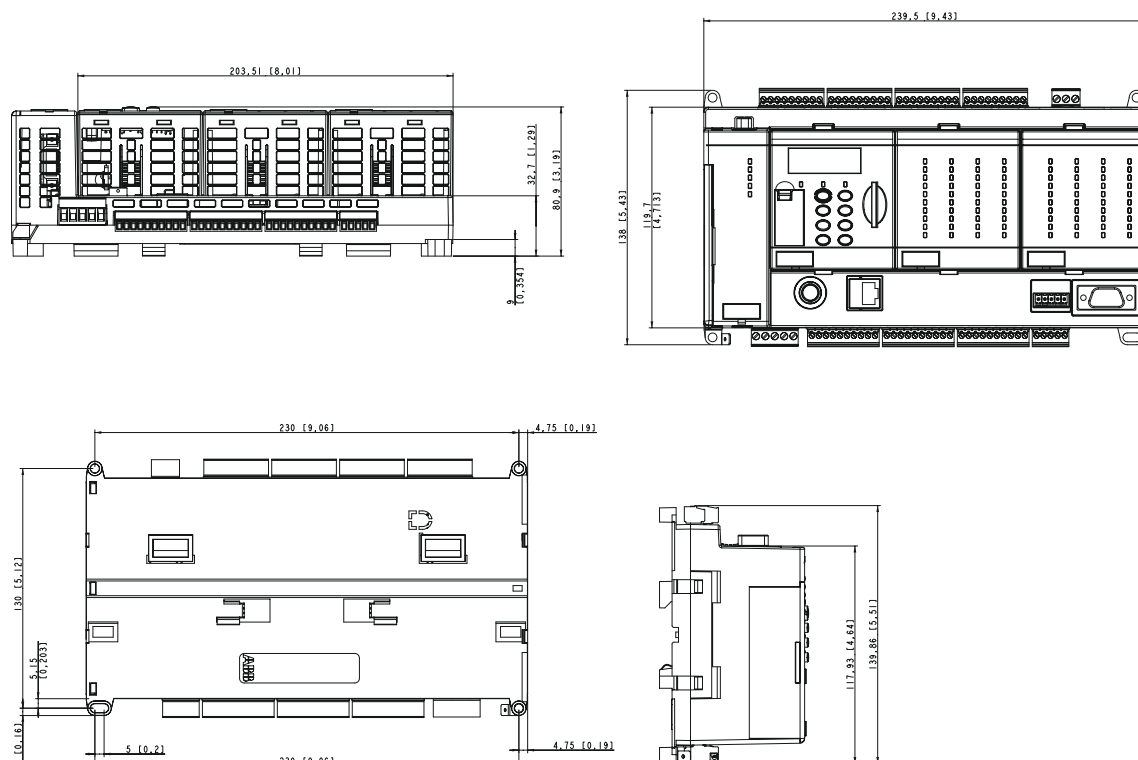
CAUTION!

Risk of injury and damaging the product!

Improper installation and maintenance may result in injury and can damage the product!

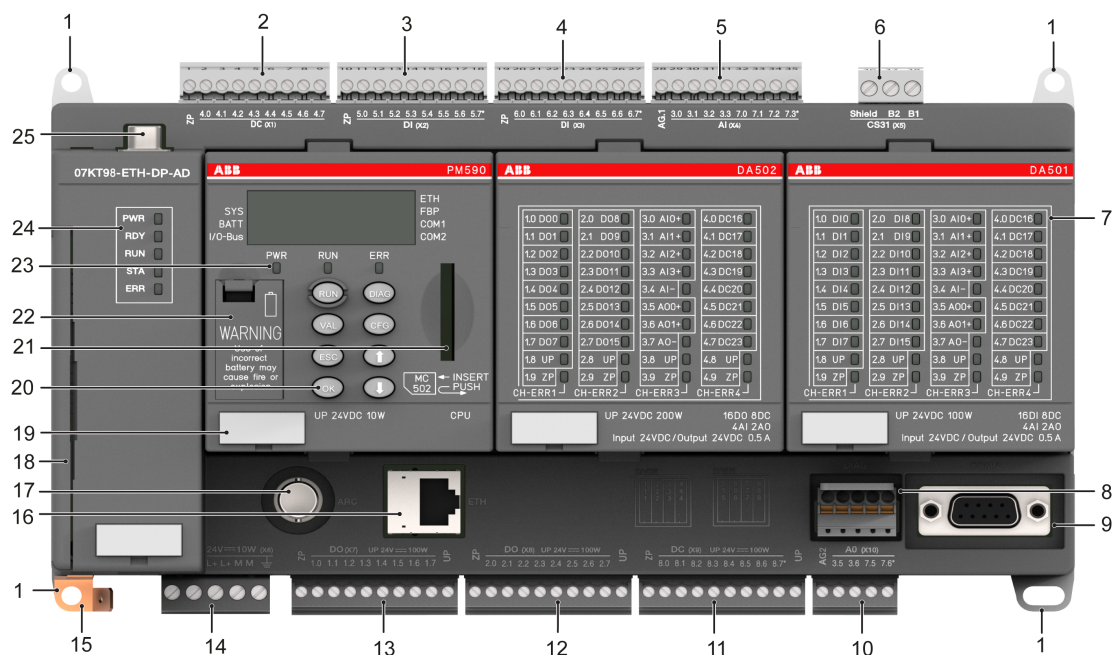
- Installation and maintenance have to be performed according to the technical rules, codes and relevant standards, e.g. EN 60204-1.
- Only by qualified personnel.

146.1 Dimensions



The dimensions are in mm and in brackets in inch.

146.2 Connections



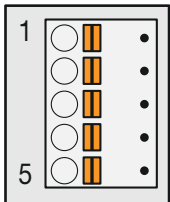
- 1 Hole for screw mounting (screw diameter 4 mm, extension torque 1.2 Nm)
- 2 Digital inputs/outputs for DA502

- 3 Digital inputs for DA501
- 4 Digital inputs for DA501
- 5 Analog inputs for DA501/DA502
- 6 CS31 bus Interface
- 7 Status LEDs for DA501/DA502
- 8 DIAG: Serial interface (diagnosis)
- 9 COM2: Serial interface (thread UNC 4-40)
- 10 Analog outputs for DA501/DA502. ± 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA in one group
- 11 Digital inputs/outputs for DA501
- 12 Digital outputs for DA502
- 13 Digital outputs for DA502
- 14 Supply voltage connection 24 V DC (CPU and communication module)
- 15 Ground connection (FE). Connection for 6.3 mm Faston.
- 16 Ethernet: Network interface (function depends on device version)
- 17 Interface for ARCNET (BNC)
- 18 External network interface
- 19 TA525: Label
- 20 8 operating buttons
- 21 Memory card
- 22 Battery compartment for lithium battery TA521
- 23 3 system LEDs
- 24 5 status LEDs (only for PROFIBUS)
- 25 Connection for PROFIBUS (optional) (function depends on device version)

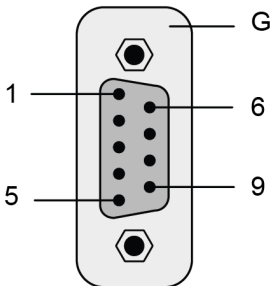


All I/O channels (digital and analog) are protected against reverse polarity, reverse supply and temporary overvoltage up to 30 VDC.

146.2.1 Diagnosis connector

	PIN	Signal	Description
	1	NC	Not connected
	2	TX	Transmit data
	3	M	M
	4	RX	Receive data
	5	FE	FE

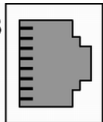
146.2.2 Serial interface COM2

	PIN	Signal	Description
	G	Housing	FE
	1	FE	FE (shield)
	2	TxD	Transmit data (output)
	3	RxD	Receive data (input)
	4	RTS	Request to send (output)
	5	CTS	Clear to send (input)
	6	NC	-

	PIN	Signal	Description
	7	SGND	Signal ground (SGND)
	8	0 V out	-
	9	+5 V out	Reserved

146.2.3 Ethernet network interface

Pin assignment

 RJ45	PIN	Signal	Description
	1	TxD+	Transmit data +
	2	TxD-	Transmit data -
	3	RxD+	Receive data +
	4	NU	Not used
	5	NU	Not used
	6	RxD-	Receive data -
	7	NU	Not used
	8	NU	Not used
	Shield	Cable shield	Functional earth



NOTICE!
Risk of corrosion!
Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices.

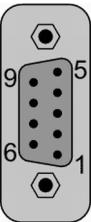
146.2.4 ARCNET



ARCNET BNC

146.2.5 PROFIBUS interface

Pin Assignment

	Pin	Signal	Description
	1	NC	Not connected
	2	NC	Not connected
	3	RxD/TxD-P	Receive/Transmit positive
	4	CNTR-P	Control signal for repeater, positive
	5	DGND	Reference potential for data exchange and +5 V

	Pin	Signal	Description
	6	VP	+5 V (power supply for the bus terminating resistors)
	7	NC	Not connected
	8	RxD/TxD-N	Receive/Transmit negative
	9	NC	Not connected



In corrosive environment, please protect unused connectors using the TA535 accessory.

Not supplied with this device.

146.2.6 Plug connection

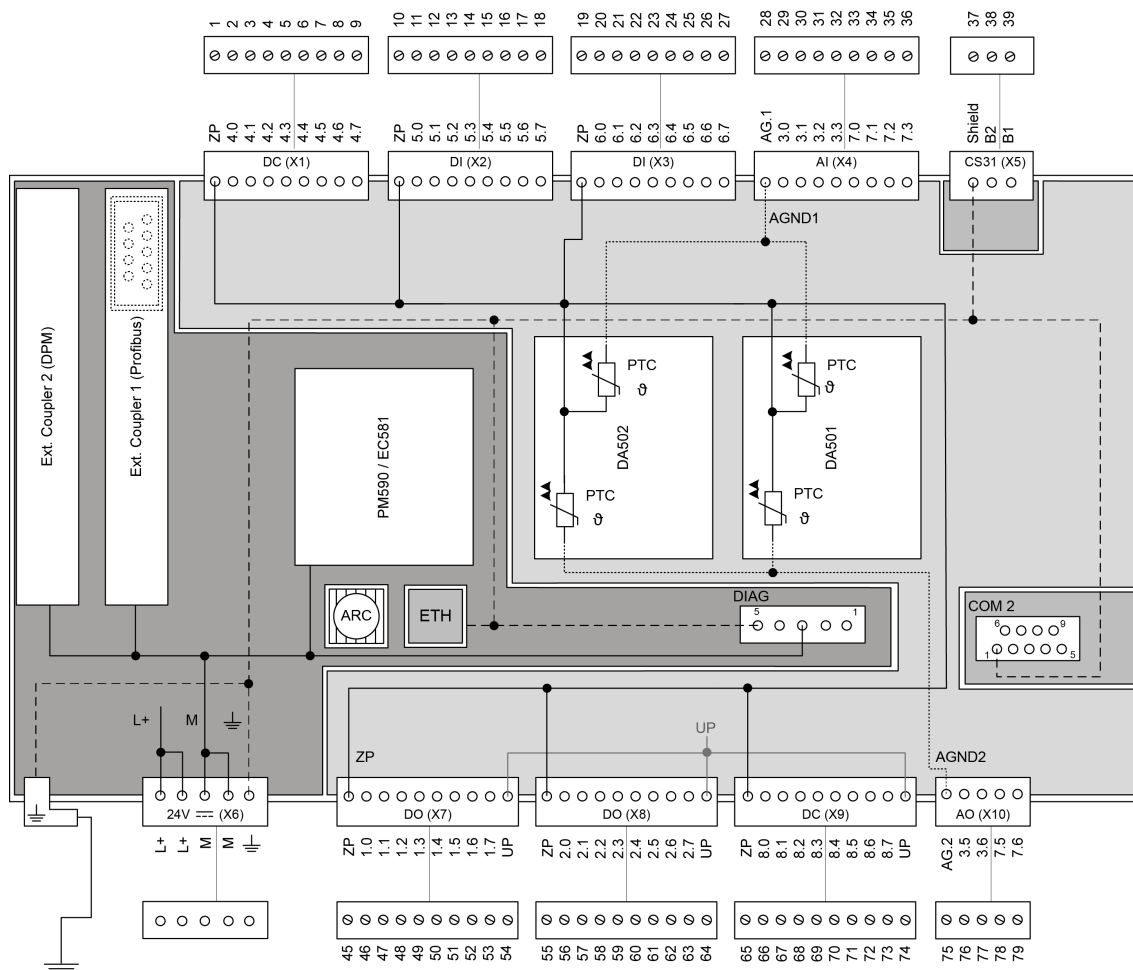


Table 133: Connector (X1)

Connector / Terminal	Pin	Assignment / Signal
X1 / ZP	1	ZP
X1 / 4.0	2	DA502 / DC16
X1 / 4.1	3	DA502 / DC17
X1 / 4.2	4	DA502 / DC18

Connector / Terminal	Pin	Assignment / Signal
X1 / 4.3	5	DA502 / DC19
X1 / 4.4	6	DA502 / DC20
X1 / 4.5	7	DA502 / DC21
X1 / 4.6	8	DA502 / DC22
X1 / 4.7	9	DA502 / DC23

Table 134: Connector X2

Connector / Terminal	Pin	Assignment / Signal
X2 / ZP	10	ZP
X2 / 5.0	11	DA501 / DI0
X2 / 5.1	12	DA501 / DI1
X2 / 5.2	13	DA501 / DI2
X2 / 5.3	14	DA501 / DI3
X2 / 5.4	15	DA501 / DI4
X2 / 5.5	16	DA501 / DI5
X2 / 5.6	17	DA501 / DI6
X2 / 5.7	18	DA501 / DI7

Table 135: Connector (X3)

Connector / Terminal	Pin	Assignment / Signal
X3 / ZP	19	ZP
X3 / 6.0	20	DA501 / DI8
X3 / 6.1	21	DA501 / DI9
X3 / 6.2	22	DA501 / DI10
X3 / 6.3	23	DA501 / DI11
X3 / 6.4	24	DA501 / DI12
X3 / 6.5	25	DA501 / DI13
X3 / 6.6	26	DA501 / DI14
X3 / 6.7	27	DA501 / DI15

Table 136: Connector (X4)

Connector / Terminal	Pin	Assignment / Signal
X4 / AG.1	28	AGND1
X4 / 3.0	29	DA502 / AI0+
X4 / 3.1	30	DA502 / AI1+
X4 / 3.2	31	DA502 / AI2+
X4 / 3.3	32	DA502 / AI3+
X4 / 7.0	33	DA501 / AI0+
X4 / 7.1	34	DA501 / AI1+

Connector / Terminal	Pin	Assignment / Signal
X4 / 7.2	35	DA501 / AI2+
X4 / 7.3	36	DA501 / AI3+

To be able to use the analog inputs, UP must be connected. L+/M and UP/ZP must always be supplied with voltage.

Table 137: Connector (X5)

Connector / Terminal	Pin	Assignment / Signal
X5 / shield	37	Shield (functional earth)
X5 / B2	38	BUS2
X5 / B1	39	BUS1



Terminal "Shield" is internally connected to FE. The previous grounding measures, e.g. with clip at the control cabinet, are still required.

If 07KT9x-AD is connected to one of the bus ends, a 120 Ω resistor must be connected for bus termination. The device 07KT9x-AD always functions as master. Slave operation is not possible. Further information on CS31 bus.

Table 138: Connector (X6)

Connector / Terminal	Pin	Assignment / Signal
X6 / L+	40	Supply voltage +24 V DC
X6 / L+	41	Supply voltage +24 V DC
X6 / M	42	Ground connection (0 V)
X6 / M	43	Ground connection (0 V)
X6 / functional earth	44	The functional earth (FE) is connected to the Faston terminal inside the device. Ensure that no ground loops are created and that FE and Faston are connected to the same ground potential.



NOTICE!

- In addition to connecting the supply voltage (L+/M) to X6, the supply voltage (UP/ZP) must be connected to all connectors.
- ZP must be connected to all connectors (X1, X2, X3, X7, X8, X9).
- UP must be connected to all connectors (X7, X8, X9).
- L+/M and UP/ZP must always be supplied with voltage.

Table 139: Connector (X7)

Connector / Terminal	Pin	Assignment / Signal
X7 / ZP	45	ZP
X7 / 1.0	46	DA502 / DO0

Connector / Terminal	Pin	Assignment / Signal
X7 / 1.1	47	DA502 / DO1
X7 / 1.2	48	DA502 / DO2
X7 / 1.3	49	DA502 / DO3
X7 / 1.4	50	DA502 / DO4
X7 / 1.5	51	DA502 / DO5
X7 / 1.6	52	DA502 / DO6
X7 / 1.7	53	DA502 / DO7
X7 / UP	54	UP

Table 140: Connector (X8)

Connector / Terminal	Pin	Assignment / Signal
X8 / ZP	55	ZP
X8 / 2.0	56	DA502 / DO8
X8 / 2.1	57	DA502 / DO9
X8 / 2.2	58	DA502 / DO10
X8 / 2.3	59	DA502 / DO11
X8 / 2.4	60	DA502 / DO12
X8 / 2.5	61	DA502 / DO13
X8 / 2.6	62	DA502 / DO14
X8 / 2.7	63	DA502 / DO15
X8 / UP	64	UP

Table 141: Connector (X9)

Connector / Terminal	Pin	Assignment / Signal
X9 / ZP	65	ZP
X9 / 8.0	66	DA501 / DC16
X9 / 8.1	67	DA501 / DC17
X9 / 8.2	68	DA501 / DC18
X9 / 8.3	69	DA501 / DC19
X9 / 8.4	70	DA501 / DC20
X9 / 8.5	71	DA501 / DC21
X9 / 8.6	72	DA501 / DC22
X9 / 8.7	73	DA501 / DC23
X9 / UP	74	UP

Connector / Terminal	Pin	Assignment / Signal
X10 / AG.2	75	AGND2
X10 / 3.5	76	DA502 / AO0+
X10 / 3.6	77	DA502 / AO1+

Connector / Terminal	Pin	Assignment / Signal
X10 / 7.5	78	DA501 / AO0+
X10 / 7.6	79	DA501 / AO1+



UP must be connected to connectors X7, X8 and X9. The internal voltage supply to the ADC channels is no longer provided by L+ but by UP in the modules DA501 and DA502.

146.3 Cleaning



Cleaning instructions

Do not use cleaning agent for cleaning the device.

Use a damp cloth instead.

146.4 Certification



MSIP-REI-Abb-AC500

en Devices with KCC sign on product sticker and packaging

ko 제품 스티커 및 포장에 KCC 표시가 된 기기

en

Note

These devices correspond to:

KN61000-6-2 "Immunity for industrial environments",
KN61000-6-4 "Emission standard for industrial environments"

ko

참고
이러한 기기는

KN61000-6-2 "산업 환경에 대한 내성",
KN61000-6-4 "산업 환경 누출 기준"에 적합함

146.5 Recycling



Disposal and recycling information

This symbol on the product (and on its packaging) is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The symbol indicates that this product must be recycled/disposed of separately from other household waste.

It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment.

The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment.

For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or the store where you purchased the product.

ABB AG
Eppelheimer Str. 82
69123 Heidelberg, Germany
Telephone: +49 (0)6221 701 1444
E-mail: plc.support@de.abb.com
new.abb.com/plc
new.abb.com/plc/automationbuilder
new.abb.com/contact-centers