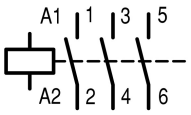
DATASHEET - DILL12(24V50HZ)

Lamp load contactor, 24 V 50 Hz, 220 V 230 V: 12 A, Contactors for lighting systems

Part no.	**DILL12(24V50HZ)**
Catalog No.	**104401**
Alternate Catalog No.	**XTCT012C00U**
EL-Nummer (Norway)	**4134238**

Delivery program

Product range			DILL Lighting contactors
Application			Contactors for lighting systems
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces
Rated operational current			
AC-5a			
220 V 230 V	I_e	A	12
380 V 400 V	I_e	A	12
AC-5b			
220 V 230 V	I_e	A	14
380 V 400 V	I_e	A	14
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	27
Contact sequence			
Actuating voltage			24 V 50 Hz
Note			Switchgear for lighting systems

DIL	L12	L18	L20	M7	M9	M12	M17	M25	M32	M40	M50
Permissible compensation capacitance	470	470	470	47	80	100	220	330	470	470	500
Filament lamp	14	21	27	6	7.5	10	14	21	27	33	42
Mercury blended lamps	12	16	23	5	6.5	8.5	12	16	23	30	38
Fluorescent lamps, conventional - reactor – starter – connection	20	26	35	9	10	15	20	26	35	41	45
Fluorescent lamps, conventional - reactor – starter – connection	20	26	35	5.5	8	13	15	22.5	29	36	47
Fluorescent lamps, duo circuit (series compensated)	12	18	20	5	6.5	8.5	12	17.5	22.5	28	35
electronic upstream devices and	12	18	20	3.5	6	10	12	17.5	20	25	30

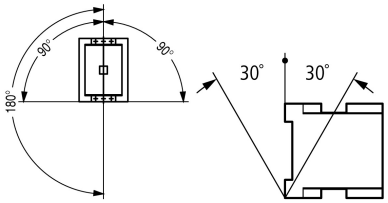
Switchgear for lighting systems LED lamps														
High-pressure mercury-arc lamps	le	[A]	12	18	20	3.5	6	10	12	17.5	20	25	30	
Metal-halide lamps	le	[A]	12	18	20	3.5	6	10	12	17.5	20	25	30	
Low-pressure sodium lamps	le	[A]	7.5	10	12	3	4	6	7.5	10	12	15	22	
Permissible compensation capacitance	DIL (Cmax)	[µF]	M65 500	M80 550	M95 620	M115 830	M150 970	M185 2055	M225 2300	M250 2600	M300 3000	M400 3250	M500 3500	A
Filament lamp	Le	[A]	55	67	79	95	125	153	187	208	349	332	415	
Mercury blended lamps	Le	[A]	45	65	67	80	110	123	150	167	200	266	332	
Fluorescent lamps, conventional - reactor – starter – connection	Ie (AC-1)	[A]	55	95	100	125	145	207	237	263	300	375	525	
Fluorescent lamps, conventional - reactor – starter – connection	Ie (AC-1)	[A]	59	71	95	100	138	186	213	236	270	338	473	
Fluorescent lamps, duo circuit (series compensated)	Ie (AC-1)	[A]	45.5	56	66.5	80.5	105	130	158	175	210	280	350	
electronic upstream devices and LED lamps	Ie (AC-1)	[A]	36	55	60	80	95	138	158	175	200	250	350	
High-pressure mercury-arc lamps	le	[A]	36	55	60	80	95	138	158	175	200	250	350	
Metal-halide lamps	le	[A]	36	55	60	80	95	138	158	175	200	250	350	
Low-pressure sodium lamps	le	[A]	25	35	40	50	70	100	11	123	140	175	245	

In compensated lamps, the sum of the capacitances must not exceed the contactors' max. permissible capacitor load (Cmax)!
The values in the table are for each contact in the contactors.

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	x 10^6	1
Operating frequency, mechanical			
AC operated	Operations/h		60
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +60

Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Mechanical shock resistance		g	6.9
Degree of Protection			IP00
Altitude		m	Max. 2000
Weight			
AC operated		kg	0.42

Main conducting paths

Rated impulse withstand voltage	U_{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V AC	690
Rated operational voltage	U_e	V AC	690
Making capacity		A	238
Breaking capacity	380 … 400 V	A	170
Lifespan, electrical	Operations		10000
Short-circuit protection maximum fuse			
400 V	gG/gL 500 V	A	63

AC

AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	27
at 60 °C	$I_{th} = I_e$	A	24
AC-5a operation			
220 V 230 V	I_e	A	12
380 V 400 V	I_e	A	12
AC-5b operation			
220 V 230 V	I_e	A	14
380 V 400 V	I_e	A	14
380 V 400 V	I_e	A	14
Electric lamps			
Filament bulbs		A	14
Mercury blended lamps		A	12
Fluorescent lamp load			
Conventional reactor starter circuit		A	20
Duo circuit		A	20
Electronic upstream devices		A	12
High-pressure mercury vapour lamps		A	12
Metal-halide lamps		A	12
High-pressure sodium lamps		A	12
Low-pressure sodium lamps		A	7.5
Maximum permissible compensation capacitance		µF	470

Additional technical data

like the contactar	DIL		M17

Rating data for approved types

Switching capacity			
General use		A	24

Short Circuit Current Rating		SCCR	
Basic Rating			
SCCR		kA	5
max. Fuse		A	125
max. CB		A	125
480 V High Fault			
SCCR (fuse)		kA	100
max. Fuse		A	70 Class J
SCCR (CB)		kA	22
max. CB		A	32
600 V High Fault			
SCCR (fuse)		kA	100
max. Fuse		A	70 Class J
SCCR (CB)		kA	22
max. CB		A	32
Special Purpose Ratings			
Incandescent Lamps (Tungsten)			
480V 60Hz 3phase, 277V 60Hz 1phase		A	24
600V 60Hz 3phase, 347V 60Hz 1phase		A	24

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	14
Heat dissipation per pole, current-dependent	P_{vid}	W	0.4
Equipment heat dissipation, current-dependent	P_{vid}	W	1.2
Static heat dissipation, non-current-dependent	P_{vs}	W	2.1
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

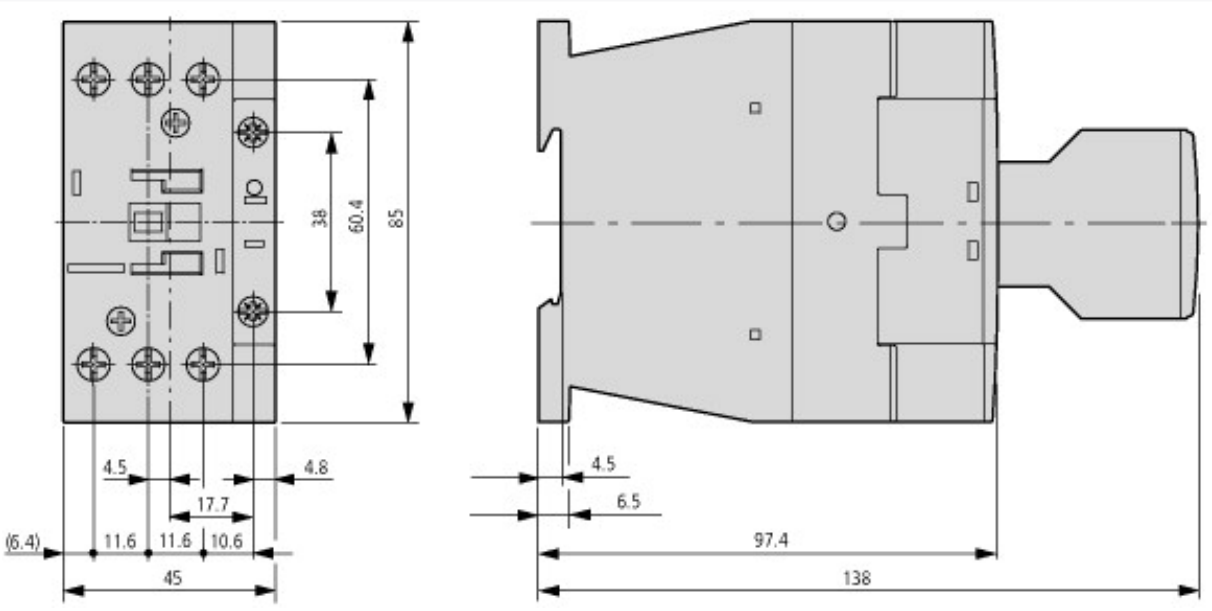
Technical data ETIM 7.0

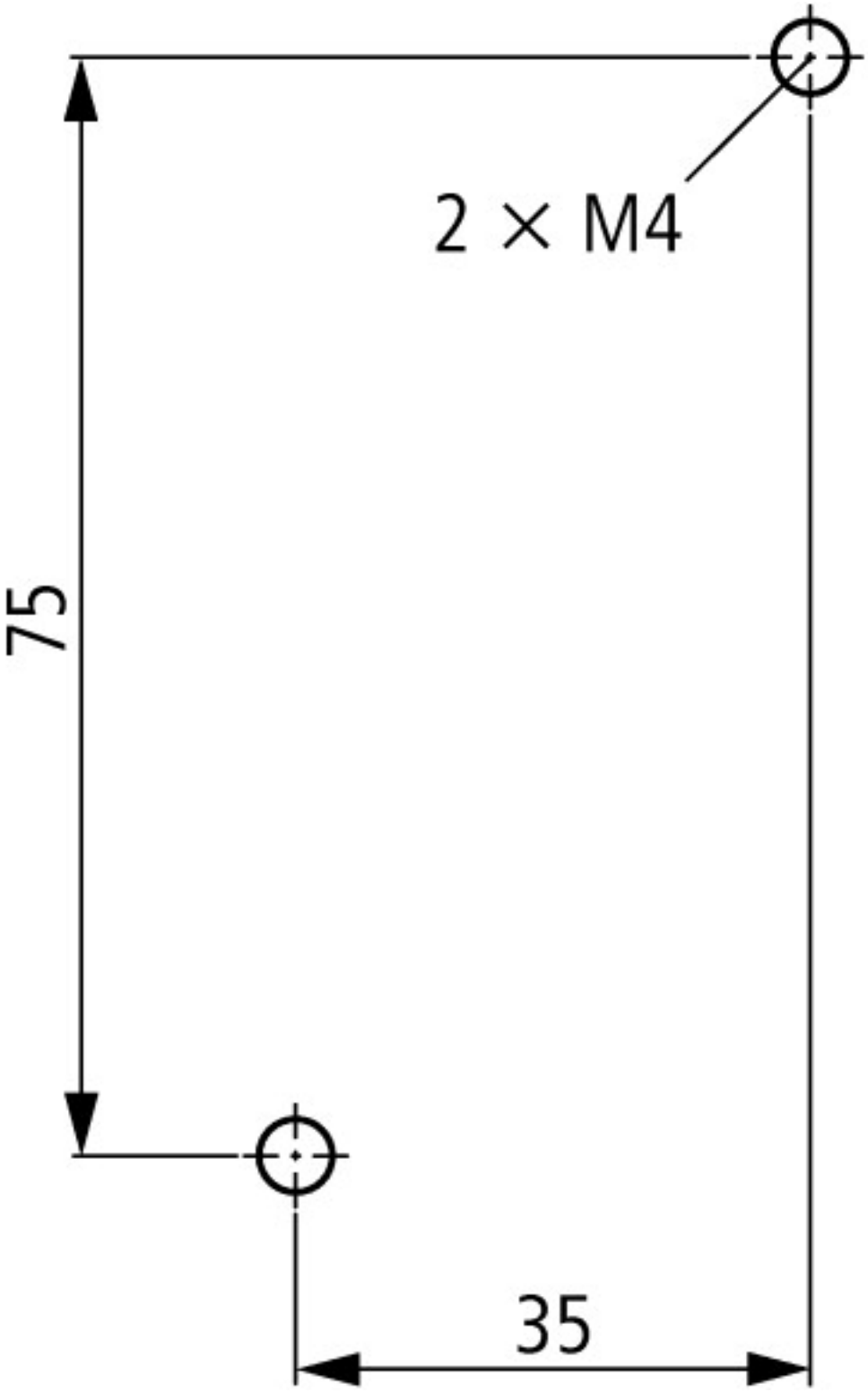
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])			
Rated control supply voltage Us at AC 50HZ		V	24 - 24
Rated control supply voltage Us at AC 60HZ		V	0 - 0
Rated control supply voltage Us at DC		V	0 - 0
Voltage type for actuating			AC
Rated operation current Ie at AC-1, 400 V		A	12
Rated operation current Ie at AC-3, 400 V		A	0
Rated operation power at AC-3, 400 V		kW	0
Rated operation current Ie at AC-4, 400 V		A	0
Rated operation power at AC-4, 400 V		kW	0
Rated operation power NEMA		kW	0
Modular version			No
Number of auxiliary contacts as normally open contact			0
Number of auxiliary contacts as normally closed contact			0
Type of electrical connection of main circuit			Screw connection
Number of normally closed contacts as main contact			0
Number of main contacts as normally open contact			3

Approvals

Product Standards			IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.			E29096
UL Category Control No.			NLDX
CSA File No.			012528
CSA Class No.			3211-04
North America Certification			UL listed, CSA certified
Specially designed for North America			No

Dimensions





distance at side to earthed parts: 6 mm

DILL12…20

Assets (links)

Declaration of CE Conformity

00002883

Instruction Leaflets

IL03407047Z2018_05