



216384  
M22-CK10

Overview

Specifications

Resources



Delivery program

Technical data

Design verification as  
per IEC/EN 61439

Technical data ETIM 7.0

Approvals

Dimensions

## DELIVERY PROGRAM

Product range  
Accessories

Basic function accessories  
Contact elements

Accessories  
Auxiliary contact

Accessories  
Standard auxiliary contact, trip-indicating auxiliary  
switch

Standard/Approval  
UL/CSA, IEC

Construction size  
NZM1/2/3/4

Description  
Cage Clamp is a registered trademark of Wago

Connection technique  
Cage Clamp

Fixing  
Front fixing

Degree of Protection  
IP20

Connection to SmartWire-DT  
no

For use with  
NZM1(-4), 2(-4), 3(-4), 4(-4)  
FN1(-4), 2(-4), 3(-4)  
N(S)1(-4), 2(-4), 3(-4), 4(-4)

Approval



## Contacts

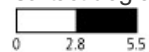
NO = Normally open  
1 NO

Contact sequence



## Contact travel diagram, stroke in connection with front element

Contact diagram



Configuration

Connection type  
Single contact

Description of HIA trip-indicating auxiliary contact  
General trip indication '+', when tripped by shunt release, overload release, short-circuit release or by the residual-current release due to residual-current.

Can be used with NZM1, 2, 3 circuit-breaker: a trip-indicating auxiliary contact can be clipped into the circuit-breaker.

Can be used with NZM4 circuit-breaker: up to two standard auxiliary contacts can be clipped into the circuit-breaker.

Any combinations of the auxiliary contact types are possible.

Not in combination with switch-disconnector FN...

Marking on switch: HIA

Labeling in FI-Block: HIAFI.

If the trip-indicating auxiliary switch in the fault current block is used, the NC contacts operates as a NO contact and the NC contact operates as an NO contact.

Description standard auxiliary contact HIN  
Switching with the main contacts Used for indicating and interlocking tasks.

Can be used with NZM1 circuit-breaker: a standard auxiliary contact can be clipped into the circuit-breaker.

Can be used with NZM2 size circuit-breaker: a standard auxiliary contact can be clipped into the circuit-breaker.

Can be used with NZM3, 4 circuit-breaker: up to three standard auxiliary contacts can be clipped into the circuit-breaker.

Any combinations of the auxiliary contact types are possible.

Marking on switch: HIN

On combination with remote operator NZM-XR... the right mounting location of standard auxiliary contact HIN can be fitted only with individual contacts.

Connection technique  
Cage Clamp

### Notes

The following can be clipped into the switches:

- NZM1: a standard auxiliary contact
- NZM2: up to two M22-(C)K... standard auxiliary contacts
- NZM3: up to three M22-(C)K... standard auxiliary contacts
- NZM4: up to three M22-(C)K... standard auxiliary contacts

Any combinations of the auxiliary contact types are possible.

Marking on switch: H1N

In combination with remote operator NZM-XR... only single contacts can be fitted to some installation locations of the standard auxiliary contact.

NZM2: Only single contact can be fitted in left installation location of standard auxiliary contact.

NZM3: Only single contact can be fitted in installation locations of standard auxiliary contact.

NZM4: Only single contact can be fitted in right installation location of standard auxiliary contact.

## TECHNICAL DATA

### General

Standards  
IEC 60947-5-1

Lifespan, mechanical [Operations]  
> 5 x 10<sup>6</sup>

Operating frequency [Operations/h]  
 3600

Actuating force  
 5 n

Degree of Protection  
IP20

Climatic proofing  
Damp heat, constant, to IEC 60068-2-78  
Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature  
Open  
-25 - +70 °C

Mechanical shock resistance to IEC 60068-2-27  
Shock duration 11 ms, half-sinusoidal  
> 30 g

Terminal capacities  
Solid  
0.75 - 2.5 mm<sup>2</sup>

Terminal capacities  
Stranded  
0.5 - 2.5 mm<sup>2</sup>

Terminal capacities  
Flexible with ferrule  
0.5 - 1.5 mm<sup>2</sup>

## Contacts

Rated impulse withstand voltage [ $U_{imp}$ ]  
6000 V AC

Rated insulation voltage [ $U_i$ ]  
500 V

Overvoltage category/pollution degree  
III/3

Control circuit reliability  
at 24 V DC/5 mA [ $I_{ct}$ ]  
<  $10^{-7}$  (i.e. 1 failure to  $10^7$  operations) Fault  
probability

Control circuit reliability  
at 5 V DC/1 mA [ $I_{ct}$ ]  
<  $5 \times 10^{-6}$  (i.e. 1 failure in  $5 \times 10^6$  operations) Fault  
probability

Max. short-circuit protective device  
Fuseless  
PKZMD-10/FAZ-B6/1 Type

Max. short-circuit protective device  
Fuse [gG/gL]  
10 A

## Switching capacity

Rated operational current [ $I_e$ ]  
AC-15  
115 V [ $I_e$ ]

6 A

Rated operational current [ $I_e$ ]  
AC-15  
220 V 230 V 240 V [ $I_e$ ]  
6 A

Rated operational current [ $I_e$ ]  
AC-15  
380 V 400 V 415 V [ $I_e$ ]  
4 A

Rated operational current [ $I_e$ ]  
AC-15  
500 V [ $I_e$ ]  
2 A

Rated operational current [ $I_e$ ]  
DC-13  
24 V [ $I_e$ ]  
3 A

Rated operational current [ $I_e$ ]  
DC-13  
42 V [ $I_e$ ]  
1.7 A

Rated operational current [ $I_e$ ]  
DC-13  
60 V [ $I_e$ ]  
1.2 A

Rated operational current [ $I_e$ ]  
DC-13  
110 V [ $I_e$ ]  
0.8 A

Rated operational current [ $I_e$ ]  
DC-13  
220 V [ $I_e$ ]  
0.3 A

Lifespan, electrical  
AC-15  
230 V/0.5 A [Operations]  
 $1.6 \times 10^6$

Lifespan, electrical  
AC-15  
230 V/1.0 A [Operations]

1 x 10<sup>6</sup>

Lifespan, electrical  
AC-15  
230 V/3.0 A [Operations]  
0.7 x 10<sup>6</sup>

Lifespan, electrical  
DV-13  
12 V/2.8 A [Operations]  
1.2 x 10<sup>6</sup>

## Auxiliary contacts

Rated operational voltage [U<sub>e</sub>]  
Rated operational voltage [U<sub>e</sub>]  
500 V AC

Rated operational voltage [U<sub>e</sub>]  
Rated operational voltage, max. [U<sub>e</sub>]  
220 V DC

Conventional thermal current [I<sub>th</sub> = I<sub>e</sub>]  
4 CSA

Rated operational current [I<sub>e</sub>]  
**Different rated operational currents** when  
used as auxiliary contact for NZM circuit-breaker

				M22- (C)K10(01)	M22- CK11(02) (20)	XHV
		<b>bei</b>				
		<b>AC =</b>				
		<b>50/60</b>				
		<b>Hz</b>				
	<b>Bemessungsbetriebsstrom</b>					
AC-15	115 V	I <sub>e</sub>	A	4	4	4
	230 V	I <sub>e</sub>	A	4	4	4
	400 V	I <sub>e</sub>	A	2	-	2
	500 V	I <sub>e</sub>	A	1	-	1
DC-13	24 V	I <sub>e</sub>	A	3	3	3
	42 V	I <sub>e</sub>	A	1.7	1	1.5
	60 V	I <sub>e</sub>	A	1.2	0.8	0.8
	110 V	I <sub>e</sub>	A	0.6	0.5	0.5
	220 V	I <sub>e</sub>	A	0.3	0.2	0.2

Short-circuit protection  
max. fuse

10 A gG/gL

Short-circuit protection  
Max. miniature circuit-breaker  
FAZ-B6/B1 A

#### Operating times

Early-make time of the HIV compared to the main contacts during with make and break switching.

(switch times with manual operation):

NZM1, FN1, N(S)1: ca. 20 ms

NZM2, FN2, N(S)2: ca. 20 ms

NZM3, FN3, N(S)3: ca. 20 ms

NZM4, N(S)4: approx. 90 ms, the HIV switch early  
**Offswitching not forward.**

#### Terminal capacities

Solid or flexible conductor, with ferrule

1 x (0,75 - 2,5)

2 x (0,75 - 2,5) mm<sup>2</sup>

#### Other technical data (sheet catalogue)

Maximum equipment and position of the internal accessories

## DESIGN VERIFICATION AS PER IEC/EN 61439

### Technical data for design verification

Rated operational current for specified heat dissipation [ $I_n$ ]  
6 A

Heat dissipation per pole, current-dependent [ $P_{id}$ ]  
0.11 W

Equipment heat dissipation, current-dependent  
[ $P_{id}$ ]  
0 W

Static heat dissipation, non-current-dependent [ $P_{vs}$ ]  
0 W



Heat dissipation capacity [ $P_{\text{diss}}$ ]  
0 W

Operating ambient temperature min.  
-25 °C

Operating ambient temperature max.  
+70 °C

## 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 Strength of materials and parts  
10.2.3.1 Verification of thermal stability of enclosures  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.2 Verification of resistance of insulating materials to normal heat  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
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 Strength of materials and parts  
10.2.4 Resistance to ultra-violet (UV) radiation  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.5 Lifting  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
10.2.6 Mechanical impact  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
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 Insulation properties

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9 Insulation properties

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) / Auxiliary contact block (EC000041)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Component for low-voltage switching technology / Auxiliary switch block (ecl@ss10.0.1-27-37-13-02 [AKN342013])

Number of contacts as change-over contact  
0

Number of contacts as normally open contact  
1

Number of contacts as normally closed contact  
0

Number of fault-signal switches  
0

Rated operation current  $I_e$  at AC-15, 230 V  
6 A

Type of electric connection  
Spring clamp connection

Model  
Top mounting and integrable

Mounting method  
Front fastening

Lamp holder  
None

## APPROVALS

Product Standards  
IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14-05;  
CSA-C22.2 No. 94-91; CE marking

UL File No.  
E29184

UL Category Control No.  
NKCR

CSA File No.  
012528

CSA Class No.  
3211-03

North America Certification  
UL listed, CSA certified

Degree of Protection  
UL/CSA Type: -

## DIMENSIONS



A = 39



Pushbutton with M22-(C)K...  
Pushbutton with M22-(C) LED... + M22-XLED...

