## **DATASHEET - M22-AK10**



## Contact element, 1N/O, front mount, screw connection

Powering Business Worldwide\*

Part no. M22-AK10
Catalog No. 216504
Alternate Catalog M22-AK100

No.

**EL-Nummer** 4355432

(Norway)

### **Delivery program**

Delivery program		
Basic function accessories		Contact elements
Description		Assembly of contact element with screw terminals and fixing adapter
Connection technique		Screw terminals
Fixing		Front fixing
Degree of Protection		IP20
Connection to SmartWire-DT		no
Contacts		
N/0 = Normally open		1 N/O
Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1		
Minimum force for positive opening	N	0
		14
Contact travel diagram, stroke in connection with front element		
Contact diagram		0 2.8 5.5
Configuration		1/4 3/6 2/5
Connection technique		Screw terminals

### **Technical data**

#### General

General			
Standards			IEC 60947-5-1
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	>5
Operating frequency	Operations/h		≦ 3600
Actuating force		n	≦5
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		°C	-25 - +70
Terminal capacities		$\text{mm}^2$	
Solid		$\text{mm}^2$	0.75 - 2.5

Stranded		2	0.5 - 2.5
		mm <sup>2</sup>	
Flexible with ferrule		mm <sup>2</sup>	0.5 - 1.5
Contacts			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Rated insulation voltage	Ui	V	500
Overvoltage category/pollution degree			III/3
Control circuit reliability			
at 24 V DC/5 mA	H <sub>F</sub>	Fault probabilit	$< 10^{-7}$ , $< 1$ fault in $10^7$ operations ty
at 5 V DC/1 mA	H <sub>F</sub>	Fault probabilit	< 5 x 10 <sup>-6</sup> , < 1 failure in 5 x 10 <sup>6</sup> operations
Max. short-circuit protective device			
Fuseless		Туре	PKZM0-10/FAZ-B6/1
Fuse	gG/gL	Α	10
Switching capacity			
Rated operational current	l <sub>e</sub>	Α	
AC-15			
115 V	l <sub>e</sub>	Α	6
220 V 230 V 240 V	l <sub>e</sub>	Α	6
380 V 400 V 415 V	l <sub>e</sub>	Α	4
500 V	l <sub>e</sub>	Α	2
DC-13			
24 V	I <sub>e</sub>	Α	3
42 V	l <sub>e</sub>	Α	1.7
60 V	l <sub>e</sub>	Α	1.2
110 V	l <sub>e</sub>	Α	0.8
220 V	I <sub>e</sub>	Α	0.3
Lifespan, electrical			
AC-15			
230 V/0.5 A	Operations	x 10 <sup>6</sup>	1.6
230 V/1.0 A	Operations	x 10 <sup>6</sup>	1
230 V/3.0 A	Operations	x 10 <sup>6</sup>	0.7
DV-13			
12 V/2.8 A	Operations	x 10 <sup>6</sup>	1.2

# Design verification as per IEC/EN 61439

Rated operational current for specified heat dissipation In A 6  Heat dissipation per pole, current-dependent P <sub>vid</sub> W 0.11  Equipment heat dissipation, current-dependent P <sub>vid</sub> W 0  Static heat dissipation, non-current-dependent P <sub>vs</sub> W 0  Heat dissipation capacity P <sub>diss</sub> W 0  Operating ambient temperature min. °C -25  Operating ambient temperature max. °C 70				
Heat dissipation per pole, current-dependent  Equipment heat dissipation, current-dependent  Pvid  V  0  Static heat dissipation, non-current-dependent  Pvs  V  0  Heat dissipation capacity  Pdiss  V  0  Operating ambient temperature min.  Operating ambient temperature max.  Operating ambient temperature max.  IEC/EN 61439 design verification  10.2 Strength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  Pvid  W  0  0  0  0  0  0  0  0  0  0  0  0	Technical data for design verification			
Equipment heat dissipation, current-dependent  Perior W 0  Static heat dissipation, non-current-dependent  Poror W 0  Heat dissipation capacity  Poliss W 0  Operating ambient temperature min.  Operating ambient temperature max.  Operating ambient temperature max.  Inc. 2 trength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  Prior W 0  O 0  O 0  O 0  O 0  O 0  O 0  O 0	Rated operational current for specified heat dissipation	In	Α	6
Static heat dissipation, non-current-dependent  Pos W 0  Heat dissipation capacity  Pdiss W 0  Operating ambient temperature min.  Operating ambient temperature max.  Operating ambient temperature max.  IEC/EN 61439 design verification  10.2 Strength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  W 0  Meets the product standard's requirements.  Meets the product standard's requirements.	Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.11
Heat dissipation capacity  Operating ambient temperature min.  Operating ambient temperature max.  Operating ambient temperature max.  CC -25  Operating ambient temperature max.  CC 70  IEC/EN 61439 design verification  10.2 Strength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects  10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Operating ambient temperature min.  Operating ambient temperature max.  Operating ambient temperature max.  OPEC 70  IEC/EN 61439 design verification  10.2 Strength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat  10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  Operating ambient temperature min.  °C 70  Reets the product standard's requirements.  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Operating ambient temperature max.  IEC/EN 61439 design verification  10.2 Strength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat  10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  or 70  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	Heat dissipation capacity	P <sub>diss</sub>	W	0
IEC/EN 61439 design verification  10.2 Strength of materials and parts  10.2.2 Corrosion resistance  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat  10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	Operating ambient temperature min.		°C	-25
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  10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  Meets the product standard's requirements.  Meets the product standard's requirements.  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	Operating ambient temperature max.		°C	70
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.  Does not apply, since the entire switchgear needs to be evaluated.	IEC/EN 61439 design verification			
10.2.3.1 Verification of thermal stability of enclosures  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	10.2 Strength of materials and parts			
10.2.3.2 Verification of resistance of insulating materials to normal heat  10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  Meets the product standard's requirements.  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.	10.2.2 Corrosion resistance			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  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.	10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
and fire due to internal electric effects  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.	10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.5 Lifting  Does not apply, since the entire switchgear needs to be evaluated.				Meets the product standard's requirements.
	10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.6 Mechanical impact Does not apply, since the entire switchgear needs to be evaluated.	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 b observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must b observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

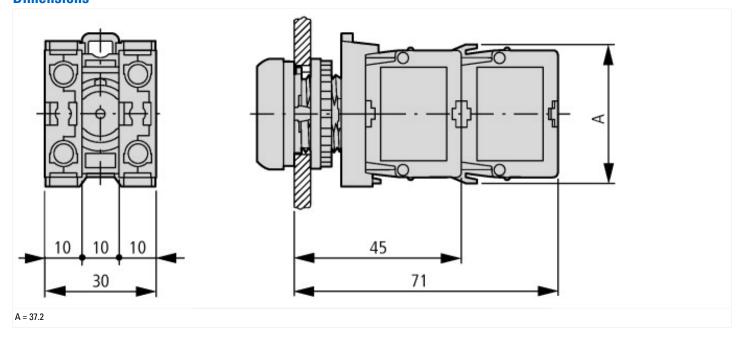
## **Technical data ETIM 7.0**

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 Number of contacts as normally closed contact 0 Number of fault-signal switches 0 Rated operation current le at AC-15, 230 V Α 6 Type of electric connection Screw connection Model Top mounting 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**



## **Assets (links)**

**Declaration of CE Conformity** 00003255