## DATASHEET - M22-AK11



Assembly of contact element with screw terminals and fixing adapter, 1 N/0, 1 NC  $\,$ 



Part no.	M22-AK11
Catalog No.	216505
Alternate Catalog	M22-AK11Q
No.	
EL-Nummer	4355433
(Norway)	

# Delivery program

Finding     Front fixing       Degree of Protection     P20       Contacts     P20       Notes     Note       Notes     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Minimum force for positive opening     Note Second force as per DIN EN 60947-5-1       Contact travel diagram, stroke in connection with front     Note Second force as per DIN EN 60947-5-1       Contact diagram     Note Second force as per DIN EN 60947-5-1       Contact diagram     Note Second force as per DIN EN 60947-5-1       Contact travel diagram, stroke in connection with front     Note Second force as per DIN EN 60947-5-1       Output     Note Second force as per DIN E	Basic function accessories		Contact elements
Friding         Friding         Friding         Friding           Degree of Protection         IP20         IP20           Contacts         IP20         IP20           Contacts         IP20         IP20           Normally open         IP20         IP20           NOr Normally open         IP20         IP20           Actuator travel and actuation force as per DINEN 60947-51 (P200497-51)         IP20         IP20           Maximum force for positive opening to IEC/FN 60947-51 (P200497-51)         IP20         IP20           Maximum force for positive opening to IEC/FN 60947-51 (P200497-51)         IP20         IP20           Maximum force for positive opening to IEC/FN 60947-51 (P200497-51)         IP20         IP20           Contact sequence         IP20         IP20         IP20           Contact travel diagram, stroke in connection with front         IP20         IP20         IP20           Contact diagram         Contact diagram         IP20         IP20 </td <td>Description</td> <td></td> <td>Assembly of contact element with screw terminals and fixing adapter</td>	Description		Assembly of contact element with screw terminals and fixing adapter
Degree of Protection     P20       Contects     no       Notes     NoteS       Actuator travel and actuation force as per DIN EN 60947-5-1     Image: State S	Connection technique		Screw terminals
contacts       no         NO = Normally open       INO         NC = Normally open       INC          Notes       INC          Actuator travel and actuation force as per DIN EN 60947-5-1       INC          Maximum travel       mm       6         Maximum travel       mm       5         Minimum force for positive opening       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Fixing		Front fixing
Contacts     Image: Contact sequence     Image: Co	Degree of Protection		IP20
N/0 = Normally open         IN/0           N/C = Normally closed         IN/0           Notes         In/0           Actuation force as per DIN EN 60947-5-1;         Im/0           K5.4.1         Im/0           Maximum travel         Im/0           Maximum force for positive opening to IEC/EN 60947-5-1         Im/0           Maximum force for positive opening         Im/0           Maximum force for positive opening         N           Contact sequence         Im/0           Contact sequence         Im/0           Contact travel diagram, stroke in connection with front element         Im/0           Contact diagram         Im/0           Im/0         Im/0	Connection to SmartWire-DT		no
NC = Normality closed         In C ()           Notes         Image: Contract travel and actuation force as per DIN EN 60947-5-1         Image: Contract travel and actuation force as per DIN EN 60947-5-1           Actuator travel and actuation force as per DIN EN 60947-5-1         Image: Contract travel and actuation force as per DIN EN 60947-5-1           Maximum travel         mm         4.8           Maximum travel         mm         5.7           Minimum force for positive opening         No         20           Contact sequence         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element         Image: Contact travel diagram, stroke in connection with front element	Contacts		
Notes         Maximum fravel         Maximum fravel </td <td>N/O = Normally open</td> <td></td> <td>1 N/O</td>	N/O = Normally open		1 N/O
Actuation force as per DIN EN 60947-5-1       V       48         Image: Second price opening to IEC/EN 60947-5-1       Maximum travel       Maximum travel         Maximum force for positive opening       Maximum force for positive opening       Image: Second price opening         Minimum force for positive opening       N       Image: Second price opening       Image: Second price opening         Contact sequence       Maximum travel       Maximum travel       Image: Second price opening       Image: Second price opening         Contact travel diagram, stroke in connection with front element       Second price opening       Image: Second price opening       Image: Second price opening         Contact diagram       Second price opening       Second price opening       Image: Second price opening       Image: Second price opening         Contact diagram       Second price opening       Second price opening       Second price opening       Second price opening         Contact diagram       Second price opening         Contact diagram       Second price opening         Contact diagram       Second price opening       Second price opening       Second price opening       Second price	N/C = Normally closed		1 NC 🛞
K5.4.1       mm       4.8         Maximum travel       mm       5.7         Minimum force for positive opening       N       20         Contact sequence       Image: Amage:	Notes		$\Theta$ = safety function, by positive opening to IEC/EN 60947-5-1
Maximum travelnm57Minimum force for positive openingN2Contact sequenceImage: SequenceImage: SequenceContact sequenceImage: SequenceImage: SequenceContact diagram, stroke in connection with front elementImage: SequenceImage: SequenceContact diagramImage: SequenceImage: Sequence <t< td=""><td>Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1</td><td></td><td></td></t<>	Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1		
Minimum force for positive opening N 20   Contact sequence I I   I I I   I I I   I I I   I I I   I I I   I I I   I I I   I I I   I I I		mm	4.8
Contact sequence     Contact travel diagram, stroke in connection with front element     Contact diagram     Contact diag	Maximum travel	mm	5.7
Contact travel diagram, stroke in connection with front element   Contact diagram   Contact diagram     Contact diagram	Minimum force for positive opening	Ν	20
element       Contact diagram       Configuration	Contact sequence		\ <del>7</del>
Configuration Configuration			
	Contact diagram		
Connection technique Screw terminals	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 10
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		mm <sup>2</sup>	
Solid		mm <sup>2</sup>	0.75 - 2.5
Stranded		mm <sup>2</sup>	0.5 - 2.5
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			111/3
Control circuit reliability			
at 24 V DC/5 mA	H <sub>F</sub>	Fault probabili	< 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations ty
at 5 V DC/1 mA	H <sub>F</sub>	Fault probabili	< 5 x 10 <sup>-6</sup> , < 1 failure in 5 x 10 <sup>6</sup> operations ty
Max. short-circuit protective device			
Fuseless		Туре	PKZM0-10/FAZ-B6/1
Fuse	gG/gL	A	10
Switching capacity Rated operational current	I <sub>e</sub>	A	
AC-15	·e		
115 V	I <sub>e</sub>	A	6
220 V 230 V 240 V	l <sub>e</sub>	A	6
380 V 400 V 415 V	l <sub>e</sub>	А	4
500 V	l <sub>e</sub>	A	2
DC-13	6		
24 V	I <sub>e</sub>	A	3
42 V	l <sub>e</sub>	A	1.7
60 V	l <sub>e</sub>	A	1.2
110 V	l <sub>e</sub>	A	0.8
220 V	l <sub>e</sub>	A	0.3
Lifespan, electrical	-8		
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
Auxiliary contacts			
Rated conditional short-circuit current	۱ <sub>q</sub>	kA	1

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	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
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) / 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 1 Number of fault-signal switches 0 Rated operation current le at AC-15, 230 V 6 А 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: -

