# DATASHEET - M22-AK11



Contact element, 1N/O+1N/C, front mount, screw connection



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

# **Delivery program**

DescriptionAssembly of contact dement with screw terminals and foring adapterContection techniqueScrew terminalsPoingFont foringDegree of ProtocionPalaContectsnoNO - Normally openNVONC - Normally closedNVONotesNVC $\Rightarrow$ Actuator travel and actuation force as per DIN EN 60947-5-1 $\Rightarrow$ Maximum travelmm5.7Mainimum travelmm5.7Minimum torce for positive openingN20Contact sequence $113 + 121 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 122 + 1$	Basic function accessories		Contact elements
FixingFront fixingFront fixingDegree of ProtectionIP20Connection to SmartWire-DTIP20NOT = Normally openINONC = Normally closedINONotesINC IPActuator travel and actuation force as per DIN EN 60947-5-1INC IPMaximum travelmm5.7Maximum force for positive openingNContact sequenceIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Description		Assembly of contact element with screw terminals and fixing adapter
Degree of Protection     P20       Contacts     no       NO = Normally open     1 N/O       NC = Normally closed     1 N/C •       Notes     •       Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.     •       Maximum travel     mm       Mainimum force for positive opening     N       Contact sequence     11/3       Contact diagram, stroke in connection with front element     11/3       Contact diagram     28       0.12     5.5       Contact diagram     1/4	Connection technique		Screw terminals
Connection to SmartWire-DT       no         Contacts       N0 = Normally open         NC = Normally obsed       N0         Notes       Image: SmartWise opening to IEC/EN 60947-5-1         Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1       Image: SmartWise opening to IEC/EN 60947-5-1         Maximum travel       mm       4.8         Maximum force for positive opening       5.7         Minimum force for positive opening       1.13       121         Contact sequence       N       20         Contact travel diagram, stroke in connection with front element       1.13       121         Contact diagram       N       2.8         Contact diagram       2.8       1.14       2.5         Contact diagram       S.7       1.4       3.6       2.5         Contact travel diagram, stroke in connection with front element       2.8       1.14       2.2         Contact diagram       S.7       2.8       1.4       3.6       2.5         Contact diagram       S.7       2.8       1.4       3.6       2.5         Contact diagram       S.7       2.8       1.4       3.6       2.5         Contact diagram       S.7       2.8       1.4       3.6       5	Fixing		Front fixing
ContactsImage: set of the set	Degree of Protection		IP20
N/0 = Normally openIN/0NotesIN/0NotesIN/0NotesIN/0Actuation force as per DIN EN 60947-5-1IN/0Maximum travelmmMaximum travelMmMinimum force for positive openingNContact sequenceIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Connection to SmartWire-DT		no
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Notes       Int C         Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1       = safety function, by positive opening to IEC/EN 60947-5-1         Maximum travel       mm       4.8         Maximum travel       mm       5.7         Minimum force for positive opening       N       20         Contact sequence       113 121 14 22       121 14 22         Contact travel diagram, stroke in connection with front element       2.8         Contact diagram       2.8       12 5.5         Configuration       12 3 6 2 5	N/O = Normally open		1 N/O
Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1         mm         48           Maximum travel         mm         5.7           Minimum force for positive opening         N         20           Contact sequence         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	N/C = Normally closed		1 NC 🕀
K.5.4.1         mm         4.8           Maximum travel         mm         5.7           Minimum force for positive opening         N         20           Contact sequence         Image: Amage: A			$igodoldsymbol{\Theta}$ = safety function, by positive opening to IEC/EN 60947-5-1
Maximum travelmm57Minimum force for positive openingN20Contact sequenceIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1		
Minimum force for positive openingN20Contact sequenceIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		mm	4.8
Contact sequence   Contact travel diagram, stroke in connection with front element   Contact diagram   Contact diagram   Contact diagram   Contact diagram   Contact diagram	Maximum travel	mm	5.7
Contact travel diagram, stroke in connection with front element       Contact diagram	Minimum force for positive opening	Ν	20
element     2.8       Contact diagram     0       Configuration     1/4       3/6     2/5	Contact sequence		\7
Configuration Co			
	Contact diagram		
Connection technique	Configuration		1/4 $3/6$ $2/5$
connection technique Screw terminals	Connection technique		Screw terminals

# **Technical data**

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			0.75 - 2.5
Stranded			0.5 - 2.5
Flexible with ferrule		mm <sup>2</sup>	0.5 - 1.5
Contacts			
Rated impulse withstand voltage	U <sub>imp</sub>		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 probabilit	< 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations
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 Y
Max. short-circuit protective device			
Fuseless			PKZM0-10/FAZ-B6/1
Fuse	gG/gL	А	10
Switching capacity			
Rated operational current	l <sub>e</sub>	A	
AC-15			
115 V	le	A	6
220 V 230 V 240 V	l <sub>e</sub>	A	6
380 V 400 V 415 V	le	А	4
500 V	l <sub>e</sub>	А	2
DC-13			
24 V	le	А	3
42 V	le	А	1.7
60 V	le	А	1.2
110 V	le	A	0.8
220 V	le	A	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		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	l <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**

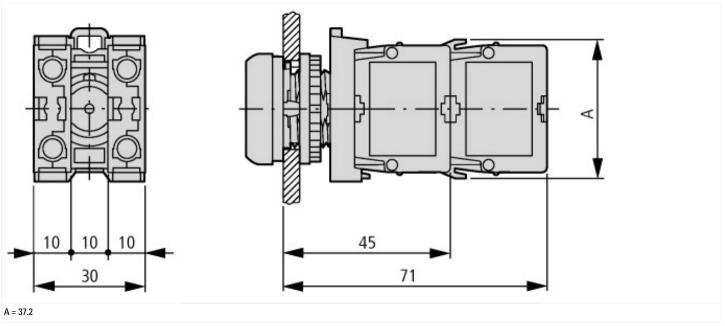
Low-voltage industrial components (EG000017) / Auxiliary contact block (EC000041)

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: -

# Dimensions



# Assets (links)

Declaration of CE Conformity 00003255