Position switch, 1N/0+1N/C, narrow,  $IP65_x$ , actuating rod



Part no. AT4/11-1/I/H Catalog No. 090671 Alternate Catalog AT4-11-1-I-H

No.



Delivery program		
Basic function		Position switches
Part group reference		AT4
Product range		Actuating rod
Degree of Protection		IP65
Features		Complete unit
Ambient temperature	°C	-25 - +70
Design		EN 50041 Form D
Description		Not to be used as a safety position switch
Approval		totally insulated
Contacts		
N/O = Normally open		1 N/O
N/C = Normally closed		1 NC
Contact sequence		0-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Contact travel = Contact closed = Contact open		13-14 21-22 0° 34° 44° 72° Zw = 50°
Colour		
Enclosure covers		Grey
Enclosure covers		
Housing		Insulated material
Connection type		Screw terminal

**Notes** The operating head can be rotated at 90° intervals to adapt to the specified approach direction. For degree of protection IP65, use V-M20 (206910) cable glands with connecting thread of max. 9 mm length.

# Technical data

General			
Standards			IEC/EN 60947
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; damp heat, cyclical, to IEC 60068-2-30
Ambient temperature		°C	-25 - +70
Mounting position			As required
Degree of Protection			IP65
Terminal capacities		mm <sup>2</sup>	
Solid		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)
Repetition accuracy		mm	0.02
Contacts/switching capacity			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Rated insulation voltage	Ui	V	500
Overvoltage category/pollution degree			III/3
Rated operational current	l <sub>e</sub>	Α	
AC-15			
24 V	I <sub>e</sub>	Α	10
220 V 230 V 240 V	Ie	Α	6
380 V 400 V 415 V	le	Α	4
DC-13			
24 V	I <sub>e</sub>	Α	10
110 V	I <sub>e</sub>	Α	1
220 V	I <sub>e</sub>	Α	0.5
Supply frequency		Hz	max. 400
Short-circuit rating to IEC/EN 60947-5-1			
max. fuse		A gG/gL	6
Rated conditional short-circuit current		kA	1
Mechanical variables			
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	8
Control town proture of roller bond		o.c	< 100

Lifespan, mechanical	Operations	x 10 <sup>6</sup>	8
Contact temperature of roller head		°C	≦ 100
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact		g	5
Snap-action contact		g	2
Operating frequency	Operations/h		≦ 6000

#### Actuation

Mechanical		
Actuating force at beginning/end of stroke	N	8.0/20.0
Actuating torque of rotary drives	Nm	0.3
Max. operating speed with DIN cam	m/s	1.4
Notes		L = 130 mm

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	6
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.1
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	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 wi provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instructio leaflet (IL) is observed.

### **Technical data ETIM 7.0** Sensors (EG000026) / End switch (EC000030)

Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1) (ecl@ss10.0.1-27-27-06-01 [AGZ382015])			
Width sensor	mm	40	

Width sensor         mm         40           Diameter sensor         mm         3           Height of sensor         mm         3           Reted to geration current le at AC-15, 24 V         A         10           Reted operation current le at AC-15, 125 V         A         6           Reted operation current le at DC-13, 24 V         A         10           Reted operation current le at DC-13, 125 V         A         10           Reted operation current le at DC-13, 125 V         A         14           Reted operation current le at DC-13, 125 V         A         14           Switching function latching         A         4         4           Switching function latching         B         No-action switch           Switching function latching         B         No-action switch           Switching function latching         B         10         No-action switch           Swit	(ecl@ss10.0.1-27-27-06-01 [AGZ382015])		
Height of sensor         mm         33           Length of sensor         mm         0           Rated operation current le at AC-15, 24 V         A         10           Rated operation current le at AC-15, 23 V         A         6           Rated operation current le at DC-13, 24 V         A         6           Rated operation current le at DC-13, 24 V         A         10           Rated operation current le at DC-13, 24 V         A         1           Rated operation current le at DC-13, 24 V         A         4           Rated operation current le at DC-13, 24 V         A         4           Rated operation current le at DC-13, 23 V         A         4           Switching function         Siow-action switch           Switching function latching         No         4           Output electronic         No         No           Forced opening         Yes         No           Number of safety auxiliary contacts         Yes         1           Number of contacts as normally closed contact         Yes         1           Number of contacts as change-over contact         Yes         None           Yupe of interface for safety communication         Yes         None           Construction type housing         Yes	Width sensor	mm	40
Length of sensor     mm     0       Rated operation current le at AC-15, 24 V     A     10       Rated operation current le at AC-15, 125 V     A     6       Rated operation current le at AC-15, 220 V     A     6       Rated operation current le at DC-13, 24 V     A     10       Rated operation current le at DC-13, 125 V     A     1       Rated operation current le at DC-13, 230 V     A     10       Switching function     No     No       Switching function     No     No       Output electronic     No     No       Forced opening     Yes     No       Number of safety auxiliary contacts     Yes     1       Number of contacts as normally closed contact     Yes     1       Number of contacts as normally open contact     Yes     1       Number of contacts as change-over contact     Yes     1       Yipe of interface for safety communication     Yes     None       Construction type housing     Yes     None       Construction type housing     Yes     None       Coting housing     Ye	Diameter sensor	mm	0
Rated operation current le at AC-15, 24 V         A         10           Rated operation current le at AC-15, 125 V         A         6           Rated operation current le at AC-15, 230 V         A         10           Rated operation current le at DC-13, 24 V         A         10           Rated operation current le at DC-13, 125 V         A         10           Rated operation current le at DC-13, 230 V         A         10           Switching function         Switching function         No         10           Switching function latching         No         No         10           Output electronic         No         No         10           Forced opening         Yes         10           Number of safety auxiliary contacts         1         1         1           Number of contacts as normally closed contact         1         1         1           Number of contacts as change-over contact         1         1         1           Type of interface         1         1         1           Type of interface for safety communication         1         1         1           Construction type housing         1         1         1           Material housing         1         1         1	Height of sensor	mm	83
Rated operation current le at AC-15, 125 V         A         0           Rated operation current le at AC-15, 230 V         A         6           Rated operation current le at DC-13, 24 V         A         10           Rated operation current le at DC-13, 125 V         A         1           Rated operation current le at DC-13, 230 V         A         0.4           Switching function         A         0.4           Switching function latching         No         No           Output electronic         Yes         No           Forced opening         Yes         1           Number of safety auxiliary contacts         Yes         1           Number of contacts as normally closed contact         Yes         1           Number of contacts as change-over contact         Yes         1           Number of contacts as change-over contact         Yes         1           Number of contacts as change-over contact         Yes         None           Type of interface         Yes         None           Construction type housing         Yes         None           Material housing         Yes         Cuboid           Cotating housing         Yes         Cuboid           Type of control element         Yes	Length of sensor	mm	0
Rated operation current le at AC-15, 230 V         A         6           Rated operation current le at DC-13, 24 V         A         10           Rated operation current le at DC-13, 125 V         A         1           Rated operation current le at DC-13, 230 V         A         0.4           Switching function         B         A         0.4           Switching function latching         No         No           Output electronic         P         Yes           Forced opening         Yes         1           Number of safety auxiliary contacts         1         1           Number of contacts as normally closed contact         Yes         1           Number of contacts as change-over contact         Yes         1           Number of contacts as change-over contact         Yes         1           Type of interface         Yes         None           Type of interface for safety communication         Yes         None           Construction type housing         Yes         None           Material housing         Yes         Cuboid           Cotting housing         Yes         Cuboid           Type of control element         Yes         Actuating rod           Alignment of the control element         Y	Rated operation current le at AC-15, 24 V	Α	10
Rated operation current le at DC-13, 24 V         A         10           Rated operation current le at DC-13, 125 V         A         1           Rated operation current le at DC-13, 230 V         A         0.4           Switching function         Slow-action switch           Switching function latching         No         No           Output electronic         Yes         No           Forced opening         Yes         No           Number of safety auxiliary contacts         1         1           Number of contacts as normally closed contact         Yes         1           Number of contacts as normally open contact         Yes         1           Number of contacts as change-over contact         Yes         None           Type of interface         None         None           Construction type housing         Yes         None           Material housing         Yes         None           Cotating housing         Yes         None           Cotating housing         Yes         None           Cotating housing         Yes         None           Cotating housing         Yes         Actuating rod           Cotating housing         Yes         Actuating rod           Cotating housing </td <td>Rated operation current le at AC-15, 125 V</td> <td>Α</td> <td>0</td>	Rated operation current le at AC-15, 125 V	Α	0
Rated operation current le at DC-13, 125 V         A         1           Rated operation current le at DC-13, 230 V         A         0.4           Switching function         Switching function latching         Iow-action switch           Switching function latching         No         No           Output electronic         No         Yes           Forced opening         Yes         1           Number of safety auxiliary contacts         1         1           Number of contacts as normally closed contact         1         1           Number of contacts as normally open contact         1         1           Number of contacts as change-over contact         No         None           Type of interface for safety communication         No         None           Construction type housing         None         Cuboid           Material housing         Plastic         Cuboid           Coating housing         Plastic         Cutter           Type of control element         Actuating rod         Actuating rod           Alignment of the control element         Wither         Actuating rod	Rated operation current le at AC-15, 230 V	Α	6
Rated operation current le at DC-13, 230 V  Switching function  Switching function  Switching function latching  Output electronic  Forced opening  Number of safety auxiliary contacts  Number of contacts as normally closed contact  Number of contacts as normally open contact  Number of contacts as change-over contact  Type of interface  Type of interface for safety communication  Construction type housing  Material housing  Coating housing  A 0.4  Slow-action switch  No  No  No  No  No  1  1  1  1  1  1  1  1  1  1  1  1  1	Rated operation current le at DC-13, 24 V	Α	10
Switching functionSlow-action switchSwitching function latchingNoOutput electronicNoForced openingYesNumber of safety auxiliary contacts1Number of contacts as normally closed contact1Number of contacts as normally open contact1Number of contacts as change-over contact0Type of interfaceNoneType of interface for safety communicationNoneConstruction type housingCuboidMaterial housingPlasticCoating housingOtherType of control elementActuating rodAlignment of the control elementOther	Rated operation current le at DC-13, 125 V	Α	1
Switching function latching Output electronic Ou	Rated operation current le at DC-13, 230 V	Α	0.4
Output electronic Forced opening Forced opening Number of safety auxiliary contacts Number of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as change-over contact  Number of contacts as change-over contact  Type of interface None Type of interface for safety communication Construction type housing Material housing Cating housing Type of control element Alignment of the control element  No  No  No  No  Note Cuboid C	Switching function		Slow-action switch
Forced opening Number of safety auxiliary contacts Number of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as change-over contact Number of contacts as normally open contact Number of contacts as normally closed contacts Number of cont	Switching function latching		No
Number of safety auxiliary contacts Number of contacts as normally closed contact Number of contacts as normally open contact  Number of contacts as normally open contact  Number of contacts as change-over contact  Number of contacts as normally open contact  Number of contacts as normally closed contact  Number of contacts as normally open contact  Number of contacts as normally closed contact  Number of contacts as normally closed contact  Number of contacts as normally closed contact  Number of contacts as normally open contacts  Number of contacts as normally open contacts  Number of contacts as normally open contacts  Number of contacts a	Output electronic		No
Number of contacts as normally closed contact  Number of contacts as normally open contact  Number of contacts as change-over contact  1  Number of contacts as change-over contact  Type of interface  Type of interface  None  Construction type housing  Material housing  Coating housing  Type of control element  Actuating rod  Other	Forced opening		Yes
Number of contacts as normally open contact  Number of contacts as change-over contact  Type of interface  Type of interface for safety communication  Construction type housing  Material housing  Coating housing  Type of control element  Alignment of the control element  I a contact as normally open contact  I a contact as normal contact as normally open contact a	Number of safety auxiliary contacts		1
Number of contacts as change-over contact  Type of interface None  Type of interface for safety communication None  Construction type housing Cuboid  Material housing Plastic  Coating housing Other  Type of control element Alignment of the control element Other	Number of contacts as normally closed contact		1
Type of interface None  Type of interface for safety communication None  Construction type housing Cuboid  Material housing Plastic  Coating housing Other  Type of control element Actuating rod  Alignment of the control element Other	Number of contacts as normally open contact		1
Type of interface for safety communication  Construction type housing  Material housing  Coating housing  Coating housing  Control element  Alignment of the control element  Other	Number of contacts as change-over contact		0
Construction type housing Cuboid Material housing Plastic Coating housing Other Type of control element Actuating rod Alignment of the control element Other	Type of interface		None
Material housing Coating housing Coating housing Type of control element Alignment of the control element Other	Type of interface for safety communication		None
Coating housing Other  Type of control element Actuating rod  Alignment of the control element Other	Construction type housing		Cuboid
Type of control element Actuating rod Alignment of the control element Other	Material housing		Plastic
Alignment of the control element Other	Coating housing		Other
	Type of control element		Actuating rod
Type of electric connection Other	Alignment of the control element		Other
	Type of electric connection		Other

With status indication		No
Suitable for safety functions		Yes
Explosion safety category for gas		None
Explosion safety category for dust		None
Ambient temperature during operating	°C	25 - 70
Degree of protection (IP)		IP65
Degree of protection (NEMA)		Other

### **Approvals**

Product Standards	UL 508; CSA-C22.2 No. 14; IEC/EN 60947-4-1; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	12528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Specially designed for North America	No
Suitable for	Branch circuits
Max. Voltage Rating	600 V AC
Degree of Protection	UL: 1, 4X; CSA: 1, 3R, 4, 4X, 12, 13