## **DATASHEET - AT4/11-S/IA/RS**



Position switch, 1N/O+1N/C, wide, IP65\_x, roller plunger

Part no. AT4/11-S/IA/RS Catalog No. 024230 Alternate Catalog AT4/11-S/IA/RS



**Delivery program** 

Delivery program		
Basic function		Position switches Safety position switches
Part group reference		AT4
Product range		Roller plunger
Degree of Protection		IP65
Features		Complete unit
Ambient temperature	°C	-25 - +70
Design		EN 50041 Form C
Approval		totally insulated
Contacts		
N/O = Normally open		1 N/0
N/C = Normally closed		1 NC →
Notes		e safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence		$0 - \frac{13}{14} = \frac{21}{22}$
Contact travel = Contact closed = Contact open		13-14 21-22 13-14 21-22 0 1.3 2.7 5.7 mm Zw = 4.3 mm
Positive opening (ZW)		yes
Colour		
Enclosure covers		Grey
Enclosure covers		
Housing		Insulated material
Connection type		Screw terminal
<b>Notes</b> The operating head can be rotated at $90^\circ$ intervals to adapt to the specified For degree of protection IP65, use V-M20 (206910) cable glands with connecting the		

### **Technical data**

#### General

donorui		
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		$mm^2$	
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	$U_{imp}$	V AC	6000
Rated insulation voltage	$U_{i}$	٧	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	I <sub>e</sub>	Α	6
380 V 400 V 415 V	I <sub>e</sub>	Α	4
DC-13			
24 V	I <sub>e</sub>	Α	10
110 V	le	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
Mechanical variables			
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

# Design verification as per IEC/EN 61439

 $\label{eq:max.perating} \mbox{Max. operating speed with DIN cam}$ 

Notes

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 <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.

0.5/0.5

for angle of actuation  $\alpha$  =  $0^{\circ}/30^{\circ}$ 

m/s

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**

Electric anginaering, automation, process control engineering / Binary sensor technology, solety-related sensor         mm         6           Diameter sensor         mm         3           Diameter sensor         mm         8           Diameter sensor         mm         8           Bedato dispersion current le at AC-15, 24 V         A         10           Brated dispersion current le at AC-15, 125 V         A         6           Brated operation current le at AC-15, 23 V         A         6           Brated operation current le at CD-13, 24 V         A         1           Brated operation current le at CD-13, 24 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13, 28 V         A         1           Brated operation current le at CD-13,	lechnical data Ellivi 7.0		
Includes 10.1.72.77.09-01   IAGZ382015 )   Wilth senanc	Sensors (EG000026) / End switch (EC000030)		
Diameter sensor         mm         3           Height of sensor         mm         3           Length of sensor         mm         0           Rated operation current le at AC-15, 24 V         A         10           Rated operation current le at AC-15, 250 V         A         6           Rated operation current le at CD-13, 24 V         A         10           Rated operation current le at DC-13, 250 V         A         10           Rated operation current le at DC-13, 250 V         A         1           Rated operation current le at DC-13, 250 V         A         10           Rated operation current le at DC-13, 250 V         A         1           Switching function larching         V         10         10           Switching function larching         V         No         10           Forced opaning         Y         Y         2           Forced opaning         Y         Y         2           Number of contacts as normally closed contact         Y         1         1           Number of contacts as normally closed contact         Y         1         1         1           Number of contacts as normally closed contact         Y         1         2         1         1         1	Electric engineering, automation, process control engineering / Binary sensor technolog (ecl@ss10.0.1-27-27-06-01 [AGZ382015])	y, safety-related se	nsor technology / Position switch / Position switch (Type 1)
Height of sensor	Width sensor	mm	56
Length of sensor  Rated operation current le at AC-15, 25V  Rated operation current le at DC-13, 24V  Rated operation current le at DC-13, 24V  Rated operation current le at DC-13, 24V  Rated operation current le at DC-13, 25V  Rated operation current le at DC-13, 25V  Rated operation current le at DC-13, 26V  Rated operat	Diameter sensor	mm	0
Rated operation current le at AC-15, 125 V         A         0           Rated operation current le at AC-15, 125 V         A         6           Rated operation current le at AC-15, 230 V         A         1           Rated operation current le at DC-13, 25 V         A         1           Rated operation current le at DC-13, 25 V         A         1           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         A         0           Switching function         1         0           None         1         0           Number of contacts as consult of contacts as normally closed contact         1         0           Number of contacts as change-over contact         0         Non	Height of sensor	mm	83
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         1           Rated operation current le at DC-13, 25 V         A         1           Rated operation current le at DC-13, 230 V         A         0           Switching function         Guick-break switch           Switching function         No         No           Switching function latching         No         No           Dutput electronic         No         No           Forced opening         Yes         No           Number of safety auxiliary contacts         1         1           Number of contacts as normally open contact         1         1           Number of contacts as normally open contact         1         None           Type of interface for safety communication         None         None           Construction type housing         Dubid         None           Material housing         Cubid         None           Construction type housing         None         None           Vipe of control element         None         None           Vipe of control element         None         None	Length of sensor	mm	0
Rated operation current le at DC-13, 28 V         A         6           Rated operation current le at DC-13, 28 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         Duick-break switch           Switching function latching         No         No           Output electronic         No         No           Forced opening         Yes         No           Number of safety auxiliary contacts         1         1           Number of contacts as normally closed contact         1         1           Number of contacts as shange-over contact         1         1           Number of contacts as change-over contact         1         None           Type of interface         None         None           Type of interface for safety communication         1         Plastic           Construction type housing         0         Plastic           Material housing         0         Plastic           Contact as a communication         0         Plastic           Contact as a communication         0         Plastic           Contact as a communication         0         Plastic	Rated operation current le at AC-15, 24 V	А	10
Rated operation current le at DC-13, 24 V A 1 Rated operation current le at DC-13, 125 V A 0 Rated operation current le at DC-13, 125 V A 0 Rated operation current le at DC-13, 230 V A 0 Rowching function Switching function latching Duptu electronic Forced opening Ves No	Rated operation current le at AC-15, 125 V	А	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         Quick-break switch           Switching function latching         No           Dutput electronic         No           Forced opening         Yes           Number of contacts as normally closed contact         1           Number of contacts as normally open contact         1           Number of contacts as normally open contact         1           Type of interface         None           Type of interface for safety communication         None           Construction type housing         Cuboid           Material housing         Cuboid           Coating housing         Cuboid           Viye of control element         Other           Viye of control element         Other           Viye of for type of for type of the cornol element         Other           With status indication         No           With status indication         No           Suitable for safety functions         Yes           Explosion safety category for dust         None           Ambient temperature during operating         Yes           Explosion safety category for dust	Rated operation current le at AC-15, 230 V	А	6
Rated operation current le at DC-13, 230 V  Switching function  Switching function latching  Output electronic  Output electronic  Output electronic  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  Veye of interface  None  Construction type housing  Material recent learned  Mype of control element  Mype of control element  Mype of control element  Mythe of control element  Mythe status indication  With status indication  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  **C**  **C**  **C**  **D**  **C**  **C**  **D**  **D**  **C**  **D**  **C**  **D**  **C**  **D**  **C**  **D**  **C**  **D**  *	Rated operation current le at DC-13, 24 V	А	10
Switching function         Quick-break switch           Switching function latching         No           Output electronic         No           Forced opening         Yes           Number of safety auxiliary contacts         1           Number of contacts as normally closed contact         1           Number of contacts as normally open contact         1           Number of contacts as change-over contact         0           Type of interface         None           Construction type housing         Cuboid           Material housing         Description           Type of control element         One           Alignment of the control element         Other           Alignment of the control element         Other           With status indication         Other           Suitable for safety functions         Yes           Explosion safety category for gas         None           Explosion safety category for dust         None           Ambient temperature during operating         Yes           Degree of protection (IP)         Pose	Rated operation current le at DC-13, 125 V	А	1
Switching function latching         No           Output electronic         No           Forced opening         Yes           Number of safety auxiliary contacts         1           Number of contacts as normally closed contact         1           Number of contacts as normally open contact         1           Number of contacts as change-over contact         0           Number of contacts as change-over contact         None           Type of interface         None           Construction type housing         Cuboid           Material housing         Plastic           Coating housing         Differ           Type of control element         Other           Alignment of the control element         Other           If ye 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         Yes           Degree of protection (IP)         P65	Rated operation current le  at DC-13, 230 V	Α	0.4
Duput electronic Forced opening Forced opening Number of safety auxiliary contacts 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 Number of contacts as change-over contact Type of interface for safety communication Number of contacts as change-over contact Type of interface for safety communication None Construction type housing Material housing None Control element Number of control element Nipe of control element Nipe of control element Nipe of ontrol element Nipe of ontrol element Nipe of safety functions None Suitable for safety functions Suitable for safety functions Suitable for safety category for dust Ambient temperature during operating None Replacion safety category for dust Ambient temperature during operating None None None None None None None None	Switching function		Quick-break switch
Foced 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  None  Construction type housing  Meterial housing  Coating housing  Yes  Control element  Alignment of the control element  Type of electric connection  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  C C C C C C C C C C C C C C C C C C C	Switching function latching		No
Number of safety auxiliary contacts         1           Number of contacts as normally closed contact         1           Number of contacts as normally open contact         1           Number of contacts as change-over contact         0           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         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	Output electronic		No
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  Construction type housing  Coating housing  Coating housing  Type of control element  Type of control element  Coating housing  Cother  Couthout of the control element  Control element  Copy of electric connection  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  Degree of protection (IP)  Degree of protection (IP)	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  Type of electric connection  With status indication  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  Degree of protection (IP)  Done  One  None  One  One  One  One  One  One  One	Number of safety auxiliary contacts		1
Number of contacts as change-over contact  Type of interface Type of interface for safety communication  Construction type housing  Material housing  Coating housing  Coating housing  Type of control element  Alignment of the control element  Type of electric connection  With status indication  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Coating housing  Coating housing  Other  Other  Other  No  No  Suitable for safety functions  Explosion safety category for dust  Ambient temperature during operating  Coating housing  None  165	Number of contacts as normally closed contact		1
Type of interface for safety communication  Construction type housing  Material housing  Coating housing  Coating housing  Coating housing  Coating the control element  Alignment of the control element  Type of electric connection  With status indication  Suitable for safety functions  Explosion safety category for dust  Ambient temperature during operating  Coating housing  None  None  Plastic  Other  Roller cam  Other  Other  Other  No  No  Yes  Explosion safety category for dust  Ambient temperature during operating  Coating housing  None  Plastic  Other  Other  Other  Yes  None  None  None  None  Plastic  Plastic  Other  Other  No  None  None  None  None  Plastic  Plastic  Other  Other  No  None  None	Number of contacts as normally open contact		1
None Construction type housing Coating housing Coating housing Coating housing Coating housing Coating housing Coating the control element Alignment of the control element Type of electric connection Coating housing Coatin	Number of contacts as change-over contact		0
Construction type housing  Material housing Coating housing Co	Type of interface		None
Material housing Coating housing Coating housing Type of control element Alignment of the control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Degree of protection (IP)  Plastic Other Ot	Type of interface for safety communication		None
Coating housing Type of control element Alignment of the control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Degree of protection (IP)  Other Other Other No Other No Other No Other Pes Other	Construction type housing		Cuboid
Type of control element  Alignment of the control element  Type of electric connection  With status indication  Suitable for safety functions  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  Roller cam  Other  Other  Other  No  No  Yes  None  None  Explosion safety category for dust  None  1P65	Material housing		Plastic
Alignment of the control element  Type of electric connection  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  Other  Other  No  No  No  Yes  None  None  None  100  100  100  100  100  100  100  1	Coating housing		Other
Type of electric connection  With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Pegree of protection (IP)  Other  No  Yes  None  None  1  1  1  1  1  1  1  1  1  1  1  1  1	Type of control element		Roller cam
With status indication  Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  No  Yes  None  None  1 25 - 70  1P65	Alignment of the control element		Other
Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  CC 25 - 70  Degree of protection (IP)  Pege 1	Type of electric connection		Other
Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  C 25 - 70  Degree of protection (IP)  None  1P65	With status indication		No
Explosion safety category for dust  Ambient temperature during operating  °C 25 - 70  Degree of protection (IP)  IP65	Suitable for safety functions		Yes
Ambient temperature during operating  °C 25 - 70  Degree of protection (IP)  IP65	Explosion safety category for gas		None
Degree of protection (IP)	Explosion safety category for dust		None
	Ambient temperature during operating	°C	25 - 70
Degree of protection (NEMA) Other	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