DATASHEET - LS-S02-230AMT-ZBZ/X



Position switch, 2 N/C, basic, magnet-powered interlock

LS-S02-230AMT-ZBZ/X

LS-S02-230AMT-ZBZ/X Part no. 106822

4356181

Catalog No.

Alternate Catalog

EL-Nummer

(Norway)



Delivery program

Delivery program			
Basic function			Position switches Safety position switches
Part group reference			LSZBZ/X
Product range			Basic devices with magnet-powered interlock (open-circuit principle)
Degree of Protection			IP65
Features			Basic device, expandable
Ambient temperature		°C	-25 - +40
Description			With interlock monitoring Monitoring of door position: continuous Time control of the release operation possible using ESR5-NV3-30
Approval			ET 18060 Sicherheit geprüft tested safety
Contacts			
N/C = Normally closed			2 NC →
Notes			= safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence			11 A1 A2 L 21 12 22
Rated control voltage for magnetic drive	U_s	V	230 V 50/60 Hz
Housing			Insulated material
Connection type			Screw terminal
Notes Switch must never be used as a mechanical stop!			

Notes Switch must never be used as a mechanical stop!

The operating head can be rotated manually in 90° steps without tools to suit the specified level of actuation. With the actuator inserted, the N/O contact is open and the N/C contact is closed.

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 - +40
Mounting position		As required
Degree of Protection		IP65
Terminal capacities	mm^2	
Solid	mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)
Flexible with ferrule	mm ²	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)

Repetition accuracy mm 0.02 Contacts/switching capacity Ump VAC 4000 Rated impulse withstand voltage Ui VAC 400 Overvoltage category/pollution degree III/3 IIII/3 Rated operational current Ie AC	
Rated impulse withstand voltage V _{imp} V AC 400 Overvoltage category/pollution degree I III/3 Rated operational current Ie AC-15 24 V Ie AC 220 V 230 V 240 V Ie AC 380 V 400 V 415 V Ie AC 24 V Ie AC 110 V Ie AC 220 V 230 V 240 V Ie AC 24 V Ie AC 110 V Ie AC 220 V Ie AC 220 V Ie AC 300 V 400 V 415 V Ie AC 4 V Im AC AC 24 V Im AC AC 300 V 400 V 415 V Ie AC AC 300 V 400 V 415 V Im AC AC 300 V 400 V 415 V Im AC AC 300 V 400 V 415 V Im AC AC 300 V 400 V 415 V Im AC	
Name	
Overvoltage category/pollution degree III/3 Rated operational current Ie A AC-15 Ie A 6 24 V Ie A 6 220 V 230 V 240 V Ie A 6 380 V 400 V 415 V Ie A 4 DC-13 Ie A 3 110 V Ie A 0.8 220 V Ie A 0.8 220 V Ie A 0.3 Supply frequency Hz max. 400 Short-circuit rating to IEC/EN 60947-5-1 Imax. fuse A gG/gL 6 Rated conditional short-circuit current KA 1 Mechanical variables Lifespan, mechanical Operations x 10 ⁸ 1 Mechanical shock resistance (half-sinusoidal shock, 20 ms) g 10 Standard-action contact Operations/h ≤ 800	
Rated operational current Ie A AC-15 Ie A 24 V Ie A 6 220 V 230 V 240 V Ie A 6 380 V 400 V 415 V Ie A 4 DC-13 Ie A 3 24 V Ie A 0.8 110 V Ie A 0.8 220 V Ie A 0.3 Supply frequency Hz max. 400 Short-circuit rating to IEC/EN 60947-5-1 Wax A max fuse A g6/gL 6 Rated conditional short-circuit current kA 1 Mechanical variables Lifespan, mechanical Operations x 10 ⁶ 1 Standard-action contact Operations/h \$800 Operation Operations/h \$800	
AC-15 24 V	
Pe	
220 V 230 V 240 V	
1	
DC-13 24 V	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
le A 0.8 220 V	
220 V le A 0.3 Supply frequency Short-circuit rating to IEC/EN 60947-5-1 max. fuse Rated conditional short-circuit current Mechanical variables Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations Operations/h Security Operations/h Security Operations/h Security A 0.3 Max. 400 A 0.3 Max. 400 File A 1 I Operations A 1 Operations Security A 1 Operations Security A 1 Operations Security A 1 Operations Security A 1 Operations/h Security Security A 1 Operations/h Security Security A 1 Operations/h Security Security	
Supply frequency Short-circuit rating to IEC/EN 60947-5-1 max. fuse A gG/gL Rated conditional short-circuit current Mechanical variables Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations Operations/h Standard-action Operations/h Standard	
Supply frequency Short-circuit rating to IEC/EN 60947-5-1 max. fuse A gG/gL Rated conditional short-circuit current Mechanical variables Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations Operations/h Standard-action Operations/h Actuation	
Short-circuit rating to IEC/EN 60947-5-1 max. fuse Rated conditional short-circuit current Mechanical variables Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations g 10 Operations/h ≤ 800 Actuation	
max. fuse Rated conditional short-circuit current Mechanical variables Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations Operations/h Standard-action Operations/h Standard-action Operations/h Standard-action Operations/h Standard-action Operations/h Standard-action Operations/h Standard-action Operations/h Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations/h Standard-action Operations/h Standard-action Operations/h	
Rated conditional short-circuit current Mechanical variables Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations y 10 Operating frequency Operations/h ≤ 800 Actuation	
Lifespan, mechanical Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact Operations g 10 Operations/h ≤ 800 Actuation	
Mechanical shock resistance (half-sinusoidal shock, 20 ms) Standard-action contact g 10 Operating frequency Operations/h ≤ 800 Actuation	
Standard-action contact g 10 Operating frequency Operations/h ≤ 800 Actuation	
Operating frequency Operations/h ≤ 800 Actuation	
Actuation	
Mechanical	
Actuating force at beginning/end of stroke N 25/15 (plug-in/pull-out)	
Mechanical holding force acc. to GS-ET-19 (04/2004)	
XG, XW, XNG N 1700	
XWA, XFG, XF N 1600	
XNW N 1200	
Electromechanical	
For magnet	
Power consumption	
at 120 V AC VA 8	
at 230 V AC VA 11	
at 24 V DC W 8	

Design verification as per IEC/EN 61439

Pick-up and drop-out values

Magnet duty factor

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	6
Heat dissipation per pole, current-dependent	P_{vid}	W	0.13
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
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.

 $x\,U_s$

% ED

0.85 - 1.1

100

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

Sensors (EG000026) / End switch (EC000030)

Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1)

Diameter sensor mm 173 Height of sensor mm 173 Length of sensor mm 39 Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 25 V A 6 Rated operation current le at DC-13, 24 V A 3 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V 0.0 0.0 Whitchief incurring le at Carle	(ecl@ss10.0.1-27-27-06-01 [AGZ382015])	· ,		
Height of sensor mm mm 39 Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 125 V A 6 Rated operation current le at AC-15, 125 V A 6 Rated operation current le at CC-13, 125 V A 3 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, 125 V A 0 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, 125 V A 0 Rought of series in the series	Width sensor		mm	60
Length of sensor mm 39 Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 125 V A 6 Rated operation current le at AC-15, 230 V A 3 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 250 V A 0.8 Rated operation current le at DC-13, 250 V A 0.8 Switching function No No Switching function latching No No Output electronic No No Forced opening Yes 2 Number of safety auxiliary contacts Yes 2 Number of contacts as normally closed contact Yes 2 Number of contacts as normally open contact Yes None Number of contacts as change-over contact Yes None Construction type housing Yes None Contraction type housing Yes Cubid Material housing Yes Cubid Control element Yes O	Diameter sensor		mm	0
Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 230 V A 6 Rated operation current le at DC-13, 230 V A 3 Rated operation current le at DC-13, 24 V A 0.8 Rated operation current le at DC-13, 125 V A 0.3 Switching function Slow-action switch Slow-action switch Switching function latching No No Output electronic No No Forced opening Yes No Number of contacts as normally closed contact 2 No Number of contacts as normally open contact 0 None Type of interface No None Type of interface No None Type of interface None None Construction type housing Cuboid Cuboid Material housing Cuboid Cuboid Coating housing Cuboid Cuboid Algement of the control element Other Other Algement of the control element Other	Height of sensor		mm	173
Rated operation current le at AC-15, 230 V A 6 Rated operation current le at DC-13, 24 V A 3 Rated operation current le at DC-13, 125 V A 0.8 Rated operation current le at DC-13, 125 V A 0.3 Rated operation current le at DC-13, 230 V A 0.3 Switching function No No Switching function latching No No Output electronic No No Forced opening Yes No Number of safety auxiliary contacts 2 2 Number of contacts as normally losed contact 2 0 Number of contacts as normally open contact 0 0 Number of contacts as change-over contact None 0 Type of interface for safety communication None Cubic Construction type housing Cubic Cubic Material housing Cubic Other Coating housing Cubic Other Type of control element Cubic Other Alignment of the control element <	Length of sensor		mm	39
Rated operation current le at AC-15,230 V A 6 Rated operation current le at DC-13, 125 V A 0.8 Rated operation current le at DC-13, 230 V A 0.3 Switching function Switching function No Switching function latching No No Output electronic No No Forced opening Yes Yes Number of safety auxiliary contacts 2 2 Number of contacts as normally closed contact 2 0 Number of contacts as normally open contact 0 0 Type of interface for safety communication None None Construction type housing Yes Vesticated Material housing Yes Plastic Coating housing Yes Other Alignment of the control element Other Other Alignment of the control element Yes None Suitable for safety functions Yes None Suitable for safety functions Yes None	Rated operation current le at AC-15, 24 V		Α	6
Rated operation current le at DC-13, 24 V A 3 Rated operation current le at DC-13, 125 V A 0.8 Rated operation current le at DC-13, 230 V A 0.3 Switching function Switching function latching No Output electronic No No Forced opening Yes 2 Number of safety auxiliary contacts 2 2 Number of contacts as normally closed contact 2 0 Number of contacts as normally closed contact 0 0 Number of contacts as change-over contact 0 0 Number of contacts as change-over contact 0 0 Type of interface for safety communication 0 0 Construction type housing 1 0 Material housing 1 0 Cotating housing 1 0 Cotating housing 1 0 Type of control element 0 0 Alignment of the control element 0 0 Type of electric connection 0 0 <t< td=""><td>Rated operation current le at AC-15, 125 V</td><td></td><td>Α</td><td>6</td></t<>	Rated operation current le at AC-15, 125 V		Α	6
Rated operation current le at DC-13, 125 V A 0.8 Rated operation current le at DC-13, 230 V A 0.3 Switching function Siow-action switch Switching function latching No Output electronic No Forced opening Yes Number of safety auxiliary contacts 2 Number of contacts as normally closed contact 2 Number of contacts as normally open contact 0 Number of contacts as change-over contact 0 Type of interface for safety communication None Construction type housing None Material housing Plastic Conting housing Here Other Injury of control element Other Injury of electric connection Other With status indication Other With status indication No Suitable for safety functions No	Rated operation current le at AC-15, 230 V		Α	6
Rated operation current le at DC-13, 230 V 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 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 Type of control element Type of control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas None One One Other Type of electric connection None Other O	Rated operation current le at DC-13, 24 V		Α	3
Switching function Slow-action switch Switching function latching No Output electronic No Forced opening Yes Number of safety auxiliary contacts 2 Number of contacts as normally closed contact 2 Number of contacts as normally open contact 0 Vumber 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 Other Suitable for safety functions Yes Explosion safety category for gas None	Rated operation current le at DC-13, 125 V		Α	0.8
Switching function latching No Output electronic No Forced opening Yes Number of safety auxiliary contacts 2 Number of contacts as normally closed contact 2 Number of contacts as normally poen contact 0 Number of contacts as change-over contact 0 Vipe of interface None Construction type fousing Cuboid Material housing Plastic Cotating housing Other Cotating housing Other Vipe of control element Other Alignment of the control element Other With status indication No Suitable for safety functions No Explosion safety category for gas None	Rated operation current le at DC-13, 230 V		Α	0.3
Output electronicNoForced openingYesNumber of safety auxiliary contacts2Number of contacts as normally closed contact2Number of contacts as normally open contact0Number of contacts as change-over contact0Number of contacts as change-over contactNoneType of interfaceNoneConstruction type housingCuboidMaterial housingPlasticCoating housingOtherType of control elementOtherAlignment of the control elementOtherType of electric connectionOtherWith status indicationNoSuitable for safety functionsYesExplosion safety category for gasNone	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 normally open contact Number of contacts as change-over contact Number of contacts as change-over contact Number of contacts as change-over contact None None Type of interface None Construction type housing Naterial housing Naterial housing Plastic Coating housing Other Type of control element Alignment of the control element None Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas None	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 change-over contact 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 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 gas	Output electronic			No
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 Type of interface Type of interface for safety communication Construction type housing Material housing Material housing Coating housing Coating housing Cother Type of control element 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 None	Forced opening			Yes
Number of contacts as normally open contact Number of contacts as change-over contact Type of interface None Type of interface for safety communication Construction type housing Material housing Coating housing Coating housing Coating the control element Type of control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas O O O O O O O O O O O O O	Number of safety auxiliary contacts			2
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 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	Number of contacts as normally closed contact			2
Type of interface Type of interface for safety communication Construction type housing Cuboid Material housing Material housing Coating housing Cother 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 None None None None None None None Non	Number of contacts as normally open contact			0
Type of interface for safety communication Construction type housing Material housing Coating housing Coating housing Coating housing Type of control element Alignment of the control element Type of electric connection With status indication Suitable for safety category for gas None None None None None None None	Number of contacts as change-over contact			0
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 Suitable for safety functions Explosion safety category for gas Cuboid Cuboi	Type of interface			None
Material housing Coating housing Cotortol element 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 Plastic Plastic Plastic Plastic Plastic Pother Other Other Other Other No Suitable for safety functions Yes None	Type of interface for safety communication			None
Coating housing Coating housin	Construction type housing			Cuboid
Type of control element Alignment of the control element Other Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas Other Other No	Material housing			Plastic
Alignment of the control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas Other No	Coating housing			Other
Type of electric connection Other With status indication No Suitable for safety functions Explosion safety category for gas None	Type of control element			Other
With status indication No Suitable for safety functions Yes Explosion safety category for gas None	Alignment of the control element			Other
Suitable for safety functions Explosion safety category for gas None	Type of electric connection			Other
Explosion safety category for gas None	With status indication			No
	Suitable for safety functions			Yes
Explosion safety category for dust None	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)		13

Approvals

Product Standards	IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; 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
Degree of Protection	IEC: IP65, UL/CSA Type 3R, 4X (indoor use only), 12, 13

Dimensions

