DATASHEET - LS-11S-M12A



Position switch, Rounded plunger, Basic device, expandable, 1 N/0, 1 NC, Cage Clamp, Yellow, Insulated material, -25 - +70 °C, with M12 connector, EN 50047 Form B



LS-11S-M12A Part no. Catalog No. 178132 Alternate Catalog LS-11S-M12A No.

Delivery program		
Basic function		Position switches Safety position switches
Part group reference		LS(M)
Product range		Rounded plunger
Degree of Protection		IP66
Equipment supplied		with M12 connector
Features		Basic device, expandable
Ambient temperature	°C	-25 - +70
Design		EN 50047 Form B
Snap-action contact		Yes
Contacts		
N/O = Normally open		1 N/O
N/C = Normally closed		1 NC →
Notes		= 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		0 3.0 6.1 21-22 13-14 21-22 13-14 1.6 2w = 5.5 mm
Positive opening (ZW)		yes
Colour		
Enclosure covers		Yellow
Enclosure covers		
Housing		Insulated material
Connection type		Cage Clamp
Notes		Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany. Accessories for the Cage-Clamp terminals from Wago:power comb, gray, Wago Article No. 264-402

Technical data General

deliefdi		
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		IP66

Terminal capacities		mm ²	
Solid		mm^2	1 x (0.5 - 2.5)
Flexible with ferrule		mm ²	1 x (0.5 - 1.5)
Repetition accuracy		mm	0.15
Contacts/switching capacity			
Rated impulse withstand voltage	U_{imp}	V AC	2500
Rated insulation voltage	Ui	V	250
Overvoltage category/pollution degree			III/3
Rated operational current	le	Α	
AC-15			
24 V	l _e	Α	6
115 V	I _e	Α	4
220 V 230 V 240 V	I _e	Α	1
380 V 400 V 415 V	I _e	Α	4
DC-13			
24 V	l _e	Α	3
110 V	I _e	Α	0.8
220 V	I _e	Α	0.3
Control circuit reliability	-		
at 24 V DC/5 mA	H _F	Fault probabili	< 10 ⁻⁷ , < 1 fault in 10 ⁷ operations
at 5 V DC/1 mA	H _F	Fault probabili	$< 5 \times 10^{-6}$, < 1 failure at 5×10^{6} operations ty
Supply frequency		Hz	max. 400
Short-circuit rating to IEC/EN 60947-5-1			
max. fuse		A gG/gL	4
Rated conditional short-circuit current		kA	1
Mechanical variables			
Lifespan, mechanical	Operations	x 10 ⁶	8
Contact temperature of roller head		°C	≦ 100
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact		g	25
Operating frequency	Operations/h		≦ 6000
Actuation			
Mechanical			
Actuating torque of rotary drives		Nm	0.2
Max. operating speed with DIN cam		m/s	1/0.5
Notes			for angle of actuation α = 0°/30°

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_{vid}	W	0.17
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	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

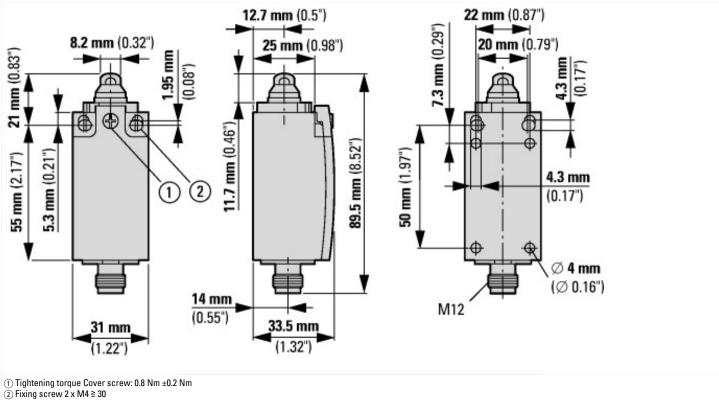
Sensors (EG000026) / End switch (EC000030)

Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1) (ec. | @ss10.0.1-27-27-06-01 | AGZ382015|)

Width sensor mm 9 Diameter sensors mm 0 Height of sensor mm 35 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 DC-13, 24 V A 6 Rated operation current le at DC-13, 125 V A 6 Rated operation current le at DC-13, 126 V A 6 Rated operation current le at DC-13, 126 V A 9 Rated operation current le at DC-13, 126 V A 9 Rated operation current le at DC-13, 126 V A 9 Switching function Y 9 10 Switching function latching Y 10 10 </th <th>(ecl@ss10.0.1-27-27-06-01 [AGZ382015])</th> <th></th> <th></th>	(ecl@ss10.0.1-27-27-06-01 [AGZ382015])		
Height of sensor	Width sensor	mm	31
Length of sensor mm 33.5 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 6 Rated operation current le at DC-13, 24 V A 3 Rated operation current le at DC-13, 125 V A 0 Rated operation current le at DC-13, 125 V A 0.3 Rated operation current le at DC-13, 125 V A 0.3 Switching function A 0.3 Switching function A 0.3 Switching function latching A 0.3 Output electronic A 0.0 Forced opening Y 1.0 Number of contacts as normally closed contact Y 1.0 Number of contacts as normally closed contact Y 1.0 Number of contacts as change-over contact Y 1.0 Type of interface for safety communication Y 1.0 Costing housing Y 1.0 Material housing Y 1.	Diameter sensor	mm	0
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 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 Rated operation current le at DC-13, 230 V A 0 Switching function No No Switching function latching No No Output electronic No 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 normally open contact Yes 1 Number of contacts as shange-over contact Yes None Type of interface Yes None Construction type housing Yes None Coating housing Yes None Coating housing Yes None Coating housing Yes None <td>Height of sensor</td> <td>mm</td> <td>86</td>	Height of sensor	mm	86
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, 24 V A 3 Rated operation current le at DC-13, 125 V A 0.6 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 1 Number of safety auxiliary contacts 1 1 Number of contacts as normally closed contact 1 1 Number of contacts as change-over contact 0 No Type of interface None None Type of interface for safety communication None None Construction type housing Plastic Cuboid Material housing Plastic Plunger Alignment of the control element Plunger Plunger Alignment of the control element Other With status indication No <t< td=""><td>Length of sensor</td><td>mm</td><td>33.5</td></t<>	Length of sensor	mm	33.5
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 0.6 Rated operation current le at DC-13, 230 V A 0.3 Switching function Duick-break switch Switching function latching No Output electronic No No Forced opening Yes Number of safety auxiliary contacts 1 Number of cantacts as namelly closed contact 1 1 Number of contacts as namelly open contact 1 1 Number of contacts as change-over contact 0 0 Type of interface or safety communication 0 0 Construction type housing 0 0 Material housing 0 0 Cotating housing	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 0.6 Rated operation current le at DC-13, 230 V A 0.3 Switching function Cuick-break switch Switching function latching 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 change-over contact 1 1 Type of interface None None Type of interface for safety communication None Cuboid Construction type housing Cuboid Plastic Cotating housing Plastic Plunger Cotortacl element Plunger Plunger Alignment of the control element Other Other Type of electric connection Other Other	Rated operation current le at AC-15, 125 V	Α	6
Rated operation current le at DC-13, 125 V Rated operation current le at DC-13, 230 V Switching function Switching function Switching function latching Output electronic Forced opening Number of safety awxillary contacts Number of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as normally open 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	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 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 for safety communication Construction type housing Material housing Coating housing Coating housing A	Rated operation current le at DC-13, 24 V	Α	3
Switching functionQuick-break switchSwitching function latchingNoOutput electronicNoForced openingYesNumber of safety auxiliary contacts1Number of contacts as normally closed contact1Number of contacts as normally open contact1Number of contacts as normally open contact0Type of interfaceNoneType of interface for safety communicationNoneConstruction type housingCuboidMaterial housingPlasticCoating housingOtherType of control elementPlungerAlignment of the control elementOtherType of electric connectionOtherWith status indicationNo	Rated operation current le at DC-13, 125 V	Α	0.6
Switching 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 elementPlungerAlignment of the control elementOtherType of electric connectionOtherWith status indicationNo	Rated operation current le at DC-13, 230 V	Α	0.3
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 Type of interface for safety communication None Construction type housing Cuboid Material housing Plastic Coating housing Other Type of control element Plunger Alignment of the control element Other Type of electric connection Other With status indication No	Switching function		Quick-break 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 None Type of interface None Construction type housing None Construction type housing Naterial housing Plastic Coating housing Other Type of control element Alignment of the control element Type of electric connection Note Other View of electric connection No	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 None Type of interface None Construction type housing None Construction type housing Naterial housing Plastic Coating housing Other Type of control element Alignment of the control element Other Type of electric connection No Other No Other No Other	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 None 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 1 Construction type housing 1 Coating housing Coating housing Cother Plunger Other Other Other No	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 Type of control element Alignment of the control element Type of electric connection With status indication 1 O O O O O O O O O O O O	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 O None Cuboid Cuboid Plastic Other Plunger Other Other Other Other No	Number of contacts as normally closed contact		1
Type of interface Type of interface for safety communication Construction type housing Material housing Coating housing Coating housing Type of control element Type of control element Type of electric connection With status indication None None Cuboid None C	Number of contacts as normally open contact		1
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 None Cuboid Plastic Other Plunger Other Other Other No	Number of contacts as change-over contact		0
Construction type housing Cuboid Material housing Plastic Coating housing Other Type of control element Alignment of the control element Type of electric connection With status indication Cuboid Plustic Other Other Other No	Type of interface		None
Material housing Coating housing Other Type of control element Alignment of the control element Type of electric connection With status indication Plastic Other Other No	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 Other No	Construction type housing		Cuboid
Type of control element Alignment of the control element Type of electric connection With status indication Plunger Other Other No	Material housing		Plastic
Alignment of the control element Type of electric connection With status indication Other No	Coating housing		Other
Type of electric connection Other With status indication No	Type of control element		Plunger
With status indication No	Alignment of the control element		Other
	Type of electric connection		Other
Suitable for safety functions Yes	With status indication		No
	Suitable for safety functions		Yes
Explosion safety category for gas None	Explosion safety category for gas		None
Explosion safety category for dust None	Explosion safety category for dust		None

Ambient temperature during operating	°C	25 - 70
Degree of protection (IP)		IP65
Degree of protection (NEMA)		4X

Dimensions



Assets (links)

Declaration of CE Conformity

00003068

Instruction Leaflets

IL053001ZU2018_06

Additional product information (links)

IL053001ZU LS-Titan position switch: basic device

IL053001ZU LS-Titan position switch: basic device

ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL053001ZU2018_06.pdf