DATASHEET - LS-S11/RLA



Position switch, Adjustable roller lever, Complete unit, 1 N/O, 1 NC, Screw terminal, Yellow, Insulated material, -25 - +70 $^{\circ}$ C

Powering Business Worldwide*

Part no. LS-S11/RLA Catalog No. 106790 Alternate Catalog LS-S11-RLA

No.

EL-Nummer 4315208

(Norway)

Delivery program

Position switches Safety position switches
LS(M)
Adjustable roller lever
IP66, IP67
Complete unit
°C -25 - +70
1 N/O
1 NC →
e safety function, by positive opening to IEC/EN 60947-5-1
O-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
0° 46° 65° 13-14 NO 21-22 NC Zw = 48°
yes
Yellow
Insulated material
Screw terminal
ion.

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			IP66, IP67
Terminal capacities		mm ²	
Solid			1, (05. 25)
		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	4000
Rated insulation voltage	Ui	V	400
Overvoltage category/pollution degree			III/3
Rated operational current	I _e	Α	
AC-15			
24 V	I _e	Α	6
220 V 230 V 240 V	I _e	Α	6
380 V 400 V 415 V	I _e	Α	4
DC-13			
24 V	I _e	Α	3
110 V	I _e	Α	0.6
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 ty
at 5 V DC/1 mA	H _F	Fault probabili	$<$ 5 x 10^{-6} , $<$ 1 failure at 5 x 10^{6} operations ty
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 ⁶	8
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact		g	25
Operating frequency	Operations/h		≦ 6000
Actuation			
Mechanical			
Actuating force at beginning/end of stroke		N	1.0/8.0
Actuating torque of rotary drives		Nm	0.2
Max. operating speed with DIN cam		m/s	1.5
Notes			for angle of actuation α = 30°, L = 125 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 _{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)

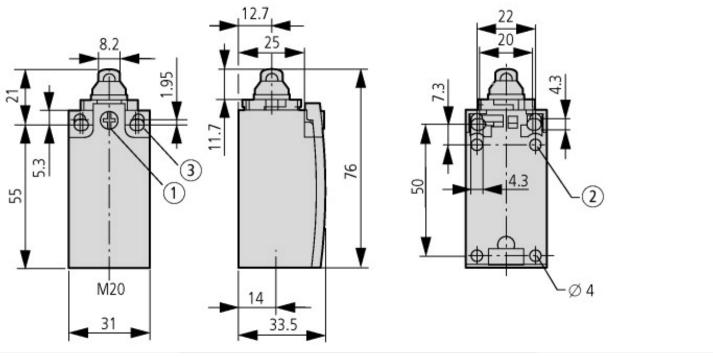
Diameter sensor mm 0 Height of sensor mm 61 Length of sensor mm 33.5 Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 25 V A 6 Rated operation current le at DC-13, 24 V A 3 Rated operation current le at DC-13, 25 V A 0.8 Rated operation current le at DC-13, 25 V A 0.8 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 A 0.8 Number of contact sa so normally closed contact I 1	(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 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 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 None Vippe of interface for safety communication Yes None Construction type housing Yes None Material housing Yes Adjustable roller lever Control element Yes Other Uppe of electric connection <	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 Sow-action switch No Switching function latching No No Output electronic No No Forced opening Yes No Number of contacts as normally closed contact 1 1 Number of contacts as normally open contact 1 None Type of interface None None Type of interface for safety communication None None Construction type housing Cuboid Cuboid Material housing Cuboid Adjustable roller lever Coating housing Cuboid Adjustable roller lever Adjustable roller lever Other Type of other lement Other Other With status indication Non	Height of sensor		mm	61
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 1 1 Number of contacts as normally losed contact 1 1 Number of contacts as normally open contact 1 0 Number of contacts as change-over contact 0 0 Type of interface for safety communication None Cubic Construction type housing Cubic Cubic Material housing Cubic Adjustable roller lever Coating housing Cubic Adjustable roller lever Alignment of the control element Cubic Cubic With	Length of sensor		mm	33.5
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 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 0 None Type of interface for safety communication None None Construction type housing Yes Plastic Material housing Yes Other Coating housing Yes Adjustable roller lever Alignment of the control element Yes Adjustable roller lever With status indication Yes Yes 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 Yes Number of safety auxiliary contacts 1 1 Number of contacts as normally closed contact 1 1 Number of contacts as normally closed contact 1 1 Number of contacts as change-over contact 0 0 Vippe of interface for safety communication No None Construction type housing Cuboid None Material housing Plastic Cuboid Cotating housing Plastic Adjustable roller lever Alignment of the control element Vider Adjustable roller lever Vift status indication No No Suitable for safety functions Yes No	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 1 Number of contacts as normally closed contact 1 Number of contacts as normally open contact 1 Number of contacts as change-over contact None Type of interface for safety communication None Construction type housing None Material housing 1 Construction type housing 1 Material housing 1 Construction type foothrol element 1 Type of control element 4 4 Alignment of the control element 4 4 With status indication 4 4 4 Suitable for safety functions 4 4 4 With status indication 5 4 4 4	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 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 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	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 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 Plastic Material housing Plastic Cotting housing Other Type of control element Adjustable roller lever 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 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 Vipe of interface None Construction type fousing Cuboid Material housing Plastic Cotating housing Other Cotating housing Other Alignment of the 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 contacts1Number of contacts as normally closed contact1Number of contacts as normally open contact1Number of contacts as change-over contact0Number of contacts as change-over contactNoneType of interfaceNoneConstruction type housingCuboidMaterial housingPlasticCoating housingOtherType of control elementAdjustable roller leverAlignment 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 change-over contact 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 Alignment of the control element 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 normally open contact Number of contacts as change-over contact Number of contacts as change-over contact One Type of interface Type of interface for safety communication Construction type housing Material housing Coating 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 change-over contact Type of interface Type of interface for safety communication Construction type housing Material housing Coating housing Coating housing Coating the control element Type of electric connection Alignment of the control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas	Forced opening			Yes
Number of contacts as normally open contact Number of contacts as change-over contact O 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 Alignment of the control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas 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 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			1
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			1
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 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 Adjustable roller lever Other Other Other No Suitable for safety functions Yes None	Type of interface for safety communication			None
Coating housing Coating housing Other 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 Other Other No No No No Noe	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 Adjustable roller lever Other Other No No No No No No No No No N	Material housing			Plastic
Alignment of the control element Type of electric connection Other With status indication No 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			Adjustable roller lever
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)		IP67
Degree of protection (NEMA)		4X

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: IP66, 67, UL/CSA Type 3R, 4X (indoor use only), 12, 13

Dimensions



- ① Tightening torque of cover screws: 0.8 Nm \pm 0.2 Nm ② only with LS (insulated version) ③ Fixing screws $2 \times M4 \ge 30$ $M_A = 1.5$ Nm

