### DATASHEET - LS-11S/L



Position switch, Roller lever, Complete unit, 1 N/O, 1 NC, Snap-action contact - Yes, Cage Clamp, Yellow, Insulated material, -25 - +70 °C, EN 50047 Form E, Long



Part no.	LS-11S/L
Catalog No.	266116
Alternate Catalog	LS-11S/L
No.	
EL-Nummer	4356125
(Norway)	

#### **Delivery program**

Derivery program		
Basic function		Position switches Safety position switches
Part group reference		LS(M)
Product range		Roller lever
Degree of Protection		IP66, IP67
Features		Complete unit
Ambient temperature	°C	-25 - +70
Design		EN 50047 Form E
Snap-action contact		Yes
Description		Long
Contacts		
N/O = Normally open		1 N/O
N/C = Normally closed		1 NC 🕀
Notes		$\Theta$ = safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence		- + + + + + + + + + + + + + + + + + + +
Contact travel = Contact closed = Contact open		$0 \qquad 4.4 \qquad 9.6$ $21-22 \qquad \longrightarrow \qquad 21-22$ $13-14 \qquad \longrightarrow \qquad 2.3$ $Zw = 8.7 \text{ mm}$
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
Notes The operating head can be rotated at 90° intervals to adapt to the specified approach direction.		

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		Ū	As required
Degree of Protection			IP66, IP67
Terminal capacities		2	
		mm <sup>2</sup>	
Solid		mm <sup>2</sup>	1 x (0.5 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.5 - 1.5)
Repetition accuracy		mm	0.15
Contacts/switching capacity			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	4000
Rated insulation voltage	Ui	V	400
Overvoltage category/pollution degree			111/3
Rated operational current	l <sub>e</sub>	А	
AC-15			
24 V	le	А	6
220 V 230 V 240 V	l <sub>e</sub>	А	6
380 V 400 V 415 V	le	А	4
DC-13			
24 V	l <sub>e</sub>	А	3
110 V	l <sub>e</sub>	А	0.6
220 V	l <sub>e</sub>	А	0.3
Control circuit reliability			
at 24 V DC/5 mA	H <sub>F</sub>	Fault probabili	< 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations ty
at 5 V DC/1 mA	H <sub>F</sub>	Fault probabili	< 5 x 10 <sup>-6</sup> , < 1 failure at 5 x 10 <sup>6</sup> 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 <sup>6</sup>	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
Notes			for angle of actuation $\alpha=30^{\circ}/45^{\circ}$

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	6
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.17
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.
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) (ecl@ss10.0.1-27-27-06-01 [AGZ382015])

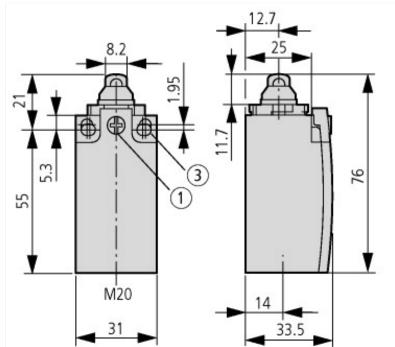
Width sensor	mm	31
Diameter sensor	mm	0
Height of sensor	mm	61
Length of sensor	mm	33.5
Rated operation current le at AC-15, 24 V	Α	6
Rated operation current le at AC-15, 125 V	Α	6
Rated operation current le at AC-15, 230 V	А	6
Rated operation current le at DC-13, 24 V	А	3
Rated operation current le at DC-13, 125 V	Α	0.8
Rated operation current le  at DC-13, 230 V	А	0.3
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
Type of interface for safety communication		None
Construction type housing		Cuboid
Material housing		Plastic
Coating housing		Other
Type of control element		Roller lever
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

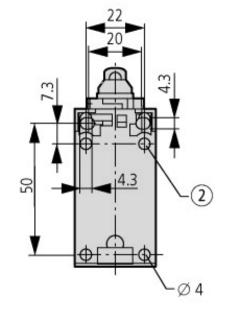
Explosion safety category for dust		None
Ambient temperature during operating	°C	25 - 70
Degree of protection (IP)		IP67
Degree of protection (NEMA)		4X

# **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 ±0.2 Nm (2) only with LS (insulated version) (3) Fixing screws 2 x M4 ≧ 30 M<sub>A</sub> = 1.5 Nm

