

Position switch, Roller lever, Complete device, 1 N/O, 1 NC, Cage clamp, Black, Insulated material, -25 - +70 °C, EN 50047 form E, Long



Part no. LS-11S-SW/L  
 Catalog No. 197059

### Delivery program

Basic function			Position switches Safety position switches
Part group reference			LS(M)-...
Product range			Roller lever
Degree of Protection			IP66, IP67
Features			Complete device
Ambient temperature		°C	-25 - +70
Design			EN 50047 form E
Snap-action contact			Yes
Description			Long
<b>Contacts</b>			
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
Positive opening (ZW)			yes
<b>Colour</b>			
Enclosure covers			Black
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
<b>Notes</b> The operating head can be rotated 90° to enable adaptation to the specified approach direction.			

### Technical data

<b>General</b>			
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 <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	U <sub>i</sub>	V	400
Overvoltage category/pollution degree			III/3
Rated operational current	I <sub>e</sub>	A	
AC-15			
24 V	I <sub>e</sub>	A	6
220 V 230 V 240 V	I <sub>e</sub>	A	6
380 V 400 V 415 V	I <sub>e</sub>	A	4
DC-13			

24 V	$I_e$	A	3
110 V	$I_e$	A	0.6
220 V	$I_e$	A	0.3
Control circuit reliability			
at 24 V DC/5 mA	$H_F$	Fault probability	$< 10^{-7}$ , $< 1$ fault in $10^7$ operations
at 5 V DC/1 mA	$H_F$	Fault probability	$< 5 \times 10^{-6}$ , $< 1$ failure at $5 \times 10^6$ operations
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	$\times 10^6$	8
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact		g	25
Operating frequency	Operations/h		$\leq 6000$

### 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
<b>Notes</b>			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	$I_n$	A	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.		$^\circ\text{C}$	-25
Operating ambient temperature max.		$^\circ\text{C}$	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.