

## Position switch, Roller lever, Complete unit, 1 N/O, 1 NC, Cage Clamp, Yellow, Insulated material, -25 - +70 °C, Large

**Part no.** LS-11/LB  
**Catalog No.** 290175  
**Alternate Catalog No.** LS-11-LB  
**EL-Nummer (Norway)** 4315233

## 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 unit
Ambient temperature	°C	-25 - +70
Description		Large
<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		Yellow
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		As required	
Degree of Protection		IP66, IP67	
Terminal capacities	mm²		
Solid	mm²	1 x (0.5 - 2.5)	
Flexible with ferrule	mm²	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 <sub>e</sub>	A	3
110 V	I <sub>e</sub>	A	0.6
220 V	I <sub>e</sub>	A	0.3
Control circuit reliability			
at 24 V DC/5 mA	H <sub>F</sub>	Fault probability	< 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations
at 5 V DC/1 mA	H <sub>F</sub>	Fault probability	< 5 x 10 <sup>-6</sup> , < 1 failure at 5 x 10 <sup>6</sup> operations
Supply frequency		Hz	max. 400
Short-circuit rating to IEC/EN 60947-5-1		A gG/gL	6
max. fuse		kA	1
Rated conditional short-circuit current			

### 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

Operating frequency	Operations/h	Operations/h	≤ 6000
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### 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 α = 30°/45°

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	A	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 8.0

Sensors (EG000026) / End switch (EC000030)		
Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Safety-related position switch / Safety position switch (Type 1) [ecl:ss10.0.1-27-27-26-01 [AKE640013]]		
Width sensor	mm	31
Diameter sensor	mm	0
Height of sensor	mm	61
Length of sensor	mm	33.5
Rated operation current Ie at AC-15, 24 V	A	6
Rated operation current Ie at AC-15, 125 V	A	6
Rated operation current Ie at AC-15, 230 V	A	6
Rated operation current Ie at DC-13, 24 V	A	3
Rated operation current Ie at DC-13, 125 V	A	0.8
Rated operation current Ie at DC-13, 230 V	A	0.3
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		Cuboid
Material housing		Plastic
Coating housing		Other
Type of control element		Roller lever
Alignment of the control element		Other
Type of electric connection		Cable entry metrical
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)		IP66/IP67
Degree of protection (NEMA)		Other