DATASHEET - LSM-11



Safety position switch, LS(M)-..., Rounded plunger, Basic device, expandable, 1 N/O, 1 NC, EN 50047 Form B, Yellow, Metal, Cage Clamp, -25 - +70 $^{\circ}$ C



Part no. LSM-11 Catalog No. 266144 Alternate Catalog LSM-11

No.

EL-Nummer 4356139

(Norway)

Delivery program

Delivery program		
Basic function		Position switches Safety position switches
Part group reference		LS(M)
Product range		Rounded plunger
Degree of Protection		IP66, IP67
Features		Basic device, expandable
Ambient temperature	°C	-25 - +70
Design		EN 50047 Form B
Contacts		
N/O = Normally open		1 N/0
N/C = Normally closed		1 NC →
Notes		e safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence		$0 - \frac{13}{14} \frac{1}{22}$
Contact travel = Contact closed = Contact open		0 4.3 6.1 13-14 NO 21-22 NC 3.0 Zw = 4.5 mm
Positive opening (ZW)		yes
Colour		
Enclosure covers		Yellow
Enclosure covers		
Housing		Metal
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

delicitui		
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	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	l _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 probabilit	
at 5 V DC/1 mA	H_{F}	Fault probabilit	$< 5 \times 10^{-6}$, < 1 failure at 5×10^{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	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 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	1/0.5
N .			

Design verification as per IEC/EN 61439

Notes

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.

for angle of actuation α = 0°/30°

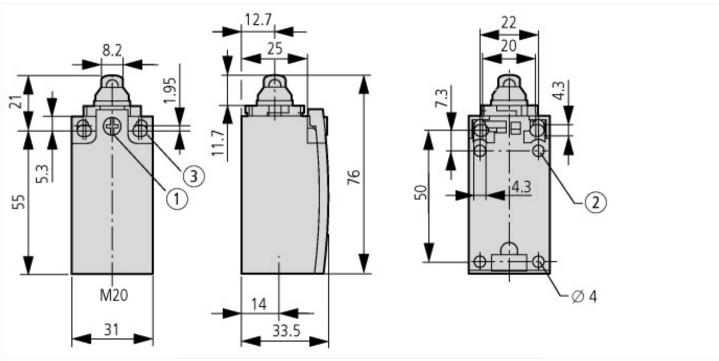
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, 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

	Technical data ETIM 7.0		
Act	Sensors (EG000026) / End switch (EC000030)		
Diameter sensor	Electric engineering, automation, process control engineering / Binary sensor technolog (ecl@ss10.0.1-27-27-06-01 [AGZ382015])	gy, safety-related ser	nsor technology / Position switch / Position switch (Type 1)
mm 1 1 1 1 1 1 1 1 1	Width sensor	mm	31
ceneral of sensor mm 33.5 Rated operation current le at AC-15, 25V A 6 Rated operation current le at AC-15, 25V A 6 Rated operation current le at AC-15, 22V A 6 Rated operation current le at DC-13, 22V A 3 Rated operation current le at DC-13, 22V A 0.8 Rated operation current le at DC-13, 23V A 0.3 Rated operation current le at DC-13, 23V A 0.3 Switching function A 0.3 Switching function latching No No Switching function latching No No Unique of contacts as normally closed contact No No Number of contacts as normally closed contact 1 1 Number of contacts as normally closed contact 1 1 Number of contacts as normally closed contact No No Number of contacts as change-over contact Contacts as change-over contact Contacts as normally closed contact No Contracts as normally closed contact Contacts as change-over contact Contact as change-over con	Diameter sensor	mm	0
Set ed operation current le at AC-15, 125 V A 6 Alted operation current le at AC-15, 125 V A 6 Alted operation current le at AC-15, 230 V A 3 Alted operation current le at DC-13, 24 V A 0.8 Alted operation current le at DC-13, 230 V A 0.8 Switching function Slow-action switch No Switching function latching No No Dutput electronic No No Forced opening 0 No Number of safety swillery contacts 0 1 Number of contacts as normally closed contact 1 1 Number of contacts as change-over contact 0 0 Number of contacts as change-over contact No None Obstitution type housing None Cubic Obstitution type housing Metal Cubic Obstitution type housing Metal Cubic Obstitution type housing Metal Cubic Vige of control element Up Other Vige of control element <td< td=""><td>Height of sensor</td><td>mm</td><td>61</td></td<>	Height of sensor	mm	61
Bated operation current le at AC-15, 125 V A 6 Bated operation current le at AC-15, 230 V A 3 Bated operation current le at DC-13, 24 V A 0.8 Bated operation current le at DC-13, 25 V A 0.3 Switching function latching Iowacion switch Switching function latching Iowacion switch Dutput electronic No Foread opening Iowacion switch Number of safety auxiliary contacts Iowacion safety auxiliary contacts Number of contacts as normally open contact Iowacion safety auxiliary contacts Vivole of interface for safety communication Iowacion safety communication Number of contacts as normally open contact None Vivole of interface for safety communication Iowacion safety communication None Cuboid Material housing Other Construction type housing Iowacion safety communication Vivo of control element Iowacion safety communication Vivo of control element Iowacion safety communication Vivol of control element Iowacion safety communication Vivol of electr	Length of sensor	mm	33.5
Rated operation current le at DC-13, 230 V A 6 Rated operation current le at DC-13, 125 V A 0.8 Rated operation current le at DC-13, 125 V A 0.3 Sated operation current le at DC-13, 230 V A 0.3 Switching function No 0 Switching function latching No 0 Dutput electronic No 0 Forced opening Yes 0 Number of safety suxiliary contacts 0 1 Number of contacts as normally closed contact 1 1 Number of contacts as shange-over contact 0 1 Vipue of interface for safety communication None 0 Vipue of interface for safety communication Metal 0 Construction type housing Metal 0 Acting housing Metal 0 Acting housing 0 0 Acting housing 0 0 Acting housing 0 0 Acting housing 0 0 Allignment of the control	Rated operation current le at AC-15, 24 V	Α	6
Asted operation current le at DC-13, 24 V A 0.8 Asted operation current le at DC-13, 125 V A 0.8 Asted operation current le at DC-13, 125 V A 0.8 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 125 V A 0.3 Asted operation current le at DC-13, 1	Rated operation current le at AC-15, 125 V	Α	6
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 Switching function latching 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 normally closed conta	Rated operation current le at AC-15, 230 V	Α	6
As a do operation current le at DC-13, 230 V Switching function Switching function latching Switching function lat	Rated operation current le at DC-13, 24 V	Α	3
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 closed contact Number of contacts as change-over contact Number of contacts as normally operation Number of contacts Number of contacts as normally operation Number of contacts as nor	Rated operation current le at DC-13, 125 V	Α	0.8
Switching function latching Dutput electronic Forced opening Number of safety auxiliary contacts Number of contacts as normally closed contact Number of contacts as normally closed contact Number of contacts as normally open contact 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 normally closed con	Rated operation current le at DC-13, 230 V	Α	0.3
Duput electronic Forced opening Forc	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 Number of contacts as normally open contact Number of contacts as change-over contact Number of contacts as normally open contact	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 normally open contacts a	Output electronic		No
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 normally open contacts as normally open contacts as normally open contacts as normally open contacts as	Forced opening		Yes
Number of contacts as normally open contact Number of contacts as change-over contact Number of contacts as change-over contact None None None None Construction type for safety communication Construction type housing Material housing Coating housing Nother Other None None Other None Alignment of the control element Nother Sype of electric connection With status indication Noth Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Other Coating housing None None None None None Sold Service of protection (IP) None 1	Number of safety auxiliary contacts		0
Number of contacts as change-over contact Type of interface None None None Construction type housing Metal Coating housing Control element Alignment of the control element Type of electric connection With status indication None Suitable for safety category for dust None Ambient temperature during operating Coating housing Policy 167 With status indication None Suitable for safety category for dust None Suitable for safety category for dust None 167 None N	Number of contacts as normally closed contact		1
Type of interface for safety communication Construction type housing Material housing Coating housing Co	Number of contacts as normally open contact		1
Figure of interface for safety communication Construction type housing Coating	Number of contacts as change-over contact		0
Construction type housing Material housing Coating housing Coa	Type of interface		None
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 Explosion safety category for dust Ambient temperature during operating Degree of protection (IP) Metal Metal Other Cother Cother Cable entry metrical No Cable entry metrical No No Yes Cable ontrol element No Cable ontrol element No Cable ontrol metrical No Cable ontrol metrical No Cable ontrol metrical No Cable ontrol metrical No Cable ontrol element Cable ontrol element No Cable ontrol element Cable ontrol element No Cable ontrol metrical No Cable ontrol metrical No Cable ontrol metrical No Cable ontrol metrical No Cable ontrol element No Cable ontrol metrical No Cable ontrol No Cabl	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 Suitable for safety functions Explosion safety category for gas Ambient temperature during operating Degree of protection (IP) Other Cable entry metrical No Cable entry metrical No Yes None Yes None 25 - 70 IP67	Construction type housing		Cuboid
Fype of control element Alignment of the control element Fype of electric connection With status indication Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Ceptee of protection (IP) Plunger Other Cable entry metrical No No No No Yes None Cable entry metrical No No Yes Cable entry metrical No Yes Cable entry metrical No No Yes Cable entry metrical No No Yes Ves None None None None Degree of protection (IP) IP67	Material housing		Metal
Alignment of the control element Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas Ambient temperature during operating Degree of protection (IP) Other Cable entry metrical No No No Yes None None Cable entry metrical No Yes No Yes None None IP67	Coating housing		Other
Type of electric connection With status indication Suitable for safety functions Explosion safety category for gas Ambient temperature during operating Degree of protection (IP) Cable entry metrical No Yes No Yes None None 25 - 70 IP67	Type of control element		Plunger
No Suitable for safety functions Explosion safety category for dust Ambient temperature during operating Degree of protection (IP) No Yes None None C 25 - 70 IP67	Alignment of the control element		Other
Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Cegree of protection (IP) Yes None None 1	Type of electric connection		Cable entry metrical
Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Cegree of protection (IP) None 25 - 70 IP67	With status indication		No
Explosion safety category for dust Ambient temperature during operating °C 25 - 70 Degree of protection (IP) IP67	Suitable for safety functions		Yes
Ambient temperature during operating °C 25 - 70 Degree of protection (IP) IP67	Explosion safety category for gas		None
Degree of protection (IP)	Explosion safety category for dust		None
	Ambient temperature during operating	°C	25 - 70
Degree of protection (NEMA) 4X	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 $2 \times M4 \ge 30$ $M_A = 1.5 \text{ Nm}$

