

Safety position switch, 1early N/O+1N/C delayed, rounded plunger, front mount



Part no.LSM-11D/FArticle no.292373Catalog No.LSM-11D-F

### **Delivery program**

Basic function     Find product range     LSMM       Product range     LSMM       Darge of Protection     Set of product on switches       Basic of Protection     Basic divice, not expandable       Ambient temperature     Controls       NO - Normally open     Product ange       NO - Normally open     In C O       Nore Normally open     In C O       Notes     In C O       Notes     In C O       Contacts sequence     In C O       Sector of Contact copen     In C O       Notes     In C O       Positive opening to IECEN 604475-1     In C O       Contact trave = Contact copen     In C O       Positive opening to IECEN 604475-1     In C O       Contact trave = Contact copen     In C O       Positive opening [CVI     In C O       Contact trave = Contact copen     In C O       Enclosure covers     In C O       Relicion covers     In C O       In Course     In C O			
Product range   Rounded plunger     Degree of Protection   IPE6, IPE7     Features   Basic device, not expandable     Ambient temperature   °C   25 - 70     Contacts   °C   25 - 70     NO = Normally open   INO   INO     NC = Normally closed   INO   INO     Notes   INO   INO     Contact sequence   INO   INO     Contact travell = Contact closed = Contact open   INO   INO     Positive opening (ZW)   INO   INO     Colour   INO   INO     Enclosure covers   INO   INO     Enclosure covers   INO   INO     Enclosure covers   INO   INO     Huxsing   INO   INO     Contact nype   INO   INO     Huxsing   INO   INO     Contaction type   INO   INO     Huxsing   INO   INO     Contact nype   INO   INO     Huxsing   INO   INO     Contact nype   INO   INO     Ino   INO   INO     Ino   INO   INO     Ino   INO   INO     Ino   INO   INO <t< td=""><td>Basic function</td><td></td><td></td></t<>	Basic function		
Degree of Protection   PP64, PP7     Features   Basic device, not expandable     Ambient temperature   Contexts     NO = Normally open   INO     NC = Normally obsed   INO     Notes   INO     Contact sequence   INO     Contact travelle = Contact closed_ = Contact open   INO     Positive opening (ZW)   INO     Enclosure covers   INO     Enclosure covers   INO     Enclosure covers   INO     Housing   INO     Context in type   INO     Housing   INO     Rotes   INO	Part group reference		LS(M)
Features   Baic device, not expandable     Ambient temperature   Contacts   Contact   Contac	Product range		Rounded plunger
Ambient temperature   25 - 70     Contacts   Intermediation (Intermediation (In	Degree of Protection		IP66, IP67
Contact:   Contact sequence   INC   INC     Notes   Inc   Inc     Contact sequence   Inc   Inc     Contact travell = Contact closed = Contact open   Inc   Inc     Positive opening (ZW)   yes     Colour   Yes     Enclosure covers   Yes     Enclosure covers   Yes     Noting   Yes     Notion type   Yes     Rousing   Contact travell = Contact closed     Kes   Gage Clamp	Features		Basic device, not expandable
N0 = Normally open     1N/0       NC = Normally closed     1NC ③       Notes     Image: Contact closed = Contact open     Image: Contact closed = Contact open       Contact trave = Contact closed = Contact open     Image: Contact closed = Contact open     Image: Contact closed = Contact open       Positive opening (ZW)     yes       Contact rever = Contact closed = Contact open     Image: Contact closed = Contact open       Enclosure covers     Yes       Enclosure covers     Yes       Housing     Metal       Contact trave = Contact closed = Contact open     Contact mark of Wago Kontakttechnik, 32432 Minden, Germank of Wago Kontakttechnik, 32432 Minden, Germ	Ambient temperature	°C	-25 - +70
NC = Normally closed     NC (P)       Notes     P = Sefety function, by positive opening to IEC/EN 60947-5-1       Contact sequence     Image: Contact closed = Contact open       Contact travel = Contact closed = Contact open     Image: Contact closed = Contact open       Positive opening (ZW)     Ves       Colour     P = Contact closed = Contact open       Enclosure covers     Ves       Enclosure covers     P = Contact closed = Contact open       Housing     Metal       Connection type     Metal       Rotes     Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Cage-Clamp is a registered trademark of Wago K	Contacts		
Notes     INC INC INCOMPOSITION CONTRICT INCOMPOSITION CONTRIPUTION CONTRIPUTICON CONTRICUTURI CONTRIPUTOR CONTRIPUTATION CONTRIPUTATI	N/O = Normally open		1 N/O
Contact sequence     Image: Second Se	N/C = Normally closed		1 NC 🕀
Contact travel = Contact closed = Contact open     Image: Contact travel = Contact closed = Contact open       Contact travel = Contact closed = Contact open     Image: Contact closed = Contact open       Positive opening (ZW)     yes       Colour     yes       Enclosure covers     Tellow       Enclosure covers     Yellow       Housing     Metal       Connection type     Gage Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany. Accessries for the Cage-Clamp terminals from Wagor, owner comb, gray, Wago	Notes		$\Theta$ = safety function, by positive opening to IEC/EN 60947-5-1
Positive opening (ZW)     yes       Colour     Yellow       Enclosure covers     Yellow       Housing     Yellow       Enclosure covers     Yellow       Housing     Yellow       Yellow     Ye	Contact sequence		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Colour     Metal       Enclosure covers     Metal       Kousing     Connection type       Notes     Cage Clamp       Notes     Cage-Clamp terminals from Wago;power comb, gray, Wago	Contact travel = Contact closed = Contact open		15-16 NC 27-28 NO 2.1
Enclosure covers     Yellow       Enclosure covers     Image: Comparison of the comparison of	Positive opening (ZW)		yes
Enclosure covers     Image: Connection type       Notes     Image: Connection type       Notes     Image: Connection type	Colour		
Housing     Metal       Connection type     Metal       Notes     Gage Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany.	Enclosure covers		Yellow
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	Enclosure covers		
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	Housing		Metal
Germany. Accessories for the Cage-Clamp terminals from Wago:power comb, gray, Wago	Connection type		Cage Clamp
	Notes		Germany. Accessories for the Cage-Clamp terminals from Wago:power comb, gray, Wago

# 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 <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)

#### **Contacts/switching capacity**

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	۱ <sub>e</sub>	A	
AC-15			
24 V	۱ <sub>e</sub>	Α	6
220 V 230 V 240 V	۱ <sub>e</sub>	Α	6
380 V 400 V 415 V	I <sub>e</sub>	А	4
DC-13			
24 V	le	А	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 probabili	< 10 <sup>-7</sup> , < 1 fault in 107 operations ty
at 5 V DC/1 mA	H <sub>F</sub>	Fault probabili	< 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
Repetition accuracy		mm	0.15
Rated conditional short-circuit current		kA	1
Mechanical variables			
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	8
Contact temperature of roller head		°C	≦ <sub>100</sub>
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact		g	25
Operating frequency	Operations/h		≦ <sub>6000</sub>
Actuation			
Mechanical			
Actuating force at beginning/end of stroke		Ν	1.0/8.0
Actuating torque of rotary drives		Nm	0.2
Max. operating speed with DIN cam		m/s	1/0.5
Notes			for angle of actuation $\alpha=0^{\circ}/30^{\circ}$

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	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 6.0**

#### Sensors (EG000026) / End switch (EC000030)

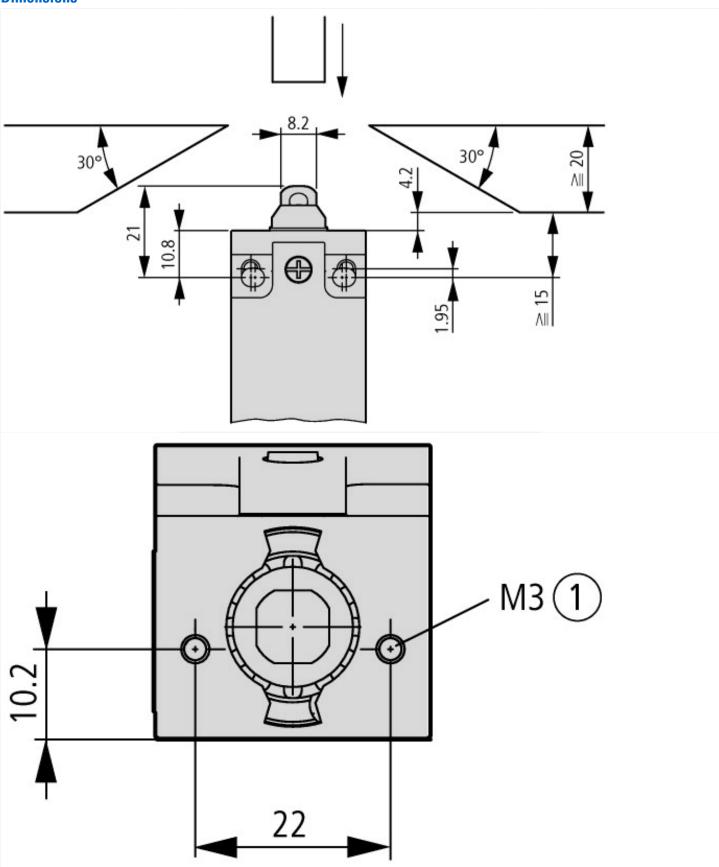
Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1) (ecl@ss8.1-27-27-06-01 [AGZ382012])

[A02302012])		
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	А	6
Rated operation current le at AC-15, 125 V	А	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	А	0.8
Rated operation current le  at DC-13, 230 V	А	0.3
Switching function		Slow-action switch
Output electronic		No
Forced opening		Yes
Number of safety auxiliary contacts		0
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
Housing according to norm		
Construction type housing		Cuboid
Material housing		Metal
Coating housing		
Type of control element		Plunger
Alignment of the control element		•
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)		IP67

## 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



292373 - HPL-ED2016 V27.0 EN

## Additional product information (links)

### IL053001ZU LS-Titan position switch: basic device

IL053001ZU LS-Titan position switch: basic ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL053001ZU2013\_08.pdf device