DATASHEET - LS-11D



Position switch, Rounded plunger, Basic device, expandable, 1 N/O, 1 NC (late-break), Cage Clamp, Yellow, Insulated material, -25 - +70 °C

Powering Business Worldwide

Part no. LS-11D Catalog No. 266114 Alternate Catalog LS-11D

No.

EL-Nummer 4356038

(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
Contacts		
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
Contact sequence		0-\\ 28 \ 16
Contact travel = Contact closed = Contact open		0 3.0 6.1 15-16 NC 27-28 NO 2.1 Zw = 4.5 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

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 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°

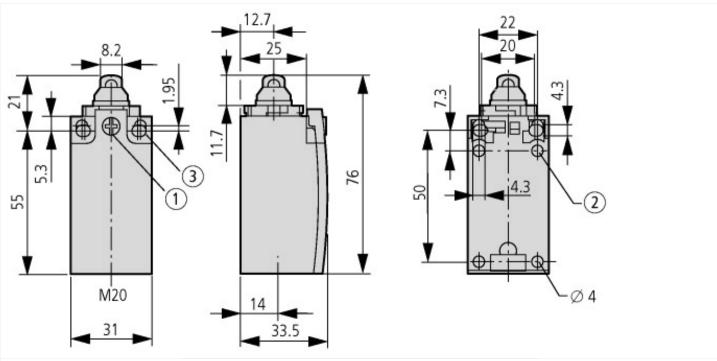
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply,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

	lechnical data Ellivi 7.0			
Activities of the Content of the C	Sensors (EG000026) / End switch (EC000030)			
Same ter sensor mm 0 1 1 1 1 1 1 1 1 1	Electric engineering, automation, process control engineering / Binary sensor techn (ecl@ss10.0.1-27-27-06-01 [AGZ382015])	nology, safety-r	elated se	nsor technology / Position switch / Position switch (Type 1)
mm Silent of sensor mm	Width sensor		mm	31
ength of sensor mm 33.5 lated operation current le at AC-15, 28 V A 6 lated operation current le at AC-15, 28 V A 6 lated operation current le at AC-15, 28 V A 6 lated operation current le at DC-13, 24 V A 0.8 lated operation current le at DC-13, 28 V A 0.8 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13, 280 V A 0.3 lated operation current le at DC-13,	Diameter sensor		mm	0
Asted operation current le at AC-15, 125 V A 6 Asted operation current le at AC-15, 125 V A 6 Asted operation current le at AC-15, 230 V A 3 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 0.9 Asted operation current le at DC-13, 230 V A 0.3 Asted operation current le at DC-13, 230 V A 0.9 Asted operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V A 0.3 Asteria operation current le at DC-13, 230 V 0.0 0.0	Height of sensor		mm	61
Ast of operation current le at AC-15, 125 V A 6 Ast of operation current le at AC-15, 230 V A 3 Ast of operation current le at DC-13, 24 V A 0.8 Ast of operation current le at DC-13, 125 V A 0.3 Switching function le DC-13, 230 V A 0.3 Switching function latching No No Switching function latching No No Switching function stafety auxiliary contacts No No Switching function stafety auxiliary contact No 1 Switching function stafety auxiliary contacts as normally closed contact No No Switching function stafety auxiliary contacts as normally open contact No No Switching function stafety communication No No Switching function stafety contacts No No <	Length of sensor		mm	33.5
stated operation current le at AC-15, 230 V A 6 lated operation current le at DC-13, 24 V A 3 lated operation current le at DC-13, 125 V A 0.3 lated operation current le at DC-13, 125 V A 0.3 lated operation current le at DC-13, 230 V A 0.3 whiching function No 0 whiching function latching No 0 burber of corted opening Yes 0 dumber of safety auxiliary contacts 0 0 dumber of contacts as normally closed contact 1 1 dumber of contacts as normally open contact 1 1 dumber of contacts as normally open contact 1 1 dumber of contacts as change-over contact 1 1 <	Rated operation current le at AC-15, 24 V		Α	6
Asted operation current le at DC-13, 24 V A DA Bated operation current le at DC-13, 125 V A DA BATE DC-13, 125 V A	Rated operation current le at AC-15, 125 V		Α	6
Asted operation current le at DC-13, 125 V Asted operation current le at DC-13, 230 V Aster do peration le Contact le attenue le current le atten	Rated operation current le at AC-15, 230 V		А	6
A Bated operation current le at DC-13, 230 V Soliching function Soliching function latching Soliching	Rated operation current le at DC-13, 24 V		Α	3
Switching function latching Switching function Switching function Switching function latching Switching function Sw	Rated operation current le at DC-13, 125 V		Α	0.8
switching function latching butput electronic butput electronic butput of safety auxiliary contacts butput of contacts as normally closed contact butput of contacts as normally closed contact butput of contacts as normally open contact butput of contacts as normally open contact butput of contacts as normally open contact butput of contacts as change-over contact butput of contacts as contacts as contacts	Rated operation current le at DC-13, 230 V		Α	0.3
Author of safety auxiliary contacts Author of safety auxiliary contacts Author of contacts as normally closed contact Author of contacts as normally open contact Author of contacts as normally open contact Author of contacts as change-over contact Author of contacts as normally closed as change-over contact Author of conta	Switching function			Slow-action switch
Forced opening Author of safety auxiliary contacts Author of contacts as normally closed contact Author of contacts as normally open contact Author of contacts as change-over contact Author of cont	Switching function latching			No
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Aumber of contacts as normally closed contact Aumber of contacts as normally open contact Aumber of contacts as change-over contact Aumber of contacts as normally open contact Aumber of contacts as change-over contact Aumber of contacts as change Aumber of contacts as ch	Forced opening			Yes
Aumber of contacts as normally open contact Aumber of contacts as change-over contact Aumber of contacts as change	Number of safety auxiliary contacts			0
Aumbier of contacts as change-over contact Vive of interface (or safety communication (or therefore for safety category for gas (or therefore for safety category for dust (or therefore for safety category for safety category for dust (or therefore for safety category for safety category for safety cat	Number of contacts as normally closed contact			1
ype of interface ype of interface for safety communication Construction type housing Material housing Coating housing Coating housing Ype of control element Vigor of control element Vigor of electric connection Vith status indication Vith status indica	Number of contacts as normally open contact			1
None Construction type housing Coating housing	Number of contacts as change-over contact			0
Construction type housing Construction type housing Coating ho	Type of interface			None
Material housing Coating housi	Type of interface for safety communication			None
Coating housing Coating housin	Construction type housing			Cuboid
Alignment of the control element Alignment of electric connection Alignm	Material housing			Plastic
Alignment of the control element Type of electric connection Other With status indication With status indication Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Other Oth	Coating housing			Other
Type of electric connection With status indication No Suitable for safety functions Explosion safety category for gas Ambient temperature during operating Degree of protection (IP) Other Other No No Yes None None CC 25 - 70 IP67	Type of control element			Plunger
No Suitable for safety functions Suitable for safety category for gas Suitable for safety category for gas None Supposion safety category for dust Ambient temperature during operating None Supposion safety category for dust None Supposion safety	Alignment of the control element			Other
Suitable for safety functions Suitable for safety functions Suitable for safety functions Suitable for safety category for gas Supposion safety category for dust Supposion safety category for	Type of electric connection			Other
Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating C 25 - 70 Degree of protection (IP) None 1P67	With status indication			No
Explosion safety category for dust Ambient temperature during operating Oegree of protection (IP) None 25 - 70 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 $2 \times M4 \ge 30$ $M_A = 1.5 \text{ Nm}$

