DATASHEET - LS-S11S



Position switch, Rounded plunger, Basic device, expandable, 1 N/0, 1 NC, Screw terminal, Yellow, Insulated material, -25 - +70 °C, EN 50047 Form B



Part no. LS-S11S Catalog No. 106798 Alternate Catalog LS-S11S

No.

EL-Nummer 4315212

(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
Snap-action contact		Yes
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-\frac{13}{14}\frac{21}{22}
Contact travel = Contact closed = Contact open		0 3.0 6.1 21-22 13-14 21-22 13-14 1.6 Zw = 5.5 mm
Positive opening (ZW)		yes
Colour		
Enclosure covers		Yellow
Enclosure covers		
Housing		Insulated material
Connection type		Screw terminal

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°

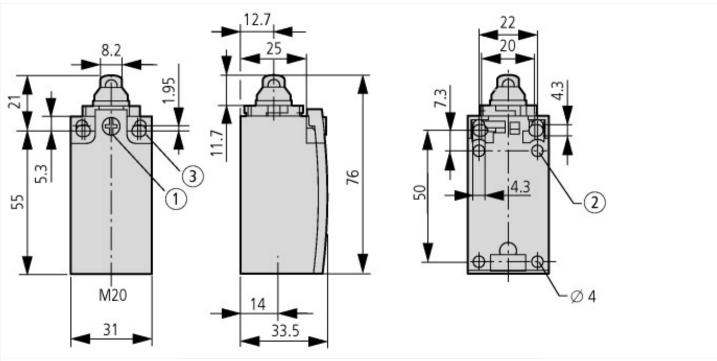
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply,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

	Technical data ETIM 7.0		
Accidence 10 1.27 27 0.0 of 1.42 232015)	Sensors (EG000026) / End switch (EC000030)		
Diameter sensor	Electric engineering, automation, process control engineering / Binary sensor technol (ecl@ss10.0.1-27-27-06-01 [AGZ382015])	logy, safety-related se	ensor technology / Position switch / Position switch (Type 1)
mm Silent of sensor Silent of	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 0.8 Rated operation current le at DC-13, 23V A 0.8 Rated operation current le at DC-13, 230 V A 0.3 Switching function latching A 0.3 Switching function latching No No Dutte electronic Yes No Corrected opening Yes 1 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 1 1 Number of contacts as normally closed contact 1 1 Number of contacts as change-over contact 1 No Obstitution Sype of interface for safety communication 1 No Control of safety communication 1 Plastic	Diameter sensor	mm	0
Set of 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, 125 V A 6 Alted operation current le at AC-15, 230 V A 0 Alted operation current le at DC-13, 230 V A 0.3 Alted operation current le at DC-13, 230 V A 0.3 Switching function No No Switching function latching No No Dutput electronic I No Switching function latching I 1 Number of safety auxiliary contacts I 1 Number of contacts as normally closed contact I 1 Number of contacts as change-over contact I No Number of contacts as change-over contact I No Obstitution type housing I No Obstitution type housing I Dutped Obstitution type housing I Dutped Vege of control element I Dutped Vige of control element I	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 Bated operation current le at DC-13, 25 V A 0 Switching function B 0 Switching function latching No No Dutput electronic No No Forest opening Yes 1 Number of safety auxiliary contacts 1 1 Number of contacts as normally open contact 1 1 Number of contacts as normally open contact 1 0 Number of contacts as normally open contact 1 0 Number of contacts as normally open contact 1 None Number of contacts as normally open contact 1 0 Number of contacts as normally open contact 1 0 None 1 0 None 0 0 None 0 0 None 0 0 None 0 <	Length of sensor	mm	33.5
Rated operation current le at DC-13, 24 V A 3 Rated operation current le at DC-13, 125 V A 0.8 Rated operation current le at DC-13, 125 V A 0.8 Sated operation current le at DC-13, 220 V A 0.3 Switching function No 0.0 Switching function latching No No Dutput electronic No No Forced opening Yes No Number of safety suxiliary contacts 1 1 Number of contacts as normally closed contact 1 1 Number of contacts as normally open contact 1 1 Number of contacts as change-over contact None None Type of interface for safety communication None Cuboid Material housing Cuboid Cuboid Auterial housing Cuboid Cuboid Auterial housing Cuboid Cuboid Alignment of the control element Cuboid Cuboid Alignment of the control element Cuboid Cuboid Alignment of the control element	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 0.3 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, 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 Routed operation current le at DC-13, 230 V A 0.3 Routeling function latching No. Routeling for safety suililiary contacts No. Routeling for contacts as normally closed contact I 1 Routeling for contacts as normally open contact I 1 Routeling for contacts as normally open contact I 1 Routeling for contacts as change-over contact I 1 Routeling for safety communication No. Routeling for safety communication No. Routeling for contact I 1 Routeling for safety communication No. Routeling for the control element No. Routeling for safety functions No. Routeling for dust No. Routeling for the control element No. Routeling for the control elem	Rated operation current le at AC-15, 230 V	Α	6
A Descripting function current le at DC-13, 230 V	Rated operation current le at DC-13, 24 V	Α	3
Switching function Switching function latching Surpose of electric connection Switching function latching Switching function latching Surpose of electric connection Switching function latching Switching function Switch funct	Rated operation current le at DC-13, 125 V	Α	0.8
Switchining function latching Dutput electronic Forced opening Number of safety auxillary contacts Number of safety auxillary 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 change-over contact Number of contacts as normally closed contacts Numb	Rated operation current le at DC-13, 230 V	Α	0.3
Dutput 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 Express of interface for safety communication None Construction type housing Cuboid Material housing Plastic Control element Other Alignment of the control element Other Type of electric connection Other 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) Ple7	Switching function		Quick-break 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	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 as normally open contacts as normally open	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 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 change.	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 Construction type for safety communication Construction type housing Material housing Control element Nignment of the control element None Nother None Nother None Nother None Nother None Nother None None None None None Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating None Control (IP) Planger None 1	Number of safety auxiliary contacts		1
Number of contacts as change-over contact Type of interface Type of interface for safety communication Construction type housing Material housing Coating housing Coating housing Alignment of the control element Type of electric connection With status indication With status indication Suitable for safety functions Explosion safety category for dust Ambient temperature during operating Coating housing Coating housing Other Other None Suitable for safety category for dust Ambient temperature during operating Coating housing None 1	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
None Construction type housing Coating housing	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) Plastic Other Other Other Other Other No No Yes Solitable for safety functions CC 25 - 70 Degree of protection (IP)	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 Explosion safety category for dust Ambient temperature during operating Degree of protection (IP) Other Other Other No No Yes None 25 - 70 IP67	Construction type housing		Cuboid
Fype 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 Plunger Other Other No	Material housing		Plastic
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 No No No No No No No No No N	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) Other Other No No Yes None None Cc 25 - 70 IP67	Type of control element		Plunger
With status indication Suitable for safety functions Explosion safety category for gas Ambient temperature during operating Pegree of protection (IP) No No No No No No No No No N	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 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Type of electric connection		Other
Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Compare 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 $2 \times M4 \ge 30$ $M_A = 1.5 \text{ Nm}$

