DATASHEET - LS-S20



Position switch, 2N/O, rounded plunger

Part no. LS-S20
Catalog No. 106808
Eaton Catalog No. LS-S20
EL-Nummer 0004315219
(Norway)



Delivery program

Part group reference Product range Degree of Protection Features Basic device, expandable Ambient temperature Contacts N/O = Normally open Contact trave = Contact closed = Contact open Enclosure covers Enclosure covers Enclosure covers Insulated material	Delivery program		
Product range Degree of Protection Features Ambient temperature Contacts N/O = Normally open Contact sequence Contact travel = Contact closed = Contact open Enclosure covers Enclosure covers Housing Rounded plunger 1P66, IP67 Basic device, expandable Co - 25 - +70 2 N/O - 13 123 - 14 24 - 13 43 6.1 - 13 43 6	Basic function		Position switches
Degree of Protection Features Ambient temperature Contacts N/O = Normally open Contact travel = Contact closed = Contact open Enclosure covers Enclosure covers Housing	Part group reference		LS(M)
Features Ambient temperature **C	Product range		Rounded plunger
Ambient temperature Contacts N/O = Normally open Contact sequence Contact travel = Contact closed = Contact open Enclosure covers Enclosure covers Housing Contact temperature Contact travel = -25 + 70 2 N/O 3 13 1 23 4 3 6.1 13 4 24 2 N/O 2 N/O 2 N/O 1 13 1 23 4 3 6.1 13 1 4 24 2 N/O 2 N/O 2 N/O 1 13 1 23 4 3 6.1 1 13 1 23 4 3 6.1 1 13 1 24 2 N/O 2 N/O 2 N/O 1 13 1 24 2 N/O 1 13 1 23 4 3 6.1 1 13 1 23 4 3 6.1 1 13 1 23 4 3 6.1 1 13 1 23 4 3 6.1 1 13 1 24 2 N/O 2 N/O 2 N/O 2 N/O 2 N/O 1 13 1 23 4 3 6.1 1 13 1 24 2 N/O 2 N/O 2 N/O 2 N/O 2 N/O 1 13 1 23 4 1 24 2 N/O 2 N/	Degree of Protection		IP66, IP67
Contact sequence Contact travel = Contact closed = Contact open Colour Enclosure covers Enclosure covers Housing Insulated material	Features		Basic device, expandable
N/O = Normally open Contact sequence Contact travel = Contact closed = Contact open Colour Enclosure covers Enclosure covers Housing Enclosure Market	Ambient temperature	°C	-25 - +70
Contact travel = Contact closed = Contact open Colour Enclosure covers Enclosure covers Housing Insulated material	Contacts		
Contact travel = Contact closed = Contact open 13-14	N/O = Normally open		2 N/O
Colour Enclosure covers Finclosure covers Housing Insulated material	Contact sequence		0- 1 -1
Enclosure covers Enclosure covers Housing Yellow Insulated material	Contact travel = Contact closed = Contact open		13-14 NO 23-24 NO
Enclosure covers Housing Insulated material	Colour		
Housing Insulated material	Enclosure covers		Yellow
•	Enclosure covers		
Connection type Screw terminal	Housing		Insulated material
	Connection type		Screw terminal

Technical data

Overvoltage category/pollution degree

Rated operational current

AC-15

General

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)
Contacts/switching capacity			
Rated impulse withstand voltage	U_{imp}	V AC	4000
Rated insulation voltage	Ui	V	400

Α

 $I_{\rm e}$

III/3

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 probabili	< 10 ⁻⁷ , < 1 fault in 107 operations ty
at 5 V DC/1 mA	H _F	Fault probabili	$< 10^{-6}$, < 1 failure at 5 x 10^6 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 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
Notes			for angle of actuation $\alpha = 0^{\circ}/30^{\circ}$

Design verification as per IEC/EN 61439

Design vernication as per icc/cm 01459			
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
EC/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 7.0

Sensors (EG000026) / End switch (EC000030)

Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1)

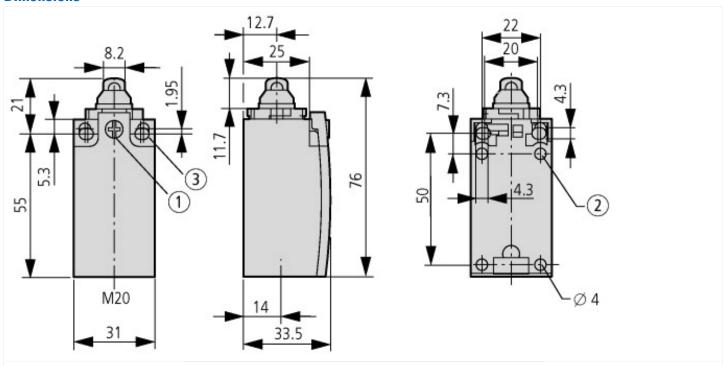
(ecl@ss10.0.1-27-27-06-01 [AGZ382015])		
Width sensor	mm	31
Diameter sensor	mm	0
Height of sensor	mm	61
Length of sensor	mm	33.5
Rated operation current le at AC-15, 24 V	Α	6
Rated operation current le at AC-15, 125 V	Α	6
Rated operation current le at AC-15, 230 V	Α	6
Rated operation current le at DC-13, 24 V	Α	3
Rated operation current le at DC-13, 125 V	Α	0.8
Rated operation current le at DC-13, 230 V	Α	0.3
Switching function		Slow-action switch
Switching function latching		No
Output electronic		No
Forced opening		No
Number of safety auxiliary contacts		0
Number of contacts as normally closed contact		0
Number of contacts as normally open contact		2
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		Plunger
Alignment of the control element		Other
Type of electric connection		Other
With status indication		No
Suitable for safety functions		No
Explosion safety category for gas		None
Explosion safety category for dust		None
Ambient temperature during operating	°C	25 - 70
Degree of protection (IP)		IP67
Degree of protection (NEMA)		4X

Approvals

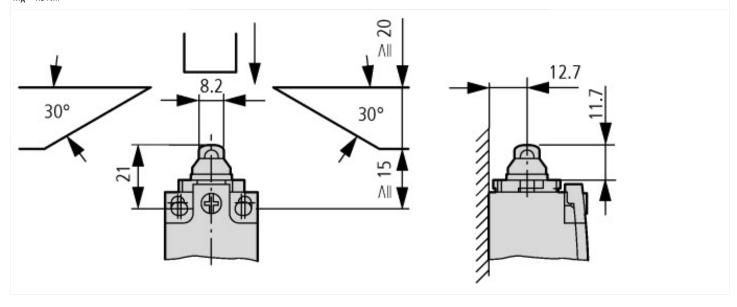
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Product Standards	IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	12528
CSA Class No.	3211-03

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 x M4 \geqq 30 M_A = 1.5 Nm



Additional product information (links)

IL053001ZU LS-Titan position switch: basic device

IL053001ZU LS-Titan position switch: basic device

ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL053001ZU2018_06.pdf