

Position switch, 2N/O, rounded plunger

LS-S20B

116707

LS-S20B

Part no. Article no. Catalog No.



Delivery program

Basic function		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		2 N/O
Contact sequence		- + + + + + + + + + + + + + + + + + + +
Contact travel = Contact closed = Contact open		0 1.3 6.1 13-14 NO 23-24 NO
Colour		
Enclosure covers		Yellow
Enclosure covers		
Housing		Insulated material
Connection type		Screw terminal

Technical data

		IEC/EN 60947	
		Damp heat, constant, to IEC 60068-2-78; damp heat, cyclical, to IEC 60068-2-30	
	°C	-25 - +70	
		As required	
		IP66, IP67	
	mm ²		
	mm ²	1 x (0.5 - 2.5)	
	mm ²	1 x (0.5 - 1.5)	
Contacts/switching capacity			
U _{imp}	V AC	4000	
Ui	V	400	
		111/3	
le	А		
le	А	6	
	U _i I _e	mm ² mm ² mm ² U _{imp} V AC U _i V	

220 V 230 V 240 V	Ι _e	А	6
380 V 400 V 415 V	l _e	Α	4
DC-13			
24 V	le	А	3
110 V	le	А	0.6
220 V	le	А	0.3
Control circuit reliability			
at 24 V DC/5 mA	H _F	Fault probabilit	< 10 ⁻⁷ , < 1 fault in 107 operations ty
at 5 V DC/1 mA	H _F	Fault probabilit	< 10 ⁻⁶ , < 1 failure at 5 x 10 ⁶ operations Y
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		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 In In <th>boolgii formoution do por 120, 211 of 100</th> <th></th> <th></th> <th></th>	boolgii formoution do por 120, 211 of 100			
Hatd dissipation per pole, current-dependent Poid Weil Pice Pic	Technical data for design verification			
Equipment theat dissipation, current-dependent Paid We Equipment theat dissipation, non-current-dependent Pais We 0 Iteat dissipation capacity Paiss We 0 Operating ambient temperature min. °C 25 Operating ambient temperature max. °C 26 102.5 Urength of materials and parts °C 70 102.2 Strength of materials and parts Meets the product standard's requirements. Meets the product standard's requirements. 102.3.1 Verification of resistance of insulating materials to normal heat Meets the product standard's requirements. Meets the product standard's requirements. 102.3.2 Verification of resistance of insulating materials to abnormal heat Meets the product standard's requirements. Meets the product standard's requirements. 102.4 Resistance to ultra-violet (UV) radiation Meets the product standard's requirements. Meets the product standard's requirements. 102.7 Inscriptions Meets the product standard's requirements. Meets the product standard's requirements. 103.0 Eque of protection of ASSEMBLIES Meets the product standard's requirements. Meets the product standard's requirements. 104.Clearances and creepage distances Meets	Rated operational current for specified heat dissipation	In	А	6
Static heat dissipation, non-current-dependent Pos We 0 Idea dissipation capacity Paiss We 0 Operating ambient temperature min. °C 25 Operating ambient temperature max. °C 70 IBC/EN 61439 design verification °C 70 10.2.2 Corrosion resistance Neets the product standard's requirements. 10.2.2 Corrosion resistance of insulating materials to normal heat Meets the product standard's requirements. 10.2.3.1 Verification of resistance of insulating materials to abnormal heat Meets the product standard's requirements. 10.2.3.2 Verification of resistance of insulating materials to abnormal heat Meets the product standard's requirements. 10.2.3.2 Verification of resistance of insulating materials to abnormal heat Meets the product standard's requirements. 10.2.4 Resistance to ultra-violet (UV) radiation Meets the product standard's requirements. 10.3.2 Merification of ASSEMBLIES Does not apply, since the entire switchgear needs to be evaluated. 10.3.2 Portection against electric shock Does not apply, since the entire switchgear needs to be evaluated. 10.4 Clearances and creepage distances Does not apply, since the entire switchgear needs to be evaluated. 10.4 Clearances and creepage distances Does not	Heat dissipation per pole, current-dependent	P _{vid}	W	0.17
Heat dissipation capacityPdissW0Operating ambient temperature min.°C-5Operating ambient temperature max.°C0102 Strength of materials and parts°C010.2 Strength of materials and partsMMest the product standard's requirements.10.2.3 Uverification of thermal stability of enclosuresMest the product standard's requirements.10.2.3.1 Verification of resistance of insulating materials to abnormal heatMest the product standard's requirements.10.2.3.2 Verification of resistance of insulating materials to abnormal heatMest the product standard's requirements.10.2.3.2 Verification of resistance of insulating materials to abnormal heatMest the product standard's requirements.10.2.4 Resistance to ultra-violet (UV) radiationMest the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.2.7 InscriptionsDoes not apply, since the entire switchgear needs to be evaluated.10.3.1 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesDoes not apply, since the entire switchgear needs to be evaluated.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.5 Internal electric of crucits and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.5 Internal electric in outs and componentsDoes not apply, sinc	Equipment heat dissipation, current-dependent	P _{vid}	W	0
Operating ambient temperature min. out <	Static heat dissipation, non-current-dependent	P _{vs}	W	0
Operating ambient temperature max. C Product standard's requirements. 102 Strength of materials and parts Meets the product standard's requirements. 102.25 Corrosion resistance Meets the product standard's requirements. 102.31 Verification of thermal stability of enclosures Meets the product standard's requirements. 102.32 Verification of resistance of insulating materials to normal heat and fire due to internal electric effects Meets the product standard's requirements. 102.42 Resistance to ultra-violet (UV) radiation Meets the product standard's requirements. 102.51 Lifting Does not apply, since the entire switchgear needs to be evaluated. 102.71 Inscriptions Meets the product standard's requirements. 103.20 Egree 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. 10.5 Information of switching devices and components Does not apply, since the entire switchgear needs to be evaluated. 10.5 Protection against electric shock Does not apply, since the entire switchgear needs to be evaluated. 10.5 Internal electrical cincuits and connections Dees not apply,	Heat dissipation capacity	P _{diss}	W	0
IEC/EN 61439 design verification IEC/EN 61439 design verification 10.2 Strength of materials and parts Meets the product standard's requirements. 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 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. 10.3.1 Spegree of protection of ASSEMBLIES Does not apply, since the entire switchgear needs to be evaluated. 10.4 Clearances and creepage distances Does not apply, since the entire switchgear needs to be evaluated. 10.5 Protection against electric shock Does not apply, since the entire switchgear needs to be evaluated. 10.5 Internal electric al circuits and components Does not apply, since the entire switchgear needs to be evaluated. 10.5 Internal electric al circuits and connections Does not apply, since the entire switchgear needs to be evaluated. 10.5 Internal electric al circuits and connections Does not app	Operating ambient temperature min.		°C	-25
10.2 Strength of materials and partsMets the product standard's requirements.10.2.2 Corrosion resistanceMets the product standard's requirements.10.2.3.1 Verification of thermal stability of enclosuresMets the product standard's requirements.10.2.3.2 Verification of resistance of insulating materials to normal heatMets the product standard's requirements.10.2.3.3 Verification of resistance of insulating materials to abnormal heatMets the product standard's requirements.10.2.4 Resistance to ultra-violet (UV) radiationMets the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.3.2 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMets the product standard's requirements.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electric all circuits and connectionsMets the product standard's requirements.	Operating ambient temperature max.		°C	70
10.2.2 Corrosion resistanceMeets the product standard's requirements.10.2.3.1 Verification of thermal stability of enclosuresMeets the product standard's requirements.10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effectsMeets the product standard's requirements.10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effectsMeets the product standard's requirements.10.2.4 Resistance to ultra-violet (UV) radiationMeets the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.3.7 InscriptionsMeets the product standard's requirements.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electric licicuits and connectionsMeets the product standard's requirements.	IEC/EN 61439 design verification			
10.2.3.1 Verification of thermal stability of enclosuresMeets the product standard's requirements.10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effectsMeets the product standard's requirements.10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effectsMeets the product standard's requirements.10.2.4 Resistance to ultra-violet (UV) radiationMeets the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.3.0 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesDoes not apply, since the entire switchgear needs to be evaluated.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electric arcuits and connectionsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electric arcuits and connectionsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electric arcuits and connectionsDoes not apply, since the entire switchgear needs to be evaluated.	10.2 Strength of materials and parts			
10.2.3.2 Verification of resistance of insulating materials to normal heat and fire due to internal electric effectsMeets the product standard's requirements.10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effectsMeets the product standard's requirements.10.2.4 Resistance to ultra-violet (UV) radiationMeets the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.3.7 InscriptionsMeets the product standard's requirements.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection of switching devices and componentsMeets the product standard's requirements.10.6 Incorporation of switching devices and componentsMeets the product standard's requirements.10.7 Internal electrical circuits and connectionsMeets the product standard's requirements.	10.2.2 Corrosion resistance			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 effectsMeets the product standard's requirements.10.2.4 Resistance to ultra-violet (UV) radiationMeets the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.2.7 InscriptionsMeets the product standard's requirements.10.3 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electrical circuits and connectionsImage: Standard's requirements.	10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
and fire due to internal electric effectsA fire due to internal electric effects10.2.4 Resistance to ultra-violet (UV) radiationMeets the product standard's requirements.10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.2.7 InscriptionsMeets the product standard's requirements.10.3 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsMeets the product standard's requirements.10.7 Internal electrical circuits and connectionsMeets the product standard's requirements.	10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.2.7 InscriptionsMeets the product standard's requirements.10.3 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsMeets the product standard's requirements.10.7 Internal electrical circuits and connectionsImage: State product standard's responsibility.	5			Meets the product standard's requirements.
10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.10.2.7 InscriptionsMeets the product standard's requirements.10.3 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsMeets10.7 Internal electrical circuits and connectionsImage: Constant apply	10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.7 InscriptionsMeets the product standard's requirements.10.3 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsMeets the product standard's requirements.10.7 Internal electrical circuits and connectionsImage: Constant of the product standard's responsibility.	10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.3 Degree of protection of ASSEMBLIESDoes not apply, since the entire switchgear needs to be evaluated.10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsMeets10.7 Internal electrical circuits and connectionsMeets	10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distancesMeets the product standard's requirements.10.5 Protection against electric shockDoes not apply, since the entire switchgear needs to be evaluated.10.6 Incorporation of switching devices and componentsDoes not apply, since the entire switchgear needs to be evaluated.10.7 Internal electrical circuits and connectionsImage: Constant of the panel builder's responsibility.	10.2.7 Inscriptions			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 Image: Constant of the panel builder's responsibility.	10.3 Degree of protection of ASSEMBLIES			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.	10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.7 Internal electrical circuits and connections Is the panel builder's responsibility.	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.
10.8 Connections for external conductors Is the panel builder's responsibility.	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)

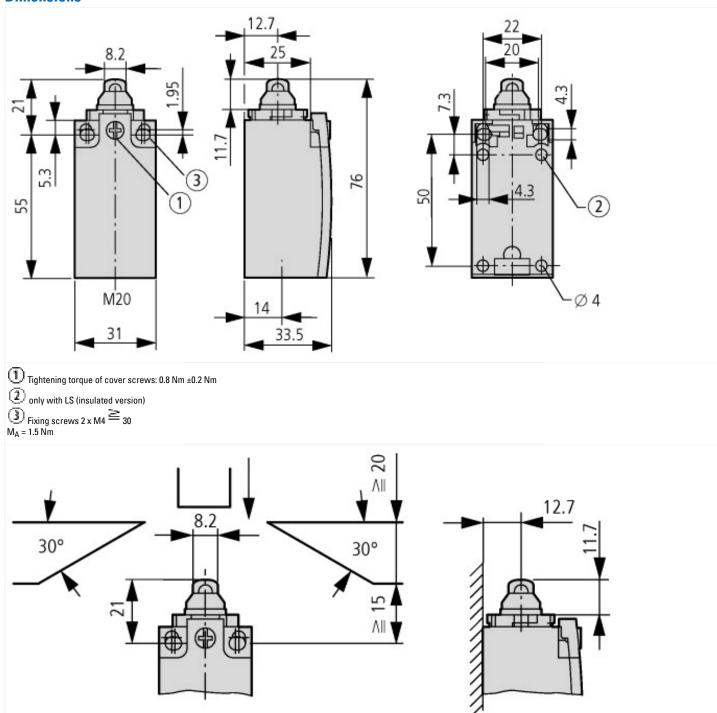
Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1) (ecl@ss8.1-27-27-06-01 [AGZ382012])

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		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
Housing according to norm		DIN EN 50047
Construction type housing		Cuboid
Material housing		Plastic
Coating housing		
Type of control element		Plunger
Alignment of the control element		
Type of electric connection		
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

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

Dimensions



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