DATASHEET - LS-S20A/F



Position switch, Rounded plunger, Basic device, not expandable, 2 N/O, Screw terminal, Yellow, Insulated material, -25 - +70 °C, version A



Part no.LS-S20A/FCatalog No.106811Alternate CatalogLS-S20A-FNo.No.

Delivery program

Basic function		Position switches
Part group reference		LS(M)
Product range		Rounded plunger
Degree of Protection		IP66, IP67
Features		Basic device, not expandable
Ambient temperature	°C	-25 - +70
Contacts		
N/O = Normally open		2 N/O
Contact sequence		- + + + + + + + + + + + + + + + + + + +
Contact travel = Contact closed = Contact open		0 2.1 6.1 13-14 NO 23-24 2.1 NO
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			111/3
Rated operational current	le	А	

AC-15			
24 V	l _e	A	6
220 V 230 V 240 V	le	А	6
380 V 400 V 415 V	l _e	А	4
DC-13			
24 V	le	А	3
110 V	le	А	0.6
220 V	l _e	А	0.3
Control circuit reliability			
at 24 V DC/5 mA	H _F	Fault probabilit	< 10 ⁻⁷ , < 1 fault in 10 ⁷ operations ty
at 5 V DC/1 mA	H _F	Fault probabilit	< 5 x 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
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			
Rated operational current for specified heat dissipation	In	А	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.
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])

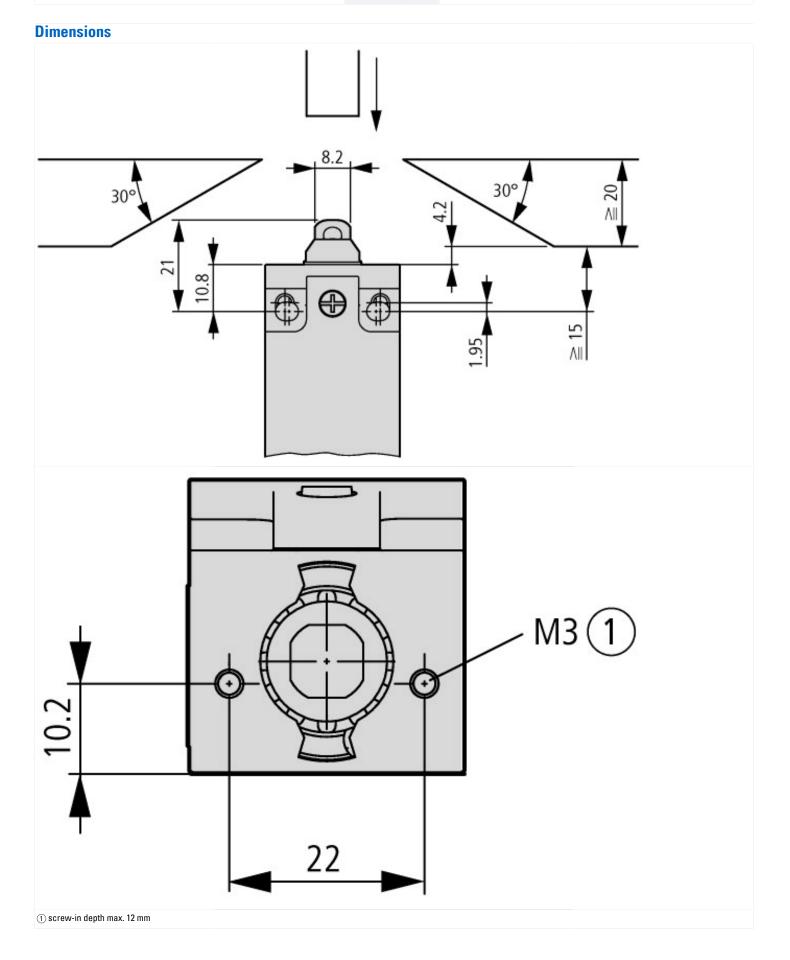
Diameter sensornm0Height of sensornm61Length of sensornm35Rated operation current le at AC-15,24 VA6Rated operation current le at AC-15,230 VA6Rated operation current le at CD-13,24 VA8Rated operation current le at DC-13,24 VA8Rated operation current le at DC-13,250 VA9Switching functionM9Switching functionM9Switching functionM9Switching functionM9Number of contacts as normally closed contactMNNumber of contacts as normally closed contactM9Type of interfaceMNonType of interfaceNonType of interfaceNonType of interface </th <th>(eci@SS10.0.1-27-27-00-01 [A02362013])</th> <th></th> <th></th>	(eci@SS10.0.1-27-27-00-01 [A02362013])		
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Rated operation current le at AC-15, 125 V A 6 Rated operation current le at AC-15, 230 V A 6 Rated operation current le at DC-13, 24 V B 8 Rated operation current le at DC-13, 250 V B 6 Switching function Switching function Switching function Switching function Switching function Switching function Dutp at electronic Switching function Switching function Number of contacts as normally closed contact Switching function Switching function Number of contacts as normally closed contact Switching function Switching function You of interface You of interface Switching function Switching function You of interface for safety communication You of interface Switching function Switching function You of interface for safety communication You of interface Switching function Switching function You of interface for safety communication You of interface Switching function Switching function You of interface for safety communication You of interface Switching function Switching function You of interface You of interface	Length of sensor	mm	33.5
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Rated operation current le at DC-13, 25 V A 3 Bated operation current le at DC-13, 25 V A 0.3 Switching function Silve-action switch Silve-action switch Switching function Silve-action switch Silve-action switch Switching function Silve-action switch Silve-action switch Switching function latching No No Dutput alectronic Silve-action switch Silve-action switch Number of actety swillary contacts Silve-action switch Silve-action switch Number of actety as normally open contact Silve-action solve-action Silve-action solve-action Sylve of interface Silve-action solve-action Silve-action Silve-action Silve-action Silve-action Sylve of interface for safety communication Silve-action Silve-action Silve-action Sylve of interface for safety communication Silve-action Silve-action Silve-action Sylve of interface for safety communication Silve-action Silve-action Silve-action Sylve of interface for safety communication Silve-action Silve-action Silve-action Sylve of interface for safety communication Silve-action	Rated operation current le at AC-15, 125 V	А	6
Rated operation current le at DC-13, 125 V A 6 Rated operation current le at DC-13, 230 V A 0.3 Switching function Silve-action switch Silve-action switch Switching function latching No No Output eletronic No No Switching function latching No No Number of safety auxiliary contacts O No Number of contacts as normally open contact No No Number of contacts as normally open contact No No System of interface No No No System of interface for safety communication No No No Solution type housing Pointerface No No No Solution type control element No No No No Solution type control element No No No No No Solution type control element No No No	Rated operation current le at AC-15, 230 V	А	6
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Output electronic Image: Section of Sectio	Switching function		Slow-action switch
Forced opening No Number of safey auxiliary contacts I Number of contacts as normally closed contact I Number of contacts as normally open contact I Number of contacts as normally open contact I Number of contacts as normally open contact I Number of contacts as change-over contact I Type of interface I None I Construction type housing I Naterial housindication	Switching function latching		No
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Number of contacts as normally closed contact Imper of contacts as normally open contact Imper of contact Imper	Forced opening		No
Number of contacts as normally open contact Image: Sector Sec	Number of safety auxiliary contacts		0
Number of contacts as change-over contact Image: Contacts as change-over contact Imag	Number of contacts as normally closed contact		0
Type of interface Mone Type of interface for safety communication Mone Construction type housing Mone Material housing Luboid Coating housing Mone Coating housing Mone Type of control element Mone Alignment of the control element Mone Type of electric connection Mone With status indication Mone Suitable for safety functions Mone Explosion safety category for gas Mone Explosion safety category for dust Mone Ambient temperature during operating Mone Degree of protection (IP) Mone	Number of contacts as normally open contact		2
Type of interface for safety communication None Type of interface for safety communication Cobid Construction type housing Cubid 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 None Suitable for safety functions None Explosion safety category for gas None Antient emperature during operating Other Plasters for safety (IPC) None Plasters for safety (IPC) None Suitable for safety (Inctions Social Explosion safety category for dust None Antient emperature during operating Other Plasters for the for the for the formation None Plasters for the formation None Plasters for the formation None Antient emperature during operating Plasters formation Plasters for the formation Social Plasters for the formation Plasters formation Plasters for the formation	Number of contacts as change-over contact		0
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Material housingPlasticCoating housingOtherType of control elementPlungerAlignment of the control elementOtherType of electric connectionOtherWith status indicationOtherSuitable for safety functionsOtherExplosion safety category for gasOtherAnbient temperature during operatingOtherDegree of protection (IP)Other	Type of interface for safety communication		None
Coating housing Cher Type of control element Plunger Alignment of the control element Plunger Type of electric connection Other With status indication Solone Suitable for safety functions Image: Solone Explosion safety category for gas Image: Solone Ambient temperature during operating Image: Solone Partee of protection (IP) Image: Solone	Construction type housing		Cuboid
Type of control element Pluger Alignment of the control element Pluger Type of electric connection Other With status indication No Suitable for safety functions Image: Control element Explosion safety category for gas Image: Control element Anbient temperature during operating Image: Control element Pagee of protection (IP) Image: Control element	Material housing		Plastic
Alignment of the control elementOtherType of electric connectionOtherWith status indicationOtherSuitable for safety functionsImage: Control of the control	Coating housing		Other
Type of electric connection Image: Connection With status indication Mo Suitable for safety functions Mo Explosion safety category for gas Mo Ambient temperature during operating Center Pagree of protection (IP) Image: Center	Type of control element		Plunger
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Suitable for safety functionsMoExplosion safety category for gasNoneExplosion safety category for dustNoneAmbient temperature during operating°CDegree of protection (IP)Implemented temperature during operating	Type of electric connection		Other
Explosion safety category for gasMoneExplosion safety category for dustMoneAmbient temperature during operatingCDegree of protection (IP)Implement temperature during operating	With status indication		No
Explosion safety category for dustNoneAmbient temperature during operating°C25 - 70Degree of protection (IP)Implement temperature during operation during temperature during	Suitable for safety functions		No
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

Degree of Protection

IEC: IP66, 67, UL/CSA Type 3R, 4X (indoor use only), 12, 13



Assets (links)

Declaration of CE Conformity 00003068 Instruction Leaflets IL053001ZU2018_06

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