



LS-S02A 116703 LS-S02A



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
Contacts		
N/C = Normally closed		2 NC 🛞
Notes		Θ = safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence		\circ
Contact travel = Contact closed = Contact open		0 2.0 6.1 11-12 NC 21-22 4.0 NC Zw (11-12) = 3.3 mm Zw (21-22) = 5.3 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)
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	Ι _e	A	
AC-15			
24 V	l _e	A	6
220 V 230 V 240 V	l _e	A	6
380 V 400 V 415 V	le	A	4
DC-13	16	~	
		٨	2
24 V	le	A	3
110 V	le	A	0.6
220 V	۱ _e	A	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		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 α = 0°/30°

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 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])

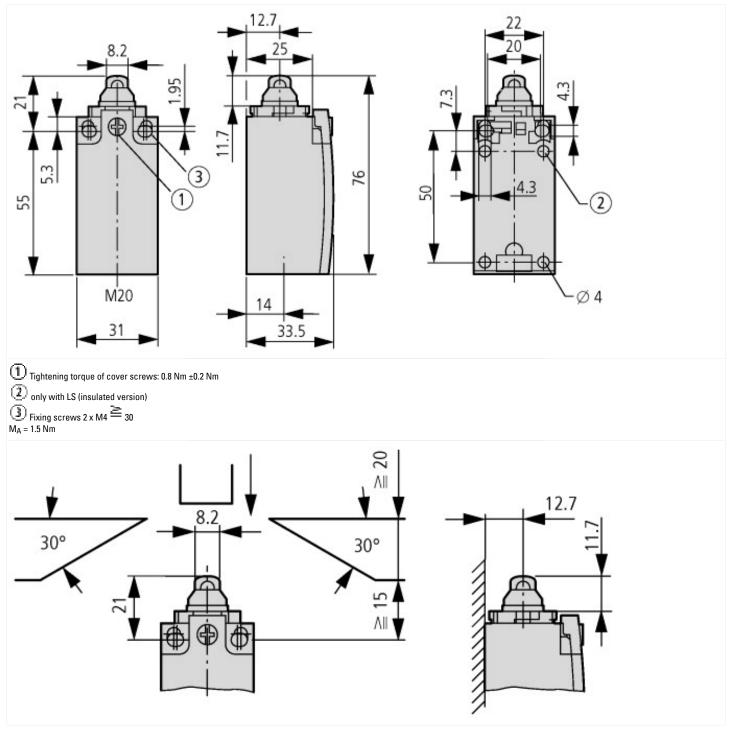
With some Dame some Display some	[AGZ362012])		
Hight of sensor Image Bit dependent ourrent ear AC-15, 24 V Image Bit dependent ourrent ear AC-15, 24 V Rated operation current ear AC-15, 25 V A 6 Rated operation current ear AC-15, 25 V A 6 Rated operation current ear AC-15, 24 V A 8 Rated operation current ear AC-15, 25 V A 8 Rated operation current ear AD-13, 25 V A 8 Nated operation current ear AD-13, 25 V A 8 Sviching function A 8 Opput electronic A 8 Noneortion current ear AD-13, 25 V A 9 Nated operation current ear AD-13, 25 V A 9 Noneortion Current ear AD-14, 26 V Noneortion Current ear AD-14, 27 V Number of Contadortion For Sectory corticat Non	Width sensor	mm	31
Legind sensorImage: Signal	Diameter sensor	mm	0
Rade operation current le at AC:15,25V A 6 Rade operation current le at AC:15,25V A 6 Rade operation current le at AC:15,25V G 6 Rade operation current le at DC:13,24V G 3 Rade operation current le at DC:13,25V G 0 Rade operation current le at DC:13,25V G 0 Sted operation current le at DC:13,25V G 0 Dupt deletronic F Soveation switch Dupt deletronic F Soveation switch Dupt deletronic F Soveation switch Number of contacts as normally colosed contact F Soveation switch Number of contacts as normally colosed contact F Soveation switch Number of contacts as normally colosed contact F Soveation switch Number of contacts as normally colosed contact F Soveation switch Soveation switch Soveation switch Soveation switch Soveation swi	Height of sensor	mm	61
Reted operation current le at AC-15, 125 V Image: A im	Length of sensor	mm	33.5
Reted operation current le at AC-15,280V A A Reted operation current le at DC-13,28V A B Reted operation current le at DC-13,280V A B Switch function C B Subtato surrent le at DC-13,280V Soweration surrent le at DC-13,280V Soweration surrent le at DC-13,280V Switch function C B Soweration surrent le at DC-13,280V Subtato surrent le at DC-13,280V Soweration surrent le at DC-13,280V Soweration surrent le at DC-13,280V Switch function C Soweration surrent le at DC-13,280V Soweration surrent le at DC-13,280V Subtato surrent le at DC-13,280V Soweration surrent le at DC-13,280V Soweration surrent le at DC-13,280V Switch function C Soweration surrent le at DC-13,280V Soweration surrent le at DC-13,280V Subtator Subator Survent le at DC-13,280V Soweration surrent le at DC-13,280V Soweration surrent le at DC-13,280V Subator Subator Subator Survent Subator Survent	Rated operation current le at AC-15, 24 V	А	6
Rate operation current le at DC-13, 25V A B Rate operation current le at DC-13, 250 V A B Switch function A B Output elercnic Switch S Switch S Number of safety axiliary contacts C A B Number of safety axiliary contacts C C B C B C	Rated operation current le at AC-15, 125 V	А	6
Rate doer ation current le at DC-13, 25V A B Rate doer ation current le at DC-13, 25V A B Switching function Switching switch Switching switch Output electronic Switching switch Switching switch Forced opening Switching switch Switching switch Number of contacts as normally closed contact C G Number of contacts as change-over contact Switching Switching Number of contacts as change-over contact Switching	Rated operation current le at AC-15, 230 V	А	6
Ret depration current le at DC-13, 230 V Image: A margin and the second sec	Rated operation current le at DC-13, 24 V	А	3
Switching function Solva-action switch Output electronic Mo Forced opening No Number of safety swillary contacts Yes Number of contacts as normally closed contact 2 Number of contacts as normally closed contact 2 Number of contacts as normally closed contact 1 Number of contacts as normally closed contact 0 Number of contacts as change-over contact 1 Yes of interface 0 Type of interface None Number of contacts as normally closed contact None Number of contacts as normally closed contact None Yes of interface None Yes of interface None Number of contacts as normally closed contact None Rest of the control element None None None Stabils for safety functions Yes Stabils for safety functions None Stabils for safety functions None Stabils for safety functions None Stabils for safety for dust None A	Rated operation current le at DC-13, 125 V	А	0.8
Output electronic No Fored opening Yes Number of safety auxiliary contacts 2 Number of contacts as normally closed contact 2 Number of contacts as normally closed contact 2 Number of contacts as normally closed contact 4 Number of contacts as normally closed contact 5 Number of contacts as normally open contact 5 Number of contacts as change-over contact 5 Number of contacts as change-over contact 5 Number of contacts as change-over contact 5 Number of contacts as normally open contact 5 Number of contacts as change-over contact 5 Number of contacts as normally open contact 5 Number of contacts as change-over contact 5 Number of contacts as normally contact 5 Number of contacts as change-over contact 5 Number of contact as as change-over contact 5 Number of control element 5 Number of contaction 6 Number of contaction 6 Number of contaction 6 Nu	Rated operation current le at DC-13, 230 V	А	0.3
Forced opening Yes Number of safety auxiliary contacts 2 Number of contacts as normally closed contact 2 Number of contacts as normally closed contact 0 Number of contacts as normally open contact 0 Number of contacts as normally open contact 0 Number of contacts as change-over contact 0 Typ of interface None Typ of interface for safety communication None Housing according to norm Choid Construction type housing Choid Material housing Polog Typ of electric connection Polog Night status indication Polog Night status indication Polog Suitable for safety functions Polog Explosion safety category for dst Polog Autibut for safety functions Polog Suitable for safety category for dst Polog Autibut temperature during operating	Switching function		Slow-action switch
Number of safety auxiliary contactsImper of safety auxiliary contactsImper of contacts as normally closed contactImper of contact contactIm	Output electronic		No
Number of contacts as normally closed contactImage: Contacts as normally open contactsImage: Contacts as normally open contactImage: Contacts as normally open contactImage: Contacts as normally open contactsImage: Contact as normally open contactsImage: Co	Forced opening		Yes
Number of contacts as normally open contact Image of contacts as change-over contact Image of contact </td <td>Number of safety auxiliary contacts</td> <td></td> <td>2</td>	Number of safety auxiliary contacts		2
Number of contacts as change-over contact Image of interface None Type of interface for safety communication None None Housing according to norm Cubid DIN EN 50047 Construction type housing Cubid Plastic Material housing Plastic Plunger Coting to control element Plunger Plunger Alignment of the control element Sone None Vith status indication Sone None Suitable for safety contextor Sone Sone Explosion safety category for gas Sone None Athient temperature during operating Sone Sone	Number of contacts as normally closed contact		2
Type of interface None Type of interface for safety communication None Housing according to norm INEN 50047 Construction type housing Cuboid Material housing Plastic Coating housing Plunger Alignment of the control element INEN 50047 Ype of electric connection Plunger Vith status indication INEN 5004 Suitable for safety functions INEN 5004 Explosion safety category for dust INEN 5004 Anbient temperature during operating INEN 5004	Number of contacts as normally open contact		0
Type of interface for safety communication More Housing according to norm DIN EN 50047 Construction type housing Cuboid Material housing Cuboid Coating housing Plastic Coating housing - Type of control element Plunger Alignment of the control element - Type of electric connection Image: Section Safety functions Suitable for safety functions Section Safety category for dust Explosion safety category for dust More Amient temperature during operating Cub	Number of contacts as change-over contact		0
Housing according to norm IN EN 50047 Construction type housing Cubid Material housing Plastic Coating housing - Type of control element Plunger Alignment of the control element Image: Plunger Yube of electric connection Image: Plunger Vith status indication Image: Plunger Suitable for safety functions Image: Plunger Explosion safety category for dust Image: Plunger Anbient temperature during operating Image: Plunger	Type of interface		None
Construction type housing Cuboid Material housing Plastic Coating housing - Type of control element Plunger Alignment of the control element I Type of electric connection I With status indication I Suitable for safety functions I Explosion safety category for gas I Anbient temperature during operating I Or Sone Suitable temperature during operating I Outperature during operating I Anbient temperature during operating I	Type of interface for safety communication		None
Material housing Plastic Coating housing - Type of control element Plonger Alignment of the control element Plonger Type of electric connection Plonger With status indication Plonger Suitable for safety functions Plonger Explosion safety category for dust Plonger Ambient temperature during operating Plonger	Housing according to norm		DIN EN 50047
Coating housing - Type of control element Plunger Alignment of the control element - Type of electric connection Image: Plunger With status indication Image: Plunger Suitable for safety functions Image: Plunger Explosion safety category for dust Image: Plunger Ambient temperature during operating Image: Plunger Image: Plunger Image: Plunger </td <td>Construction type housing</td> <td></td> <td>Cuboid</td>	Construction type housing		Cuboid
Type of control element Plunger Alignment of the control element i <i>i Type of electric connection i<i>i<i>i<i>i<i>i<iii<iii<iii<iii<iii<< td=""><td>Material housing</td><td></td><td>Plastic</td></iii<iii<iii<iii<iii<<></i></i></i></i></i>	Material housing		Plastic
Alignment of the control element Image: Control element Type of electric connection Image: Control element With status indication Image: Control element Suitable for safety functions Image: Control element Explosion safety category for gas Image: Control element Explosion safety category for dust Image: Control element Ambient temperature during operating Image: Control element	Coating housing		
Type of electric connection Image: sector	Type of control element		Plunger
With status indicationMoSuitable for safety functionsMoExplosion safety category for gasMoExplosion safety category for dustMoAmbient temperature during operatingMoSuitable for safety category for dustSomeAmbient temperature during operatingSomeSuitable for safety category for dustSomeSuitable for safety category for	Alignment of the control element		
Suitable for safety functions Yes Explosion safety category for gas None Explosion safety category for dust None Ambient temperature during operating °C °25 - 70	Type of electric connection		
Explosion safety category for gas Mone Explosion safety category for dust Mone Ambient temperature during operating C 25 - 70	With status indication		No
Explosion safety category for dust None Ambient temperature during operating °C -25 - 70	Suitable for safety functions		Yes
Ambient temperature during operating °C -25 - 70	Explosion safety category for gas		None
	Explosion safety category for dust		None
Degree of protection (IP)	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

CSA File No.	1000
	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



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/IL053001ZU2013_08.pdf