### **DATASHEET - LS4/S11-1/I/ZB**



Safety position switch, LS(4)...ZB, Safety position switches, Complete unit, 1 N/0, 1 NC, narrow, Insulated material, Screw terminal, -25 - +70  $^{\circ}$ C



Part no. LS4/S11-1/I/ZB Catalog No. 106857

Alternate Catalog LS4/S11-1/I/ZB

No.

EL-Nummer 4356201

**Notes** Do not, under any circumstance, use the switch as a mechanical stop or transportation restraint or brace! Connect operating elements permanently with the protective device, e.g., with non-reusable screws or rivets.

(Norway)

#### Delivery program

Delivery program		
Basic function		Position switches Safety position switches
Part group reference		LS(4)ZB
Product range		Safety position switches
Degree of Protection		IP65
Features		Complete unit
Ambient temperature	°C	-25 - +70
Design		narrow
Description		With the actuator inserted, the N/O contact is open and the NC contact is closed.
Approval		ET 17039 Sicherheit geprüft tested safety
Contacts		
N/O = Normally open		1 N/O
N/C = Normally closed		1 NC →
Notes		e safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Contact travel = Contact closed = Contact open		13-14 21-22 0 2.65 3.55 6.0 Zw = 3.9 mm
Housing		Insulated material
Connection type		Screw terminal

#### Technical data General

Operating head can be rotated 90°.

delicital		
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		IP65
Terminal capacities	mm <sup>2</sup>	
Solid	$mm^2$	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)
Flexible with ferrule	$mm^2$	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)

		DIII
		PH1
	Nm	0.9
	mm	0.02
U <sub>imp</sub>	V AC	6000
Ui	V	500
		III/3
l <sub>e</sub>	Α	
l <sub>e</sub>	Α	6
l <sub>e</sub>	Α	6
l <sub>e</sub>	Α	4
l <sub>e</sub>	Α	3
l <sub>e</sub>	Α	0.8
l <sub>e</sub>	Α	0.3
	Hz	max. 400
	A gG/gL	10
	kA	1
Operations	x 10 <sup>6</sup>	1.5
	g	5
Operations/h		≦ 1800
	N	15/20 (plug-in/pull-out)
	Ie Ie Ie Ie Ie Operations	Uimp VAC Ui V  Ie A Ie A Ie A Ie A Ie A Ie A Operations x 10 <sup>6</sup> Operations/h

# Design verification as per IEC/EN 61439

Design verification as per IEG/EN 01439			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	6
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.1
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	P <sub>diss</sub>	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)

Width sensor         Imm         40           Diameter sensor         mm         25           Height of sensor         mm         40           Rated operation current le at AC-15, 24V         A         10           Rated operation current le at AC-15, 22V         A         6           Rated operation current le at DC-13, 24V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Rated operation current le at DC-13, 25V         A         8           Switching function latching         B         6         8           Where DC contect	(ecl@ss10.0.1-27-27-06-01 [AGZ382015])	 0.0100	(1)po 1
Height of sensor         mm         125           Length of sensor         mm         40           Rated operation current le at AC-15, 125 V         A         10           Rated operation current le at AC-15, 125 V         A         6           Rated operation current le at AC-15, 125 V         A         6           Rated operation current le at DC-13, 125 V         A         3           Rated operation current le at DC-13, 125 V         A         0           Rated operation current le at DC-13, 125 V         A         0           Rated operation current le at DC-13, 125 V         B         0           Rated operation current le at DC-13, 125 V         B         0           Rated operation current le at DC-13, 125 V         B         0           Rated operation current le at DC-13, 125 V         B         0           Rated operation current le at DC-13, 125 V         B         0           Rated operation current le at DC-13, 125 V         B         0           Rated operation current le at DC-13, 125 V         B         0           Switching function laterial post of the CD-13, 125 V         B         0           Number of contacts as normally closed contact         B         C         0           Number of contactes as normally open contact <td>Width sensor</td> <td>mm</td> <td>40</td>	Width sensor	mm	40
Length of sensor         mm         40           Rated operation current le at AC-15, 24 V         A         10           Rated operation current le at AC-15, 25 V         A         6           Rated operation current le at AC-15, 25 V         B         3           Rated operation current le at AC-15, 24 V         A         3           Rated operation current le at DC-13, 25 V         B         3           Rated operation current le at DC-13, 25 V         A         0           Rated operation current le at DC-13, 25 V         B         0           Switching function         B         0         0           Switching function         B         0         0           Switching function latching         B         0         0           Unique electronic         B         0         0           Switching function latching         B         0         0           Unique electronic         B         0         0           Switching function latching         B         0         0           Number of contacts as normally colorated         B         0         0           Number of contacts as change-over contact         B         0         0           Operation suiterface         B	Diameter sensor	mm	0
Rated operation current le at AC-15, 24 V         A         6           Rated operation current le at AC-15, 250 V         A         6           Rated operation current le at AC-15, 230 V         A         3           Rated operation current le at DC-13, 24 V         A         0           Rated operation current le at DC-13, 250 V         A         0           Rated operation current le at DC-13, 250 V         A         0           Switching function         B         No           Switching function surrent le at DC-13, 250 V         N         N           Switching function latching         N         N           Output alectronic         N         N           Torced opening         P         0           Number of contacts as normally closed contact         N         0           Number of contacts as normally closed contact         N         0           Number of contacts as normally connumication         N         No           Type of interface         N         No           Type of interface for safety communication         N         No           Costruction type housing         C         Ubic           Material housing         D         Ubic           Cotting housing         D         Ubic <td>Height of sensor</td> <td>mm</td> <td>125</td>	Height of sensor	mm	125
Rated operation current le at AC-15, 250 V         A         6           Rated operation current le at DC-13, 24 V         A         3           Rated operation current le at DC-13, 125 V         A         A           Rated operation current le at DC-13, 125 V         A         A           Switching function         Switching function         Switching function         Switching function           Switching function         B         Yes           Output electronic         No         No           Forced opening         Yes         Yes           Number of safety auxiliary contacts         Yes         O           Number of contacts as normally closed contact         Yes         O           Number of contacts as normally open contact         Yes         O           Number of contacts as change-over contact         Yes         None           Type of interface         Yes         None           Construction type housing         Yes         None           Material housing         Yes         Plastic           Coating housing         Yes         Other           Alignment of the control element         Yes         Cable entry metrical           With status indication         Yes         Cable entry metrical	Length of sensor	mm	40
Rated operation current le at AC-15, 230 V         A         6           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, 230 V         B         A           Switching function function in latching         No         No           Switching function latching         No         No           Output electronic         No         No           Forced opening         Yes         No           Number of contacts as normally closed contact         O         O           Number of contacts as normally open contact         O         O           Number of contacts as normally open contact         O         None           Type of interface for safety communication         None         O           Obstruction type housing         O         O           Material housing         O         O           Coating housing         O         O           Type of cortical element         O         O           Type of cortical element         O         O           With status indication         O         O           Suitable for safety functions         O         O	Rated operation current le at AC-15, 24 V	Α	10
Rated operation current le at DC-13, 24 V         A         3           Rated operation current le at DC-13, 125 V         A         0.8           Switching function         A         0.3           Switching function furcing function latching         No.         No.           Output alectronic         Yes         No.           Forced opening         Yes         No.           Number of safety auxiliary contacts         Yes         0           Number of contacts as normally closed contact         Yes         0           Number of contacts as normally open contact         Yes         None           Number of contacts as change-over contact         Yes         None           Type of interface for safety communication         Yes         None           Construction type housing         Yes         Cuboid           Material housing         Yes         Cuboid           Control element         Yes         Other           Alignment of the control element         Yes         Cubic entry metrical           Type of electric connection         Yes         Ves           Suitable for safety functions         Yes         None           Explosion safety category for dust         Yes         Yes           Explosion safety categor	Rated operation current le at AC-15, 125 V	Α	6
Rated operation current le at DC-13, 125 V         A         0.8           Rated operation current le at DC-13, 230 V         A         0.3           Switching function         Coveration switch           Switching function latching         No         No           Output electronic         No         No           Output electronic         Ves         No           Number of safety auxiliary contacts         0         O           Number of contacts as normally closed contact         0         O           Number of contacts as normally open contact         0         O           Number of contacts as normally open contact         0         O           Type of interface         None         None           Onstruction type housing         None         None           Construction type housing         Plastic         O           Coating housing         Plastic         O           Coating housing         O         O           Coating housing         O         O           Type of control element         O         O           Type of control element         O         O           With status indication         O         O           Explosion safety category for dust         O	Rated operation current le at AC-15, 230 V	Α	6
Rated operation current leat DC-13,230 V         A         3           Switching function         100 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 -	Rated operation current le at DC-13, 24 V	Α	3
Switching function         Sow-action switch           Switching function latching         No           Output electronic         No           Forced opening         Yes           Number of safety auxiliary contacts         0           Number of contacts as normally closed contact         0           Number of contacts as normally open contact         0           Number of contacts as change-over contact         0           Type of interface         None           Type of interface for safety communication         None           Construction type housing         None           Material housing         Plasic           Coating housing         Plasic           Coating housing         Plasic           Alignment of the control element         Plasic           Alignment of the control element         Plasic           Alignment of the control element         Plasic           With status indication         Plasic           Suitable for safety functions         Plasic           Suitable for	Rated operation current le at DC-13, 125 V	Α	0.8
Switching function latching         No           Output electronic         No           Forced opening         Yes           Number of safety auxiliary contacts         0           Number of contacts as normally closed contact         0           Number of contacts as normally open contact         0           Number of contacts as change-over contact         0           Type of interface         None           Type of interface for safety communication         None           Construction type housing         None           Costing housing         None           Cotating housing         None           Alignment of the control element         Other           Alignment of the control element         Other           Type of electric connection         Other           With status indication         Other           Suitable for safety functions         Other           Suitable for safety functions         Other           Specific connection         Other           Specific cannection         Other           Specific safety functions         Other           Specific safety functions         Other           Specific safety category for dust         None           Ambient temperature during operating	Rated operation current le at DC-13, 230 V	Α	0.3
Output electronic         No           Forced opening         Yes           Number of safety auxiliary contacts         0           Number of contacts as normally closed contact         0           Number of contacts as normally open contact         0           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         Destruction type footnoted           Type of control element         Other           Type of electric connection         Other           Suitable for safety functions         Cable entry metrical           With status indication         No           Suitable for safety functions         Yes           Explosion safety category for gas         No           Explosion safety category for dust         None           Ambient temperature during operating         *C         5-70           Degree of protection (IP)         *C         1965	Switching function		Slow-action switch
Forced opening Number of safety auxiliery 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 change-over contact  Type of interface Type of interface for safety communication  Construction type housing Material housing Coating housing Coating housing Coating housing Coating housing Coating housing Coating lement Type of centrol element Type of electric connection  With status indication  Vith status indication  Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating  Page of protection (IP)  Pige of electric connection  None  Selection safety category for dust Ambient temperature during operating  Piges  P	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 normal	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 change-over contact  Type of interface  Type of interface for safety communication  None  Construction type housing  Material housing  Coating housing  Cothrol element  Type of control element  Type of electric connection  With status indication  Suitable for safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Particular  Particular  Particular  O ther  Cable entry metrical  None  None  Explosion safety category for dust  Ambient temperature during operating  Particular  Particular	Forced opening		Yes
Number of contacts as normally open contact  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  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)  Do None  None  None  Control Cobe entry metrical  None  Cable entry metrical  None  Anoe  Pas  Pas  Pos  Pos  Pos  Pos  Pos  Pos	Number of safety auxiliary contacts		0
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 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)  None  O Coating None  O Coati	Number of contacts as normally closed contact		0
Type of interface Type of interface for safety communication  Construction type housing  Material housing  Coating housing  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 dust  Ambient temperature during operating  Degree of protection (IP)  None  None  None  None  None  Solitable for Safety category for dust  Ambient temperature during operating  Passic  Cuboid  Cuboid  Cuboid  Cuber  Cuber  Other  Cubler  Cuble entry metrical  No  Cable entry metrical  No  None  Explosion safety category for dust  None  Solitable for safety functions  Explosion safety category for dust  Mone  1	Number of contacts as normally open contact		0
Type of interface for safety communication  Construction type housing  Material housing  Coating housing  Coating housing  Type of control element  Alignment of the control element  Alignment of the control element  Type of electric connection  With status indication  Suitable for safety functions  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  None  Cuboid	Number of contacts as change-over contact		0
Construction type housing  Material housing Coating housing Coating housing Coating housing Type of control element Alignment of the control element Type of electric connection Coating housing Coating housing Cother Cot	Type of interface		None
Material housing 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)  Plastic Other Other Other Other Other Cable entry metrical No Vibratus indication No Ves Ves Ves Ves Vone Vone Vone Vone Vone Ves Vone Vone Ves Vone Vone Vone Ves Vone Vone Vone Vone Vone Vone Vone Vone	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 category for gas Explosion safety category for dust Ambient temperature during operating Degree of protection (IP)  Other Other Cable entry metrical No Cable entry metrical No No  Yes None Explosion Safety category for dust None PC 25 - 70 IP65	Construction type housing		Cuboid
Type of control element Alignment of the control element Type of electric connection Other  Cable entry metrical With status indication No Suitable for safety functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Degree of protection (IP)  Other Othe	Material housing		Plastic
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  Cable entry metrical  No  No  No  No  Yes  None  None  None  25 - 70  IP65	Coating housing		Other
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)  Cable entry metrical  No  No  Yes  None  None  25 - 70  IP65	Type of control element		Other
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)  No  No  No  No  No  PC  25 - 70  IP65	Alignment of the control element		Other
Suitable for safety functions  Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  Yes  None  None  1 25 - 70  IP65	Type of electric connection		Cable entry metrical
Explosion safety category for gas  Explosion safety category for dust  Ambient temperature during operating  Degree of protection (IP)  None  25 - 70  IP65	With status indication		No
Explosion safety category for dust  Ambient temperature during operating  or C 25 - 70  Degree of protection (IP)  IP65	Suitable for safety functions		Yes
Ambient temperature during operating  °C 25 - 70  Degree of protection (IP)  IP65	Explosion safety category for gas		None
Degree of protection (IP)  IP65	Explosion safety category for dust		None
	Ambient temperature during operating	°C	25 - 70
Degree of protection (NEMA) 13	Degree of protection (IP)		IP65
	Degree of protection (NEMA)		13

# 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

### **Dimensions**



