Safety position switch, 1N/O+1N/C, insulated material, +actuator ZB, screw connection



LS-S11-ZB Part no. Catalog No. 106876 **Alternate Catalog** LS-S11-ZB

No.

**EL-Nummer** 4356197

(Norway)

#### **Delivery program**

Don'tory program		
Basic function		Position switches Safety position switches
Part group reference		LS(4)ZB
Product range		Safety position switches
Degree of Protection		IP66
Features		Complete unit
Ambient temperature	°C	-25 - +70
Description		With the actuator inserted, the N/O contact is open and the NC contact is closed.
Contacts		
N/O = Normally open		1 N/0
N/C = Normally closed		1 NC →
Notes		e safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Housing		Insulated material
Connection type		Screw terminal

Notes Switch must never be used as a mechanical stop!

Actuator can be repositioned for horizontal or vertical mounting.

The operating heads can be turned manually in 90° steps to suit the specified level of actuation.

With the actuator inserted, the N/O contact is open and the N/C contact is closed.

For degree of protection IP65, use V-M20 (206910) cable glands with connecting thread of max. 9 mm length.

## **Technical data**

Rated operational current

AC-15 24 V

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
Terminal capacities		$\mathrm{mm}^2$	
Solid		mm <sup>2</sup>	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)
Terminal screw			PH1
Tightening torque for terminal screw		Nm	0.4
Repetition accuracy		mm	0.15
Contacts/switching capacity			
Rated impulse withstand voltage	$U_{\text{imp}}$	V AC	4000
Rated insulation voltage	Ui	V	400
Overvoltage category/pollution degree			III/3

 $I_{\mathsf{e}}$ 

220 V 230 V 240 V       I <sub>e</sub> A       6         380 V 400 V 415 V       I <sub>e</sub> A       4         DC-13       I <sub>e</sub> A       3         24 V       I <sub>e</sub> A       3         110 V       I <sub>e</sub> A       0.6         220 V       I <sub>e</sub> A       0.3			
DC-13  24 V  I <sub>e</sub> A 3  110 V  I <sub>e</sub> A 0.6			
24 V			
110 V I <sub>e</sub> A 0.6			
220 V I <sub>e</sub> A 0.3			
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 <sup>6</sup> 1.5			
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact g 25			
Operating frequency Operations/h ≤ 1800			
Actuation			
Mechanical			

## **Design verification as per IEC/EN 61439**

Design verification as per IEC/EN 61439			
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	0.17
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	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 8.0**

Sensors (EG000026) / End switch (EC000030)

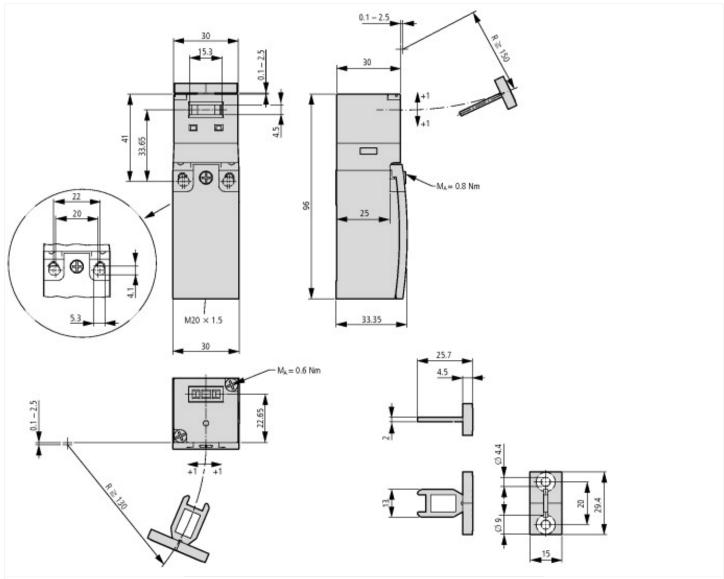
Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Safety-related position switch / Safety position switch (Type 1) (ect@ss10.0.1-27-27-26-01 [AKE640013])

Width season         mm         9           Diameter sensor         mm         9           Length of sensor         mm         33-3           Rated operation current leat AC-15, 24 V         A         1           Rated operation current leat AC-15, 25 V         A         6           Rated operation current leat AC-15, 24 V         A         6           Rated operation current leat AC-15, 24 V         A         6           Rated operation current leat AC-15, 24 V         A         8           Rated operation current leat AC-13, 24 V         A         8           Rated operation current leat AC-13, 24 V         A         8           Rated operation current leat AC-13, 25 V         A         8           Rated operation current leat DC-13, 23 V         A         8           Switching function         M         6         8           Switching function latching         B         7         8           Number of safety auxiliary contacts         B         7         9           Number of contacts as normally closed contact         B         7         1           Number of contacts as normally closed contact         B         7         1           Type of interface         B         7         1	(ecl@ss10.0.1-27-27-26-01 [AKE640013])		
Helpht of sensor         mm         96           Length of sensor         mm         33.35           Rated operation current te at AC-15, 125 V         A         10           Rated operation current te at AC-15, 125 V         A         6           Rated operation current te at AC-15, 125 V         A         6           Rated operation current te at DC-13, 125 V         A         8           Rated operation current te at DC-13, 125 V         A         8           Rated operation current te at DC-13, 125 V         A         8           Rated operation current te at DC-13, 125 V         A         8           Rated operation current te at DC-13, 125 V         A         8           Rated operation current te at DC-13, 125 V         A         8           Switching function         SW-2         Now-action switch           Switching function         SW-2         Now-action switch           Switching function         SW-2         Now-action switch           Number of softway axiliary contacts         SW-2         1           Number of contacts as normally open contact         SW-2         Now-action switch           Number of contacts as normally open contact         SW-2         Now-action switch           Construction type bousing         SW-2	Width sensor	mm	30
Length of sensor         mm         33.35           Rated operation current eat AC-15,24V         A         10           Rated operation current eat AC-15,25V         A         6           Rated operation current eat AC-15,24V         A         3           Rated operation current eat DC-13,24V         A         3           Rated operation current eat DC-13,25V         A         0           Novitching function         B         Novelean convent eat DC-13,20V         A           Switching function         B         Novelean convent eat DC-13,20V         A           Switching function         B         Novelean convent eat DC-13,20V         A           Switching function         B         Novelean convent eat a DC-13,20V         Novelean convent convent eat Earl DC-13,20V           Switching function         B         Novelean convent convent eat Earl DC-13,20V         Novelean Convent Earl Earl DC-13,20V         Novelean Convent Earl Earl Earl Earl Earl Earl Earl Earl	Diameter sensor	mm	0
Rated operation current le at AC-15, 25 V         A         6           Rated operation current le at AC-15, 250 V         A         6           Rated operation current le at AC-15, 250 V         A         6           Rated operation current le at DC-13, 25 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         P         Slow-action switch           Switching function latching         P         No           Output electronic         P         0         No           Number of safety auxiliary contacts         P         1         1           Number of contacts as normally closed contact         P         1         1           Number of contacts as normally open contact         P         0         No           Number of contacts as normally open contact         P         0         No           Type of interface for safety communication         P         0         No           Control contact sa schange-over contact         P         0         No           Control control element         P         0         No           Type of interface for safety communication         P <td>Height of sensor</td> <td>mm</td> <td>96</td>	Height of sensor	mm	96
Rated operation current le at AC-15, 125 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           Rated operation current le at DC-13, 125 V         A         0           Switching function         Slow-action switch           Switching function         Slow-action switch           Switching function         No         No           Output electronic         No         No           Forced opening         Yes         No           Number of safety auxiliary contacts         1         1           Number of contacts as normally closed contact         Yes         1           Number of contacts as change-over contact         Yes         1           Number of contacts as change-over contact         Yes         None           Type of interface for safety communication         Yes         None           Construction type housing         Yes         None           Material housing         Yes         None           Construction type of control element         Yes         Other           Type of control element         Yes         Cable entry metrical           With status indication         Yes         No	Length of sensor	mm	33.35
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           Rated operation current le at DC-13, 230 V         A         3           Switching function alching         Mo         No           Switching function latching         Mo         No           Output electronic         Mo         No           Forced opening         Mo         No           Number of contacts as normally closed contact         Mo         1           Number of contacts as normally closed contact         Mo         1           Number of contacts as normally open contact         Mo         None           Number of contacts as change-over contact         Mo         None           Type of interface for safety communication         Mo         None           Construction type housing         Mo         None           Material housing         Mo         None           Type of cortrol element         Mo         Other           Type of cortrol element         Mo         Other           Suitable for safety functions         Mo         None           Suitable for safety functions <td< td=""><td>Rated operation current le at AC-15, 24 V</td><td>Α</td><td>10</td></td<>	Rated operation current le at AC-15, 24 V	Α	10
Rated operation current le at DC-13, 24V         A         3           Rated operation current le at DC-13, 125V         A         0.8           Switching function         A         0.3           Switching function latching         Boly Companie         No.           Switching function latching         Boly Companie         No.           Subject tonic         Boly Companie         No.           Number of safety auxiliary contacts         Boly Companie         No.           Number of contacts as normally closed contact         Boly Companie         No.           Number of contacts as normally open contact         Boly Companie         No.           Number of contacts as schange-over contact         Boly Companie         No.           Type of interface for safety communication         Boly Companie         No.           Store of prostacts as change-over contact         Boly Companie         No.           Type of interface for safety communication         Boly Companie         Couloid           Material housing         Boly Companie         Couloid           Construction type housing         Boly Country Companie         Couloid           Alignment of the control element         Boly Country Co	Rated operation current le at AC-15, 125 V	Α	6
Rated operation current le at DC-13, 125 V         A         0.3           Switching function current le at DC-13, 230 V         A         30           Switching function latching         Boy Substitution         500         500           Output electronic         C         10         500           Output electronic         C         10         500           Number of safety auxiliary contacts         C         1         1           Number of contacts as normally closed contact         C         1         1           Number of contacts as normally open contact         C         10         1           Number of contacts as normally open contact         C         10         1           Number of contacts as normally open contact         C         10         1           Number of contacts as change-over contact         C         10         10           Type of interface         C         10         10         10           Onstruction type housing         C         10         10         10           Material housing         C         10         10         10           Type of control element         C         10         10         10           Type of control element         C	Rated operation current le at AC-15, 230 V	Α	6
Rated operation current leat DC-13,230 V         A         3           Switching function         Switching function latching         Image: Control of the properties of the prope	Rated operation current le at DC-13, 24 V	Α	3
Switching function         Switching function latching         Iow-action switch           Output electronic         Iow Switching function latching         Iow Switching function latching           Forced opening         Iow Switching function latching         Iow Switching function latching           Number of safety auxiliary contacts         Iow Switching functions         Iow Switching functions           Number of contacts as normally closed contact         Iow Switching functions         Iow Switching functions           Number of contacts as change-over contact         Iow Switching functions         Iow Switching functions           Type of interface for safety communication         Iow Switching function system function system functions         Iow Switching function system functions           Construction type housing         Iow Switching function system function system functions         Iow Switching function system functions           Coating housing         Iow Gwing         Iow Gwing           Alignment of the control element         Iow Gwing         Iow Gwing           Alignment of the control element         Iow Gwing         Iow Gwing           With status indication         Iow Gwing         Iow Gwing           Suitable for safety functions         Iow Gwing         Iow Gwing           Explosion safety category for gas         Iow Gwing         Iow Gwing <td< td=""><td>Rated operation current le at DC-13, 125 V</td><td>Α</td><td>0.8</td></td<>	Rated operation current le at DC-13, 125 V	Α	0.8
Switching function latching       Mo         Output electronic       Mo         Forced opening       Yes         Number of safety auxiliary contacts       1         Number of contacts as normally closed contact       1         Number of contacts as normally open contact       1         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       the         Alignment of the control element       the         Alignment of the control element       the         Type of electric connection       the         With status indication       the         Suitable for safety functions       the         Suitable for safety category for gas       the         Explosion safety category for gas       None         Explosion safety category for dust       None         Amenin temperature during operating       the         Degree of protection (IP)       25-70	Rated operation current le at DC-13, 230 V	Α	0.3
Output electronic         No           Forced opening         Yes           Number of safety auxiliary contacts         1           Number of contacts as normally closed contact         1           Number of contacts as normally open contact         1           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         Other           Alignment of the control element         Other           Type of electric connection         Cable entry metrical           With status indication         No           Suitable for safety functions         Yes           Explosion safety category for gas         No           Explosion safety category for dust         No           Ambient temperature during operating         Yes           Bright production (IP)         Pice	Switching function		Slow-action switch
Forced opening 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 contacts Number of contacts as change-over contacts Number of c	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 None None None Construction type fouring Number of safety communication None Construction type housing Number of control plement Number of control element Num	Output electronic		No
Number of contacts as normally closed contact       1         Number of contacts as normally open contact       1         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       Other         Alignment of the control element       Other         Type of electric connection       Cable entry metrical         With status indication       No         Suitable for safety functions       Yes         Explosion safety category for gas       None         Explosion safety category for dust       None         Ambient temperature during operating       Yes       25-70         Degree of protection (IP)       IP66	Forced opening		Yes
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  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)  I van de Calle entry metrical  None  1 connection  None  2 connection  None  1 connection  None  None  1 c	Number of safety auxiliary contacts		1
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  Occarding housing Other Cuber C	Number of contacts as normally closed contact		1
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  Possible for safety of protection (IP)  Mone  None  None  Possible for Safety category for dust  Ambient temperature during operating  Possible for safety functions  Possible for safety category for dust  Mone  Possible for safety category for dust  Possible	Number of contacts as normally open contact		1
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  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  Persone  Persone  Persone  Persone  Persone  Poersone  Cuboid  Cuboid  Cuboid  Cuboid  Cuboid  Cuboid  Cuboid  Cuboid  Plastic  Cuber  Other  Other  Cable entry metrical  No  No  Persone  Persone	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 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)  Cubeid Plastic	Type of interface		None
Material housing Coating housing Cother 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 Vo Sable entry metrical No No Suitable for safety functions Yes None Page Sc -25 - 70 Pegree of protection (IP)	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  Cable entry metrical No No  Yes  None  Yes  None  1000 1000 1000 1000 1000 1000 1000 1	Construction type housing		Cuboid
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)  Other Other Cable entry metrical No Yes No No No Yes  None Explosion Safety category for gas None None PC -25 - 70 IP66	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  PC  -25 - 70  IP66	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  IP66	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  No  No  No  No  N	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 2 25 - 70  IP66	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  *C -25 - 70  IP66	With status indication		No
Explosion safety category for dust  Ambient temperature during operating  C -25 - 70  Degree of protection (IP)  IP66	Suitable for safety functions		Yes
Ambient temperature during operating  °C -25 - 70  Degree of protection (IP)  IP66	Explosion safety category for gas		None
Degree of protection (IP)  IP66	Explosion safety category for dust		None
	Ambient temperature during operating	°C	-25 - 70
Degree of protection (NEMA) Other	Degree of protection (IP)		IP66
	Degree of protection (NEMA)		Other

# **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
Degree of Protection	IEC: IP65, UL/CSA Type 3R, 4X (indoor use only), 12, 13

## **Dimensions**



Switch must not be used as a mechanical stop Terminal marking according to EN 50 013

Travel [mm]

= Contact closed

= Contact open
Zw = Positive opening sequence

## **Additional product information (links)**

IL05208003Z (AWA1310-2374) Safety position switch

IL05208003Z (AWA1310-2374) Safety position switch

https://es-assets.eaton.com/DOCUMENTATION/AWA\_INSTRUCTIONS/IL05208003Z.pdf