

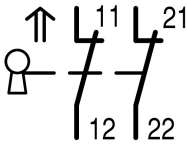



Safety position switch, LS(4)...ZB, Safety position switches, Complete unit, 2 NC, Insulated material, Cage Clamp, -25 - +70 °C

Part no. LS-02-ZB
Catalog No. 106817
Alternate Catalog No. LS-02-ZB
EL-Nummer (Norway) 4356194

Delivery 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/C = Normally closed			2 NC 
Notes			 = safety function, by positive opening to IEC/EN 60947-5-1
Contact sequence			
Housing			Insulated material
Connection type			Cage Clamp
Notes			Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany. Accessories for the Cage-Clamp terminals from Wago: power comb, gray, Wago Article No. 264-402

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

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		mm ²	
Solid		mm ²	1 x (0.5 - 1.5) 2 x (0.5 - 1.5)
Flexible with ferrule		mm ²	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 _{imp}	V AC	4000

Rated insulation voltage	U _i	V	400
Overvoltage category/pollution degree			III/3
Rated operational current	I _e	A	
AC-15			
24 V	I _e	A	6
220 V 230 V 240 V	I _e	A	6
380 V 400 V 415 V	I _e	A	4
DC-13			
24 V	I _e	A	3
110 V	I _e	A	0.6
220 V	I _e	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 ⁶	1.5
Mechanical shock resistance (half-sinusoidal shock, 20 ms)			
Standard-action contact		g	25
Operating frequency	Operations/h		≤ 1800

Actuation

Mechanical			
Actuating force at beginning/end of stroke		N	10/5 (plug-in/pull-out)

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	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.

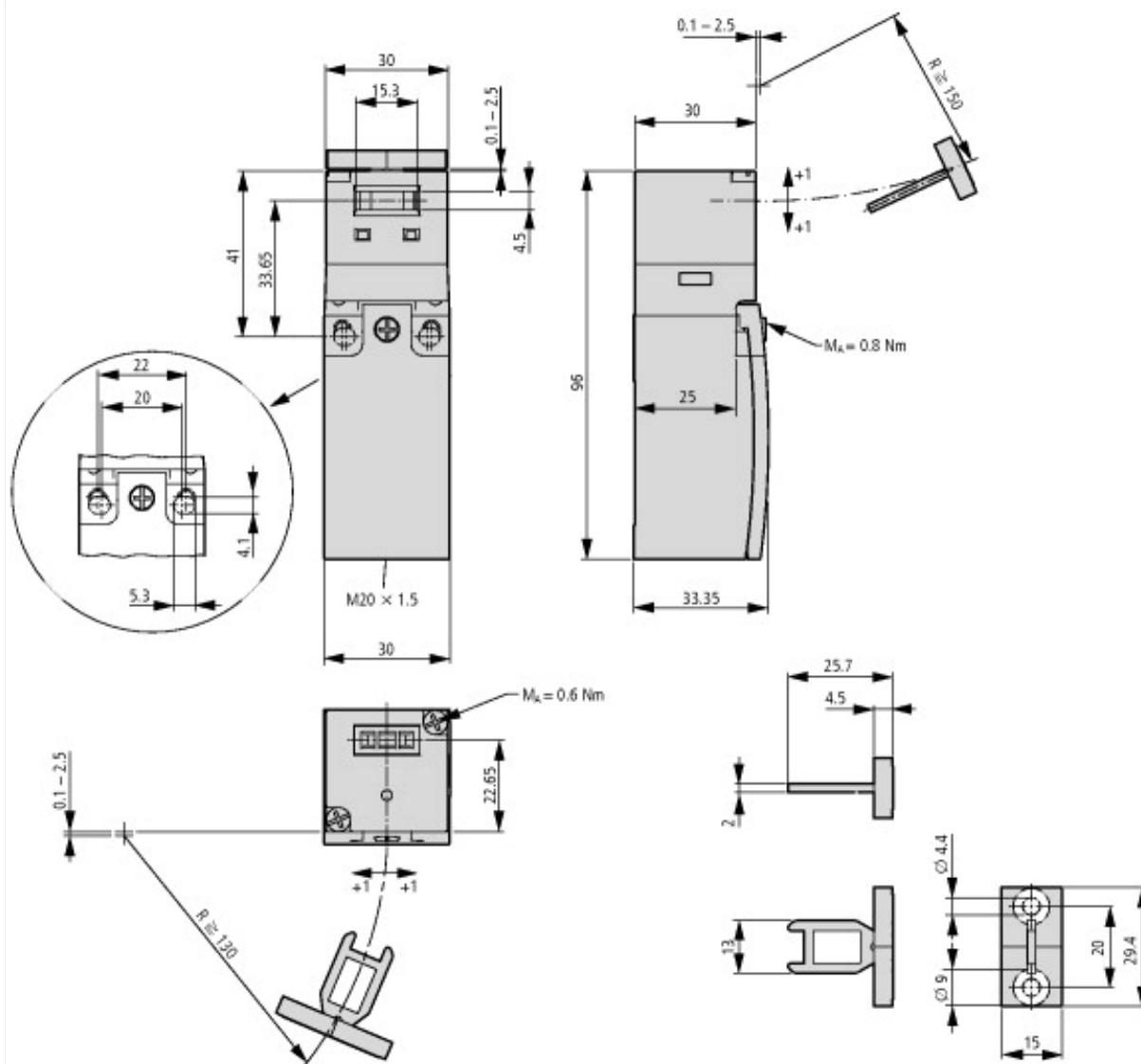
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			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) (ecI@ss10.0.1-27-27-06-01 [AGZ382015])			
Width sensor		mm	30
Diameter sensor		mm	0
Height of sensor		mm	96
Length of sensor		mm	33.35
Rated operation current I _e at AC-15, 24 V		A	10
Rated operation current I _e at AC-15, 125 V		A	6
Rated operation current I _e at AC-15, 230 V		A	6
Rated operation current I _e at DC-13, 24 V		A	3
Rated operation current I _e at DC-13, 125 V		A	0.8
Rated operation current I _e at DC-13, 230 V		A	0.3
Switching function			Slow-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			2
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			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		°C	25 - 70
Degree of protection (IP)			IP65
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
North America Certification			UL listed, CSA certified
Degree of Protection			IEC: IP65, UL/CSA Type 3R, 4X (indoor use only), 12, 13



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