



116703  
LS-S02A

Overview

Specifications

Resources



Delivery program

Technical data

Design verification as per IEC/EN 61439

Technical data ETIM 7.0

Approvals

Dimensions

## 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  
-25 - +70 °C

Design  
EN 50047 Form B

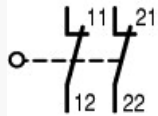
## Contacts

NC = Normally closed  
2 NC

### Notes

= safety function, by positive opening to IEC/EN  
60947-5-1

### Contact sequence



Contact travel  = Contact closed  = Contact open



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  
-25 - +70 °C

Mounting position  
As required

Degree of Protection  
IP66, IP67

Terminal capacities  
Solid  
1 x (0.5 - 2.5) mm<sup>2</sup>

Terminal capacities  
Flexible with ferrule  
1 x (0.5 - 1.5) mm<sup>2</sup>

Repetition accuracy  
0.15 mm

## Contacts/switching capacity

Rated impulse withstand voltage [ $U_{imp}$ ]  
4000 V AC

Rated insulation voltage [ $U_i$ ]  
400 V

Overvoltage category/pollution degree  
III/3

Rated operational current [ $I_e$ ]  
AC-15  
24 V [ $I_e$ ]  
6 A

Rated operational current [ $I_e$ ]  
AC-15  
220 V 230 V 240 V [ $I_e$ ]  
6 A

Rated operational current [ $I_e$ ]  
AC-15  
380 V 400 V 415 V [ $I_e$ ]  
4 A

Rated operational current [ $I_e$ ]  
DC-13  
24 V [ $I_e$ ]  
3 A

Rated operational current [ $I_e$ ]  
DC-13  
110 V [ $I_e$ ]  
0.6 A

Rated operational current [ $I_e$ ]  
DC-13  
220 V [ $I_e$ ]  
0.3 A

Control circuit reliability  
at 24 V DC/5 mA [ $H_F$ ]  
<  $10^{-7}$ , < 1 fault in  $10^7$  operations Fault probability

Control circuit reliability  
at 5 V DC/1 mA [ $H_F$ ]  
<  $5 \times 10^{-6}$ , < 1 failure at  $5 \times 10^6$  operations Fault  
probability

Supply frequency  
max. 400 Hz

Short-circuit rating to IEC/EN 60947-5-1  
max. fuse  
6 A gG/gL

Rated conditional short-circuit current  
1 kA

## Mechanical variables

Lifespan, mechanical [Operations]

8 x 10<sup>6</sup>

Contact temperature of roller head

100 °C

Mechanical shock resistance (half-sinusoidal shock, 20 ms)

Standard-action contact

25 g

Operating frequency [Operations/h]

6000

## Actuation

Mechanical

Actuating force at beginning/end of stroke

1.0/8.0 N

Mechanical

Actuating torque of rotary drives

0.2 Nm

Mechanical

Max. operating speed with DIN cam

1/0.5 m/s

Mechanical

### 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 [ $I_n$ ]

6 A

Heat dissipation per pole, current-dependent [ $P_{id}$ ]

0.17 W

Equipment heat dissipation, current-dependent

[P<sub>vid</sub>]  
0 W

Static heat dissipation, non-current-dependent [P<sub>vs</sub>]  
0 W

Heat dissipation capacity [P<sub>diss</sub>]  
0 W

Operating ambient temperature min.  
-25 °C

Operating ambient temperature max.  
+70 °C

## 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 Strength of materials and parts  
10.2.3.1 Verification of thermal stability of enclosures  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.2 Verification of resistance of insulating materials to normal heat  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
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 Strength of materials and parts  
10.2.4 Resistance to ultra-violet (UV) radiation  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.5 Lifting  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts

#### 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.2 Strength of materials and parts

##### 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 Insulation properties

##### 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

#### 10.9 Insulation properties

##### 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])

Width sensor  
31 mm

Diameter sensor  
0 mm

Height of sensor  
61 mm

Length of sensor  
33.5 mm

Rated operation current  $I_e$  at AC-15, 24 V  
6 A

Rated operation current  $I_e$  at AC-15, 125 V  
6 A

Rated operation current  $I_e$  at AC-15, 230 V  
6 A

Rated operation current I<sub>e</sub> at DC-13, 24 V  
3 A

Rated operation current I<sub>e</sub> at DC-13, 125 V  
0.8 A

Rated operation current I<sub>e</sub> at DC-13, 230 V  
0.3 A

Switching function  
Slow-action switch

Switching function latching  
No

Output electronic  
No

Forced opening  
Yes

Number of safety auxiliary contacts  
2

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  
Plunger

Alignment of the control element  
Other

Type of electric connection  
Other

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  
25 - 70 °C

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

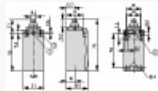
CSA File No.  
12528

CSA Class No.  
3211-03

North America Certification  
UL listed, CSA certified

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

## DIMENSIONS



- Tightening torque of cover screws:  $0.8 \text{ Nm} \pm 0.2 \text{ Nm}$
  - only with LS (insulated version)
  - Fixing screws 2 x M4  30
- $M_A = 1.5 \text{ Nm}$



