DATASHEET - LS-S02-24DFT-ZBZ/X



Position switch, 2 N/C, basic, spring-powered interlock

Part no. LS-S02-24DFT-ZBZ/X 106823

Catalog No.

Alternate Catalog LS-S02-24DFT-ZBZ/X

EL-Nummer (Norway)

4356171

Powering Business Worldwide

Delivery program

| Don'tony program | | | |
|--|-------|----|--|
| Basic function | | | Position switches Safety position switches |
| Part group reference | | | LSZBZ/X |
| Product range | | | Basic units with spring-powered interlock (closed-circuit principle) |
| Degree of Protection | | | IP65 |
| Features | | | Basic device, expandable |
| Ambient temperature | | °C | -25 - +40 |
| Description | | | With interlock monitoring with auxiliary release mechanism Monitoring of door position: continuous |
| Contacts | | | |
| N/C = Normally closed | | | 2 NC → |
| Notes | | | e safety function, by positive opening to IEC/EN 60947-5-1 |
| Contact sequence | | | 1 L ¹¹ A ₁ A ₂ L ²¹ |
| Rated control voltage for magnetic drive | U_s | V | 24 V DC |
| Housing | | | Insulated material |
| Connection type | | | Screw terminal |
| | | | |

Notes Switch must never be used as a mechanical stop!

The operating head can be rotated manually in 90° steps without tools 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.

In the event of power failure (e.g., during commissioning), the device can be released with a screwdriver. The auxiliary release mechanism must be sealed! -> Instructional leaflet IL 05208005Z

Technical data

Overvoltage category/pollution degree

| 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 - +40 |
| Mounting position | | | As required |
| Degree of Protection | | | IP65 |
| Terminal capacities | | mm^2 | |
| 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) |
| Terminal screw | | | PH1 |
| Tightening torque for terminal screw | | Nm | 0.9 |
| Repetition accuracy | | mm | 0.02 |
| Contacts/switching capacity | | | |
| Rated impulse withstand voltage | U_{imp} | V AC | 4000 |
| Rated insulation voltage | U_{i} | V | 400 |
| | | | |

III/3

| Rated operational current | l _e | Α | | |
|--|----------------|-------------------|--------------------------|--|
| AC-15 | | | | |
| 24 V | l _e | Α | 6 | |
| 220 V 230 V 240 V | I _e | Α | 6 | |
| 380 V 400 V 415 V | I _e | Α | 4 | |
| DC-13 | | | | |
| 24 V | I _e | Α | 3 | |
| 110 V | I _e | Α | 0.8 | |
| 220 V | I _e | Α | 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 | |
| Mechanical shock resistance (half-sinusoidal shock, 20 ms) | | | | |
| Standard-action contact | | g | 10 | |
| Operating frequency | Operations/h | | ≦ 800 | |
| Actuation | | | | |
| Mechanical | | | | |
| Actuating force at beginning/end of stroke | | N | 25/15 (plug-in/pull-out) | |
| Mechanical holding force acc. to GS-ET-19 (04/2004) | | | | |
| XG, XW, XNG | | N | 1700 | |
| XWA, XFG, XF | | N | 1600 | |
| XNW | | N | 1200 | |
| Electromechanical | | | | |
| For magnet | | | | |
| Power consumption | | | | |
| | | | | |
| at 120 V AC | | VA | 8 | |
| , | | VA VA | 11 | |
| at 120 V AC | | | | |

Design verification as per IEC/EN 61439

Magnet duty factor

| echnical data for design verification | | | |
|---|-------------------|----|--|
| Rated operational current for specified heat dissipation | In | Α | 6 |
| Heat dissipation per pole, current-dependent | P _{vid} | W | 0.13 |
| 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 | 40 |
| C/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. |
| 10.2.3.3Verification 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. |

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| 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 mm 90 Diameter sensor mm 70 Length of sensor mm 73 Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 220 V A 6 Rated operation current le at AC-15, 220 V A 6 Rated operation current le at AC-15, 220 V A 6 Rated operation current le at AC-15, 220 V A 8 Rated operation current le at AC-13, 220 V A 8 Rated operation current le at AC-13, 220 V A 8 Switching function B 8 8 Switching function B 8 8 Switching function B 9 8 Number of contacts as normally closed contact B 9 8 Number of contacts as normally closed contact B 9 9 Number of contacts as normally closed contact B 9 9 Number of contacts as change-over contact B 9 9 Switze of intertace B | (ecl@ss10.0.1-27-27-06-01 [AGZ382015]) | | |
|--|---|----|--------------------|
| Height of sensor mm 173 Length of sensor mm 38 Rated operation current le at AC-15, 24 V A 6 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 DC-13, 24 V A 3 Rated operation current le at DC-13, 25 V A 8 Rated operation current le at DC-13, 25 V A 8 Rated operation current le at DC-13, 25 V A 8 Rated operation current le at DC-13, 25 V A 8 Rated operation current le at DC-13, 25 V S A Rated operation current le at DC-13, 25 V S A Rated operation current le at DC-13, 25 V S A Rated operation current le at DC-13, 25 V S B Rated operation current le at DC-13, 25 V S B Switching function S A 8 Switching function S Y S Number of contacts as normally open contact S Y None | Width sensor | mm | 60 |
| Leight of sensor mm 99 Rated operation current le at AC-15, 24 V A 6 Rated operation current le at AC-15, 25 V A 6 Rated operation current le at AC-15, 24 V A 3 Rated operation current le at AC-15, 24 V A 3 Rated operation current le at DC-13, 24 V B 3 Rated operation current le at DC-13, 25 V B A 3 Switching function B A 3 3 Switching function B B B 3 3 Switching function B <td>Diameter sensor</td> <td>mm</td> <td>0</td> | 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 6 Rated operation current le at DC-13,240 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 Rated operation current le at DC-13,250 V A 0 Switching function C A 0 Switching function C A 0 Output electronic C A 0 Output alectronic C 0 0 Number of sortacts as charelly closed contact 2 2 Number of contacts as normally closed contact 0 0 Number of contacts as charelly open contact 0 0 Number of contacts as charely communication C 0 Obstraction type interface for safety communication C 0 Obstraction type in terface for safety communication C 0 Obstraction type in terface for safet | Height of sensor | mm | 173 |
| 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 3 Rated operation current le at DC-13, 125 V A 3 Rated operation current le at DC-13, 125 V A 3 Switching function Slow-action switch Switching function latching No No Output electronic No No Forced opening Yes No Number of contacts as normally closed contact Yes 2 Number of contacts as normally open contact Yes No Number of contacts as normally open contact Yes No Number of contacts as change-over contact Yes No Type of interface Yes No Type of interface for safety communication Yes No Construction type housing Yes Plastic Type of control element Yes Other Type of electric connection Yes Yes With status indication Ye | Length of sensor | mm | 39 |
| 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 Switchining function No No Output electronic No No Forced opening Yes No Number of contacts as normally closed contact Yes No Number of contacts as normally closed contact Yes No Number of contacts as normally closed contact Yes No Number of contacts as change-over contact Yes No Type of interface Yes No Type of interface for safety communication Yes No Construction type housing Yes No Material housing Yes No Type of control element Yes Other Alignment of the control element Yes No Type of electric connection Yes No With status indication Yes | Rated operation current le at AC-15, 24 V | Α | 6 |
| Rated operation current le at DC-13, 24 V Rated operation current le at DC-13, 25 V Rated operation current le at DC-13, 230 V Rowelling function Switching function Switching function latching Output electronic Forced operating Number of safety auxiliary contacts Number of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as normally closed contact Number of contacts as change-over contact Number of contacts as normally open contact Number of contacts as change-over contact Number of contacts as normally open contact Number of | 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 Coverage of the properties of the prope | Rated operation current le at AC-15, 230 V | Α | 6 |
| Rated operation current leat DC-13, 230 V A 3 Switching function Sow-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 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 0 Construction type housing Cuboid Material housing Cuboid Control clement Cuboid Alignment of the control element 0 Alignment of the control element 0 Alignment of the control element 0 Mith status indication 0 Suitable for safety functions Yes Explosion safety category for dust None Ambient temperature during operating Yes Explosion safety category for dust None Ambient temperature during operating Yes | 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 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 Cubid Material housing Plastic Coating housing Cubid Alignment of the control element Uther Alignment of the control element Uther Type of electric connection Uther With status indication Uther Suitable for safety functions Yes Explosion safety category for gas None Explosion safety category for gas None Explosion safety category for dust None Amient temperature during operating Yes Explosion safety category for dust None Amient temperature during operating Yes | Rated operation current le at DC-13, 125 V | Α | 0.8 |
| Switching function latching Output electronic 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 shange-over contact Number of contacts as shange-over contact Number of contacts as shange-over contact Number of contacts as change-over contact Number of contacts as normally closed contact Number of contacts as normally clos | Rated operation current le at DC-13, 230 V | Α | 0.3 |
| 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 Mone Type of interface for safety communication None Construction type housing Cuboid Material housing Plastic Control element Other Type of control element Other Alignment of the control element Other Type of electric connection Other With status indication Other Suitable for safety functions Yes Explosion safety category for gas None Explosion safety category for dust None Ambient temperature during operating Yes Degree of protection (IP) Fe5 | 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 contacts as change-over contacts Number of | Switching function latching | | No |
| 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 interface plement Other 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 °C 25-70 Degree of protection (IP) IP65 | 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 Number of contacts as change-over contact None Type of interface None Construction type housing Material housing Coating housing Coting flowing Control element Type of control element Type of electric connection With status indication Suitable for safety cutegory for gas Explosion safety category for dust Ambient temperature during operating Passion Passion Passion Conde Pher | 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 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) Degree of protection (IP) Degree of protection (IP) | Number of safety auxiliary contacts | | 2 |
| 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 Coating functions Suitable for safety function(IP) None Construction (IP) Other Other None None Coating housing Cober Co | Number of contacts as normally closed contact | | 2 |
| Type of interface Type of interface for safety communication Construction type housing Material housing Coating housing Coating housing Type of control element 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 Coating housing Tother Type of electric connection Type of electric connec | 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 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 Solution Solut | Number of contacts as change-over contact | | 0 |
| 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) Cuboid Plastic Other Other Other Other No No Suitable or safety functions Yes None Explosion safety category for dust None Plastic | Type of interface | | None |
| Material housing Coating housing Other Type of control element Alignment of the control element 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 Other Plastic Other Other Other Other No No No Yes Explosion safety category for gas None Explosion safety category for dust Ambient temperature during operating Other Plastic Other | 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 functions Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating Degree of protection (IP) Other Other Other No Other No Other No Other No Other Pes Other Oth | 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 Other No Ves No No Yes None None IP65 | 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 Other Other No No No Yes None None None 1965 | 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) Other No No Yes None None 10 10 10 10 10 10 10 10 10 1 | 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 Yes None None 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 | Type of electric connection | | Other |
| Explosion safety category for gas Explosion safety category for dust Ambient temperature during operating CC 25 - 70 Degree of protection (IP) None 25 - 70 IP65 | With status indication | | No |
| Explosion safety category for dust Ambient temperature during operating °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) | 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 |

| | Ap | prova | ls |
|--|----|-------|----|
|--|----|-------|----|

| Approvais | |
|-----------------------------|---|
| 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

