DATASHEET - LS-20/F



Position switch, Rounded plunger, Basic device, not expandable, 2 N/O, Cage Clamp, Yellow, Insulated material, -25 - +70 °C



Part no.LS-20/FCatalog No.292368Alternate CatalogLS-20-FNo.No.

Delivery program

| Basic function Pointion switches Part group reference ISMM Product range Bounded plumger. Bagree of Potaction Basic divice, not expandable Fatures Contact sequence NO = Normally opon Contact sequence Contact sequence Image of the sequence Inclusive covers Image of the sequence Factors Image of the sequence Inclusive covers Image of the sequence Inclusive covers Image of the sequence Factors Image of the sequence Inclusive covers Image of the sequence Image of the sequence Image of the | | | |
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| Product range Rounded plunger Degree of Protection P66, P67 Features Basic device, not expandable Ambient temperature - 25 - 470 Contacts 2N0 No normally open - 21 - 470 Contact sequence - 21 - 470 Contact travell = Contact closed = Contact open - 21 - 470 Colour | Basic function | | Position switches |
| Degree of Protection P66, P67 Features Basic device, not expandable Ambient temperature -25 - 70 Contacts 2 V/0 Contact sequence | Part group reference | | LS(M) |
| Features Image: Contact temperature Sec: device, not expandable Ambient temperature Contacts 25 - 70 Contacts 2 / 0 2 / 0 Contact sequence Image: Contact teamerature Image: Contact teamerature Contact travel = Contact closed = Contact open Image: Contact teamerature Image: Contact teamerature Colour Image: Contact closed = Contact open Image: Contact teamerature Image: Contact teamerature Enclosure covers Image: Contact closed = Contact open Image: Contact teamerature Image: Contact teamerature Housing Image: Contact teamerature Image: Contact teamerature Image: Contact teamerature Kots Image: Contact teamerature Image: Contact teamerature Image: Contact teamerature | Product range | | Rounded plunger |
| Anbient temperature *** Contacts 70 N0 = hormally open 700 Contact sequence 700 Contact sequence 700 Contact sequence 700 Contact cosed = Contact cosed 700 Contact rave = Contact closed = Contact open 700 Colour 1114 Enclosure covers Yellow Enclosure covers Yellow Rousing Yelo | Degree of Protection | | IP66, IP67 |
| Contacts Mole Normally open Note Normally opense normally open Normaly open Normally open Normally open Normally open Norma | Features | | Basic device, not expandable |
| N/O = Normally open 2N/O Contact sequence Image: Sequence sequence Image: Sequence | Ambient temperature | °C | -25 - +70 |
| Contact sequence Image: sequence <td< td=""><td>Contacts</td><td></td><td></td></td<> | Contacts | | |
| Contact travel = Contact closed = Contact open Contact travel = Contact closed = Contact open Colour Enclosure covers Enclosure covers Enclosure covers Findosure covers Vellow Enclosure covers Vellow Enclosure covers Findosure covers Findosu | N/O = Normally open | | 2 N/O |
| Image: Colour Image: Colour Enclosure covers Image: Colour Housing Image: Colour Connection type Cage Clamp Notes Cage: Clamp terminals from Wago: power comb, gray, Wago | Contact sequence | | $\sim + - +$ |
| Enclosure covers Yellow Enclosure covers Image: Compute content of the cage clamp terminals from Wago: power comb, gray, Wago Housing Image: Compute content of the cage clamp terminals from Wago: power comb, gray, Wago Notes Image: Compute content of the cage clamp terminals from Wago: power comb, gray, Wago | Contact travel = Contact closed = Contact open | | 13-14 NO 23-24 NO |
| Enclosure covers Image: Constant of the case | Colour | | |
| Image: state of the state of | Enclosure covers | | Yellow |
| 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 | Enclosure covers | | |
| 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 | Housing | | Insulated material |
| Germany. Accessories for the Cage-Clamp terminals from Wago:power comb, gray, Wago | Connection type | | Cage Clamp |
| | Notes | | Germany. Accessories for the Cage-Clamp terminals from Wago:power comb, gray, Wago |

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, IP67 |
| Terminal capacities | | mm ² | |
| Solid | | mm ² | 1 x (0.5 - 2.5) |
| Flexible with ferrule | | mm ² | 1 x (0.5 - 1.5) |
| Repetition accuracy | | mm | 0.15 |
| Contacts/switching capacity | | | |
| Rated impulse withstand voltage | U _{imp} | V AC | 4000 |
| Rated insulation voltage | Ui | V | 400 |

| Quarieltage estagen//pollution degree | | | 111/3 |
|--|----------------|---------------------|--|
| Overvoltage category/pollution degree | | | 11/5 |
| Rated operational current | l _e | A | |
| AC-15 | | | |
| 24 V | Ι _e | Α | 6 |
| 220 V 230 V 240 V | Ι _e | А | 6 |
| 380 V 400 V 415 V | le | А | 4 |
| DC-13 | | | |
| 24 V | I _e | А | 3 |
| 110 V | Ι _e | А | 0.6 |
| 220 V | Ι _e | А | 0.3 |
| Control circuit reliability | | | |
| at 24 V DC/5 mA | H _F | Fault probabilit | < 10 ⁻⁷ , < 1 fault in 10 ⁷ operations V |
| at 5 V DC/1 mA | H _F | Fault probabilit | < 5 x 10 ⁻⁶ , < 1 failure at 5 x 10 ⁶ operations ly |
| 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 | 8 |
| Contact temperature of roller head | | °C | ≦ 100 |
| Mechanical shock resistance (half-sinusoidal shock, 20 ms) | | | |
| Standard-action contact | | g | 25 |
| Operating frequency | Operations/h | | ≦ 6000 |
| Actuation | | | |
| Mechanical | | | |
| Actuating force at beginning/end of stroke | | N | 1.0/8.0 |
| Actuating torque of rotary drives | | Nm | 0.2 |
| Max. operating speed with DIN cam | | m/s | 1/0.5 |
| 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 | In | А | 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 hea and fire due to internal electric effects | t | | 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) (ecl@ss10.0.1-27-27-06-01 [AGZ382015])

| Width sensor | mm | 31 |
|---|----|--------------------|
| Diameter sensor | mm | 0 |
| Height of sensor | mm | 61 |
| Length of sensor | mm | 33.5 |
| Rated operation current le at AC-15, 24 V | А | 6 |
| Rated operation current le at AC-15, 125 V | А | 6 |
| Rated operation current le at AC-15, 230 V | А | 6 |
| Rated operation current le at DC-13, 24 V | А | 3 |
| Rated operation current le at DC-13, 125 V | А | 0.8 |
| Rated operation current le at DC-13, 230 V | А | 0.3 |
| Switching function | | Slow-action switch |
| Switching function latching | | No |
| Output electronic | | No |
| Forced opening | | No |
| Number of safety auxiliary contacts | | 0 |
| Number of contacts as normally closed contact | | 0 |
| Number of contacts as normally open contact | | 2 |
| 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 | | Other |
| 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 | | No |
| Explosion safety category for gas | | None |
| Explosion safety category for dust | | None |
| Ambient temperature during operating | °C | 25 - 70 |
| Degree of protection (IP) | | IP67 |
| Degree of protection (NEMA) | | 4X |

Approvals

| 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: IP66, 67, UL/CSA Type 3R, 4X (indoor use only), 12, 13 |

Dimensions

