

Limit Switches
440P Safety Limit Switches
 22 mm Compact Metal Position Switches



Description

The 22 mm IEC-style metal safety limit switches have been developed to provide a small metal case with a choice of actuator heads.

Features

- Rugged die-cast enclosure
- Positive operation, forced disconnection of contacts (direct-opening action)
- Snap-acting contact actuation
- Contacts 1 N.C. + 1 N.O. or 2 N.C.
- Pre-wired 2 m (6.5 ft) cable with bottom or side out exit; 4-pin or 5-pin male micro M12 connector attached to a 152 mm (6 in.) pigtail

ATTENTION



For safety applications it is important that upon actuation, the guard or other moving objects should not pass completely over the switch and allow the plunger or lever to return to its original position.

Specifications

Safety Ratings

| | |
|-----------------------|--|
| Standards | EN 954-1, ISO 13849-1, IEC/EN 60204-1, NFPA 79, EN 1088, ISO 14119, IEC/EN 60947-5-1, ANSI B11.19, AS 4024.1 |
| Safety Classification | Cat.1 Device per EN 954-1 Dual channel limit switch suitable for Cat. 3 or 4 systems when ganged together |
| Certifications | UL Listed, TÜV and CE Marked for all applicable directives |

Outputs

| | |
|--------------------------|--|
| Safety Contacts ★ | 1 N.C. snap-acting, 2 N.C. slow-acting |
| Auxiliary Contacts | 1 N.O. snap-acting |
| Thermal Current I_{th} | 10 A |
| Rated Insulation Voltage | 300V AC |

Contact Rating

Maximum AC Contact Rating Per Pole‡

| NEMA Rating Designation | Max. Voltage | Amperes | | Continuous Carrying Current [A] | Volt Amperes | |
|-------------------------|--------------|---------|-------|---------------------------------|--------------|-------|
| | | Make | Break | | Make | Break |
| AC15/B300 | 120 | 30 | 3.0 | 5 | 3600 | 360 |
| | 240 | 15 | 1.5 | | | |

Maximum DC Contact Rating Per Pole‡

| | | | | | | |
|-----------|-----|------|------|-----|----|----|
| DC13/Q300 | 240 | 0.27 | 0.27 | 2.5 | 69 | 69 |
|-----------|-----|------|------|-----|----|----|

Operating Characteristics

| | |
|---------------------------|--|
| Actuation Speed, Max. | 250 mm/s |
| Actuation Speed, Min. | 100 mm/min. |
| Actuation Frequency, Max. | 6000 ops/hr |
| Mechanical Life | 1 x 10 ⁷ operations with no electrical load |

Environmental

| | |
|-------------------------------|--|
| Enclosure Type Rating | Type 1, IP65, IP66, IP67, and IP69K (preleaded versions) |
| Operating Temperature [C (F)] | 2...+70° (35.6...+158°) |
| Pollution Degree | 3 |

Physical Characteristics

| | |
|-------------------|---|
| Housing Material | Die-cast alloy |
| Actuator Material | Various polymers and metals |
| Mounting | 2 x M4, any position |
| Vibration | IEC 68-2-6 (10...55 Hz, 0.35 mm amplitude) |
| Shock | IEC 68-2-7 (30 Gn 3 pulses per axis) |
| Connection | 2 m (6.5 ft) cable or micro quick disconnect on a 6 in. pigtail |
| Color | Red body/black head |

★ The safety contacts are described as normally closed (N.C.) i.e., with the guard closed, actuator in place (where relevant) and the machine able to be started.


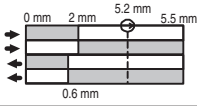


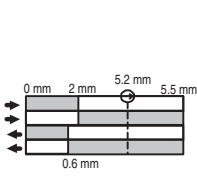
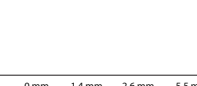

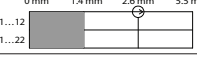


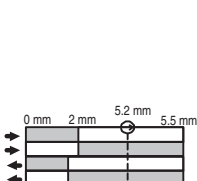
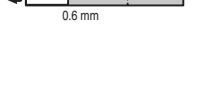





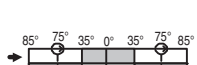

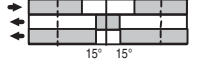


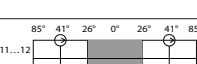


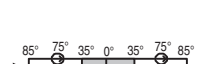
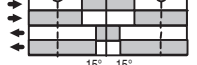


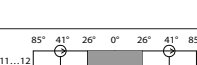
‡ Maximum for:

| 4-pin Male Micro M12 Connectors (D4 suffix) | |
|---|----------|
| AC | DC |
| 30V, 3 A | 30V, 3 A |
| 5-pin Male Micro M12 Connectors (D5 suffix) | |
| AC | DC |
| 60V, 3 A | 60V, 3 A |



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Product Selection

| Operator Type | Contact | | | Max Force/ Torque to Operate | Contact Opening Characteristics <input type="checkbox"/> Open <input checked="" type="checkbox"/> Closed ⊕ Positive Opening Point | Cat. No. | | | | | | | | | |
|--|---------|--------|-------------|---------------------------------|---|---|---|---|---|---|---|----------------|----------------|----------------|----------------|
| | Safety | Aux. | Type | | | 2 m (6.5 ft) Bottom Cable Style | 2 m (6.5 ft) Side Cable Style | 4-pin Micro QD Style | 5-pin Micro QD Style | | | | | | |
|  Roller Plunger | 1 N.C. | 1 N.O. | Snap Acting | 10 N (2.25 lb) |  | 440P-ARPS11C | 440P-ARPS11CS | 440P-ARPS11D4 | 440P-ARPS11D5 | | | | | | |
| | 2 N.C. | — | — | |  | 440P-ARPB02C | 440P-ARPB02CS | 440P-ARPB02D4 | 440P-ARPB02D5 | | | | | | |
|  Roller Plunger Panel Mount | 1 N.C. | 1 N.O. | Snap Acting | | 10 N (2.25 lb) |  | 440P-ARP1S11C | 440P-ARP1S11CS | — | 440P-ARP1S11D5 | | | | | |
| | 1 N.C. | 1 N.O. | Snap Acting | | |  | 440P-ADPS11C | 440P-ADPS11CS | 440P-ADPS11D4 | 440P-ADPS11D5 | | | | | |
|  Dome Plunger | 2 N.C. | — | — | | | 10 N (2.25 lb) |  | 440P-ADPB02C | 440P-ADPB02CS | 440P-ADPB02D4 | 440P-ADPB02D5 | | | | |
| | 1 N.C. | 1 N.O. | Snap Acting | | | |  | 440P-ADP1S11C | 440P-ADP1S11CS | — | 440P-ADP1S11D5 | | | | |
|  Dome Plunger Panel Mount | 1 N.C. | 1 N.O. | Snap Acting | | | | 10 N (2.25 lb) |  | 440P-ACRS11C | 440P-ACRS11CS | 440P-ACRS11D4 | 440P-ACRS11D5 | | | |
| | 1 N.C. | 1 N.O. | Snap Acting | | | | |  | 440P-ACR1S11C | 440P-ACR1S11CS | — | 440P-ACR1S11D5 | | | |
|  Cross Roller Plunger | 1 N.C. | 1 N.O. | Snap Acting | | | | | 0.2 N•m (1.77 lb•in) |  | 440P-AWLS11C | 440P-AWLS11CS | 440P-AWLS11D4 | 440P-AWLS11D5 | | |
| | 1 N.C. | 1 N.O. | Snap Acting | | | | | |  | 440P-ASLS11C | 440P-ASLS11CS | 440P-ASLS11D4 | 440P-ASLS11D5 | | |
|  Cross Roller Plunger Panel Mount | 2 N.C. | — | — | | | | | | 0.2 N•m (1.77 lb•in) |  | 440P-ASLB02C | 440P-ASLB02CS | 440P-ASLB02D4 | 440P-ASLB02D5 | |
| | 1 N.C. | 1 N.O. | Snap Acting | | | | | | |  | 440P-AALS11C | 440P-AALS11CS | 440P-AALS11D4 | 440P-AALS11D5 | |
|  Short Lever Wide Roller | 1 N.C. | 1 N.O. | Snap Acting | | | | | | | 0.2 N•m (1.77 lb•in) |  | 440P-AA1LS11C | 440P-AA1LS11CS | 440P-AA1LS11D4 | 440P-AA1LS11D5 |
| | 1 N.C. | 1 N.O. | Snap Acting | | | | | | | |  | 440P-AA1LB02C | 440P-AA1LB02CS | 440P-AA1LB02D4 | 440P-AA1LB02D5 |
|  Short Lever Nylon Roller | 2 N.C. | — | — | 0.2 N•m (1.77 lb•in) | | | | | | |  | 440P-AA1LS11C | 440P-AA1LS11CS | 440P-AA1LS11D4 | 440P-AA1LS11D5 |
| | 1 N.C. | 1 N.O. | Snap Acting | | | | | | | |  | 440P-AA1LS11C | 440P-AA1LS11CS | 440P-AA1LS11D4 | 440P-AA1LS11D5 |
|  Adj. Lever Nylon Roller | 1 N.C. | 1 N.O. | Snap Acting | | 0.2 N•m (1.77 lb•in) | | | | | |  | 440P-AA1LS11C | 440P-AA1LS11CS | 440P-AA1LS11D4 | 440P-AA1LS11D5 |
| | 2 N.C. | — | — | | | | | | | |  | 440P-AA1LB02C | 440P-AA1LB02CS | 440P-AA1LB02D4 | 440P-AA1LB02D5 |
|  Adj. Lever Metal Roller | 1 N.C. | 1 N.O. | Snap Acting | | | 0.2 N•m (1.77 lb•in) | | | | |  | 440P-AA1LS11C | 440P-AA1LS11CS | 440P-AA1LS11D4 | 440P-AA1LS11D5 |
| | 2 N.C. | — | — | | | | | | | |  | 440P-AA1LB02C | 440P-AA1LB02CS | 440P-AA1LB02D4 | 440P-AA1LB02D5 |

Limit Switches

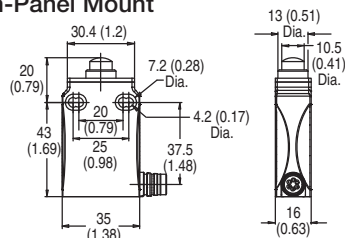
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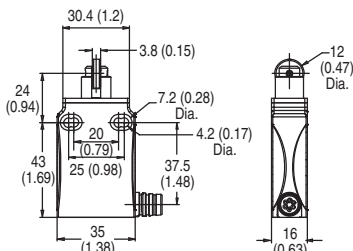
Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.

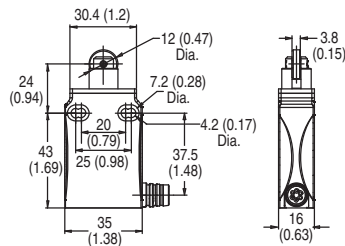
Non-Panel Mount



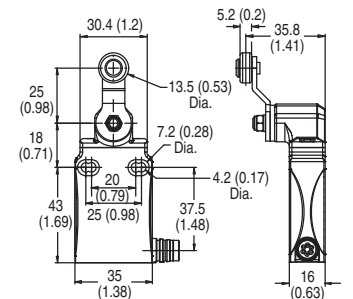
Dome Plunger



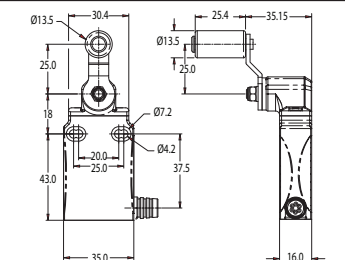
Cross Roller Plunger



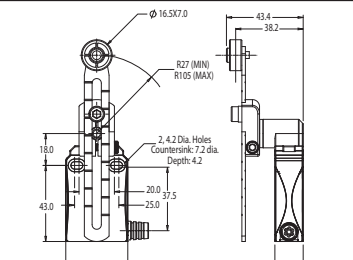
Roller Plunger



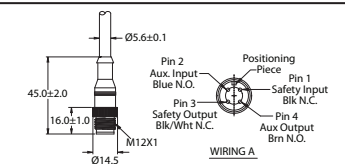
Lever Type



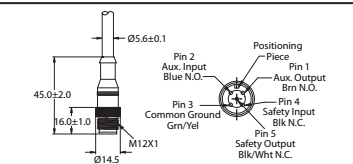
Wide Roller Plunger



Adjustable Lever Type



4-pin Micro Quick Disconnect

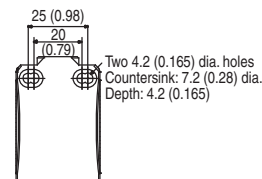


5-pin Micro Quick Disconnect

Note: Only non-panel mount pre-leaded side out models shown. Body dimensions for panel mount models as well as pre-leaded bottom out and 4-pin/5-pin micro connector mounted on a 6 in. pigtail models are identical. For other dimension drawings, refer to Installation and Operating Instructions.

- Side cable style shows strain relief only. Units include a 2 m integral cable.
- Bottom cable style units have same dimensions as side cable style.
- Panel mount clearance hole = 13 mm (0.51 in.)

Counter Sinkhole



Typical Wiring Diagrams

