



The 30 mm metal safety limit switches conform to EN 50041 and have been developed to provide a range of options including a choice of snap-acting, slow-acting, and break before make (BBM) with 2-, 3-, and 4-circuit configurations and a choice of actuator heads. The distance between the horizontal mounting holes is 30 mm.

The operator heads can be rotated in 90° increments for easy mounting.

Allen-Bradley/Guardmaster limit switches can be used in other applications other than guard doors, for example on moving machine beds, crane arms, lifts, elevators, etc.

Operation of these limit switches is achieved by the sliding action of the guard or other moving object deflecting the plunger or lever.

Specifications

| | | | | |
|--------------------------------------|---|-------|--------|----------------|
| Standards | EN954-1, ISO13849-1, IEC/EN60204-1, NFPA79, EN1088, ISO14119, IEC/ EN60947-5-1, ANSI B11.19, AS4024.1 | | | |
| Category | Cat. 1 Device per EN954-1 Dual channel interlocks suitable for Cat. 3 or 4 systems | | | |
| Approvals | cULus, TÜV, CE and CCC Marked for all applicable directives | | | |
| Safety Contacts | 1 N.C. snap acting, 2 N.C., 3 N.C. or 4 N.C. slow acting | | | |
| Auxiliary Contacts | 1 N.O. (with 2 N.C.) | | | |
| Designation/Utilization Cat. | Contact Specifications^⓪ | | | |
| A600/AC-15 | (Ue) | 600 V | 500 V | 240 V 120 V |
| | (Ie) | 1.2 A | 1.4 A | 3 A 6 A |
| Q600/DC-13 | (Ue) | 600 V | 500 V | 250 V 125 V |
| | (Ie) | 0.1 A | 0.13 A | 0.27 A 09.55 A |
| Thermal Current (Ith) | 8 A | | | |
| Rated Insulation Voltage | 600 V AC | | | |
| Rated Impulse withstand Volt | 2500 V | | | |
| Travel for Positive Opening | Various (see Product Selection table) | | | |
| Max Switching Speed | 250 mm/s | | | |
| Min Switching Speed | 100 mm/min | | | |
| Max Switching Frequency | 6000 operation per hour | | | |
| Case Material | Die cast alloy | | | |
| Actuator Material | See Product Selection table | | | |
| Enclosure Protection | IP66 | | | |
| Operating Temperature [C (F)] | -25...+65° (-13...+149°) | | | |
| Pollution Degree ^⓪ | 3 | | | |
| Mechanical Life Expectancy | 1 x 10 ⁷ operations with no electrical load | | | |
| Conduit Entry | M20 or 1/2 inch NPT | | | |
| Fixing | 2 x M5 | | | |
| Mounting | Any position | | | |
| Color | Red | | | |

⓪ Maximum for:

| Two-Circuit N5 5-Pin Mini Connector | |
|--------------------------------------|-------------|
| AC | DC |
| 300V, 2.5 A | 300V, 2.5 A |
| Four-Circuit M9 12-Pin M23 Connector | |
| AC | DC |
| 60V, 2.5 A | 60V, 2.5 A |

⓪ Conductive pollution occurs, or dry, nonconductive pollution occurs which becomes conductive due to condensation.

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.

Features

- Large selection of actuator heads
- Positive operation, forced disconnection of contacts
- Snap-acting, slow make before break or slow break before make contact blocks
- Contacts 1 N.C. + 1 N.O., 2 N.C. + 1 N.O. 3 N.C., 2 N.C. + 2 N.O., 3 N.C. + 1 N.O., or 4 N.C.
- Conforms to EN 50041, EN 1088, EN 60947-5-1, EN 292 and EN 60204-1

Safety Limit Switches


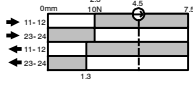
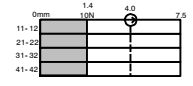
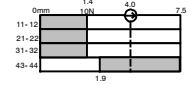


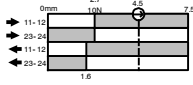
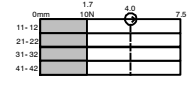

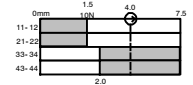

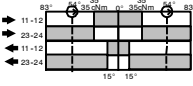
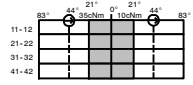
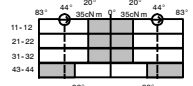
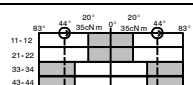
- Product Selection page 5-123
- Wiring page 5-126
- Dimensions page 5-126



440P Safety Limit Switches

30mm Metal Position Switches

Product Selection

| Operator Type | Contacts | | Contact Type | Typical Force/Torque to Operate | Contact Opening Characteristics □ Open ■ Closed ⊙ Positive Opening Point | Cat. No. | | |
|--|----------|--------|--------------|---------------------------------|---|----------------------|---------------------|--------------------|
| | Safety | Aux. | | | | 1/2 inch NPT Conduit | M20 Conduit | Quick Disconnect ① |
|  | 1 N.C. | 1 N.O. | Snap Acting | 13 N |  | 440P-MRPS11E | 440P-MRPS11B | 440P-MRPS11N5 |
| | 4 N.C. | — | — | 11 N |  | 440P-MRPB04E | 440P-MRPB04B | 440P-MRPB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 11 N |  | 440P-MRPB13E | 440P-MRPB13B | 440P-MRPB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 11 N |  | 440P-MRPB22E | 440P-MRPB22B | 440P-MRPB22M9 |
|  | 1 N.C. | 1 N.O. | Snap Acting | 13 N |  | 440P-MDPS11E | 440P-MDPS11B | 440P-MDPS11N5 |
| | 4 N.C. | — | — | 11 N |  | 440P-MDPB04E | 440P-MDPB04B | 440P-MDPB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 11 N |  | 440P-MDPB13E | 440P-MDPB13B | 440P-MDPB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 11 N |  | 440P-MDPB22E | 440P-MDPB22B | 440P-MDPB22M9 |
|  | 1 N.C. | 1 N.O. | Snap Acting | 0.34 N•m |  | 440P-MSLS11E | 440P-MSLS11B | 440P-MSLS11N5 |
| | 4 N.C. | — | — | 0.20 N•m |  | 440P-MSLB04E | 440P-MSLB04B | 440P-MSLB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.34 N•m |  | 440P-MSLB13E | 440P-MSLB13B | 440P-MSLB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.34 N•m |  | 440P-MSLB22E | 440P-MSLB22B | 440P-MSLB22M9 |
| Recommended standard cordset, 2 m, 5-pin mini connector (see page 8-1 for additional lengths). | | | | | | 889N-F5AE-6F | | |
| Recommended standard cordset, 2 m, 12-pin 9 wire (see page 8-1 for additional lengths). | | | | | | 889M-F12X9AE-2 | | |


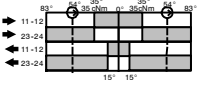
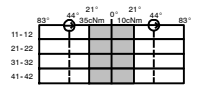

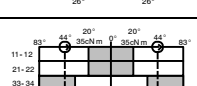

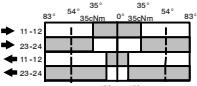
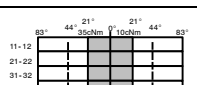
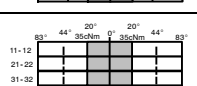
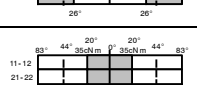

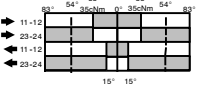
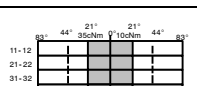
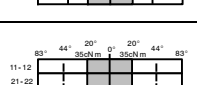
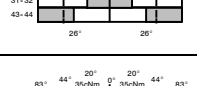
① N5 = 5-pin mini connector.
M9 = 12-pin M23 connector (use 9 wire).

Limit Switches

440P Safety Limit Switches

30mm Metal Position Switches

Product Selection (continued)

| Operator Type | Contacts | | Contact Type | Typical Force/ Torque to Operate | Contact Opening Characteristics □ Open ■ Closed ⊙ Positive Opening Point | Cat. No. | | |
|--|----------|--------|--------------|-------------------------------------|---|----------------------|--------------|--------------------|
| | Safety | Aux. | | | | 1/2 inch NPT Conduit | M20 Conduit | Quick Disconnect ① |
|  Metal Short Lever, Metal Roller | 1 N.C. | 1 N.O. | Snap Acting | 0.34 N•m |  | 440P-MMHS11E | 440P-MMHS11B | 440P-MMHS11N5 |
| | 4 N.C. | — | — | 0.20 N•m |  | 440P-MMHB04E | 440P-MMHB04B | 440P-MMHB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.34 N•m |  | 440P-MMHB13E | 440P-MMHB13B | 440P-MMHB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.34 N•m |  | 440P-MMHB22E | 440P-MMHB22B | 440P-MMHB22M9 |
|  Metal Adjustable Lever ② | 1 N.C. | 1 N.O. | Snap Acting | 0.34 N•m |  | 440P-MALS11E | 440P-MALS11B | 440P-MALS11N5 |
| | 4 N.C. | — | — | 0.20 N•m |  | 440P-MALB04E | 440P-MALB04B | 440P-MALB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.34 N•m |  | 440P-MALB13E | 440P-MALB13B | 440P-MALB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.34 N•m |  | 440P-MALB22E | 440P-MALB22B | 440P-MALB22M9 |
|  Metal Rod Lever ② | 1 N.C. | 1 N.O. | Snap Acting | 0.34 N•m |  | 440P-MARS11E | 440P-MARS11B | 440P-MARS11N5 |
| | 4 N.C. | — | — | 0.20 N•m |  | 440P-MARB04E | 440P-MARB04B | 440P-MARB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.34 N•m |  | 440P-MARB13E | 440P-MARB13B | 440P-MARB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.34 N•m |  | 440P-MARB22E | 440P-MARB22B | 440P-MARB22M9 |
| Recommended standard cordset, 2 m, 5-pin mini connector (see page 8-1 for additional lengths). | | | | | | 889N-F5AE-6F | | |
| Recommended standard cordset, 2 m, 12-pin 9 wire (see page 8-1 for additional lengths). | | | | | | 889M-F12X9AE-2 | | |




① N5 = 5-pin mini connector.

M9 = 12-pin M23 connector (use 9 wire).

② Not positive opening

Limit Switches
440P Safety Limit Switches
 30 mm Metal Position Switches

Product Selection (continued)

| Description | Safety Contacts | Auxiliary Contacts | Contact Type | Typical Force/Torque to Operate | Contact Opening Characteristics | Cat. No. | | |
|---|-----------------|--------------------|--------------|---------------------------------|--|----------------------|--------------|----------------|
| | | | | | <input type="checkbox"/> Open <input checked="" type="checkbox"/> Closed ☉ Positive Opening Point | 1/2 inch NPT Conduit | M20 Conduit | Connector ★ |
|  Metal Spring Rod ‡ | 1 N.C. | 1 N.O. | Snap Acting | 0.20 N•m (1.77 lb•in) | | 440P-MSRS11E | 440P-MSRS11B | 440P-MSRS11N5 |
| | 4 N.C. | — | — | 0.20 N•m (1.77 lb•in) | | 440P-MSRB04E | 440P-MSRB04B | 440P-MSRB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.20 N•m (1.77 lb•in) | | 440P-MSRB13E | 440P-MSRB13B | 440P-MSRB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.20 N•m (1.77 lb•in) | | 440P-MSRB22E | 440P-MSRB22B | 440P-MSRB22M9 |
|  Telescopic Arm ‡ | 1 N.C. | 1 N.O. | Snap Acting | 0.20 N•m (1.77 lb•in) | | 440P-MTAS11E | 440P-MTAS11B | 440P-MTAS11N5 |
| | 4 N.C. | — | — | 0.20 N•m (1.77 lb•in) | | 440P-MTAB04E | 440P-MTAB04B | 440P-MTAB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.20 N•m (1.77 lb•in) | | 440P-MTAB13E | 440P-MTAB13B | 440P-MTAB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.20 N•m (1.77 lb•in) | | 440P-MTAB22E | 440P-MTAB22B | 440P-MTAB22M9 |
|  Large Rubber Roller ‡ | 1 N.C. | 1 N.O. | Snap Acting | 0.20 N•m (1.77 lb•in) | | 440P-MRRS11E | 440P-MRRS11B | 440P-MRRS11N5 |
| | 4 N.C. | — | — | 0.20 N•m (1.77 lb•in) | | 440P-MRRB04E | 440P-MRRB04B | 440P-MRRB04M9 |
| | 3 N.C. | 1 N.O. | BBM | 0.34 N•m (3.01 lb•in) | | 440P-MRRB13E | 440P-MRRB13B | 440P-MRRB13M9 |
| | 2 N.C. | 2 N.O. | BBM | 0.34 N•m (3.01 lb•in) | | 440P-MRRB22E | 440P-MRRB22B | 440P-MRRB22M9 |
| Recommended standard cordset, 2 m, 5-pin mini connector. | | | | | | | | 889N-F5AE-6F |
| Recommended standard cordset, 2 m, 12-pin 9-wire. | | | | | | | | 889M-F12X9AE-2 |

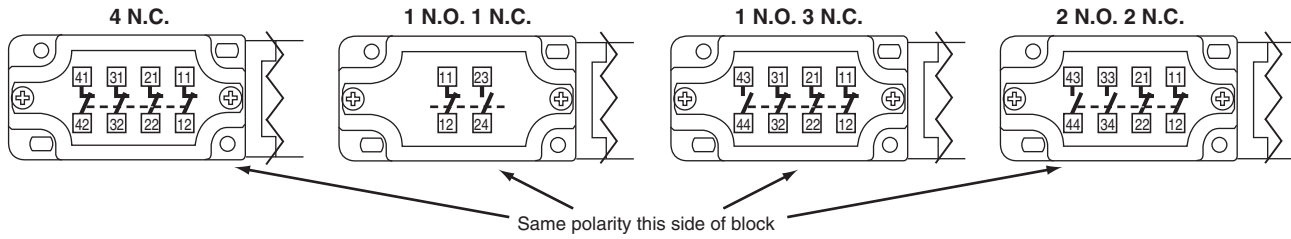
★ N5 = 5-pin mini connector.
 M9 = 12-pin M23 connector (use 9 wire).
 ‡ Not positive opening

Limit Switches

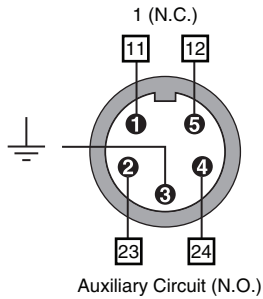
440P Safety Limit Switches

30 mm Metal Position Switches

Typical Wiring Diagrams



N5 Connector 2 Circuit 5-Pin Mini Connector



Connector Ratings

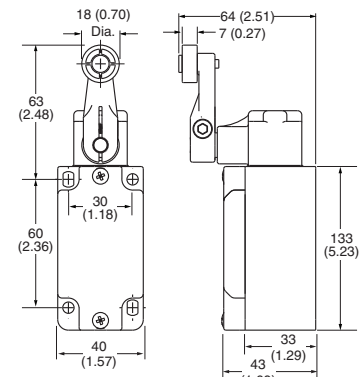
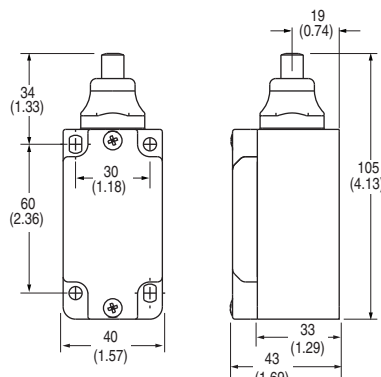
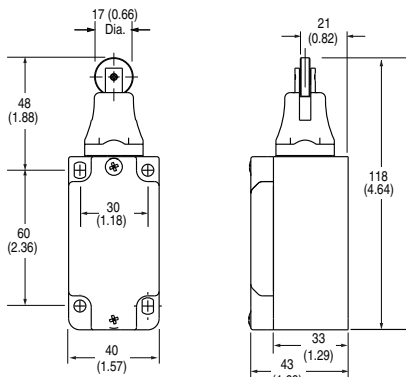
| | Max. Ratings | | Applicable Standards |
|------------------|--------------|-------------|----------------------|
| | AC | DC | |
| 5-Pin Mini (M12) | 300V, 2.5 A | 300V, 2.5 A | IEC 61076-2-101:2003 |
| 12-Pin (M23) | 60V, 2.5 A | 60V, 2.5 A | |

M9 12-Pin M23 Connector

| Connector Pinout | 4 N.C. | | 3 N.C. 1 N.O. | | 3 N.C. | |
|------------------|----------|---------|---------------|---------|----------|---------|
| | Terminal | Contact | Terminal | Contact | Terminal | Contact |
| 1 | 11 | N.C. | 11 | N.C. | 11 | N.C. |
| 3 | 12 | N.C. | 12 | N.C. | 12 | N.C. |
| 4 | 21 | N.C. | 21 | N.C. | 21 | N.C. |
| 6 | 22 | N.C. | 22 | N.C. | 22 | N.C. |
| 7 | 31 | N.C. | 31 | N.C. | 33 | N.O. |
| 8 | 32 | N.C. | 32 | N.C. | 34 | N.O. |
| 9 | 41 | N.C. | 43 | N.O. | 43 | N.O. |
| 10 | 42 | N.C. | 44 | N.O. | 44 | N.O. |
| 12 | Ground | | | | | |

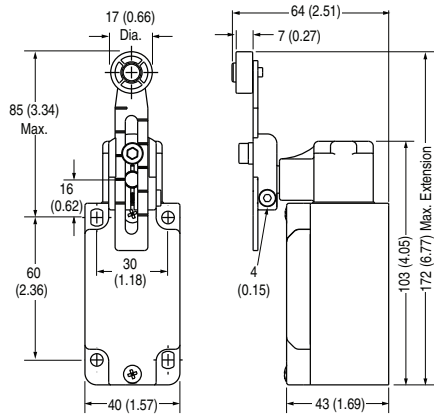
Approximate Dimensions—mm (inches)

Dimensions are not intended to be used for installation purposes.

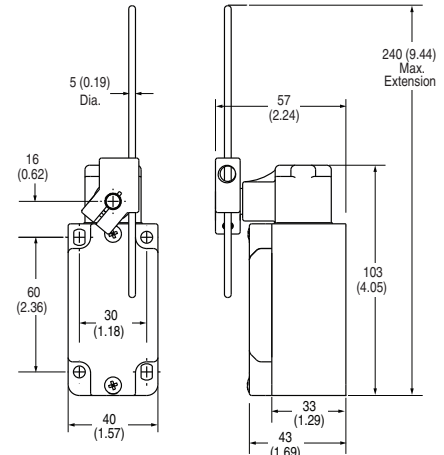


Approximate Dimensions—mm (inches) (continued)

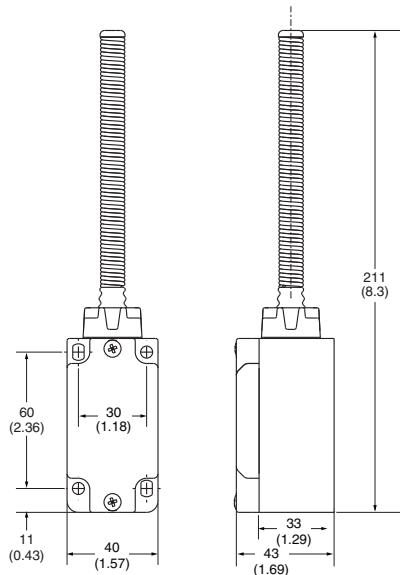
Dimensions are not intended to be used for installation purposes.



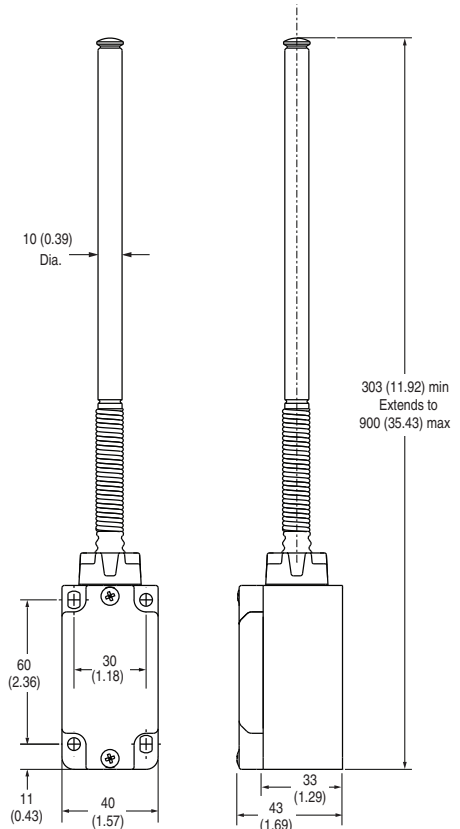
Adjustable Lever



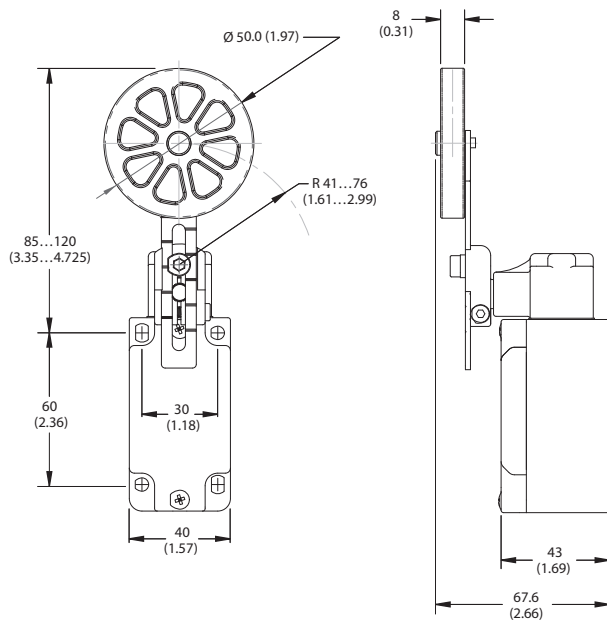
Rod Lever



Spring Rod



Telescopic Arm



Adjustable Lever with Rubber Roller