

Heavy-Duty Plug-In Switches

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Cutler-Hammer® E50 Modular Plug-In Limit Switch Components from Eaton's electrical business are the industry standard with versatility of design and high reliability for low maintenance, installation and inventory costs. Standard Viton® gaskets, seals and boots and a zinc die cast enclosure provide exceptional chemical resistance to the common coolants, cleansing agents, and hydraulic fluids found in machine tool, automotive, waste water treatment and other heavy-duty industrial applications. Mounting dimensions accommodate both U.S. and DIN standards for easy retrofit installations. Super bright 24 – 120V AC/DC LED indicating light versions simplify setup and troubleshooting operations.

Approvals

- UL Listed
- CSA Certified
- IEC.947.5.1
- TUV — E9271605E02

CE (where shown)



Unless otherwise noted, the products contained in this document are not designed or intended for use in human safety applications.

Viton® is a registered trademark of Dupont Dow Elastomers.

Modular Limit Switches Provide Extremely Easy Installation, High Reliability, and Low Maintenance and Inventory Costs

Available as Assembled Switches or Components

Viton Gasket Seals

Rugged Zinc Die-Cast Housing

Conduit, Cable and Connector Wiring Options



Dozens of Operators to Perfectly Fit Your Application

Rotary, Top and Side Push, Wobble and Specialty Operating Heads

Single- or Double-Pole Switch Bodies with Optional Indicating Lights

A Variety of Receptacles Meet Your Wiring Needs



Product Features










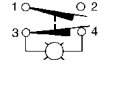
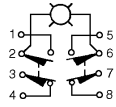
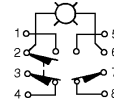
- Modular, plug-in components (head, body and receptacle) provide application flexibility, reduced inventory and less downtime
- Manufactured to take the physical and environmental abuse (including cutting fluids and chemicals) of harsh industrial environments
- Chemical resistant Viton® gaskets, seals and boots are standard, and so are captive, posi-drive screws
- The switches have terminal identification on the nameplate for a visual wiring check-out without guesswork. Heads and switch bodies can be replaced without rewiring
- E50 devices can be ordered in separate components or as complete assembled switches
- 600V rating, ridge-topped contacts and wiping action assure continuity even to logic level circuits
- Keyed, four direction head positioning
- Standard 5° pre-travel and 90° total travel
- 24 – 120V AC/DC LED and 120V AC neon indicating lights available
- Rotary heads are field convertible CW, CCW, or both, without special tools
- Epoxy filled, pin connector or pigtail pin connector receptacles available

For Customer Service in the U.S. call 1-800-356-1243, in Canada call 1-800-268-3578.

For Application Assistance in the U.S. and Canada call 1-800-426-9184.

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Model Selection — Assembled Switches — Standard

| Assembled Switch | Single Pole (5 Terminal Receptacle) | | | Double Pole (9 Terminal Receptacle) | | | | | |
|--|---|--|---|---|---|-----------------------|-----------------------|--|----------------|
| |  |  |  |  |  | | | | |
| | Indicating Light: | None | LED (24 – 120V AC/DC) | Neon (120V AC) | None | LED (24 – 120V AC/DC) | Neon (120V AC) | LED (24 – 120V AC/DC) | Neon (120V AC) |
| | Switch Body: | E50SA 1N.O.-1N.C. | E50SAL 1N.O.-1N.C. | E50SAN 1N.O.-1N.C. | E50SB 2N.O.-2N.C. | E50SBL 2N.O.-2N.C. | E50SBN 2N.O.-2N.C. | E50SCL 1N.O.-2N.C. | — |
| Receptacle: ① | E50RA | E50RA | E50RA | E50RB | E50RB | E50RB | E50RB | E50RB | |
| Operating Head Type ② | | Catalog Number for Assembled Switches | | | | | | | |
| Side Rotary (requires an operating lever, see PG.05C.04.T.E) | Standard Spring Return — E50DR1 ③ | E50AR1 CE | E50ALR1 | E50ANR1 | E50BR1 | E50BLR1 | E50BNR1 | — | — |
| | Low Force Spring Return — E50DL1 ③ | E50AL1 CE | E50ALL1 | E50ANL1 | E50BL1 | E50BLL1 | E50BNL1 | — | — |
| | Maintained Two-Position — E50DM1 | E50AM1 CE | E50ALM1 | E50ANM1 | E50BM1 | E50BLM1 | E50BNM1 | — | — |
| Side Pushbutton, Spring Return — E50DS1 |  | E50AS1 CE | E50ALS1 | E50ANS1 | E50BS1 | E50BLS1 | E50BNS1 | E50CLS1 | — |
| Side Pushbutton, Adjustable Spring Return — E50DS2 |  | E50AS2 CE | E50ALS2 | E50ANS2 | E50BS2 | E50BLS2 | E50BNS2 | E50BLS2 | E50CNS2 |
| Side Push Roller, Spring Return — E50DS3 ④ |  | E50AS3 CE | E50ALS3 | E50ANS3 | E50BS3 | E50BLS3 | E50BNS3 | E50BLS3 | — |
| Side Pushbutton, Maintained — E50DH1 |  | E50AH1 CE | E50ALH1 | E50ANH1 | E50BH1 | E50BLH1 | E50BNH1 | E50BLH1 | — |
| Wiring: | | Single Pole 1N.O.-1N.C. Must be same polarity  | | | Double Pole 2N.O.-2N.C. Parallel wired Indicator light Same polarity each pole  | | | Double Pole 1N.O.-2N.C. Series wired Indicator light; Same polarity each pole  | |

① Connection options (add the Code Suffix from the table below to the end of the Catalog Number):

| Option | Catalog Number | Code Suffix |
|---|------------------------------------|---------------|
| Mini-Connector ⑤ (with epoxy filled receptacle) | Single Pole (5-Pin Mini-Connector) | CSMS5D5CY1602 |
| | Double Pole (9-pin Mini-Connector) | CSMS9D9CY1602 |
| Cable Connection (with epoxy filled receptacle) | 8-foot cable length | — |
| | 12-foot cable length | — |
| | 20-foot cable length | — |
| Manifold Mount (rear wiring entrance) | — | M |
| 20 mm Conduit Entrance | — | 20 |

② For Operating Head specifications, see Page 5.








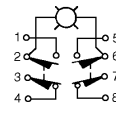
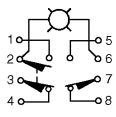
③ CW (clockwise) and CCW (counterclockwise) operation, easily convertible to CW only or CCW only operation.

④ Roller can be converted in the field between horizontal and vertical.

⑤ For a full selection of cable connectors, see PG.05.05.T.E.

☐ Fast turn product with typical one day lead-time to shipment.

Model Selection — Assembled Switches — Standard (Continued)^①

| Assembled Switch  | Single Pole (5 Terminal Receptacle)  | | | Double Pole (9 Terminal Receptacle)  | | | | | |
|---|--|---------------------------------------|-----------------------|---|----------------------|-----------------------|--|-----------------------|----------------|
| | Indicating Light: | None | LED (24 – 120V AC/DC) | Neon (120V AC) | None | LED (24 – 120V AC/DC) | Neon (120V AC) | LED (24 – 120V AC/DC) | Neon (120V AC) |
| | Switch Body: | E50SA 1N.O.-1N.C. | E50SAL 1N.O.-1N.C. | E50SAN 1N.O.-1N.C. | E50SB 2N.O.-2N.C. | E50SBL 2N.O.-2N.C. | E50SBN 2N.O.-2N.C. | E50SCL 1N.O.-2N.C. | — |
| | Receptacle: ① | E50RA | E50RA | E50RA | E50RB | E50RB | E50RB | E50RB | E50RB |
| Operating Head Type ^② | | Catalog Number for Assembled Switches | | | | | | | |
| Top Pushbutton, Spring Return — E50DT1  | E50AT1 | E50ALT1 | E50ANT1 | E50BT1 | E50BLT1 | E50BNT1 | E50CLT1 | E50BNT1 | |
| Top Pushbutton, Adjustable Spring Return — E50DT2  | E50AT2 | E50ALT2 | E50ANT2 | E50BT2 | E50BLT2 | E50BNT2 | — | — | |
| Top Push Roller, Spring Return — E50DT3 ^③  | E50AT3 | E50ALT3 | E50ANT3 | E50BT3 | E50BLT3 | E50BNT3 | — | — | |
| Wobble Head, Spring Return (requires a wobble operator, see PG.05C.04.T.E)  | Standard Duty — E50DW1 | E50AW1 | E50ALW1 | E50ANW1 | E50BW1 | E50BLW1 | E50BNW1 | E50CLW1 | — |
| | Heavy-Duty High Strength Steel — E50DW2 | E50AW2 | E50ALW2 | E50ANW2 | E50BW2 | E50BLW2 | E50BNW2 | E50CLW2 | E50BNW2 |
| Wiring: | Single Pole 1N.O.-1N.C. Must be same polarity  | | | Double Pole 2N.O.-2N.C. Parallel wired Indicator light Same polarity each pole  | | | Double Pole 1N.O.-2N.C. Series wired Indicator light; Same polarity each pole  | | |


^① Connection options (add the Code Suffix from the table below to the end of the Catalog Number):

| Option | Catalog Number | Code Suffix |
|--|------------------------------------|---------------|
| Mini-Connector ^④ (with epoxy filled receptacle) | Single Pole (5-Pin Mini-Connector) | CSMS5D5CY1602 |
| | Double Pole (9-pin Mini-Connector) | CSMS9D9CY1602 |
| Cable Connection (with epoxy filled receptacle) | 8-foot cable length | — |
| | 12-foot cable length | — |
| | 20-foot cable length | — |
| Manifold Mount (rear wiring entrance) | — | M |
| 20 mm Conduit Entrance | — | 20 |

^② For Operating Head specifications, see Page 5.


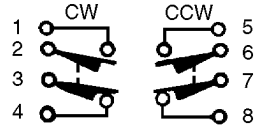

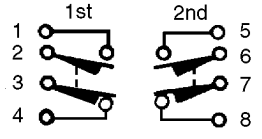


^③ Roller can be converted in the field between horizontal and vertical.

^④ For a full selection of cable connectors, see PG.05.05.T.E.

 Fast turn product with typical one day lead-time to shipment.







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Model Selection — Assembled Switches — Special Purpose

| | Operating Data — Nominal | Catalog Number | | | | Circuit Diagram |
|---|--|---|------------------|-----------------|---------------------|--|
| | | Assembled Switch | Switch Body Only | Receptacle Only | Operating Head Only | |
| Neutral Position (requires an operating lever, see PG.05C.04.T.E)  | 5° Travel | E50NN1 | E50SN | E50RB | E50DN1 | Same Polarity Each Pole  |
| | 15° Travel | E50NN2 | E50SN | E50RB | E50DN2 | |
| | Travel to Operate Contacts: Travel to Reset Contacts: Total Travel: Force to Operate Contacts: Minimum Return Force: Operating Temperature: | 5° or 15° (depending upon model selected) 2° 90° 1.8 in-lbs 2.5 in-oz 14° to 200°F (-10° to 94°C) | | | | |
| Two Step CW, CCW or both, Convertible (requires an operating lever, see PG.05C.04.T.E)  | | E50TD1 | E50ST | E50RB | E50DD1 | Same Polarity Each Pole  |
| | Travel to Operate Contacts: Travel to Reset Contacts: Total Travel: Force to Operate Contacts: Minimum Return Force: Operating Temperature: | 1st Step 10°; 2nd Step 20° 4° Each 90° 3 in-lbs 4.5 in-oz CW or CCW: 14° to 250°F (-10° to 121°C) CW and CCW: 14° to 200°F (-10° to 94°C) | | | | |
| Gravity Return (requires E50KL220, E50KL226 or equivalent operating lever, see PG.05C.04.T.E)  | without Indicating Light | E50GG1 | E50SG | E50RA | E50DG1 | Must Be Same Polarity  |
| | with LED Indicating Light (24-120V AC/DC) | E50GLG1 | E50SGL | | | |
| | with Neon Indicating Light (120V AC) | E50GNG1 | E50SGN | | | |
| | Travel to Operate Contacts: Travel to Reset Contacts: Total Travel: Force to Operate Contacts: Minimum Return Force: Operating Temperature: | 10° to 170° 8° 360° 3.0 in-oz Gravity 14° to 200°F (-10° to 94°C) | | | | |

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Model Selection — Operating Heads

| Description | Travel to Operate Contacts | Travel to Reset Contacts | Total Travel | Force to Operate Contacts | Minimum Return Force | Operating Temperature ^① | | Catalog Number | |
|---|--|--------------------------|--------------|---------------------------|----------------------|------------------------------------|--|--|----------------|
| | | | | | | Without Cable | With Pre-wired Cable | | |
| Side Rotary (requires an operating lever, see PG.05C.04.T.E)  | Standard Spring Return ^② | 5° | 2° | 90° | 3 in-lbs | 4.5 in-oz | 10° to 200°F (-12° to 94°C) ^③ | 10° to 200°F (-12° to 94°C) ^③ | E50DR1 |
| | Low ^② Temperature Spring Return | 5° | 2° | 90° | 3 in-lbs | 4.5 in-oz | -40° to 175°F (-40° to 79°C) | -31° to 175°F (-34° to 79°C) | E50DR19 |
| | Low Force Spring Return ^② | 15° | 6° | 90° | 1.5 in-lbs | 2.5 in-oz | 10° to 200°F (-12° to 94°C) ^③ | 10° to 200°F (-12° to 94°C) ^③ | E50DL1 |
| | Maintained Two-Position | 50° | 50° | 90° | 3 in-lbs | — | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DM1 |
| Side Pushbutton, Spring Return  | 0.065 inch | 0.030 inch | 0.250 inch | 4 lbs | 8 oz | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DS1 | |
| Side Pushbutton, Adjustable Spring Return  | 0.065 inch | 0.030 inch | 0.250 inch | 4 lbs | 8 oz | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DS2 | |
| Side Push Roller, Spring Return ^④  | 0.065 inch | 0.030 inch | 0.250 inch | 4 lbs | 8 oz | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DS3 ^⑤ | |
| | | | | | | | | E50DS4 ^⑤ | |
| Side Pushbutton, Maintained  | 0.200 inch | 0.130 inch | 0.320 inch | 5 lbs | 5 lbs | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DH1 | |
| Top Pushbutton, Spring Return  | 0.040 inch | 0.020 inch | 0.280 inch | 4 lbs | 8 oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DT1 | |
| Top Pushbutton, Adjustable Spring Return  | 0.040 inch | 0.020 inch | 0.280 inch | 4 lbs | 8 oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DT2 | |
| Top Push Roller, Spring Return  | 0.040 inch | 0.020 inch | 0.280 inch | 4 lbs | 8 oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DT3 | |
| Wobble Head, Spring Return (requires a wobble operator, see PG.05C.04.T.E)  | Standard Duty | 10° | 6° | 15° | 2 in-lbs | 2.4 in-oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DW1 |
| | Heavy-Duty High Strength Steel | 10° | 6° | 15° | 2 in-lbs | 2.4 in-oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DW2 |

① Temperature ranges below +32°F (0°C) are based on absence of freezing moisture or water.

② CW (clockwise) and CCW (counterclockwise) operation, easily convertible to CW only or CCW only operation.

③ For CW and CCW operation. For CW only or CCW only operation, high temperature limit increases to 250°F (121°C) without cable, and 221°F (105°C) with pre-wired cable.


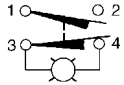
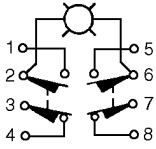
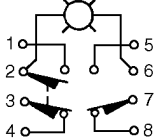
④ Roller can be converted in the field between horizontal and vertical.

⑤ Roller shaft is 0.38 inches (9.5 mm) longer on E50DS4, see dimensions on **Page 11**.

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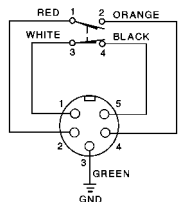


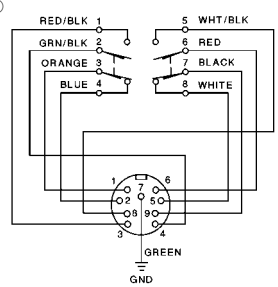

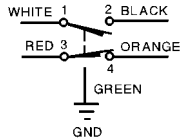
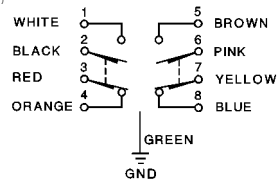
Model Selection — Switch Bodies



| | Circuit | Switch Body Construction | Catalog Number |
|--|--|--|--------------------|
|  | Single Pole 1N.O.-1N.C. Must Be Same Polarity ①  | Without Indicating Light | E50SA CE |
| | | With LED Indicating Light 24 – 120V AC/DC | E50SAL |
| | | With Neon Indicating Light 120V AC | E50SAN |
| | Double Pole 2N.O.-2N.C. Parallel Wired Ind. Light Same Polarity Each Pole  | Without Indicating Light | E50SB |
| | | With LED Indicating Light 24 – 120V AC/DC | E50SBL |
| | | With Neon Indicating Light 120V AC | E50SBN |
| Double Pole 2N.C.-1N.O. Series Wired Ind. Light Same Polarity Each Pole ①  | With LED Indicating Light 24 – 120V AC/DC | E50SCL | |

① Indicating lights are supplied from the factory wired as shown. However, they can easily be re-connected to terminals 1 and 2 if necessary (SPDT).

Fast turn product with typical one day lead-time to shipment.




Model Selection — Receptacles

| | Description | Poles | Conduit Entrance | Cable Length | Catalog Number | Wiring |
|---|---|--------------------------|----------------------|-----------------|--|---|
|  | Conduit entrance, front or rear mounting | Single Pole (5 Terminal) | 1/2 NPT | — | E50RA | ① |
| | | | 20 mm | — | E50RA20 | |
| | | Double Pole (9 Terminal) | 1/2 NPT | — | E50RB | ① |
| | | | 3/4 NPT | — | E50RB34 | |
|  | Rear wiring entrance instead of conduit hole, gasket on back for oil tightness | Single Pole (5 Terminal) | — | — | E50RAM | ① |
| | | Double Pole (9 Terminal) | — | — | E50RBM | ① |
|  | Epoxy filled receptacle with pre-wired Mini-Connector. (The -W version is a wiring scheme typically used in automotive applications.) | Single Pole (5 Terminal) | 5-pin Mini-Connector | — | E50RAP5  | ②  |
| | | | | | E50RAP5-W  | |
| | | Double Pole (9 Terminal) | 9-pin Mini-Connector | — | E50RBP9  | ②  |
|  | Epoxy filled receptacle with pre-wired 16 gauge, yellow jacketed, type SOOW-A cable. Cable enters through hole threaded for conduit | Single Pole (5 Terminal) | 1/2 NPT | 8-foot | E50RAS | ②  |
| | | | | 12-foot | E50RAS12 | |
| | | | 20-foot | E50RAS20 | | |
| | | | 20 mm | 8-foot | E50RA20S | |
| | | | | 12-foot | E50RA20S12 | |
| | | | | 20-foot | E50RA20S20 | |
| | | Double Pole (9 Terminal) | 1/2 NPT | 8-foot | E50RBS | ②  |
| | | | | 12-foot | E50RBS12 | |
| | | | 20-foot | E50RBS20 | | |
| | | | 20 mm | 8-foot | E50RB20S | |
| 12-foot | E50RB20S12 | | | | | |
| 20-foot | E50RB20S20 | | | | | |

① See Model Selection — Switch Bodies for wiring information.
 ② The wire colors referenced on these diagrams are those internal to the switch itself.
 See listing of compatible connector cables on **Page 8**.
 Fast turn product with typical one day lead-time to shipment.

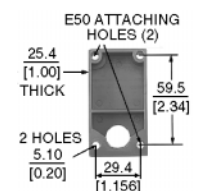
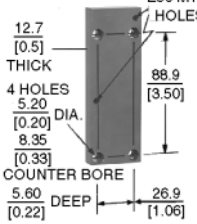
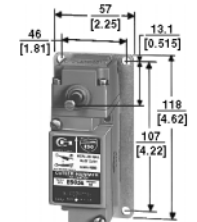
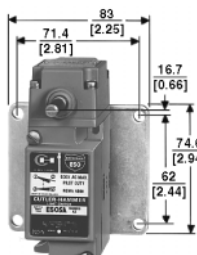
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Model Selection — Compatible Connector Cables ①

| | Voltage Style | Number of Pins | Gauge | Length | Catalog Number | Pin Configuration/Wire Colors (Face View Female Shown) |
|--|---------------|----------------|--------|--------------|----------------------|---|
| Standard Cables — Mini Style | | | | | | |
|  Mini Style Straight Female Current Rating @ 600V 5-pin: 8A 9-pin: 7A | — | 5-pin | 16 AWG | 6 feet (2m) | CSMS5D5CY1602 |  1-White 2-Red 3-Green 4-Orange 5-Black |
| | — | 9-pin | 16 AWG | 12 feet (4m) | CSMS9D9CY1602 |  1-Orange 2-Blue 3-Red/Black 4-Green/Black 5-White 6-Red 7-Green 8-White/Black 9-Black |

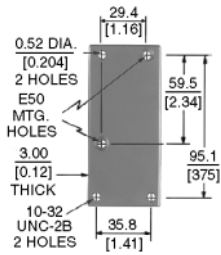
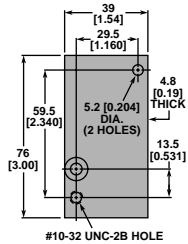
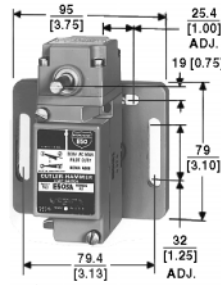

① For a full selection of connector cables, see **PG.05.05.T.E.**

Model Selection — Accessories

| Approximate Dimensions in mm [Inches] | Description | Catalog Number |
|---|--|-----------------|
|  | Allows E50 to replace Eaton's Cutler-Hammer 10316 Type LP Surface Mounting Plug-In Limit Switch | E50KH1 |
| | Allows E50 to replace Eaton's Cutler-Hammer 10316 Type LP Manifold Mounting Plug-In Limit Switch | E50KH1M |
|  | Allows E50 to replace Square D Type AW Surface Mounting Non Plug-In Standard Box Limit Switch | E50KH7 |
|  | Allows E50 to replace National Acme, Type D-1200M, Style 2 Mounting. Denison LoxSwitch, Model L-100W, Style 2 Mounting. Square D 9007 Type T, Style B Mounting. (Adapter plate is 1/8 inch thick, with 1/4 inch mounting holes.) | E50KH4 ① |
|  | Allows E50 to replace National Acme, Type D-1200M, Style 1 Mounting. Denison LoxSwitch, Model L-100W, Style 1 Mounting. Square D 9007 Type T, Style C Mounting. (Adapter plate is 1/8 inch thick, with 1/4 inch mounting holes.) | E50KH5 ① |

① Limit Switch not included.

Model Selection — Accessories (Continued)

| Approximate Dimensions in mm [Inches] | Description | Catalog Number |
|---|---|-----------------|
| <p>Adapter Plate</p>  | Allows E50 to replace Eaton's Cutler-Hammer 10316 Type LT Non Plug-In 2-Pole Limit Switch | E50KH2 |
| <p>Adapter Plate</p>  | Allows E50 to replace Allen-Bradley 802M Sealed Limit Switch | E50KH10 |
| <p>Adjustable Mounting Plate</p>  | This is a mounting plate only 5/16 inch thick and includes the proper mounting bolts and nuts. The slots in the plate allow a maximum horizontal adjustment of 1 inch and vertical adjustment of 1-1/4 inches | E50KH3 ① |
| <p>Conduit Sealing Nut</p>  | 1/2 inch oiltight | E50KH6 |

① Limit Switch not included.

■ Fast turn product with typical one day lead-time to shipment.

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Specifications

| Description | Specification |
|--|--|
| Environmental Ratings | NEMA 1, 3, 3S, 4, 4X, 6, 6P, 13, IP67 |
| Material of Construction | Zinc die cast |
| Switch Gasket Material | Viton [®] |
| Universal U.S./DIN Mounting Dimensions | 1.16 in (30 mm) x 2.34 in (60 mm) |
| Conduit Entrance | 1/2 in NPT or 20 mm threading |
| Contact Ratings | See below |
| Contact Operation | Snap action over center mechanism |
| Contact Material | Fine silver |
| Maximum Frequency of Operation | 8000 operations per hour |
| Mechanical Life: Side Rotary Side or Top Push | 13,000,000 operations minimum 10,000,000 operations minimum |
| Electrical Life: Single Pole Double Pole | 1,000,000 operations typical at full load 100,000 operations typical at full load |
| Ambient Temperature Range — Standard Standard without Cable Standard with Cable Low Temperature without Cable Low Temperature with Cable | 14° to 250°F (-10° to 121°C) 14° to 221°F (-10° to 105°C) -40° to 250°F (-40° to 121°C) -40° to 221°F (-40° to 105°C) |
| Repeat Accuracy — Standard Side Operated Top Operated Side Rotary | Within 0.0012 in Within 0.0003 in Within 0.0014 in |
| Torque Requirements: Switch Body Screws Operating Head Screws | 25 – 30 lb-in 14 – 18 lb-in |
| Wire Size | Will accept AWG #22 – #12, single or stranded wire |

Electrical Data — Maximum Contact Ratings (Same polarity each pole)

| AC Volts | Current, Amperes | | | Voltamperes | | DC Volts | Current, Amperes | |
|----------|------------------|-------|---------|-------------|-------|----------|--------------------|---------|
| | Make | Break | Cont. ① | Make | Break | | Max. Make or Break | Cont. ① |

All Switches Except Gravity Return and Indicating Light Versions

| NEMA A600 Rating | | | | | | NEMA R300 | | |
|------------------|----|-----|----|------|-----|-----------|------|-----|
| 120 | 60 | 6 | 10 | 7200 | 720 | 125 | 0.22 | 1.0 |
| 240 | 30 | 3 | | | | 250 | 0.11 | 1.0 |
| 480 | 15 | 1.5 | | | | | | |
| 600 | 12 | 1.2 | | | | | | |

Switches with Indicating Lights (LED or Neon)

| NEMA A150 Rating | | | | | | NEMA R150 | | |
|------------------|----|---|----|------|-----|-----------|------|-----|
| 120 | 60 | 6 | 10 | 7200 | 720 | 125 | 0.22 | 1.0 |

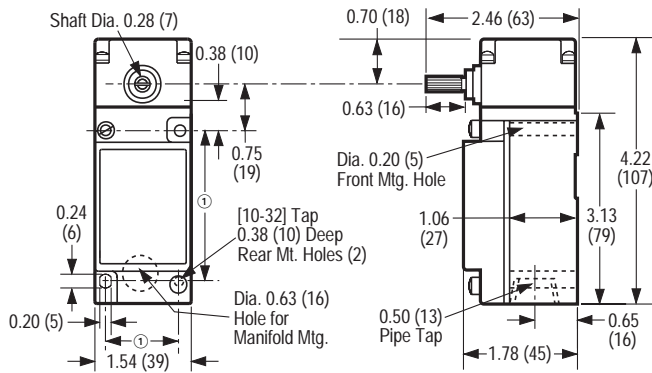
Gravity Return Switches — Maximum Contact Ratings

| NEMA 6600 Rating — Contacts on Same Polarity | | | | | | — | | |
|--|-----|------|---|------|-----|---|---|---|
| 120 | 30 | 3 | 5 | 3600 | 360 | — | — | — |
| 240 | 15 | 1.5 | | | | | | |
| 480 | 7.5 | 0.75 | | | | | | |
| 600 | 6 | 0.60 | | | | | | |

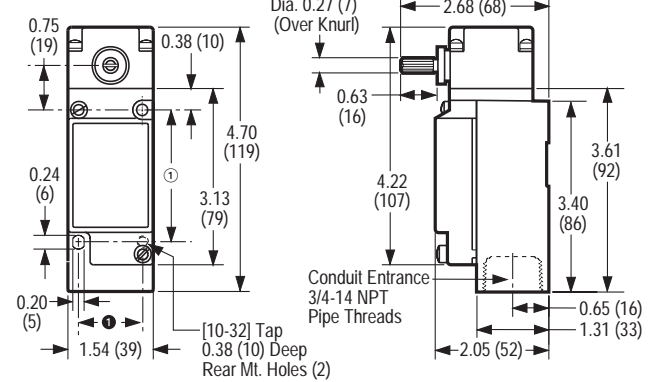
① Thermal rating. Valid only if switch does not have to make or break.

Approximate Dimensions in Inches (mm)

Standard



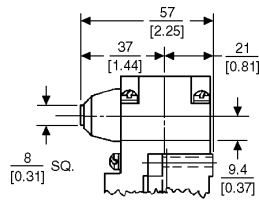
E50SB34



① Can accommodate both U.S., 1.16 (29.4) x 2.34 (59.5) and DIN, 1.18 (30) x 3.26 (60), mounting dimensions.

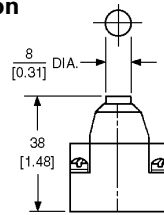
Side Push Operators in mm [Inches]

Pushbutton



Top Push Operators in mm [Inches]

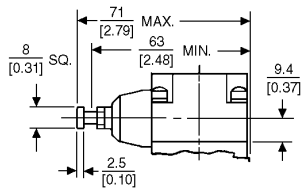
Pushbutton



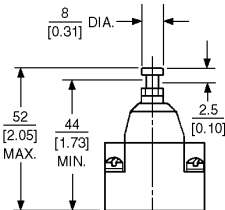
Wobble Operators

See Operators, PG.05C.04.T.E

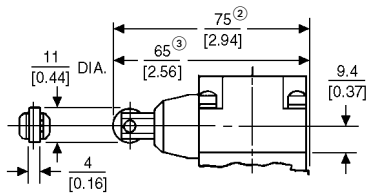
Adjustable Pushbutton



Adjustable Pushbutton

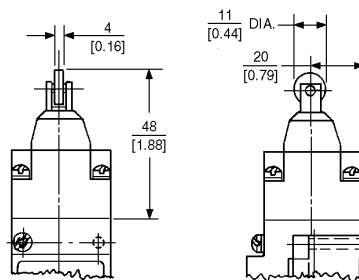


Roller

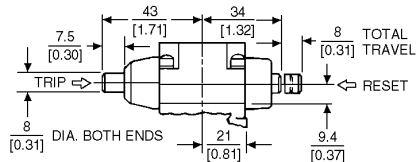


② For E50DS4.
③ For E50DS3.

Roller



Maintained Pushbutton



Heavy-Duty Plug-In Switches

Contents

| | |
|---|----|
| Overview | 1 |
| Model Selection, Assembled Switches | 2 |
| Model Selection, Operating Heads | 5 |
| Model Selection, Switch Bodies..... | 6 |
| Model Selection, Receptacles..... | 7 |
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| Specifications..... | 10 |
| Dimensions..... | 11 |

Cutler-Hammer® E50 Modular Plug-In Limit Switch Components from Eaton's electrical business are the industry standard with versatility of design and high reliability for low maintenance, installation and inventory costs. Standard Viton® gaskets, seals and boots and a zinc die cast enclosure provide exceptional chemical resistance to the common coolants, cleansing agents, and hydraulic fluids found in machine tool, automotive, waste water treatment and other heavy-duty industrial applications. Mounting dimensions accommodate both U.S. and DIN standards for easy retrofit installations. Super bright 24 – 120V AC/DC LED indicating light versions simplify setup and troubleshooting operations.

Approvals

- UL Listed
- CSA Certified
- IEC.947.5.1
- TUV — E9271605E02

CE (where shown)



Unless otherwise noted, the products contained in this document are not designed or intended for use in human safety applications.

Viton® is a registered trademark of Dupont Dow Elastomers.

Modular Limit Switches Provide Extremely Easy Installation, High Reliability, and Low Maintenance and Inventory Costs

Available as Assembled Switches or Components

Viton Gasket Seals

Rugged Zinc Die-Cast Housing

Conduit, Cable and Connector Wiring Options



Dozens of Operators to Perfectly Fit Your Application

Rotary, Top and Side Push, Wobble and Specialty Operating Heads

Single- or Double-Pole Switch Bodies with Optional Indicating Lights

A Variety of Receptacles Meet Your Wiring Needs



Product Features








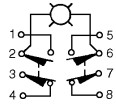
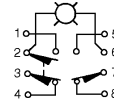
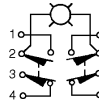
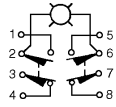
- Modular, plug-in components (head, body and receptacle) provide application flexibility, reduced inventory and less downtime
- Manufactured to take the physical and environmental abuse (including cutting fluids and chemicals) of harsh industrial environments
- Chemical resistant Viton® gaskets, seals and boots are standard, and so are captive, posi-drive screws
- The switches have terminal identification on the nameplate for a visual wiring check-out without guesswork. Heads and switch bodies can be replaced without rewiring
- E50 devices can be ordered in separate components or as complete assembled switches
- 600V rating, ridge-topped contacts and wiping action assure continuity even to logic level circuits
- Keyed, four direction head positioning
- Standard 5° pre-travel and 90° total travel
- 24 – 120V AC/DC LED and 120V AC neon indicating lights available
- Rotary heads are field convertible CW, CCW, or both, without special tools
- Epoxy filled, pin connector or pigtail pin connector receptacles available

For Customer Service in the U.S. call **1-800-356-1243**,
in Canada call **1-800-268-3578**.

For Application Assistance in the U.S. and Canada
call **1-800-426-9184**.

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Model Selection — Assembled Switches — Standard

| | | | | | | | | | |
|---|---|--|-----------------------|-----------------------|--|-----------------------|-----------------------|--|----------------|
|  | | Single Pole (5 Terminal Receptacle)  | | | Double Pole (9 Terminal Receptacle)  | | | | |
| | Indicating Light: | None | LED (24 – 120V AC/DC) | Neon (120V AC) | None | LED (24 – 120V AC/DC) | Neon (120V AC) | LED (24 – 120V AC/DC) | Neon (120V AC) |
| | Switch Body: | E50SA 1N.O.-1N.C. | E50SAL 1N.O.-1N.C. | E50SAN 1N.O.-1N.C. | E50SB 2N.O.-2N.C. | E50SBL 2N.O.-2N.C. | E50SBN 2N.O.-2N.C. | E50SCL 1N.O.-2N.C. | — |
| | Receptacle: ① | E50RA | E50RA | E50RA | E50RB | E50RB | E50RB | E50RB | E50RB |
| Operating Head Type ② | | Catalog Number for Assembled Switches | | | | | | | |
|  | Standard Spring Return — E50DR1 ③ | E50AR1 CE | E50ALR1 | E50ANR1 | E50BR1 | E50BLR1 | E50BNR1 | — | — |
| | Low Force Spring Return — E50DL1 ③ | E50AL1 CE | E50ALL1 | E50ANL1 | E50BL1 | E50BLL1 | E50BNL1 | — | — |
| | Maintained Two-Position — E50DM1 | E50AM1 CE | E50ALM1 | E50ANM1 | E50BM1 | E50BLM1 | E50BNM1 | — | — |
| Side Pushbutton, Spring Return — E50DS1 |  | E50AS1 CE | E50ALS1 | E50ANS1 | E50BS1 | E50BLS1 | E50BNS1 | E50CLS1 | — |
| Side Pushbutton, Adjustable Spring Return — E50DS2 |  | E50AS2 CE | E50ALS2 | E50ANS2 | E50BS2 | E50BLS2 | E50BNS2 | E50BLS2 | E50CNS2 |
| Side Push Roller, Spring Return — E50DS3 ④ |  | E50AS3 CE | E50ALS3 | E50ANS3 | E50BS3 | E50BLS3 | E50BNS3 | E50BLS3 | — |
| Side Pushbutton, Maintained — E50DH1 |  | E50AH1 CE | E50ALH1 | E50ANH1 | E50BH1 | E50BLH1 | E50BNH1 | E50BLH1 | — |
| Wiring: | | Single Pole 1N.O.-1N.C. Must be same polarity  | | | Double Pole 2N.O.-2N.C. Parallel wired Indicator light Same polarity each pole  | | | Double Pole 1N.O.-2N.C. Series wired Indicator light; Same polarity each pole  | |

① Connection options (add the Code Suffix from the table below to the end of the Catalog Number):

| Option | Catalog Number | Code Suffix | |
|--|------------------------------------|---------------|-----|
| Mini-Connector ⑤ (with epoxy filled receptacle) | Single Pole (5-Pin Mini-Connector) | CSMS5D5CY1602 | P5 |
| | Double Pole (9-pin Mini-Connector) | CSMS9D9CY1602 | P9 |
| Cable Connection (with epoxy filled receptacle) | 8-foot cable length | — | S |
| | 12-foot cable length | — | S12 |
| | 20-foot cable length | — | S20 |
| Manifold Mount (rear wiring entrance) | — | — | M |
| 20 mm Conduit Entrance | — | — | 20 |

② For Operating Head specifications, see Page 5.








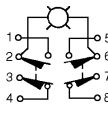
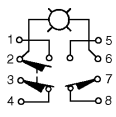
③ CW (clockwise) and CCW (counterclockwise) operation, easily convertible to CW only or CCW only operation.

④ Roller can be converted in the field between horizontal and vertical.

⑤ For a full selection of cable connectors, see PG.05.05.T.E.

☐ Fast turn product with typical one day lead-time to shipment.

Model Selection — Assembled Switches — Standard (Continued)^①

| Assembled Switch  | Single Pole (5 Terminal Receptacle)  | | | Double Pole (9 Terminal Receptacle)  | | | | | |
|---|--|---------------------------------------|-----------------------|---|----------------------|-----------------------|--|-----------------------|----------------|
| | Indicating Light: | None | LED (24 – 120V AC/DC) | Neon (120V AC) | None | LED (24 – 120V AC/DC) | Neon (120V AC) | LED (24 – 120V AC/DC) | Neon (120V AC) |
| | Switch Body: | E50SA 1N.O.-1N.C. | E50SAL 1N.O.-1N.C. | E50SAN 1N.O.-1N.C. | E50SB 2N.O.-2N.C. | E50SBL 2N.O.-2N.C. | E50SBN 2N.O.-2N.C. | E50SCL 1N.O.-2N.C. | — |
| | Receptacle: ^① | E50RA | E50RA | E50RA | E50RB | E50RB | E50RB | E50RB | E50RB |
| Operating Head Type ^② | | Catalog Number for Assembled Switches | | | | | | | |
| Top Pushbutton, Spring Return — E50DT1  | E50AT1 | E50ALT1 | E50ANT1 | E50BT1 | E50BLT1 | E50BNT1 | E50CLT1 | E50BNT1 | |
| Top Pushbutton, Adjustable Spring Return — E50DT2  | E50AT2 | E50ALT2 | E50ANT2 | E50BT2 | E50BLT2 | E50BNT2 | — | — | |
| Top Push Roller, Spring Return — E50DT3 ^③  | E50AT3 | E50ALT3 | E50ANT3 | E50BT3 | E50BLT3 | E50BNT3 | — | — | |
| Wobble Head, Spring Return (requires a wobble operator, see PG.05C.04.T.E)  | Standard Duty — E50DW1 | E50AW1 | E50ALW1 | E50ANW1 | E50BW1 | E50BLW1 | E50BNW1 | E50CLW1 | — |
| | Heavy-Duty High Strength Steel — E50DW2 | E50AW2 | E50ALW2 | E50ANW2 | E50BW2 | E50BLW2 | E50BNW2 | E50CLW2 | E50BNW2 |
| Wiring: | Single Pole 1N.O.-1N.C. Must be same polarity  | | | Double Pole 2N.O.-2N.C. Parallel wired Indicator light Same polarity each pole  | | | Double Pole 1N.O.-2N.C. Series wired Indicator light; Same polarity each pole  | | |


^① Connection options (add the Code Suffix from the table below to the end of the Catalog Number):

| Option | Catalog Number | Code Suffix |
|---|------------------------------------|---------------|
| Mini-Connector ^④ (with epoxy filled receptacle) | Single Pole (5-Pin Mini-Connector) | CSMS5D5CY1602 |
| | Double Pole (9-pin Mini-Connector) | CSMS9D9CY1602 |
| Cable Connection (with epoxy filled receptacle) | 8-foot cable length | — |
| | 12-foot cable length | — |
| | 20-foot cable length | — |
| Manifold Mount (rear wiring entrance) | — | M |
| 20 mm Conduit Entrance | — | 20 |

^② For Operating Head specifications, see Page 5.


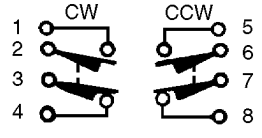

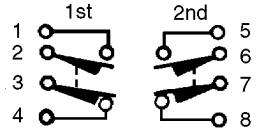


^③ Roller can be converted in the field between horizontal and vertical.

^④ For a full selection of cable connectors, see PG.05.05.T.E.

 Fast turn product with typical one day lead-time to shipment.

July 2005

Model Selection — Assembled Switches — Special Purpose

| | Operating Data — Nominal | Catalog Number | | | | Circuit Diagram |
|--|--|---|------------------|-----------------|---------------------|--|
| | | Assembled Switch | Switch Body Only | Receptacle Only | Operating Head Only | |
| Neutral Position (requires an operating lever, see PG.05C.04.T.E)  | 5° Travel | E50NN1 | E50SN | E50RB | E50DN1 | Same Polarity Each Pole  |
| | 15° Travel | E50NN2 | E50SN | E50RB | E50DN2 | |
| | Travel to Operate Contacts: Travel to Reset Contacts: Total Travel: Force to Operate Contacts: Minimum Return Force: Operating Temperature: | 5° or 15° (depending upon model selected) 2° 90° 1.8 in-lbs 2.5 in-oz 14° to 200°F (-10° to 94°C) | | | | |
| Two Step CW, CCW or both, Convertible (requires an operating lever, see PG.05C.04.T.E)  | | E50TD1 | E50ST | E50RB | E50DD1 | Same Polarity Each Pole  |
| | Travel to Operate Contacts: Travel to Reset Contacts: Total Travel: Force to Operate Contacts: Minimum Return Force: Operating Temperature: | 1st Step 10°; 2nd Step 20° 4° Each 90° 3 in-lbs 4.5 in-oz CW or CCW: 14° to 250°F (-10° to 121°C) CW and CCW: 14° to 200°F (-10° to 94°C) | | | | |
| Gravity Return (requires E50KL220, E50KL226 or equivalent operating lever, see PG.05C.04.T.E)  | without Indicating Light | E50GG1 | E50SG | E50RA | E50DG1 | Must Be Same Polarity  |
| | with LED Indicating Light (24-120V AC/DC) | E50GLG1 | E50SGL | | | |
| | with Neon Indicating Light (120V AC) | E50GNG1 | E50SGN | | | |
| | Travel to Operate Contacts: Travel to Reset Contacts: Total Travel: Force to Operate Contacts: Minimum Return Force: Operating Temperature: | 10° to 170° 8° 360° 3.0 in-oz Gravity 14° to 200°F (-10° to 94°C) | | | | |

Fast turn product with typical one day lead-time to shipment.

Model Selection — Operating Heads

| Description | Travel to Operate Contacts | Travel to Reset Contacts | Total Travel | Force to Operate Contacts | Minimum Return Force | Operating Temperature ^① | | Catalog Number | |
|---|--|--------------------------|--------------|---------------------------|----------------------|------------------------------------|--|--|----------------|
| | | | | | | Without Cable | With Pre-wired Cable | | |
| Side Rotary (requires an operating lever, see PG.05C.04.T.E)  | Standard Spring Return ^② | 5° | 2° | 90° | 3 in-lbs | 4.5 in-oz | 10° to 200°F (-12° to 94°C) ^③ | 10° to 200°F (-12° to 94°C) ^③ | E50DR1 |
| | Low ^② Temperature Spring Return | 5° | 2° | 90° | 3 in-lbs | 4.5 in-oz | -40° to 175°F (-40° to 79°C) | -31° to 175°F (-34° to 79°C) | E50DR19 |
| | Low Force Spring Return ^② | 15° | 6° | 90° | 1.5 in-lbs | 2.5 in-oz | 10° to 200°F (-12° to 94°C) ^③ | 10° to 200°F (-12° to 94°C) ^③ | E50DL1 |
| | Maintained Two-Position | 50° | 50° | 90° | 3 in-lbs | — | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DM1 |
| Side Pushbutton, Spring Return  | 0.065 inch | 0.030 inch | 0.250 inch | 4 lbs | 8 oz | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DS1 | |
| Side Pushbutton, Adjustable Spring Return  | 0.065 inch | 0.030 inch | 0.250 inch | 4 lbs | 8 oz | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DS2 | |
| Side Push Roller, Spring Return ^④  | 0.065 inch | 0.030 inch | 0.250 inch | 4 lbs | 8 oz | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DS3 ^⑤ | |
| | | | | | | | | E50DS4 ^⑤ | |
| Side Pushbutton, Maintained  | 0.200 inch | 0.130 inch | 0.320 inch | 5 lbs | 5 lbs | 14° to 200°F (-10° to 94°C) | 14° to 200°F (-10° to 94°C) | E50DH1 | |
| Top Pushbutton, Spring Return  | 0.040 inch | 0.020 inch | 0.280 inch | 4 lbs | 8 oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DT1 | |
| Top Pushbutton, Adjustable Spring Return  | 0.040 inch | 0.020 inch | 0.280 inch | 4 lbs | 8 oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DT2 | |
| Top Push Roller, Spring Return  | 0.040 inch | 0.020 inch | 0.280 inch | 4 lbs | 8 oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DT3 | |
| Wobble Head, Spring Return (requires a wobble operator, see PG.05C.04.T.E)  | Standard Duty | 10° | 6° | 15° | 2 in-lbs | 2.4 in-oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DW1 |
| | Heavy-Duty High Strength Steel | 10° | 6° | 15° | 2 in-lbs | 2.4 in-oz | 14° to 250°F (-10° to 121°C) | 14° to 221°F (-10° to 105°C) | E50DW2 |

① Temperature ranges below +32°F (0°C) are based on absence of freezing moisture or water.

② CW (clockwise) and CCW (counterclockwise) operation, easily convertible to CW only or CCW only operation.

③ For CW and CCW operation. For CW only or CCW only operation, high temperature limit increases to 250°F (121°C) without cable, and 221°F (105°C) with pre-wired cable.


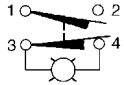
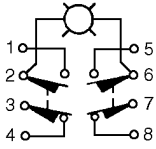
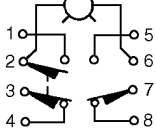
④ Roller can be converted in the field between horizontal and vertical.

⑤ Roller shaft is 0.38 inches (9.5 mm) longer on E50DS4, see dimensions on **Page 11**.

Fast turn product with typical one day lead-time to shipment.

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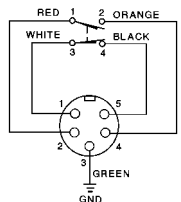


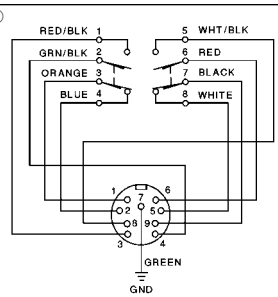

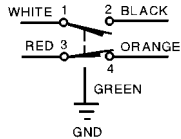
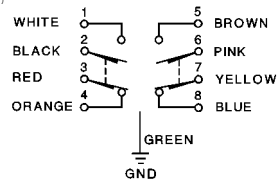
Model Selection — Switch Bodies



| | Circuit | Switch Body Construction | Catalog Number |
|--|--|--|--------------------|
| <p>Switch Bodies</p>  | <p>Single Pole 1N.O.-1N.C. Must Be Same Polarity ①</p>  | Without Indicating Light | E50SA CE |
| | | With LED Indicating Light 24 – 120V AC/DC | E50SAL |
| | | With Neon Indicating Light 120V AC | E50SAN |
| | <p>Double Pole 2N.O.-2N.C. Parallel Wired Ind. Light Same Polarity Each Pole</p>  | Without Indicating Light | E50SB |
| | | With LED Indicating Light 24 – 120V AC/DC | E50SBL |
| | | With Neon Indicating Light 120V AC | E50SBN |
| <p>Double Pole 2N.C.-1N.O. Series Wired Ind. Light Same Polarity Each Pole ①</p>  | With LED Indicating Light 24 – 120V AC/DC | E50SCL | |

① Indicating lights are supplied from the factory wired as shown. However, they can easily be re-connected to terminals 1 and 2 if necessary (SPDT).

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Model Selection — Receptacles

| | Description | Poles | Conduit Entrance | Cable Length | Catalog Number | Wiring |
|---|---|--------------------------|----------------------|-----------------|--|---|
|  | Conduit entrance, front or rear mounting | Single Pole (5 Terminal) | 1/2 NPT | — | E50RA | ① |
| | | | 20 mm | — | E50RA20 | |
| | | Double Pole (9 Terminal) | 1/2 NPT | — | E50RB | ① |
| | | | 3/4 NPT | — | E50RB34 | |
|  | Rear wiring entrance instead of conduit hole, gasket on back for oil tightness | Single Pole (5 Terminal) | — | — | E50RAM | ① |
| | | Double Pole (9 Terminal) | — | — | E50RBM | ① |
|  | Epoxy filled receptacle with pre-wired Mini-Connector. (The -W version is a wiring scheme typically used in automotive applications.) | Single Pole (5 Terminal) | 5-pin Mini-Connector | — | E50RAP5  | ②  |
| | | | | | E50RAP5-W  | |
| | | Double Pole (9 Terminal) | 9-pin Mini-Connector | — | E50RBP9  | ②  |
|  | Epoxy filled receptacle with pre-wired 16 gauge, yellow jacketed, type S00W-A cable. Cable enters through hole threaded for conduit | Single Pole (5 Terminal) | 1/2 NPT | 8-foot | E50RAS | ②  |
| | | | | 12-foot | E50RAS12 | |
| | | | 20-foot | E50RAS20 | | |
| | | | 20 mm | 8-foot | E50RA20S | |
| | | | | 12-foot | E50RA20S12 | |
| | | | | 20-foot | E50RA20S20 | |
| | | Double Pole (9 Terminal) | 1/2 NPT | 8-foot | E50RBS | ②  |
| | | | | 12-foot | E50RBS12 | |
| | | | 20-foot | E50RBS20 | | |
| | | | 20 mm | 8-foot | E50RB20S | |
| 12-foot | E50RB20S12 | | | | | |
| 20-foot | E50RB20S20 | | | | | |

① See Model Selection — Switch Bodies for wiring information.
 ② The wire colors referenced on these diagrams are those internal to the switch itself.
 See listing of compatible connector cables on **Page 8**.
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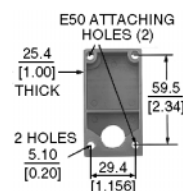
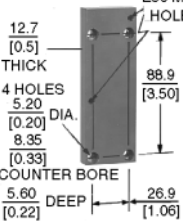
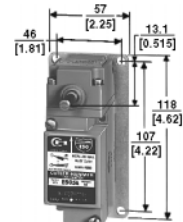
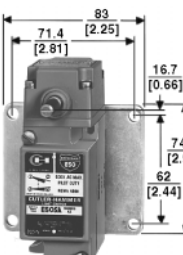
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Model Selection — Compatible Connector Cables ①

| | Voltage Style | Number of Pins | Gauge | Length | Catalog Number | Pin Configuration/Wire Colors (Face View Female Shown) |
|--|---------------|----------------|--------|--------------|----------------------|---|
| Standard Cables — Mini Style | | | | | | |
|  Mini Style Straight Female Current Rating @ 600V 5-pin: 8A 9-pin: 7A | — | 5-pin | 16 AWG | 6 feet (2m) | CSMS5D5CY1602 |  1-White 2-Red 3-Green 4-Orange 5-Black |
| | — | 9-pin | 16 AWG | 12 feet (4m) | CSMS9D9CY1602 |  1-Orange 2-Blue 3-Red/Black 4-Green/Black 5-White 6-Red 7-Green 8-White/Black 9-Black |

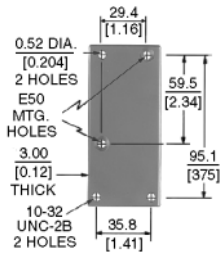
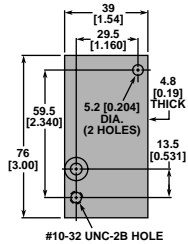
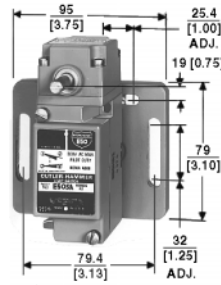

① For a full selection of connector cables, see **PG.05.05.T.E.**

Model Selection — Accessories

| Approximate Dimensions in mm [Inches] | Description | Catalog Number |
|---|--|-----------------|
|  | Allows E50 to replace Eaton's Cutler-Hammer 10316 Type LP Surface Mounting Plug-In Limit Switch | E50KH1 |
| | Allows E50 to replace Eaton's Cutler-Hammer 10316 Type LP Manifold Mounting Plug-In Limit Switch | E50KH1M |
|  | Allows E50 to replace Square D Type AW Surface Mounting Non Plug-In Standard Box Limit Switch | E50KH7 |
|  | Allows E50 to replace National Acme, Type D-1200M, Style 2 Mounting. Denison LoxSwitch, Model L-100W, Style 2 Mounting. Square D 9007 Type T, Style B Mounting. (Adapter plate is 1/8 inch thick, with 1/4 inch mounting holes.) | E50KH4 ① |
|  | Allows E50 to replace National Acme, Type D-1200M, Style 1 Mounting. Denison LoxSwitch, Model L-100W, Style 1 Mounting. Square D 9007 Type T, Style C Mounting. (Adapter plate is 1/8 inch thick, with 1/4 inch mounting holes.) | E50KH5 ① |

① Limit Switch not included.

Model Selection — Accessories (Continued)

| Approximate Dimensions in mm [Inches] | Description | Catalog Number |
|---|---|-----------------|
| <p>Adapter Plate</p>  | Allows E50 to replace Eaton's Cutler-Hammer 10316 Type LT Non Plug-In 2-Pole Limit Switch | E50KH2 |
| <p>Adapter Plate</p>  | Allows E50 to replace Allen-Bradley 802M Sealed Limit Switch | E50KH10 |
| <p>Adjustable Mounting Plate</p>  | This is a mounting plate only 5/16 inch thick and includes the proper mounting bolts and nuts. The slots in the plate allow a maximum horizontal adjustment of 1 inch and vertical adjustment of 1-1/4 inches | E50KH3 ① |
| <p>Conduit Sealing Nut</p>  | 1/2 inch oiltight | E50KH6 |

① Limit Switch not included.

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Specifications

| Description | Specification |
|--|--|
| Environmental Ratings | NEMA 1, 3, 3S, 4, 4X, 6, 6P, 13, IP67 |
| Material of Construction | Zinc die cast |
| Switch Gasket Material | Viton [®] |
| Universal U.S./DIN Mounting Dimensions | 1.16 in (30 mm) x 2.34 in (60 mm) |
| Conduit Entrance | 1/2 in NPT or 20 mm threading |
| Contact Ratings | See below |
| Contact Operation | Snap action over center mechanism |
| Contact Material | Fine silver |
| Maximum Frequency of Operation | 8000 operations per hour |
| Mechanical Life: Side Rotary Side or Top Push | 13,000,000 operations minimum 10,000,000 operations minimum |
| Electrical Life: Single Pole Double Pole | 1,000,000 operations typical at full load 100,000 operations typical at full load |
| Ambient Temperature Range — Standard Standard without Cable Standard with Cable Low Temperature without Cable Low Temperature with Cable | 14° to 250°F (-10° to 121°C) 14° to 221°F (-10° to 105°C) -40° to 250°F (-40° to 121°C) -40° to 221°F (-40° to 105°C) |
| Repeat Accuracy — Standard Side Operated Top Operated Side Rotary | Within 0.0012 in Within 0.0003 in Within 0.0014 in |
| Torque Requirements: Switch Body Screws Operating Head Screws | 25 – 30 lb-in 14 – 18 lb-in |
| Wire Size | Will accept AWG #22 – #12, single or stranded wire |

Electrical Data — Maximum Contact Ratings (Same polarity each pole)

| AC Volts | Current, Amperes | | | Voltamperes | | DC Volts | Current, Amperes | |
|----------|------------------|-------|---------|-------------|-------|----------|--------------------|---------|
| | Make | Break | Cont. ① | Make | Break | | Max. Make or Break | Cont. ① |

All Switches Except Gravity Return and Indicating Light Versions

| NEMA A600 Rating | | | | | | NEMA R300 | | |
|------------------|----|-----|----|------|-----|-----------|------|-----|
| 120 | 60 | 6 | 10 | 7200 | 720 | 125 | 0.22 | 1.0 |
| 240 | 30 | 3 | | | | 250 | 0.11 | 1.0 |
| 480 | 15 | 1.5 | | | | | | |
| 600 | 12 | 1.2 | | | | | | |

Switches with Indicating Lights (LED or Neon)

| NEMA A150 Rating | | | | | | NEMA R150 | | |
|------------------|----|---|----|------|-----|-----------|------|-----|
| 120 | 60 | 6 | 10 | 7200 | 720 | 125 | 0.22 | 1.0 |

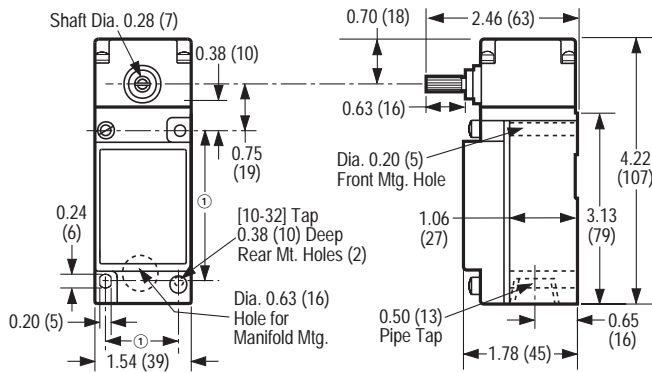
Gravity Return Switches — Maximum Contact Ratings

| NEMA 6600 Rating — Contacts on Same Polarity | | | | | | — | | |
|--|-----|------|---|------|-----|---|---|---|
| 120 | 30 | 3 | 5 | 3600 | 360 | — | — | — |
| 240 | 15 | 1.5 | | | | | | |
| 480 | 7.5 | 0.75 | | | | | | |
| 600 | 6 | 0.60 | | | | | | |

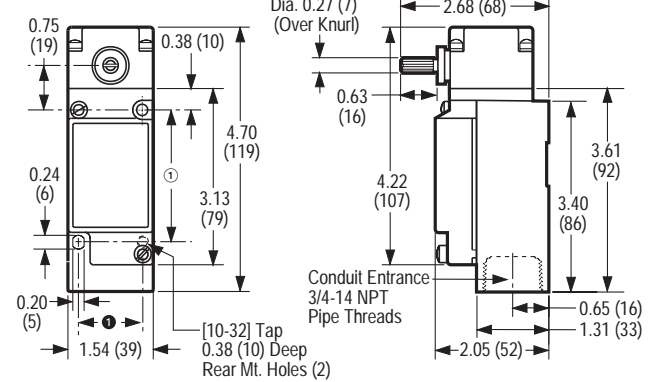
① Thermal rating. Valid only if switch does not have to make or break.

Approximate Dimensions in Inches (mm)

Standard



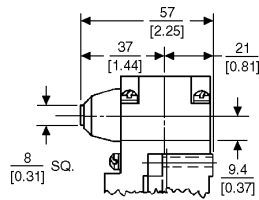
E50SB34



① Can accommodate both U.S., 1.16 (29.4) x 2.34 (59.5) and DIN, 1.18 (30) x 3.26 (60), mounting dimensions.

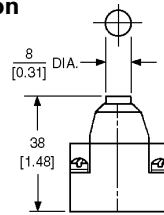
Side Push Operators in mm [Inches]

Pushbutton



Top Push Operators in mm [Inches]

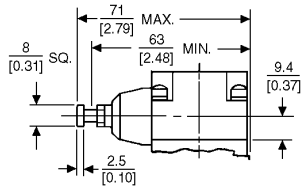
Pushbutton



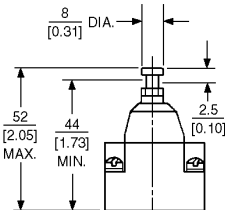
Wobble Operators

See Operators, PG.05C.04.T.E

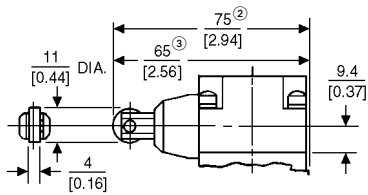
Adjustable Pushbutton



Adjustable Pushbutton

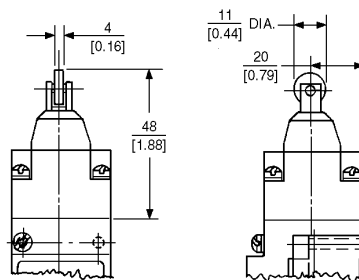


Roller



② For E50DS4.
③ For E50DS3.

Roller



Maintained Pushbutton

