

## E50 Heavy-Duty Factory Sealed 6P+ Switches



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## Product Description

E50 6P+ Limit Switches by Eaton's electrical sector were specifically designed to withstand the penetrating properties of cutting fluids and coolants, such as those used in the automotive industry, as well as extreme shock, vibration and temperature fluctuations. The one-piece, epoxy filled switch body is prewired at the factory to ensure leak-proof, submersible performance. This unique construction positively stops fluid from finding its way to any and all critical connections.

Our 6P+ switches can be ordered in separate components or as complete assembled devices. They are available with prewired 16 AWG cables or mini-connectors. Standard and custom cable lengths are available. As part of the E50 line, the 6P+ switches use the same operating heads as the standard E50 plug-in models to reduce the components you need to inventory.

## Features

- Manufactured to take the physical and environmental abuse (including cutting fluids and chemicals) of harsh industrial environments
- Modular, plug-in components (head and switch body) provide application flexibility, reduced inventory and less downtime
- Chemical resistant Viton gaskets, seals and boots are standard, and so are captive, posi-drive screws
- A special tertiary seal on the switch body prevents fluid from entering even when the operating head is not attached
- 600V rating, ridge-topped contacts and wiping action assure continuity even to logic level circuits
- Factory wired cable features a 350 pound pullout capacity
- Keyed, four direction head positioning. Standard 5° pre-travel and 90° total travel
- 24–120 Vac/dc LED and 120 Vac neon indicating lights available
- Rotary heads are field convertible CW, CCW, or both, without special tools

## Standards and Certifications

- UL Listed
- CSA Certified
- IEC.9475.1
- TUV—E9271605E02
- CE (where shown)



**⚠ DANGER**

**THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.**

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## Description

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Drawings  
Online








For the most current information on this product, visit our Web site: [www.eaton.com](http://www.eaton.com)

For Customer Service in the U.S. call 1-877-ETN CARE (386-2273), in Canada call 1-800-268-3578.  
For Application Assistance in the U.S. and Canada call 1-800-426-9184.

## Operating Heads

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## E50 Heavy-Duty Factory Sealed 6P+ Switches, Operating Heads

| Description   | Travel to Operate Contacts | Travel to Reset Contacts | Total Travel | Force to Operate Contacts | Minimum Return Force | Operating Temperature <sup>①</sup>          |   | Catalog Number             |
|---|----------------------------|--------------------------|--------------|---------------------------|----------------------|---|---|----------------------------|
|   |                            |                          |              |                           |                      | Without Cable                               | With Pre-wired Cable                        |                            |
| <b>Side Rotary</b> (requires an operating lever, see <a href="#">Page V8-T2-80</a> )                                  |                            |                          |              |                           |                      |   |   |                            |
|  Standard spring return <sup>②</sup> | 5°                         | 2°                       | 90°          | 3 in-lbs                  | 4.5 in-oz            | 10° to 200°F<br>(-12° to 94°C) <sup>③</sup> | 10° to 200°F<br>(-12° to 94°C) <sup>③</sup> | <b>E50DR1</b>              |
| Low temperature spring return <sup>②</sup>  | 5°                         | 2°                       | 90°          | 3 in-lbs                  | 4.5 in-oz            | -40° to 175°F<br>(-40° to 79°C)             | -31° to 175°F<br>(-34° to 79°C)             | <b>E50DR19</b>             |
| Low force spring return <sup>②</sup>  | 15°                        | 6°                       | 90°          | 1.5 in-lbs                | 2.5 in-oz            | 10° to 200°F<br>(-12° to 94°C) <sup>③</sup> | 10° to 200°F<br>(-12° to 94°C) <sup>③</sup> | <b>E50DL1</b>              |
| Maintained two-position   | 50°                        | 50°                      | 90°          | 3 in-lbs                  | —                    | 14° to 200°F<br>(-10° to 94°C)              | 14° to 200°F<br>(-10° to 94°C)              | <b>E50DM1</b>              |
| <b>Side Pushbutton</b>  |                            |                          |              |                           |                      |   |   |                            |
|  Spring return                       | 0.065 in                   | 0.030 in                 | 0.250 in     | 4 lbs                     | 8 oz                 | 14° to 200°F<br>(-10° to 94°C)              | 14° to 200°F<br>(-10° to 94°C)              | <b>E50DS1</b>              |
|  Adjustable Spring Return           | 0.065 in                   | 0.030 in                 | 0.250 in     | 4 lbs                     | 8 oz                 | 14° to 200°F<br>(-10° to 94°C)              | 14° to 200°F<br>(-10° to 94°C)              | <b>E50DS2</b>              |
| <b>Side Push Roller</b>   |                            |                          |              |                           |                      |   |   |                            |
|  Spring return <sup>④</sup>        | 0.065 in                   | 0.030 in                 | 0.250 in     | 4 lbs                     | 8 oz                 | 14° to 200°F<br>(-10° to 94°C)              | 14° to 200°F<br>(-10° to 94°C)              | <b>E50DS3</b> <sup>⑤</sup> |
|   | 0.065 in                   | 0.030 in                 | 0.250 in     | 4 lbs                     | 8 oz                 | 14° to 200°F<br>(-10° to 94°C)              | 14° to 200°F<br>(-10° to 94°C)              | <b>E50DS4</b> <sup>⑤</sup> |
| <b>Side Pushbutton</b>  |                            |                          |              |                           |                      |   |   |                            |
|  Maintained                        | 0.200 in                   | 0.130 in                 | 0.320 in     | 5 lbs                     | 5 lbs                | 14° to 200°F<br>(-10° to 94°C)              | 14° to 200°F<br>(-10° to 94°C)              | <b>E50DH1</b>              |
| <b>Top Pushbutton</b>   |                            |                          |              |                           |                      |   |   |                            |
|  Spring return                     | 0.040 in                   | 0.020 in                 | 0.280 in     | 4 lbs                     | 8 oz                 | 14° to 250°F<br>(-10° to 121°C)             | 14° to 221°F<br>(-10° to 105°C)             | <b>E50DT1</b>              |
|  Adjustable Spring Return          | 0.040 in                   | 0.020 in                 | 0.280 in     | 4 lbs                     | 8 oz                 | 14° to 250°F<br>(-10° to 121°C)             | 14° to 221°F<br>(-10° to 105°C)             | <b>E50DT2</b>              |

**Notes**

- 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 in (9.5 mm) longer on E50DS4, see Dimensions on [Page V8-T2-78](#).