

E50 Heavy-Duty Plug-In Switches

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E50 Heavy-Duty Plug-In Switches

Product Description

E50 Modular Plug-In Limit Switch Components from Eaton’s electrical sector 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 24–120 Vac/dc LED indicating light versions simplify setup and troubleshooting operations.

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 checkout 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
- 24–120 Vac/dc LED and 120 Vac 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

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.

For the most current information on this product, visit our Web site: 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.

Product Selection

Assembled Switches—Standard

Assembled Switch E50 Heavy-Duty Plug-In Switches, Assembled—Standard

Assembled Switch



Single-Pole (5 Terminal Receptacle)



Two-Pole (9 Terminal Receptacle)

Indicating Light:	None	LED (24–120 Vac/dc)	Neon (120 Vac)	None	LED (24–120 Vac/dc)	Neon (120 Vac)	LED (24–120 Vac/dc)	Neon (120 Vac)
	Switch Body:	E50SA 1NO-1NC	E50SAL 1NO-1NC	E50SAN 1NO-1NC	E50SB 2NO-2NC	E50SBL 2NO-2NC	E50SBN 2NO-2NC	E50SCL 1NO-2NC
Receptacle: ①	E50RA	E50RA	E50RA	E50RB	E50RB	E50RB	E50RB	E50RB
Operating Head Type ②	Assembled Switch (Head + Receptacle + Body) Catalog Number			Assembled Switch (Head + Receptacle + Body) Catalog Number				

Operating Head Type ②

Side Rotary



Side Rotary (requires an operating lever, see Page V8-T2-80)

Standard spring return—E50DR1 ③	E50AR1 CE	E50ALR1	E50ANR1
Low force spring return—E50DL1 ③	E50AL1 CE	E50ALL1	E50ANL1
Maintained two-position—E50DM1	E50AM1 CE	E50ALM1	E50ANM1

E50BR1	E50BLR1	E50BNR1	—	—
E50BL1	E50BLL1	E50BNL1	—	—
E50BM1	E50BLM1	E50BNM1	—	—

Spring Return



Spring return—E50DS1	E50AS1 CE	E50ALS1	E50ANS1
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E50BS1	E50BSL1	E50BNS1	E50CLS1	—
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Adjustable Spring Return



Adjustable spring return—E50DS2	E50AS2 CE	E50ALS2	E50ANS2
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E50BS2	E50BSL2	E50BNS2	E50BLS2	E50CNS2
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Circuit Diagrams, see Page V8-T2-65.

Notes

① Connection options (add the code suffix from the table below to the end of the catalog number):

Option		Mating Cordset Catalog Number	Code Suffix	
Mini-connector ④ (with epoxy filled receptacle)	Single-pole (5-pin mini-connector)	CSMS5D5CY1602	P5 ⑤	
	Two-pole (9-pin mini-connector)	CSMS9D9CY1602	P9 ⑤	
Micro-connector ④ (with epoxy filled receptacle)	Single-pole (5-pin micro-connector)	CSDS5A5CY2202	A5 ⑤	
	Cable connection (with epoxy filled receptacle)	8 ft cable length	—	S
		12 ft cable length	—	S12
20 ft cable length		—	S20	
Manifold mount (rear wiring entrance)	—	—	M	
20 mm conduit entrance	—	—	20	

② For operating head specifications, see Page V8-T2-59.

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

④ For a full selection of cable connectors, see Tab 10, section 10.1.

⑤ Refer to Page V8-T2-65 for wiring diagrams.

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Assembled Switch



E50 Heavy-Duty Plug-In Switches, Assembled—Standard, continued



Single-Pole (5 Terminal Receptacle)

Two-Pole (9 Terminal Receptacle)

Indicating Light:	None	LED (24–120 Vac/dc)	Neon (120 Vac)	None	LED (24–120 Vac/dc)	Neon (120 Vac)	LED (24–120 Vac/dc)	Neon (120 Vac)
Switch Body:	E50SA	E50SAL	E50SAN	E50SB	E50SBL	E50SBN	E50SCL	—
Receptacle: ①	1NO-1NC	1NO-1NC	1NO-1NC	2NO-2NC	2NO-2NC	2NO-2NC	1NO-2NC	—
	E50RA	E50RA	E50RA	E50RB	E50RB	E50RB	E50RB	E50RB
Operating Head Type ②	Assembled Switch (Head + Receptacle + Body) Catalog Number			Assembled Switch (Head + Receptacle + Body) Catalog Number				

Operating Head Type ②

Side Push Roller



Side Push Roller

Spring return— E50DS3 ③	E50AS3 CE	E50ALS3	E50ANS3	E50BS3	E50BLS3	E50BNS3	E50BLS3	—
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Side Pushbutton



Side Pushbutton

Maintained— E50DH1	E50AH1 CE	E50ALH1	E50ANH1	E50BH1	E50BLH1	E50BNH1	E50BLH1	—
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Top Pushbutton

Spring Return



Spring return— E50DT1	E50AT1 CE	E50ALT1	E50ANT1	E50BT1	E50BLT1	E50BNT1	E50CLT1	E50BNT1
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Adjustable Spring Return



Adjustable spring return—E50DT2	E50AT2 CE	E50ALT2	E50ANT2	E50BT2	E50BLT2	E50BNT2	—	—
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Circuit Diagrams, see [Page V8-T2-65](#).

Notes

① Connection options (add the code suffix from the table below to the end of the catalog number):

Option		Mating Cordset Catalog Number	Code Suffix
Mini-connector ④ (with epoxy filled receptacle)	Single-pole (5-pin mini-connector)	CSMS5D5CY1602	P5 ⑤
	Two-pole (9-pin mini-connector)	CSMS9D9CY1602	P9 ⑤
Micro-connector ④ (with epoxy filled receptacle)	Single-pole (5-pin micro-connector)	CSDS5A5CY2202	A5 ⑤
Cable connection (with epoxy filled receptacle)	8 ft cable length	—	S
	12 ft cable length	—	S12
	20 ft cable length	—	S20
Manifold mount (rear wiring entrance)		—	M
20 mm conduit entrance		—	20

② For operating head specifications, see [Page V8-T2-59](#).

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

④ For a full selection of cable connectors, see [Tab 10, section 10.1](#).

⑤ Refer to [Page V8-T2-65](#) for wiring diagrams.

E50 Heavy-Duty Plug-In Switches, Assembled—Standard, continued

Assembled Switch



Single-Pole (5 Terminal Receptacle)

Two-Pole (9 Terminal Receptacle)

Indicating Light:	None	LED (24–120 Vac/dc)	Neon (120 Vac)	None	LED (24–120 Vac/dc)	Neon (120 Vac)	LED (24–120 Vac/dc)	Neon (120 Vac)
Switch Body:	E50SA 1NO-1NC	E50SAL 1NO-1NC	E50SAN 1NO-1NC	E50SB 2NO-2NC	E50SBL 2NO-2NC	E50SBN 2NO-2NC	E50SCL 1NO-2NC	—
Receptacle: ①	E50RA	E50RA	E50RA	E50RB	E50RB	E50RB	E50RB	E50RB
Description	Assembled Switch (Head + Receptacle + Body) Catalog Number			Assembled Switch (Head + Receptacle + Body) Catalog Number				

Operating Head Type ②

Top Push Roller



Spring return E50DT3 ③	E50AT3 CE	E50ALT3	E50ANT3	E50BT3	E50BLT3	E50BNT3	—	—
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Wobble Head, Spring Return



Standard duty— E50DW1	E50AW1 CE	E50ALW1	E50ANW1	E50BW1	E50BLW1	E50BNW1	EB50BLW1	—
Heavy-duty high strength steel— E50DW2	E50AW2 CE	E50ALW2	E50ANW2	E50BW2	E50BLW2	E50BNW2	E50CLW2	E50BNW2

Circuit Diagrams, see Page V8-T2-65.

Notes

① Connection options (add the code suffix from the table below to the end of the catalog number):

Option		Mating Cordset Catalog Number	Code Suffix	
Mini-connector ④ (with epoxy filled receptacle)	Single-pole (5-pin mini-connector)	CSMS5D5CY1602	P5 ⑤	
	Two-pole (9-pin mini-connector)	CSMS9D9CY1602	P9 ⑤	
Micro-connector ④ (with epoxy filled receptacle)	Single-pole (5-pin micro-connector)	CSDS5A5CY2202	A5 ⑤	
	Cable connection (with epoxy filled receptacle)	8 ft cable length	—	S
		12 ft cable length	—	S12
20 ft cable length		—	S20	
Manifold mount (rear wiring entrance)		—	M	
20 mm Conduit Entrance		—	20	

② For operating head specifications, see Page V8-T2-59.

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

④ For a full selection of cable connectors, see Tab 10, section 10.1.

⑤ Refer to Page V8-T2-65 for wiring diagrams.

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Limit Switches

E50 Heavy-Duty Plug-In Switches

Assembled Switches—Special Purpose

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E50 Heavy-Duty Plug-In Switches, Assembled—Special Purpose

	Operating Data— Nominal Switches	Assembled Switch Catalog Number	Switch Body Only Catalog Number	Receptacle Only Catalog Number	Operating Head Only Catalog Number
Neutral Position	Neutral Position (requires an operating lever, see Page V8-T2-80)				
	5° Travel	E50NN1 ①	E50SN	E50RB	E50DN1 ①
	5° Travel; stainless steel shaft	E50NN1SPL ②	—	—	—
	15° Travel	E50NN2	E50SN	E50RB	E50DN2 ①
	Travel to operate contacts:	5° or 15° ③	5° or 15° ③	5° or 15° ③	5° or 15° ③
	Travel to reset contacts:	2°	2°	2°	2°
	Total travel:	90°	90°	90°	90°
	Force to operate contacts:	1.8 in-lbs	1.8 in-lbs	1.8 in-lbs	1.8 in-lbs
	Minimum return force:	2.5 in-oz	2.5 in-oz	2.5 in-oz	2.5 in-oz
	Operating temperature:	14° to 200°F (–10° to 94°C)	14° to 200°F (–10° to 94°C)	14° to 200°F (–10° to 94°C)	14° to 200°F (–10° to 94°C)
Two-Step	Two-Step CW, CCW, or both, Convertible (requires an operating lever, see Page V8-T2-80)				
	—	E50TD1	E50ST	E50RB	E50DD1
	Travel to operate contacts:	1st step 10°; 2nd step 20°	1st step 10°; 2nd step 20°	1st step 10°; 2nd step 20°	1st step 10°; 2nd step 20°
	Travel to reset contacts:	4° each	4° each	4° each	4° each
	Total travel:	90°	90°	90°	90°
	Force to operate contacts:	3 in-lbs	3 in-lbs	3 in-lbs	3 in-lbs
	Minimum return force:	4.5 in-oz	4.5 in-oz	4.5 in-oz	4.5 in-oz
	Operating temperature:	CW or CCW: 14° to 250°F (–10° to 121°C) CW and CCW: 14° to 200°F (–10° to 94°C)	CW or CCW: 14° to 250°F (–10° to 121°C) CW and CCW: 14° to 200°F (–10° to 94°C)	CW or CCW: 14° to 250°F (–10° to 121°C) CW and CCW: 14° to 200°F (–10° to 94°C)	CW or CCW: 14° to 250°F (–10° to 121°C) CW and CCW: 14° to 200°F (–10° to 94°C)
Gravity Return	Gravity Return (requires E50KL220, E50KL226 or equivalent operating lever, see Page V8-T2-80)				
	Without indicating light	E50GG1	E50SG	E50RA	E50DG1
	With LED indicating light (24–120 Vac/dc)	E50GLG1	E50SGL	E50RA	E50DG1
	With neon indicating light (120 Vac)	E50GNG1	E50SGN	E50RA	E50DG1
	Travel to operate contacts:	10° to 170°	10° to 170°	10° to 170°	10° to 170°
	Travel to reset contacts:	8°	8°	8°	8°
	Total travel:	360°	360°	360°	360°
	Force to operate contacts:	3.0 in-oz	3.0 in-oz	3.0 in-oz	3.0 in-oz
	Minimum return force:	Gravity	Gravity	Gravity	Gravity
	Operating temperature:	14° to 200°F (–10° to 94°C)	14° to 200°F (–10° to 94°C)	14° to 200°F (–10° to 94°C)	14° to 200°F (–10° to 94°C)








Circuit Diagrams, see [Page V8-T2-65](#).

Notes

- ① Add **9** suffix to the model number for low temperature –40° to 174°F (–40 to 79°C) versions.
- ② Low temperature rating –40° to 174°F (–40° to 79°C)
- ③ Depending upon model selected.

Operating Heads

E50 Heavy-Duty Plug-In Switches, 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									
Side Rotary (requires an operating lever, see Page V8-T2-80)									
 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 temperature spring return ^②	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 in	0.030 in	0.250 in	4 lbs	8 oz	14° to 200°F (-10° to 94°C)	14° to 200°F (-10° to 94°C)	E50DS1	
Adjustable Spring Return	Adjustable spring return	0.065 in	0.030 in	0.250 in	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 in	0.030 in	0.250 in	4 lbs	8 oz	14° to 200°F (-10° to 94°C)	14° to 200°F (-10° to 94°C)	E50DS3 ^⑤	
	0.065 in	0.030 in	0.250 in	4 lbs	8 oz	14° to 200°F (-10° to 94°C)	14° to 200°F (-10° to 94°C)	E50DS4 ^⑤	
Side Pushbutton									
 Maintained	0.200 in	0.130 in	0.320 in	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 in	0.020 in	0.280 in	4 lbs	8 oz	14° to 250°F (-10° to 121°C)	14° to 221°F (-10° to 105°C)	E50DT1	
Adjustable Spring Return	Adjustable spring return	0.040 in	0.020 in	0.280 in	4 lbs	8 oz	14° to 250°F (-10° to 121°C)	14° to 221°F (-10° to 105°C)	E50DT2
									

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-T2-66**.

E50 Heavy-Duty Plug-In Switches, Operating Heads, continued

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	
Top Push Roller								
Top Push Roller								
Spring return	0.040 in	0.020 in	0.280 in	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 Page V8-T2-80)								
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



Switch Bodies

E50 Heavy-Duty Plug-In Switches, Switch Bodies



Switch Body Construction ^①	Single-Pole 1NO-1NC Catalog Number	Two-Pole 2NO-2NC Parallel Wired Indicator Light Catalog Number	Two-Pole 2NC-1NO Series Wired Indicator Light Catalog Number
Without indicating light	E50SA CE	E50SB	—
With LED indicating light 24–120 Vac/dc	E50SAL	E50SBL	E50SCL
With neon indicating light 120 Vac	E50SAN	E50SBN	—









Circuit Diagrams, see **Page V8-T2-65**.

Note

^① Indicating lights are supplied from the factory wired as shown in Circuit Diagrams on **Page V8-T2-65**. However, they can be easily re-connected to terminals 1 and 2 if necessary (SPDT).

Receptacles

E50 Heavy-Duty Plug-In Switches, Receptacles

	Description	Poles	Conduit Entrance	Cable Length	Catalog Number
Surface Mount 	Surface Mount Conduit entrance, front or rear mounting	Single-pole (5 terminal)	1/2 NPT	—	E50RA
			20 mm	—	E50RA20
		Two-pole (9 terminal)	1/2 NPT	—	E50RB
			3/4 NPT	—	E50RB34
			20 mm	—	E50RB20
Manifold Mount 	Manifold Mount Rear wiring entrance instead of conduit hole, gasket on back for oil tightness	Single-pole (5 terminal)	—	—	E50RAM
		Two-pole (9 terminal)	—	—	E50RBM
Mini-Connector 	Mini-Connector 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 
				—	E50RAP5-W 
		Two-pole (9 terminal)	9-pin mini-connector	—	E50RBP9 
Micro-Connector 	Micro-Connector Epoxy filled receptacle with M12 DC micro-connector	Single-pole (5 terminal)	—	—	E50RAA5 ^①
Pre-Wired Cable 	Pre-Wired Cable 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 ft	E50RAS
				12 ft	E50RAS12
				20 ft	E50RAS20
			20 mm	8 ft	E50RA20S
				12 ft	E50RA20S12
				20 ft	E50RA20S20
		Two-pole (9 terminal)	1/2 NPT	8 ft	E50RBS
				12 ft	E50RBS12
			20 mm	20 ft	E50RBS20
				8 ft	E50RB20S
12 ft	E50RB20S12				
20 ft	E50RB20S20				

Wiring Diagrams, see Page V8-T2-65.

Notes

 See listing of compatible connector cables on Page V8-T2-62.

^① Model E50RAA5 is not UL listed or CSA certified.

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
Limit Switches

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Compatible Connector Cables

Standard Cables ^①

	Current Rating at 600V	Voltage Style	Number of Pins	Gauge	Length	Pin Configuration/Wire Colors (Face View Female Shown)	Catalog Number
Mini-style Straight Female 	Mini-Style, Straight Female						
	8A	—	5-pin	16 AWG	6 ft (2m)	 1-White 2-Red 3-Green 4-Orange 5-Black	CSMS5D5CY1602
	7A	—	9-pin	16 AWG	12 ft (4m)	 1-Orange 2-Blue 3-Red/Black 4-Green/Black 5-White 6-Red 7-Green 8-White/Black 9-Black	CSMS9D9CY1602
Micro-Style 	Micro-Style						
	4A	—	5-pin, 5-wire	22 AWG	6.0 ft (2m)	 1-Brown 2-White 3-Blue 4-Black 5-Green/Yellow	CSDS5A5CY2202

Accessories

E50 Heavy-Duty Plug-In Switch Accessories




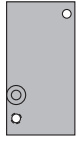
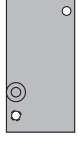

	Description	Catalog Number
E50KH7 	Adapter Plate	
	Allows E50 to replace Square D Type AW Surface Mounting Non Plug-In Standard Box Limit Switch	E50KH7

Dimensions, see **Page V8-T2-67**.

Note

^① For a full selection of connector cables, see **Tab 10, section 10.1**.

E50 Heavy-Duty Plug-In Switch Accessories, continued

Description	Catalog Number
Adapter Plate, continued	
E50KH4	E50KH4 ①
	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 in thick, with 1/4 in mounting holes.) Namco® long mount.
E50KH5	E50KH5 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 in thick, with 1/4 in mounting holes.)
E50KH2	E50KH2
	Allows E50 to replace Eaton's 10316 Type LT Non Plug-In Two-Pole Limit Switch
E50KH10	E50KH10
	Allows E50 to replace Allen-Bradley 802M Sealed Limit Switch
Adjustable Mounting Plate	
E50KH3	E50KH3 ①
	This is a mounting plate only 5/16 in thick and includes the proper mounting bolts and nuts. The slots in the plate allow a maximum horizontal adjustment of 1 in and vertical adjustment of 1-1/4 in
Conduit Sealing Nut	
E50KH6	E50KH6
	1/2 in oiltight
Dimensions, see Page V8-T2-67.	

Note

① Limit switch not included.

Technical Data and Specifications

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E50 Heavy-Duty Plug-In Switches

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	13,000,000 operations minimum
Side or top push	10,000,000 operations minimum
Electrical life	
Single-pole	1,000,000 operations typical at full load
Two-pole	100,000 operations typical at full load
Ambient temperature range—standard	
Standard without cable	14° to 250°F (–10° to 121°C)
Standard with cable	14° to 221°F (–10° to 105°C)
Low temperature without cable	–40° to 250°F (–40° to 121°C)
Low temperature with cable	–40° to 221°F (–40° to 105°C)
Repeat accuracy—standard	
Side operated	Within 0.0012 in
Top operated	Within 0.0003 in
Side rotary	Within 0.0014 in
Torque requirements:	
Switch body screws	25–30 lb-in
Operating head screws	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	10	7200	720	250	0.11	1.0
480	15	1.5	10	7200	720	250	0.11	1.0
600	12	1.2	10	7200	720	250	0.11	1.0
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	5	3600	360	—	—	—
480	7.5	0.75	5	3600	360	—	—	—
600	6	0.60	5	3600	360	—	—	—

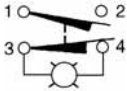
Note

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

Circuit Diagrams

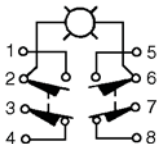
Standard Assembled Switches and Switch Bodies

Single-Pole 1NO-1NC



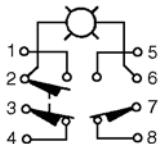
Must be same polarity.

Two-Pole 2NO-2NC



Parallel wired indicator light. Same polarity each pole.

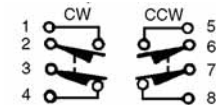
Two-Pole 1NO-2NC



Series wired indicator light. Same polarity each pole.

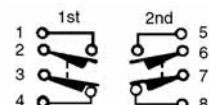
Special Purpose Assembled Switches

Neutral Position



Same polarity, each pole.

Two-Step (CW, CCW, or Both)



Same polarity, each pole.

Gravity Return

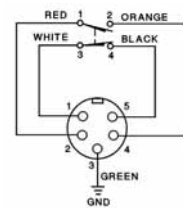


Must be same polarity.

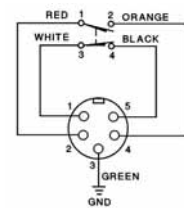
Wiring Diagrams

Receptacles ①

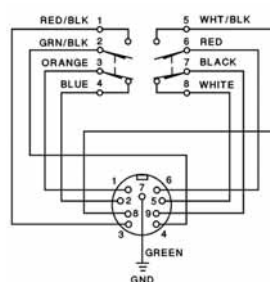
E50RAP5



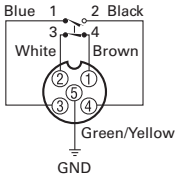
E50RAP5-W



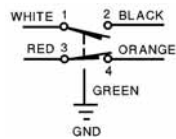
E50RBP9



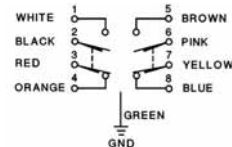
E50RAA5



E50RAS_



E50RBS_



Note

① The wire colors referenced on these diagrams are those internal to the switch itself.

2.6

Limit Switches

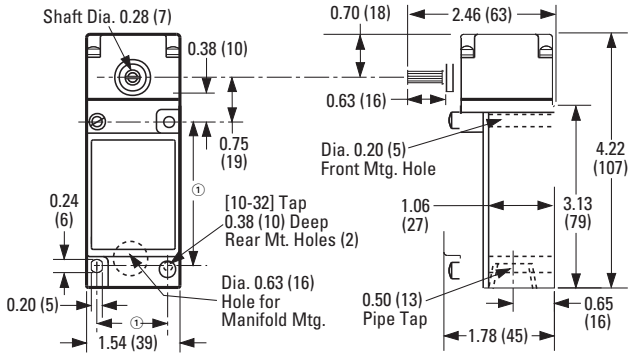
E50 Heavy-Duty Plug-In Switches

Dimensions

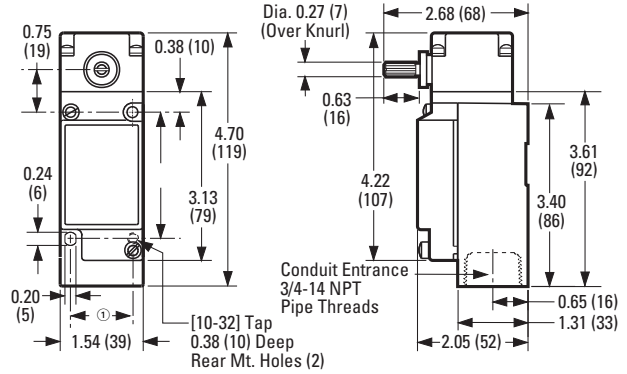
Approximate Dimensions in Inches (mm)

2

Standard



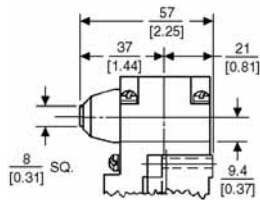
E50SB34



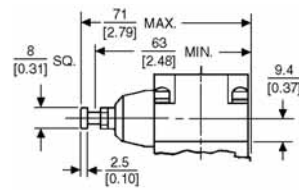
Side Push Operators

Approximate Dimensions in mm [in]

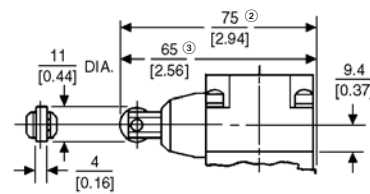
Pushbutton



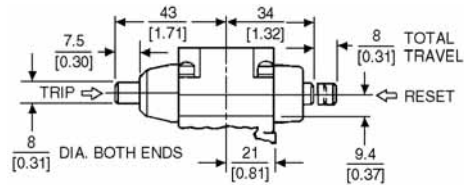
Adjustable Pushbutton



Roller

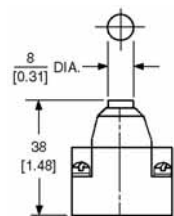


Maintained Pushbutton

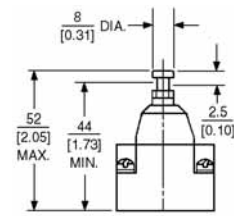


Top Push Operators

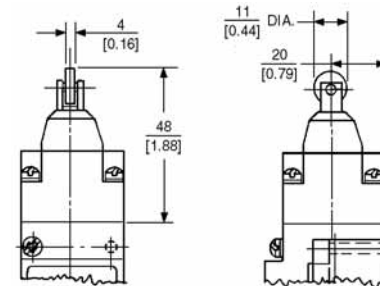
Pushbutton



Adjustable Pushbutton



Roller



Wobble Operators

See Operators on Page V8-T2-80.

Notes

- 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.
- ② For E50DS4.
- ③ For E50DS3.

Accessories

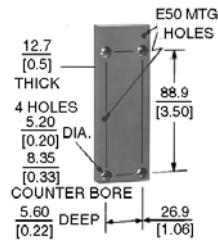
Approximate Dimensions in mm [in]

Adapter Plates

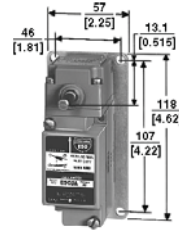
E50KH1M



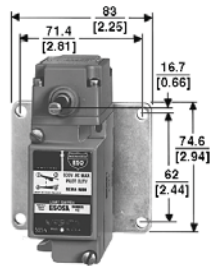
E50KH7



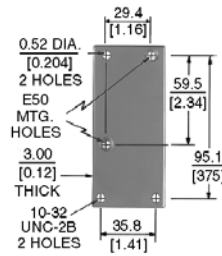
E50KH4



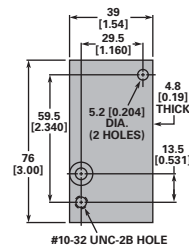
E50KH5



E50KH2



E50KH10



Adjustable Mounting Plate

E50KH3

