

# PUSH-PULL & E-STOP

006186

Issue 2

## Switches



### DESCRIPTION

Honeywell Push-pull and E-stop switches are durable, environmentally sealed, sliding contact switches incorporating two circuits with multiple combinations. The sliding contacts provide positive contact closure and opening when the switch knob is operated.

The dual O-ring design protects the contact chamber by isolating it from any moisture or any other contaminant. These Push-pull and E-stop switches are available as two-circuit switches. Contact closures are available with both circuits closed in the push position, both circuits closed in the pull position, or alternate closure: one closed and one open.

These switches can be a replacement for sealed and unsealed switches including power take-off switches and park brake switches. These rugged and reliable switches increase application reliability and facilitate seamless equipment operation and control with their ability to keep dirt and moisture out of the contact chamber, thereby promoting longer switch life.

Multiple standard knob colors are available with these switches and can be shipped in bulk packaging.

### FEATURES

- Designed and tested to withstand a wide range of environmental conditions and contaminants: severe temperatures, chemical splashes, pressure wash, vibration, dust, humidity and salt
- The dual O-ring design protects the contact chamber by isolating it from moisture and/or any other contaminant
- These Push-pull switches can be operated in humidity range of 5 %RH to 95 %RH and are designed for severe temperatures
- The sliding contacts provide positive contact closure and opening when the switch knob is operated
- IP67 sealing (select listings); resistant to impact, vibration and shock
- Multiple knob color availability
- UL file E219293 (select listings)

### DIFFERENTIATION

- The dual O-ring design protects the contact chamber by isolating it from any moisture or any other contaminant
- Vibration frequency from 18 Hz to 1000 Hz
- UL, CE and UKCA certified listings offered
- Self-cleaning, sliding contacts deliver outstanding reliability that enhances performance
- Sliding contacts provide positive contact closure and opening when the switch knob is operated

### APPLICATIONS

- Construction
- Agricultural
- Marine
- Material handling
- Machine tools
- Mining
- Lawn and garden
- Heavy equipment



### PORTFOLIO

Honeywell's push-pull/e-stop switches are robust, environmentally sealed, sliding contact switches incorporating two circuits with multiple combinations. To view the entire product portfolio, [click here](#).

**Honeywell**

# PUSH-PULL & E-STOP SWITCHES

**TABLE 1. ELECTRICAL, MECHANICAL, AND ENVIRONMENTAL SPECIFICATIONS**

Characteristic	Description	
<b>Electrical</b>		
<b>Nominal voltage</b>	12 dc, 24 dc, 48 dc, or C300*	
<b>Current, max.</b>	20 A @ 12 Vdc, 10 A @ 24 Vdc, 4 A @ 48 Vdc	
<b>Current, min.</b>	0.1 A, resistive	
<b>Dielectric</b>	500 Vdc or 707 Vdc for 1 minute, 5 mA max.	
<b>Voltage drop</b>	1 Vdc at rated dc loads, max.	
<b>Mechanical</b>		
<b>Operating force</b>	27 N ±14 N	
<b>Life</b>	25,000 cycles at rated load	
<b>Handle shock</b>	1 m [39.37 in] drop to hard surface	
<b>Vibration</b>	10 g max., 18 Hz to 1000 Hz	
<b>Connector</b>	Screw terminals (combo-head), wire harness with 4-pin Deutsch connector	
<b>Environmental</b>		
<b>Humidity</b>	95 % non-condensing	
<b>UV color fade</b>	DE 3 max. at 15,000 hours UVB, ASTM G 154-06	
<b>Temperature</b>	<b>Operating</b>	-40 °C to 40 °C [-40 °F to 104 °F]
	<b>Storage</b>	-40 °C to 80 °C [-40 °F to 176 °F]
<b>Sealing</b>	50058830-05 is IP67 rated	
<b>Approvals</b>	UL, CE, UKCA (select listings)	

\*For details, please refer Table 2

**TABLE 2. ELECTRICAL RATINGS BASED ON UTILIZATION CATEGORY**

Designation <sup>1</sup>	Utilization Category	Conventional Enclosed Thermal Current I <sub>the</sub> (A)	Rated Operational Current I <sub>e</sub> (A) at Rated Operational Voltage						VA Rating	
			120 V	240 V	380 V	480 V	500 V	600 V	VA	Break
ac		—	120 V	240 V	380 V	480 V	500 V	600 V	Make	Break
C300	AC-15	2,5	1,5	0,75	—	—	—	—	1800	180

Note 1: The letter stands for the conventional enclosed thermal current and identifies (ac or dc): for example B means 5 A ac. The rated insulation voltage U<sub>i</sub> is at least equal to the number after the letter





Note 2: The rated operational current I<sub>e</sub> (A), the rated operational voltage U<sub>e</sub> (V) and the break apparent power B (VA) are correlated by the formula B=U<sub>e</sub> · I<sub>e</sub>

# PUSH-PULL & E-STOP SWITCHES

TABLE 3. PACKAGING OPTIONS/CODES		
Code	Quantity/Packaging	Fastenings
00	150 units per box	One (1) of each part (mounting nut, large screw, cap, clip, button) and four (4) of each mounting hardware (clamps and short screws) are packed into individual bags. Bags are placed individually with each product in its carton cell.
01	50 units per box	Fifty (50) of each part (mounting nuts, large screws, caps, clips and buttons) are packed into one large bag and placed into the carton.
02	50 units per box	Fifty (50) of each part (mounting nuts, large screws, caps, clips, buttons, installation screws and wire clamps) are packed into individual part bags and placed into the carton.
04	100 units per box	100 of each part (mounting nuts, large screws, caps, clips, buttons, installation screws and wire clamps) are packed in two bags containing 50 of each part and placed into the carton.
05	150 units per box	150 of each part (mounting nuts, large screws, caps, clips and buttons) are packed into three bags containing 50 of each part and placed in box.
08	48 units per box	One (1) of each part (mounting nut, large screw, cap, clip, button) and four (4) of each mounting hardware (clamps and short screws) are packed into a bag. The bag is placed into an individual box within the carton.
09	150 units per box	One (1) of each part (mounting nut, large screw, cap, clip, button) and four (4) of each mounting hardware (clamps and short screws) are packed into individual bags. 150 bags are then placed into the carton.
12	150 units per box	One (1) of each part (mounting nut, large screw, cap, clip, button) and four (4) of each mounting hardware (clamps and short screws) are packed into individual bags. 150 bags are placed individually with each product in its carton cell.

# PUSH-PULL & E-STOP SWITCHES











**TABLE 4. ORDER GUIDE AND SPECIFICATIONS**

	Catalog Listing <sup>1</sup>	Knob Color	Circuitry	Terminal Type	Terminals	Approvals	Bulk Packaging	Dimensional Drawing
<b>Push-Pull Switches</b>								
	88843-00	Orange	2NO	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 1
	89496-09	Orange	2NC	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 2
	90098-09	Orange	1NC/1NO	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 4
	50070967-001-00	Orange	2NC	Screw terminal	4	—	150 units per box	Figure 2
	50070967-001-01	Orange	2NC	Screw terminal	4	—	50 units per box	Figure 2
	50070967-001-08	Orange	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070967-003-00	Yellow	2NC	Screw terminal	4	—	150 units per box	Figure 2
	50070967-003-01	Yellow	2NC	Screw terminal	4	—	50 units per box	Figure 2
	50070967-003-08	Yellow	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070967-004-00	Black	2NC	Screw terminal	4	—	150 units per box	Figure 2
	50070967-004-01	Black	2NC	Screw terminal	4	—	50 units per box	Figure 2
	50070967-004-08	Black	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070967-005-08	Green	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070967-006-08	Blue	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070967-008-08	Gray	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070967-009-08	White	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070974-001-00	Orange	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-001-01	Orange	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-001-08	Orange	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4

<sup>1</sup> Numbers before the dash indicate the model number; the three digit number after the model number indicates the color code and the two digit number following the dash indicates the packaging option. For more information on packaging options, see Table 3.

# PUSH-PULL & E-STOP SWITCHES

**TABLE 4. ORDER GUIDE AND SPECIFICATIONS CONTINUED**

	Catalog Listing <sup>1</sup>	Knob Color	Circuitry	Terminal Type	Terminals	Approvals	Bulk Packaging	Dimensional Drawing
	50070974-003-00	Yellow	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-003-01	Yellow	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-003-08	Yellow	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4
	50070974-004-00	Black	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-004-01	Black	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-004-08	Black	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4
	50070974-005-00	Green	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-005-01	Green	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-005-08	Green	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4
	50070974-006-00	Blue	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-006-01	Blue	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-008-00	Gray	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-008-01	Gray	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-008-08	Gray	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4
	50070974-009-00	White	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-009-01	White	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-009-08	White	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4
	50087384-12	Yellow	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 7
<b>E-Stop Switches</b>								
	87941-00	Red	2NC	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 2
	87941-01	Red	2NC	Screw terminal	4	UL, CE, UKCA	50 units per box	Figure 2
	87941-08	Red	2NC	Screw terminal	4	UL, CE, UKCA	48 units per box	Figure 2
	87943-00	Red	1NC/1NO	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 4
	87943-01	Red	1NC/1NO	Screw terminal	4	UL, CE, UKCA	50 units per box	Figure 4
	87943-08	Red	1NC/1NO	Screw terminal	4	UL, CE, UKCA	48 units per box	Figure 4
	87944-00	Red	2NO	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 1
	87944-04	Red	2NO	Screw terminal	4	UL, CE, UKCA	100 units per box	Figure 1
	87944-08	Red	2NO	Screw terminal	4	UL, CE, UKCA	48 units per box	Figure 1

<sup>1</sup> Numbers before the dash indicate the model number; the three digit number after the model number indicates the color code and the two digit number following the dash indicates the packaging option. For more information on packaging options, see Table 3.

# PUSH-PULL & E-STOP SWITCHES

**TABLE 4. ORDER GUIDE AND SPECIFICATIONS CONTINUED**

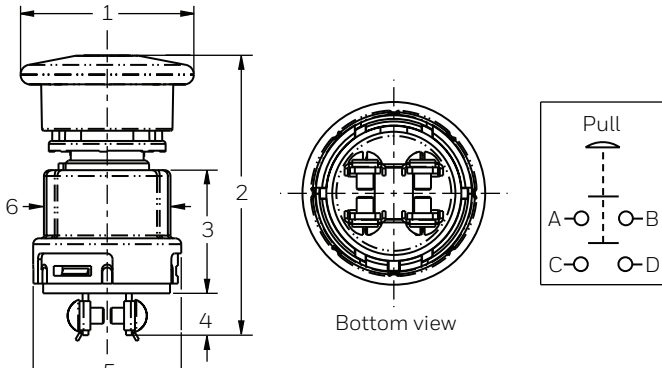
	Catalog Listing <sup>1</sup>	Knob Color	Circuitry	Terminal Type	Terminals	Approvals	Bulk Packaging	Dimensional Drawing
	50058830-05	Red	1NC/1NO	Wire harness with 4-pin Deutsch connector	n/a	UL, CE, UKCA	150 units per box	Figure 5
	50070967-002-08	Red	2NC	Screw terminal	4	—	48 units per box	Figure 2
	50070974-002-00	Red	1NC/1NO	Screw terminal	4	—	150 units per box	Figure 4
	50070974-002-01	Red	1NC/1NO	Screw terminal	4	—	50 units per box	Figure 4
	50070974-002-08	Red	1NC/1NO	Screw terminal	4	—	48 units per box	Figure 4
	50093979-05	Red	2NC	Wire harness with 4-pin Deutsch connector	n/a	—	150 units per box	Figure 3
<b>Momentary Push-Pull Switches</b>								
	90201-02	Red	1NC	Screw terminal	2	UL, CE, UKCA	50 units per box	Figure 6
	90221-09	Orange	2NC	Screw terminal	4	UL, CE, UKCA	150 units per box	Figure 2

<sup>1</sup> Numbers before the dash indicate the model number; the three digit number after the model number indicates the color code and the two digit number following the dash indicates the packaging option. For more information on packaging options, see Table 3.

# PUSH-PULL & E-STOP SWITCHES

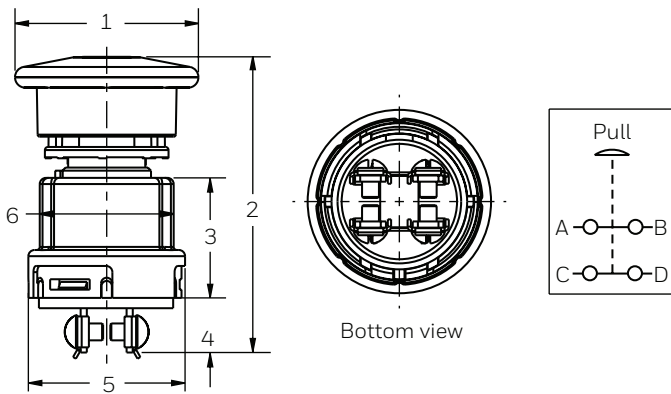
## DIMENSIONAL DRAWINGS

Figure 1. Push-pull/E-stop switches with 2NO circuitry and screw terminal



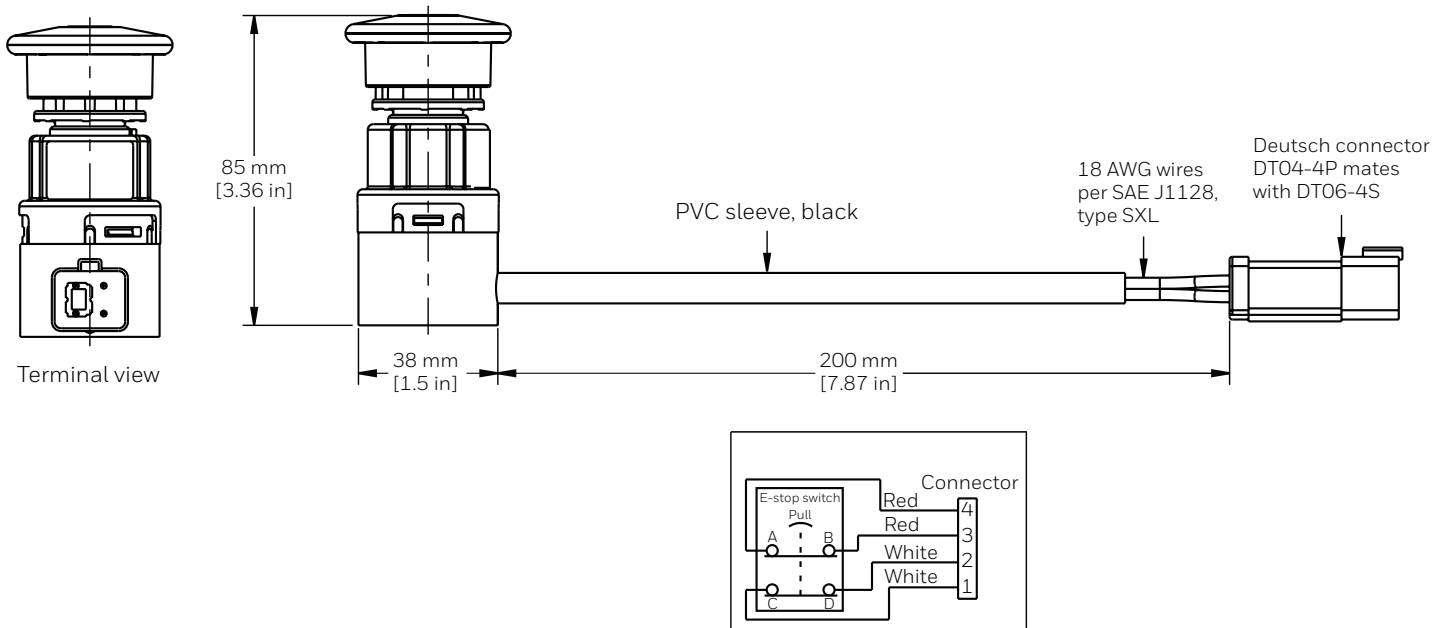
Listing	1 mm [in]	2 mm [in]			3 mm [in]	4 mm [in]	5 mm [in]	6 mm [in]
		Total	Pulled	Pushed				
87944	Ø 45,21 [Ø 1.78]	74,4 [2.93]	77,98 [3.07]	73,15 [2.88]	29,72 [1.17]	13,46 [0.53]	Ø 38,63 [Ø 1.521]	Ø 33,02 [Ø 1.30]
88843	Ø 45,21 [Ø 1.78]	74,4 [2.93]	—	73,15 [2.88]	32,26 [1.27]	10,92 [0.43]	Ø 38,63 [Ø 1.521]	Ø 33,02 [Ø 1.30]

Figure 2. Push-pull/E-stop switches with 2NC circuitry and screw terminal



Listing	1 mm [in]	2 mm [in]			3 mm [in]	4 mm [in]	5 mm [in]	6 mm [in]
		Total	Pulled	Pushed				
87941	Ø 45,21 [Ø 1.78]	74,4 [2.93]	77,98 [3.07]	73,15 [2.88]	29,72 [1.17]	13,46 [0.53]	Ø 38,63 [Ø 1.521]	Ø 33,02 [Ø 1.30]
89496	Ø 45,21 [Ø 1.78]	73,01 [2.875]	—	73,15 [2.88]	32,26 [1.27]	10,92 [0.43]	Ø 38,63 [Ø 1.521]	Ø 33,02 [Ø 1.30]
90221	Ø 45,21 [Ø 1.78]	73,01 [2.875]	—	73,15 [2.88]	32,13 [1.265]	10,92 [0.43]	Ø 38,63 [Ø 1.521]	Ø 33,02 [Ø 1.30]
50070967	Ø 45,21 [Ø 1.78]	73,01 [2.875]	—	—	29,6 [1.165]	—	Ø 38,63 [Ø 1.521]	Ø 33,02 [Ø 1.30]

Figure 3. Push-pull/E-stop switches with 2NC circuitry and Deutsch connector, 50093979



# PUSH-PULL & E-STOP SWITCHES

Figure 4. Push-pull/E-stop switches with 1NC/1NO circuitry and screw terminal

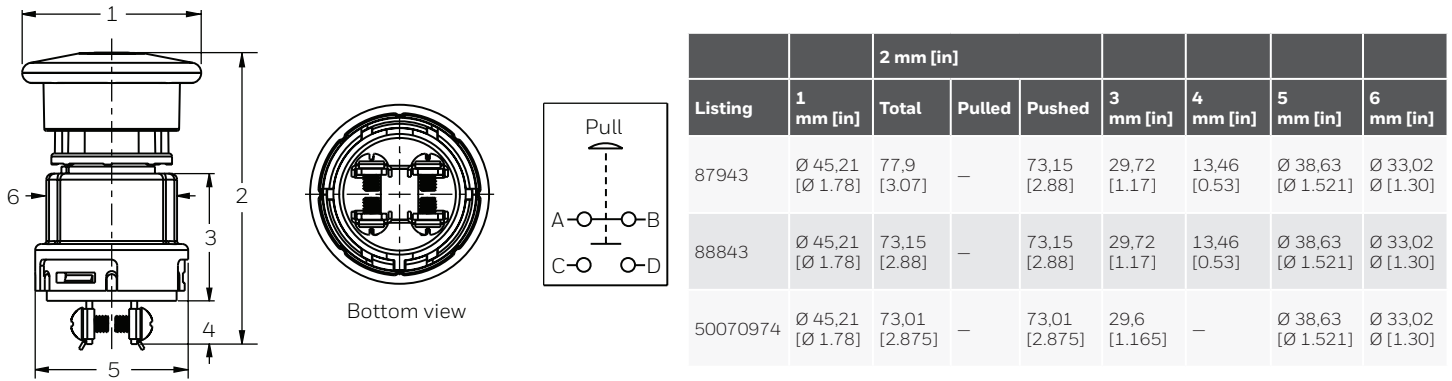


Figure 5. Push-pull/E-stop switches with 1NC/1NO circuitry and Deutsch connector, 50058830

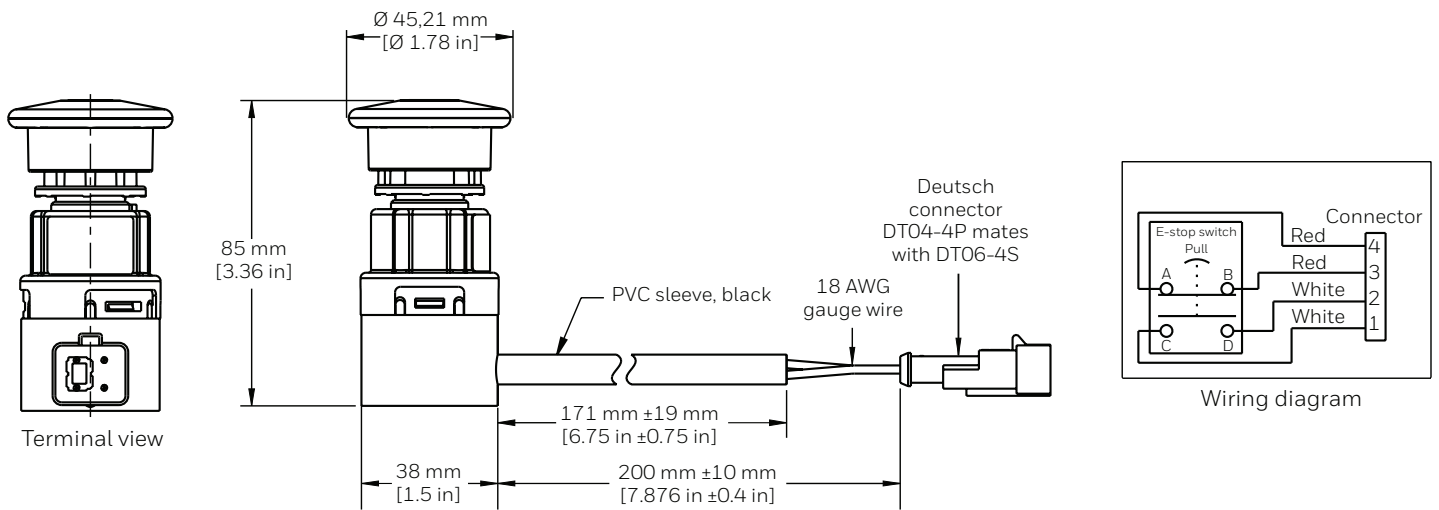
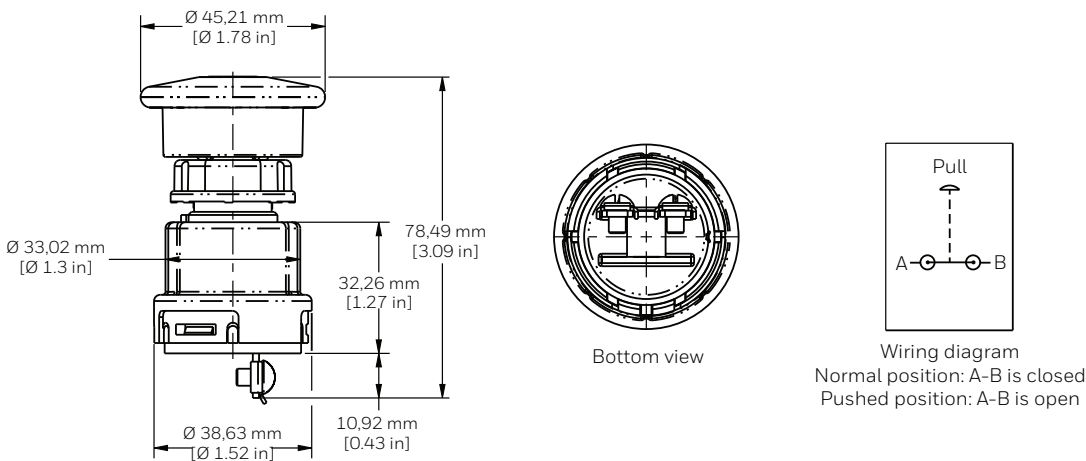


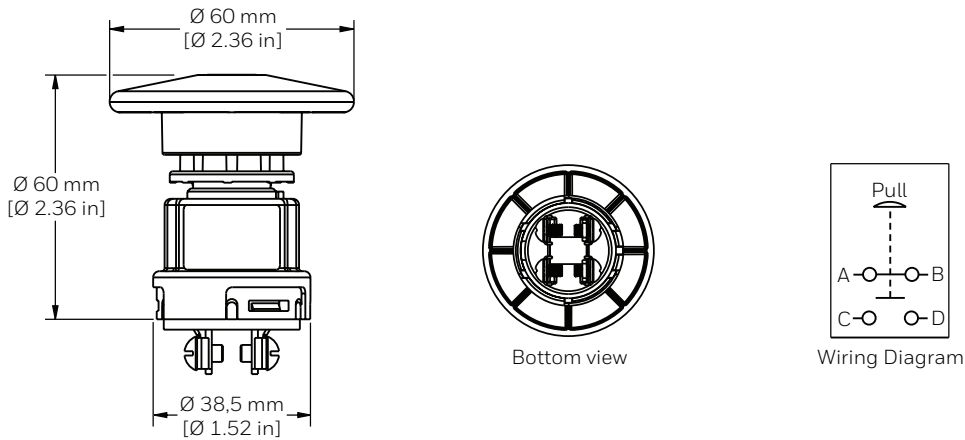
Figure 6. Push-pull/E-stop switches with 1NC circuitry and screw terminal, 90201





# PUSH-PULL & E-STOP SWITCHES

Figure 7. Push-pull/E-stop switches with 1NC/1NO circuitry and screw terminal, 50087384



## MOUNTING KNOBS

Figure 8. 50071755

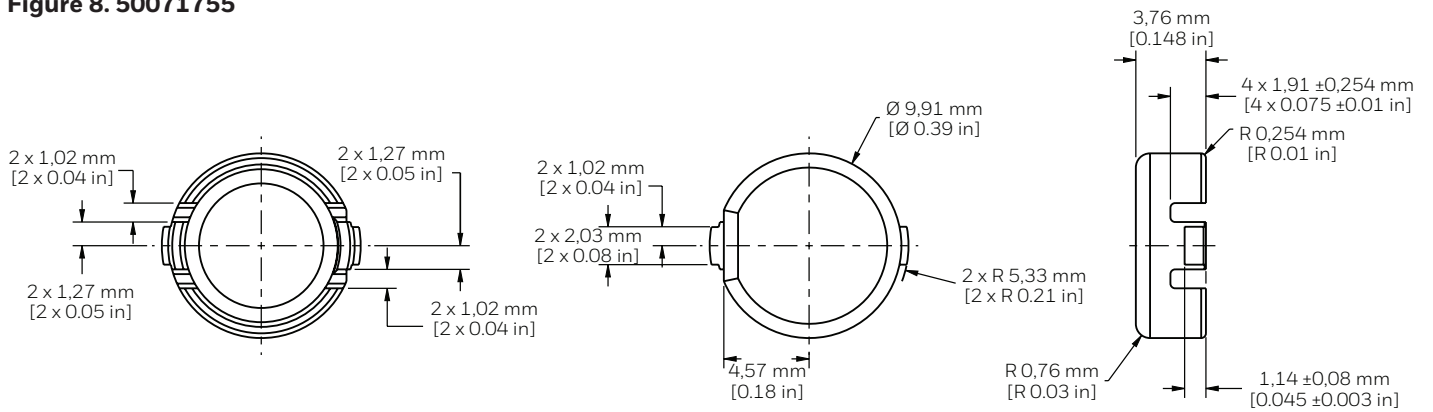
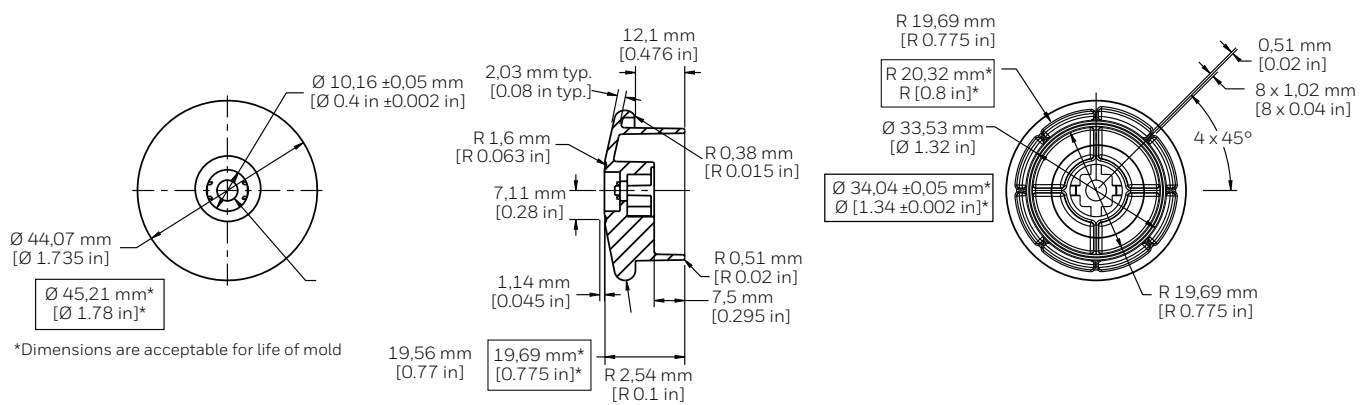
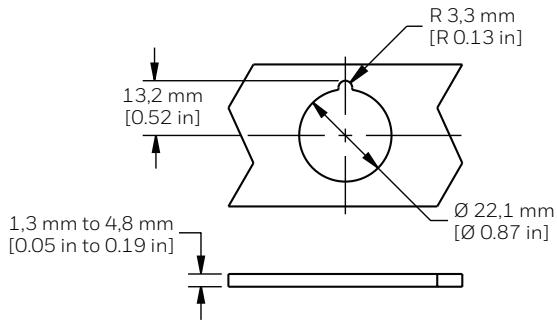


Figure 9. 50071756



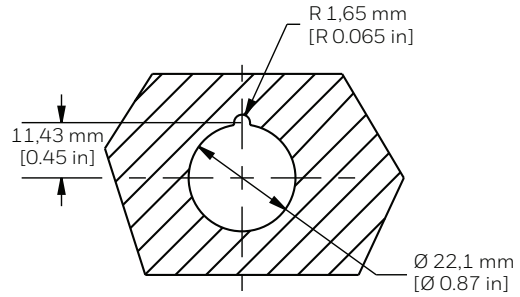
# PUSH-PULL & E-STOP SWITCHES

**Figure 10. Recommended mounting hole**



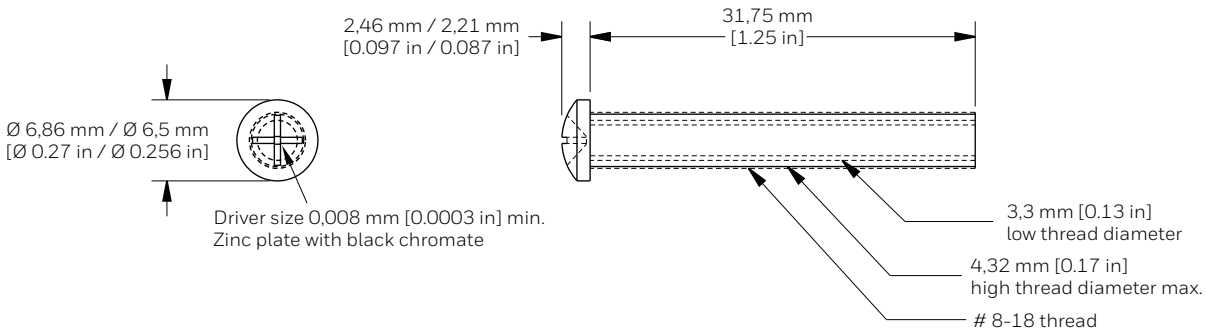
Part numbers: 87944, 50058830, 50087384, 50093979

**Figure 11. Recommended mounting hole**

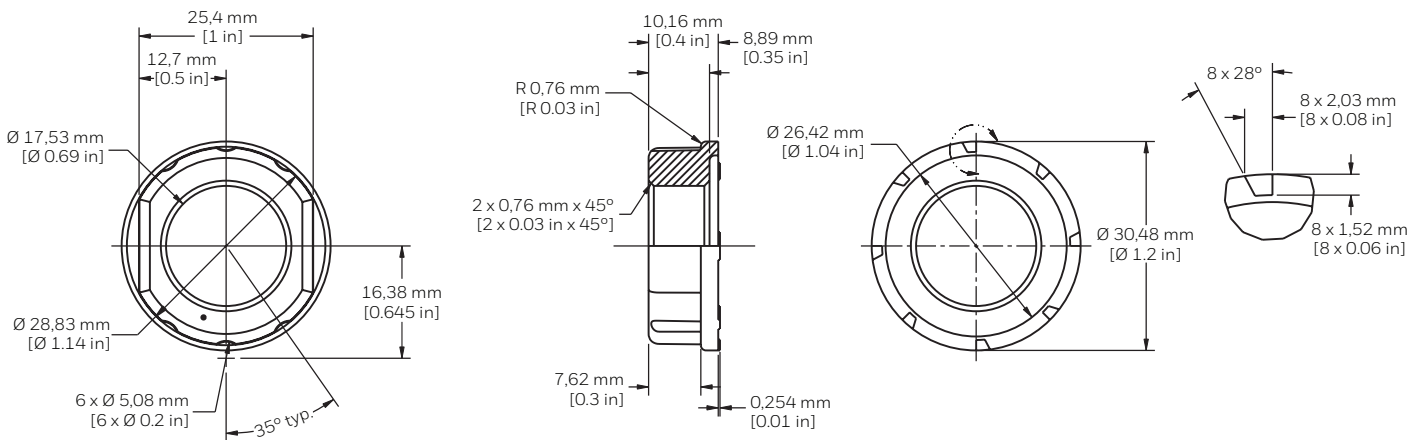


Mounting plate thickness: 1,3 mm to 4,8 mm [0.05 in to 0.19 in]  
Part numbers: 87941, 87943, 88843, 89496, 90201, 90221, 90098, 50070967, and 50070974

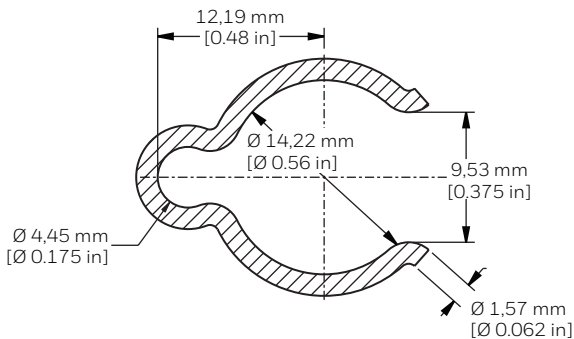
**Figure 12. Mounting screw 81908**



**Figure 13. Mounting nut 84508**



**Figure 13. Mounting nut 84508**



## WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

## WARNING IMPROPER INSTALLATION

- Consult with local safety agencies and their requirements when designing a machine-control link, interface and all control elements that affect safety.
- Strictly adhere to all installation instructions.

**Failure to comply with these instructions could result in death or serious injury.**

## WARNING MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

## FOR MORE INFORMATION

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