

# E47 compact prewired limit switches

## **⚠ WARNING**

**DO NOT USE THIS SWITCH FOR HUMAN SAFETY APPLICATIONS. TO DO SO COULD RESULT IN ELECTRICAL SHOCK, SERIOUS PERSONAL INJURY, AND/OR EQUIPMENT DAMAGE. ALWAYS FOLLOW APPROPRIATE SAFETY PRECAUTIONS AND INSTALL IN ACCORDANCE WITH US NATIONAL AND LOCAL ELECTRICAL CODES.**



Figure 1.

## Features

- Rugged aluminum alloy diecast housing.
- Sealed construction with enclosure ratings of NEMA 4, 6, 13, IP67, IP69K.
- Prewired with 3m of 18 AWG, AWM 2517, 300 V cable.
- M12 connector option.
- Easy for switch bank mounting.

## Mountings and installation

- Proper grounding is required for the prevention of electric shock.
- Do not directly exposed the switch to oil, dust, or organic gas.

## Mounting holes

Mount the switch body to a rigid mounting panel using two #10-24 screws.

Recommended tightening torque is 4.9 to 5.8 N•m (43.4 to 51.3 lb - in.).

## Switch bank mounting

A maximum of six switches may be mounted together as a switch bank. During the installation, the convex part of the switch front shall mate with the concave part of the switch back. The mounting panel shall be 6 mm (0.236 in.) or thicker. See Figure 2 for details.

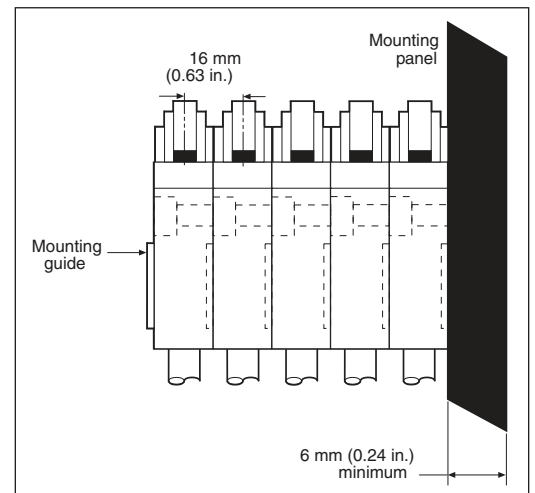


Figure 2.

## Fastening of the switch cable

The switch bodies are filled with resin for sealing purposes. To avoid stressing the cable and switch body, fasten the cable at 5 cm (1.97 in.) or farther away from the switch body. Should the wire be bent, the bending radius shall be at least 45 mm (1.77 in.).

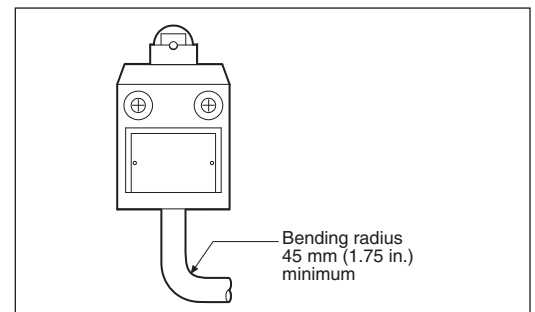


Figure 3.

**EAT•N**

Powering Business Worldwide

**Table 1. Specifications.**

<b>Contacts</b>	1-SPDT (Form C)
<b>Mechanical life</b>	10,000,000 operations
<b>Electrical life</b>	200,000 operations, 30 operations/min. at rated load
<b>Operating speed</b>	30 operations per minute maximum
<b>Operating temperature range</b>	-10° to +70°C (14° to 158°F)*
<b>Storage temperature range</b>	-10° to +70°C (14° to 158°F)*
<b>Humidity</b>	95% maximum non-condensing
<b>Vibration</b>	Malfunction durability, 10 to 55 Hz 1.5 mm double amplitude
<b>Shock</b>	Malfunction durability, approximately 50 G
<b>Enclosure ratings</b>	NEMA 4, 6, and 13; IEC IP67, IP69K**

\* Temperature range for E47BCC07 revised to -40° to +70°C (-40° to 158°F) for Series B1 or later.

\*\* Cable versions only.

**Electrical data - contact ratings (amperes)**

**Table 2. Electrical data.**

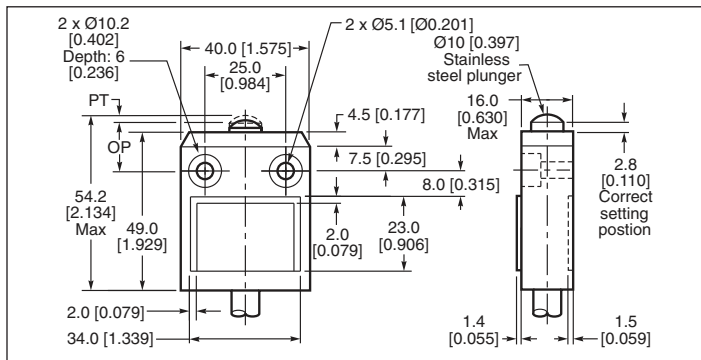
Rated voltage	Non-inductive load		Inductive load		In-rush current			
	Resistive load		Inductive load	Motor load	NC	NO	NC	NO
	NC	NO	NC	NO	NC	NO	NC	NO
<b>125 VAC</b>	5.0	5.0	3.0	3.0	2.50	1.30	20 max <sup>2</sup>	10 max <sup>2</sup>
<b>250 VAC</b>	5.0	5.0	2.0	2.0	1.50	0.08		
<b>8 VDC</b>	5.0	5.0	5.0	4.0	1.50	1.50		
<b>14 VDC</b>	5.0	5.0	4.0	4.0	1.50	1.50		
<b>30 VDC</b>	4.0	4.0	3.0	3.0	1.50	1.50		
<b>125 VDC</b>	0.4	0.4	0.4	0.4	0.05	0.05		
<b>250 VDC</b>	0.2	0.2	0.2	0.2	0.03	0.03		

**Note:** Inductive load ratings are tested at a power factor 0.4 min. for AC power and a time constant of 7 ms max. for DC power. In-rush current for motor load is six times the steady state current.

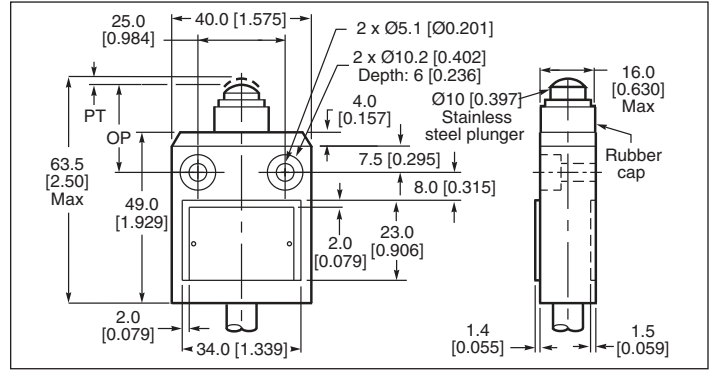
<sup>2</sup> Micro connector models are rated 1.0 ampere max. at 125 VAC and 30 VDC.

**Approximate dimensions**

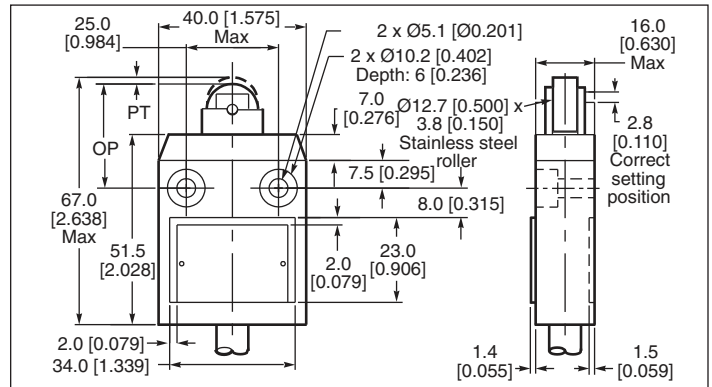
**Note:** Shown in mm (in.)



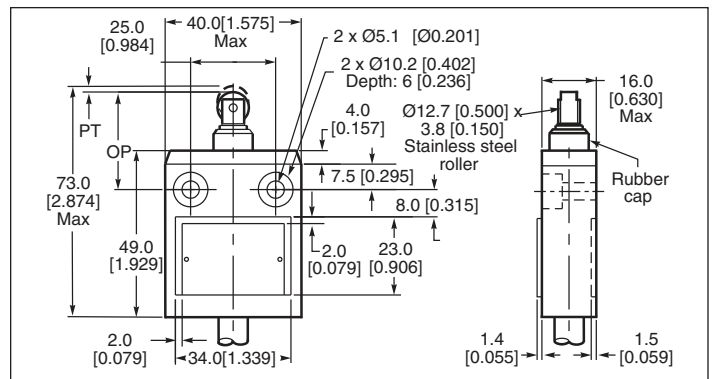
**Figure 4. E47BCC05.**



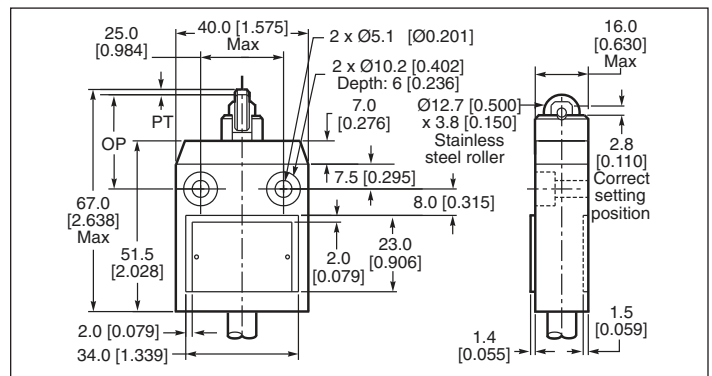
**Figure 5. E47BCC06.**



**Figure 6. E47BCC07.**



**Figure 7. E47BCC08.**



**Figure 8. E47BCC11.**

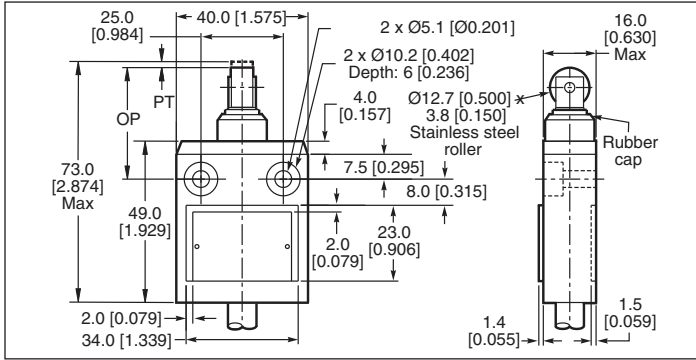


Figure 9. E47BCC12.

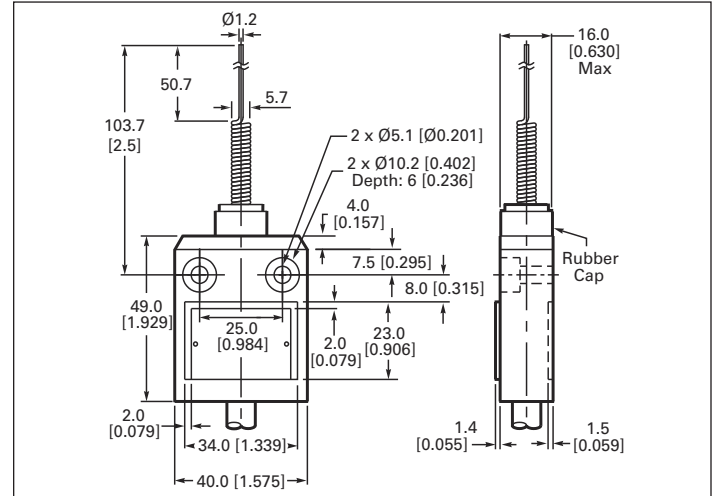


Figure 12. E47BCC20.

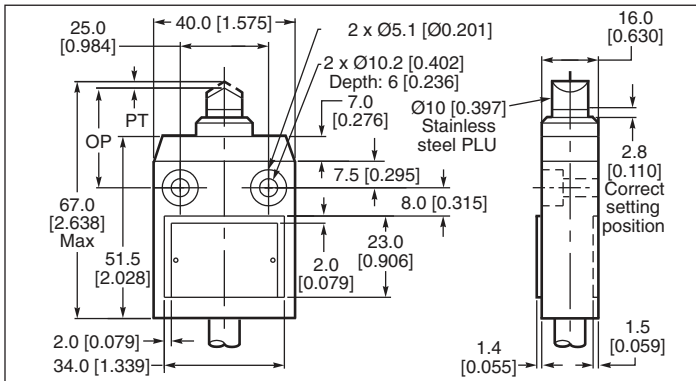


Figure 10. E47BCC13.

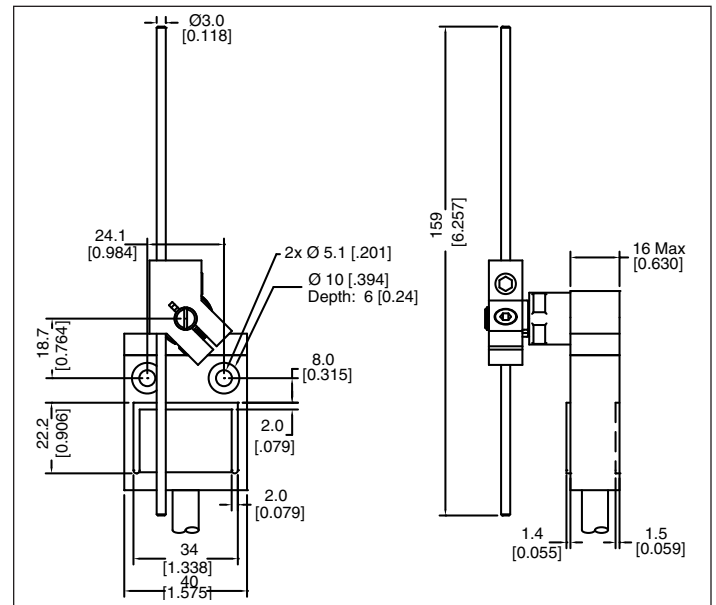


Figure 13. E47BCC21.

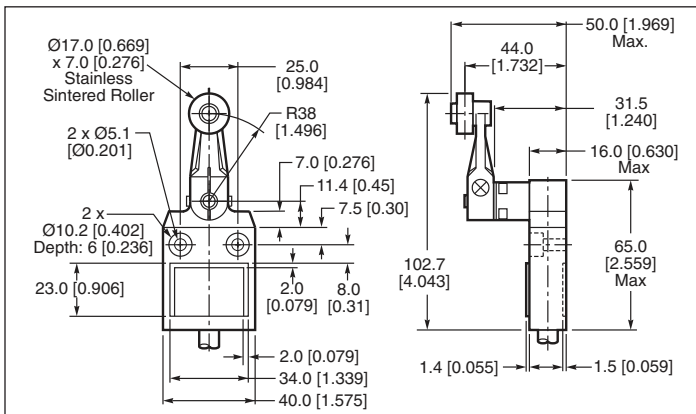


Figure 11. E47BCC15.

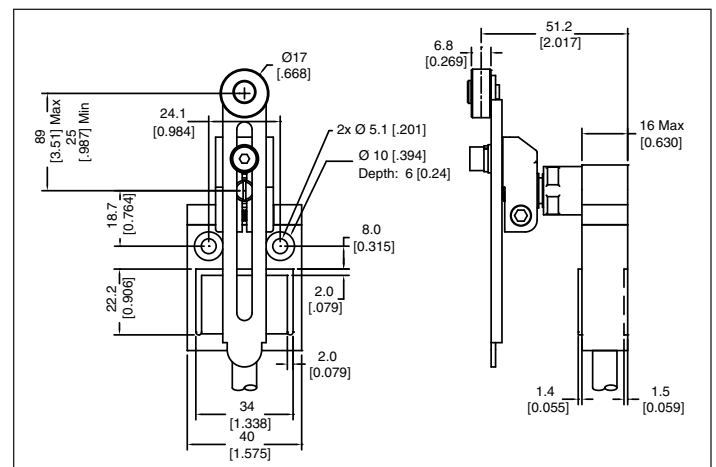


Figure 14. E47BCC22.

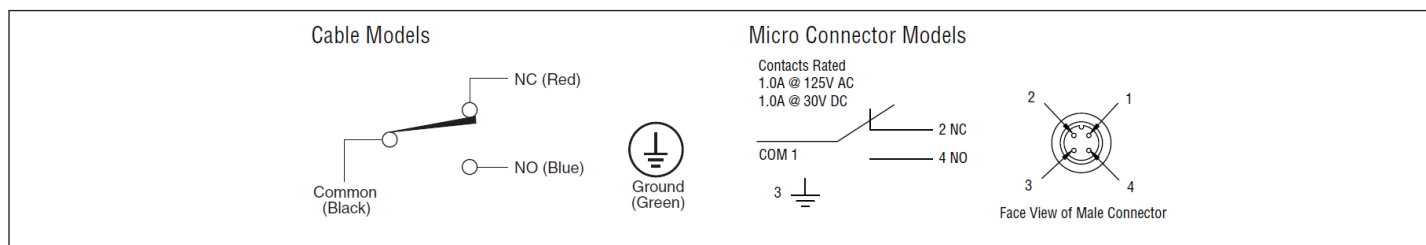
## Operating characteristics

Table 3. Operating characteristics.

Catalog number*	Operating head	Operating force (max.)	Reset force (min.)	Over travel (min.)	Pretravel	Movement differential (max.)	Operating point
E47BCC05	Pin plunger	1.2 kg (42.32 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	15.7 ± 1 mm (0.62 ± 0.04 in.)
E47BCC06	Sealed pin plunger	1.8 kg (63.48 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	24.9 ± 1 mm (0.99 ± 0.04 in.)
E47BCC07	Roller plunger	1.2 kg (42.32 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	28.5 ± 1 mm (1.12 ± 0.04 in.)
E47BCC08	Sealed roller plunger	1.8 kg (63.48 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	34.3 ± 1 mm (1.35 ± 0.04 in.)
E47BCC11	Cross roller plunger	1.2 kg (42.32 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	28.5 ± 1 mm (1.12 ± 0.04 in.)
E47BCC12	Sealed cross roller plunger	1.8 kg (63.48 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	34.3 ± 1 mm (1.35 ± 0.04 in.)
E47BCC13	Bevel plunger	1.2 kg (42.32 oz)	0.45 kg (15.87 oz)	3 mm (0.118 in.)	1.8 mm (0.07 in.)	0.2 mm (0.008 in.)	28.5 ± 1 mm (1.12 ± 0.04 in.)
E47BCC15	Side rotary roller lever	0.58 kg (20.46 oz)	0.15 kg (5.29 oz)	40°	10°	3°	--
E47BCC20	Wobble stick	150 g (5.3 oz)	--	--	50°	--	--
E47BCC21	Side rotary rod lever	0.58 kg (20.46 oz)	0.15 kg (5.29 oz)	40°	10°	3°	--
E47BCC22	Adj. Side rotary roller lever	0.58 kg (20.46 oz)	0.15 kg (5.29 oz)	40°	10°	3°	--

\* A suffix of "P4" at the end of the catalog number (i.e. E47BCC05P4) indicates a switch with a 4-pin micro connector output instead of the standard 3-meter cable.

## Wiring diagram



## Disclaimer of warranties and limitation of liability

The information, recommendations, descriptions and safety notations in this document are based on Eaton Corporation's ("Eaton") experience and judgment and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted. Sale of the product shown in this literature is subject to the terms and conditions outlined in appropriate Eaton selling policies or other contractual agreement between Eaton and the purchaser.

**THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES.**

In no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations and descriptions contained herein. The information contained in this manual is subject to change without notice.

**Eaton**  
 1000 Eaton Boulevard  
 Cleveland, OH 44122  
 United States  
 877-ETN-CARE (877-386-2273)  
 Eaton.com

Electrical Sector  
 W126N7250 Flint Drive  
 Menomonee Falls, WI 53051  
 United States  
 Eaton.com

© 2016 Eaton  
 All Rights Reserved  
 Printed in USA  
 Publication No. P49505 / TBG001314  
 June 2016