

## Series 48EM

### 12MM MINIATURE SEALED ELECTRO-MECHANICAL

This rugged multi-option sealed pushbutton series offers the utmost in choices of mounting styles, colors, terminations, bezels, lighting and momentary or alternate-action switching. The Series 48 offers all these options in one compact package size.



### APPLICATIONS

- Office equipment
- Medical equipment
- Industrial machinery
- Outdoor controls
- Mass transportation
- Food processing equipment

### KEY FEATURES:

- Momentary or maintained action
- Gold contacts
- Many button colors
- Choice of LED colors (or non-lighted versions)
- Long life
- Solder, PC terminals or Wireleads
- Panel sealed to IP 67

ACTUAL SIZE

### ORDERING INFORMATION:

Switch Function	Switch Termination	Module Type	Bezel Type	LED Color †	Button Color	Mounting Type	Voltage Resistor
Momentary	Solder Tabs	<b>48-1</b>	<b>RB</b> - Round, Black	<b>N</b> - None	<b>RD</b> - Red	<b>B</b> - Bushing	If Blank*
Maintained	Solder Tabs	<b>48-2</b>	<b>SB</b> - Square, Black	<b>R</b> - Red	<b>GR</b> - Green	<b>S</b> - Snap-fit	<b>05</b> - 5V forward
Momentary	PC	<b>48-5</b>	<b>RC</b> - Round, Chrome	<b>G</b> - Green	<b>BK</b> - Black		
Maintained	PC	<b>48-6</b>	<b>SC</b> - Square, Chrome	<b>Y</b> - Yellow	<b>BL</b> - Blue		
Momentary	Wire Leads	<b>48-A</b>		<b>A</b> - Amber	<b>YL</b> - Yellow		
Maintained	Wire Leads	<b>48-B</b>		<b>B</b> - Blue	<b>OR</b> - Orange		
				<b>W</b> - White	<b>CR</b> - Chrome		
				<b>RB</b> - Red / Blue	<b>PK</b> - Black with Standby Symbol		
				<b>RG</b> - Red / Green	<b>WH</b> - White		

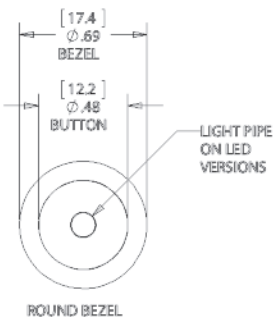
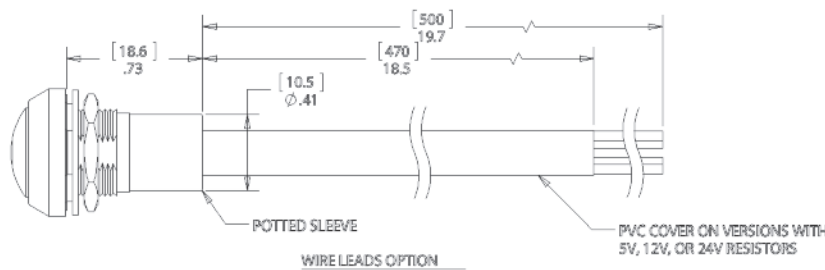
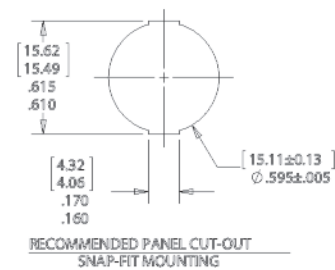
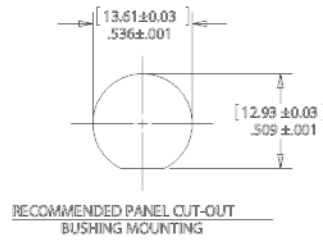
† Lighted switches come with wires on LEDs to protect from solder heat.

\* Current limiting resistor is required to limit LED forward current to 20 mA (not included).

### STANDARDS / AGENCY / RATINGS:



### PRODUCT DRAWINGS



[MILLIMETERS]  
 [INCHES]

### MECHANICAL CHARACTERISTICS

- CIRCUIT:**  
 SPST-NO-DB (FORM X)
- BUTTON TRAVEL (NOM):**  
 [2.3] .09
- OPERATING FORCE (NOM):**  
 [3N] 306g
- CONTACT BOUNCE (NOM):**  
 1 ms
- PANEL THICKNESS:**  
 BUSHING MOUNTING: [0.5-3.0]  
 .02-.12  
 SNAP-FIT MOUNTING: [1.3-3.0]  
 .05-.12
- NUT TORQUE (MAX):**  
 [11.5 kgf/cm] 10 lb/in
- HARDWARE**  
 BUSHING MOUNTING: BULK  
 PACKAGED SEALING WASHER  
 AND HEX NUT ARE INCLUDED.

### ENVIRONMENTAL SPECIFICATIONS

- ACTUATOR INGRESS PROTECTION:**  
 IP67
- OPERATING TEMPERATURE:**  
 [-40 C to +85 C] -40 F to +185 F

### ELECTRICAL SPECIFICATIONS

- CURRENT RATING (resistive):**  
 250mA @ 12VDC, 100K CYCLES  
 150mA @ 28VDC, 150K CYCLES  
 (MOMENTARY)  
 100mA @ 48VDC, 100K CYCLES  
 10mA @ 12VDC, 1 MILLION CYCLES  
 (MOMENTARY)
- DIELECTRIC STRENGTH:**  
 1,000 VAC
- INSULATION RESISTANCE:**  
 1G OHM
- CONTACT RESISTANCE:**  
 50m OHMS
- WIRE LEADS:**  
 UL STYLE 1007  
 26 AWG, STRANDED

# Mouser Electronics

Authorized Distributor

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## ITW Switches:

[48-7-RB-N-RD-B](#) [48-2-RC-N-CR-B](#) [48-1-SB-N-BK-B](#) [48-1-RB-N-BK-B](#) [48-1-SB-N-RD-B](#) [48-1-RB-N-RD-B](#) [48-5RB-G-BK-B](#) [48-5-RB-N-BK-B](#) [48-2-RB-R-BK-B](#) [48-7-RB-N-BK-B](#) [48-1-RB-R-BK-B](#) [48-2-RB-N-BK-B](#) [48-7-RC-N-CR-B](#) [48-2-RB-N-RD-B](#) [48-7-RB-R-BK-B](#) [48-1-RC-N-CR-B](#) [48-1-SB-R-BK-B](#) [48-1-SB-R-GR-B](#) [48-3-RB-N-BK-B](#) [48-1-RB-N-YL-B](#) [48-1-RB-N-GR-B](#) [48-1-RB-N-OR-B](#) [48-1-RB-N-BL-B](#) [48-1-RB-N-BK-S](#) [48-2-RB-W-YL-B-05](#) [48-2-RB-W-YL-B](#) [48-1-RB-G-BK-B](#) [48-1-RB-N-RD-S](#) [48-A-SB-N-WH-S](#) [48-A-SB-N-BK-S](#) [48-A-SB-N-RD-B](#) [48-A-SB-N-GR-B](#) [48-A-SB-N-BK-B](#) [48-A-SB-N-BL-B](#) [48-A-RB-N-YL-B](#) [48-A-RB-N-OR-B](#) [48-A-RB-N-WH-B](#) [48-5-RB-G-BK-B](#)