

## 19MM PANEL SEALED METAL ELECTRO-MECHANICAL

Built on the proven series 48 platform these rugged switches come in stainless steel or chrome plated housings with either momentary or maintained action and lighted or unlighted versions. The variety of options in this compact package size make the 48M ideal for many applications

### APPLICATIONS

- Outdoor Controls
- Security Equipment
- Medical Equipment
- Food Processing Equipment
- Military Equipment
- Industrial Machinery
- Transportation: Mass-Transit, Lift Trucks

### KEY FEATURES:

• Momentary or Maintained Action	• Electro-Mechanical
• Stainless Steel Housing	• Panel Sealed to IP67
• Center Spot or Ring Illumination	• ROHS Compliant
• Variety of LED colors	• Gold Plated Contact and Terminals

### ORDERING INFORMATION:

#### SWITCH FUNCTION:

1. MECHANICAL, MOMENTARY, SOLDER TERMINAL
2. MECHANICAL, MAINTAINED, SOLDER TERMINAL
3. MECHANICAL, MOMENTARY, PC TERMINAL
4. MECHANICAL, MAINTAINED, PC TERMINAL
- A. MECHANICAL, MOMENTARY, WIRE LEADS
- B. MECHANICAL, MAINTAINED, WIRE LEADS
9. SPECIAL, DIGITS ARE IN SERIAL ORDER

#### HOUSING MATERIAL:

1. STAINLESS STEEL
2. ZINC ALLOY  
CHROME PLATED

#### ILLUMINATION <sup>†</sup>:

0. NON-LIT
1. CENTER SPOT ILLUMINATION
2. RING ILLUMINATION
3. ILLUMINATED POWER SYMBOL

#### LED COLOR:

- N. NONE
- G. GREEN L.E.D.
- R. RED L.E.D.
- A. AMBER L.E.D.
- B. BLUE L.E.D.
- W. WHITE L.E.D.
- RB. RED/BLUE L.E.D.
- RG. RED/GREEN L.E.D.

#### VOLTAGE RESISTOR:

- I. BLANK \*
- 05 5V FORWARD
- 12 12V FORWARD \*\*
- 24 24V FORWARD \*\*

<sup>†</sup> 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).

\*\* 12 and 24 V resistors are available with wirelead versions only.

# Series 48M-EM

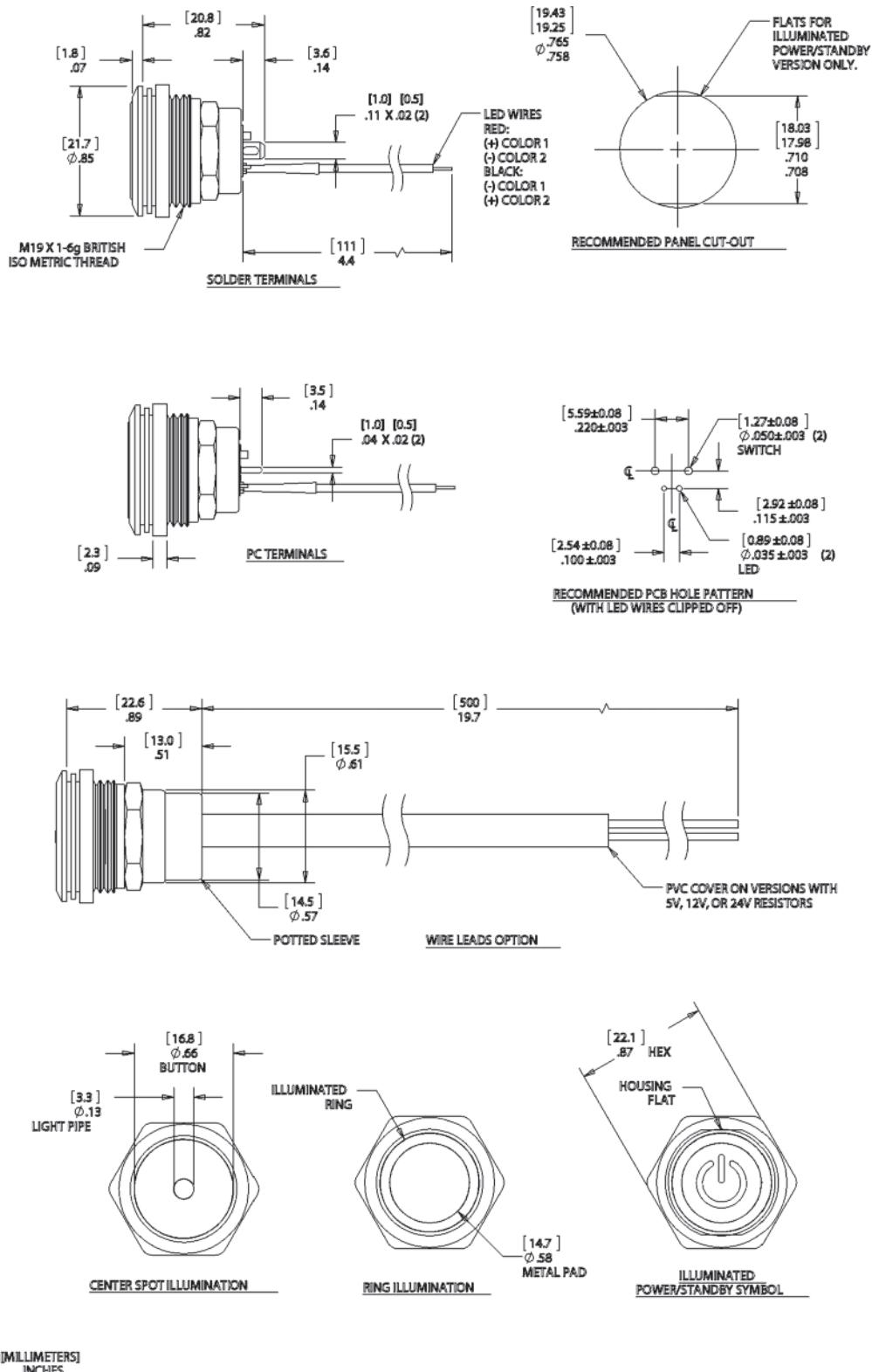


ACTUAL SIZE

### STANDARDS / AGENCY / RATINGS:



## PRODUCT DRAWINGS



## 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:

[0.5 to 4.5] .02 to .18

## NUT TORQUE (MAX):

[11.5 kgf/cm] 10 lb/in

## HARDWARE:

BULK PACKAGED SEALING WASHER AND HEX NUT ARE INCLUDED.

## ENVIRONMENTAL SPECIFICATIONS

## ACTUATOR INGRESS PROTECTION:

IP67

## OPERATING TEMPERATURE:

NON-LIT: [-40 C to +85 C]

-40 F to +185 F

ILLUMINATED: [-25 C to +85 C]

-13 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

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## ITW Switches:

[48M111A](#) [48M111R](#) [48M111B](#) [48M111W](#) [48M211A](#) [48M112R](#) [48M112B](#) [48M112G](#) [48M112W](#) [48M212A](#)  
[48M212G](#) [48M212W](#)