Series 48M-EM

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

ACTUAL SIZE

KEY FEATURES:

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

ORDERING INFORMATION:

SWITCH FUNCTION:
1. MECHANICAL, MOMENTARY, SOLDER TERMINAL
2. MECHANICAL, MAINTAINED, SOLDER TERMINAL
5. MECHANICAL, MOMENTARY, PC TERMINAL
6. 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:
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 RESISTER
IF BLANK *
05 5V FORWARD **
12 5V FORWARD ***
24 5V FORWARD ***

48M-

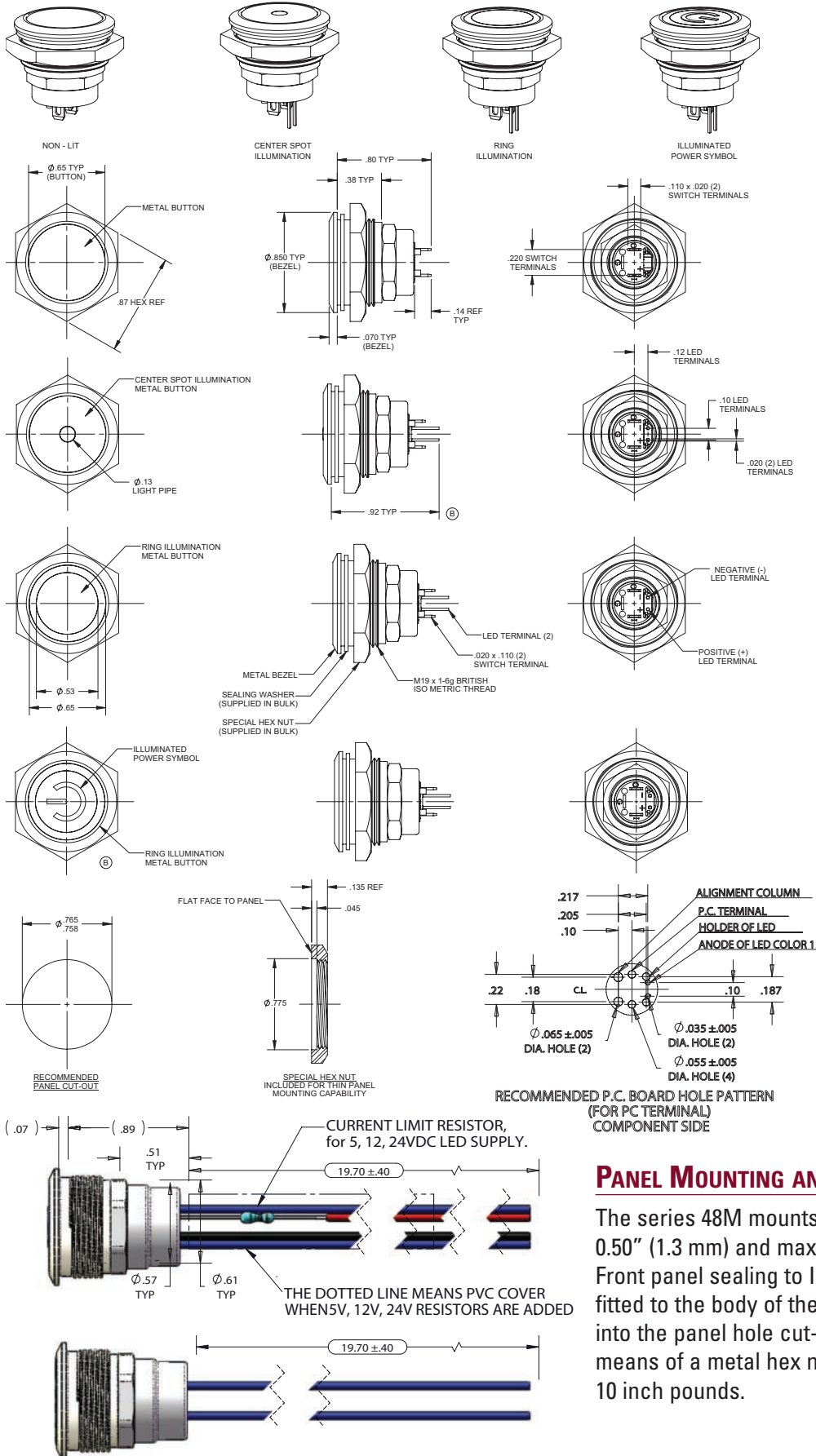* Current limiting resistor is required to limit LED forward current to 20 mA (not included).

** Resistor included, jacketed leads by special request.

*** Resistor and jacketed leads included

STANDARDS / AGENCY / RATINGS:

RoHS COMPLIANT 2002 / 95 / EC

IEC IP67 COMPLIANT

PRODUCT DRAWINGS

NON - LIT

Ø.65 TYP
(BUTTON)

METAL BUTTON

.87 HEX REF

CENTER SPOT ILLUMINATION
METAL BUTTON

Ø.13
LIGHT PIPE

RING ILLUMINATION
METAL BUTTON

Ø.53
Ø.65

ILLUMINATED
POWER SYMBOL

RING ILLUMINATION
METAL BUTTON

Ⓑ

CENTER SPOT
ILLUMINATION

.80 TYP
.38 TYP

Ø.850 TYP
(BEZEL)

.14 REF
TYP

.070 TYP
(BEZEL)

.92 TYP   Ⓑ

METAL BEZEL
SEALING WASHER
(SUPPLIED IN BULK)
SPECIAL HEX NUT
(SUPPLIED IN BULK)

LED TERMINAL (2)
.020 x .110 (2)
SWITCH TERMINAL
M19 x 1-6g BRITISH
ISO METRIC THREAD

RING
ILLUMINATION

.110 x .020 (2)
SWITCH TERMINALS

.220 SWITCH
TERMINALS

.12 LED
TERMINALS

.10 LED
TERMINALS

.020 (2) LED
TERMINALS

ILLUMINATED
POWER SYMBOL

NEGATIVE (-)
LED TERMINAL

POSITIVE (+)
LED TERMINAL

FLAT FACE TO PANEL

Ø.765
.758

.135 REF
.045

Ø.775

RECOMMENDED
PANEL CUT-OUT

SPECIAL HEX NUT
INCLUDED FOR THIN PANEL
MOUNTING CAPABILITY

.217
.205
.10

ALIGNMENT COLUMN
P.C. TERMINAL
HOLDER OF LED
ANODE OF LED COLOR 1

.22   .18   C.L.   .10   .187

Ø.065 ±.005
DIA. HOLE (2)

Ø.035 ±.005
DIA. HOLE (2)

Ø.055 ±.005
DIA. HOLE (4)

RECOMMENDED P.C. BOARD HOLE PATTERN
(FOR PC TERMINAL)
COMPONENT SIDE

(.07)   (.89)

.51
TYP

19.70 ±.40

CURRENT LIMIT RESISTOR,
for 5, 12, 24VDC LED SUPPLY.

Ø.57
TYP

Ø.61
TYP

THE DOTTED LINE MEANS PVC COVER
WHEN 5V, 12V, 24V RESISTORS ARE ADDED

19.70 ±.40

MECHANICAL / ELECTRICAL CHARACTERISTICS:

Circuit:
SPST-NO-DB

Button travel (nominal):
0.09 inches / 2.3 mm

Operating force (nominal):
3N / 306 grams

Contact bounce (nominal):
1 millisecond

Panel thickness:
0.50"– 0.150" 1.3 – 3.8mm)

Temperature index:
-40°C to +85°C

LED operating temperature:
-13° F to +185° F /
-25° C to +85° C

Torque (max):
10 inch pounds

LED operating temperature:
-13° F to +185° F /
-25° C to +85° C

Current ratings (resistive):
250mA @ 12VDC, 100K cycles

150mA @ 28VDC, 150K cycles
(momentary)

100mA @ 48VDC, 100K cycles

10mA @ 12VDC, 1 million cycles
(momentary)

ELECTRO-MECHANICAL

Dielectric strength:
1,000 VAC

Insulation resistance:
1 GΩ

Contact resistance:
50 mΩ max (initial)

PANEL MOUNTING AND CONSTRUCTION INFORMATION

The series 48M mounts easily into panels of minimum 0.50" (1.3 mm) and maximum 0.150" (3.8 mm) thickness. Front panel sealing to IP67 is achieved by a sealing o-ring fitted to the body of the switch before it is inserted into the panel hole cut-out. It is held onto the panel by means of a metal hex nut tightened down to a torque of 10 inch pounds.

ITW Switches
SENSORS, SWITCHES, ELECTRONIC CONTROLS

800.544.3354