Series 48M-EM

19MM PANEL SEALED METAL ELECTRO MECHANCAL

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.



ACTUAL SIZE

APPLICATIONS

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

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 Glod Plated Contact and Terminals
- SERIES 48M:19MM PANEL SEALED METAL
- 5A / 28VDC with UL 61058

ORDERING INFORMATION:

Series:

- **Blank** Gold Contact IP67
- **S** Silver Contact IP67
- **N** Silver Contact
- **G** Silver Contact IP67/2A
- **SA** Silver Contact IP67/5A

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, Wireleads
- **B** Mechanical, Maintained, Wireleads
- **9** Special, Digits Are in Serial Order

- **1** Mechanical, Momentary, Solder Terminal
- **A** Mechanical, Momentary, NO/NO Wireleads
- **C** Mechanical, Momentary, NC/NC Wireleads
- **E** Mechanical, Momentary, NC/NO Wireleads
- **2** Mechanical, Maintained, Solder Terminal
- **B** Mechanical, Maintained, NO/NO Wireleads
- **D** Mechanical, Maintained, NC/NC Wireleads
- **F** Mechanical, Maintained, NC/NO Wireleads

Housing Material:

- **1** Stainless Steel, Natural
- **2** Zinc Alloy, Velour Chrome Plated

Illumination:

- **0** Nin-lit
- **1** Center Spot Illumination
- **2** Ring Illumination
- **3** Standby Logo Illumination

LED Color:

- **N** None
- **G** Green
- **R** Red
- **A** Amber
- **Y** Yellow
- **B** Blue
- **W** White
- **RB** Red / Blue
- **RG** Red / Green

Voltage Resistor:

If Blank*

- **05** 5V Forward
- **12** 12V Forward
- **24** 24V Forward

48M- ☐ - ☐ - ☐ - ☐ - ☐

* Current limiting resistor is required to limit LED forward current to 20mA (not included).
** Resistor included, jacketed leads by special request.
*** Resistor and jacketed leads included.

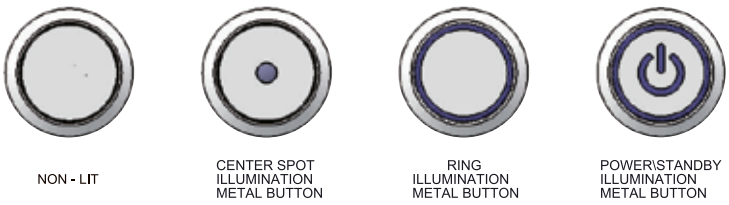
STANDARDS / AGENCY / RATINGS:

RoHS COMPLIANT 2002 / 95 / EC

IEC IP67 COMPLIANT

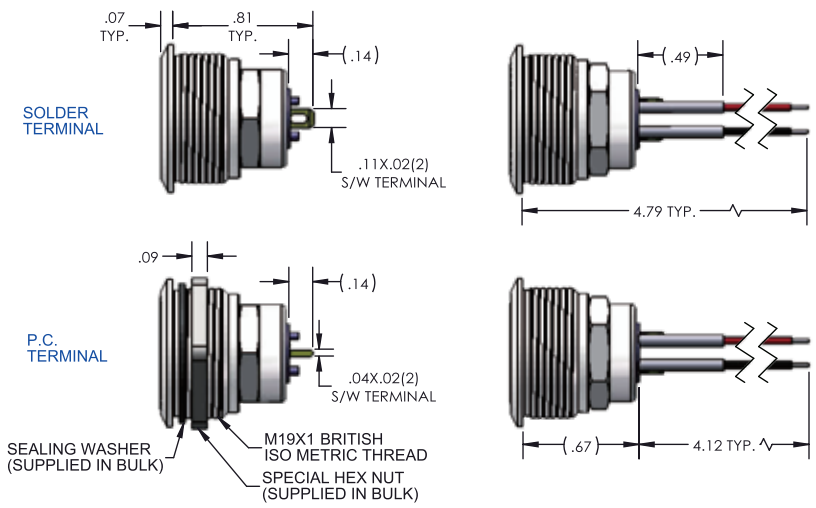
SERIES 48M: 19MM PANEL SEALED METAL PUSHBUTTON

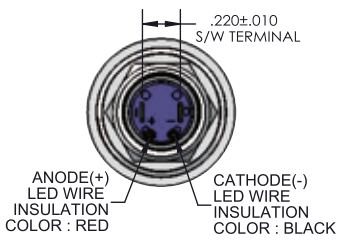
PRODUCT DRAWINGS



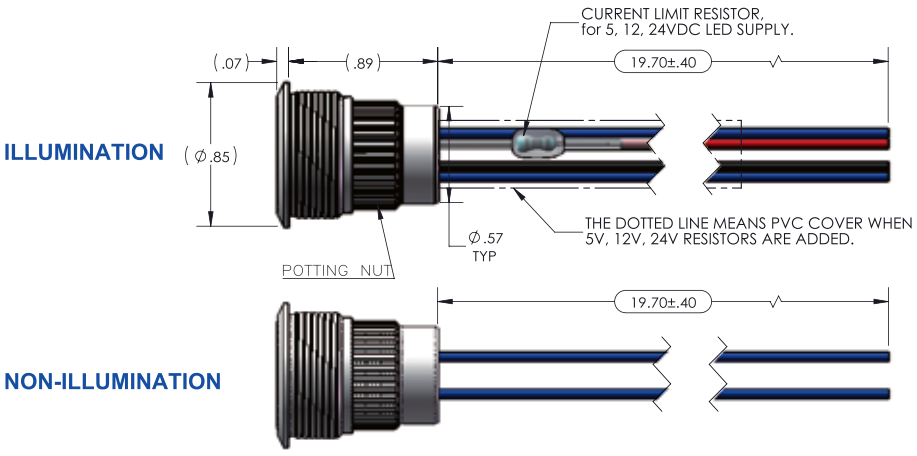
NON - LIT | CENTER SPOT ILLUMINATION METAL BUTTON | RING ILLUMINATION METAL BUTTON | POWER\STANDBY ILLUMINATION METAL BUTTON

48M/ S48M/ N48M SERIES





WIRELEADS



MECHANICAL / ELECTRICAL CHARACTERISTICS:

CIRCUIT:
SPST-NO-DB

BUTTON TRAVEL(NOM):
0.09 inches / 2.3mm

OPERATING FORCE (NOM):
3N / 306g

CONTACT BOUNCE (NOM):
1 millisecond

PANEL THICKNESS:
0.20 - 0.120 inches / 0.5 - 3mm

TEMPERATURT INDEX:
-40°C to +85°C

TORQUE (MAX):
10 inch pounds

LED OPERATION TEMPERATURE:
-13°F to +185°F / -25°C to +85°C

CURRENT RATINGS (Resistive)

48M (Momentary)
250mA @ 12VDC, 100k Cycles
150mA @ 28VDC, 150k Cycles
100mA @ 48VDC, 100k Cycles
10mA @ 12VDC, 1,000k Cycles

48M (Maintained)
50,000 Cycles Nominal

S48M / N48M (Momentary)
10mA @ 12VDC,200K Cycles

S48M / N48M (Maintained)
20K Cycles Nominal

ELECTRICAL SPECIFICATIONS

DIELECTRIC STRENGTH:
1,000 VAC

INSULATION RESISTANCE:
1GΩ

CONTACT RESISTANCE:
50mΩ max (intial)

SERIES 48M: 19MM PANEL SEALED METAL PUSHBUTTON

MECHANICAL / ELECTRICAL CHARACTERISTICS:

CIRCUIT:
SPST-NO-DB

BUTTON TRAVEL(NOM):
0.09 inches / 2.3mm

OPERATING FORCE (NOM):
3N / 306g

CONTACT BOUNCE (NOM):
1 millisecond

PANEL THICKNESS:
0.20 - 0.120 inches / 0.5 - 3mm

TEMPERATURT INDEX:
-40°C to +85°C

TORQUE (MAX):
10 inch pounds

LED OPERATION TEMPERATURE:
-13°F to +185°F / -25°C to +85°C

CURRENT RATINGS (Resistive)

G48M (Momentary)
2A @ 24VDC,40K Cycles
2A @ 250VAC,40K Cycles

G48M (Maintained)
2A @ 24VDC,20K Cycles
2A @ 250VAC,20K Cycles

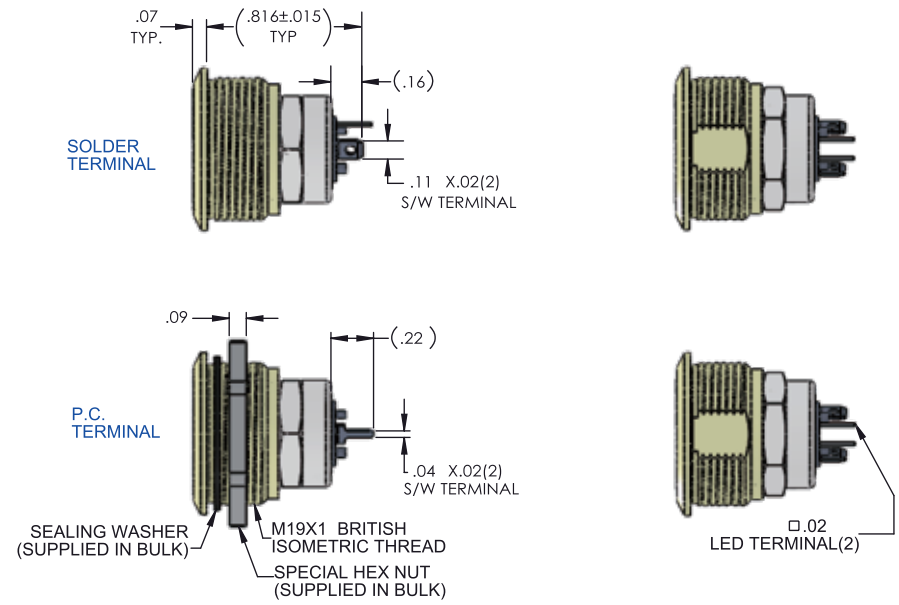
ELECTRICAL SPECIFICATIONS

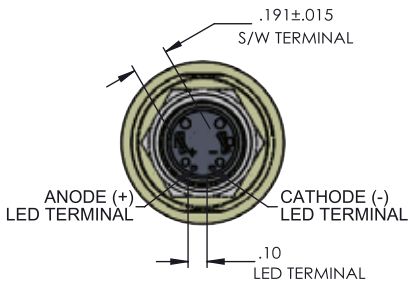
DIELECTRIC STRENGTH:
1,000 VAC

INSULATION RESISTANCE:
1GΩ

CONTACT RESISTANCE:
50mΩ max (intial)

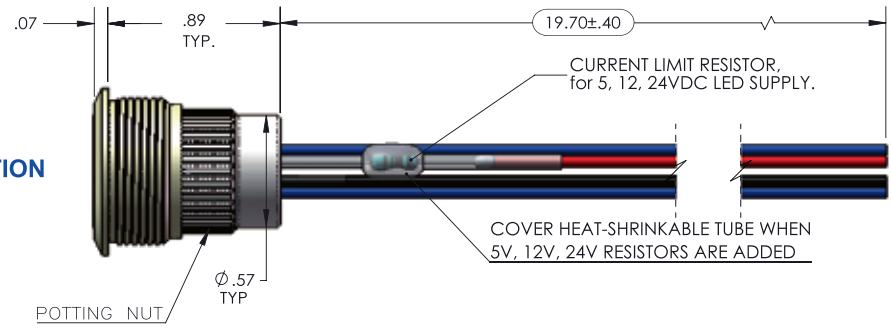
G48M SERIES



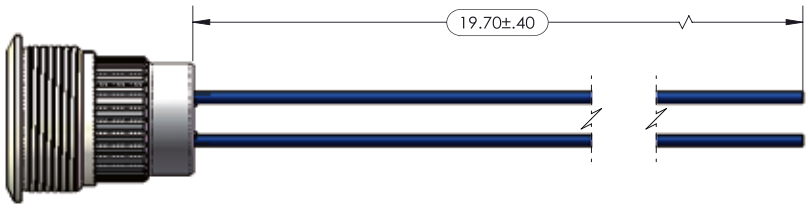


WIRELEADS

ILLUMINATION

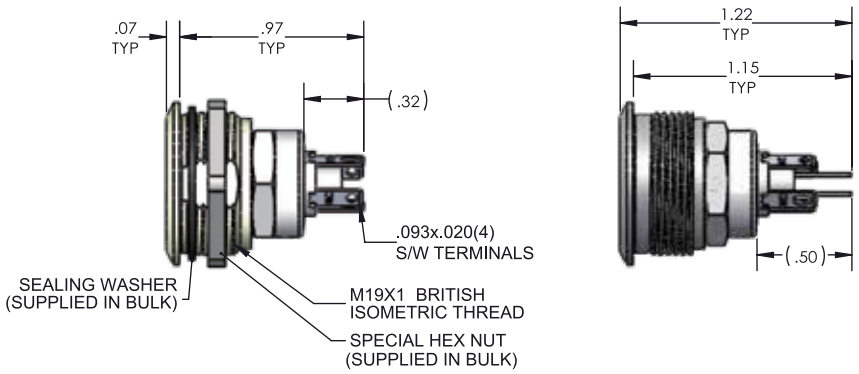


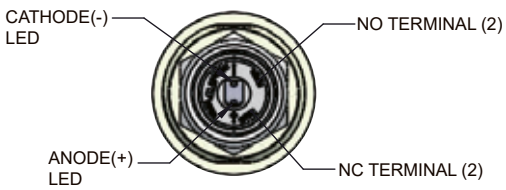
NON-ILLUMINATION



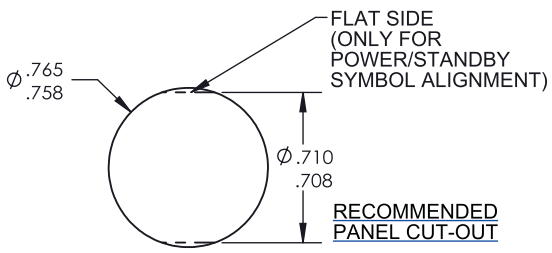
SERIES 48M: 19MM PANEL SEALED METAL PUSHBUTTON

SA48M SERIES





RECOMMENDED PANEL CUT-OUT



MECHANICAL / ELECTRICAL CHARACTERISTICS:

CIRCUIT:
SPST-NO-DB

BUTTON TRAVEL(NOM):
0.09 inches / 2.3mm

OPERATING FORCE (NOM):
3N / 306g

CONTACT BOUNCE (NOM):
1 millisecond

PANEL THICKNESS:
0.20 - 0.120 inches / 0.5 - 3mm

TEMPERATURT INDEX:
-40°C to +85°C

TORQUE (MAX):
10 inch pounds

LED OPERATION TEMPERATURE:
-13°F to +185°F / -25°C to +85°C

CURRENT RATINGS (Resistive)

SA48M (Momentary)
5A@28VDC,125/250 VAC 25K Cycles Nominal

ELECTRICAL SPECIFICATIONS

DIELECTRIC STRENGTH:
1,000 VAC

INSULATION RESISTANCE:
1GΩ

CONTACT RESISTANCE:
50mΩ max (intial)

PANEL MOUNTING AND CONSTRUCTION INFORMATION

The series 48M mounts easily into panels of minimum 0.20"(0.5mm) and maximum 0.177"(4.5mm) thicknesses. 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 panal hole cutout. It is held onto the panel by means of a metal hex nut tightened down to a torque of 10 inch pounds to achieve the correct sealing pressure.
Designs and specifications are subject to change without notice due to product improvement.