Series 48-EM

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.



ACTUAL 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
- Metal, Plastic bezel / housing
- Raised button
- Snap action in SA series

ORDERING INFORMATION:

Series:

- **BLANK** Gold Contact IP67
- **S** Silver Contact IP67
- **N** Silver Contact
- **C** Silver Contact Screw Terminal IP67
- **G** Silver Contact IP67/2A
- **SA** Silver Contact IP67/5A

Module Type:

- **48-1**
- **48-2**
- **48-5**
- **48-6**
- **48-A**
- **48-B**

Switch Function:

- Momentary
- Maintained
- Momentary
- Maintained
- Momentary
- Maintained

Switch Termination:

- Solder
- Solder
- PC
- PC
- Wire Leads
- Wire Leads

Bezel Type:

Plastic Bezel:

- **RB** Round, Black
- **SB** Square, Black

Metal Bezel:

- **RMB** Round, Matte Black $
- **RMG** Round, Glossy Black $
- **RMS** Round, Velour Chrome $
- **RMC** Round, Bright Chrome $

Led#

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

Button@ Color:

- **(H)RD** Red (for High Button)
- **(H)GR** Green (for High Button)
- **(H)BK** Black (for High Button)
- **(H)BL** Blue (for High Button)
- **(H)YL** Yellow (for High Button)
- **(H)OR** Orange (for High Button)
- **(H)WH** White (for High Button)
- **PK** Standby Symbol

Mounting Type:

- **B** Bushing
- **S** Snap-fit

Voltage Resistor:

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

48- [ ] [ ] [ ] [ ] [ ] [ ]

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

$ Metal Bezel only for Momentray.

@ H__ only for High Button type.

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

STANDARDS / AGENCY / RATINGS:

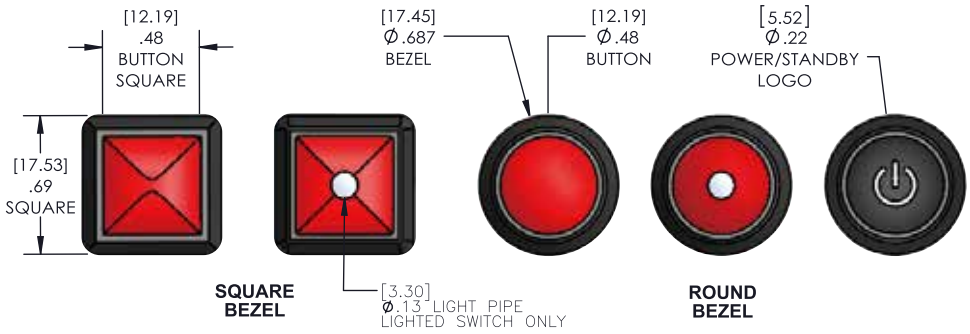
RoHS COMPLIANT 2002 / 95 / EC

IEC IP67 COMPLIANT

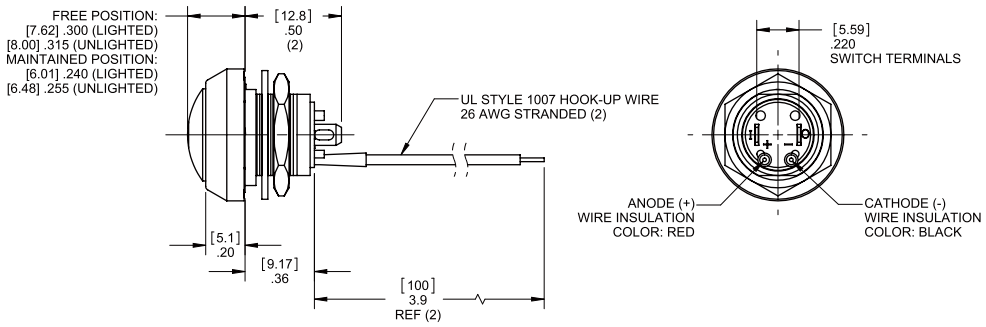
Contact an Authorized Distributor or Factory for Pricing

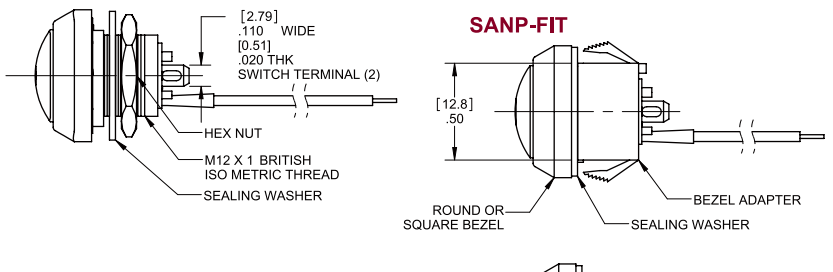
SERIES 48: 12MM MINIATURE SEALED ELECTRO-MECHANICAL

PRODUCT DRAWINGS

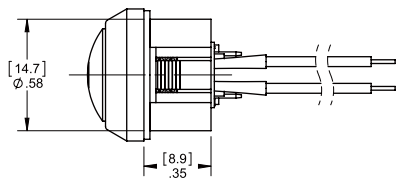


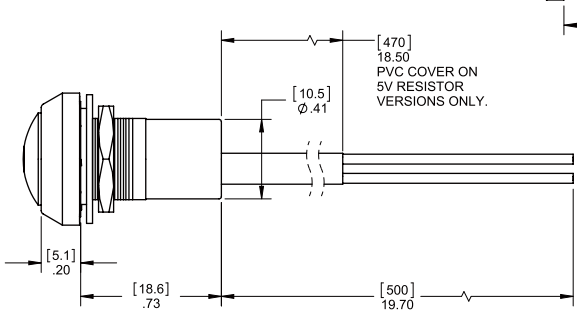
48 SERIES



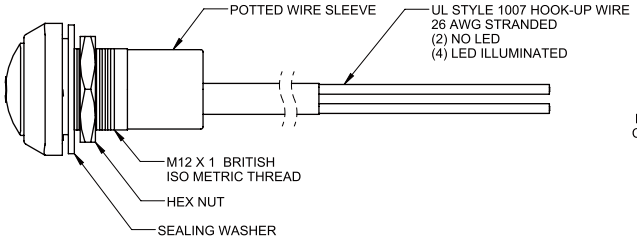


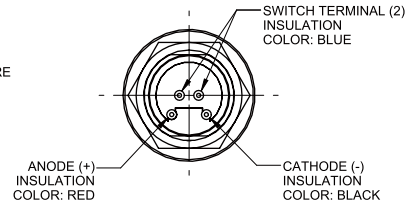
SANP-FIT





WIRELEADS





MECHANICAL CHARACTERISTICS

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):
[6 kgf-cm] 5.2 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):

48 (Momentary)
250mA @ 12VDC, 100K CYCLES
150mA @ 28VDC, 150K CYCLES
100mA @ 48VDC, 100K CYCLES
10mA @ 12VDC, 1 MILLION CYCLES

48 (Maintained)
50K CYCLES NOMINAL

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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SERIES 48: 12MM MINIATURE SEALED ELECTRO-MECHANICAL

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]
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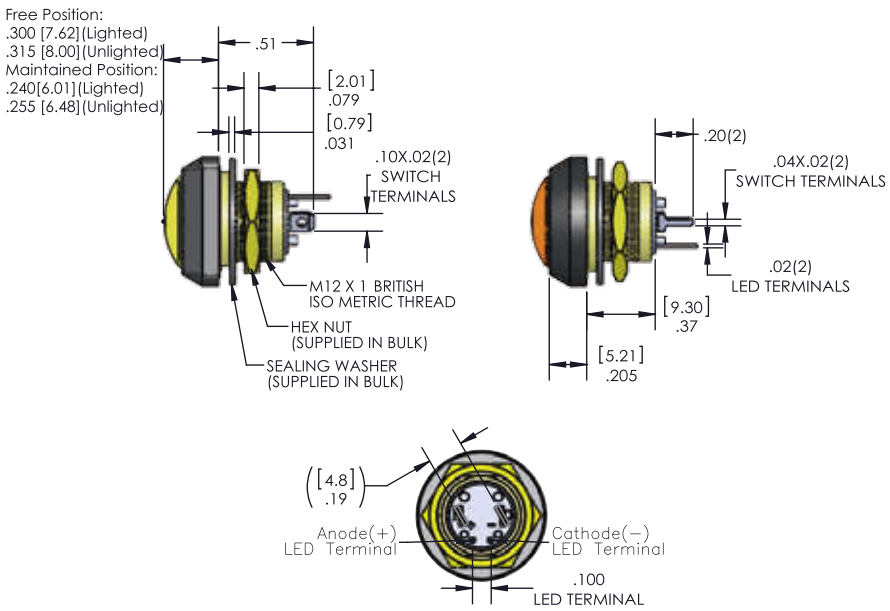
S48 / N48 (Momentary)
10mA @ 12VDC,200K CYCLES
S48 / N48 (Maintained)
20K CYCLES NOMINAL

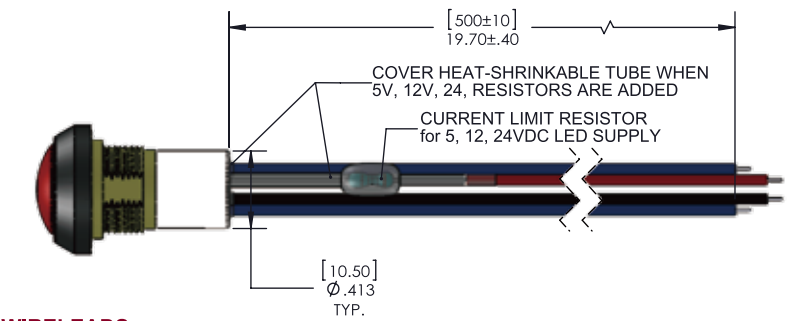
G48 (Momentary)
2A @ 24VDC,40K CYCLES
2A @ 250VAC,40K CYCLES
G48 (Maintained)
2A @ 24VDC,20K CYCLES
2A @ 250VAC,20K CYCLES

SA48
5A @ 28VDC,25K CYCLES
5A @ 125/250VAC,25K CYCLES

DIELECTRIC STRENGTH:
1,000 VAC
INSULATION RESISTANCE:
1G OHM
CONTACT RESISTANCE:
50m OHMS
WIRE LEADS:
UL STYLE 1007
26 AWG, STRANDED

G48/ N48/ S48 SERIES

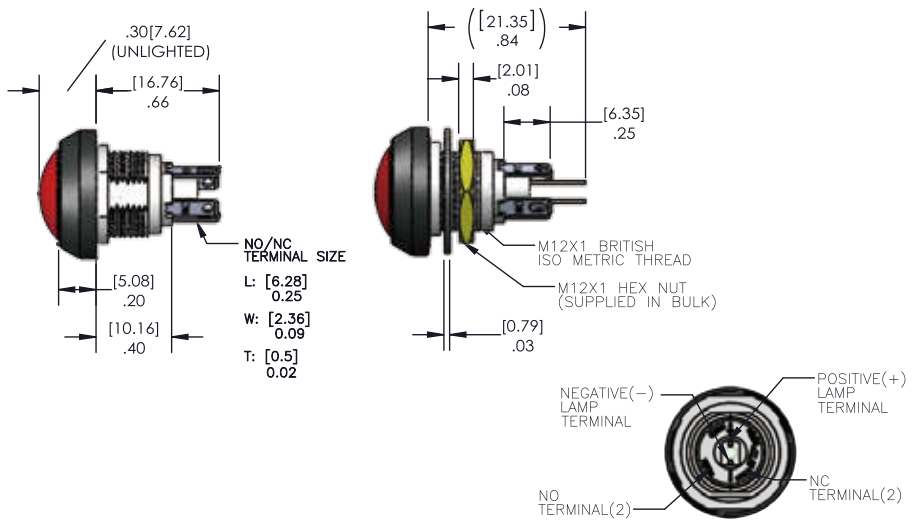




WIRELEADS



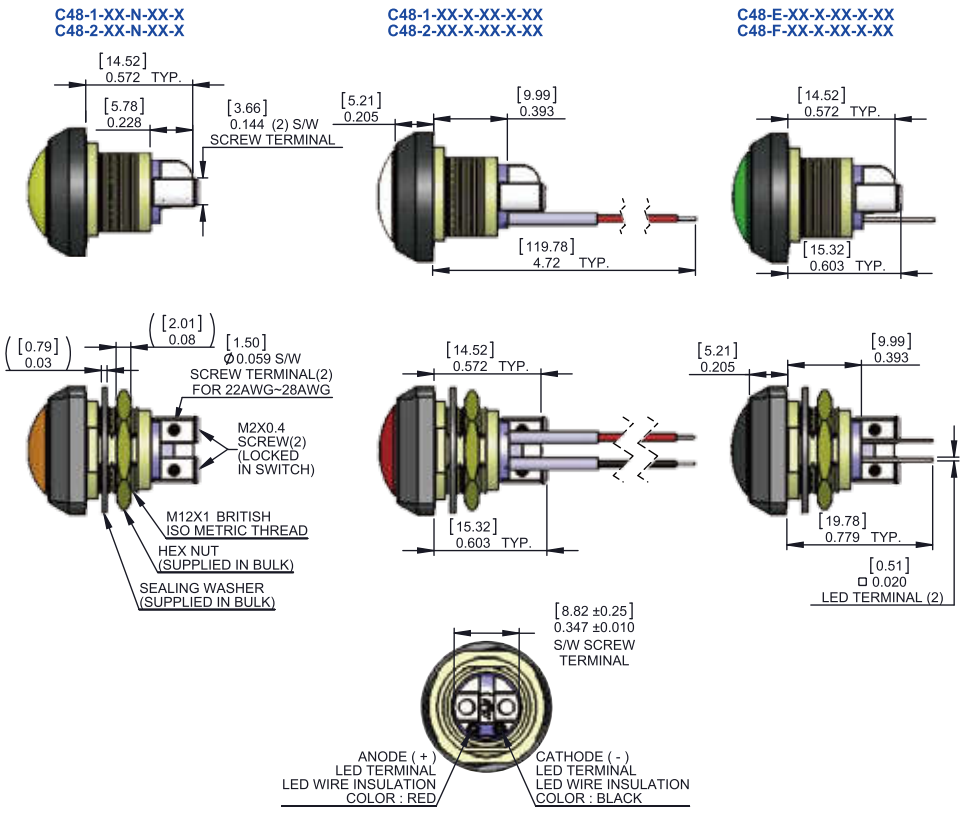
SA48 SERIES



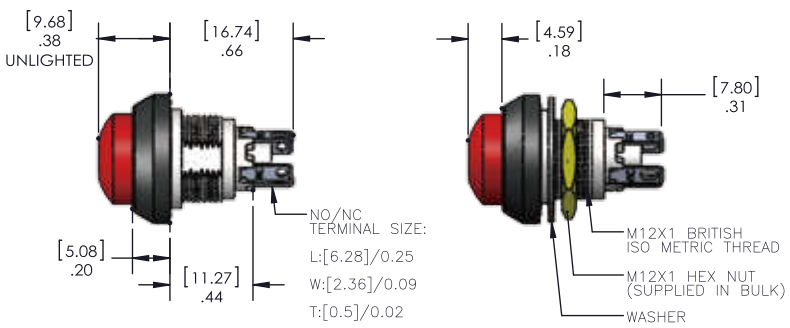
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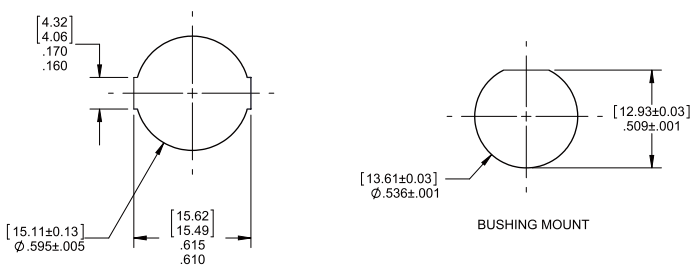
C48 SERIES



HIGH BUTTON TYPE



RECOMMENDED PANEL CUT-OUT



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:
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SNAP-FIT MOUNTING: [1.3-3.0] .05-.12
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[6 kgf-cm] 5.2 lb-in
HARDWARE
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IP67
OPERATING TEMPERATURE:
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ELECTRICAL SPECIFICATIONS

CURRENT RATING (resistive):
C48 (Momentary)
10mA @ 12VDC,200K CYCLES
C48 (Maintained)
20K CYCLES NOMINAL
DIELECTRIC STRENGTH:
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INSULATION RESISTANCE:
1G OHM
CONTACT RESISTANCE:
50m OHMS
WIRE LEADS:
UL STYLE 1007
26 AWG, STRANDED

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