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

ORDERING INFORMATION:

Series:	Module Type:	Switch Function:	Switch Termination:
BLANK Gold Contact IP67	48-1	Momentary	Solder
S Silver Contact IP67	48-2	Maintained	Solder
N Silver Contact	48-5	Momentary	PC
G Silver Contact IP67/2A	48-6	Maintained	PC
	48-A	Momentary	Wire Leads
	48-B	Maintained	Wire Leads
SA Silver Contact IP67/5A	48-1	Momentary	Solder
	48-A	Momentary	NO/NO Wireleads
	48-C	Momentary	NC/NC Wireleads
	48-E	Momentary	NC/NO Wireleads
	48-2	Maintained	Solder
	48-B	Maintained	NO/NO Wireleads
	48-D	Maintained	NC/NC Wireleads
	48-F	Maintained	NC/NO Wireleads

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).

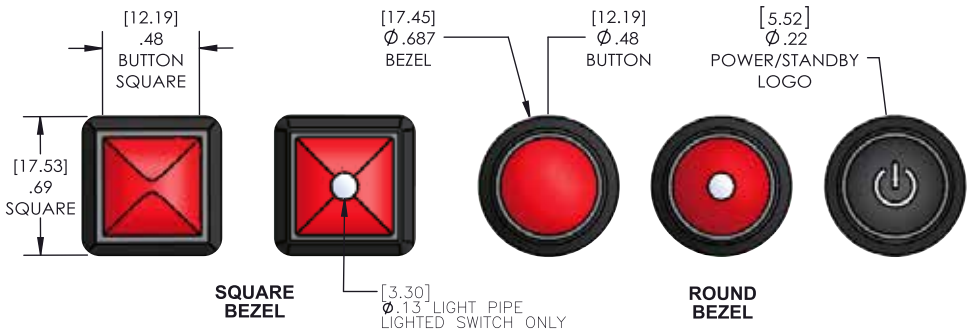
STANDARDS / AGENCY / RATINGS:

RoHS COMPLIANT 2002 / 95 / EC

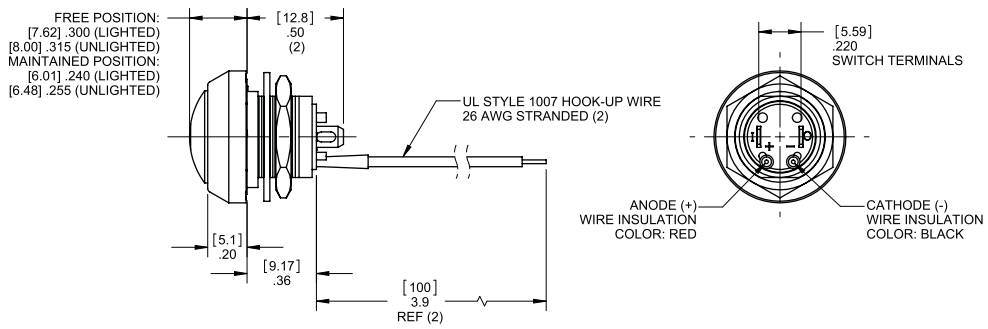
IEC IP67 COMPLIANT

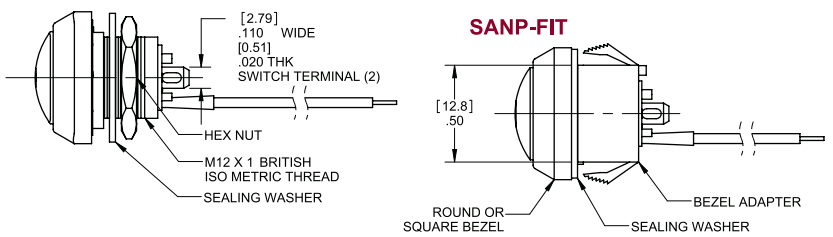
SERIES 48: 12MM MINIATURE SEALED ELECTRO-MECHANICAL

PRODUCT DRAWINGS

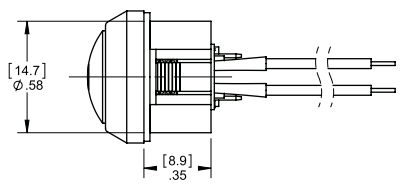


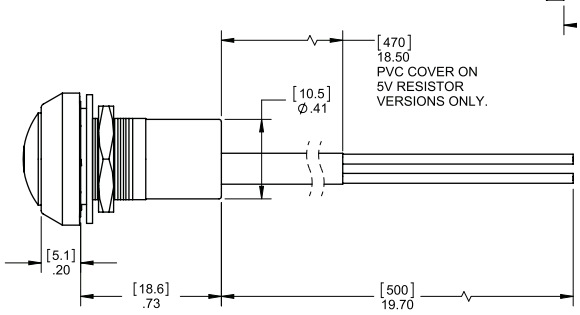
48 SERIES



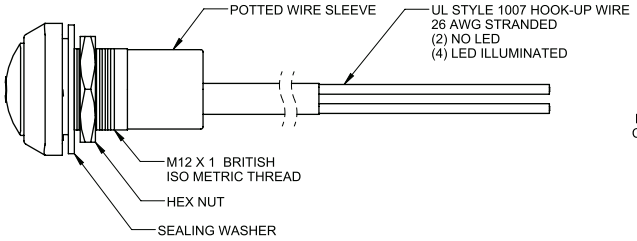


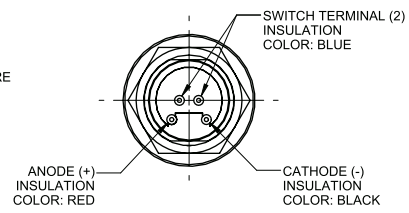
SANP-FIT





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

Designs and specifications are subject to change without notice due to product improvement.

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]
.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

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IP67
OPERATING TEMPERATURE:
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ELECTRICAL SPECIFICATIONS

CURRENT RATING (resistive):

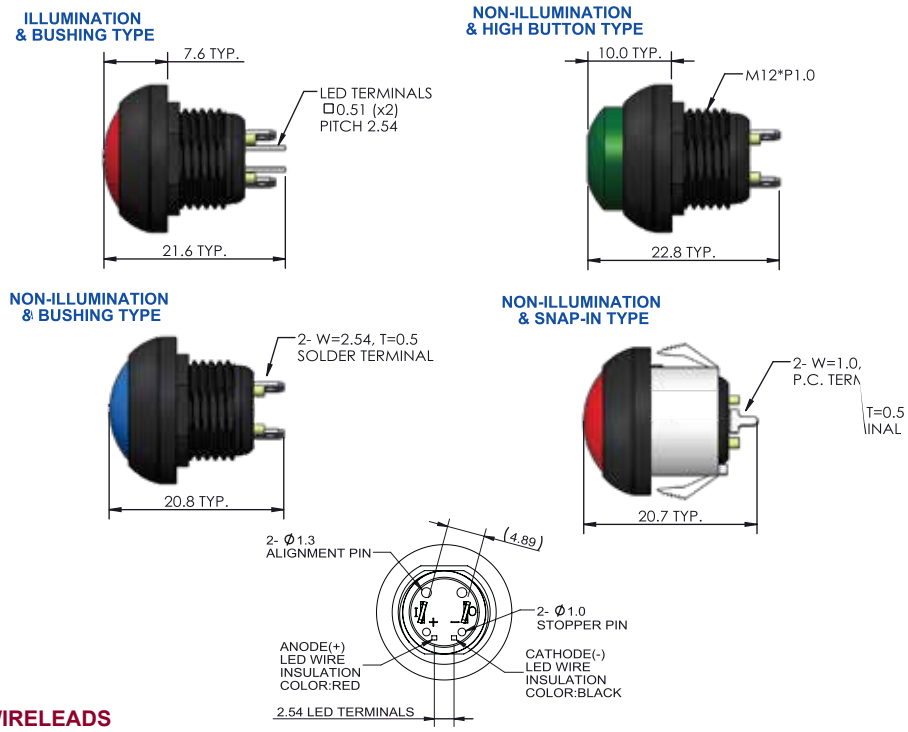
G48 (Momentary)
2A @ 24VDC,40K CYCLES
2A @ 250VAC,40K CYCLES

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

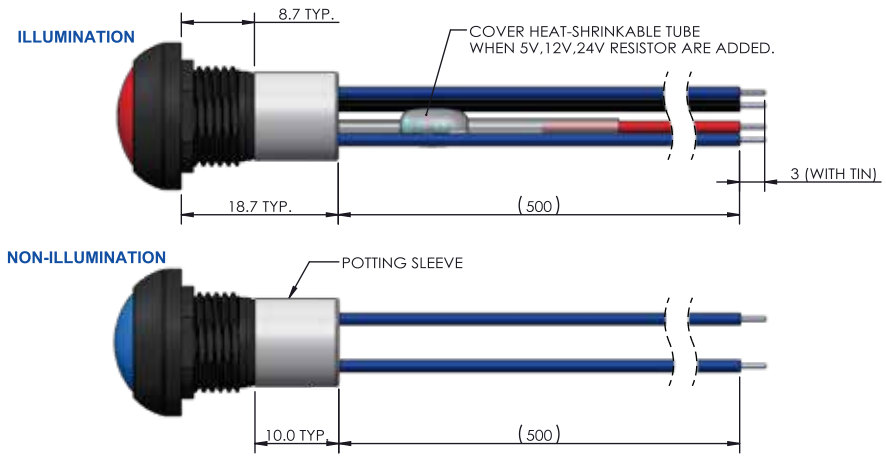
SA48
5A @ 28VDC,25K CYCLES
5A @ 125/250VAC,25K CYCLES

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

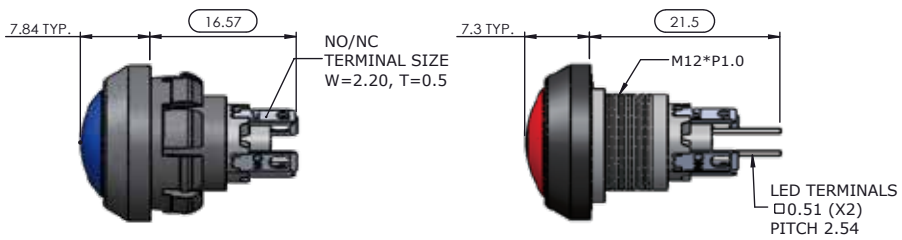
G48 SERIES

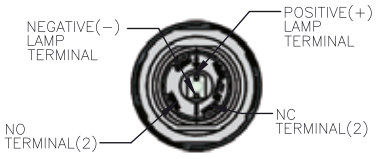


WIRELEADS



SA48 SERIES

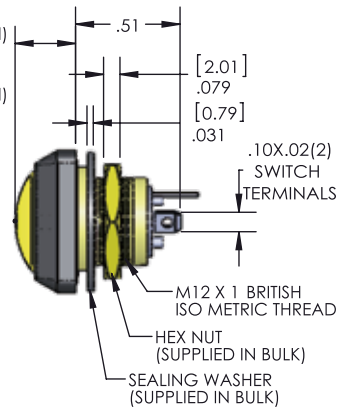


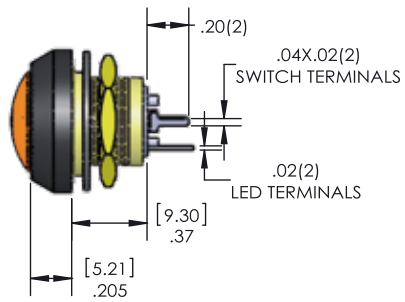


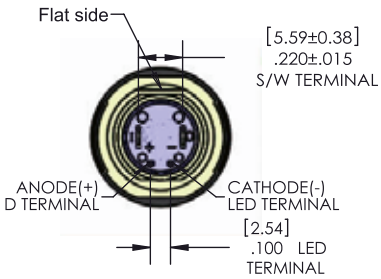
SERIES 48: 12MM MINIATURE SEALED ELECTRO-MECHANICAL

N48/ S48 SERIES

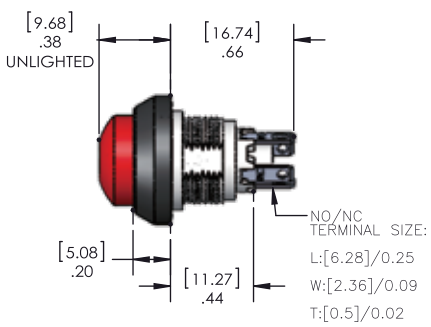
Free Position:
.300 [7.62](Lighted)
.315 [8.00](Unlighted)
Maintained Position:
.240[6.01](Lighted)
.255 [6.48](Unlighted)

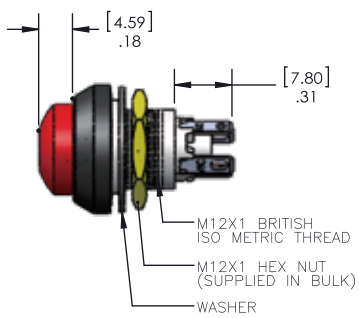




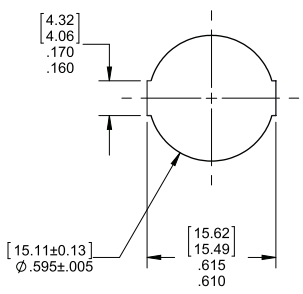


HIGH BUTTON TYPE

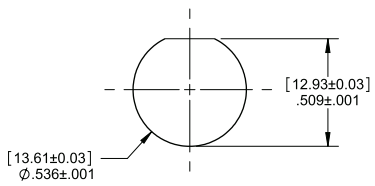




RECOMMENDED PANEL CUT-OUT



SNAP-IN MOUNT



BUSHING MOUNT

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OPERATING FORCE (NOM):
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CONTACT BOUNCE (NOM):
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PANEL THICKNESS:
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.02-.12
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NUT TORQUE (MAX):
[6 kgf-cm] 5.2 lb-in
HARDWARE
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S48 / N48 (Momentary)
10mA @ 12VDC,200K CYCLES
S48 / N48 (Maintained)
20K CYCLES NOMINAL

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1,000 VAC
INSULATION RESISTANCE:
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CONTACT RESISTANCE:
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WIRE LEADS:
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26 AWG, STRANDED

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