12MM MINIATURE PANEL SEALED METAL SWITCHES

The 12M is a miniature switch designed for rugged environments. The housing is stainless steel and aluminum alloy. It is available as maintained or momentary action, electro-mechanical operation with Gold or Silver plated contacts and terminals. It is ideal for a multitude of applications.



APPLICATIONS

- Communications
- Hand-held Control Modules
- Security Equipment
- Food Processing
- Industrial Machinery
- Outdoor Controls
- Transportation: Mass-transit, Lift Truck

KEY FEATURES:

- Momentary or Maintained Action
- Stainless Steel/ Aluminum Housing
- Ring Illumination
- Variety of LED Colors
- Panel Sealed to IP67
- Gold or Silver Plated
- Solder, PC Terminal

ORDERING INFORMATION:

Series:
- **Blank** Gold Plated
- **S** Silver Plated

Switch Function:
- **A** Mechanical, Momentary, Wireleads
- **B** Mechanical, Maintained, Wireleads
- **E** Mechanical, Momentary, Solder Terminal
- **F** Mechanical, Maintained, Solder Terminal
- **G** Mechanical, Momentary, PC Terminal
- **H** Mechanical, Maintained, PC Terminal
- **A** Mechanical, Momentary, Wireleads
- **B** Mechanical, Maintained, Wireleads
- **1** Mechanical, Momentary, Solder Terminal
- **2** Mechanical, Maintained, Solder Terminal
- **5** Mechanical, Momentary, PC Terminal
- **6** Mechanical, Maintained, PC Terminal

Bezel Material/Color:
- **1** Stainless, Natural
- **2** Zinc Alloy, Velour Chrome Plated
- **K** Aluminum Alloy, Anodized, Black
- **R** Aluminum Alloy, Anodized, Red
- **S** Aluminum Alloy, Anodized, Silver

Button Material/Color:
- **1** Stainless, Natural

Illumination:
- **2** Ring Illumination, Flat Button***
- **H** Ring Illumination, Raised Button

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

Voltage Resistor:
- If Blank*
- **05** 5V Forward
- **12** 12V Forward**
- **24** 24V Forward**

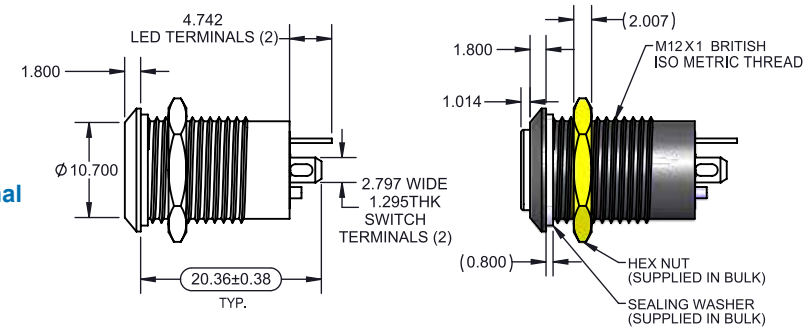
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*Current limiting resistor is required to limit LED forward current to 20mA.(not included)
**12 and 24V resistors are available with wirelead versions only.
***Only for Momentary Type.

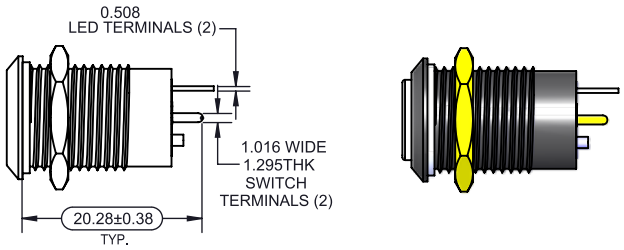
SERIES 12M: 12MM MINIATURE PANEL SEALED METAL SWITCHES

PRODUCT DRAWINGS

Solder Terminal

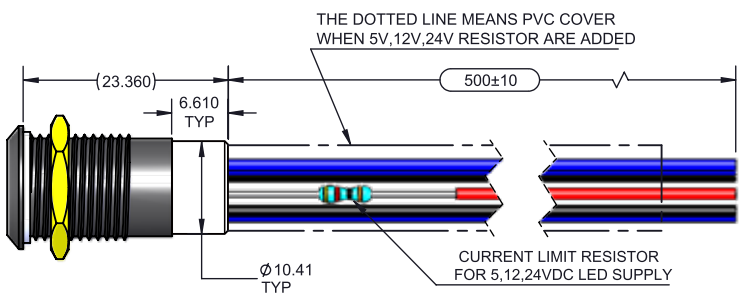


P.C. Terminal

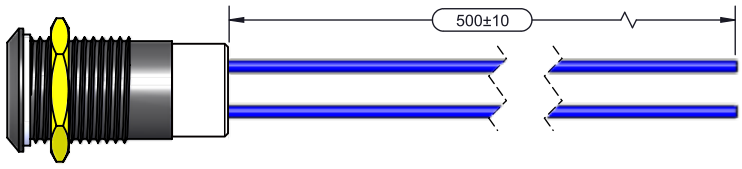


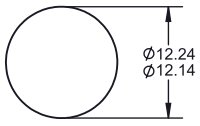
WIRELEADS

Illumination

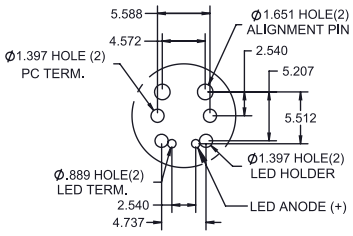


Non-Illumination



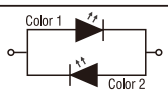


RECOMMENDED PANEL CUTOUT



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

LED SPECIFICATIONS

LED CODE	LED		CIRCUITRY	Vf(VDC)		If
	Color 1	Color 2		Color 1	Color 2	(mA)
A	AMBER	—		1.6~2.0	—	20
R	RED	—		1.6~2.0	—	20
Y	YELLOW	—		1.6~2.0	—	20
B	BLUE	—		2.8~3.4	—	20
G	GREEN	—		2.8~3.4	—	20
W	WHITE	—		2.8~3.4	—	20
RB	RED	BLUE		1.6~2.0	2.8~3.4	20
RG	RED	GREEN		1.6~2.0	2.8~3.4	20

Notes:
1.) Lead Soldering Temperature (4mm form body) : 280°C for 5 seconds
2.) Head Soldering Temperature (4mm form body) : 320°C for 3 seconds

MECHANICAL CHARACTERISTICS:

Circuit:
SPST-NO-DB (Form X)
Button Travel (Nominal):
0.099inches [2.5mm]
Operating Force (Nominal):
3N [306g]
Contact Bounce (Nominal):
1ms
Panel Thickness:
0.020" - 0.236" [0.5 - 6.0mm]
Nut Torque Force:
Max 5.2 lb-in [6 kgf-cm]

ENVIRONMENTAL SPECIFICATIONS:

Actuator Ingress Protection:
IP67 (Front Panel)
Operating Temperature:
Non-illumination type:
-40° to +185°F [-40° to +85°C]
Illumination type:
-13° to +185°F [-25° to +85°C]

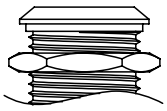
ELECTRICAL SPECIFICATIONS:

Current Ratings: (Momentary)
12M Series:
250mA@12VDC, 100k Cycles
150mA@28VDC, 150k Cycles
100mA@48VDC, 100k Cycles
10mA@12VDC, 1000k Cycles
S12M Series:
10mA@12VDC, 200k Cycles
Current Ratings: (Maintained)
12M Series: 50,000 Cycles Nominal
S12M Series: 20,000 Cycles Nominal
Dielectric Strength:
1,000 VAC
Insulation Resistance:
1GΩ
Contact Resistance:
Max 50mΩ (intial)

Maintained Type



Momentary Type



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