

QRM SERIES Rear Panel Mount LED Indicators

Distinctive features and specifications

Features

- Ø6mm and Ø8mm rear mounting LED indicator
- 5mm flush diffused LED, standard or hyper bright
- Bi-color and Tri-color LED options
- Black chrome finish
- 2VDC – 28VAC.DC
- 200mm wires or pin terminations
- IP67 sealed (EN60529)
- Epoxy sealed rear end
- Supplied with fixing nut, spring washer and O-ring (Dress nut available as an option - contact APEM)



NB: UL Recognized Component

TECHNICAL SPECIFICATIONS

Voltage	Operating Voltage	Operating Current
	(Min to Max)	(Typical All Types)
2VDC (No Resistor)	1.8 to 2.5VDC	20mA*
6VDC	5.4 to 6.6VDC	20mA
12VDC	10.8 to 13.2VDC	20mA
24VDC	21.6 to 26.4VDC	20mA
28VDC	25.2 to 30.8VDC	20mA

Max Reverse Voltage: 5V
Viewing Angle: 60°
Life Expectancy: 100,000 hours
Operating Temperature Range: -40 to +85°C
Storage Temperature Range: -55 to +100°C
Max panel thickness: 3.5mm
Torque: 60cNm

Materials	
Body: Black chrome plated brass	Lock washer: Spring steel
Nut: Black chrome plated brass	Terminal seal: Epoxy
Panel seal: Nitrile O-ring	Wires: 24AWG to UL1061

Standard LED Intensity	MCD Output	Forward Voltage
	(all voltages)	
HE Red	10mcd	2.0V
Green	8mcd	2.2V
Yellow	6mcd	2.1V
Blue	200mcd	3.8V
White	500mcd	3.3V
Bi-color (Typical) (Red/Green)	10/8mcd	2.0V/2.2V
Tri-color (Typical) (Red/Green/Yellow)	10/8/6mcd	2.0V/2.2V/2.1V
The color is changed by reversing the polarity of the supply voltage.		
Tri-color - The indicator has red and green LEDs, when both connected yellow is produced.		
Hyper Bright	MCD Output	Forward Voltage
	(all voltages)	
HE Red	980mcd	2.2V
Green	300mcd	3.2V
Yellow	250mcd	2.2V
Bi-color (Typical) (Red/Green)	350/300mcd	2.2/3.2V
Tri-color (Typical) (Red/Green/Yellow)	110/30/20mcd	1.9V/2.2V/2.1V
Luminous intensity will be reduced with lower operating current.		

Note: The operating voltage must not be exceeded by more than 10% as this will result in reduced life expectancy.

The company reserves the right to change specifications without notice.

* Customer to supply resistor for desired operating current.

Luminous intensity is measured at 20mA on a discrete LED unless otherwise stated.

Luminous intensities and color shades of white LEDs may vary within a batch.

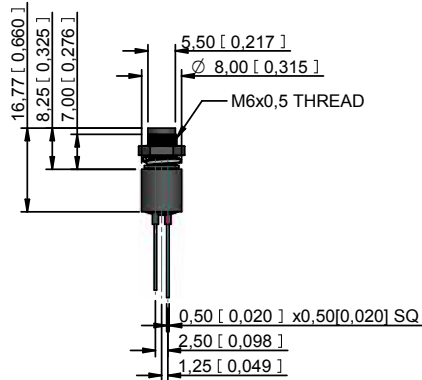
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Technical Drawings

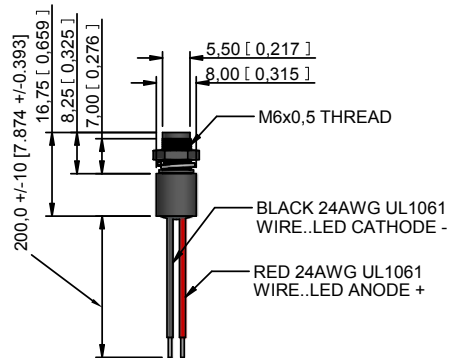
6mm



Pins



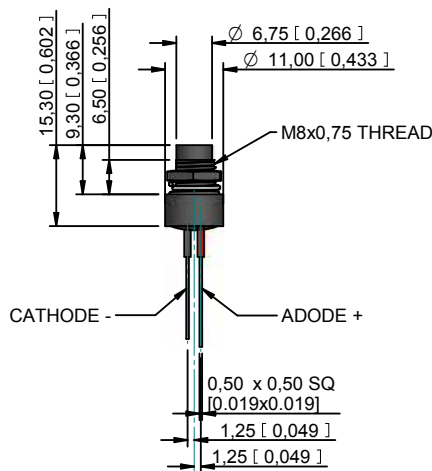
Wires



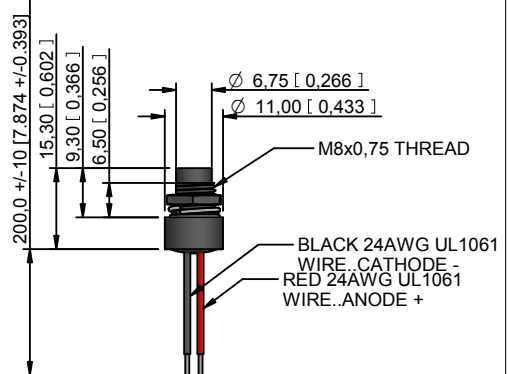
8mm



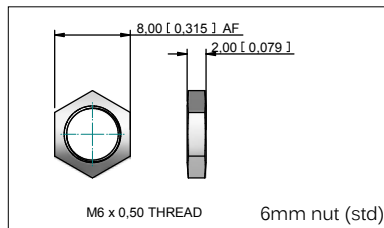
Pins



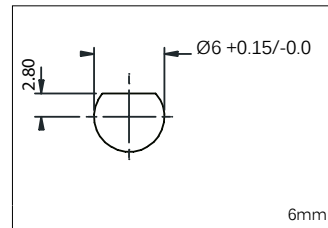
Wires



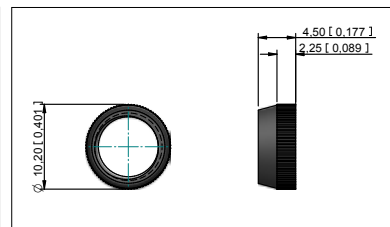
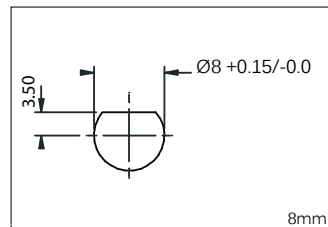
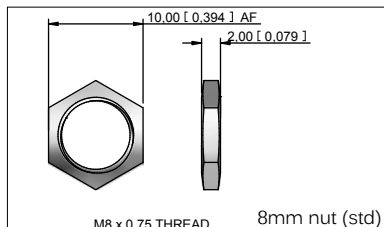
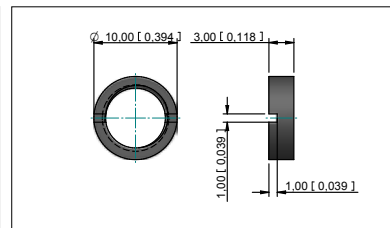
Hardware



Panel Cut out

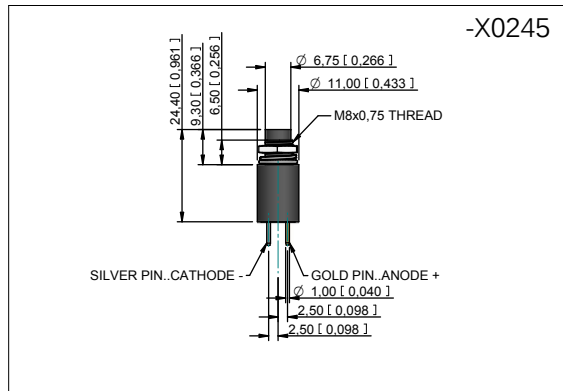


Dress nuts for 8mm QRM



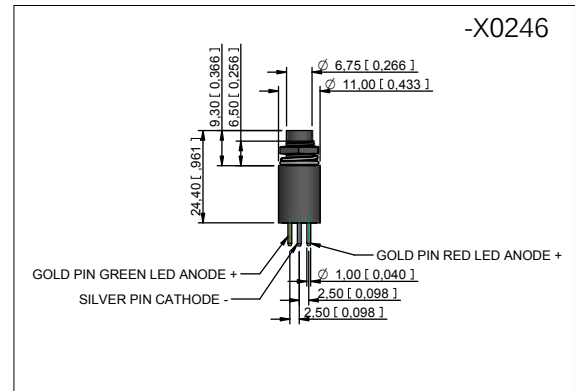
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Custom options

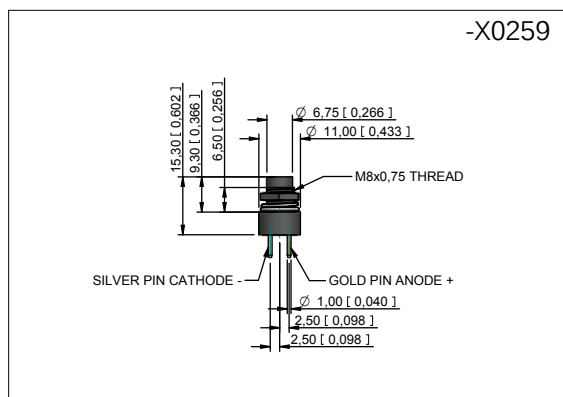


Fixed and Bi-color long body rigid pins

Long body matches the behind panel depth of APEM 12200X778 PCB mounting military grade toggle switches



Tri-color long body and rigid PCB



Fixed and Bi-color standard body rigid pins

To apply the above custom option, suffix the part number with the -X reference number
Example QRM84BXXHB24AE-X0245


QRM SERIES Rear Panel Mount LED Indicators Overview

STANDARD OPTIONS

The QRM Series is available with a range of standard options, to specify your LED, simply choose one option from each column. An example is shown below.

QRM	8	4	B	XX	HB	24A	E
SERIES	MOUNTING HOLE	TERMINALS	BEZEL FINISH	TYPE OF ILLUMINATION	LED COLOR	VOLTAGE	SEALING
QRM	6 = Ø6mm 8 = Ø8mm	4 = Pins 5 = Wires	B = Black Chrome	XX = Fixed light YY = Bi-color ZZ = Tri-color	R = Red G = Green Y = Yellow B = Blue W = White HR = Hyper Bright Red HG = Hyper Bright Green HY = Hyper Bright Yellow HB = Hyper Bright Blue HW = Hyper Bright White RG = Red/Green RY = Red/Yellow GY = Green/Yellow RYG = Red/Yellow/Green	02 = 2VDC 06 = 6VDC 12 = 12VDC 12A = 12VAC/DC 24 = 24VDC 24A = 24VAC/DC 28 = 28VDC 28A = 28VAC/DC	E = IP67 (Standard)

Example QRM84BXXHR24AE
 Ø8mm mounting hole with pin terminations, black chrome finish, fixed light, Red 24VAC, panel sealed to IP67



- Standard wire length is 200mm, 24AWG, red wire denotes Anode (+), black wire denotes Cathode (-) for other wire lengths consult APEM
- For LEDs with alternate voltages consult APEM
- Bi-color LEDs, by connecting the gold Faston (+) one colour is produced, by reversing the supply voltage another colour is produced – Bi-colours are available up to 28VDC
- Take care when soldering (recommended solder temperature 270°C - 2 sec)
- The Tri-color LED has red and green LEDs when both are connected yellow is produced
- Standard Tri-color termination is two Anodes (+) and one Cathode (-)
- Tri-color wires are one red (+) and one green (+) Anode and one black (-) Cathode
- Tri-color pins are center (-) Cathode, shortest (+) Anode pin green, longest (+) Anode pin red
- Maximum panel thickness 3.5mm
- For resistorless versions (02) please pay attention to the forward voltage
- For multi-voltage options please consult APEM