QRM8 SERIES Rear Panel Mount LED Indicators

Distinctive features and specifications

Features

- Ø8mm rear mounting LED indicator
- 5mm flush diffused LED, standard, hyper bright or water clear
- 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)
02 (No Resistor)	1.8 to 3.8VDC	20mA max*
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

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

Max Reverse Voltage: 5V

Viewing Angle: 60°

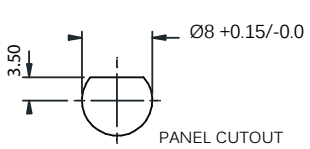
Life Expectancy: 100,000 hours

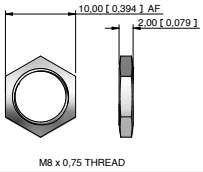
Operating Temperature Range: –40 to +85°C

Storage Temperature Range: –55 to +100°C

Max panel thickness: 3.5mm

Torque: 60cNm





Standard LED Intensity	MCD Output (all voltages)	Forward Voltage
HE Red	8mcd	2.0V
Green	6mcd	2.2V
Yellow	6mcd	2.1V
Blue	50mcd	3.8V
White	500mcd	3.8V
Bi-color (Typical) (Red/Green)	15/10mcd	2.0V/2.2V
Tri-color (Typical) (Red/Green/Yellow)	15/10/6mcd	2.0V/2.2V/2.1V
Bi-color - the color is changed by reversing the polarity Tri-color - The indicator has red and green LEDs, when both connected yellow is produced.		

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Super Bright LED	MCD Output (all voltages)	Forward Voltage
HE Red	1,300mcd	2.2V
Green	1,200mcd	3.3V
Yellow	350mcd	2.0V
Blue	280mcd	3.3V
White	950mcd	3.3V
Orange	500mcd	2.2V

Hyper Bright	MCD Output (all voltages)	Forward Voltage
HE Red	980mcd	2.2V
Green	300mcd	3.3V
Yellow	250mcd	2.0V
Luminous intensity will be reduced with lower operating current.		

Note: The operating voltage must not be exceeded by more that 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.
LED characteristics are dependent upon environmental conditions. Therefore published data should be considered nominal.

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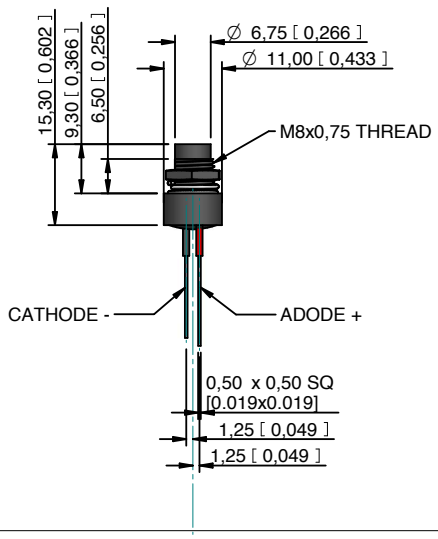
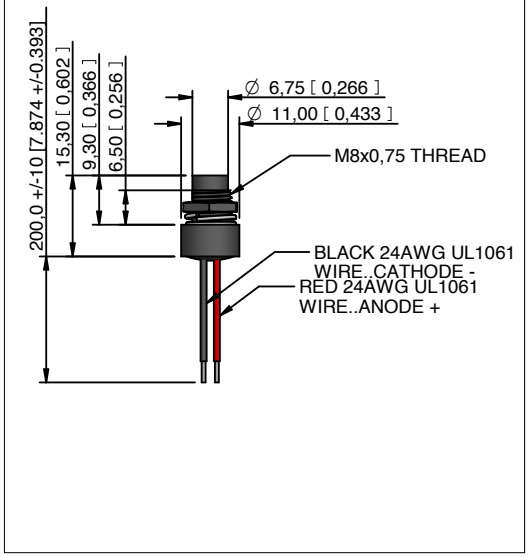
Technical Drawings

Pins



Wires



Dress nuts

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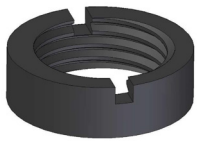

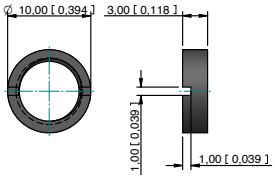

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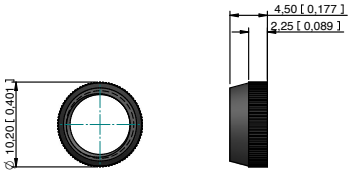

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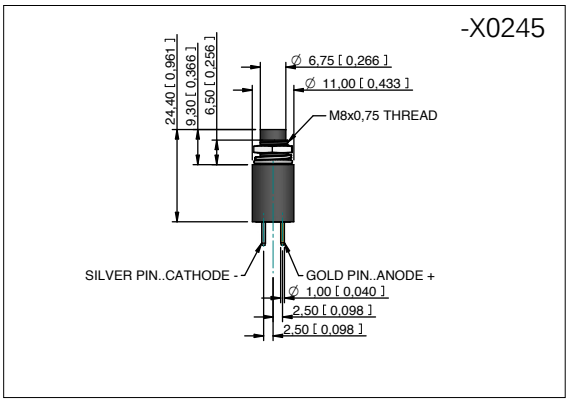
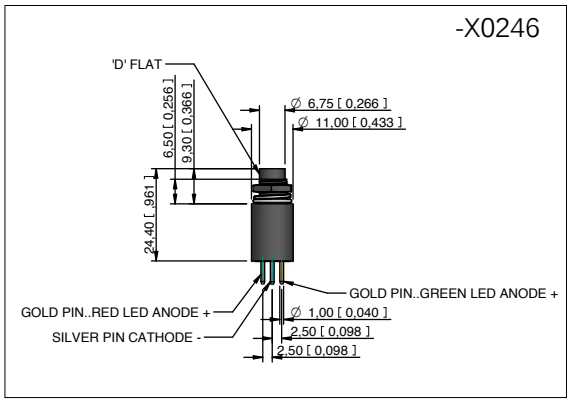
Custom options

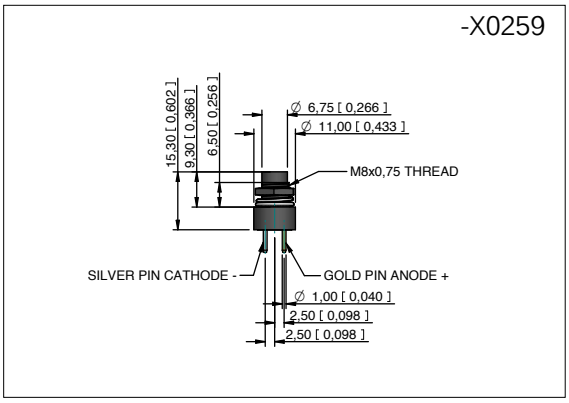


Fixed and Bi-color long body rigid pins



Tri-color long body and rigid PCB

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



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

QRM8 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		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 SR = Super Bright Red SG = Super Bright Green SY = Super Bright Yellow SB = Super Bright Blue SW = Super Bright White SO = Super Bright Orange RG = Red/Green RY = Red/Yellow GY = Green/Yellow RYG = Red/Yellow/Green		02 = no resistor* 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 UL1061, 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 300°C - 3 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 multi-voltage options please consult APEM

* = For resistorless versions (02) please refer to the forward voltage on page 1