

# QRM14 series

Ø 14 mm rear panel mount LED indicators



## DISTINCTIVE FEATURES

IP67 Sealed

Bi-Color & Tri-Color Options

2 to 28 VDC

200 mm wire terminations



## ENVIRONMENTAL SPECIFICATIONS

- IP67 sealing option (EN60529)
- Operating Temperature Range: -40 °C to +85 °C ( -40 °F to +185 °F)
- Storage Temperature Range: -55 °C to +100 °C (-67 °F to +212 °F)



## GENERAL SPECIFICATIONS

- Max Reverse Voltage: 5 V
- Viewing Angle: 60°
- Life Expectancy: 100,000 hours
- Max Panel Thickness: 3.5 mm
- Torque: 75 cNm (Ø 14 mm)
- Insulation resistance : 4,000 MΩ at 500 VDC
- Salt spray test: 96 hours (IEC 68-2-11)

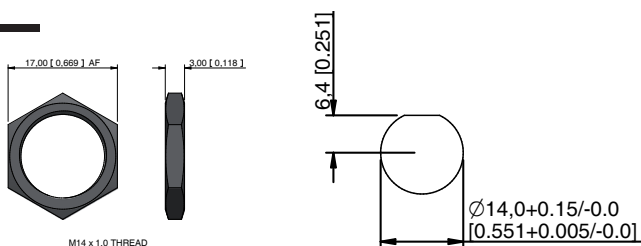


## MATERIALS

- Body: Black plated brass or anodized aluminum
- Lock Washer: Spring steel
- Nut: Black plated brass
- Terminal Seal: Epoxy
- Panel Seal: Nitrile O-ring
- Wires: 22A WG - Approved to UL1007



## MOUNTING



The company reserves the right to change specifications without notice.

LED characteristics are dependent upon environmental conditions. Therefore published data should be considered nominal and subject to variations.



# QRM14 series

Ø 14 mm rear panel mount LED indicators



## ELECTRICAL SPECIFICATIONS

### STANDARD LED INTENSITY

LED COMPONENT SPECIFICATIONS		
	Flush	Forward Voltage
HE Red	10 mcd	2.0 V
Green	5 mcd	2.2 V
Yellow	4 mcd	2.1 V
Blue	100 mcd	3.3 V
White	150 mcd	3.3 V
Orange	200 mcd	2.2 V
Bi-color (Typical) (Red/Green)	14/10 mcd	2.0 V/2.2 V
Tri-color (Typical) (Red/Green/Yellow)	15/10/30 mcd	2.0 V/2.2 V/2.1 V

Bi-color - 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.

### SUPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS		
	Flush	Forward Voltage
HE Red	2,000 mcd	2.2 V
Green	680 mcd	3.5 V
Yellow	350 mcd	2.3 V
Blue	250 mcd	3.3 V
White	250 mcd	3.3 V
Orange	300 mcd	2.1 V

### HYPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS		
	Flush	Forward Voltage
HE Red	800 mcd	2.0 V
Green	250 mcd	3.2 V
Yellow	250 mcd	2.0 V
Orange	200 mcd	2.1 V

- The operating voltage must not be exceeded by more than 10% as this will result in reduced life expectancy
- Luminous intensity is measured at 20 mA on a discrete led unless otherwise stated.
- Luminous intensities and color shades of white LEDs may vary within a batch.
- Luminous intensity will be reduced with lower operating current.

Voltage	Operating Voltage	Operating Current
	(Min to Max)	(Typical All Types)
02 (No Resistor)	1.8 to 3.8 VDC	20 mA max
6 VDC	5.4 to 6.6 VDC	20 mA
12 VDC	10.8 to 13.2 VDC	20 mA
24 VDC	21.6 to 26.4 VDC	20 mA
28 VDC	25.2 to 30.8 VDC	20 mA

\* Customer to supply resistor for desired operating current.

# QRM14 series

Ø 14 mm rear panel mount LED indicators



## BUILD YOUR PART NUMBER

<b>QRM</b>																																																															
SERIES	MOUNTING HOLE	TERMINALS	BEZEL FINISH																																																												
	<b>14</b> Ø14 mm	<b>5</b> Wires	<table border="0"> <tr><td><b>B</b></td><td>Black</td></tr> <tr><td><b>AK</b></td><td>Anodized Dark Olive</td></tr> <tr><td><b>AN</b></td><td>Anodized Black</td></tr> </table>	<b>B</b>	Black	<b>AK</b>	Anodized Dark Olive	<b>AN</b>	Anodized Black																																																						
<b>B</b>	Black																																																														
<b>AK</b>	Anodized Dark Olive																																																														
<b>AN</b>	Anodized Black																																																														
TYPE OF ILLUMINATION	LED COLOR	VOLTAGE	SEALING																																																												
<table border="0"> <tr><td><b>XX</b></td><td>Fixed Light</td></tr> <tr><td><b>YY</b></td><td>Bi-color</td></tr> <tr><td><b>ZZ</b></td><td>Tri-color</td></tr> </table>	<b>XX</b>	Fixed Light	<b>YY</b>	Bi-color	<b>ZZ</b>	Tri-color	<table border="0"> <tr><td><b>R</b></td><td>Red</td></tr> <tr><td><b>G</b></td><td>Green</td></tr> <tr><td><b>Y</b></td><td>Yellow</td></tr> <tr><td><b>B</b></td><td>Blue</td></tr> <tr><td><b>W</b></td><td>White</td></tr> <tr><td><b>O</b></td><td>Orange</td></tr> <tr><td><b>HR</b></td><td>Hyper Bright Red</td></tr> <tr><td><b>HG</b></td><td>Hyper Bright Green</td></tr> </table>	<b>R</b>	Red	<b>G</b>	Green	<b>Y</b>	Yellow	<b>B</b>	Blue	<b>W</b>	White	<b>O</b>	Orange	<b>HR</b>	Hyper Bright Red	<b>HG</b>	Hyper Bright Green	<table border="0"> <tr><td><b>HY</b></td><td>Hyper Bright Yellow</td></tr> <tr><td><b>HO</b></td><td>Hyper Bright Orange</td></tr> <tr><td><b>SR</b></td><td>Super Bright Red</td></tr> <tr><td><b>SG</b></td><td>Super Bright Green</td></tr> <tr><td><b>SY</b></td><td>Super Bright Yellow</td></tr> <tr><td><b>SB</b></td><td>Super Bright Blue</td></tr> </table>	<b>HY</b>	Hyper Bright Yellow	<b>HO</b>	Hyper Bright Orange	<b>SR</b>	Super Bright Red	<b>SG</b>	Super Bright Green	<b>SY</b>	Super Bright Yellow	<b>SB</b>	Super Bright Blue	<table border="0"> <tr><td><b>SW</b></td><td>Super Bright White</td></tr> <tr><td><b>SO</b></td><td>Super Bright Orange</td></tr> <tr><td><b>RG</b></td><td>Red/Green</td></tr> <tr><td><b>RY</b></td><td>Red/Yellow</td></tr> <tr><td><b>GY</b></td><td>Green/Yellow</td></tr> <tr><td><b>RYG</b></td><td>Red/Yellow/Green</td></tr> </table>	<b>SW</b>	Super Bright White	<b>SO</b>	Super Bright Orange	<b>RG</b>	Red/Green	<b>RY</b>	Red/Yellow	<b>GY</b>	Green/Yellow	<b>RYG</b>	Red/Yellow/Green	<table border="0"> <tr><td><b>02</b></td><td>no resistor*</td></tr> <tr><td><b>06</b></td><td>6 VDC</td></tr> <tr><td><b>12</b></td><td>12 VDC</td></tr> <tr><td><b>24</b></td><td>24 VDC</td></tr> <tr><td><b>28</b></td><td>28 VDC</td></tr> </table> <p>* please refer to the forward voltage in electrical specifications</p>	<b>02</b>	no resistor*	<b>06</b>	6 VDC	<b>12</b>	12 VDC	<b>24</b>	24 VDC	<b>28</b>	28 VDC	<table border="0"> <tr><td><b>E</b></td><td>IP67 (Standard)</td></tr> </table>	<b>E</b>	IP67 (Standard)
<b>XX</b>	Fixed Light																																																														
<b>YY</b>	Bi-color																																																														
<b>ZZ</b>	Tri-color																																																														
<b>R</b>	Red																																																														
<b>G</b>	Green																																																														
<b>Y</b>	Yellow																																																														
<b>B</b>	Blue																																																														
<b>W</b>	White																																																														
<b>O</b>	Orange																																																														
<b>HR</b>	Hyper Bright Red																																																														
<b>HG</b>	Hyper Bright Green																																																														
<b>HY</b>	Hyper Bright Yellow																																																														
<b>HO</b>	Hyper Bright Orange																																																														
<b>SR</b>	Super Bright Red																																																														
<b>SG</b>	Super Bright Green																																																														
<b>SY</b>	Super Bright Yellow																																																														
<b>SB</b>	Super Bright Blue																																																														
<b>SW</b>	Super Bright White																																																														
<b>SO</b>	Super Bright Orange																																																														
<b>RG</b>	Red/Green																																																														
<b>RY</b>	Red/Yellow																																																														
<b>GY</b>	Green/Yellow																																																														
<b>RYG</b>	Red/Yellow/Green																																																														
<b>02</b>	no resistor*																																																														
<b>06</b>	6 VDC																																																														
<b>12</b>	12 VDC																																																														
<b>24</b>	24 VDC																																																														
<b>28</b>	28 VDC																																																														
<b>E</b>	IP67 (Standard)																																																														



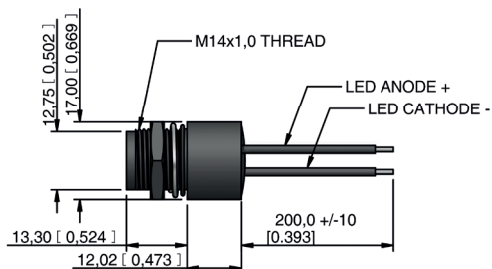
## ABOUT THIS SERIES

- Notice:** please note that not all combinations of above numbers are available.
- Standard wire length is 200 mm, 22A WG UL1007, red wire denotes Anode (+), black wire denotes Cathode (-) for other wire lengths consult APEM.
  - For LEDs with alternate voltages and multi-voltage options consult APEM.
  - Bi-color LEDs, by connecting the gold Faston (+) one color is produced, by reversing the supply voltage another color is produced. Bi-color are available up to 28 VDC.
  - 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.

# QRM14 series

Ø 14 mm rear panel mount LED indicators

## REAR MOUNT - WIRES TERMINALS - SINGLE & BI-COLOR LED



## REAR MOUNT - WIRES TERMINALS - TRI-COLOR LED

