#### Distinctive features and specification

Q14\_VOY1609R2US

#### **Features**

- 14mm panel mounting LED indicator
- 10mm colored diffused epoxy lens or 10mm water clear super bright LEDs
- · Plated brass bezel finished in bright chrome, black chrome or satin grey and moulded polycarbonate rear body
- Prominent recessed and flush bezel styles
- · Custom engraving available
- 2VDC 220VAC
- (2.8 x 0.8) solder lug/Faston terminals, pins or (200mm long) wire terminations
- IP67 sealing option (EN60529)
- · Supplied with fixing nut and spring washer

NB: UL Recognized Component



| TECHNICAL SPECIFICATIONS |                   |                     |  |
|--------------------------|-------------------|---------------------|--|
| Voltage                  | Operating Voltage | Operating Current   |  |
|                          | (Min to Max)      | (Typical All Types) |  |
| 02 (No Resistor)         | 1.8 to 3.3VDC     | 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                |  |
| 110VAC                   | 99 to 121VAC      | 6mA                 |  |
| 220VAC                   | 207 to 253VAC     | 3mA                 |  |

| Max Reverse Voltage: 5V                               |
|---|
| Viewing Angle: 30–100° (dependant on model)           |
| Life Expectancy: 100,000 hours                        |
| Temperature Range: -40 to +85°C (operating & storage) |
| Torque: 75cNm   |
| Ø 14.00 +0.15/-0.0                                    |

PANEL CUTOUT

| Standard LED Intensity                 | Prominent and Recessed | Flush       | Forward Voltage |
|--|------------------------|-------------|-----------------|
| HE Red                                 | 80mcd                  | 10mcd       | 2.0V            |
| Green                                  | 60mcd                  | 5mcd        | 2.2V            |
| Yellow                                 | 50mcd                  | 4mcd        | 2.1V            |
| Blue                                   | 540mcd                 | 100mcd      | 3.3V            |
| White                                  | 1000mcd                | 150mcd      | 3.3V            |
| Orange                                 | 80mcd                  | 200mcd      | 2.0V            |
| Bi-color (Typical) (Red/Green)         | 15/15mcd               | 14/10mcd    | 2.0V/2.2V       |
| Tri-color (Typical) (Red/Green/Yellow) | 60/50/50mcd            | 15/10/30mcd | 2.0V/2.2V/2.1V  |

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 | Prominent and Recessed | Flush    | Forward Voltage |
|------------------|------------------------|----------|-----------------|
| HE Red           | 17,000mcd              | 2,000mcd | 2.2V            |
| Green            | 11,000mcd              | 680mcd   | 3.5V            |
| Yellow           | 4,000mcd               | 350mcd   | 2.3V            |
| Blue             | 2,500mcd               | 250mcd   | 3.3V            |
| White            | 4,400mcd               | 250mcd   | 3.3V            |
| Orange           | 2800mcd                | 300mcd   | 2.1V            |

| Hyper Bright LED | Prominent and Recessed | Flush  | Forward Voltage |
|------------------|------------------------|--------|-----------------|
| HE Red           | 2,800mcd               | 800mcd | 2.1V            |
| Green            | 2,200mcd               | 250mcd | 3.2V            |
| Yellow           | 1,300mcd               | 250mcd | 2.0V            |
| Orange           | 850mcd                 | 200mcd | 2.1V            |

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.

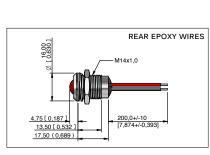
Luminous intensity is measured at 20mA on a discrete LED unless otherwise stated.

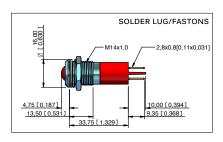
Luminous intensities and color shades of white LEDs may vary within a batch.

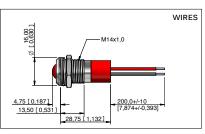
LED characteristics are dependent upon environmental conditions. Therefore published data should be considered nominal.

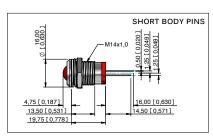
**Technical Drawings** 

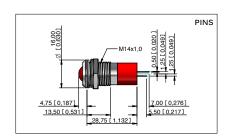


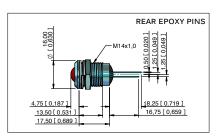


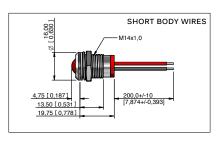






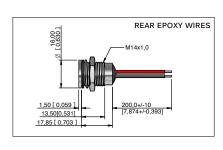


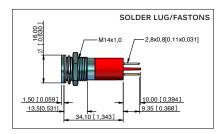


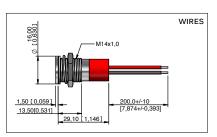


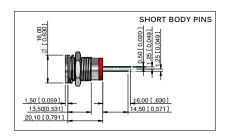
#### FLUSH BEZEL

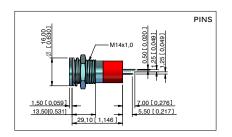


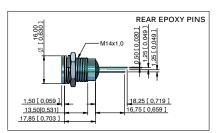


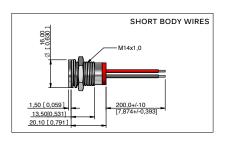




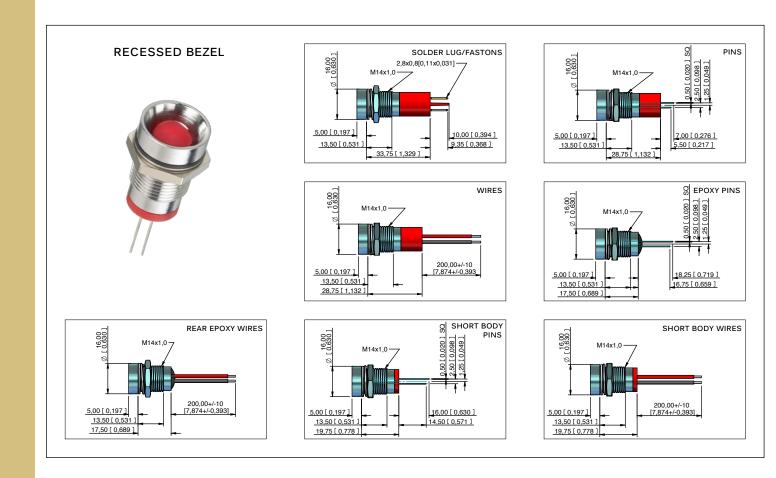








#### **Technical Drawings**



# Q SERIES Ø14mm (.551") Panel Mount LED Indicators Custom options

## **CUSTOM MARKING**

## Cable length & connector



## **CUSTOM ENGRAVING**

Suffix the part number with legend code.

| Code | Symbol      | Description          |
|------|-------------|----------------------|
| -0AJ |             | High Beam            |
| -097 |             | Low Beam             |
| -027 | <b>(</b> )≢ | Rear Fog             |
| -026 | <b>≢</b> 0  | Front Fog            |
| -021 |             | Windscreen<br>Wiper  |
| -022 |             | Windscreen<br>Washer |
| -023 | (SF)        | Ventilator<br>Fan    |
| -0AH | <b>\$</b>   | Turn<br>Signal       |
| -098 | ₹DQ€        | Side Lights          |

| Code | Symbol | Description           |
|------|--------|-----------------------|
| -041 | þ      | Horn                  |
| -013 |        | Hazard<br>Warning     |
| -018 |        | Heating               |
| -0BU |        | Brake Test            |
| -0K6 | 4      | Arrow                 |
| -0AG | = +    | Battery               |
| -0GP |        | Oil Can               |
| -020 |        | Windscreen<br>Heating |
| -086 | (ABS)  | ABS                   |

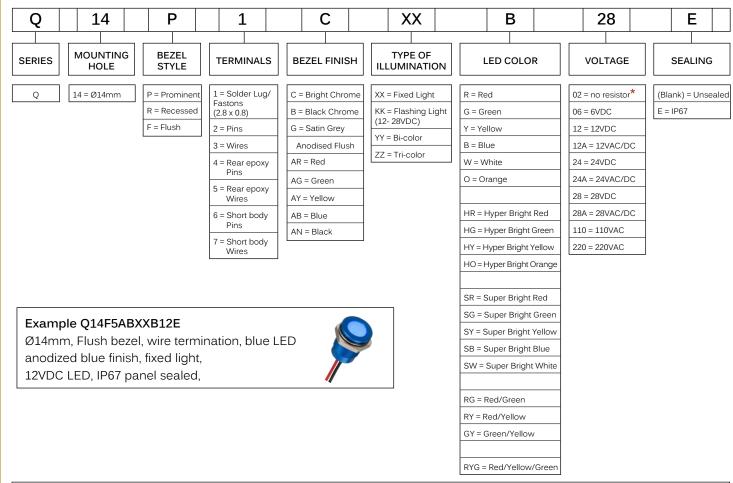
| Code | Symbol   | Description           |
|------|--|-----------------------|
| -0EL | 000  | Engine<br>Coil        |
| -0SB |  | Seat Belt             |
| -0UB | \frac{\psi}{2}                                       | USB<br>Connection     |
| -0ST |  | Steam                 |
| -0EU | ECU  | ECU                   |
| -0AD |  | Side Step             |
| -012 | $\left  \begin{array}{c} \times \end{array} \right $ | Air Con               |
| -040 |  | Engine                |
| -0BR |  | Boot/Trunk<br>Release |

Some common codes are listed above, for your custom requirements please contact APEM. Unless specified, standard engraving with white infill will be supplied.

#### **Order Overview**

#### STANDARD OPTIONS

The Q14 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.



- Gold Faston terminal denotes Anode (+), silver terminal denotes Cathode (-)
- Standard wire length is 200mm, 22AWG UL1007, red wire denotes Anode (+), black wire denotes Cathode (-) for other wire lengths consult APEM
- For LEDs with alternative voltages consult APEM
- Bi-color LEDs, by connecting the gold Faston (+) one color is produced, by reversing the supply voltage another color is produced Bi-colors are available up to 28VDC
- Take care when soldering to the Faston terminals (recommended solder temperature 300°C 3 sec)
- Short body pins and wires are only available up to 28VDC
- The Tri-color LED has red and green LEDs when both are connected yellow is produced
- Standard Tri-color Faston terminals are 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 11mm
- We recommend using Hyper bright LEDs for use at 110VAC and 220VAC
- · For multi-voltage options please consult APEM

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