# Q14 series

Ø14 mm panel mount LED indicators

## DISTINCTIVE FEATURES

**10 mm colored diffused epoxy lens or 10 mm water clear super bright LEDs**

**Prominent and flush bezel styles**

**(2.8 x 0.8) solder lug/faston terminals, pins or (200 mm long) wire terminations**

**Custom engraving available**

**Available in RGB**

## ENVIRONMENTAL SPECIFICATIONS

- IP67 sealing option (EN60529)
- Operating & Storage Temperature Range:
  **Rear plastic body:** -30 °C to +65° C ( -22 °F to +149 °F)
  **Rear epoxy body:** -40 °C to +85° C ( -40 °F to +185 °F)

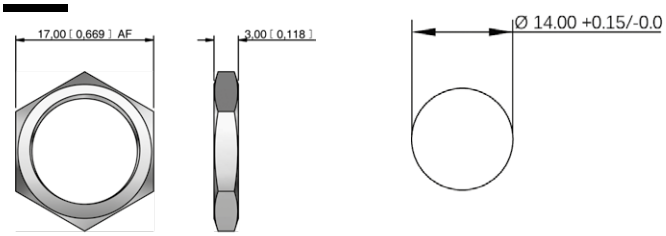
## GENERAL SPECIFICATIONS

- Max Reverse Voltage: 5 V
- Viewing Angle: 30–100° (dependant on model)
- Life Expectancy: 100,000 hours
- Torque: 75 cNm
- Maximum panel thickness 11 mm

## MATERIALS

- Plated brass bezel finished in bright chrome, black or satin grey and moulded polycarbonate rear body

## MOUNTING




The company reserves the right to change specifications without notice.

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

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## ELECTRICAL SPECIFICATIONS

STANDARD LED INTENSITY

| LED COMPONENT SPECIFICATIONS | | | |
|---|---|---|---|
| | Prominent and Recessed | Flush | Forward Voltage |
| HE Red | 80 mcd | 10 mcd | 2.0 V |
| Green | 60 mcd | 5 mcd | 2.2 V |
| Yellow | 50 mcd | 4 mcd | 2.1 V |
| Blue | 540 mcd | 100 mcd | 3.3 V |
| White | 1000 mcd | 150 mcd | 3.3 V |
| Orange | 80 mcd | 200 mcd | 2.2 V |
| Bi-color (Typical) (Red/Green) | 15/15 mcd | 14/10 mcd | 2.0V/2.2 V |
| Tri-color (Typical) (Red/Green/Yellow) | 60/50/50mcd | 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 | | | |
|---|---|---|---|
| | Prominent and Recessed | Flush | Forward Voltage |
| HE Red | 17,000 mcd | 2,000 mcd | 2.2 V |
| Green | 11,000 mcd | 680 mcd | 3.3 V |
| Yellow | 4,000 mcd | 350 mcd | 2.0 V |
| Blue | 2,500mcd | 250 mcd | 3.3 V |
| White | 4,400 mcd | 250 mcd | 3.3 V |
| Orange | 2,800 mcd | 300 mcd | 2.2 V |

HYPER BRIGHT LED INTENSITY

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

RGB LED INTENSITY

| ITEM | SYMBOL | CONDITION | TYP. |
|---|---|---|---|
| DC Forward Voltage | $V_F$(R) | IF=20 mA | 2.1 |
| | $V_F$(B/G) | IF=20 mA | 2.1 |
| Luminous Intensity | Iv (Red) | | 220 mdc |
| | Iv (Green) | | 500 mdc |
| | Iv (Blue) | | 100 mdc |

| Voltage | Operating Voltage (Min to Max) | Operating Current (Typical All Types) |
|---|---|---|
| 02 (No Resistor) | 1.8 to 3.3 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 |
| 110 VAC | 99 to 121 VAC | 6 mA |
| 220 VAC | 207 to 235 VAC | 3 mA |

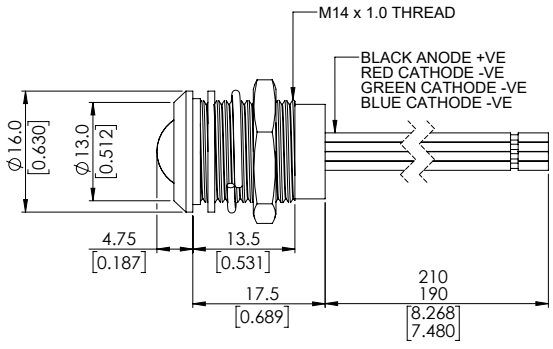
* Customer to supply resistor for desired operating current.

ADDITIONNAL INFORMATION ON LED COMPONENTS

- The operating voltage must not be exceeded by more that 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.

## CONNECTIONS

REAR EPOXY WIRES FOR RGB OPTION



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## BUILD YOUR PART NUMBER

Q

### SERIES

### MOUNTING HOLE

| | |
|---|---|
| 14 | Ø14mm |

### BEZEL STYLE

| | |
|---|---|
| P | Prominent |
| R | Recessed |
| F | Flush |

### TERMINALS

| | |
|---|---|
| 1 | Solder Lug/ Fastons (2.8 x 0.8) |
| 2 | Pins |
| 3 | Wires |
| 4 | Rear epoxy Pins |
| 5 | Rear epoxy Wires |
| 6 | Short body Pins |
| 7 | Short body Wires |

### BEZEL FINISH

ANODIZED FLUSH

| | |
|---|---|
| AR | Red |
| AG | Green |
| AY | Yellow |
| AB | Blue |
| AN | Black |

OTHERS

| | |
|---|---|
| C | Bright Chrome |
| B | Black |
| G | Satin Grey |

### TYPE OF ILLUMINATION

| | |
|---|---|
| XX | Fixed Light |
| KK | Flashing Light (12V – 28VDC) |
| YY | Bi-color |
| ZZ | Tri-color |

| | |
|---|---|
| R | Red |
| G | Green |
| Y | Yellow |
| B | Blue |
| W | White |
| O | Orange |
| HR | Hyper Bright Red |

### LED COLOR

| | |
|---|---|
| HG | Hyper Bright Green |
| HY | Hyper Bright Yellow |
| HO | Hyper Bright Orange |
| SR | Super Bright Red |
| SG | Super Bright Green |
| SY | Super Bright Yellow |
| SB | Super Bright Blue |
| SW | Super Bright White |
| RG | Red/Green |
| RY | Red/Yellow |
| GY | Green/Yellow |
| RYG | Red/Yellow/ Green |
| RGB | Red/Green/ Blue* |

* Terminals option 5 and common anode only

### VOLTAGE

| | |
|---|---|
| 02 | no resistor |
| 06 | 6 VDC |
| 12 | 12 VDC |
| 12A | 12 VAC/DC |
| 24 | 24 VDC |
| 24A | 24 VAC/DC |
| 28 | 28 VDC |
| 28A | 28 VAC/DC |
| 110 | 110 VAC |
| 220 | 220 VAC |

### SEALING

| | |
|---|---|
| (Blank) | Unsealed |
| E | IP67 |

| | |
|---|---|
| (Blank) | Common cathode |
| -CA | Common anode |

## ABOUT THIS SERIES

**Notice:** please note that not all combinations of above numbers are available.

- Gold faston terminal denotes anode (+), silver terminal denotes cathode (-)
- Standard wire length is 200 mm, 22 AWG UL1061, red wire denotes anode (+), black wire denotes cathode (-) for other wire lengths consult APEM
- For LEDs with alternative voltages and mutlit-voltage options consult APEM
- 110 VAC and 220 VAC, short body terminal options, 5, 6 and 7 please consult the factory
- 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 28 VDC
- 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 28 VDC
- 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
- We recommend using Hyperbright or Superbright LEDs for use at 110 VAC and 220 VAC

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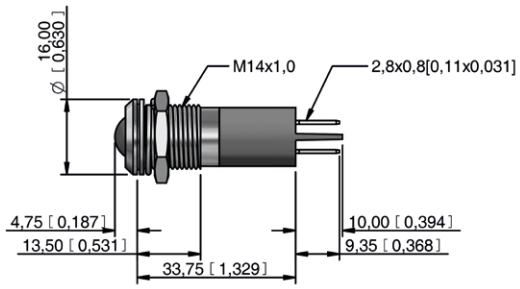
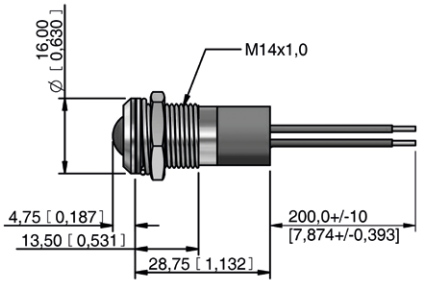
## PROMINENT BEZEL

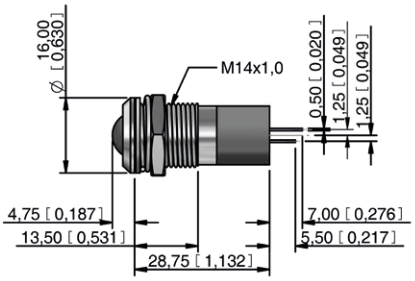
## SOLDER LUG/FASTON



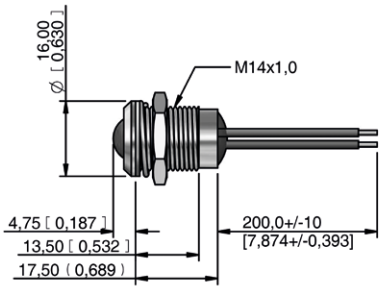

## WIRES



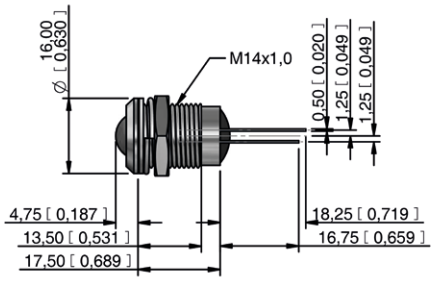

## PINS



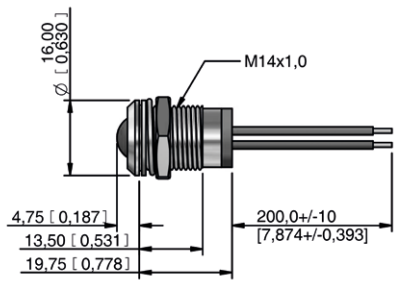

## REAR EPOXY WIRES



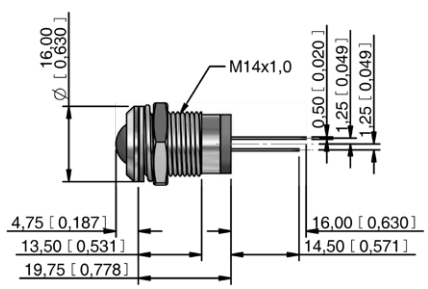

## REAR EPOXY PINS




## SHORT BODY WIRES




## SHORT BODY PINS



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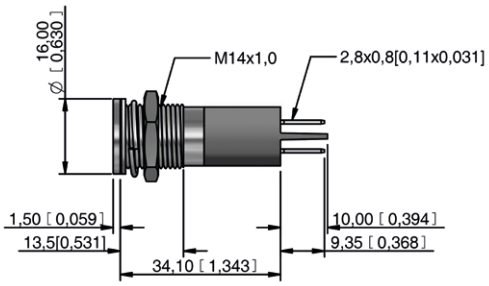
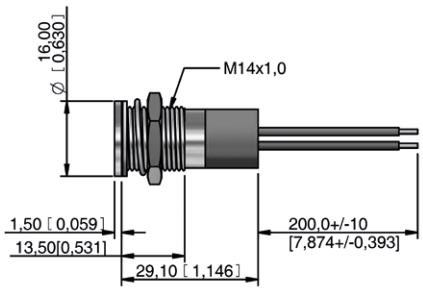
## FLUSH BEZEL

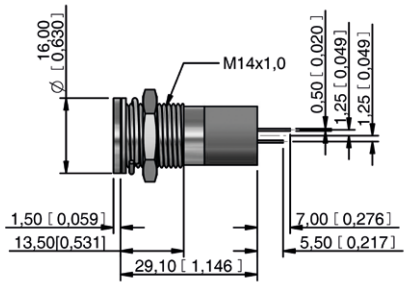
## SOLDER LUG/FASTON




## WIRES




## PINS

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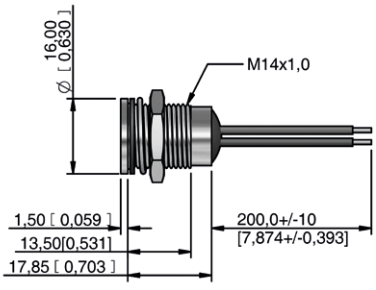


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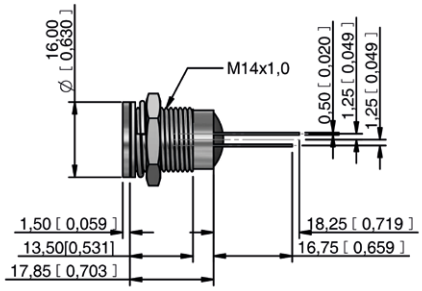
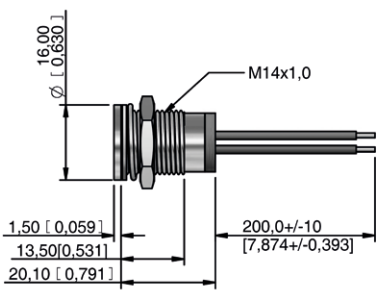
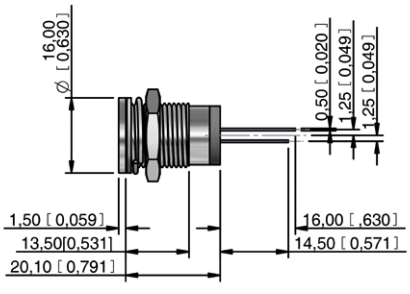



## SHORT BODY WIRES




## SHORT BODY PINS



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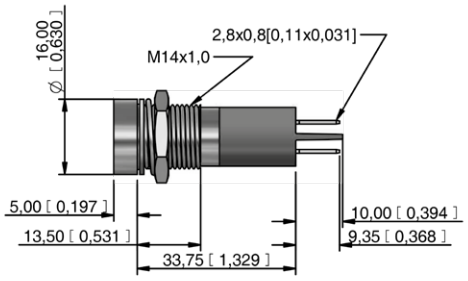
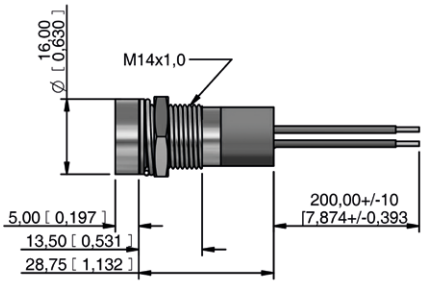
## RECESSED BEZEL

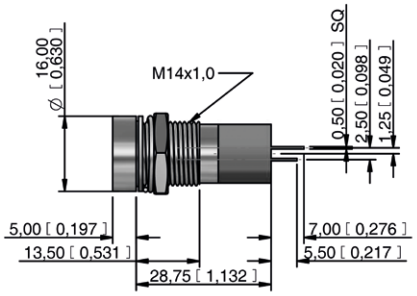
## SOLDER LUG/FASTON




## WIRES




## PINS

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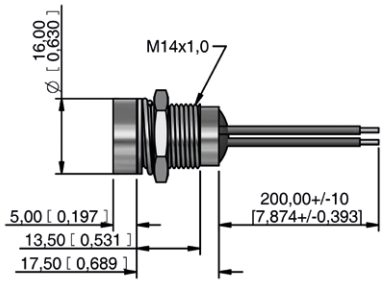


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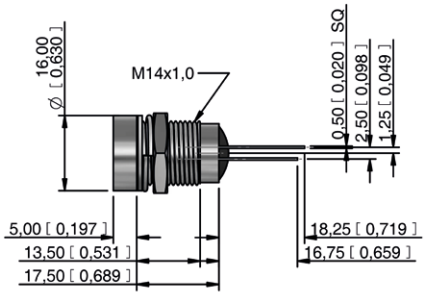
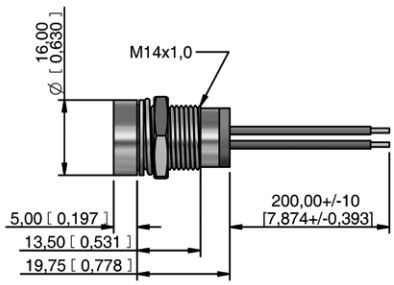



## SHORT BODY WIRES

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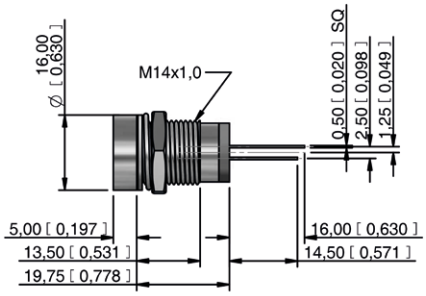

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## CUSTOM ENGRAVING

Some common codes are listed above, for your custom requirements please contact APEM.
Unless specified standard engraving with white infill will be supplied.
Suffix the part number with legend code :

| | | | | | | |
|---|---|---|---|---|---|---|
| High beam **-0AJ** | Low beam **-097** | Rear fog **-027** | Front fog **-026** | Windscreen wiper **-021** | Windscreen washer **-022** | Ventilator fan **-023** |
| Turn Signal **-0AH** | Side lights **-098** | Horn **-041** | Hazard warning **-013** | Heating **-018** | Brake test **-0BU** | Arrow **-0K6** |
| Battery **-0AG** | Oil can **-0GP** | Windscreen heating **-020** | ABS **-086** | Engine coil **-0EL** | Seat belt **-0SB** | USB connection **-0UB** |
| Steam **-0ST** | ECU **-0EU** | Side step **-0AD** | Air con **-012** | Engine **-040** | Boot/Trunk Release **-0BR** | |

## CABLE LENGTH AND CONNECTOR

For custom cable length and connectors contact APEM.