

# Q22 series

Ø22 mm panel mount LED indicators



## DISTINCTIVE FEATURES

16.75 mm colored diffused epoxy lens or 16.75 mm super bright LEDs

Secret until lit polycarbonate decals or custom engraving  
(2.8 x 0.8) solder lug/faston terminals, pins or (200 mm long)  
wire terminations

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 12 mm (Prominent), 10 mm (Flush)

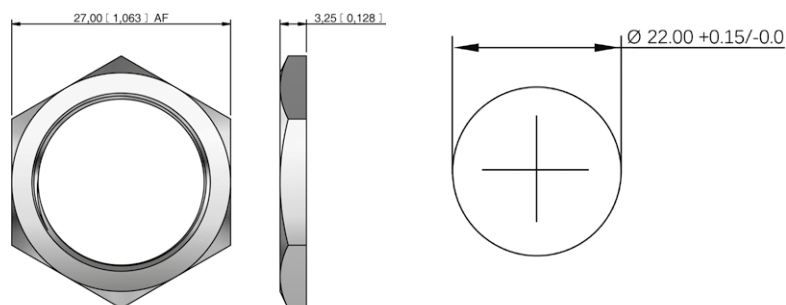


## MATERIALS

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



## MOUNTING



M22 x 1.0 THREAD

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                                 | 82 mcd                 | 70 mcd       | 5.7 V             |
| Green                                  | 95 mcd                 | 66 mcd       | 6.0 V             |
| Yellow                                 | 60 mcd                 | 59 mcd       | 5.9 V             |
| Blue                                   | 120 mcd                | 101 mcd      | 9.9 V             |
| White                                  | 1,000 mcd              | 150 mcd      | 3.3 V             |
| Bi-color (Typical) (Red/Green)         | 80/50 mcd              | 80/50 mcd    | 2.0 V/2.2 V       |
| Tri-color (Typical) (Red/Green/Yellow) | 80/50/50 mcd           | 80/50/50 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                       | 465 mcd                | 800 mcd   | 5.7 V           |
| Green                        | 245 mcd                | 980 mcd   | 9.0 V           |
| Yellow                       | 365 mcd                | 1,250 mcd | 6.0 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  | 3.1     |
| Luminous Intensity | Iv (Red)   |           | 220 mdc |
|                    | Iv (Green) |           | 500 mdc |
|                    | Iv (Blue)  |           | 100 mdc |

| Voltage          | Operating Voltage | Operating Current   |
|------------------|-------------------|---------------------|
|                  | (Min to Max)      | (Typical All Types) |
| 05 (No Resistor) | 3.3 to 9.9 VDC    | 40 mA max*          |
| 12 VDC           | 10.8 to 13.2 VDC  | 40 mA               |
| 24 VDC           | 21.6 to 26.4 VDC  | 40 mA               |
| 28 VDC           | 25.2 to 30.8 VDC  | 40 mA               |
| 110 VAC          | 99 to 121 VAC     | 5 mA                |
| 220 VAC          | 207 to 235 VAC    | 3 mA                |

\* Customer to supply resistor for desired operating current.

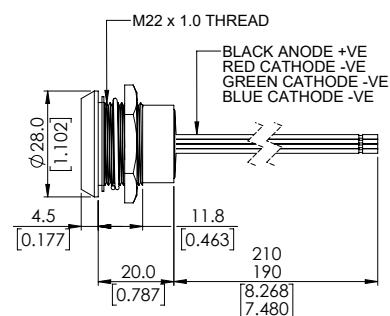
### ADDITIONAL INFORMATION ON LED COMPONENTS

- 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
- The tri-color led has red and green leds when both are connected yellow is produced
- 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.



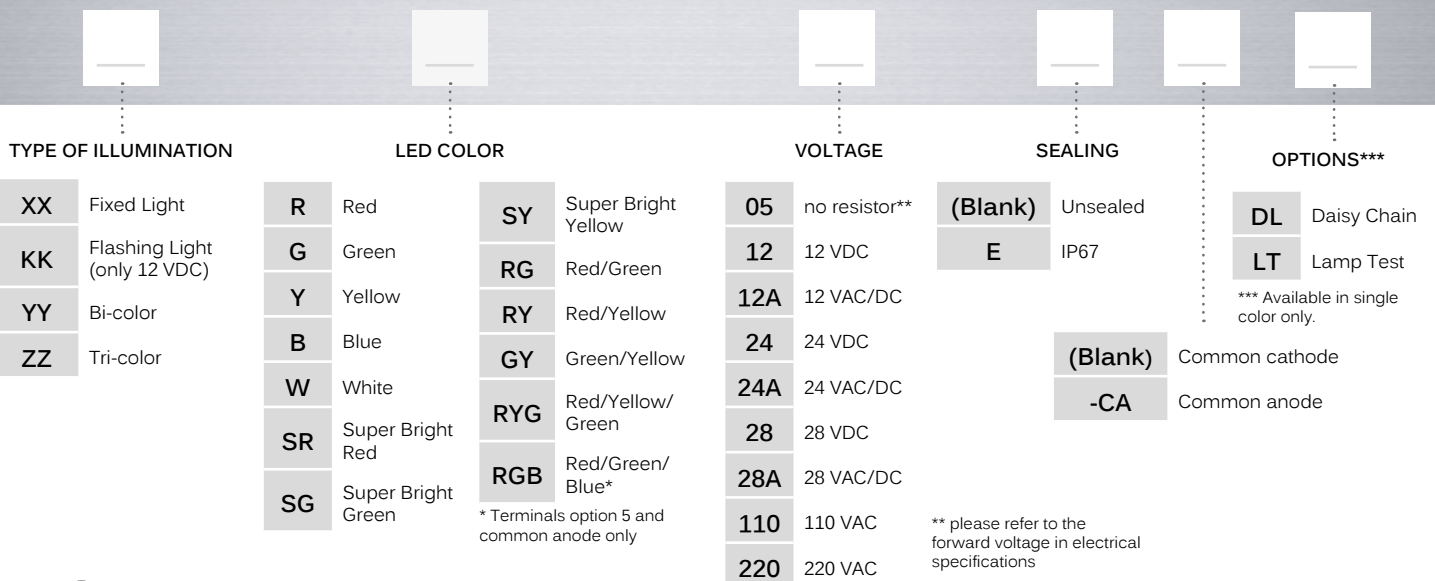
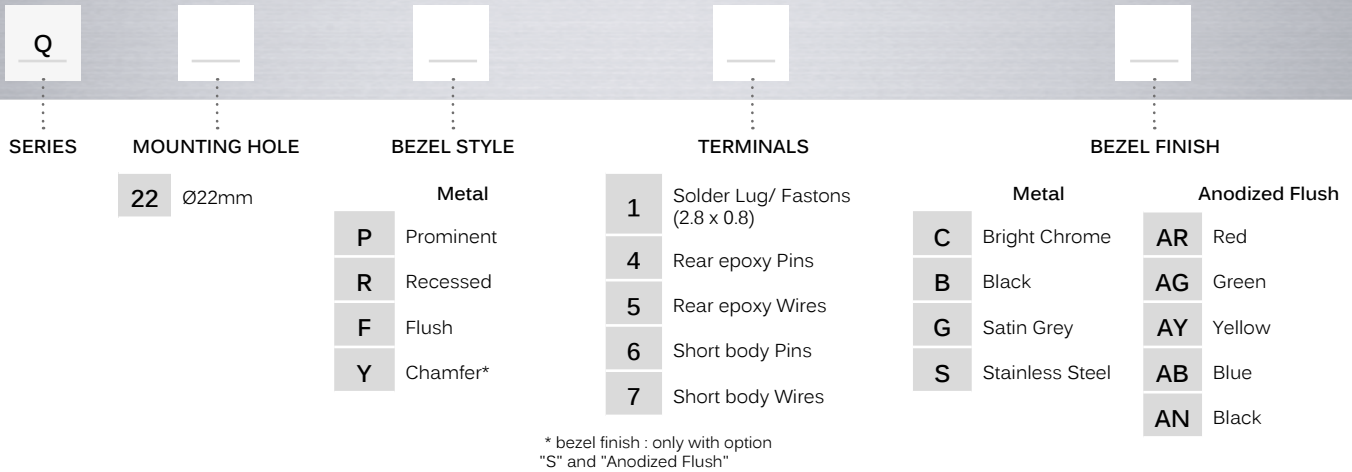
## CONNECTIONS

### REAR EPOXY WIRES FOR RGB OPTION





### BUILD YOUR PART NUMBER



### 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 UL1007, red wire denotes anode (+), black wire denotes cathode (-) for other wire lengths consult APEM
  - For leds with alternative voltages please consult Apem
  - 110 VAC and 220 VAC, only available with terminal options 1, 3 and 5
  - Take care when soldering to the faston terminals (recommended solder temperature 300 °C - 3 sec)
  - Pin and Wire options are epoxy sealed at the rear of the bezels, termination options 4 and 5
  - 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
  - Daisy chaining option - has negative (Cathode) terminals linked (3 x Fastons), solder lugs only
  - Lamp test facility option 4 x solder lug/Faston only
  - We recommend using superbright leds for use at 110 VAC and 220 VAC

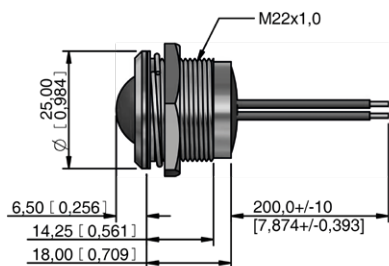
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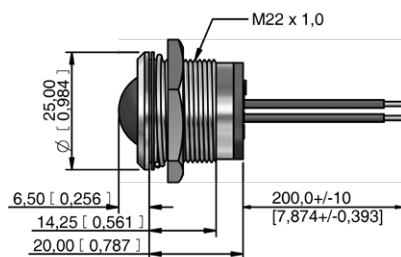
## PROMINENT BEZEL



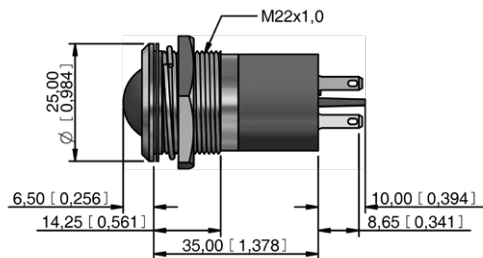
## REAR EPOXY WIRES



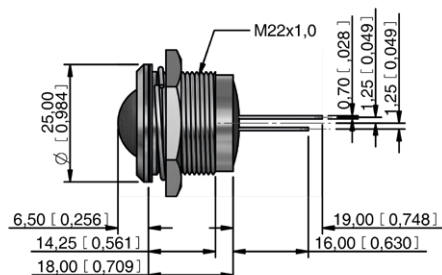
## SHORT BODY WIRES



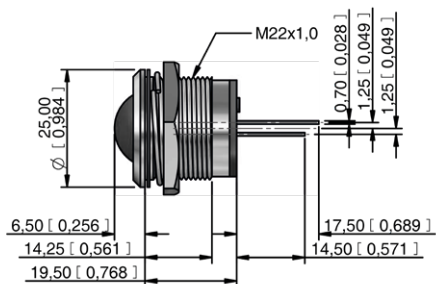
## SOLDER LUG/FASTON



## REAR EPOXY PINS



## SHORT BODY PINS



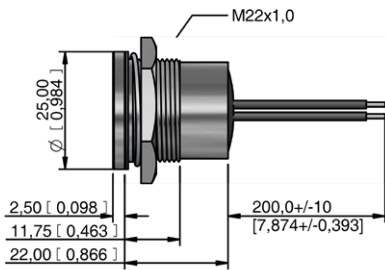
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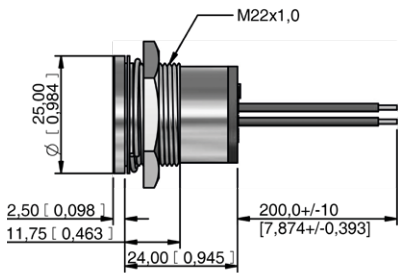
## FLUSH BEZEL



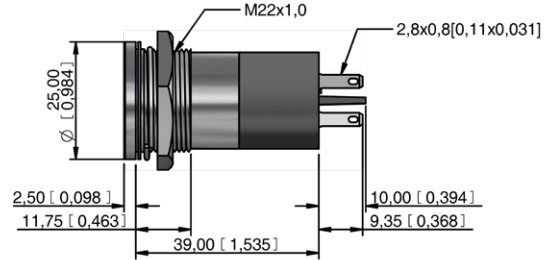
## REAR EPOXY WIRES



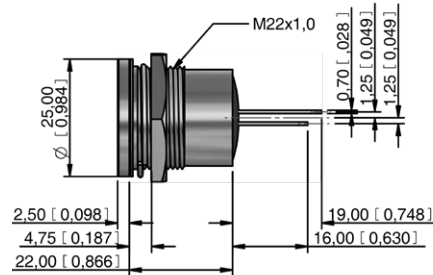
## SHORT BODY WIRES



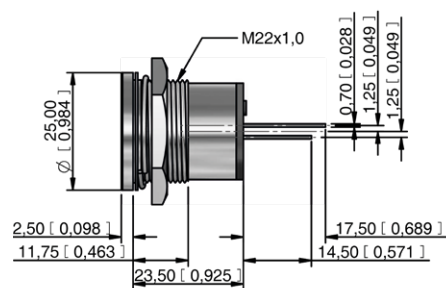
## SOLDER LUG/FASTON



## REAR EPOXY PINS



## SHORT BODY PINS



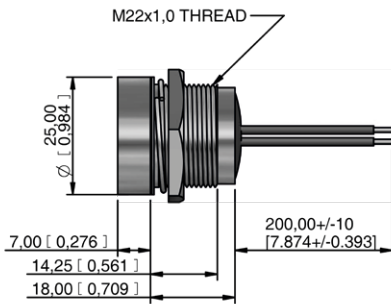
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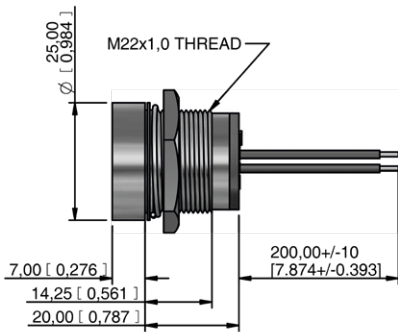
## RECESSED BEZEL



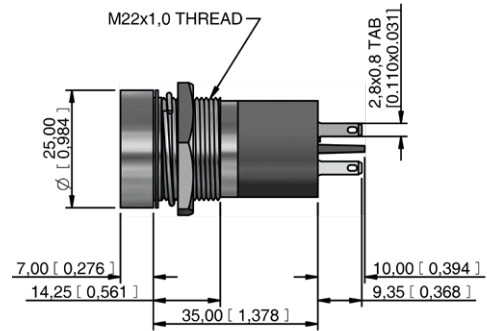
## REAR EPOXY WIRES



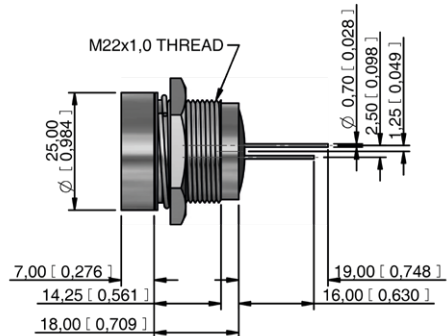
## SHORT BODY WIRES



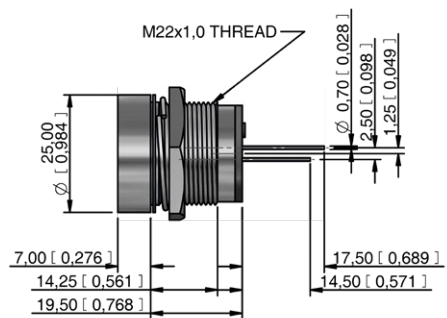
## SOLDER LUG/FASTON



## PINS



## REAR EPOXY PINS



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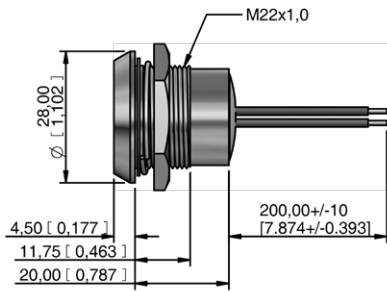
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## CHAMFER BEZEL

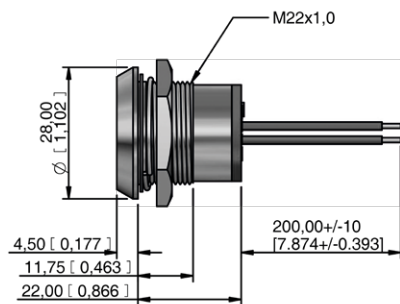
(316L STAINLESS STEEL AND ANODIZED ALUMINIUM ONLY)



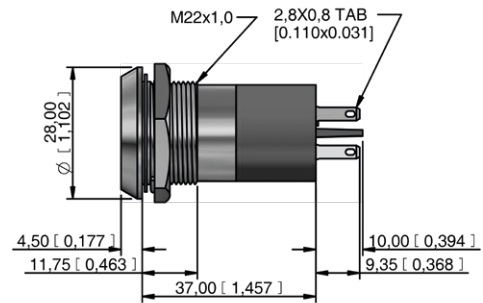
## REAR EPOXY WIRES



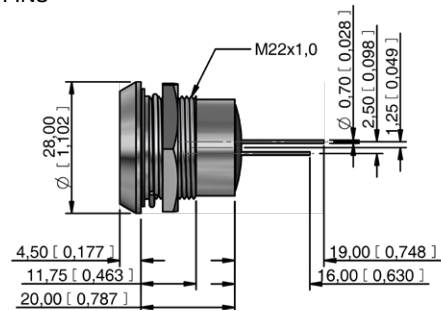
## SHORT BODY WIRES



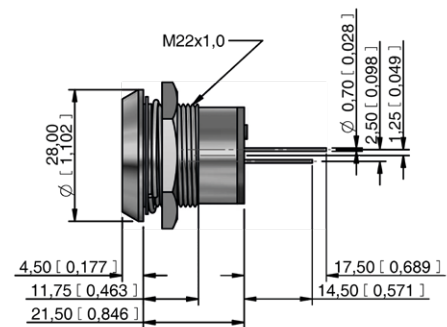
## SOLDER LUG/FASTON



## PINS



## REAR EPOXY PINS
























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





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## SECRET UNTIL LIT POLYCARBONATE INSERTS

Some common codes are listed above, for your custom requirements please contact APEM. Please note Secret until lit inserts only available with flush metal bezel (Option F)  
Suffix the part number with legend code :

|   |  |   |  |   |  |   |
|---|--|---|--|---|--|---|
| <br>Turn signal<br>-3AH          | <br>Hazard<br>-313    | <br>Oil can<br>-3GP                          | <br>Battery<br>-3AG     | <br>Rear fog<br>-327  | <br>Low beam<br>-397      | <br>Brake test<br>-3BU   |
| <br>Arrow<br>-3K6                | <br>High beam<br>-3AJ | <br>Park brake<br>-3PB                       | <br>Side lights<br>-398 | <br>Seat belt<br>-3SB | <br>Type pressure<br>-3TP | <br>Check engine<br>-3CE |
| <br>Engine temperature<br>-3EC | <br>Fuel<br>-3FP    | <br>BRAKE FAILURE<br>Brake failure<br>-3BF |  Off                  |  On                |  |   |



## CABLE LENGTH AND CONNECTOR



For custom cable length and connectors contact APEM.