

# Q SERIES Ø22mm (.866") Panel Mount LED Indicators

## Distinctive features and specification

Q22\_VOY1609R3US

### Features

- 22mm panel mounting LED indicator
- 18mm colored diffused epoxy lens or 18mm super bright LEDs
- Plated brass bezel finished in bright chrome, black chrome or satin grey and moulded polycarbonate rear body
- Chamfer bezel option in 316L stainless steel and anodized aluminum finish only
- Prominent, Recess and flush bezel styles
- Custom engraving & secret until lit options available
- (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<br>(Min to Max) | Operating Current<br>(Typical All Types) |
|------------------|-----------------------------------|------------------------------------------|
| 05 (No Resistor) | 3.3 to 9.9VDC                     | 40mA max*                                |
| 12VDC            | 10.8 to 13.2VDC                   | 40mA                                     |
| 24VDC            | 21.6 to 26.4VDC                   | 40mA                                     |
| 28VDC            | 25.2 to 30.8VDC                   | 40mA                                     |
| 110VAC           | 99 to 121VAC                      | 5mA                                      |
| 220VAC           | 207 to 253VAC                     | 3mA                                      |

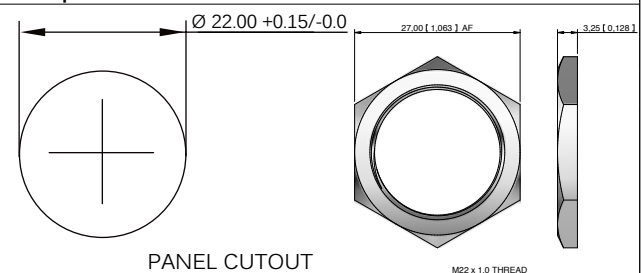
**Max Reverse Voltage:** 5V

**Viewing Angle:** 30–100° (dependant on model)

**Life Expectancy:** 100,000 hours

**Temperature Range:** –40 to +85°C (operating & storage)

**Torque:** 100cNm



| Standard LED Intensity                 | Prominent and Recessed | Flush       | Forward Voltage |
|----------------------------------------|------------------------|-------------|-----------------|
| HE Red                                 | 82mcd                  | 70mcd       | 5.7V            |
| Green                                  | 95mcd                  | 66mcd       | 6.0V            |
| Yellow                                 | 60mcd                  | 59mcd       | 5.9V            |
| Blue                                   | 120mcd                 | 101mcd      | 9.9V            |
| White                                  | 1,000mcd               | 150mcd      | 3.3V            |
| Bi-color (Typical) (Red/Green)         | 80/50mcd               | 80/50mcd    | 2.0V/2.2V       |
| Tri-color (Typical) (Red/Green/Yellow) | 80/50/50mcd            | 80/50/50mcd | 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 (Diffused) | Prominent and Recessed | Flush    | Forward Voltage |
|-----------------------------|------------------------|----------|-----------------|
| HE Red                      | 465mcd                 | 800mcd   | 5.7V            |
| Green                       | 245mcd                 | 980mcd   | 9.0V            |
| Yellow                      | 365mcd                 | 1,250mcd | 6.0V            |

Luminous intensity will be reduced with lower operating current.

Note: The operating voltage must not be exceeded by more than 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.

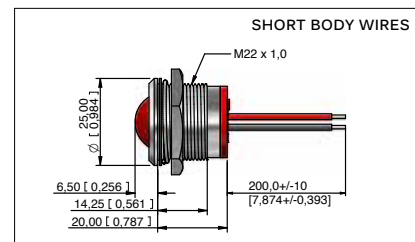
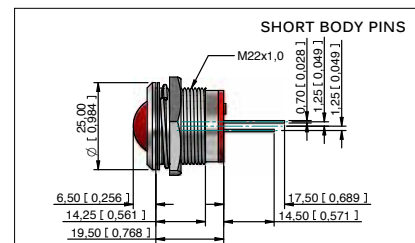
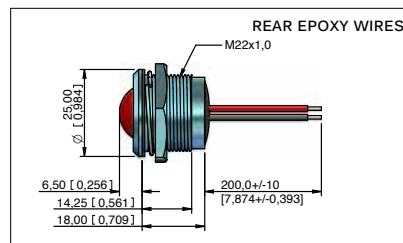
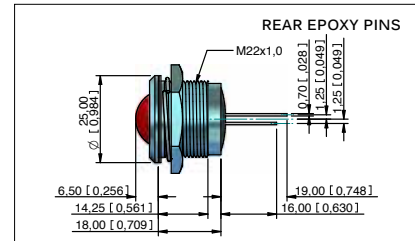
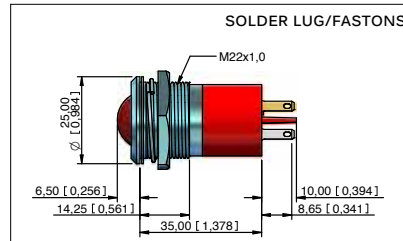
Luminous intensities and color shades of white LEDs may vary within a batch.

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

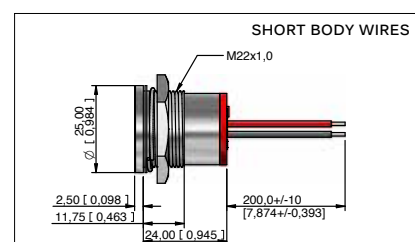
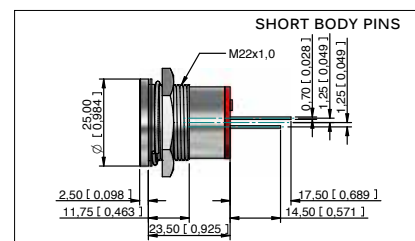
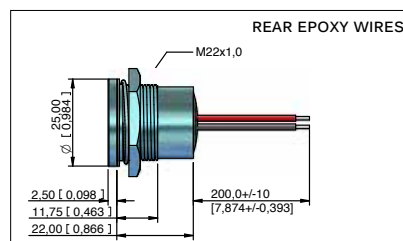
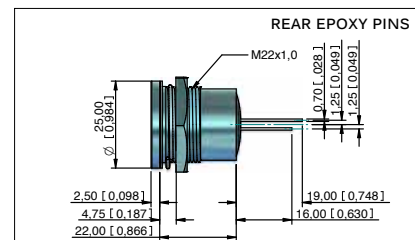
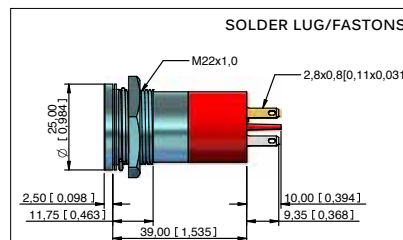
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## Technical Drawings

### PROMINENT BEZEL



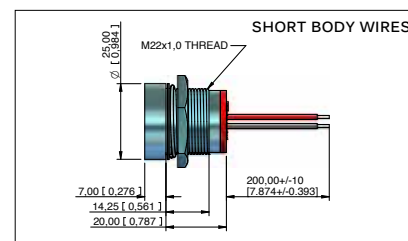
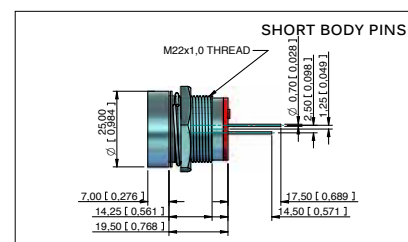
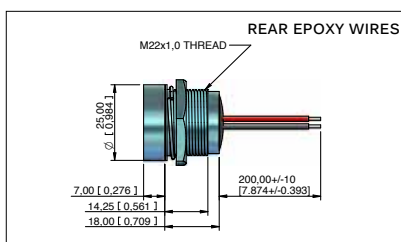
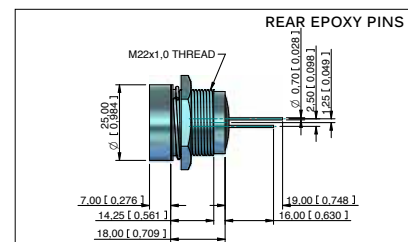
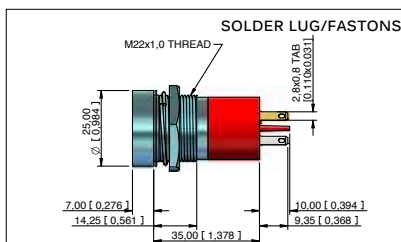
### FLUSH BEZEL



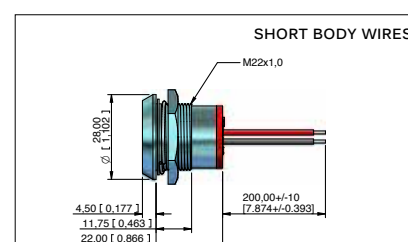
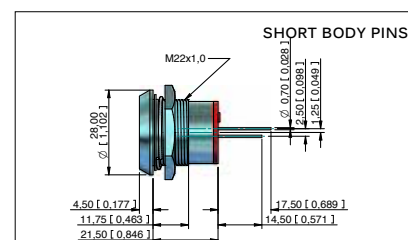
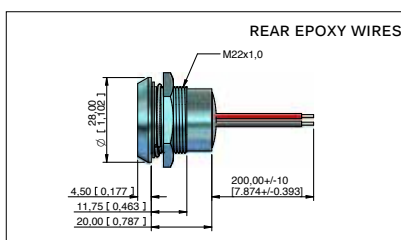
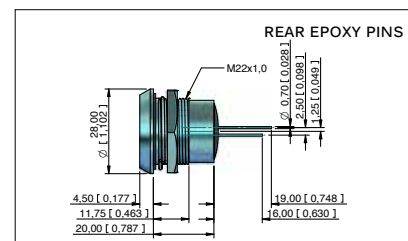
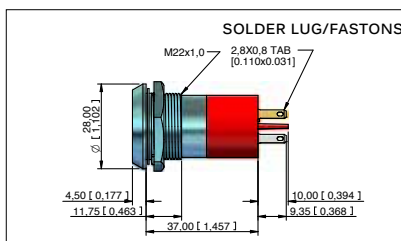
# Q SERIES Ø22mm (.866") Panel Mount LED Indicators

## Technical Drawings

### RECESSED BEZEL



### CHAMFER BEZEL (316L Stainless Steel and aluminium only)



Designed to match the bezel style of APEM's range of Ø22mm panel mounting Piezo pushbutton switches PBAR, PBAR6, PBARY and PBARZ. Search on [apem.com](http://apem.com) for detail

Q SERIES  Ø22mm (.866") Panel Mount LED Indicators

Custom options

Secret Until Lit Polycarbonate Inserts



Suffix the part number with legend code (see example on page 5)

| Code | Symbol | Description | Code | Symbol | Description        |
|------|--------|-------------|------|--------|--------------------|
| -3AH |        | Turn Signal | -3PB |        | Park Brake         |
| -313 |        | Hazard      | -398 |        | Side Lights        |
| -3GP |        | Oil can     | -3SB |        | Seat Belt          |
| -3AG |        | Battery     | -3TP |        | Tyre Pressure      |
| -327 |        | Rear fog    | -3CE |        | Check Engine       |
| -397 |        | Low beam    | -3EC |        | Engine Temperature |
| -3BU |        | Brake test  | -3FP |        | Fuel               |
| -3K6 |        | Arrow       | -3BF |        | Brake Failure      |
| -3AJ |        | High beam   |      |        |                    |

Some common codes are listed above, for your custom requirements please contact APEM.

# Q SERIES Ø22mm (.866") Panel Mount LED Indicators

Custom Options

Custom Marking



Cable length & connector



For custom cable length and connectors please contact APEM

## CUSTOM ENGRAVING

Suffix the part number with legend code (see example on page 5)

| Code | Symbol | Description       |
|------|--------|-------------------|
| -0AJ |        | High Beam         |
| -097 |        | Low Beam          |
| -027 |        | Rear Fog          |
| -026 |        | Front Fog         |
| -021 |        | Windscreen Wiper  |
| -022 |        | Windscreen Washer |
| -023 |        | Ventilator Fan    |
| -0AH |        | Turn Signal       |
| -098 |        | Side Lights       |

| Code | Symbol | Description        |
|------|--------|--------------------|
| -041 |        | Horn               |
| -013 |        | Hazard Warning     |
| -018 |        | Heating            |
| -0BU |        | Brake Test         |
| -0K6 |        | Arrow              |
| -0AG |        | Battery            |
| -0GP |        | Oil Can            |
| -020 |        | Windscreen Heating |
| -086 |        | ABS                |

| Code | Symbol | Description        |
|------|--------|--------------------|
| -0BD |        | Engine Coil        |
| -0SB |        | Seat Belt          |
| -0UB |        | USB Connection     |
| -0ST |        | Steam              |
| -0EU |        | ECU                |
| -0AD |        | Side Step          |
| -012 |        | Air Con            |
| -040 |        | Engine             |
| -0BR |        | Boot/Trunk Release |

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

# Q SERIES Ø22mm (.866") Panel Mount LED Indicators

## Overview

### STANDARD OPTIONS

The Q22 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.

| Q      | 22            | F                                                                                                                                     | 1                                                                                                                                | BP                                                                                                                                                                                                     | XX                                                                                      | W                                                                                                                                                                                                                                           | 28                                                                                                                                                | E                              | DL                                 |
|--------|---------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------|
| SERIES | MOUNTING HOLE | BEZEL STYLE                                                                                                                           | TERMINALS                                                                                                                        | BEZEL FINISH                                                                                                                                                                                           | TYPE OF ILLUMINATION                                                                    | LED COLOR                                                                                                                                                                                                                                   | VOLTAGE                                                                                                                                           | SEALING                        | OPTIONS                            |
| Q      | 22 = Ø22mm    | Metal<br>P = Prominent<br>R = Recessed<br>F = Flush<br>Y = Chamfer (Steel & Anodized only)<br>Plastic<br>PP = Prominent<br>FP = Flush | 1 = Solder Lug/Fastons (2.8 x 0.8)<br>4 = Rear epoxy Pins<br>5 = Rear epoxy Wires<br>6 = Short body Pins<br>7 = Short body Wires | Metal<br>C = Bright Chrome<br>B = Black Chrome<br>G = Satin Grey<br>S = Stainless Steel<br>Plastic<br>BP = Black<br>Anodized Flush<br>AR = Red<br>AG = Green<br>AY = Yellow<br>AB = Blue<br>AN = Black | XX = Fixed Light<br>KK = Flashing Light (only 12VDC)<br>YY = Bi-color<br>ZZ = Tri-color | R = Red<br>G = Green<br>Y = Yellow<br>B = Blue<br>W = White<br><br>SR = Super bright Red<br>SG = Super bright Green<br>SY = Super bright Yellow<br><br>RG = Red/Green<br>RY = Red/Yellow<br>GY = Green/Yellow<br><br>RYG = Red/Yellow/Green | 05 = no resistor*<br>12 = 12VDC<br>12A = 12VAC/DC<br>24 = 24VDC<br>24A = 24VAC/DC<br>28 = 28VDC<br>28A = 28VAC/DC<br>110 = 110VAC<br>220 = 220VAC | (Blank) = Unsealed<br>E = IP67 | DL = Daisy Chain<br>LT = Lamp Test |

#### Example Q22F5CXXG12E-0AG

Ø22mm, flush bezel, rear epoxy wire terminals, bright chrome finish, fixed light, green, 12VDC LED, IP67 panel sealed, Battery symbol marking



- 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)
- Pin and Wire options are epoxy sealed at the rear of the bezels, termination options 4 and 5
- 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: Prominent = 12mm, Flush = 10mm
- Plastic bezel material: ABS
- 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 super bright LEDs for use at 110 and 220VAC

\* = For resistorless versions (05) please refer to the forward voltage on page 1

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Authorized Distributor

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