

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

Distinctive features and specification

VOYC1603R2US

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
- Black ABS Plastic bezel option
- Prominent and flush bezel styles
- Custom engraving 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 (Min to Max)	Operating Current (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

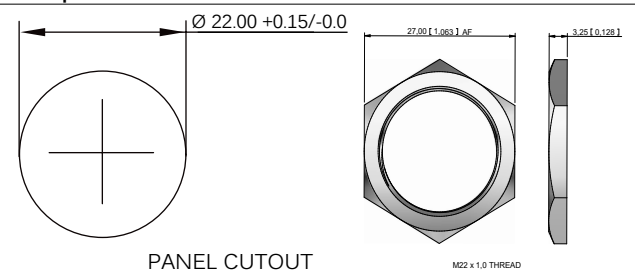
Max Reverse Voltage: 5V

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	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	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.

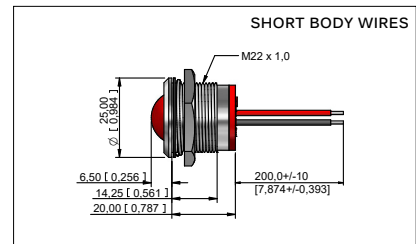
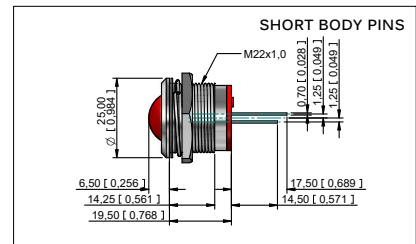
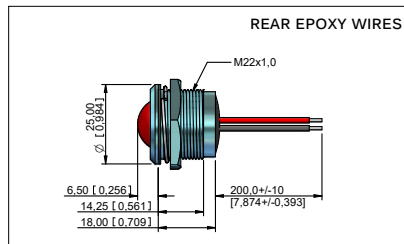
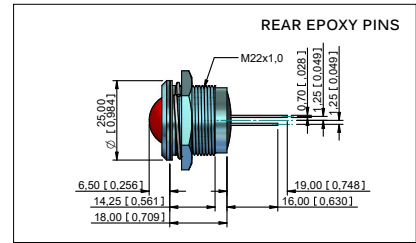
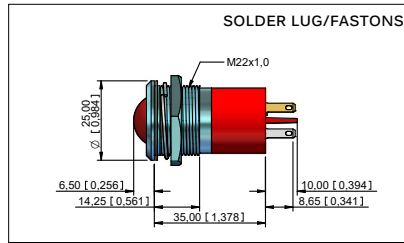
Luminous intensity is measured at 20mA on a discrete LED unless otherwise stated.

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

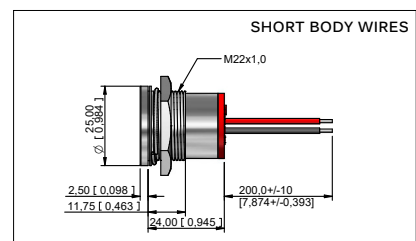
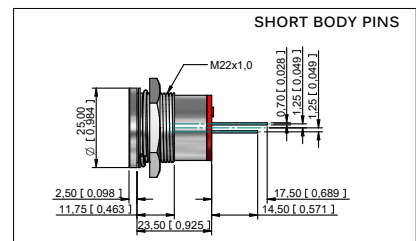
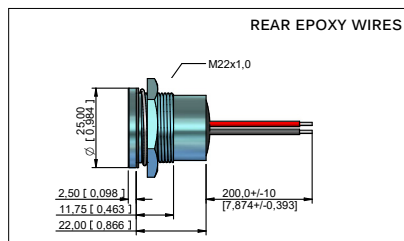
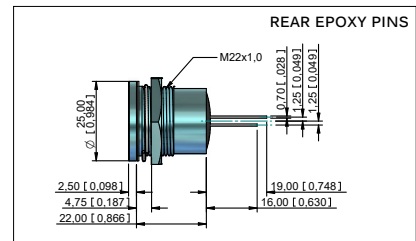
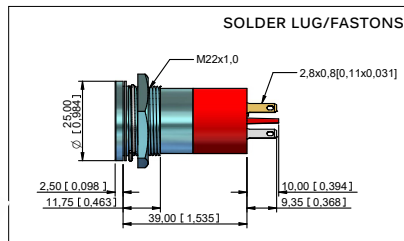
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Technical Drawings

PROMINENT BEZEL



FLUSH BEZEL



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Custom Options

Custom Engraving



Cable length & connector



For custom cable length and connectors please contact APEM

Suffix the part number with legend code (see example on page 4)

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

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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 P = Prominent F = Flush Plastic PP = Prominent FP = Flush	1 = Solder Lug/Fastons (2.8 x 0.8) 4 = Rear epoxy Pins 5 = Rear epoxy Wires 6 = Short body Pins 7 = Short body Wires	Metal C = Bright Chrome B = Black Chrome G = Satin Grey Plastic BP = Black Anodised Flush AR = Red AG = Green AY = Yellow AB = Blue AN = Black	XX = Fixed Light KK = Flashing Light (only 12VDC) YY = Bi-color ZZ = Tri-color	R = Red G = Green Y = Yellow B = Blue W = White SR = Super bright Red SG = Super bright Green SY = Super bright Yellow RG = Red/Green RY = Red/Yellow GY = Green/Yellow RYG = Red/Yellow/Green	05 = no resistor* 12 = 12VDC 12A = 12VAC/DC 24 = 24VDC 24A = 24VAC/DC 28 = 28VDC 28A = 28VAC/DC 110 = 110VAC 220 = 220VAC	(Blank) = Unsealed E = IP67	DL = Daisy Chain 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