V P E M

Q6 series

Ø6 mm panel mount LED indicators



MD-06-17-07

DISTINCTIVE FEATURES

3 mm colored diffused epoxy lens or 3 mm water clear super bright LEDs

Prominent, recessed and flush bezel styles (2.0 x 0.5) solder lug terminals, pins or (200 mm long) wire terminations, other lengths available on request



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: 4 cNm (dependent on option)
- Maximum panel thickness 7 mm

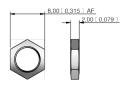


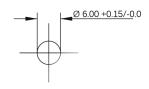
MATERIALS

 Plated brass bezel finished in bright chrome, black chrome 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 subjet to variations.





Ø6 mm panel mount LED indicators



ELECTRICAL SPECIFICATIONS

STANDARD LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	40 mcd	10 mcd	2.0 V
Green	50 mcd	12 mcd	2.2 V
Yellow	30 mcd	6 mcd	2.1 V
Blue	1,200 mcd	100 mcd	3.8 V
White	1,200 mcd	160 mcd	3.8 V
Orange	60 mcd	10 mcd	2.0 V
Bi-color (Typical) (Red/Green)	20/15 mcd	10/8 mcd	2.0 V/2.2V

Bi-color - The color is changed by reversing the polarity of the supply voltage.

SUPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	1,000 mcd	700 mcd	2.2 V
Green	1,200 mcd	2,000 mcd	3.5 V
Yellow	2,000 mcd	8,000 mcd	2.3 V
Blue	1,600mcd	200 mcd	3.3 V
White	1,200 mcd	350 mcd	3.3 V
Orange	10,000 mcd	500 mcd	2.2 V

HYPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	3,700 mcd	600 mcd	2.2 V
Green	2,000 mcd	350 mcd	3.2 V
Yellow	1,200 mcd	140 mcd	2.0 V
Orange	4,500 mcd	400 mcd	2.2 V

- 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.

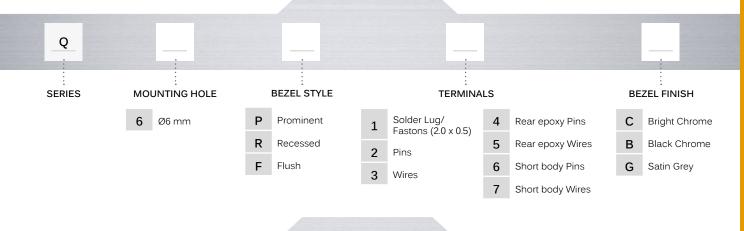
Voltage	Operating Voltage	Operating Current	
	(Min to Max)	(Typical All Types)	
02 (No Resistor)	1.8 to 3.3 VDC	20 mA max*	
6 VDC	5.4 to 6.6 VDC	20 mA	
12 VDC	10.8 to 13.2 VDC	20 mA	
24 VDC	21.6 to 26.4 VDC	20 mA	
28 VDC	25.2 to 30.8 VDC	20 mA	
* Contained to consider the decimal annualism			

^{*} Customer to supply resistor for desired operating current.

Ø6 mm panel mount LED indicators



BUILD YOUR PART NUMBER







ABOUT THIS SERIES

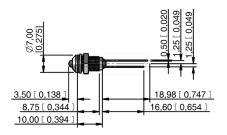
- Notice: please note that not all combinations of above numbers are available.
 - Gold faston terminal denotes anode (+), silver terminal denotes cathode (-)
 - Standard wire length is 200 mm, 24 AWG UL1061, red wire denotes anode (+), black wire denotes cathode (-) for other wire lengths consult APEM.
 - For LEDs with alternative voltages consult APEM
- Bi-color leds, by connecting the gold solder lug (+) one color is produced, by reversing the supply voltage another color is produced bi-colors are available up to 28 V in DC only.
- \bullet Take care when soldering to the faston terminals (recommended solder temperature 300 $^{\circ}\text{C}$ 3 sec)
- Short body options are only available up to 24 VDC.

Ø6 mm panel mount LED indicators

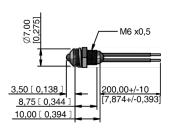
PROMINENT BEZEL



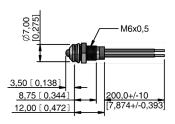
WIRES



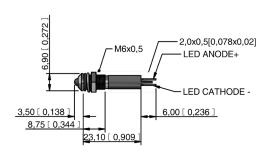
REAR EPOXY WIRES



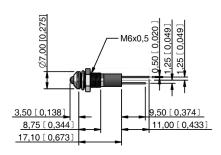
SHORT BODY WIRES



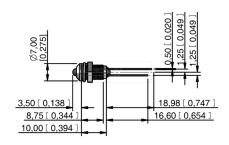
SOLDER LUG/FASTON

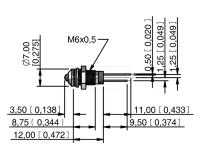


PINS



REAR EPOXY PINS





A DEM

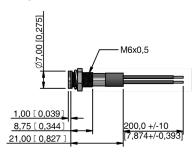
Q6 series

Ø6 mm panel mount LED indicators

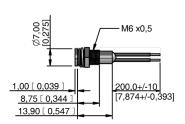
FLUSH BEZEL



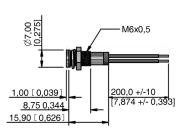
WIRES



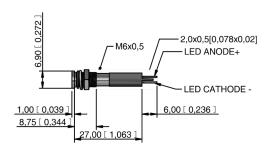
REAR EPOXY WIRES



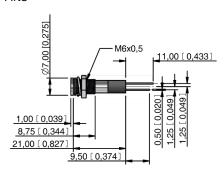
SHORT BODY WIRES



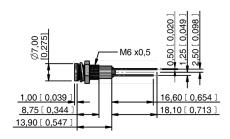
SOLDER LUG/FASTON

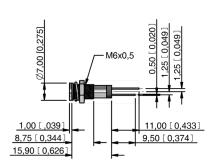


PINS



REAR EPOXY PINS



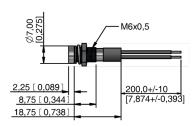


Ø6 mm panel mount LED indicators

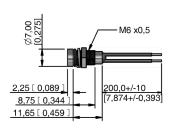
RECESSED BEZEL



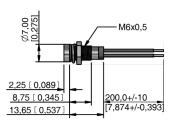
WIRES



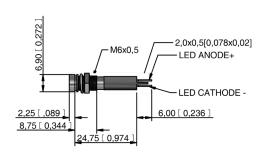
REAR EPOXY WIRES



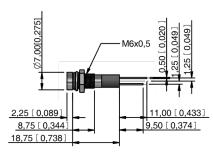
SHORT BODY WIRES



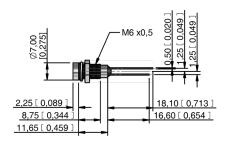
SOLDER LUG/FASTON

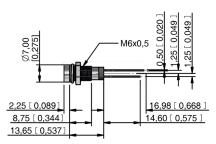


PINS



REAR EPOXY PINS





MDOBITIO

Q8 series

Ø8 mm panel mount LED indicators



DISTINCTIVE FEATURES

5mm colored diffused epoxy lens or 5mm water clear super bright LEDs

Prominent, recessed and flush bezel styles

 (2.8×0.8) solder lug/faston terminals, pins or (200mm long) wire terminations (2.0 x 0.5) solder lug/faston terminals on tri-color versions



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: 4 cNm (dependent on option)
- Maximum panel thickness 7 mm

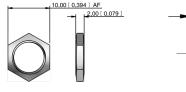


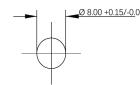
MATERIALS

• Plated brass bezel finished in bright chrome, black chrome 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.





Ø8 mm panel mount LED indicators



ELECTRICAL SPECIFICATIONS

STANDARD LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	80 mcd	8 mcd	2.0 V
Green	60 mcd	6 mcd	2.2 V
Yellow	50 mcd	6 mcd	2.1 V
Blue	1,600 mcd	50 mcd	3.3 V
White	1,600 mcd	500 mcd	3.3 V
Orange	60 mcd	110 mcd	2.2 V
Bi-color (Typical) (Red/Green)	14/30 mcd	15/10 mcd	2.0V/2.2 V
Tri-color (Typical) (Red/Green/Yellow)	60/15/13 mcd	15/10/6 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	5,000 mcd	1,300 mcd	2.2 V
Green	10,000 mcd	1,200 mcd	3.3 V
Yellow	4,000 mcd	350 mcd	2.0 V
Blue	2,200 mcd	280 mcd	3.3 V
White	2,500 mcd	950 mcd	3.3 V
Orange	4,000 mcd	500 mcd	2.2 V

HYPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	6,000 mcd	980 mcd	2.2 V
Green	1,900 mcd	300 mcd	3.3 V
Yellow	1,600 mcd	250 mcd	2.0 V
Orange	2,400 mcd	110 mcd	2.2 V

- 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.

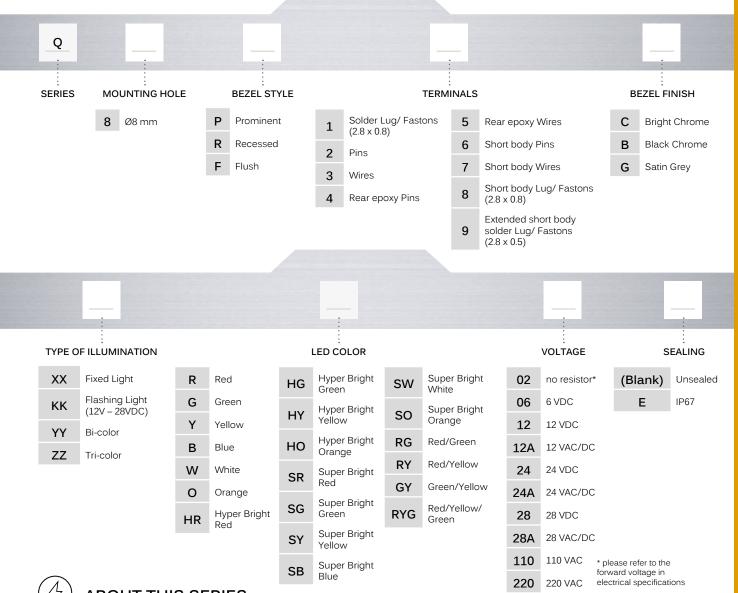
Voltage	Operating Voltage	Operating Current
	(Min to Max)	(Typical All Types)
02 (No Resistor)*	1.8 to 3.3 VDC	20 mA max
6 VDC	5.4 to 6.6 VDC	20 mA
12 VDC	10.8 to 13.2 VDC	20 mA
24 VDC	21.6 to 26.4 VDC	20 mA
28 VDC	25.2 to 30.8 VDC	20 mA
110 VAC	99 to 121 VAC	6 mA
220 VAC	207 to 235 VAC	3 mA

* Customer to supply resistor for desired operating current.

Ø8 mm panel mount LED indicators



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, 24 AWG UL1061, red wire denotes anode (+), black wire denotes cathode (-) for other wire lengths consult APEM
 - \bullet 110 VAC and 220 VAC, only available with terminal options 1 & 3
 - 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 [AC products not available]
 - \bullet Take care when soldering to the faston terminals (recommended solder temperature 300 $^{\circ}\text{C}$ 3 sec)
 - Terminal options 2,6,7 & 9 are only available up to 28 V (DC only). Tri-color not available with terminal 9

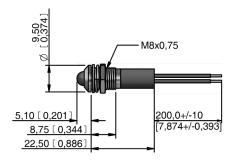
- Terminal code 8 is only available without integral resistor, see forward voltage values.
- \bullet We recommend using hyperbright or superbright leds for use at 110 VAC and 220 VAC
- Mains voltage product is not recommended for use on 3 phase appliances
- The tri-color led has red and green leds when 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

Ø8 mm panel mount LED indicators

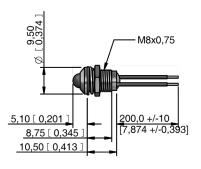
PROMINENT BEZEL



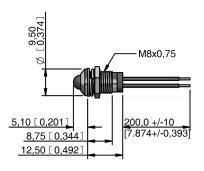
WIRES



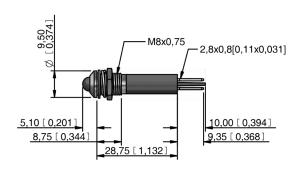
REAR EPOXY WIRES



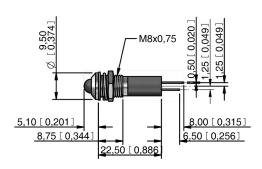
SHORT BODY WIRES



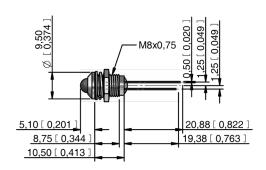
SOLDER LUG/FASTON

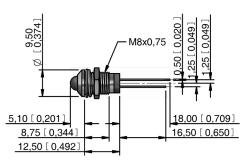


PINS



REAR EPOXY PINS





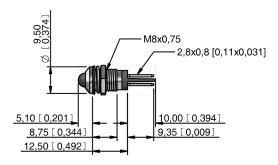
APEM

Q8 series

Ø8 mm panel mount LED indicators

PROMINENT BEZEL (CONTINUED)

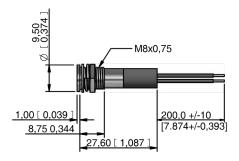
SHORT BODY SOLDER LUG/FASTONS



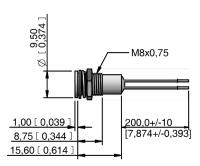
FLUSH BEZEL



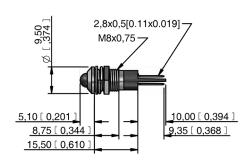
WIRES



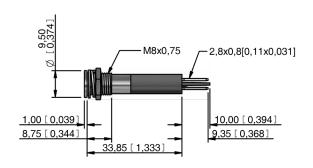
REAR EPOXY WIRES



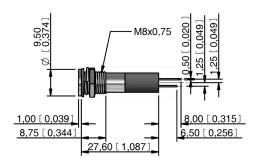
EXTENDED SHORT BODY SOLDER LUG/FASTONS



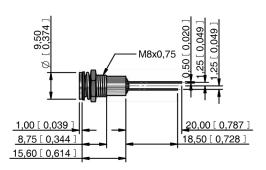
SOLDER LUG/FASTON



PINS



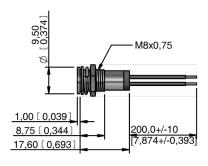
REAR EPOXY PINS



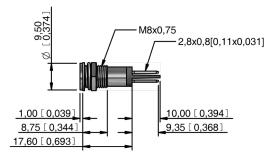
Ø8 mm panel mount LED indicators

FLUSH BEZEL (CONTINUED)

SHORT BODY WIRES

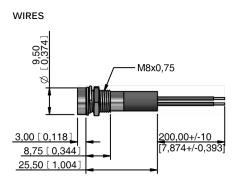


SHORT BODY SOLDER LUG/FASTONS

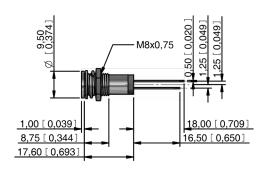


RECESSED BEZEL

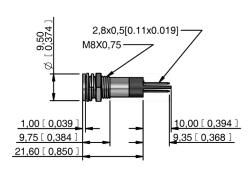




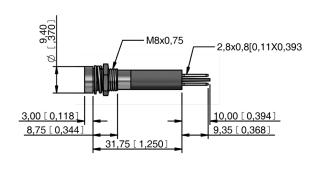
SHORT BODY PINS

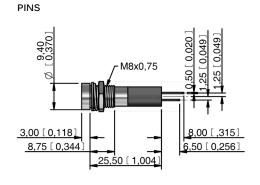


EXTENDED SHORT BODY SOLDER LUG/FASTONS



SOLDER LUG/FASTON





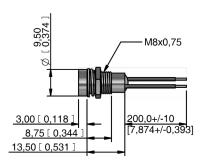
APEM

Q8 series

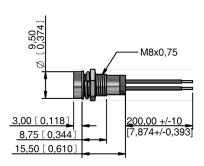
Ø8 mm panel mount LED indicators

RECESSED BEZEL (CONTINUED)

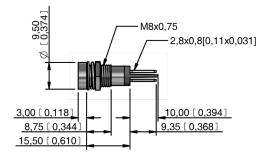
REAR EPOXY WIRES



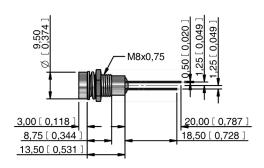
SHORT BODY WIRES



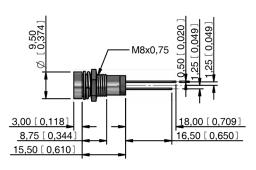
SHORT BODY SOLDER LUG/FASTONS



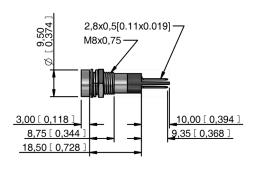
REAR EPOXY PINS



SHORT BODY PINS



EXTENDED SHORT BODY SOLDER LUG/FASTONS



Ø12 mm panel mount LED indicators



WD-012-1708

DISTINCTIVE FEATURES

8 mm colored diffused epoxy lens or 8 mm water clear super bright LEDs

2VDC - 220VAC

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



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: 4 cNm (dependent on option)
- Maximum panel thickness 7 mm

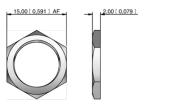


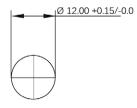
MATERIALS

• Plated brass bezel finished in bright chrome, black chrome 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.





Ø12 mm panel mount LED indicators



ELECTRICAL SPECIFICATIONS

STANDARD LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	350 mcd	N/A	2.0 V
Green	60 mcd	N/A	2.2 V
Yellow	50 mcd	N/A	2.1 V
Blue	800 mcd	330 mcd	3.3 V (Flush : 3.1 V)
White	1,200 mcd	1.560 mcd	3.3 V (Flush: 3.1 V)
Orange	100 mcd	N/A	2.2 V
Bi-color (Typical) (Red/Green)	20/10 mcd	N/A	2.0 V/2.2 V
Tri-color (Typical) (Red/Green/Yellow)	80/15/13 mcd	N/A	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	3,000 mcd	N/A	2.2 V
Green	8,000 mcd	N/A	3.3 V
Yellow	1,100 mcd	N/A	2.0 V
Blue	1,500mcd	N/A	3.3 V
White	1,200 mcd	N/A	3.3 V
Orange	2,000 mcd	N/A	2.2 V

HYPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	N/A	1,120 mcd	2.2 V
Green	N/A	1,560 mcd	3.3 V
Yellow	N/A	1,120 mcd	2.0 V
Orange	N/A	1,120 mcd	2.2 V

- 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.

Voltage	Operating Voltage	Operating Current
	(Min to Max)	(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

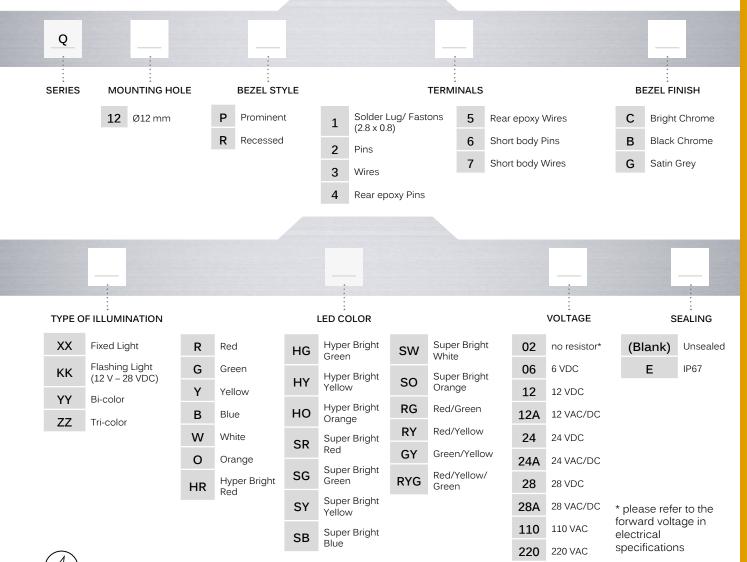
^{*} Customer to supply resistor for desired operating current.

Ø12 mm panel mount LED indicators



BUILD YOUR PART NUMBER

PROMINENT AND RECESSED BEZEL





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
 - 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
 - \bullet Take care when soldering to the faston terminals (recommended solder temperature 300 $^{\circ}\text{C}$ 3 sec)
 - Max voltage for pins and wires is 28 V
 - Tri-color are not available with terminal option 1 and behind panel epoxy sealed with wires (option 4) or pins (option 5).

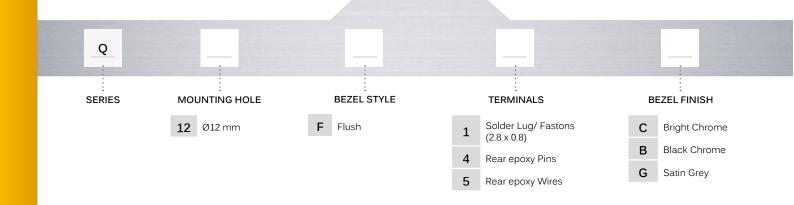
- \bullet 110 VAC and 220 VAC, short body terminal options, 5, 6 and 7 please consult the factory
- We recommend using Hyperbright or Superbright LEDs for use at 110 VAC and 220 VAC
- The Tri-color LED has red and green LEDs when both are connected yellow is produced
- Standard tri-color faston terminals 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

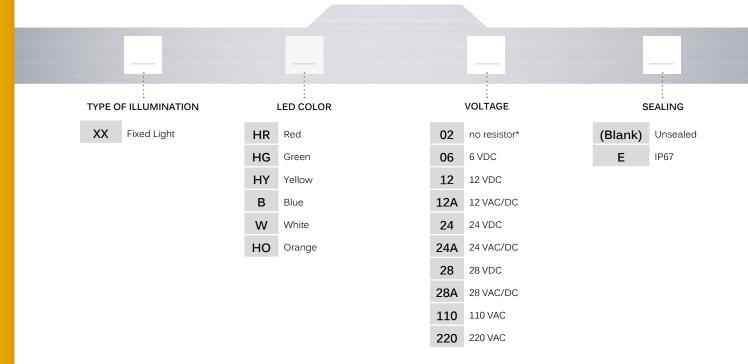
Ø12 mm panel mount LED indicators



BUILD YOUR PART NUMBER

FLUSH BEZEL







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 please consult Apem
 - \bullet Take care when soldering to the faston terminals (recommended solder temperature 300 °C 3 sec)
 - Max voltage for pins and wires is 28 V.
 - 110VAC and 220VAC only available with solder lug/Faston terminals

APEM

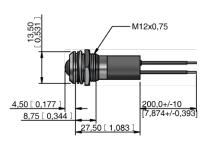
Q12 series

Ø12 mm panel mount LED indicators

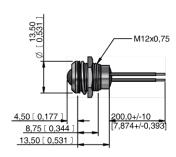
PROMINENT BEZEL



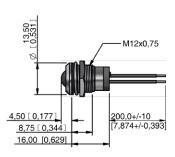
WIRES



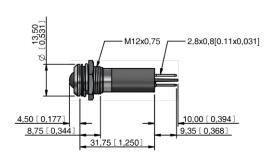
REAR EPOXY WIRES



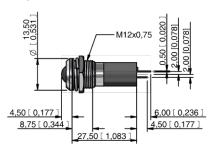
SHORT BODY WIRES



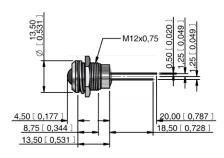
SOLDER LUG/FASTON

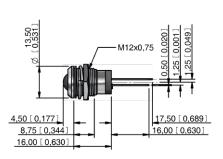


PINS



REAR EPOXY PINS



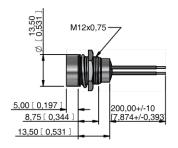


Ø12 mm panel mount LED indicators

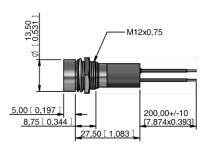
RECESSED BEZEL



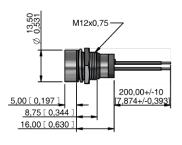
WIRES



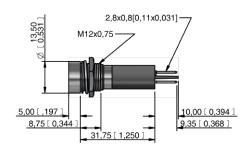
REAR EPOXY WIRES



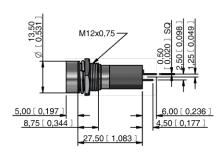
SHORT BODY WIRES



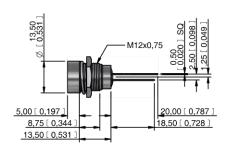
SOLDER LUG/FASTON

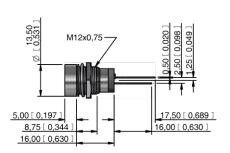


PINS



REAR EPOXY PINS



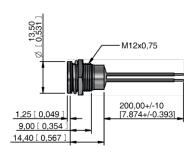


Ø12 mm panel mount LED indicators

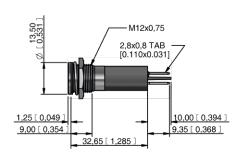
FLUSH BEZEL



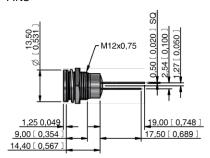
WIRES



SOLDER LUG/FASTON



PINS



IND CITY TORK

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



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: 4 cNm (dependent on option)
- Maximum panel thickness 11 mm

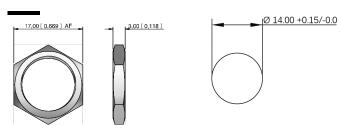


MATERIALS

 Plated brass bezel finished in bright chrome, black chrome 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.





Ø14 mm panel mount LED indicators



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

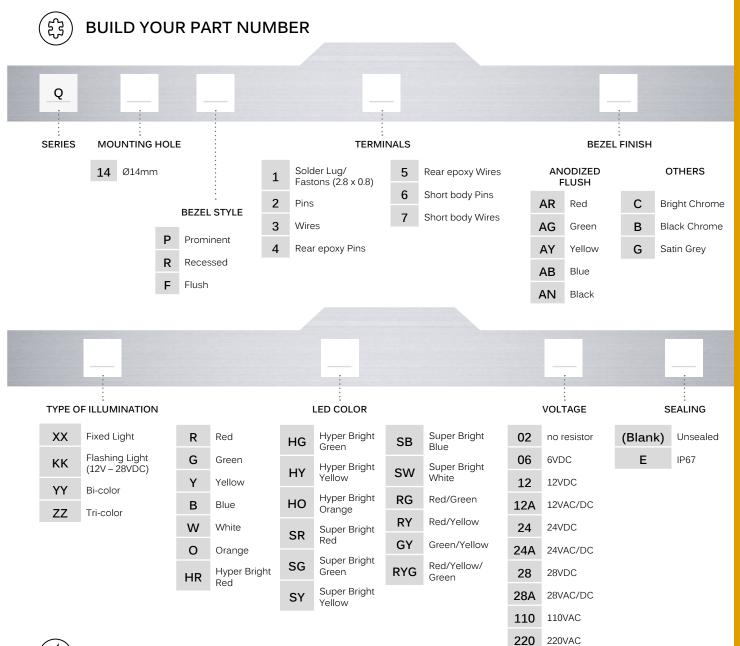
LED COMPONENT SPECIFICATIONS				
	Prominent and Recessed	Flush	Forward Voltage	
HE Red	2,800 mcd	800 mcd	2.1 V	
Green	2,200 mcd	250 mcd	3.2 V	
Yellow	1,300 mcd	250 mcd	2.0 V	
Orange	850 mcd	200 mcd	2.1 V	

- 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.

Voltage	Operating Voltage	Operating Current
	(Min to Max)	(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.

Ø14 mm panel mount LED indicators



4) 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

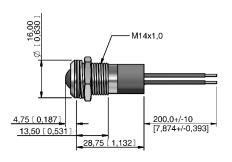
- \bullet Take care when soldering to the faston terminals (recommended solder temperature 300 $^{\circ}\text{C}$ 3 sec)
- Short body pins and wires are only available up to 28 VDC
- The Tri-color LED has red and green LEDs when both are connected yellow is produced
- Standard tri-color faston terminals 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

Ø14 mm panel mount LED indicators

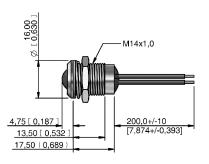
PROMINENT BEZEL



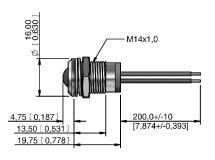
WIRES



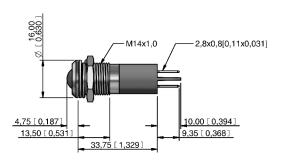
REAR EPOXY WIRES



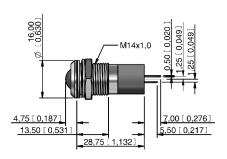
SHORT BODY WIRES



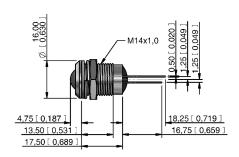
SOLDER LUG/FASTON

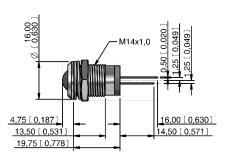


PINS



REAR EPOXY PINS





APEM

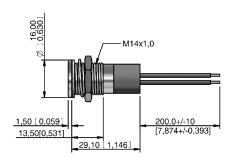
Q14 series

Ø14 mm panel mount LED indicators

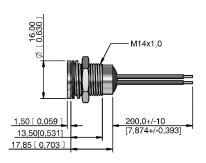
FLUSH BEZEL



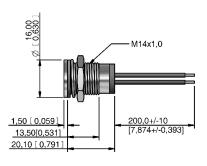
WIRES



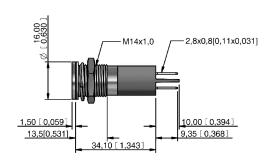
REAR EPOXY WIRES



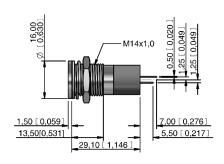
SHORT BODY WIRES



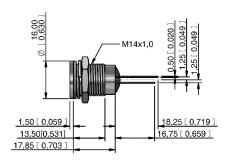
SOLDER LUG/FASTON

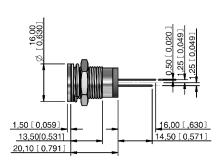


PINS



REAR EPOXY PINS



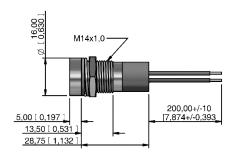


Ø14 mm panel mount LED indicators

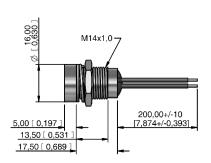
RECESSED BEZEL



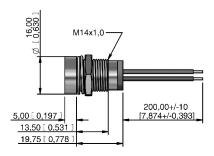
WIRES



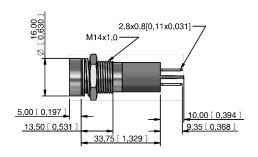
REAR EPOXY WIRES



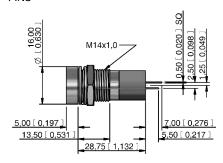
SHORT BODY WIRES



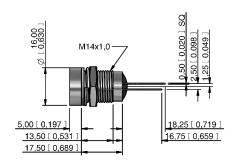
SOLDER LUG/FASTON

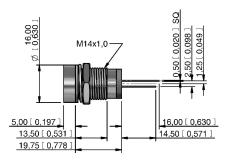


PINS



REAR EPOXY PINS





Ø14 mm panel mount LED indicators



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



Rear fog -027

Front fog -026

Windscreen wiper

Windscreen washer -022

Ventilator fan -023















Turn Signal



-041

Hazard warning -013

Heating -018



-0K6



















Windscreen heating -020

-086

Engine coil -0EL

Seat belt

USB connection -0UB







-0EU



Side step -0AD



-012



-040



Boot/Trunk Release -0BR









CABLE LENGTH AND CONNECTOR







For custom cable length and connectors contact APEM.

Ø16 mm panel mount LED indicators



MD-016-17.01

DISTINCTIVE FEATURES

Secret until lit polycarbonate decals or custom engraving 10 mm colored diffused epoxy lens or 10 mm water clear super bright LEDs

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



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 (dependent on option)
- Maximum panel thickness 11 mm

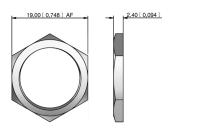


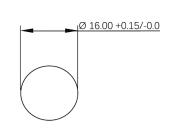
MATERIALS

 Plated brass bezel finished in bright chrome, black chrome 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.





Ø16 mm panel mount LED indicators



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	1,000 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	2.0 V/2.2 V	
Tri-color (Typical) (Red/Green/Yellow)	60/50/50 mcd	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	2000 mcd	2.2 V	
Green	11,000 mcd	680 mcd	3.5 V	
Yellow	4,000 mcd	350 mcd	2.3 V	
Blue	2,500 mcd	250 mcd	3.3 V	
White	4,400 mcd	250 mcd	3.3 V	
Orange	2,800 mcd	300 mcd	2.1 V	

HYPER BRIGHT LED INTENSITY

LED COMPONENT SPECIFICATIONS				
	Prominent and Recessed	Flush	Forward Voltage	
HE Red	2,800 mcd	800 mcd	2.0 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	

- 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.

Voltage	Operating Voltage	Operating Current
	(Min to Max)	(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.

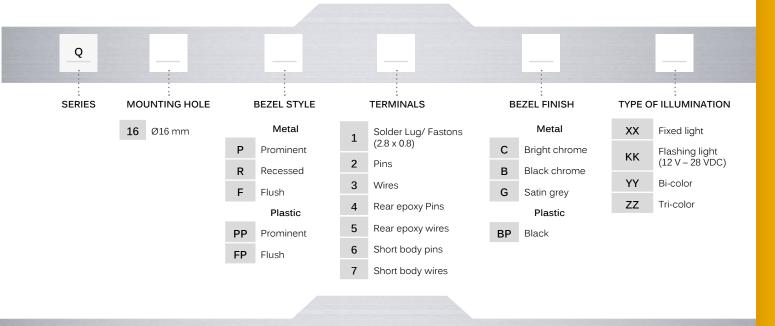
ADDITIONNAL INFORMATION ON LED COMPONENTS

- 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

Ø16 mm panel mount LED indicators



BUILD YOUR PART NUMBER



										<u> </u>
			ED COLOR				VOLTAGE	S	EALING	CUSTOM OPTIONS
R	Red	HG	Hyper bright green	SB	Super bright blue	02	no resistor*	(Blank)	Unsealed	See end of series
G	Green		Hyper bright		Super bright	06	6 VDC	E	IP67	
Υ	Yellow	HY	yellow	SW	white	12	12 VDC			
В	Blue	но	Hyper bright orange	RG	Red/green	12A	12 VAC/DC			
W	White		Super bright	RY	Red/yellow	24	24 VDC			
0	Orange	SR	Red	GY	Green/yellow	24A	24 VAC/DC			
HR	Hyper bright Red	SG	Super bright green	RYG	Red/yellow/ green	28	28 VDC			
		SY	Super bright			28A	28 VAC/DC			
		31	yellow			110	110 VAC	* please refer to the		
						220	220 VAC	voltage in electrical specifications		



ABOUT THIS SERIES

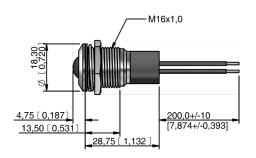
- Notice: please note that not all combinations of above numbers are available.
 - Gold faston terminal denotes anode (+), silver terminal denotes cathode (-)
 - Standard wire length is 200 mm, 22 AWG UL1007, red wire denotes anode (+), black wire denotes cathode (-) for other wire lengths consult APEM
 - \bullet Take care when soldering to the faston terminals (recommended solder temperature 300 $^{\circ}\text{C}$ 3 sec)
 - Short body pins and wires are only available up to 28 VDC
 - 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
- For leds with alternative voltages and for multi-voltage options please consult APEM

Ø16 mm panel mount LED indicators

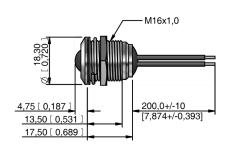
PROMINENT BEZEL



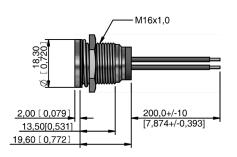
WIRES



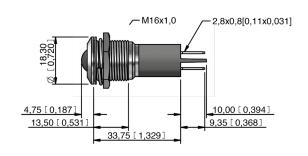
REAR EPOXY WIRES



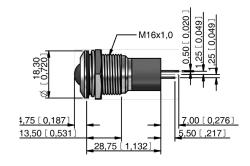
SHORT BODY WIRES



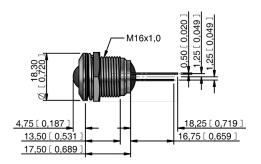
SOLDER LUG/FASTON

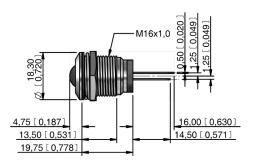


PINS



REAR EPOXY PINS





APEM

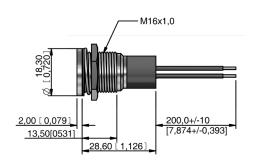
Q16 series

Ø16 mm panel mount LED indicators

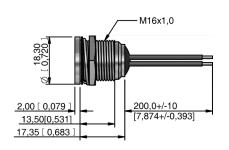
FLUSH BEZEL



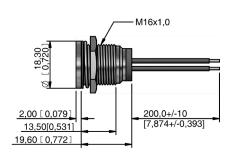
WIRES



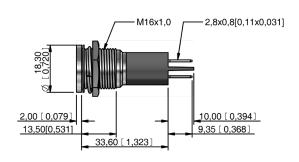
REAR EPOXY WIRES



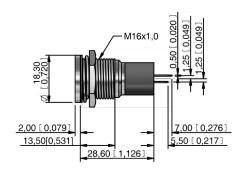
SHORT BODY WIRES



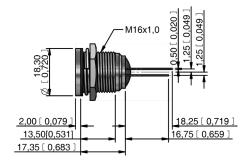
SOLDER LUG/FASTON

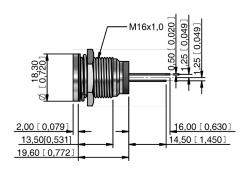


PINS



REAR EPOXY PINS



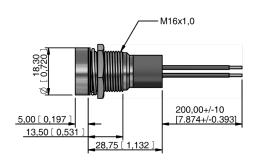


Ø16 mm panel mount LED indicators

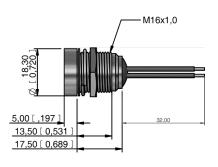
RECESSED BEZEL



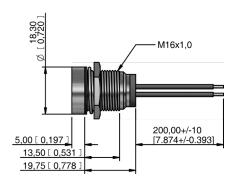
WIRES



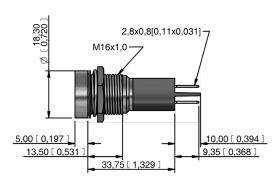
REAR EPOXY WIRES

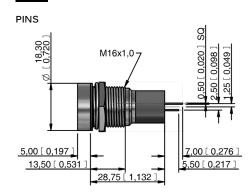


SHORT BODY WIRES

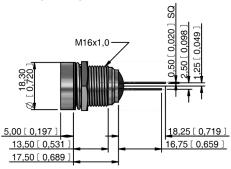


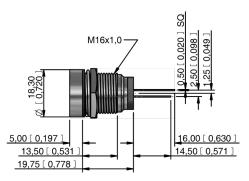
SOLDER LUG/FASTON





REAR EPOXY PINS





LED INDICATORS

Q16 series

Ø16 mm panel mount LED indicators



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

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







Oil can



Windscreen heating -020



ABS -086



Engine coil -0EL



Seat belt



USB connection -0BU



Steam



ECU -0EU



Side step





Engine -040



Boot/Trunk Release -0BR









Ø16 mm panel mount LED indicators



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:



(•••) CABLE LENGTH AND CONNECTOR



For custom cable length and connectors contact APEM.

IND-022-27-07

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



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 (dependent on option)
- Maximum panel thickness 12 mm (Prominent), 10 mm (Flush)

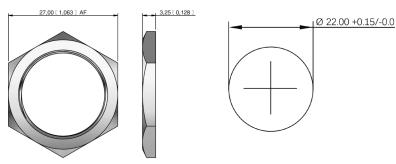


MATERIALS

 Plated brass bezel finished in bright chrome, black chrome 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.





Ø22 mm panel mount LED indicators



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 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		

- 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

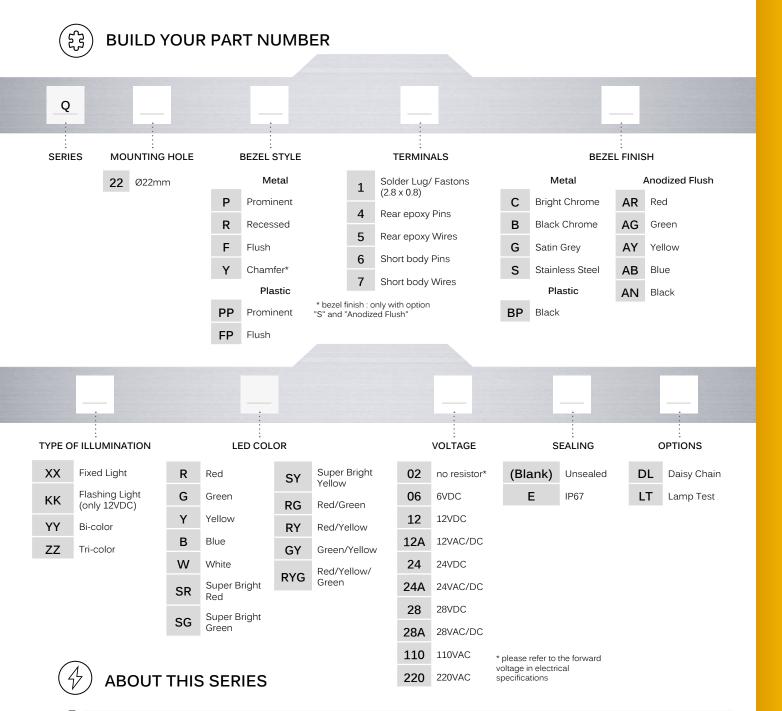
Voltage	Operating Voltage	Operating Current		
	(Min to Max)	(Typical All Types)		
05 (No Resistor)	3.3 to 9.9 VDC	40 mA max*		
12 VDC	10.8 to 13.2 VDC	40 mA		
24 VDC	21.6 to 26.4 VDC	40 mA		
28 VDC	25.2 to 30.8 VDC	40 mA		
110 VAC	99 to 121 VAC	5 mA		
220 VAC	207 to 235 VAC	3 mA		
* Customer to supply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

* Customer to supply resistor for desired operating current.

ADDITIONNAL 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

Ø22 mm panel mount LED indicators



- 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, short body terminal options, 5, 6 and 7 please consult the factory
 - \bullet 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,

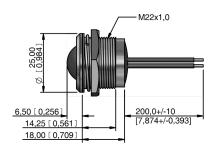
- termination options 4 and 5
- Standard tri-color faston terminals are two anodes (+) and one cathode (-)
- Tri-color wires are one red (+) and one green (+) anode and one black (-) cathode
- Tri-color pins are center (-) cathode, shortest (+) anode pin green, longest (+) anode pin red
- Daisy chaining 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

Ø22 mm panel mount LED indicators

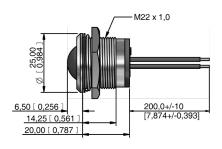
PROMINENT BEZEL



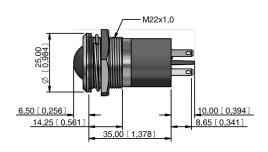
REAR EPOXY WIRES



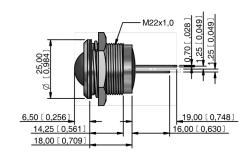
SHORT BODY WIRES

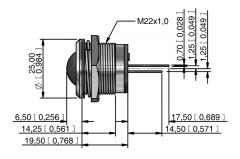


SOLDER LUG/FASTON



REAR EPOXY PINS





A D E M

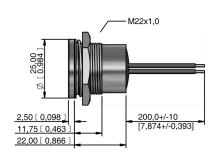
Q22 series

Ø22 mm panel mount LED indicators

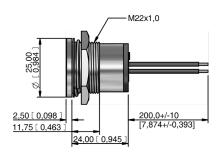
FLUSH BEZEL



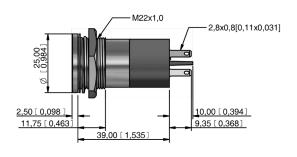
REAR EPOXY WIRES



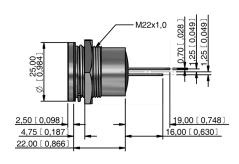
SHORT BODY WIRES

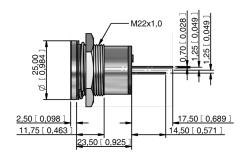


SOLDER LUG/FASTON



REAR EPOXY PINS



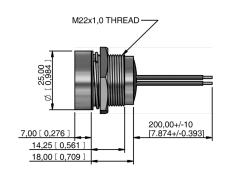


Ø22 mm panel mount LED indicators

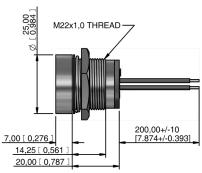
RECESSED BEZEL



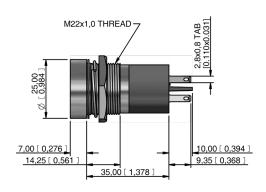
WIRES



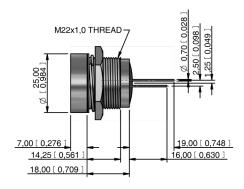
REAR EPOXY WIRES



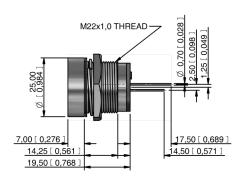
SOLDER LUG/FASTON



PINS



REAR EPOXY PINS



PER

Q22 series

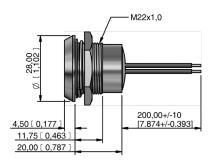
Ø22 mm panel mount LED indicators

CHAMFER BEZEL

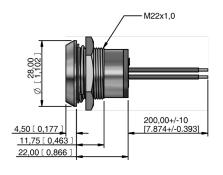
(316L STAINLESS STEEL AND ANODIZED ALUMINIUM ONLY)



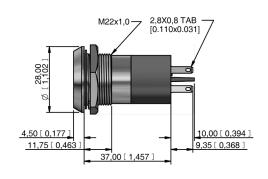
WIRES



REAR EPOXY WIRES

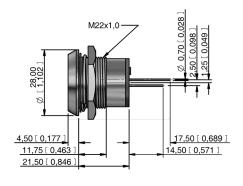


SOLDER LUG/FASTON



PINS M22x1,0 M22x1,

REAR EPOXY PINS



Ø22 mm panel mount LED indicators



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:



-0AJ





Low beam -097



Rear fog -027



Front fog -026



Windscreen wiper



Windscreen washer -022



Ventilator fan -023



Turn Signal -0AH



Side lights -098



Horn -**041**



Hazard warning



Heating -018



Brake test -0BU



Arrow -0K6



Battery -0AG



Oil can



Windscreen heating



ABS -086



Engine coil -0EL



Seat belt -0SB



USB connection -0BU



Steam -0ST



ECU -0EU



Side step



Air con



Engine -040



Boot/Trunk Release -0BR







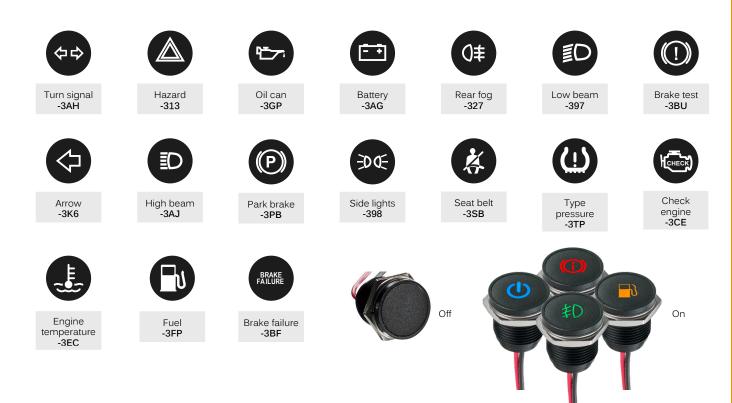


Ø22 mm panel mount LED indicators



SECRET UNTIL LIT POLYCARBONATE INSERTS

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Suffix the part number with legend code:



$\left(\bullet\bullet\right)$

CABLE LENGTH AND CONNECTOR



For custom cable length and connectors contact APEM.