## Q12 series

Ø12 mm panel mount LED indicators

## (5) <br> DISTINCTIVE FEATURES

8 mm colored diffused epoxy lens or 8 mm water clear super bright LEDs
2VDC - 220VAC
( $2.8 \times 0.8$ ) solder lug/faston terminals, pins or ( 200 mm long) wire terminations

## (1)

ENVIRONMENTAL SPECIFICATIONS

- IP67 sealing option (EN60529)
- Operating \& Storage Temperature Range:

Rear plastic body: $-30^{\circ} \mathrm{C}$ to $+65^{\circ} \mathrm{C}\left(-22^{\circ} \mathrm{F}\right.$ to $\left.+149{ }^{\circ} \mathrm{F}\right)$
Rear epoxy body: $-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}\left(-40^{\circ} \mathrm{F}\right.$ to $\left.+185^{\circ} \mathrm{F}\right)$

## GOM 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 7 mm


## MATERIALS

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


## MOUNTING



M12 $\times 0,75$ 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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## (4) 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 | $2.0 \mathrm{~V} / 2.2 \mathrm{~V}$ |
| Tri-color (Typical) (Red/Green/Yellow) | 80/15/13 mcd | N/A | $2.0 \mathrm{~V} / 2.2 \mathrm{~V} / 2.1 \mathrm{~V}$ |

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 <br> Recessed | Flush | Forward Voltage |
| HE Red | $3,000 \mathrm{mcd}$ | $\mathrm{N} / \mathrm{A}$ | 2.2 V |
| Green | $8,000 \mathrm{mcd}$ | $\mathrm{N} / \mathrm{A}$ | 3.3 V |
| Yellow | $1,100 \mathrm{mcd}$ | $\mathrm{N} / \mathrm{A}$ | 2.0 V |
| Blue | $1,500 \mathrm{mcd}$ | $\mathrm{N} / \mathrm{A}$ | 3.3 V |
| White | $1,200 \mathrm{mcd}$ | $\mathrm{N} / \mathrm{A}$ | 3.3 V |
| Orange | $2,000 \mathrm{mcd}$ | $\mathrm{N} / \mathrm{A}$ | 2.2 V |

HYPER BRIGHT LED INTENSITY

## LED COMPONENT SPECIFICATIONS

| Prominent and <br> Recessed | Flush | Forward Voltage |
| :---: | :---: | :---: | :---: |
| $1,900 \mathrm{mcd}$ | $1,120 \mathrm{mcd}$ | 2.2 V |
| $3,500 \mathrm{mcd}$ | $1,560 \mathrm{mcd}$ | 3.3 V |
| $1,600 \mathrm{mcd}$ | $1,120 \mathrm{mcd}$ | 2.0 V |
| $4,300 \mathrm{mcd}$ | $1,120 \mathrm{mcd}$ | 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 <br> 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.


## TERMINALS

## BEZEL FINISH

$12 \varnothing 12 \mathrm{~mm}$

|  | Solder Lug/ Fastons | $\mathbf{5}$ | Rear epoxy Wires | C | Bright Chrome |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1}$ | (2.8 $\times 0.8)$ | $\mathbf{6}$ | Short body Pins | B | Black |
| $\mathbf{2}$ | Pins | $\mathbf{7}$ | Short body Wires | G | Satin Grey |
| $\mathbf{3}$ | Wires |  |  |  |  |
| $\mathbf{4}$ | Rear epoxy Pins |  |  |  |  |

## TYPE OF ILLUMINATION

| XX | Fixed Light |
| :---: | :--- |
| KK | Flashing Light <br> $(12 \mathrm{~V}-28$ VDC $)$ |
| YY | Bi-color |
| ZZ | Tri-color |


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


| SW | Super Bright <br> White |
| :---: | :--- |
| SO | Super Bright <br> Orange |
| RG | Red/Green |
| RY | Red/Yellow |
| GY | Green/Yellow <br> Red/Yellow/ |
| RYG | Green |

VOLTAGE


## ABOUT THIS SERIES

(1) 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 $200 \mathrm{~mm}, 24$ 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
- Take care when soldering to the faston terminals (recommended solder temperature $300^{\circ} \mathrm{C}-3 \mathrm{sec}$ )
- 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).
- 110 VAC and 220 VAC, only available with terminal options 1, 3 and 5
- 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


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## (5) BUILD YOUR PART NUMBER

## FLUSH BEZEL



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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 please consult Apem
- Take care when soldering to the faston terminals (recommended solder temperature $300^{\circ} \mathrm{C}-3 \mathrm{sec}$ )
- Body options 2 and 6 are only available without integral resistor (02)
-110VAC and 220VAC only available with solder lug/Faston terminals


WIRES

REAR EPOXY WIRES

SHORT BODY WIRES


Ø12 mm panel mount LED indicators


SOLDER LUG/FASTON


PINS


REAR EPOXY PINS


SHORT BODY PINS


## Q12 series

Ø12 mm panel mount LED indicators

## RECESSED BEZEL



## WIRES



## REAR EPOXY WIRES



SHORT BODY WIRES


SOLDER LUG/FASTON


PINS


REAR EPOXY PINS


SHORT BODY PINS


Ø12 mm panel mount LED indicators


REAR EPOXY WIRES


REAR EPOXY PINS
SOLDER LUG/FASTON


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