

# Q19 series

Ø19 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

Available in RGB



## ENVIRONMENTAL SPECIFICATIONS

- IP67 sealing option (EN60529)

- Operating & Storage Temperature Range:

**Rear plastic body:** -30 °C to +65° C (-22 °F to +149 °F)

**Rear epoxy body:** -40 °C to +85° C (-40 °F to +185 °F)



## GENERAL SPECIFICATIONS

- Max Reverse Voltage: 5 V

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

- Life Expectancy: 100,000 hours

- Torque: 75 cNm

- Maximum panel thickness 11 mm

- Insulation resistance : 4,000 MΩ at 500 VDC

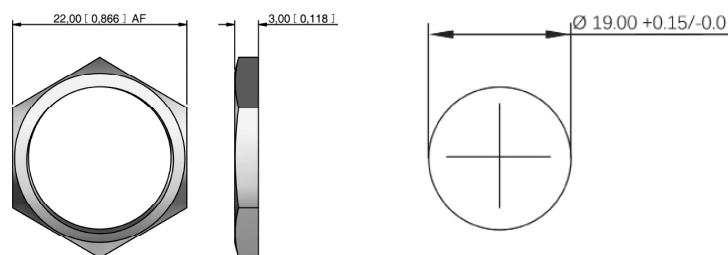


## MATERIALS

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



## MOUNTING



M19 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.



# Q19 series

Ø19 mm panel mount LED indicators



## ELECTRICAL SPECIFICATIONS

### STANDARD LED INTENSITY

LED COMPONENT SPECIFICATIONS			
	Prominent and Recessed	Flush	Forward Voltage
HE Red	330 mcd	10 mcd	2.1 V
Green	330 mcd	5 mcd	2.1 V
Yellow	500 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)	220/150 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	2,000 mcd	2.0 V
Green	11,000 mcd	680 mcd	3.5 V
Yellow	12,000 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	2.1 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

### RGB LED INTENSITY

ITEM	SYMBOL	CONDITION	TYP.
DC Forward Voltage	$V_F(R)$	IF=20 mA	2.1
	$V_F(B/G)$	IF=20 mA	3.1
Luminous Intensity	$I_v$ (Red)		220 mcd
	$I_v$ (Green)		500 mcd
	$I_v$ (Blue)		100 mcd

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.

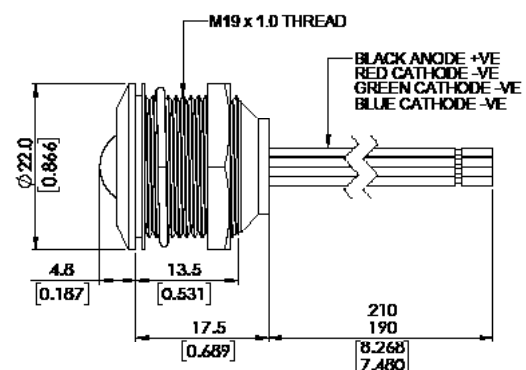
### ADDITIONAL INFORMATION ON LED COMPONENTS

- The operating voltage must not be exceeded by more than 10% as this will result in reduced life expectancy
- Luminous intensity is measured at 20 mA on a discrete led unless otherwise stated.
- Luminous intensities and color shades of white LEDs may vary within a batch.
- Luminous intensity will be reduced with lower operating current.
- Recommended usage:
  - Standard: Homogenous light output that is good for indoor applications.
  - Hyper Bright: Homogenous light output that is good for outside viewing and is daylight visible.
  - Super Bright: A water clear LED that is good for long distance viewing and is daylight visible.



## CONNECTIONS

REAR EPOXY WIRES FOR RGB OPTION



# Q19 series

Ø19 mm panel mount LED indicators



## BUILD YOUR PART NUMBER

<b>Q</b>	—	—	—	—	—
SERIES	MOUNTING HOLE	BEZEL STYLE	TERMINALS	TERMINALS	BEZEL FINISH
	<b>19</b> Ø19 mm	<b>Metal</b> <b>P</b> Prominent <b>R</b> Recessed <b>F</b> Flush <b>EP</b> Extra Prominent	<b>1</b> Solder Lug/ Fastons (2.8 x 0.8) <b>2</b> Pins <b>3</b> Wires <b>4</b> Rear epoxy Pins	<b>5</b> Rear epoxy Wires <b>6</b> Short body Pins <b>7</b> Short body Wires	<b>Metal</b> <b>C</b> Bright Chrome <b>B</b> Black <b>G</b> Satin Grey

—	—	—	—	—	—																																																																														
TYPE OF ILLUMINATION	LED COLOR	LED COLOR	VOLTAGE	SEALING	SEALING																																																																														
<table border="0"> <tr><td><b>XX</b></td><td>Fixed Light</td></tr> <tr><td><b>KK</b></td><td>Flashing Light (12 V – 28 VDC)</td></tr> <tr><td><b>YY</b></td><td>Bi-color</td></tr> <tr><td><b>ZZ</b></td><td>Tri-color</td></tr> </table>	<b>XX</b>	Fixed Light	<b>KK</b>	Flashing Light (12 V – 28 VDC)	<b>YY</b>	Bi-color	<b>ZZ</b>	Tri-color	<table border="0"> <tr><td><b>R</b></td><td>Red</td></tr> <tr><td><b>G</b></td><td>Green</td></tr> <tr><td><b>Y</b></td><td>Yellow</td></tr> <tr><td><b>B</b></td><td>Blue</td></tr> <tr><td><b>W</b></td><td>White</td></tr> <tr><td><b>O</b></td><td>Orange</td></tr> <tr><td><b>HR</b></td><td>Hyper Bright Red</td></tr> </table>	<b>R</b>	Red	<b>G</b>	Green	<b>Y</b>	Yellow	<b>B</b>	Blue	<b>W</b>	White	<b>O</b>	Orange	<b>HR</b>	Hyper Bright Red	<table border="0"> <tr><td><b>HG</b></td><td>Hyper Bright Green</td></tr> <tr><td><b>HY</b></td><td>Hyper Bright Yellow</td></tr> <tr><td><b>HO</b></td><td>Hyper Bright Orange</td></tr> <tr><td><b>SR</b></td><td>Super Bright Red</td></tr> <tr><td><b>SG</b></td><td>Super Bright Green</td></tr> <tr><td><b>SY</b></td><td>Super Bright Yellow</td></tr> </table>	<b>HG</b>	Hyper Bright Green	<b>HY</b>	Hyper Bright Yellow	<b>HO</b>	Hyper Bright Orange	<b>SR</b>	Super Bright Red	<b>SG</b>	Super Bright Green	<b>SY</b>	Super Bright Yellow	<table border="0"> <tr><td><b>SB</b></td><td>Super bright blue</td></tr> <tr><td><b>SW</b></td><td>Super bright white</td></tr> <tr><td><b>SO</b></td><td>Super bright Orange</td></tr> <tr><td><b>RG</b></td><td>Red/green</td></tr> <tr><td><b>RY</b></td><td>Red/yellow</td></tr> <tr><td><b>GY</b></td><td>Green/yellow</td></tr> <tr><td><b>RYG</b></td><td>Red/yellow/green</td></tr> <tr><td><b>RGB</b></td><td>Red/Green/Blue*</td></tr> </table>	<b>SB</b>	Super bright blue	<b>SW</b>	Super bright white	<b>SO</b>	Super bright Orange	<b>RG</b>	Red/green	<b>RY</b>	Red/yellow	<b>GY</b>	Green/yellow	<b>RYG</b>	Red/yellow/green	<b>RGB</b>	Red/Green/Blue*	<table border="0"> <tr><td><b>02</b></td><td>no resistor**</td></tr> <tr><td><b>06</b></td><td>6 VDC</td></tr> <tr><td><b>12</b></td><td>12 VDC</td></tr> <tr><td><b>12A</b></td><td>12 VAC/DC</td></tr> <tr><td><b>24</b></td><td>24 VDC</td></tr> <tr><td><b>24A</b></td><td>24 VAC/DC</td></tr> <tr><td><b>28</b></td><td>28 VDC</td></tr> <tr><td><b>28A</b></td><td>28 VAC/DC</td></tr> <tr><td><b>110</b></td><td>110 VAC</td></tr> <tr><td><b>220</b></td><td>220 VAC</td></tr> </table>	<b>02</b>	no resistor**	<b>06</b>	6 VDC	<b>12</b>	12 VDC	<b>12A</b>	12 VAC/DC	<b>24</b>	24 VDC	<b>24A</b>	24 VAC/DC	<b>28</b>	28 VDC	<b>28A</b>	28 VAC/DC	<b>110</b>	110 VAC	<b>220</b>	220 VAC	<table border="0"> <tr><td><b>(Blank)</b></td><td>Unsealed</td></tr> <tr><td><b>E</b></td><td>IP67</td></tr> <tr><td><b>(Blank)</b></td><td>Common cathode</td></tr> <tr><td><b>-CA</b></td><td>Common anode</td></tr> </table>	<b>(Blank)</b>	Unsealed	<b>E</b>	IP67	<b>(Blank)</b>	Common cathode	<b>-CA</b>	Common anode
<b>XX</b>	Fixed Light																																																																																		
<b>KK</b>	Flashing Light (12 V – 28 VDC)																																																																																		
<b>YY</b>	Bi-color																																																																																		
<b>ZZ</b>	Tri-color																																																																																		
<b>R</b>	Red																																																																																		
<b>G</b>	Green																																																																																		
<b>Y</b>	Yellow																																																																																		
<b>B</b>	Blue																																																																																		
<b>W</b>	White																																																																																		
<b>O</b>	Orange																																																																																		
<b>HR</b>	Hyper Bright Red																																																																																		
<b>HG</b>	Hyper Bright Green																																																																																		
<b>HY</b>	Hyper Bright Yellow																																																																																		
<b>HO</b>	Hyper Bright Orange																																																																																		
<b>SR</b>	Super Bright Red																																																																																		
<b>SG</b>	Super Bright Green																																																																																		
<b>SY</b>	Super Bright Yellow																																																																																		
<b>SB</b>	Super bright blue																																																																																		
<b>SW</b>	Super bright white																																																																																		
<b>SO</b>	Super bright Orange																																																																																		
<b>RG</b>	Red/green																																																																																		
<b>RY</b>	Red/yellow																																																																																		
<b>GY</b>	Green/yellow																																																																																		
<b>RYG</b>	Red/yellow/green																																																																																		
<b>RGB</b>	Red/Green/Blue*																																																																																		
<b>02</b>	no resistor**																																																																																		
<b>06</b>	6 VDC																																																																																		
<b>12</b>	12 VDC																																																																																		
<b>12A</b>	12 VAC/DC																																																																																		
<b>24</b>	24 VDC																																																																																		
<b>24A</b>	24 VAC/DC																																																																																		
<b>28</b>	28 VDC																																																																																		
<b>28A</b>	28 VAC/DC																																																																																		
<b>110</b>	110 VAC																																																																																		
<b>220</b>	220 VAC																																																																																		
<b>(Blank)</b>	Unsealed																																																																																		
<b>E</b>	IP67																																																																																		
<b>(Blank)</b>	Common cathode																																																																																		
<b>-CA</b>	Common anode																																																																																		

\*\* please refer to the forward voltage in electrical specifications



## ABOUT THIS SERIES

\* Terminals option 5 and common anode only



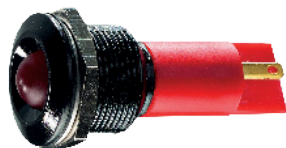
**Notice:** please note that not all combinations of above numbers are available.

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Gold faston terminal denotes anode (+), silver terminal denotes cathode (-)</li> <li>• Standard and Bi-Colour are provided in Standard wire length is 200mm, 24AWG UL1061, Red wire denotes anode (+), Black wire denotes cathode (-) for other lengths consult APEM.</li> <li>• 110 VAC and 220 VAC, only available with terminal options 1, 3 and 5</li> <li>• 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</li> <li>• Take care when soldering to the faston terminals (recommended solder temperature 300 °C - 3 sec)</li> <li>• Body options 2, 4 and 6 are only available without integral resistor (02).</li> </ul> | <ul style="list-style-type: none"> <li>• The tri-color led has red and green leds when both are connected yellow is produced</li> <li>• Standard tri-color faston terminals are two anodes (+) and one cathode (-)</li> <li>• Tri-color wires are one red (+) and one green (+) anode and one black (-) cathode</li> <li>• Tri-color pins are center (-) cathode, shortest (+) anode pin green, longest (+) anode pin red</li> <li>• We recommend using hyperbright or superbright leds for use at 110 VAC and 220 VAC</li> <li>• For leds with alternative voltages and for multi-voltage options please consult APEM</li> </ul> |
|---|---|

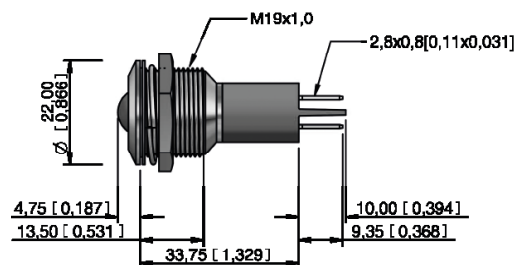
# Q19 series

Ø19 mm panel mount LED indicators

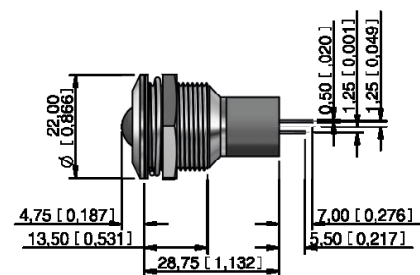
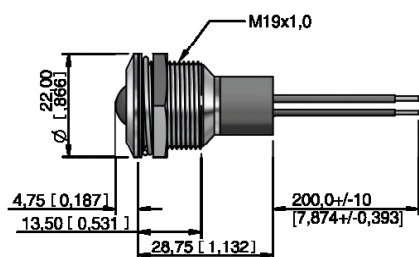
## PROMINENT BEZEL



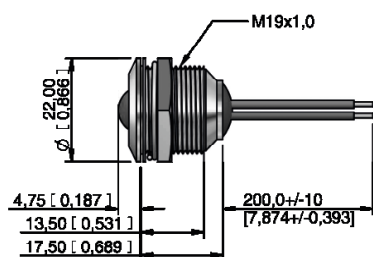
## SOLDER LUG/FASTON



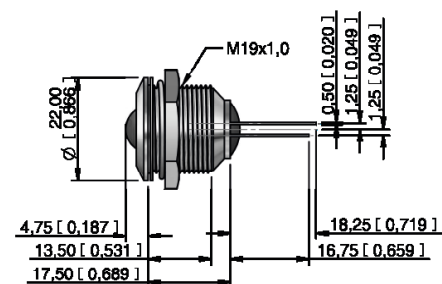
## WIRES



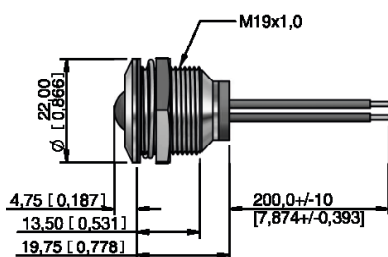
## REAR EPOXY WIRES



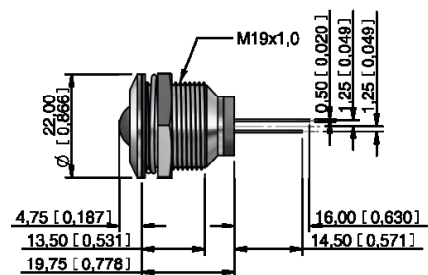
## REAR EPOXY PINS



## SHORT BODY WIRES



## SHORT BODY PINS



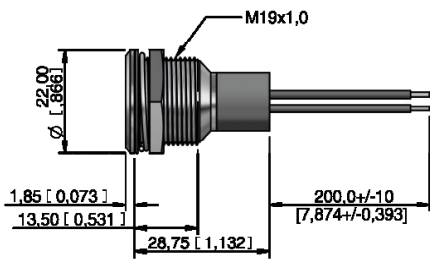
# Q19 series

Ø19 mm panel mount LED indicators

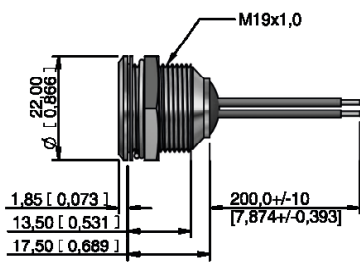
## FLUSH BEZEL



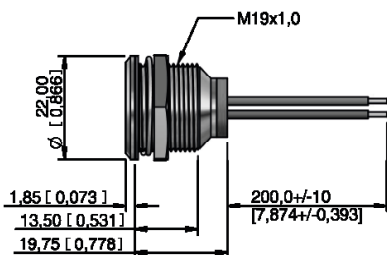
## WIRES



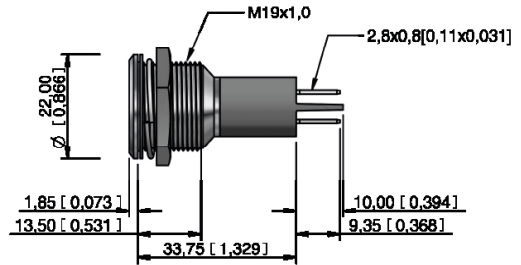
## REAR EPOXY WIRES



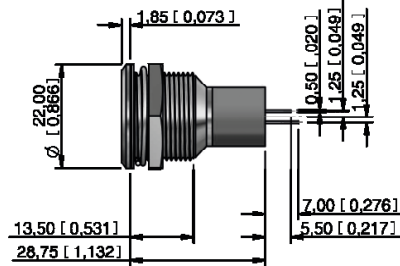
## SHORT BODY WIRES



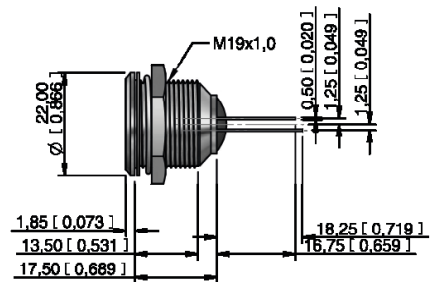
## SOLDER LUG/FASTON



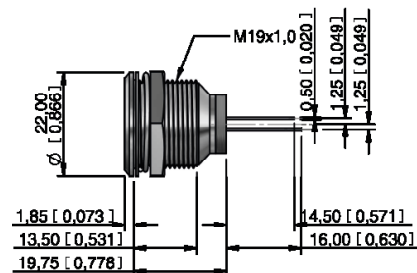
## PINS



## REAR EPOXY PINS



## SHORT BODY PINS



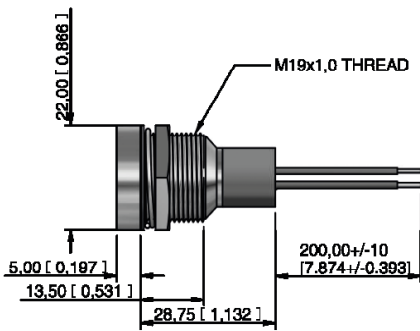
# Q19 series

Ø19 mm panel mount LED indicators

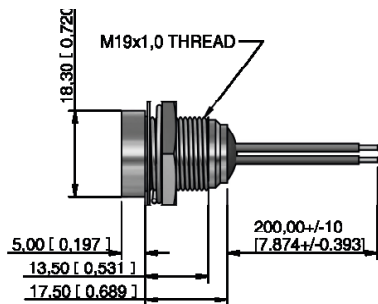
## RECESSED BEZEL



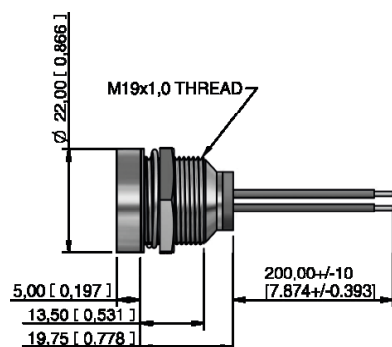
### WIRES



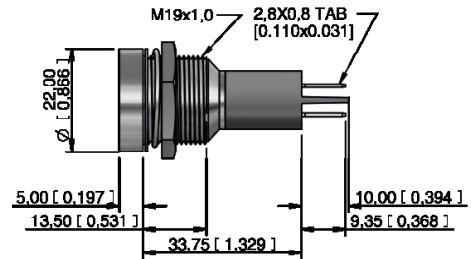
### REAR EPOXY WIRES



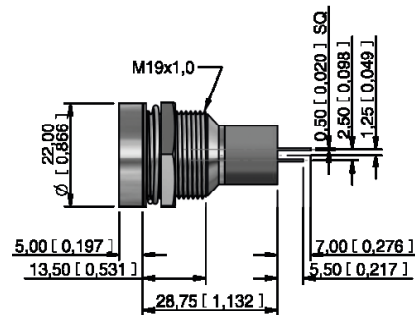
### SHORT BODY WIRES



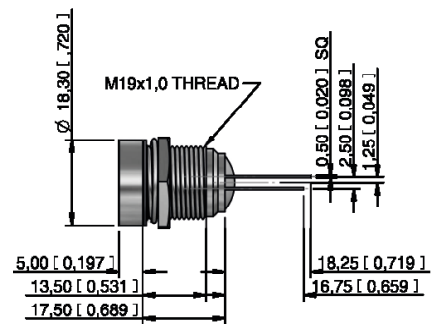
## SOLDER LUG/FASTON



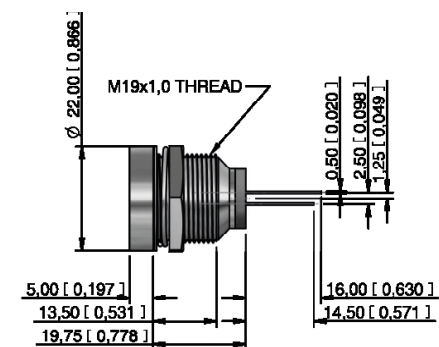
### PINS



### REAR EPOXY PINS



### SHORT BODY PINS



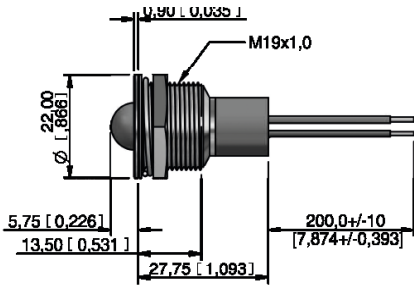
# Q19 series

Ø19 mm panel mount LED indicators

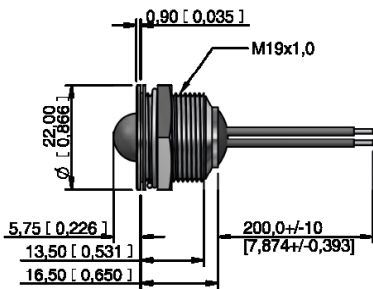
## EXTRA PROMINENT BEZEL



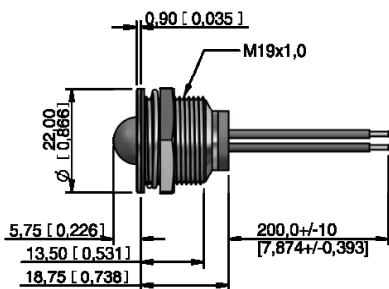
## WIRES



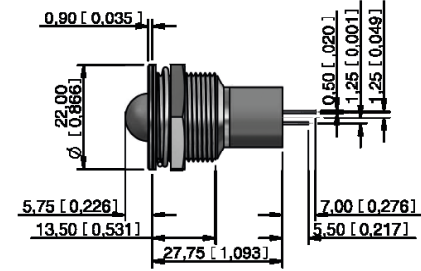
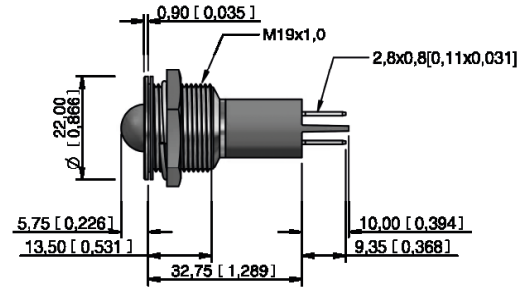
## REAR EPOXY WIRES



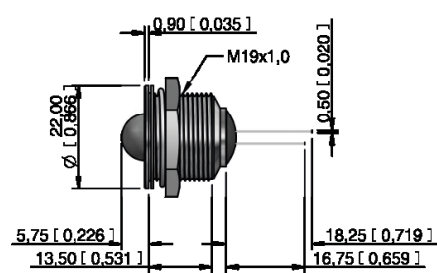
## SHORT BODY WIRES



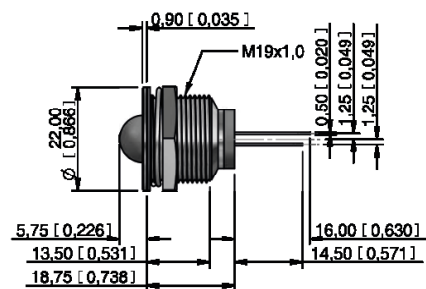
## SOLDER LUG/FASTON



## REAR EPOXY PINS



## SHORT BODY PINS



# Q19 series

Ø19 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  
-027



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



Battery  
-0AG



Oil can  
-0GP



Windscreen  
heating  
-020



ABS  
-086



Engine coil  
-0EL



Seat belt  
-0SB



USB  
connection  
-0BU



Steam  
-0ST



ECU  
-0EU



Side step  
-0AD



Air con  
-012



Engine  
-040



Boot/Trunk  
Release  
-0BR



## CABLE LENGTH AND CONNECTOR



For custom cable length and connectors contact APEM.