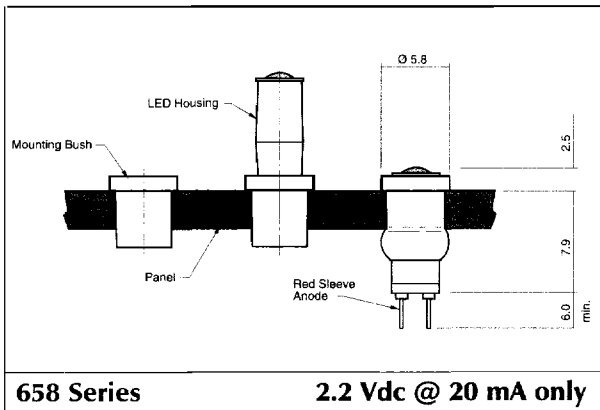# High Performance Panel Indicators

The ultimate range of indicators which are available in a wide range of mounting diameters and combine features such as ingress protection and sunlight readability with outstanding orders of operational performance and reliability. Other options include limiting resistors, test facility, protection circuitry, burn - in and flame retardant flying lead terminations. High Performance Panel Indicator Lamps have been specifically designed for installation in all categories of climatic and hazardous environments and meet all the criteria expected of product capable of providing high intensity indication for long duration in the most demanding professional and military related applications. Many devices are approved by the Ministry of Defence and Railway Industries.

Push-Fit Indicator   Ø 5mm Mounting

Ø 5.8
LED Housing
Mounting Bush
2.5
7.9
6.0 min.
Panel
Red Sleeve
Anode

| 658 Series | 2.2 Vdc @ 20 mA only |

658 - 391 - 04   Order Code

LED Options:
Code - LED Colour / Intensity at 20 mA

391	- RED 700 nm	1.0 mcd
392	- ORANGE 610 nm	4.0 mcd
393	- YELLOW 585 nm	3.0 mcd
394	- GREEN 565 nm	4.0 mcd

Mounting Hole Ø 5mm   Use Assembly Tool No. 927 - 000 - 00

Ø 5 and Ø 6.35mm Mounting

2.6   15.2   150   Ø 5.0 $^{+0.1}_{0}$
Ø 7.9   Ø 5.1
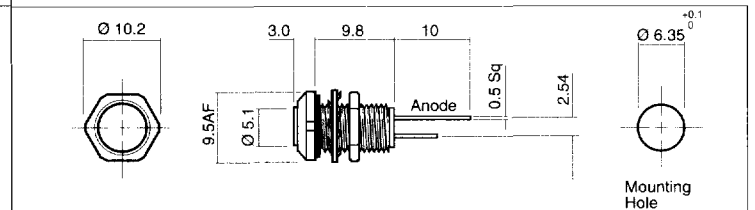Mounting Hole
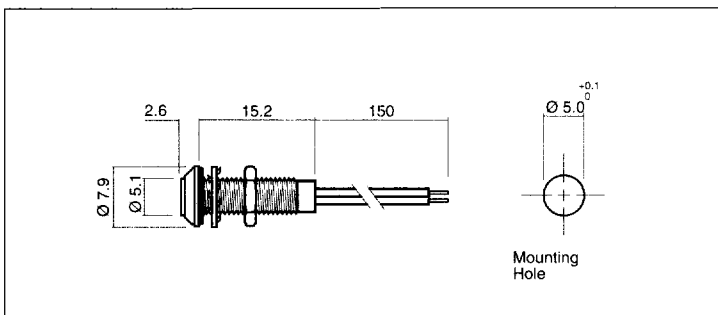
603 Series

- **Flying Leads Terminations**
- **Sealing to IP67**
- **Lamp Test Facility**
- **Robust Terminations accept Push-on Connectors**
- **Sunlight Readable Options**

2.5   14.7   10   Ø 6.35 $^{+0.1}_{0}$
Ø 9.0   Ø 5.1   Anode   0.6 Sq   2.54
Mounting Hole

611 Series

Ø 10.2   3.0   9.8   10   Ø 6.35 $^{+0.1}_{0}$
9.5AF   Ø 5.1   Anode   0.5 Sq   2.54
Mounting Hole
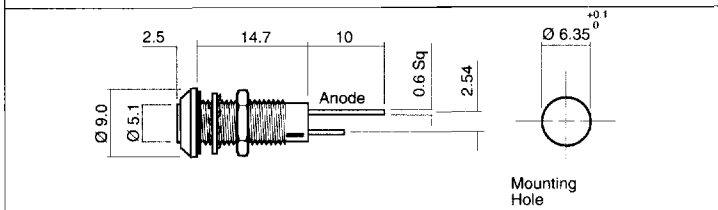
| 662 Series | 2.2 Vdc @ 20 mA only |

Drawing scale 1:1
Dimensions in mm (Typical)
MTBF 90,000 Hours

Operating Temperature Range -40 to +85 °C
Storage Temperature Range -50 to +100 °C

Order Code: **611 - 303 - 20**

Series Options:	LED Options:	Voltage Options:
	Code - LED Colour / Intensity at 20 mA	Code - Voltage / Current
603		
611	**303** - RED 650 nm 100 mcd	**04** - 2.2 Vdc @ 20 mA
662	**309** - YELLOW 585 nm 100 mcd	**20** - 5/6 Vdc @ 15/20 mA
	312 - GREEN 563 nm 160 mcd	**21** - 12 Vdc @ 20 mA
		22 - 24 Vdc @ 17 mA

Ø 8.1mm Mounting

Replacement for JANTX Range

0.64 13 14
1.65
Ø 9.65 Ø 5.0 Cathode 2.54
0.5 Sq
Surface A
Flat
Ø 8.1 +0.1 0
Rear View
Mounting Hole 7.5 +0.1 0
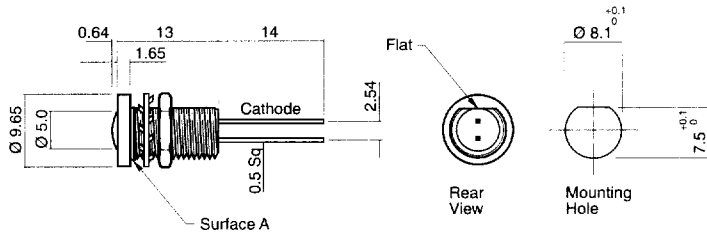
Surface 'A' Anodising removed for earthing to panel

667 Series | **2.2 Vdc @ 20 mA only**

667 - 927 - 04   Order Code

LED Options:
Code - LED Colour / Intensity at 20 mA

926	- RED 650 nm	13 mcd
927	- YELLOW 585 nm	13 mcd
928	- GREEN 563 nm	20 mcd

Sunlight Readable Range

Ø 8.1 and Ø 12.7mm Mounting

8.2 23.3 6
Ø 11.5 Ø 7.0 Anode 2.8

3.7 23.3 6
Ø 11.5 Ø 7.0 Anode 2.8
7.5 +0.1 0 Ø 8.1 +0.1 0
Mounting Hole

676 Series | **677 Series**

8.2 10.6 10
Ø 11.5 Ø 7.0 Anode 0.5 Sq 2.54
7.5 +0.1 0 Ø 8.1 +0.1 0
Mounting Hole

6.5 25.5 6.0
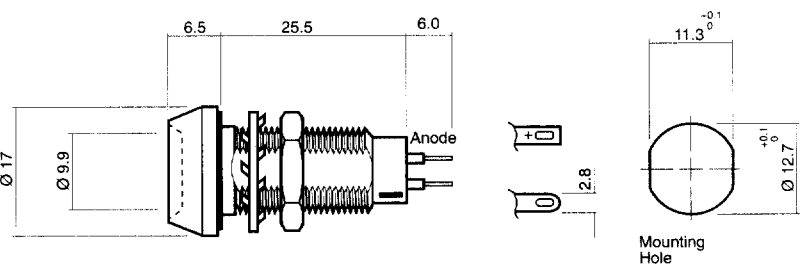Ø 17 Ø 9.9 Anode 2.8
11.3 -0.1 0 Ø 12.7 +0.1 0
Mounting Hole
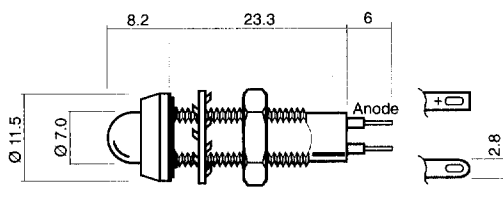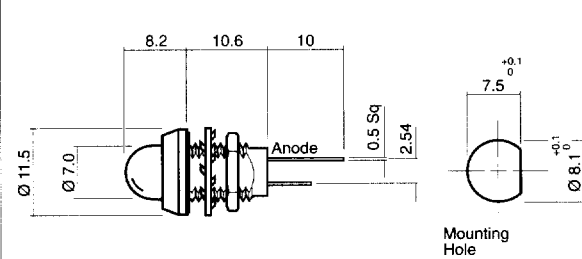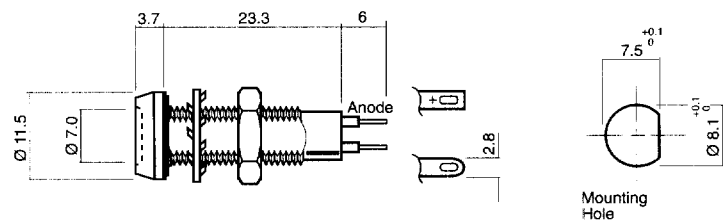
643 Series | **2.2 Vdc @ 20 mA only** | **692 Series**

Drawing scale 1:1
Dimensions in mm (Typical)
MTBF 90,000 Hours

Operating Temperature Range -40 to +85 °C
Storage Temperature Range -50 to +100 °C
Accessories page 8 / Flying Leads
and Lamp Test Facility page 9

Order Code: **677 - 501 - 21**

Series Options:

| 676 |
| 677 |
| 643 |
| 692 |

LED Options:
Code - LED Colour / Intensity at 20 mA

501	- RED 660 nm	3000 mcd
521	- YELLOW 590 nm	2500 mcd
532	- GREEN 525 nm	2000 mcd
930	- BLUE 470 nm	1000 mcd

Intensity figures are for discrete LEDs

Voltage Options:
Code - Voltage / Current

04	- 2.2 Vdc @ 20 mA
20	- 5/6 Vdc @ 15/20 mA
21	- 12 Vdc @ 20 mA
22	- 24 Vdc @ 20 mA
23	- 28 Vdc @ 17mA
24	- 48 Vdc @ 10 mA

Ø 12.7 and Ø 16mm Mounting

651 Series

678 Series

Mounting Hole Ø 16 $^{+0.2}_{0}$
Use Assembly Tool No. 934 - 000 - 00

Drawing scale 1:1 Dimensions in mm (Typical)
MTBF 90, 000 Hours

Order Code: **651 - 105 - 20**

Operating Temperature Range -40 to +85 °C
Storage Temperature Range -50 to +100 °C

Series Options:

651

678

LED Options:

Code - LED Colour / Intensity at 20 mA

102	- HIGH RED 660 nm	200 mcd
105	- RED 635 nm	40 mcd
111	- YELLOW 590 nm	40 mcd
114	- GREEN 565 nm	40 mcd

Voltage Options:

Code - Voltage / Current

04 - 2.2 Vdc @ 20 mA
20 - 5/6 Vdc @ 15/20 mA
21 - 12 Vdc @ 20 mA
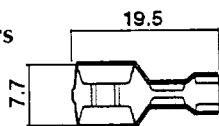22 - 24 Vdc @ 20 mA

Ø 25.4mm Mounting

Mounting Hole Ø25.4 $^{+0.2}_{0}$
Flat Spade Terminations: 6.35mm

672 Series

672 - 290 - 75 Order Code

LED Options:

Code - LED Colour / Intensity at 20 mA

289	- HIGH RED 660 nm	365 cd/m²
290	- RED 635 nm	180 cd/m²
291	- YELLOW 585 nm	160 cd/m²
292	- GREEN 565 nm	155 cd/m²

Voltage Options:

Code - Voltage / Current

21 - 12 Vac/dc @ 40 mA
22 - 24 Vac/dc @ 20 mA
75 - 110 Vac/dc @ 20 mA
76 - 240 Vac @ 25 mA

Drawing scale 1:1
Dimensions in mm (Typical)
MTBF 80, 000 Hours

Operating Temperature Range -40 to +85 °C
Storage Temperature Range -50 to +100 °C

High Performance Panel Indicators

Accessories

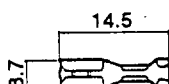**Push-on Connectors**

926 - 000 - 00

Brass Tin plated, Vinyl Insulation 6.35mm insulated push-on terminal to suit wire sizes from 0.25mm² to 1.65mm² cross sectional area. For use with 672 Series.

925 - 000 - 00

Brass Tin plated 2.8mm non-insulated push-on terminal to suit wire sizes from 0.25mm² to 1.65mm² cross sectional area. For use with 676, 677, 692, 651 and 678 Series.

High Performance Panel Indicators

Flying Leads Terminations

Order code Suffix	Supply Voltage	Wire Colour	Wire Length	No./Diameter of Conductors	Diameter over Insulation	Comments
15	Up to 24 VDC	Red anode Black cathode	15 cm			Available on all High Performance Panel Indicators. 15cm length standard on 603 Series to Def Stan 61-12 part 18.
15	110 AC 240 AC	Brown live Blue Neutral	15 cm	19/0.15 mm	1.2 mm	
19	Up to 24 VDC	Red anode Black cathode	100 cm			
19	110 AC 240 AC	Brown live Blue neutral	100 cm			

Example: Add order code suffix to lamp part number
e.g. 676 - 501 - 21 - **07**

Lamp Test Facility

Order code Suffix	Termination	Circuit	Comments
		Test Positive	Available in the following Series:
07	15 cm of flying leads colours as shown		651
			672
11	100 cm of flying leads colours as shown		676
			677
			678
		Test Negative	692
08	15 cm of flying leads colours as shown		
12	100 cm of flying leads colours as shown		

Installation Details and Material Specification

Series	Maximum Power Dissipation mW	Maximum Reverse Voltage V	Minimum Mounting Centres mm	Min/Max Panel Thickness mm	Mounting Torque Nm	IP Rating	Body	Lens	Termination	Panel Seal	Lockwasher	Nut	Encapsulation
658	70	4	6.5	1.6 to 3.2	–	67		Epoxy	Nickel Plated Iron Steel	PTFE Mounting Bush			
603	425	3(2-20 mA) 75 (volt)	10.00	1.5 to 8.0	0.35	67	Bright Nickel Plated Brass		Flying Leads				
611	500	3(2-20 mA) 75 (volt)	11.00	1.5 to 7.0	0.6	67		Poly-carbonate	Tinned Phosphor Bronze Tags	Fluoro-elastomer			
643	75	3	14.5	1.5 to 5.0	0.6	67							
667	75	3	14.5	1.5 to 5.0	0.6	–		Epoxy	Tin Plated Steel	–		Nickel Plated Brass	
662	75	3	11	1.5 to 5.0	0.6	67					Zinc Plated Steel		
676	700	3(2-20 mA) 1000 (volt)	14.5	1.5 to 13.0	0.6	67	Black Anodised Aluminium	Poly-carbonate					Alumina Filled Epoxy
677	700	3(2-20 mA) 1000 (volt)	14.5	1.5 to 13.0	0.6	67							
692	1000	3(2-20 mA) 1000 (volt)	19.5	1.5 to 8.0	1.0	67			Nickel Plated Brass Flat Tags	Flouro-elastomer			
651	1000	3(2-20 mA) 1000 (volt)	19.5	1.5 to 8.0	1.0	67						Black Anodised Aluminium	
678	1700	3(2-20 mA) 1000 (volt)	25	1.5 to 8.0	1.0	67							
672	2500	1000 (volt)	41.0	2.0 to 10.0	1.2	67		Epoxy	Tinned 6.35mm Flat Tags		Steel	Aluminium	