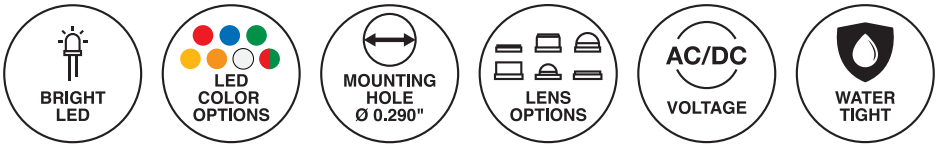
90 Series
0.290″ (7.37mm)
LED Panel Mount Indicator



90 Series with built-in long life LED offer superior construction and longer life
Cartridge, bi-pin and wire leads termination styles



Key features

- Built-in LED can be used with DC circuits (5 to 60 VDC) or 120VAC circuits
- Terminal Styles: cartridge, bi-pin and wire leads (6” 24 AWG wire leads)
- Available with a variety of LEDs including AlInGaP and InGaN technology for high brightness applications, bi-color and with integrated resistors
- Available in six LED solid colors: red, green, white, blue, amber, orange and in one bi-color: red/green with or without lens
- Seven lens colors available: red, amber, yellow, green, blue, water clear and smoke
- Offered with a variety of lens options: cylindrical, flush, dome, wide cylindrical or wide flush, all featured with fresnel pattern lens which provide excellent light focus and assure maximum light output
- Spring retainer clip and washer (included) secures uniform placement of the indicator to the panel and is ideal for high vibration environments
- Offered with white or black bezel, where the black bezel enhances LED contrast
- Resistant to shock and vibration
- Mounting hardware provided (spring retainer clip and washer)
- Watertight socket options for splashdown environments
- For use with spring retainer clip (included), socket holder (PS90 or PS90T - sold separately) or wiring plug (SH90 or CSH90 - sold separately)
- Compliant with RoHS and REACH

Ordering Data

TO ORDER, FOLLOW THE EXAMPLE Part Number: **94-LRG12H-CW0** Mounting hardware included

Select one **BOLD** component from each numbered category in the tables below.

1 Model	2 LED	3 Voltage	4 Lens Diffusion	5 Lens Color	6 Bezel Color
94	**-LRG**	**12H**	**-C**	**W**	**0**

1

	Cartridge	Bi-Pin	Wire Leads
Black Housing	**C**[1]	**905**[2] -No lens **91**-Cylindrical **94**-Flush **96**-Dome	**W**
White Housing		**961**-Wide cylindrical **964**-Wide flush	

2

Standard Intensity - Diffused Encapsulation

LED	Color	λpk (nm)	Iv[1] (mcd)	Viewing Angle	V/C Table[2]
-BR[4]	RED	626	6.1	60	I
-BA[4]	AMB	585	6.5	60	I
-BG[4]	GRN	569	4.7	60	I

Medium Intensity - Tinted Encapsulation

LED	Color	λpk (nm)	Iv[1] (mcd)	Viewing Angle	V/C Table[2]
-BCR	RED	626	60	35	I
-BCA	AMB	585	60	35	I
-BCG	GRN	569	70	24	I

High Intensity - Waterclear Encapsulation

LED	Color	λpk (nm)	Iv[1] (mcd)	Viewing Angle	V/C Table[2]
-NWR	RED	634	2800	30	I
-NWO	ORG	605	2000	30	I
-NWA	AMB	592	7500	30	I
-NWG	GRN	520	6500	30	II
-NWB	BLU	465	700	45	II
-NWW[8]	CWHT		6150	30	II
-NWL[8]	WWHT		4700	30	II
-NKR	RED	634	3600	15	I
-NKO	ORG	605	8000	15	I
-NKA	AMB	592	3600	15	I
-NKG	GRN	520	10000	15	II
-NKB	BLU	465	9300	20	II
-NKW[8]	CWHT		27000	20	II
-NKL[8]	WWHT		9200	15	II

Specialty LEDs - Diffused Encapsulation

LED	Color	λpk (nm)	Iv[3] (mcd)	Viewing Angle	V/C Table[5]	Description
-RLP[7]	RED	634	2.3	50	[5]	Low Power
-ALP[7]	AMB	583	2.1	50	[5]	Low Power
-GLP[7]	GRN	565	2.3	50	[5]	Low Power
-LRG[8]	RED/GRN	568/640	60/200	35	I	Bi-Color, Red Cathode

Voltage/Current

Design Vf/If	Max Vf/If
V/C Table I	
5V/22mA	5.5V/28mA
12V/20mA	14V/25mA
15V/24mA	16.5V/28mA
24V/17mA	26V/20mA
28V/16.5mA	30V/18mA
48V/15mA	50V/16mA
60V/9mA	65V/10mA
120VAC/3.5mA	130VAC/4mA

Voltage/Current

Design Vf/If	Max Vf/If
V/C Table II	
5V/15mA	5.5V/23mA
12V/15mA	14V/20mA
15V/15mA	16.5V/18mA
24V/15mA	26V/18mA
28V/15mA	30V/17mA
48V/9.5mA	50V/10mA
60V/7mA	65V/8mA
120VAC/3.5mA	130VAC/4mA

3

Voltage[6]
2
5H
12H
15H
24H
28H
48H
60H
120[9]

4

Lens Diffusion
-C Clear
-N Diffused

5

Lens Color
R Red
A Amber
Y Yellow
G Green
B Blue
W Water Clear
-S Smoke [10]

6

Bezel Color
0 Black
9 White

[1] For panel lights mounted in the PS90 or PS90T socket (pg. 5). Mounting hardware is included with the socket. Do not select the W option. C and standard pins are not solderable.

[2] Model 905 has no lens. Omit Lens Diffusion and Color (e.g. 905 ·BG5H·O).

[3] Iv = typical luminous intensity @ If = 20mA [Ta =25˚C). Iv is measured without lenses. For Low Power LEDs, If = 2mA.

[4] Use with Model 905 only.

[5] See Voltage/Current table for design specifications. Design current for low power LEDs = 2mA.

[6] Ta = 25˚C. Voltage "2" indicates external resistor required. Voltages 5H through 60H are VDC. For AC operation, insert D after Voltage (e.g. 24HD). D indicates built-in rectifier; not required for 5H or 120VAC. DC operation not available for 120V. Bi-Color not available in AC voltages.

[7] Omit H when selecting a voltage (e.g. 91-RLP12-CWO).

[8] Select -CW or -NW Lens only.

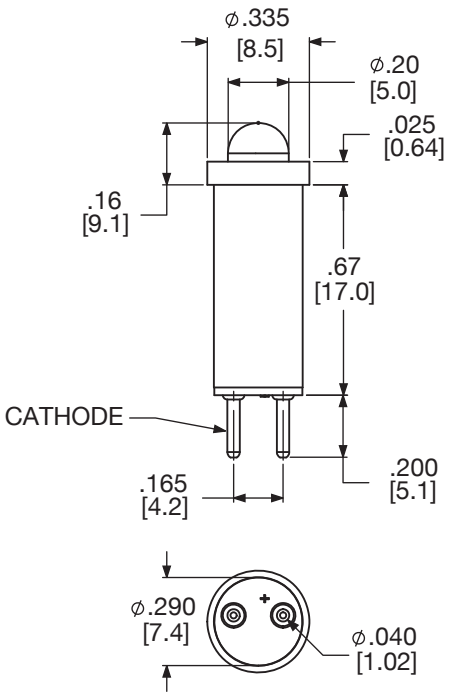
[9] Select high intensity LEDs only.

[10] Omit Lens Diffusion when selecting smoked lens (e.g. 91-NWG24H-S0).

Product Dimensions

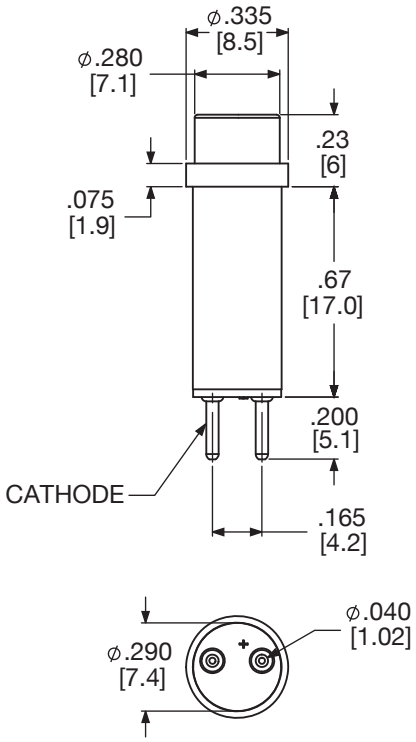
905[1]

No Lens - Black Housing



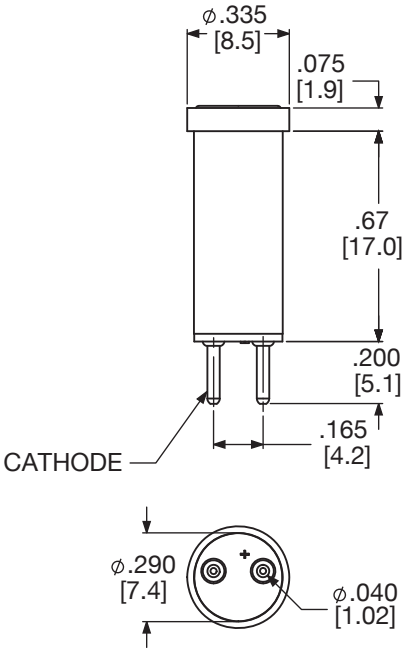
91[1]

Cylindrical Fresnel Lens - Black Housing



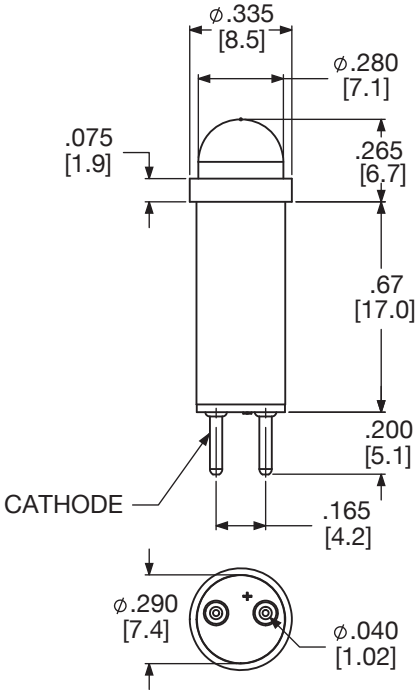
94[1]

Flush Fresnel Lens - Black Housing



96[1]

Dome Lens - Black Housing

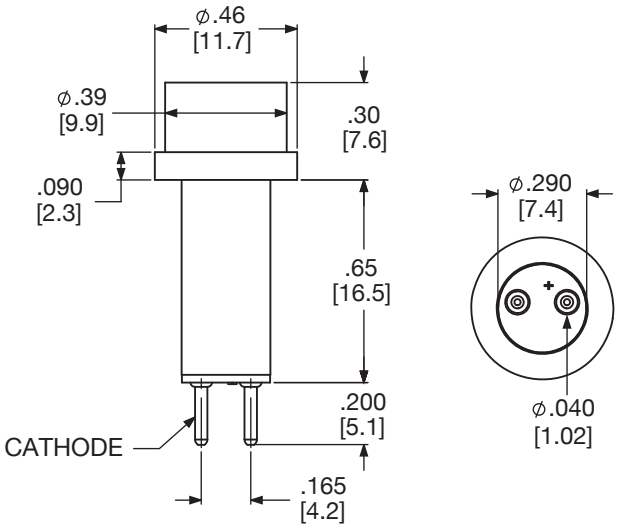


[1] Dimensions for cartridge and bi-pin

Dimensions in inches [mm]

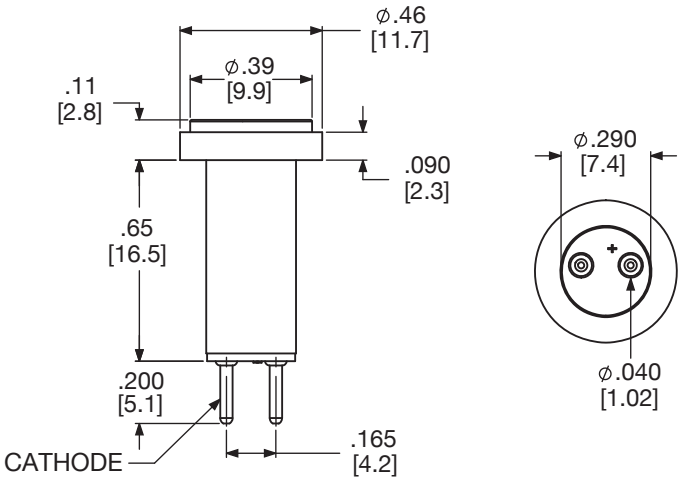
961[1]

Wide Cylindrical Fresnel Lens - White Housing



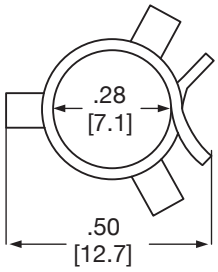
964[1]

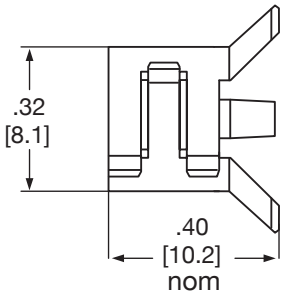
Wide Flush Fresnel Lens - White Housing



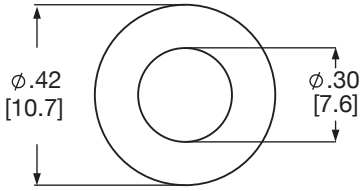
Mounting Hardware (included)

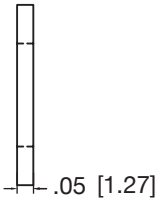
TC9-R-
Spring Retainer Clip





NW5
Mounting Washer





Hardness: 60 Shore A

[1] Dimensions for cartridge and bi-pin

Dimensions in inches [mm]

Lens, Retaining Collar, Wiring Plug for 90 Series

TO ORDER, FOLLOW THE EXAMPLE Part Number: **L92-CR**

Select one BOLD component from each numbered category in the tables below.

1 Model	2 Lens Diffusion	3 Lens Color
L92	**-C**	**R**

- Mounting Hole Diameter: Ø.375″ - Ø.385″
- Panel Thickness: Max: 0.80″

90 Series Sockets & Hardware

1 Model	Description	Mating Components
L92	90 Series Lens	C905
PS90[1]	90 Series Socket, Solder Terminals	C905, C91, C94, C96, C961, C964
PS90T[1]	90 Series Socket, Turret Terminals	C905, C91, C94, C96, C961, C964
RC90-R-	Retaining Collar	PS90, PS90T
RC90-B-R-	Retaining Collar (Black)	PS90, PS90T
SH90	Wiring Plug	Wiring Plug
CSH90	Wiring Plug with collar	905, 91, 94, 96, 961, 964, C905, C91, C94, C96, C961, C964
TC9-R-	90 Series Spring Retainer Clip[3]	905, 91, 94, 96, 961, 964, C905, C91, C94, C96, C961, C964
NW5	Mounting Washer (neoprene)[3]	905, 91, 94, 96, 961, 964, C905, C91, C94, C96, C961, C964

90 Series Lens
(For use with PS90 or PS90T Socket with Model C905 Panel Light)

1 Model	4 Lens Diffusion	5 Lens Color
L92	**-C** Clear	**R** Red
	-N Diffused	**A** Amber
		Y Yellow
		G Green
		B Blue
		W Water Clear
		-S Smoke [2]



RC90-R-



SH90



L92

[1] Hardware Assembled, for watertight option see page 6
[2] Omit Lens Diffusion Code (e.g. L92-S).
[3] Mounting hardware included

Watertight Sockets for model C905 or 905

TO ORDER, FOLLOW THE EXAMPLE Part Number: **PS90T-L92-CY-WT**

Select one **BOLD** component from each numbered category in the tables below.

1 Socket Model	2 Lens Model	3 Lens Diffusion	4 Lens Color	5 Water Tight
PS90	**-L92**	**-C**	**Y**	**-WT**

- For Splash Down Environments (not submersible)
- Mounting Hole Diameter: Ø.375″ - Ø.385″
- Panel Thickness: Max: 0.80″

1 Socket Model
PS90
PS90T

2 Lens Model
-L92

3 Lens Diffusion
-C Clear
-N Diffused

4 Lens Color
R Red
A Amber
Y Yellow
G Green
B Blue
W Water Clear
-S Smoke [1]

5 Water Tight
-WT



PS90-L92-S-WT

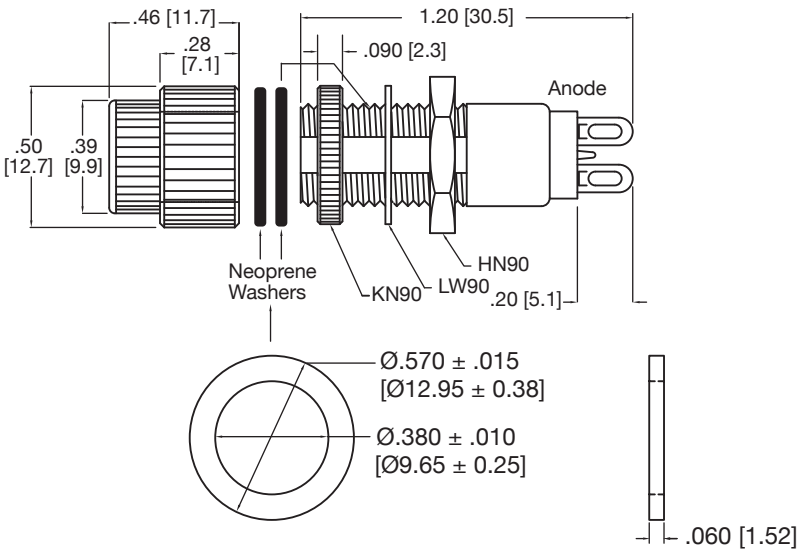


PS90T-L92-NG-WT

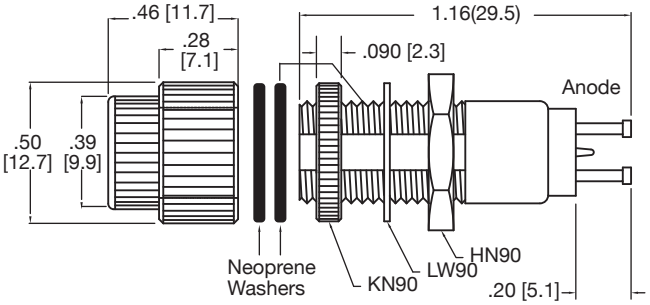
[1] Omit Lens Diffusion Code (e.g. PS90T-L92-S-WT).

Dimensions in inches [mm]

PS90, Watertight

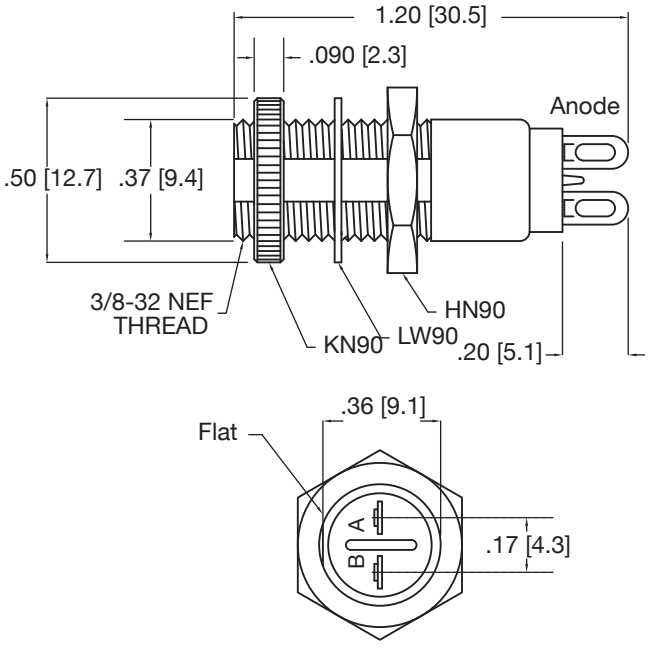


PS90T, Watertight



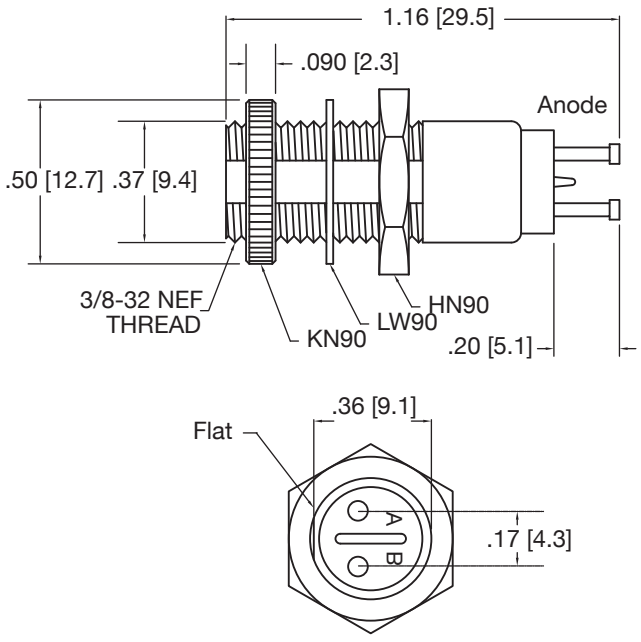
PS90

90 Series Socket, Solder Terminals



PS90T

90 Series Socket, Turret Terminals



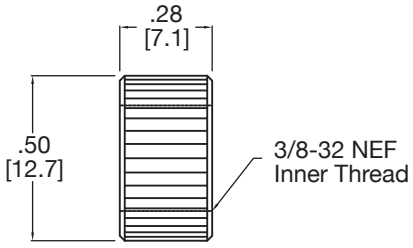
Mounting Hole Diameter
Ø 0.375″/0.385″ [Ø 9.525/9.779]

Maximum Panel Thickness
Max: 0.80″ [20.32]

Dimensions in inches [mm]

RC90-R- (aluminum)
RC90-B-R- (black anodized aluminum)

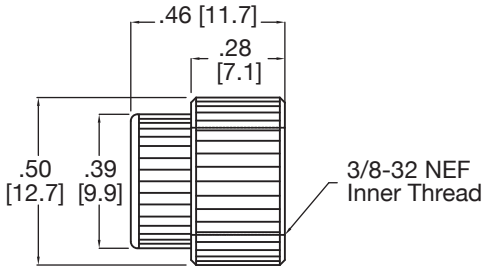
Retaining Collar for PS90 and PS90T



Only for use with PS90, PS90T

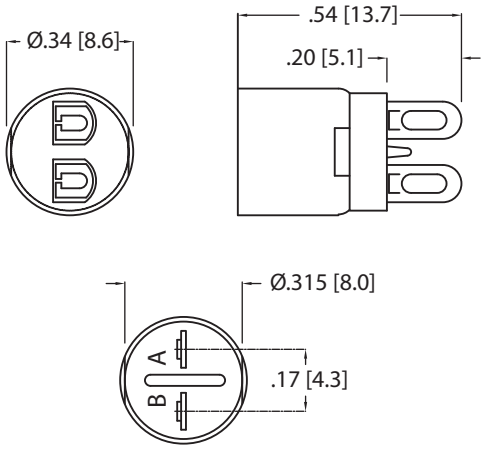
L92

90 Series Lens for PS90, PS90T socket and C905, 905



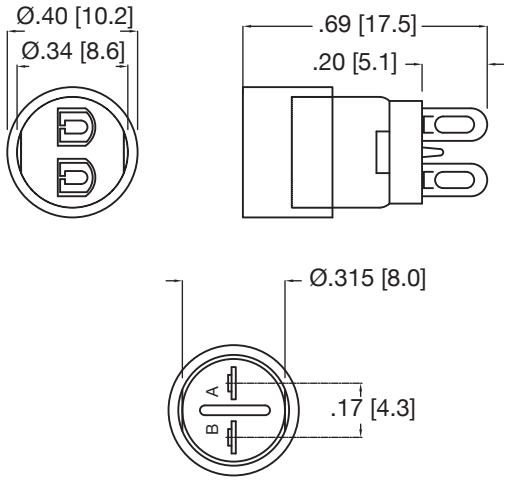
SH90

Wiring Plug



CSH90

Wiring Plug with Collar



Dimensions in inches [mm]

Product Specifications

Materials	
Housing	Black nylon, except 961 & 964 which are white nylon
Lens	Lexan
Pin	Brass
Wire Leads	Tinned copper conductor TPB insulation
TC9-R-	High carbon spring steel zinc plate finish
NW5	Black neoprene
RC90-R-	Aluminum
RC90-B-R-	Black Anodized Aluminum

Temperature Specifications	
Operating Temperature	-30˚C to 60˚C
Storage Temperature	-40˚C to 100˚C

Installation Specifications	
Mounting Hole	0.290″ to 0.291″ [7.37 to 7.39]
Panel Thickness	0.25″ max
Wire Leads	24 AWG - 300V lead color: red and black 6.0″ long min stripped 0.5″ nom red anode/black cathode, 24 AWG TPB UL1061 insulation. Contact sales for other lengths, gauges and colors.

Dimensions in inches [mm]

Compliances and Approvals