



RoHS Compliant

Illuminated Pushbutton - 12mm

## Specifications\*

|                    |                        |
|--------------------|------------------------|
| Electrical Ratings | 2A @ 48VDC             |
| Sealing Degree     | IP65                   |
| Electrical Life    | 50,000 cycles average  |
| Mechanical Life    | 100,000 cycles average |
| Contact Resistance | ≤ 50mΩ initial         |

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Actuation Force       | 250 ± 100gF                                                    |
| Dielectric Strength   | 1500Vrms min contact to contact<br>1500Vrms min contact to LED |
| Insulation Resistance | > 100MΩ min @ 500VDC                                           |
| Operating Temperature | -25°C to 55°C                                                  |
| Storage Temperature   | -25°C to 55°C                                                  |

## Materials

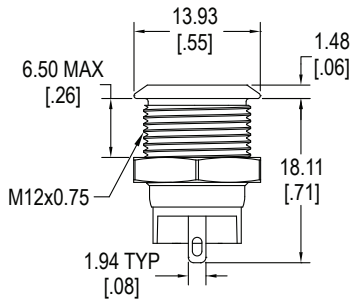
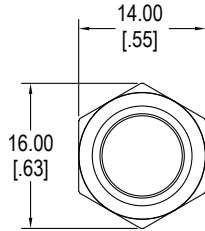
|                  |                                     |
|------------------|-------------------------------------|
| Actuator         | Stainless Steel or Aluminum         |
| LED Lens         | Polycarbonate (PC)                  |
| Threaded Body    | Stainless Steel or Aluminum         |
| Terminal Support | Polybutylene Terephthalate (PBT)    |
| Contacts         | Silver Alloy                        |
| Terminals        | Brass, Silver Plated                |
| Hardware         | One Hex Nut & One "O" Ring Supplied |

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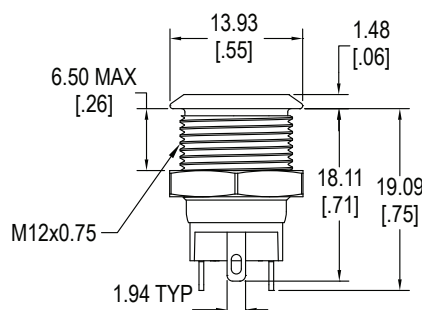
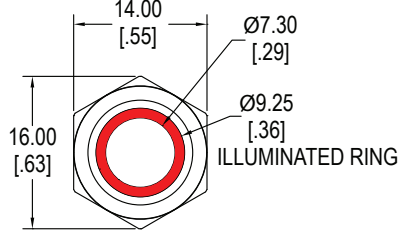
### Ordering Information

|                     |                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 1. Series           | FH                                                                                                                                                                                                                                                                                                                                                                                                            | N | B | B | B | G |
| FH                  |                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |
| 2. Bezel Style      | Blank = Standard Bezel                                                                                                                                                                                                                                                                                                                                                                                        |   |   |   |   |   |
| 3. Switch Function  | N = Momentary<br>L = Latching                                                                                                                                                                                                                                                                                                                                                                                 |   |   |   |   |   |
| 4. Actuator Style:  | A = Flush actuator, non-illuminated<br>B = Flush actuator, ring illuminated<br>C = Flush actuator, dot illuminated<br>D = Raised actuator, non-illuminated<br>E = Raised actuator, ring illuminated<br>F = Raised actuator, dot illuminated                                                                                                                                                                   |   |   |   |   |   |
| 5. Switch Finish    | B = Black Anodized Aluminum<br>G = Green Anodized Aluminum<br>R = Red Anodized Aluminum<br>S = Brushed Stainless Steel<br>U = Blue Anodized Aluminum<br>Y = Yellow Anodized Aluminum                                                                                                                                                                                                                          |   |   |   |   |   |
| 6. Terminal Options | B = Solder Lugs                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |
| 7. LED Color        | X = No LED<br>R = Red<br>Y = Yellow<br>G = Green<br>B = Blue<br>W = White<br>O = Orange<br><br>RO = Red / Orange dual LED<br>RY = Red / Yellow dual LED<br>RG = Red / Green dual LED<br>RB = Red / Blue dual LED<br>OY = Orange / Yellow dual LED<br>OG = Orange / Green dual LED<br>OB = Orange / Blue dual LED<br>YG = Yellow / Green dual LED<br>YB = Yellow / Blue dual LED<br>GB = Green / Blue dual LED |   |   |   |   |   |
| 8. LED Voltage      | Blank = No LED<br>N = No internal resistor in series with the LED                                                                                                                                                                                                                                                                                                                                             |   |   |   |   |   |

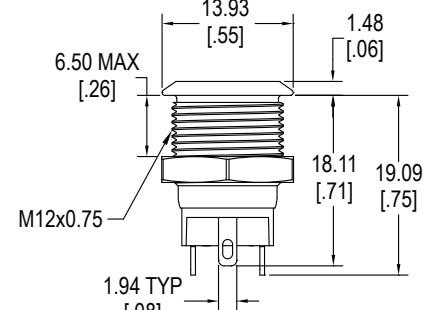
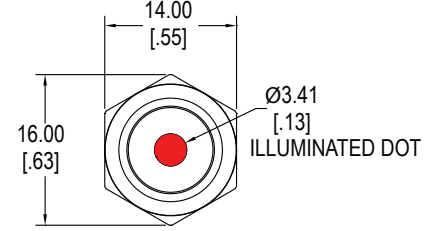
## Dimensions - Momentary



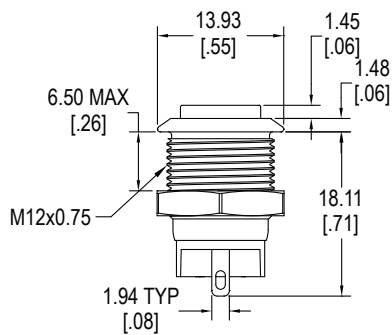
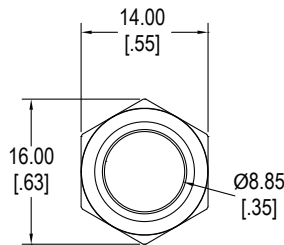
**A**



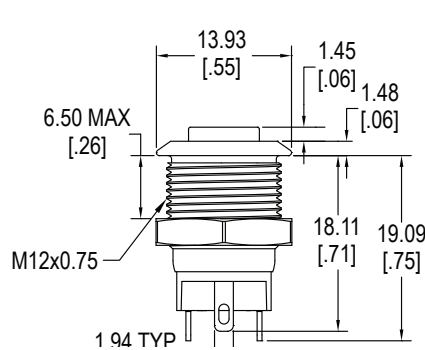
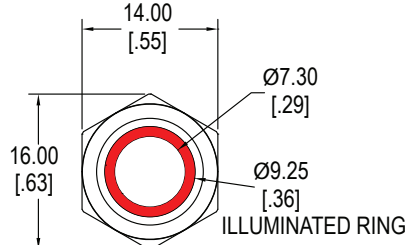
**B**



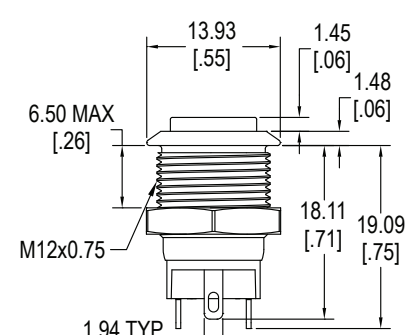
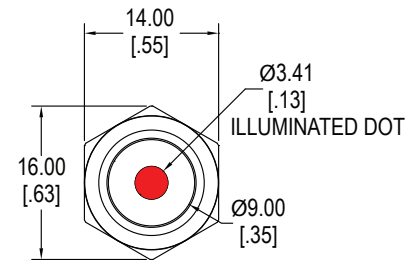
**C**



**D**



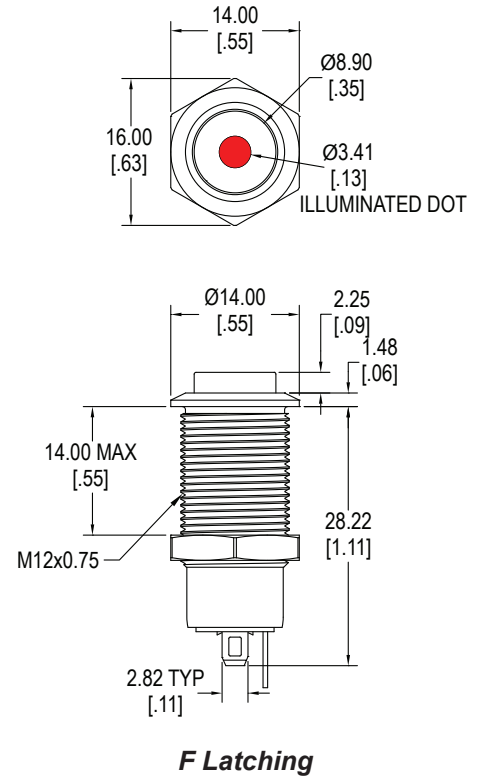
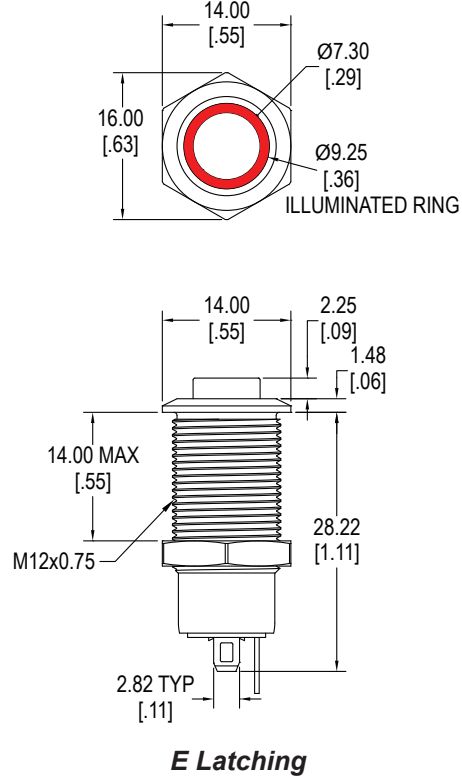
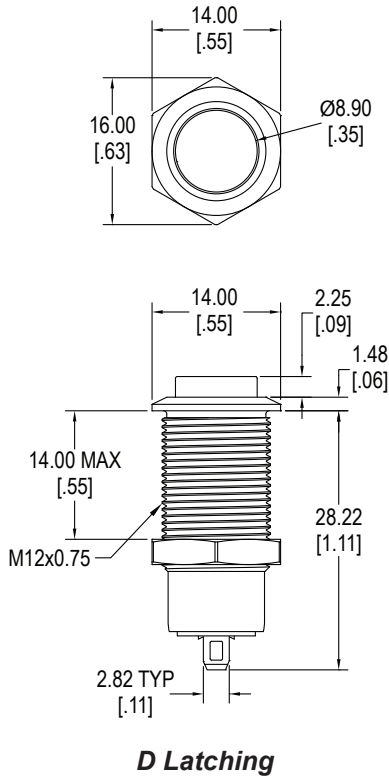
**E**



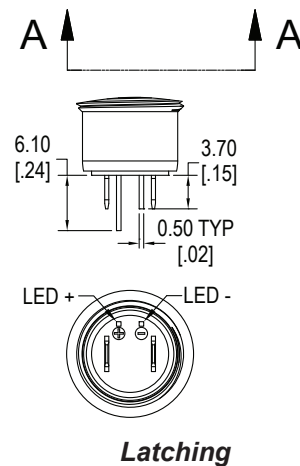
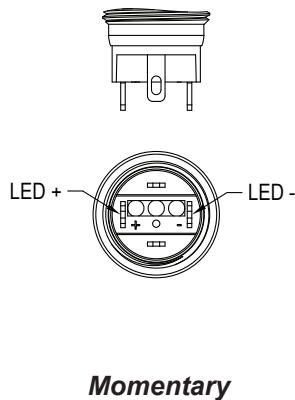
**F**

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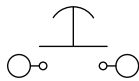
### Dimensions - Latching



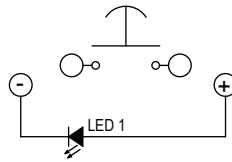
### Bottom View



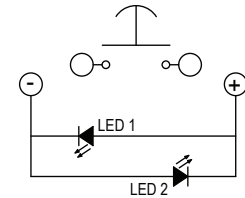
## Schematics



**No LED**

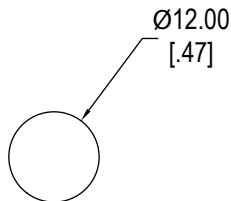


**Single Color LED**



**Dual Color LED**

## Panel Cut-Out



## LED Characteristics

| LED Ratings                               |                 | Color     |     |     |     |     |     |         |
|-------------------------------------------|-----------------|-----------|-----|-----|-----|-----|-----|---------|
|                                           |                 | R         | Y   | G   | B   | O   | W   | Units   |
| Reverse Voltage                           | $V_R$           | 5         | 5   | 5   | 5   | 5   | 5   | V       |
| Forward Current (avg)                     | $I_F$           | 25        | 25  | 30  | 30  | 25  | 30  | mA      |
| Forward Current (peak)                    | $I_{FS}$        | 120       | 120 | 160 | 160 | 120 | 160 | mA      |
| Reverse Current $V_R = 5V$                | $I_R$           | 10        | 10  | 10  | 10  | 10  | 10  | $\mu A$ |
| Power Dissipation                         | $P_T$           | 80        | 80  | 120 | 120 | 80  | 120 | mW      |
| Operating & Storage Temperature           | $T_A$           | -40 ~ +85 |     |     |     |     |     | C°      |
| Forward Voltage (typ) $I_F = 20mA$        | $V_F$           | 2.1       | 2.1 | 3.3 | 3.3 | 2.0 | 3.0 | V       |
| Forward Voltage (max) $I_F = 20mA$        | $V_F$           | 2.4       | 2.5 | 3.6 | 3.6 | 2.3 | 3.6 | V       |
| Wavelength at Peak Emmission $I_F = 20mA$ | $\lambda_P$     | 635       | 592 | 516 | 463 | 606 | n/a | nm      |
| Spectral Line Half-Width $I_F = 20mA$     | $\Delta\lambda$ | 14        | 12  | 28  | 20  | 12  | n/a | nm      |
| Luminous Intensity, $I_F = 20mA$          | LI              | 120       | 120 | 170 | 100 | 120 | 700 | mcd     |
| Viewing Angle                             | $\Theta$        | 145       | 145 | 145 | 145 | 145 | 145 | deg     |