



# AP Series Industrial Pushbutton Switch

**NEW!**

Pushbutton A

## Features/Benefits

- IP67 sealed
- 1,000,000 life cycle
- Illumination / non-illumination
- Multiple colored caps
- Threaded or snap-in mounting
- Caps available separately
- RoHS compliant

## Typical Applications

- Harsh environments
- Off-Road
- Industrial
- Medical
- Transportation
- Joystick control modules
- Gaming
- Military



## Specifications

FUNCTION: SPST Momentary, double break  
 CONTACT ARRANGEMENT: N.O.  
 MOUNTING TYPE:  
 Snap-in (panel front) or threaded (nut with locking washer and panel gasket)

## Mechanical

OPERATING LIFE: 1,000,000 cycles  
 TOTAL TRAVEL: 2.1 ± 0.2 mm  
 OPERATING POINT 1.55 ± 0.25 mm  
 OVER TRAVEL: 0.6 min.  
 OPERATING FORCE: 4N ± 1N standard configuration; other force option 2N ± 0.5N  
 VIBRATION: 10-500 Hz 10g Max  
 SHOCK: 60g 11ms sawtooth wave

## Electrical

CONTACT RATING:  
 200mA @ 24 V DC resistive (500,000 cycles)  
 100mA @ 50 V DC resistive (500,000 cycles)  
 400mA @ 32 V AC resistive (500,000 cycles)  
 125mA @ 125 V AC resistive (1,000,000 cycles)  
 DIELECTRIC STRENGTH: 1000 V AC min.  
 INSULATION RESISTANCE: 1 G Ω @ 500 VDC  
 INITIAL CONTACT RESISTANCE 50 mΩ max (without wire leads)  
 BOUNCE TIME: <5 ms

## Materials

HOUSING: PBT  
 BASE: PBT  
 CAP: PBT  
 ACTUATOR:  
 Illuminated: Clear polycarbonate  
 Non-illuminated: PBT  
 INTERNAL SEAL: Silicone rubber  
 TERMINALS: Copper alloy, gold over silver plating  
 MOVABLE CONTACT: Copper alloy, gold over silver plating  
 TERMINAL SEAL: Epoxy

## Operating Environment

OPERATING TEMPERATURE: -40°C to 85°C (+105°C non-illuminated)  
 ESD PROTECTION: 20 KV min.

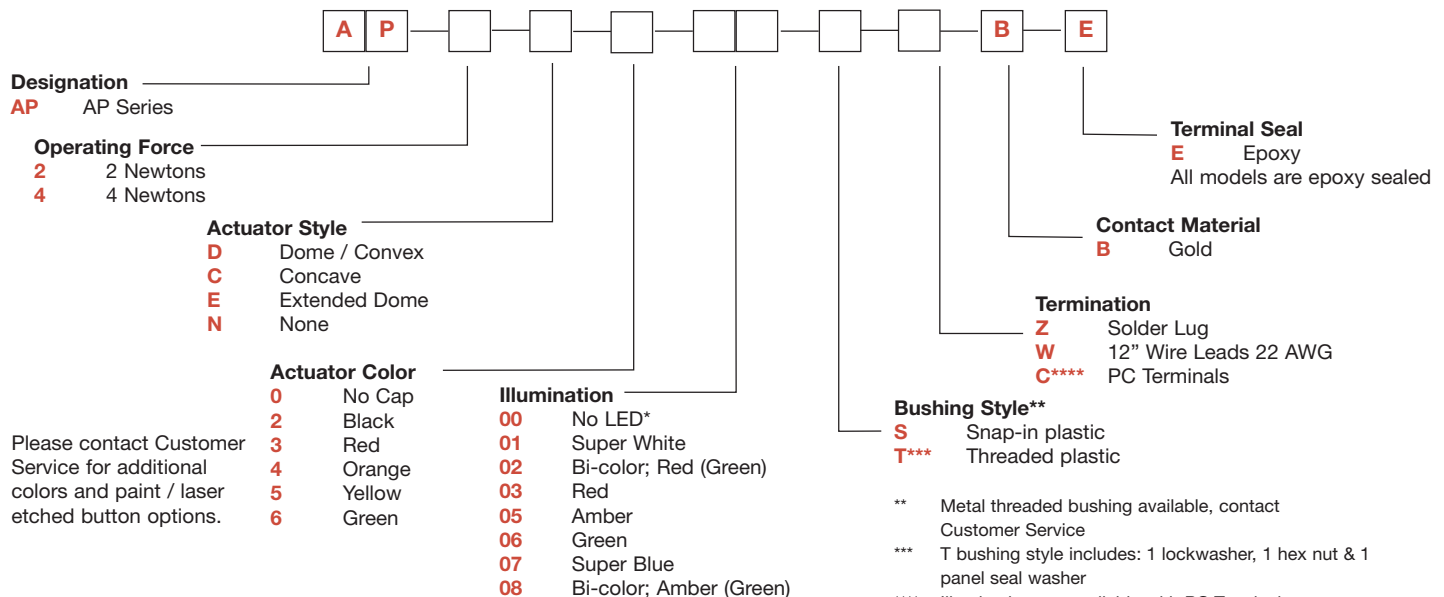
## Process Environment

SEALING: IP67

**NOTE:** Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, please contact Customer Service.

## Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box.



Please contact Customer Service for additional colors and paint / laser etched button options.

\* No LED available in short body only

\*\* Metal threaded bushing available, contact Customer Service  
 \*\*\* T bushing style includes: 1 lockwasher, 1 hex nut & 1 panel seal washer  
 \*\*\*\* Illumination not available with PC Terminals  
 Contact Customer Service for additional hardware options.



Specifications and dimensions subject to change

**NEW!**

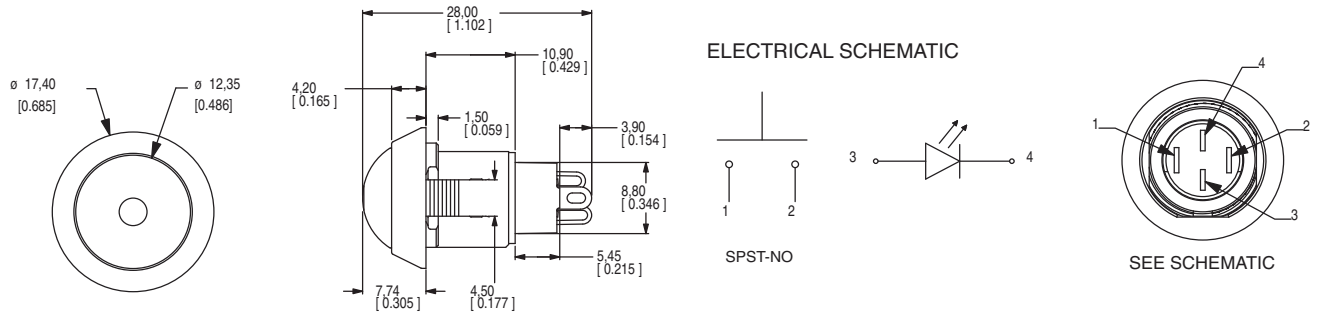
# AP Series Industrial Pushbutton Switch



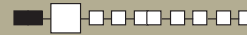
**A**

Pushbutton

## STANDARD VIEW

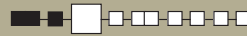


## OPERATING FORCE

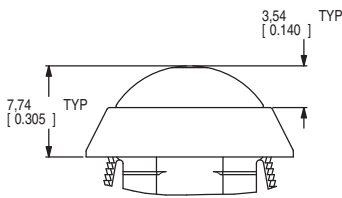


| OPTION CODE | OPERATING FORCE |
|-------------|-----------------|
| <b>2</b>    | 2 N, 200 g      |
| <b>4</b>    | 4 N, 400 g      |

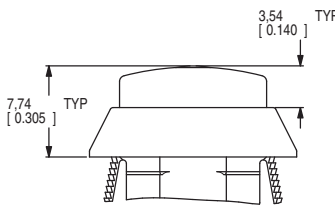
## ACTUATOR STYLE



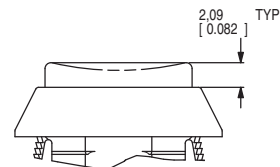
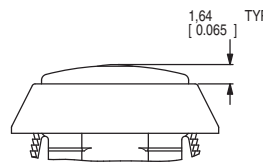
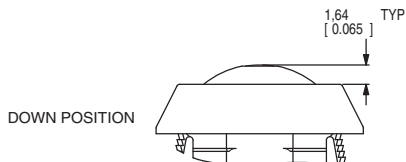
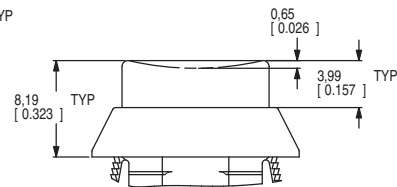
### D DOME / CONVEX



### E EXTENDED DOME



### C CONCAVE

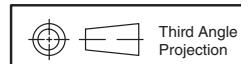


## ACTUATOR COLOR



| OPTION CODE | ACTUATOR COLOR |
|-------------|----------------|
| <b>0</b>    | No Cap         |
| <b>2</b>    | Black          |
| <b>3</b>    | Red            |
| <b>4</b>    | Orange         |
| <b>5</b>    | Yellow         |
| <b>6</b>    | Green          |

For additional colors please contact Customer Service.



Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change





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**NEW!**

## ILLUMINATION



Pushbutton  
A

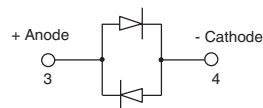
| OPTION CODE | ILLUMINATION TYPE            | TYPICAL INTENSITY* |       | PEAK WAVELENGTH | Vf Forward Voltage |
|-------------|------------------------------|--------------------|-------|-----------------|--------------------|
|             |                              | MIN                | MAX   |                 |                    |
|             |                              | (mcd)              |       | (nm)            |                    |
| 00          | Model without illumination   | N/A                |       | N/A             |                    |
| 01          | LED Super White              | 4,000              | 5,000 | N/A             | 3.5                |
| 02          | LED Bi-Color – Red (Green)   | 10                 | 20    | 635/565         | 2.0                |
| 03          | LED Red                      | 4                  | 8     | 700             | 2.0                |
| 05          | LED Amber                    | 35                 | 50    | 610             | 2.0                |
| 06          | LED Green                    | 35                 | 50    | 565             | 2.0                |
| 07          | LED Super Blue               | 800                | 1,500 | 470             | 3.8                |
| 08          | LED Bi-Color – Amber (Green) | 10                 | 10    | 585/565         | 2.0                |

\*LED FORWARD CURRENT: 20 mA  
LED FORWARD VOLTAGE: see chart above  
LED REVERSE VOLTAGE: 5.0 V MAX

\* For information on specific and custom LED, please contact Customer Service.

NOTE:

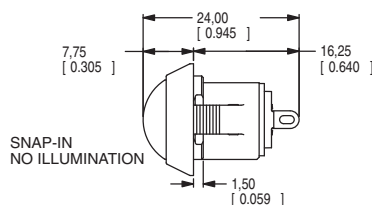
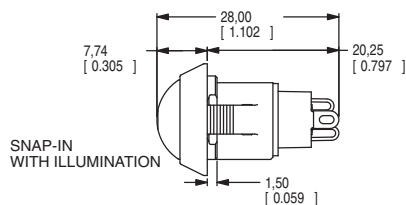
For bi-color LED's the polarity must be reversed to alternate the color



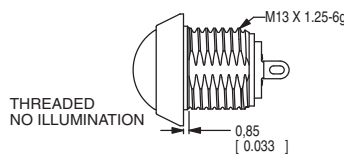
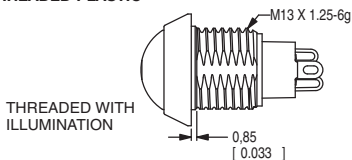
## BUSHING STYLE



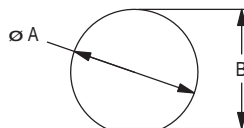
### S SNAP-IN



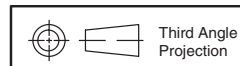
### T THREADED PLASTIC



### PANEL CUTOUT



| PANEL THICKNESS                           | DIM A (± 0.05 mm)      | DIM B (± 0.05 mm)      |
|---|------------------------|------------------------|
| 1 mm<br>[0.039 in]                        | 13.70 mm<br>[0.539 in] | 13.00 mm<br>[0.512 in] |
| 2 mm<br>[0.079 in]                        | 13.80 mm<br>[0.539 in] | 13.00 mm<br>[0.512 in] |
| 3 mm<br>[0.118 in]                        | 13.90 mm<br>[0.547 in] | 13.10 mm<br>[0.516 in] |
| THREADED BODY<br>MIN PANEL THICKNESS 1 mm | 13.70 mm<br>[0.539 in] | 13.00 mm<br>[0.512 in] |



A 0.1mm min. chamfer on the leading edge of the mounting hole is recommended for snap-in version.

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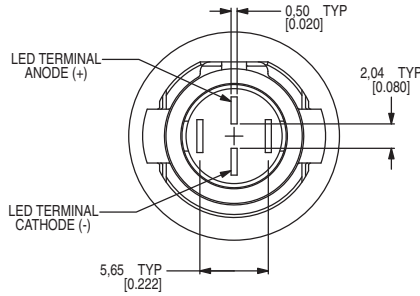
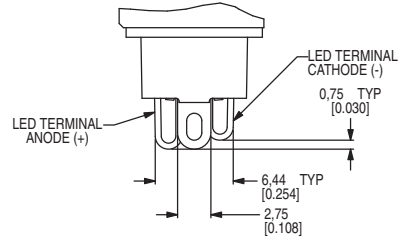
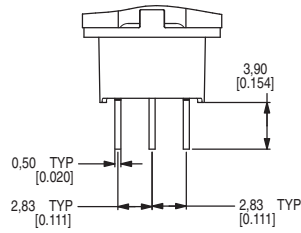
**A**

Pushbutton

## TERMINATION

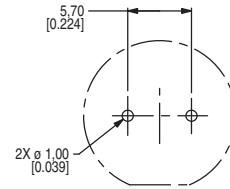
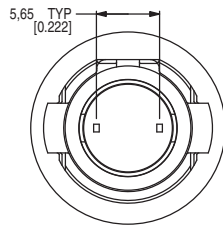
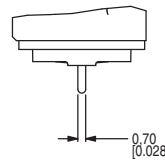
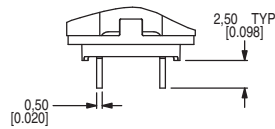


### Z SOLDER LUG



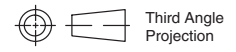
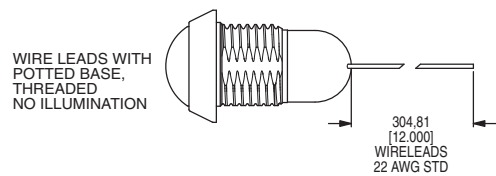
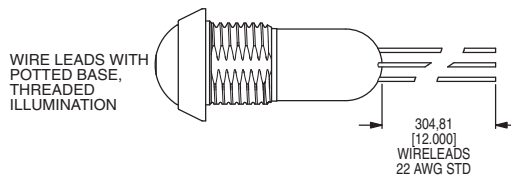
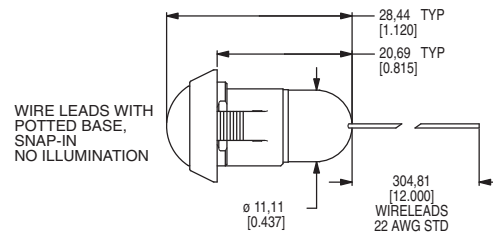
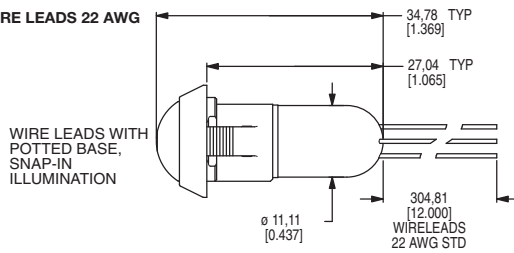
### C PC TERMINALS

\*\*\*\* Illumination not available with PC Terminals



PCB HOLE PATTERN BOARD VIEW

### W 12" WIRE LEADS 22 AWG



Third Angle Projection



Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change



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Pushbutton

## CONTACT MATERIAL



**B** GOLD

| OPTION CODE | CONTACT MATERIAL |
|-------------|------------------|
| <b>B</b>    | Gold             |

## TERMINAL SEAL



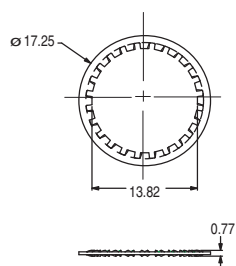
**E** EPOXY

All models are epoxy sealed

## HARDWARE

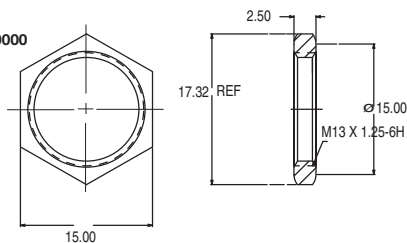
### LOCK WASHER

Part Number 647D00000



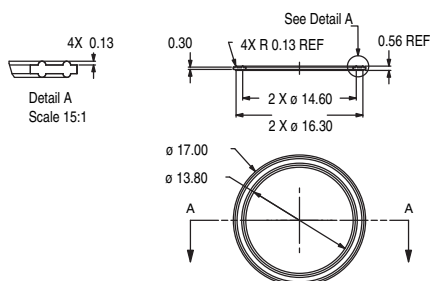
### HEX NUT

Part number 515D00000

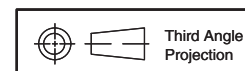


### PANEL SEAL

Part Number 655D00000



Caps available on next page



Third Angle Projection



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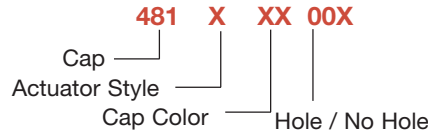
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Pushbutton

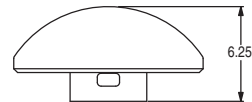
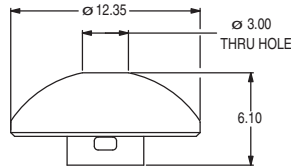
## AVAILABLE CAPS



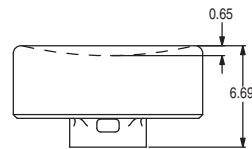
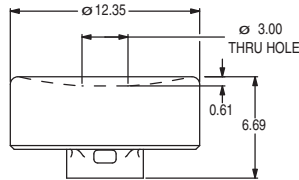
| OPTION | CAP COLOR |
|--------|-----------|
| 02     | BLACK     |
| 03     | RED       |
| 04     | ORANGE    |
| 05     | YELLOW    |
| 06     | GREEN     |

| PART NUMBER | HOLE | ACTUATOR STYLE |
|-------------|------|----------------|
| 481DXX000   | NO   | DOME           |
| 481DXX001   | YES  | DOME           |
| 481CXX000   | NO   | CONCAVE        |
| 481CXX001   | YES  | CONCAVE        |
| 481EXX000   | NO   | EXTENDED DOME  |
| 481EXX001   | YES  | EXTENDED DOME  |

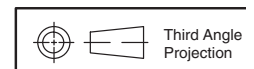
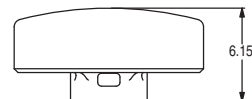
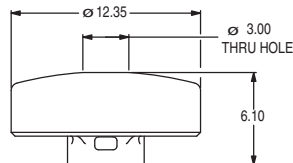
**D** DOME



**C** CONCAVE



**E** EXTENDED DOME



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