



A

Pushbutton

AP Series Industrial Pushbutton Switch

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 (no panel seal)

Threaded body (hex nut, lock washer, and panel seal gasket provided)

Torque spec for threaded body: Do not exceed 8-9 in-lbs (0.9-1.0 N.m)

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: $4N \pm 1N$ standard configuration; other force

option $2N \pm 0.5N$

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: $1 \text{ G } \Omega$ @ 500 VDC

INITIAL CONTACT RESISTANCE 50 m Ω 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.

Designation	A	P									B	E
AP	AP Series											
Operating Force	2	2 Newtons										
	4	4 Newtons										
Actuator Style	D	Dome / Convex										
	C	Concave										
	E	Extended Dome										
	N	None										
Actuator Color	0	No Cap										
	2	Black										
	3	Red										
	4	Orange										
	5	Yellow										
	6	Green										
	7	Blue										
	9	Gray										
Illumination	00	No LED*										
	01	Super White										
	02	Bi-color; Red (Green)										
	03	Red										
	05	Amber										
	06	Green										
	07	Super Blue										
	08	Bi-color; Amber (Green)										
Terminal Seal	E	Epoxy										
		All models are epoxy sealed										
Contact Material	B	Gold										
Termination	Z	Solder Lug										
	W	12" Wire Leads 22 AWG										
	C**	PC Terminals										
Bushing Style**	S**	Snap-in plastic										
	T**	Threaded plastic										
		** No panel seal option										

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

* No LED available in short body only

Contact Customer Service for additional hardware options.



Specifications and dimensions subject to change

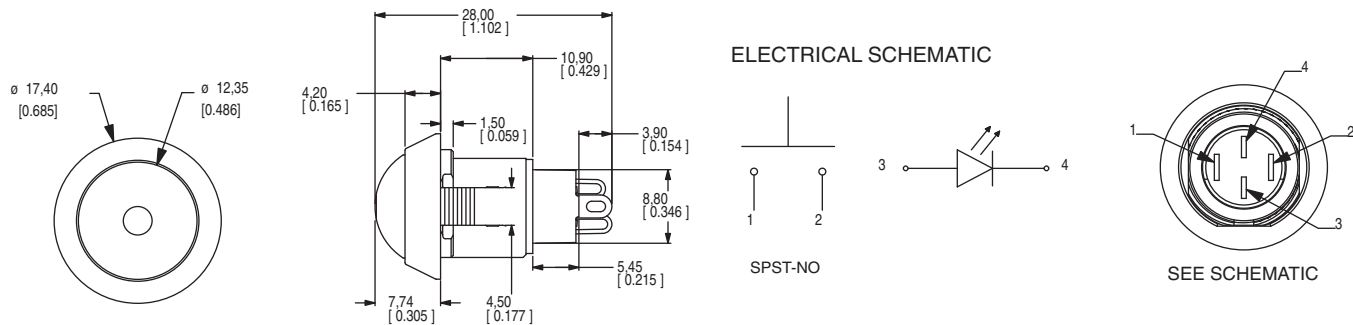
AP Series Industrial Pushbutton Switch



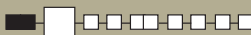
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STANDARD VIEW

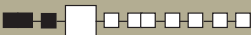


OPERATING FORCE

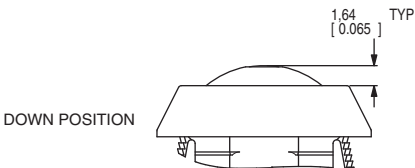
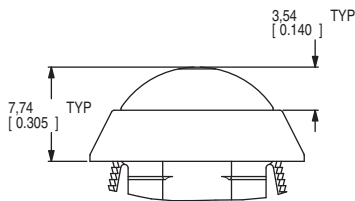


OPTION CODE	OPERATING FORCE
2	2 N, 200 g
4	4 N, 400 g

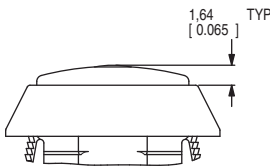
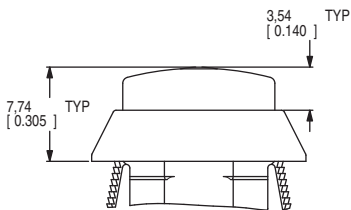
ACTUATOR STYLE



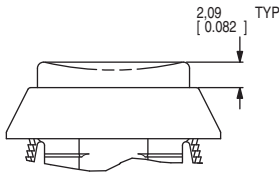
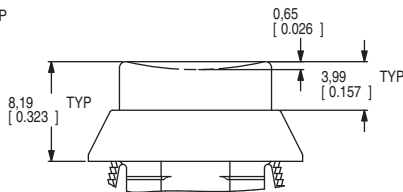
D DOME / CONVEX



E EXTENDED DOME



C CONCAVE

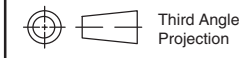


ACTUATOR COLOR



OPTION CODE	ACTUATOR COLOR
0	No Cap
2	Black
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
9	Gray

For additional colors please contact Customer Service.



Third Angle
Projection



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ILLUMINATION



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

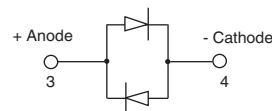
LED FORWARD VOLTAGE: see chart above

LED REVERSE VOLTAGE: 5.0 V MAX

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

NOTE:

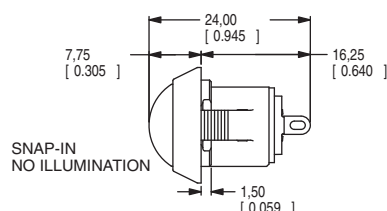
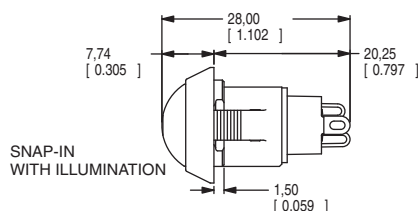
For bi-color LED's the polarity must be reversed to alternate the color



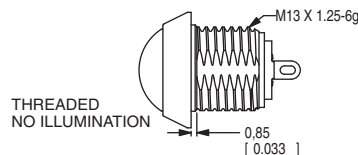
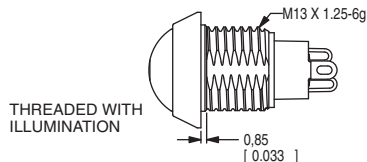
BUSHING STYLE



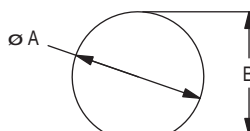
S SNAP-IN



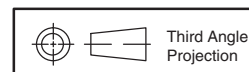
T THREADED PLASTIC



PANEL CUTOUT



PANEL THICKNESS	DIM A (± 0.05 mm)	DIM B (± 0.05 mm)
1 mm [0.039 in]	13.70 mm [0.539 in]	13.00 mm [0.512 in]
2 mm [0.079 in]	13.80 mm [0.539 in]	13.00 mm [0.512 in]
3 mm [0.118 in]	13.90 mm [0.547 in]	13.10 mm [0.516 in]
THREADED BODY MIN PANEL THICKNESS 1 mm	13.70 mm [0.539 in]	13.00 mm [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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www.ck-components.com

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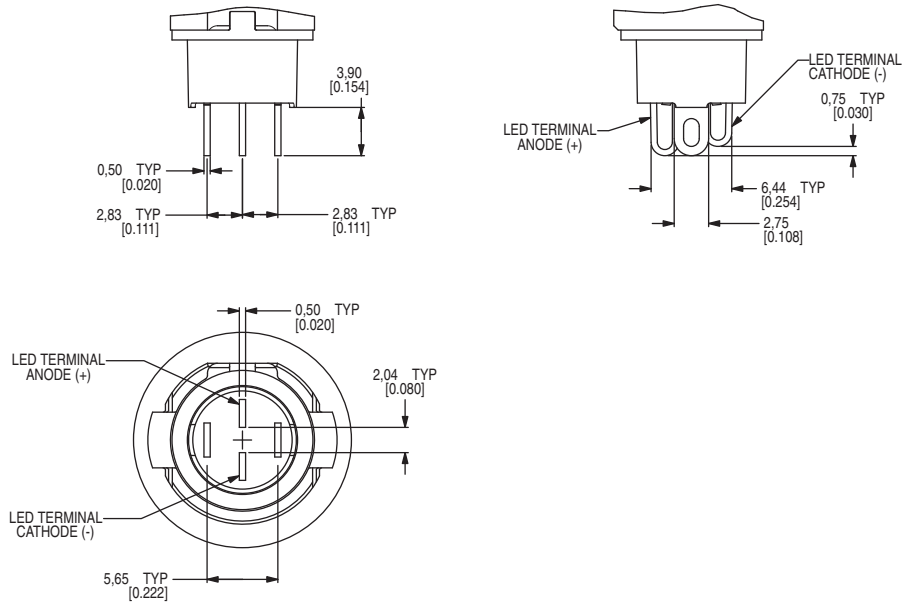
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TERMINATION

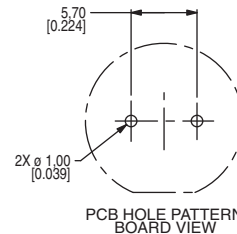
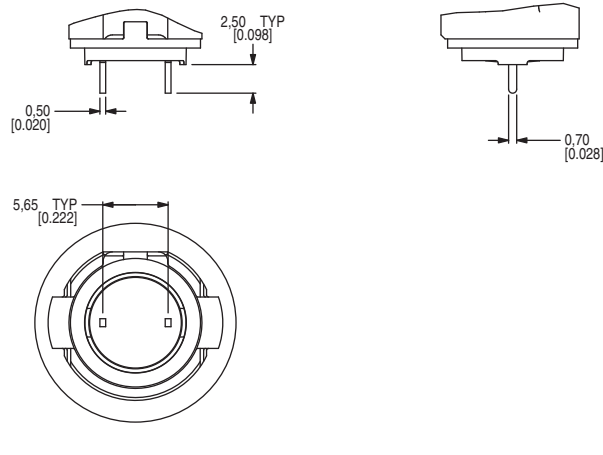


Z SOLDER LUG

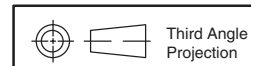
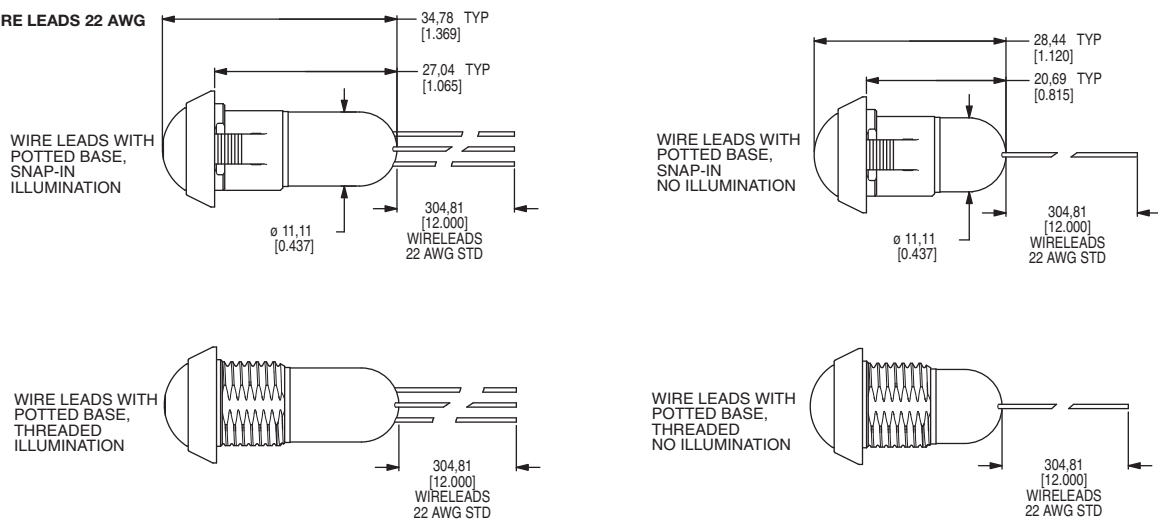


C PC TERMINALS

**** Illumination not available with PC Terminals



W 12" WIRE LEADS 22 AWG



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CONTACT MATERIAL



B GOLD

OPTION CODE	CONTACT MATERIAL
B	Gold

TERMINAL SEAL



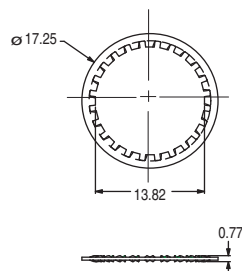
E EPOXY

All models are epoxy sealed

HARDWARE

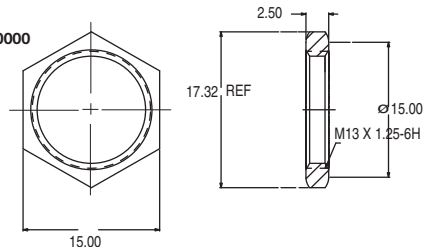
LOCK WASHER

Part Number 647D00000



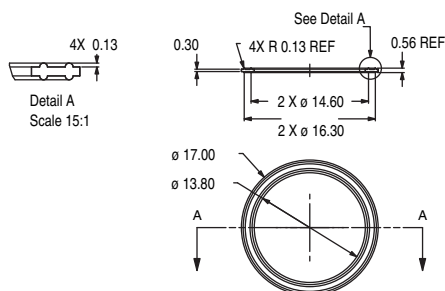
HEX NUT

Part number 515D00000



PANEL SEAL

Part Number 655D00000



Caps available on next page



Third Angle
Projection

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AVAILABLE CAPS



481D XX XXX

Cap Color

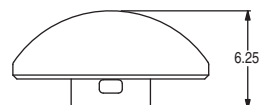
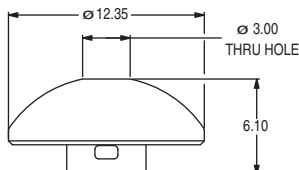
Style

OPTION	CAP COLOR
01	WHITE
02	BLACK
03	RED
04	ORANGE
05	YELLOW
06	GREEN
07	BLUE
08	BROWN
09	GRAY

PART NUMBER	HOLE	STYLE
481DXX000	NO	DOME
481DXX001	YES	DOME
481DXX002	NO	EXTENDED DOME
481DXX003	YES	EXTENDED DOME
481DXX004	NO	CONCAVE
481DXX005	YES	CONCAVE

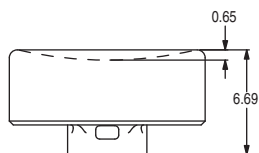
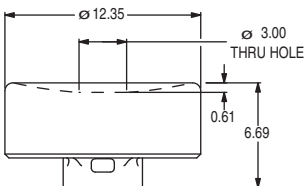
DOME

481DXX000 = HOLE
481DXX001 = NO HOLE



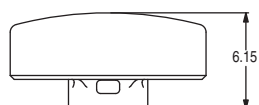
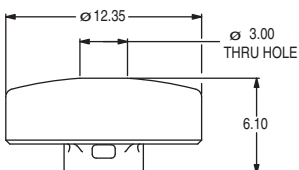
EXTENDED DOME

481DXX002 = HOLE
481DXX003 = NO HOLE



CONCAVE

481DXX004 = HOLE
481DXX005 = NO HOLE



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

C&K Components:

<u>AP4D200SZBE</u>	<u>AP4D207SZBE</u>	<u>AP4D200SWBE</u>	<u>AP4D300SZBE</u>	<u>AP4E300SZBE</u>	<u>AP4C300SZBE</u>	<u>AP4D202SZBE</u>
<u>AP4E202SZBE</u>	<u>AP4D200TZBE</u>	<u>AP4D207TZBE</u>	<u>AP4D200TWBE</u>	<u>AP4D300TZBE</u>	<u>AP4E300TZBE</u>	<u>AP4C300TZBE</u>
<u>AP4D202TZBE</u>	<u>AP4E202TZBE</u>	<u>AP2D200SZBE</u>	<u>AP2D207SZBE</u>	<u>AP2D200SWBE</u>	<u>AP2D200TZBE</u>	<u>AP2D207TZBE</u>
<u>AP2D200TWBE</u>	<u>AP4E200SZBE</u>	<u>AP4E207SZBE</u>	<u>AP4E200SWBE</u>	<u>AP4E200TZBE</u>	<u>AP4E207TZBE</u>	<u>AP4E200TWBE</u>
<u>AP2E200SZBE</u>	<u>AP2E207SZBE</u>	<u>AP2E200SWBE</u>	<u>AP2D300SZBE</u>	<u>AP2E300SZBE</u>	<u>AP2C300SZBE</u>	<u>AP2D202SZBE</u>
<u>AP2E202SZBE</u>	<u>AP2E200TZBE</u>	<u>AP2E207TZBE</u>	<u>AP2E200TWBE</u>	<u>AP2D300TZBE</u>	<u>AP2E300TZBE</u>	<u>AP2C300TZBE</u>
<u>AP2D202TZBE</u>	<u>AP2E202TZBE</u>	<u>AP2D203SZBE</u>	<u>AP2D203TZBE</u>	<u>AP2D206SZBE</u>	<u>AP2D206TZBE</u>	<u>AP4D203SZBE</u>
<u>AP4D203TZBE</u>	<u>AP4D206SZBE</u>	<u>AP4D206TZBE</u>	<u>AP4E206SZBE</u>			