

C&K TP Series Tiny Pushbutton Switches

Features/Benefits

- **Subminiature size**—capable of switching 1 AMP
- **Vertical & right angle terminations**
- **PC & panel mount models**
- **Snap-in front panel mounting available**



Models Available

Typical Applications

- **Telecommunications and networking equipment**
- **Computers and peripherals**
- **Instrumentation and controls**



A

Pushbutton

Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material: 1 AMP @ 120 V AC or 28 V DC. See page A-13 for additional ratings.

ELECTRICAL LIFE: TP11, TP21 MODELS: 60,000 make-and-break cycles at full load. TP12 MODELS: 30,000 cycles.

CONTACT RESISTANCE: Below 20 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

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

Materials

CASE: Glass filled nylon 6/6, flame retardant, heat stabilized or diallyl phthalate (DAP), (UL 94V-0).

PLUNGER: Thermoplastic polyester (UL 94V-0).

CAP & FRAME: Nylon, black standard.

BUSHING: Brass, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass, tin plated.

END CONTACTS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Coin silver, silver plated. See page A-13 for additional contact materials.

CENTER CONTACT & ALL TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See page A-13 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut & Locking Ring: Brass nickel plated. Lockwasher: Steel, nickel plated.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages A-10 thru A-13. For additional options not shown in catalog, consult Customer Service Center. All models have epoxy terminal seal and are compatible with all "bottom-wash" PCB cleaning methods.

Switch Function TP11 (STD.) SPST Off-Mom. TP12 (STD.) SPDT On-Mom. TP21 DPST Off-Mom. Actuator or Bushing SH (STD.) .155" high plunger, threaded, .220" high bushing, flat SH8 (STD.) .155" high plunger, unthreaded, .220" high bushing, round SH9 (STD.) .155" high plunger, unthreaded, .220" high bushing, flat J81 Snap-in with frame LT .215" high plunger, .310" high bushing, flat LT9 .215" high plunger, unthreaded, .310" high bushing, flat MS9 .130" high plunger, .020" high bushing, round	Terminations A (STD.) Right angle, PC thru-hole C (STD.) PC Thru-hole Z (STD.) Solder lug AV Vertical right angle, PC thru-hole V3 Vertical mount, v-bracket W Wire wrap Contact Material B (STD.) Gold Q (STD.) silver K Gold, tin-lead G Gold over silver L Gold over silver, tin-lead	Seal E (STD.) Epoxy Cap Color 2 (STD.) Black NONE Models with no cap 1 White Frame Color 2 (STD.) Black NONE Models with no frame
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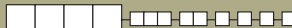
C&K TP Series Tiny Pushbutton Switches



A

Pushbutton

SWITCH FUNCTION

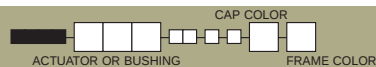


NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
		C&K marking on opposite side		C&K marking on opposite side		
SP	TP11 (STD.)	OFF	MOM.	OPEN	1-3	SPST
	TP12 (STD.)	ON	MOM.	2-1	2-3	SPDT
SPDT Omit terminal 2 for TP11 models.						
DP	TP21	OFF	MOM.	OPEN	1-3,4-6	DPST
DPST 						

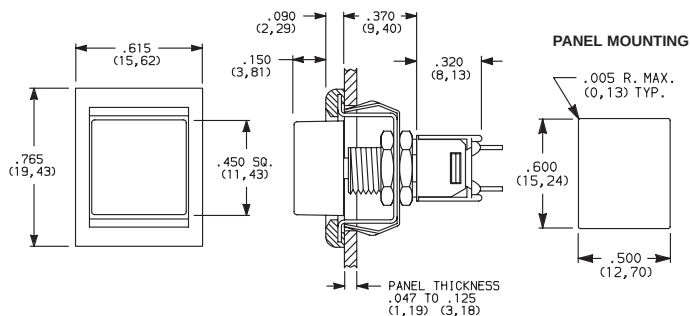
MOM. = Momentary

All models with all options when ordered with G, L, M or Q contact material.

ACTUATOR—SNAP-IN FRONT MOUNT



J81 SNAP-IN WITH FRAME



OPTION CODE	CAP COLOR
2	(STD.) BLACK
1	WHITE

OPTION CODE	FRAME COLOR
2	(STD.) BLACK
NONE	No Frame Color (J80 option)

Cap and Frame Finish: matte. Other colors available, consult Customer Service Center.

NOTE: Available with Z, C, or W terminations.

NOTE: Caps & frames available separately, see page A-14.

C&K TP Series Tiny Pushbutton Switches

BUSHING



A

Pushbutton

SH (STD.) .155" HIGH PLUNGER, .220" HIGH BUSHING, THREADED, FLAT

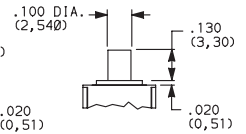
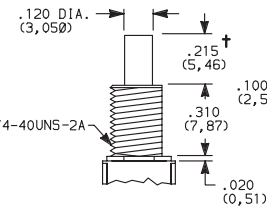
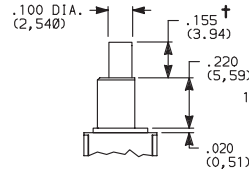
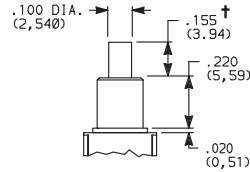
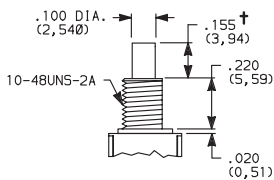
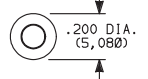
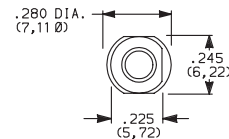
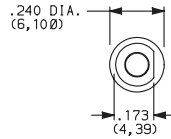
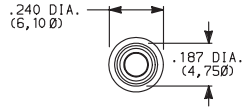
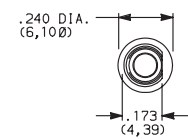
SH8 (STD.) .155" HIGH PLUNGER, .220" HIGH BUSHING, UNTHREADED

SH9 (STD.) .155" HIGH PLUNGER, .220" HIGH BUSHING, UNTHREADED, FLAT

LT .215" HIGH PLUNGER, .310" HIGH BUSHING, THREADED

MS9 .130" HIGH PLUNGER

LT9 .215" HIGH PLUNGER, .310" HIGH BUSHING, UNTHREADED



Standard with Z, C, W terminations.

Standard with A, AV, V3 terminations.

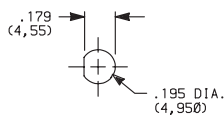
Not available with Z terminations.

† Subtract .016 (0,41) for models with A, AV or V3 terminations.

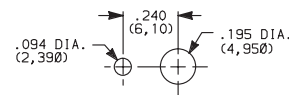
NOTE: Caps available for plunger options, see page A-14.

PANEL MOUNTING

10-48 BUSHING

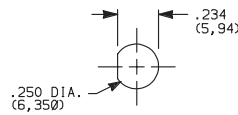


Without locking ring

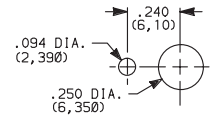


With standard locking ring

1/4 IN. BUSHING



Without locking ring



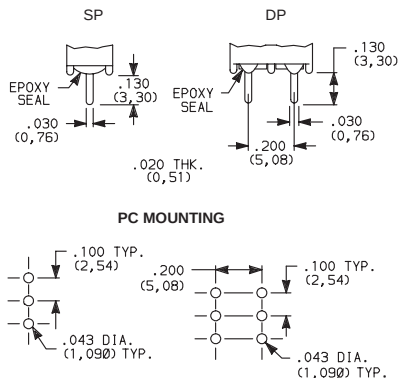
With standard locking ring

NOTE: One mounting nut, locking ring and lockwasher supplied standard with 10-48 threaded bushings (two nuts with 1/4-40 bushings). Optional mounting nut and locking ring styles and finishes available separately, see section N.

TERMINATIONS

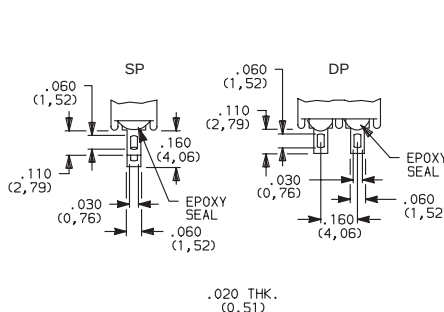


C (STD.) PC THRU-HOLE



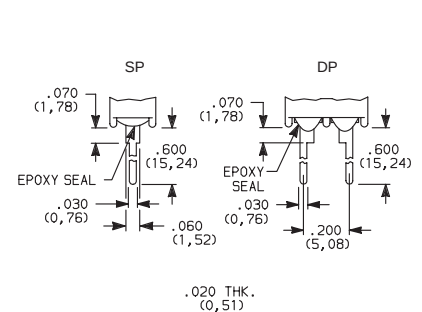
Omit center holes for TP11 models

Z (STD.) SOLDER LUG



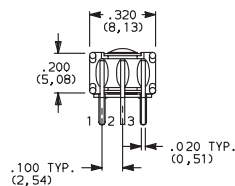
Not available with MS9 bushing or K, L or M contact material.

W WIRE WRAP

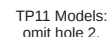
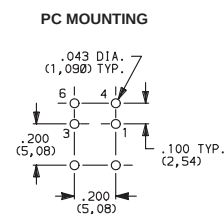
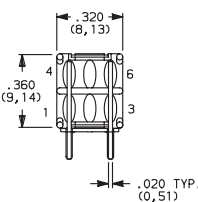
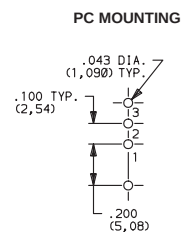
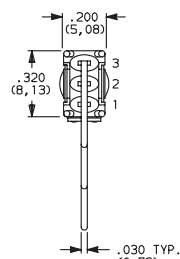


Dimensions are shown: IN (mm)
Dimensions subject to change

A Pushbutton



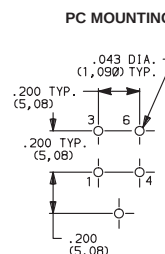
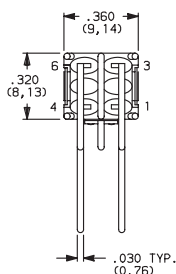
TP11 Models:
omit terminal 2.

TP21SH9ABE
DPSTTP12SH9AVBE
SPDT

TP11 Models:
omit hole 2.

NOTE: Terminal bend radii and lead-in manufacturing option.

TP21SH9AVBE
DPST



Third Angle Projection

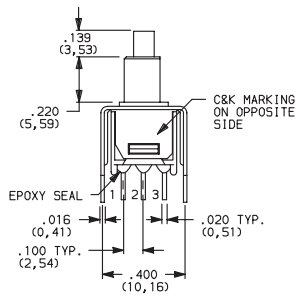
Dimensions are shown: IN (mm)
Dimensions subject to change

www.ittcannon.com

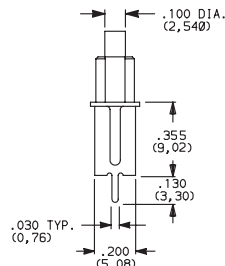
C&K TP Series Tiny Pushbutton Switches

TERMINATIONS

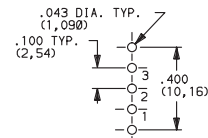
V3 VERTICAL MOUNT, V-BRACKET



TP11 Models:
omit terminal 2.



PC MOUNTING

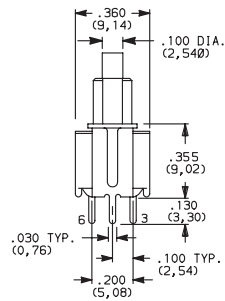
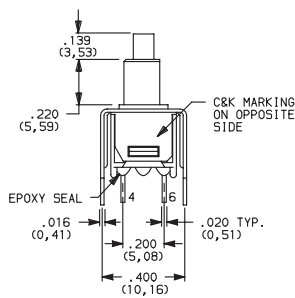


TP11 Models:
omit hole 2.

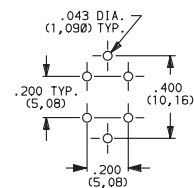


TP12SH9V3BE
SPDT

V3 VERTICAL MOUNT, V-BRACKET



PC MOUNTING



TP21SH9V3BE
DPST

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B (STD.)	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
K		TIN-LEAD ⁶		
Q (STD.)	SILVER ^{4,5}	SILVER ⁵	POWER	1 AMP @ 120 V AC OR 28 V DC.
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 VA MAX @ 20 V AC OR DC MAX. OR 1 AMP @ 120 V AC OR 28 V DC.
L		TIN-LEAD ⁶		

CONTACT MATERIAL/APPLICATION RECOMMENDATIONS—SEE SECTION N.

¹ CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

² END CONTACTS: Coin silver, with gold plate over nickel plate.

³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

⁶ TERMINALS: Copper alloy, with tin-lead alloy over nickel plate.

All models  with all options when ordered with G, L or Q contact material.

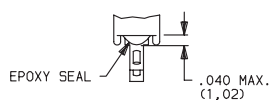
B contact material standard with A, AV, V3 & W terminations.

Q contact material standard with C & Z terminations

K, L contact materials not available with Z terminations.

SEAL

E (STD.) EPOXY SEAL



Dimensions are shown: IN (mm)
Dimensions subject to change



A

Pushbutton

C&K TP Series Tiny Pushbutton Switches

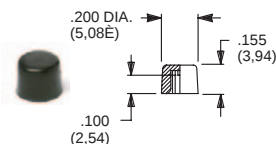


A

Pushbutton

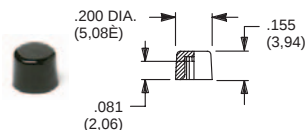
AVAILABLE HARDWARE

Cap, .100" DIA. Plungers



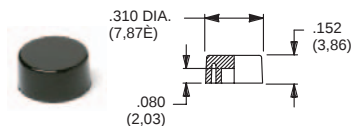
PART NO.
508101000 WHITE
508102000 BLACK
 Material: Nylon
 Finish: Gloss

Cap, .100" DIA. Plungers (Recommended for S9 plunger)



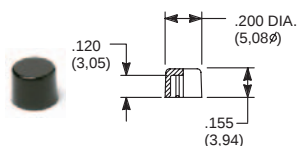
PART NO.
538701000 WHITE
538702000 BLACK
 Material: Nylon
 Finish: Gloss

Cap, .100" DIA. Plungers



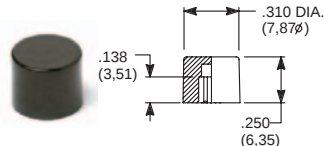
PART NO.
465801000 WHITE
465802000 BLACK
 Material: Nylon
 Finish: Gloss

Cap, .120" DIA. Plungers



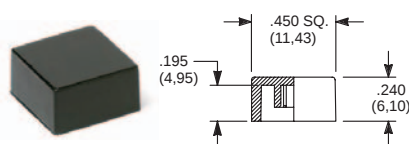
PART NO.
708901000 WHITE
708902000 BLACK
 Material: Nylon
 Finish: Gloss

Cap, .120" DIA. Plungers



PART NO.
801801000 WHITE
801802000 BLACK
 Material: Nylon
 Finish: Gloss

Cap, J81 option only



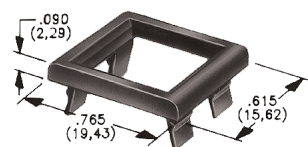
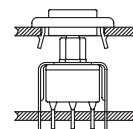
PART NO.
484601000 WHITE
484602000 BLACK
 Material: Nylon
 Finish: Gloss

PART NO.
798201000 WHITE
798202263 BLACK
 Material: Nylon
 Finish: Matte

NOTE: Additional nuts, locking rings and lockwashers available separately, see section N.
 Other cap colors available, consult Customer Service Center.

Frames snap into panel opening and are independent from switch mounting. Accurate positioning of the PC mounted switch relative to the panel opening is necessary to provide proper clearance between actuator and frame. Available in two basic styles and four panel thicknesses .047-.125 in. Material: Nylon. Finish: Matte.

TYPICAL APPLICATION



.047" (1,19) PANEL THK.

PART NO.
432502263

.062" (1,57) PANEL THK.

PART NO.
432602263

.090" (2,29) PANEL THK.

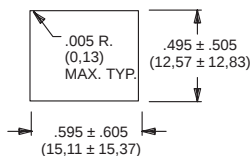
PART NO.
432702263

.125" (3,18) PANEL THK.

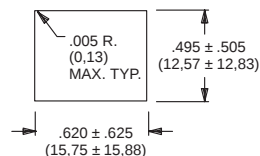
PART NO.
432802263 BLACK

PANEL MOUNTING

For part numbers
 432502263, 432602263

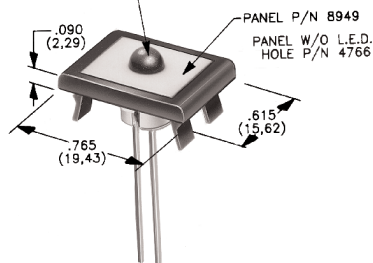


For part numbers
 432702263, 432802263



Panel Inserts

L.E.D. (.200 DIA. (5,08E)) SNAPS
 SECURELY INTO INSERT (P/N 8949).
 HEIGHT DEPENDS ON L.E.D. USED.



Above frames (part nos. 432XXXXXX) are also available with insert which accepts LED for indicator light assembly. Order insert separately from frame. Blank insert panel (without hole for LED) also available. **LED not included.**

PANEL INSERT
 WITH HOLE FOR LED

PART NO.
894902000

BLANK PANEL INSERT
 WITHOUT HOLE FOR LED

PART NO.
476602000 BLACK