












**A****Pushbutton**

Pushbutton Product Selection Guide

Pushbutton									
Series	ELUM	EP	TP	E020	8020	E010	8060	8500	KM
Switch Type	Mom./Latching	Tiny	Tiny	Snap-acting Mom.	Snap-acting Mom.	Miniature	Alternate Action	Sub-miniature	Sub-miniature
Poles/Throws	SPDT	SPST, SPDT, DPST	SPST, SPDT, DPST	SPDT, DPDT	SPDT, DPDT, 3PDT, 4PDT	SPDT	SPDT, DPDT	SPST	SPST, SPDT
Max. Current	3.5 VA	1 Amp	1 Amp	1 Amp	1 Amp	4 Amps	6 Amps	3 Amps	1 Amp
Process Sealed		•		•		•			
Illuminated	•				•		•	•	
PCB Mount Options									
Thru-hole	•	•	•	•	•	•	•	•	•
Vertical		•	•	•	•	•	•	•	•
Right Angle	•	•	•	•	•	•	•	•	•
Surface Mount	•	•							
Panel Mount			•		•	•	•	•	•
Page No.	A-4	A-9	A-15	A-21	A-29	A-46	A-52	A-62	A-67

Pushbutton							
Series	8600	8700	GP	PN	PHA	F	NE-18
Switch Type	Micro-miniature	Over Travel	Ultra-miniature	Alternate & Mom. Action	Short Stroke	Alternate & Mom. Action	Mains / Power
Poles/Throws	SPST	SPST	SPST, SPDT	SPDT, DPDT, 4PDT	DPDT, 4PDT, 6PDT	DPDT, 4PDT, 6PDT, 8PDT, 10PDT	DPST, DPDT Varied
Max. Current	500 mA	1 Amp	0.4 VA	200 mA	100 mA	500 mA	6 A
Process Sealed			•				
PCB Mount Options							
Thru-hole	•	•	•	•	•	•	•
Vertical	•	•	•				
Right Angle			•	•	•	•	•
Surface Mount			•				
Panel Mount	•	•				•	•
Page No.	A-71	A-74	A-77	A-81	A-84	A-88	A-98

Pushbutton Product Selection Guide



A

Pushbutton

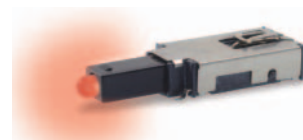
Pushbutton								
Series	FP	AP	HP	NP	PBA	PWR	PB	PS
Switch Type	Ultra Miniature	Industrial	Hall Effect	Sealed Power	Snap-acting Mom.	Momentary Detent		
Poles/Throws	SPST	SPST	Linear Output	SPDT	DPST	SPST		
Max. Current	0.4 VA	400mA	10 mA	5 Amp	250mA	2 A		
Process Sealed	•	IP67	IP68	IP68		IP65		
PCB Mount Options								
Thru-hole	•	•		•	•			
Vertical	•	•	•	•				
Right Angle	•				•			
Panel Mount		•	•	•				
Wire Leads		•	•	•				
Solder Lug		•						
Surface Mount						•		
Quick Connect								
Page No.	A-107	A-110	A-116	A-118	A-125	A-128	A-129	A-137



**LEAD FREE
COMPATIBLE OPTION**

Patent Numbers
6,974,924 B2 US
EP1583118B1 Europe

- **Telecom network equipment**
- **Automotive electronics**
- **Consumer electronics**
- **Computer, server, modem, data storage**
- **Professional instrumentation, medical**



OPERATING TEMPERATURE: -40°C TO 80°C.
STORAGE TEMPERATURE: -40°C TO 80°C.
RELATIVE HUMIDITY: 90% R.H. @ 80°C.
OPERATING LIFE: 30,000 Cycles.
VIBRATION: Per EIA 186-E Method
MECHANICAL SHOCK: Per EIA 186-E Method 12.
OVERLOAD: Withstands 40 N for 1 minute without damage

SOLDERABILITY: According to Mil STD 202F Method 208D or EIA RS-186E Method 9.

LEAD FREE PROCESS COMPATIBLE: 260°C peak, 10 seconds Max. above 250° C.

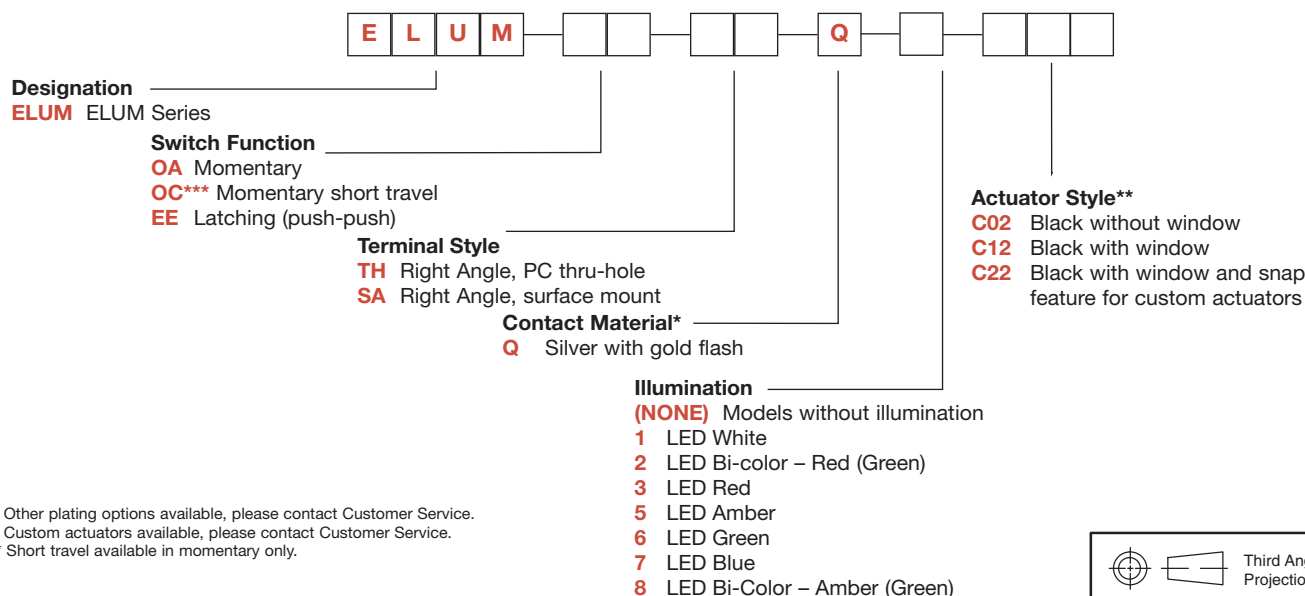
WASHING PROCESS: No clean process compatible (SMT)
Bottom wash compatible (Thru-hole)

SHEAR TEST (SWITCH/PCB): > 40 N

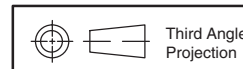
“SA” Terminal Style SMT: Tape and reel per EIA 481-2 (450/reel)
 “TH” Terminal Style PC: Tray (60/tray)

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

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



* Other plating options available, please contact Customer Service.
 ** Custom actuators available, please contact Customer Service.
 *** Short travel available in momentary only.



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

ELUM™ Series Right Angle Illuminated Latching Pushbutton

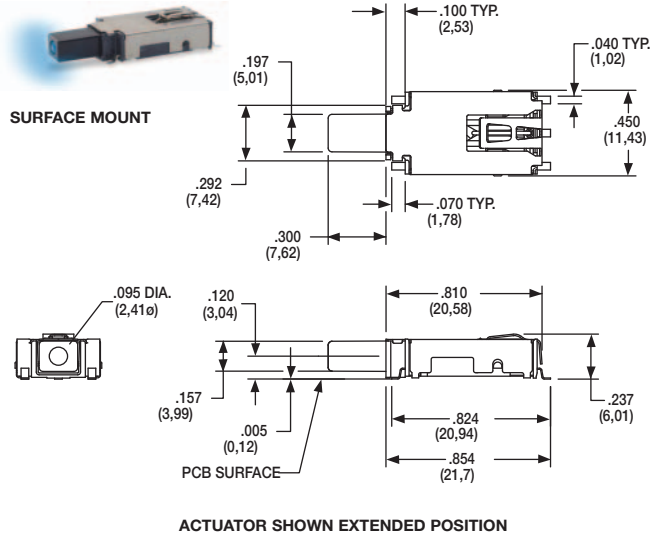


A

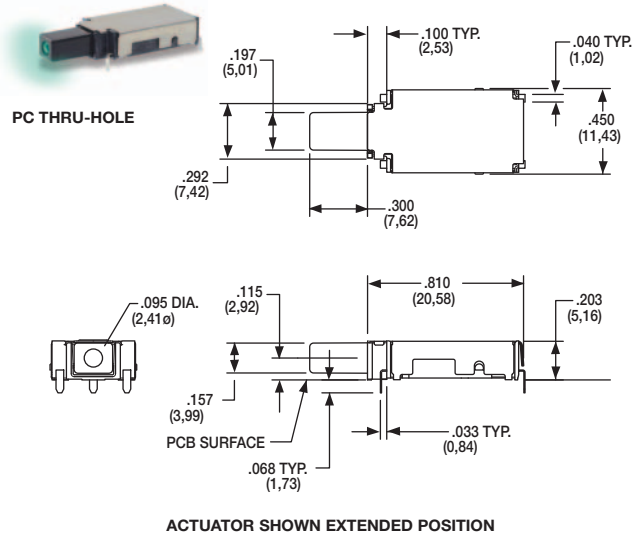
Pushbutton

STANDARD OPTIONS

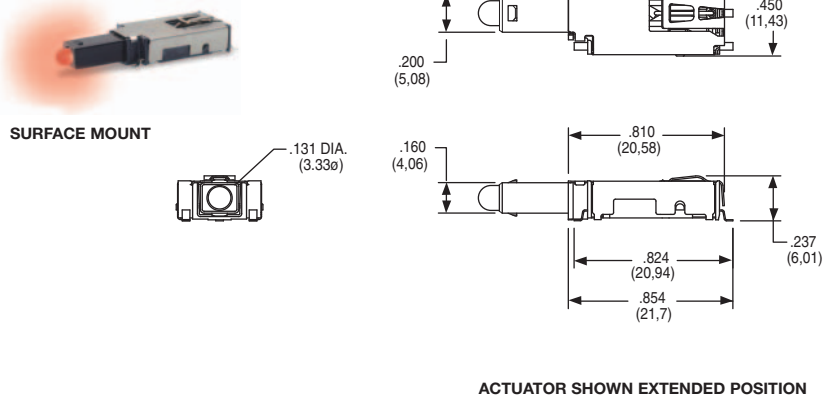
ELUMEESAQ7C12



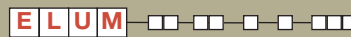
ELUMOATHQ6C12



ELUMEESAQ3C22



DESIGNATION



ELUM ELUM SERIES, Illuminated Latching Pushbutton

SWITCH FUNCTION



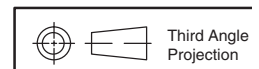
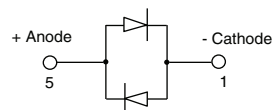
		POSITION 1		POSITION 2		SCHEMATIC
OPTION CODE	NO. OF POLES	SWITCH FUNCTION	CONNECTED TERMINALS	SWITCH FUNCTION	CONNECTED TERMINALS	
OA / OC	SP Momentary	ON	3 - 4	ON (Mom.)	3 - 2	
EE	SP Latching (Push-Push)	ON	3 - 4	ON	3 - 2	

For SPST N.O. function, only terminals 3 & 2 are used.
For SPST N.C. function, only terminals 3 & 4 are used.
Circuit: Make before break

LED pins 1 & 5 are independent of switch function.

NOTE:

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



C&K

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

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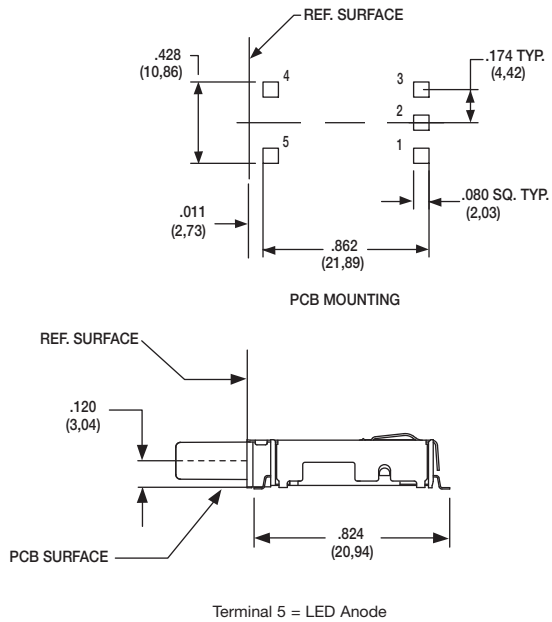


ELUM™ Series Right Angle Illuminated Latching Pushbutton

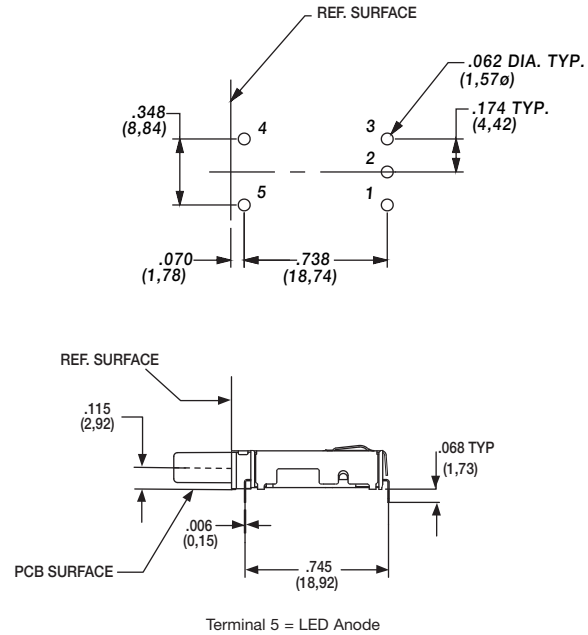
TERMINAL STYLE



SA RIGHT ANGLE, SURFACE MOUNT



TH RIGHT ANGLE, PC THRU-HOLE



CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS
Q	SILVER WITH GOLD FLASH	SILVER	250 mA

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

FIXED CONTACTS AND TERMINALS: Stainless steel, silver plated with gold flash

MOVABLE CONTACTS: Copper alloy, silver plated with gold flash

NOTE: Any models supplied with Q, contact material are RoHS compliant.

ILLUMINATION



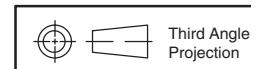
OPTION CODE	ILLUMINATION TYPE	TYPICAL INTENSITY* MIN MAX	PEAK WAVELENGTH	Vf Forward Voltage
		(mcd)	(nm)	
0	Model without illumination	N/A	N/A	
1	LED Super White	4,000 5,000	N/A	3.5
2	LED Bi-Color – Red (Green)	10 20	635/565	2.0
3	LED Red	4 8	700	2.0
5	LED Amber	35 50	610	2.0
6	LED Green	35 50	565	2.0
7	LED Super Blue	800 1,500	470	3.8
8	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.



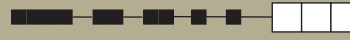
ELUM™ Series Right Angle Illuminated Latching Pushbutton



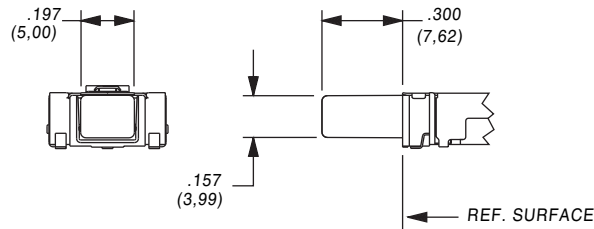
A

Pushbutton

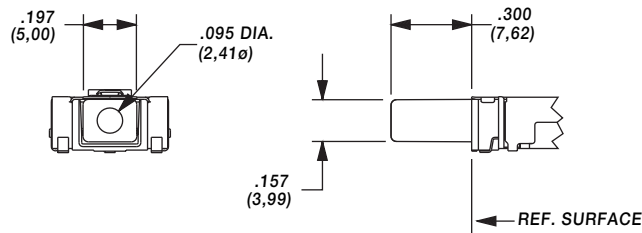
ACTUATOR STYLE*



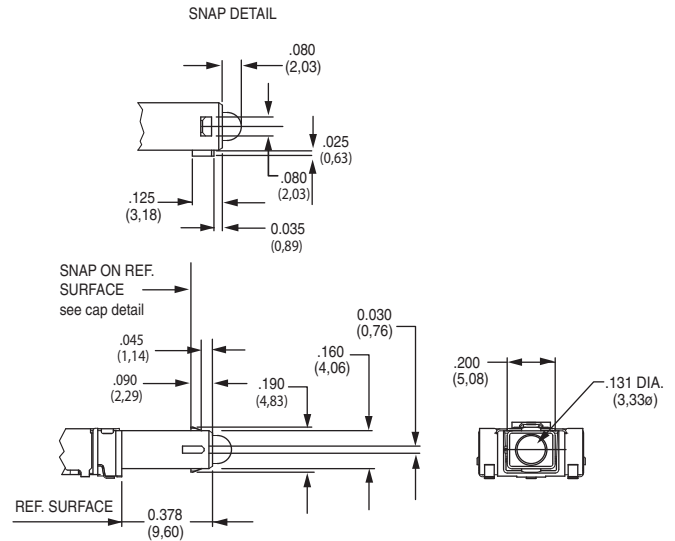
C02 BLACK WITHOUT WINDOW



C12 BLACK WITH WINDOW

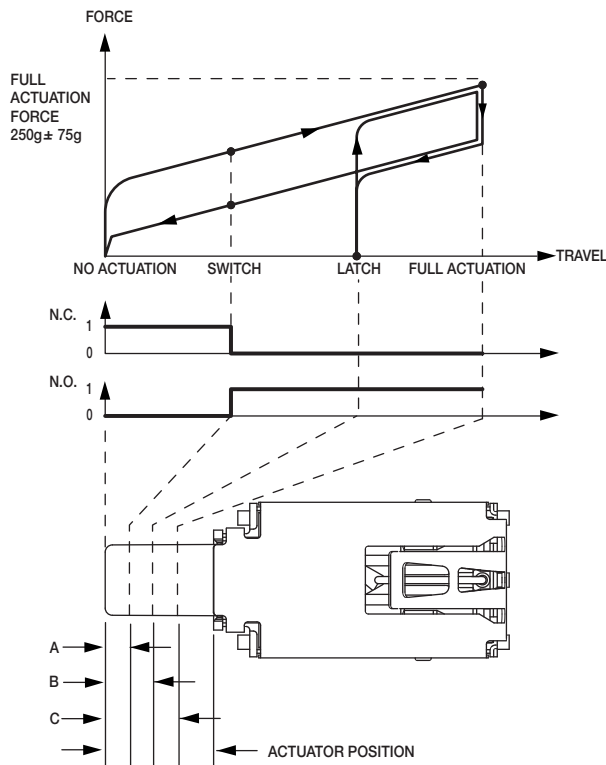


C22 BLACK WITH WINDOW AND SNAP FEATURE TO ACCEPT CUSTOM CAP



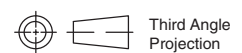
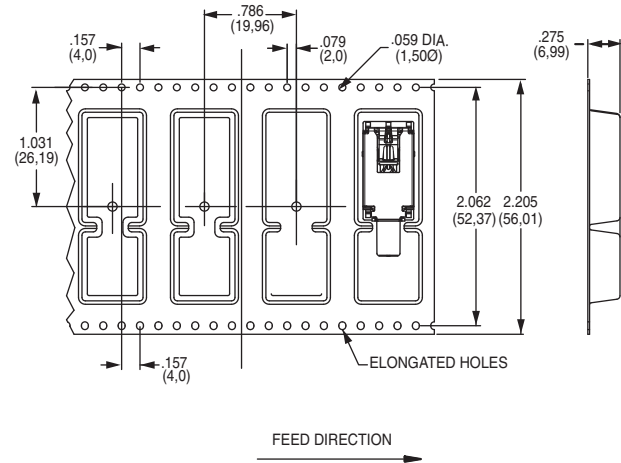
* Custom actuators available, please contact Customer Service.

FORCE TRAVEL DIAGRAM



OA, EE ACTUATOR POSITION			
A	SWITCH POINT	.067 ± .020	1,7 ± 0.5mm
B	LATCH	.131 ± .020	3,3 ± 0.5mm
C	FULL ACTUATION	.200 ± .020	5,1 ± 0.5mm
OC ACTUATOR POSITION			
A	SWITCH POINT	.067 ± .020	1,7 ± 0.5mm
C	FULL ACTUATION	.098 ± .020	2,5 ± 0.5mm

TAPE & REEL



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

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A
Pushbutton

ELUM™ Series Right Angle Illuminated Latching Pushbutton

AVAILABLE HARDWARE

Cap



PART NO.

957C00000 High temperature black cap with universal standby symbol

956C02000 High temperature black cap with no symbol

Material: 4/6 Nylon SMT compatible

Cap



PART NO.

181D01000 Paint and Laser Etched with black paint and universal standby symbol

Material: Clear polycarbonate

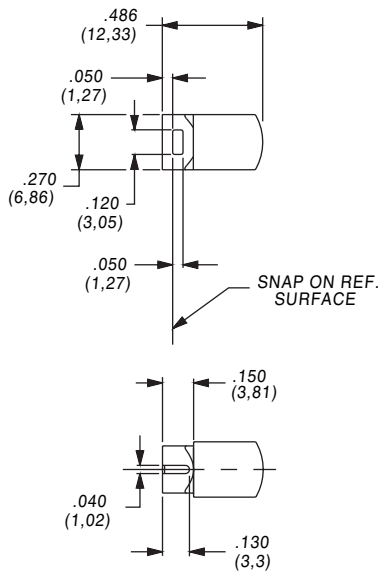
Cap



PART NO.

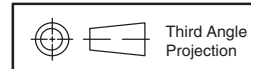
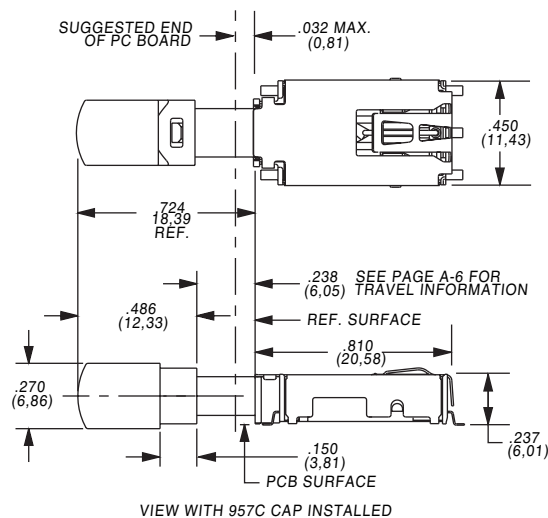
181D00000 Paint and laser etched with white paint underlay and black paint with universal standby symbol.

Material: Clear polycarbonate



NOTE: Caps are for use with the C22 actuator style. Other colors and symbols available, consult Customer Service Center.

CAP INSTALLATION



Third Angle
Projection



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

EP Series Sealed Tiny Pushbutton Switches



A

Pushbutton

Features/Benefits

- Sealed against solder & cleaning processes
- Thru-hole and surface mount models
- Snap-fitting actuator accepts standard caps
- Tape & reel packaging available
- RoHS compliant models available



Models Available

Typical Applications

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



Specifications

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

ELECTRICAL LIFE: EP11, EP21 models: 60,000 make-and-break cycles at full load. EP12 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).

DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.

PACKAGING: Surface mount switches standard in anti-static tape and reel packaging per EIA 481-3, see page A-14 for drawings and reel information. Tape and cover strip are conductive for use near statically sensitive components, consult Customer Service Center.

Materials

CASE & BUSHING: High temperature material, glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0) on EP11 / EP12 models; glass filled nylon 6/6 on EP21.

PLUNGER: Thermoplastic polyester or glass filled nylon (UL 94V-0), with internal o-ring seal. SA surface mount: High temperature material, glass filled LCP (UL 94V-0).

SWITCH SUPPORT: Brass, matte-tin plated.

CONTACTS & TERMINALS: B contact material: Copper alloy, with gold plate over nickel plate. See page A-13 for additional contact materials.

TERMINAL SEAL: Epoxy.

NOTE: Any models supplied with Q, B, P, S, R or G contact material are RoHS compliant.

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

CAUTION: PC mounting layouts and pads as shown are designed to be compatible with the latest equipment and reflow techniques. Care should be taken in the design and location of PC lands to suit individual needs. Orientation relative to reflow direction may significantly impact solder joint integrity.

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-14. For additional options not shown in catalog, consult Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

<div>Switch Function</div> <div>EP11 SPST Off-Mom.</div> <div>EP12 SPDT On-Mom.</div> <div>EP21 DPST Off-Mom.</div>	<div>Plunger</div> <div>S .215" high</div> <div>S1 .110" high</div> <div>S2 .465" high</div> <div>FP Flush</div> <div>R Snap-fitting, .215 high</div>	<div>Bushing</div> <div>D1 Unthreaded</div>	<div>Terminations</div> <div>A Right angle, PC thru-hole</div> <div>C PC Thru-hole</div> <div>AV Vertical right angle, PC thru-hole</div> <div>AV3 Vertical right angle, snap-in, PC thru-hole</div> <div>SA Right angle, surface mount</div> <div>SA1 Right angle, surface mount rear facing</div> <div>V3 Vertical mount, v-bracket</div> <div>V31 Vertical mount, v-bracket, snap-in (EP11 & EP12 only)</div> <div>W Wire wrap</div>	<div>Contact Material</div> <div>B Gold</div> <div>P Gold, matte-tin</div> <div>Q Silver</div> <div>S Silver, matte-tin</div> <div>G Gold over silver</div> <div>R Gold over silver, matte tin</div>	<div>Seal</div> <div>E Epoxy</div>
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>






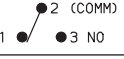
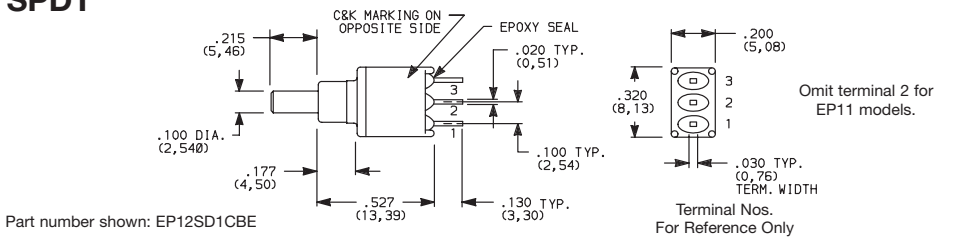
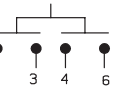
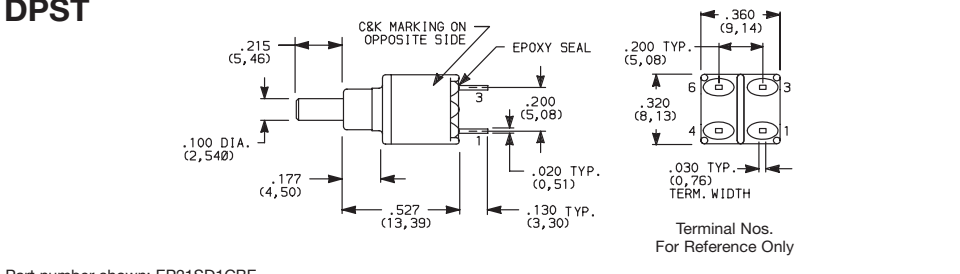


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change





EP Series Sealed Tiny Pushbutton Switches

SWITCH FUNCTION

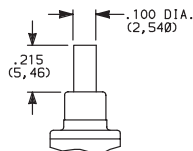
NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1  C&K marking on opposite side	POS. 2  C&K marking on opposite side	POS. 1  C&K marking on opposite side	POS. 2  C&K marking on opposite side	
SP	EP11	OFF	MOM.	OPEN	1-3	SPST 
	EP12	ON	MOM.	2-1	2-3	SPDT 
SPDT  Part number shown: EP12SD1CBE						
DP	EP21	OFF	MOM.	OPEN	1-3,4-6	DPST 
DPST  Part number shown: EP21SD1CBE						

MOM. = Momentary

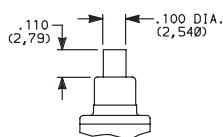
All models   with all options when ordered with G, Q, R or S contact material.

PLUNGER

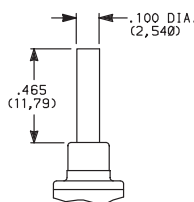
S .215" HIGH



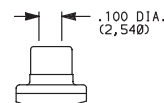
S1 .110" HIGH



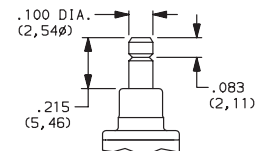
S2 .465" HIGH



FP FLUSH PLUNGER



R SNAP-FITTING



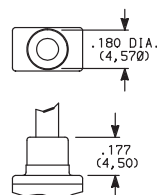
S1 & S2 actuators are not available with EP12 & EP21 models.

FP & R actuators are not available with EP21 model.

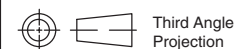
NOTE: Caps available for plunger options, see page A-14.

BUSHING

D1 UNTHREADED



NOTE: Internal actuator o-ring standard.



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

EP Series Sealed Tiny Pushbutton Switches



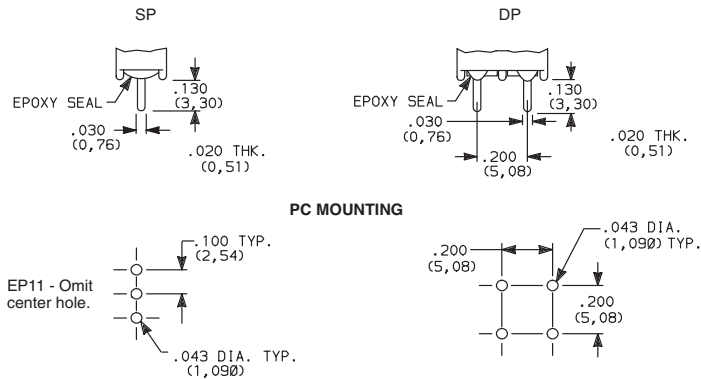
A

Pushbutton

TERMINATIONS

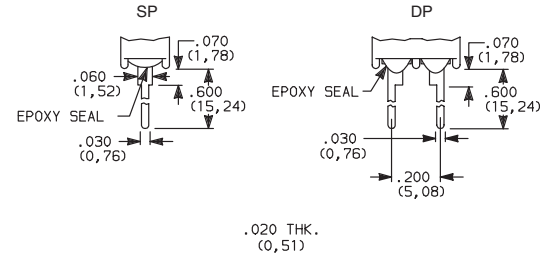


C PC THRU-HOLE



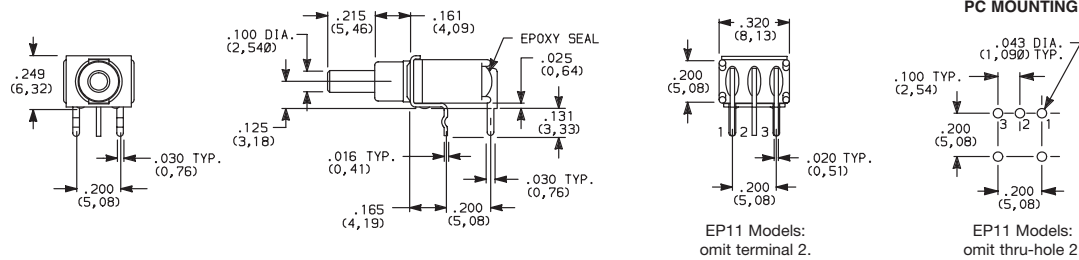
SP and DP

W WIRE WRAP



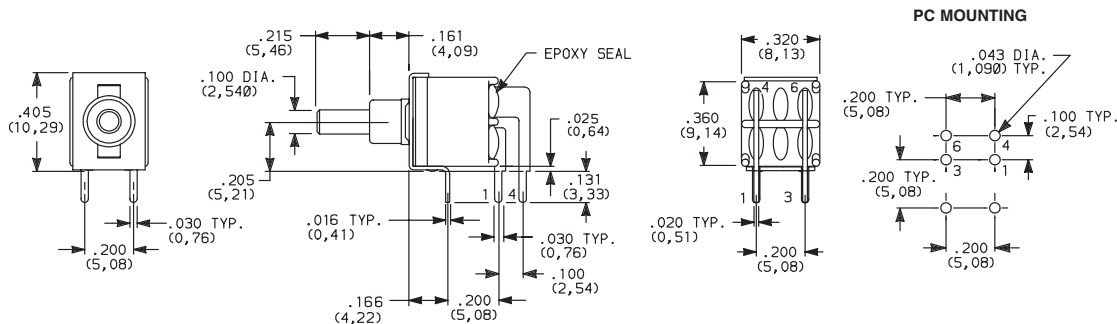
SP and DP

A RIGHT ANGLE, PC THRU-HOLE



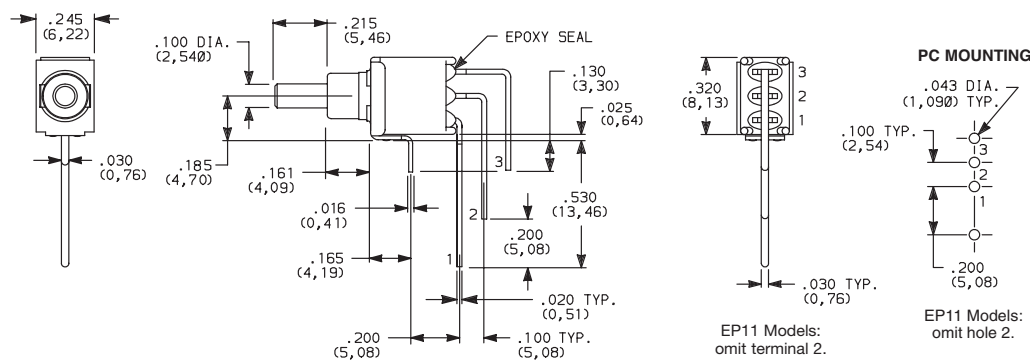
EP12SD1ABE
SPDT

A RIGHT ANGLE, PC THRU-HOLE



EP21SD1ABE
DPST

AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



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



EP12SD1AVBE
SPDT



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

C&K



A

Pushbutton

EP Series Sealed Tiny Pushbutton Switches

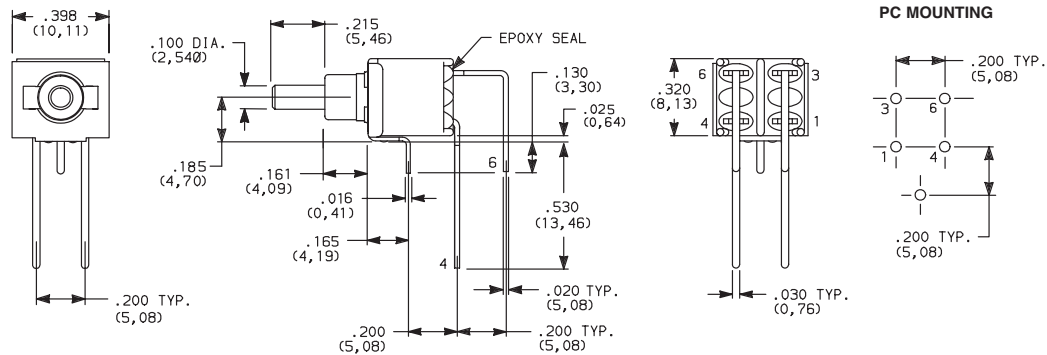
TERMINATIONS



AV VERTICAL RIGHT ANGLE, THRU-HOLE



EP21SD1AVBE
DPST

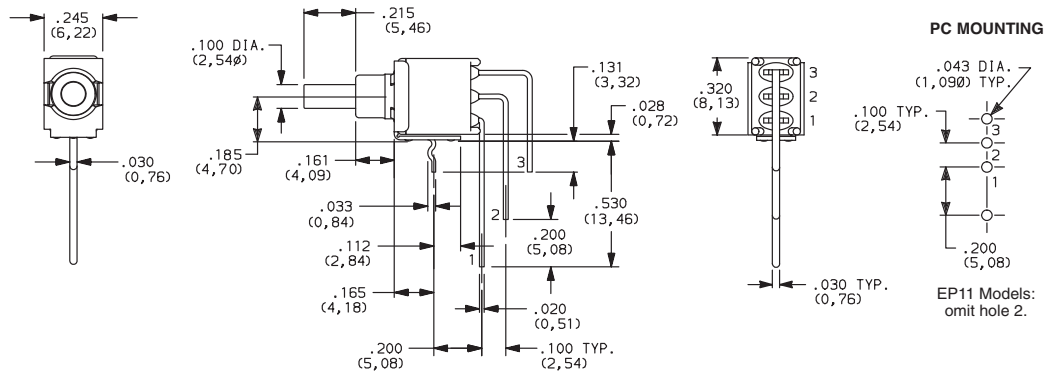


NOTE: Terminal bend radii and lead-in manufacturing option.

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



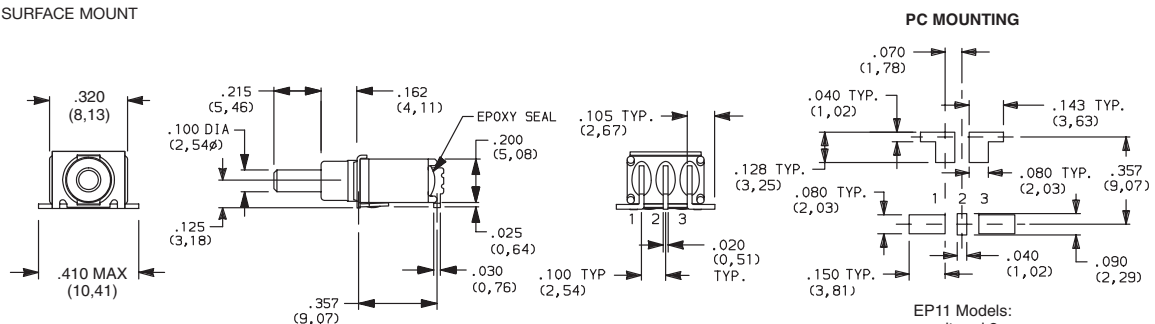
EP12SD1AV3BE
SPST



SA RIGHT ANGLE, SURFACE MOUNT



EP12SD1SAPE
SPDT



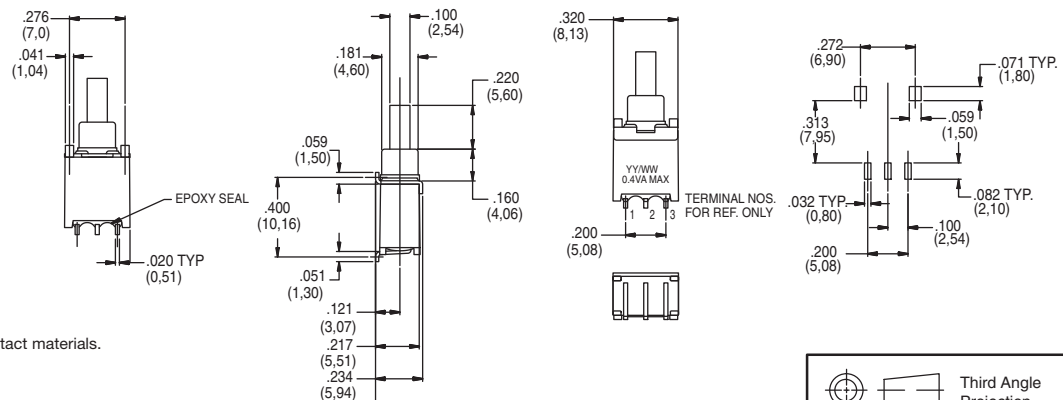
Available with P contact material only.
Not Available on DPST models.

EP11 Models:
omit terminal 2.

SA1 RIGHT ANGLE, SURFACE MOUNT



EP12SD1SA1BE
SPDT



SA1 is only available with B and P contact materials.
Not Available on DPST models.



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

C&K

EP Series Sealed Tiny Pushbutton Switches



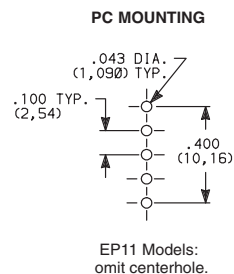
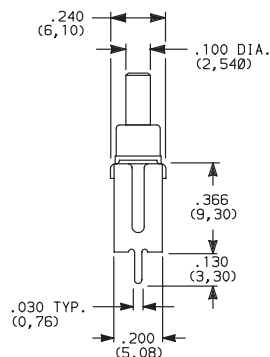
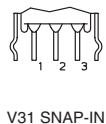
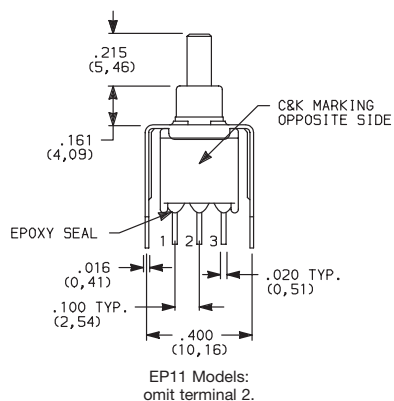
A

Pushbutton

TERMINATIONS



- V3** VERTICAL MOUNT, V-BRACKET
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN

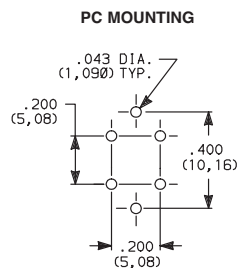
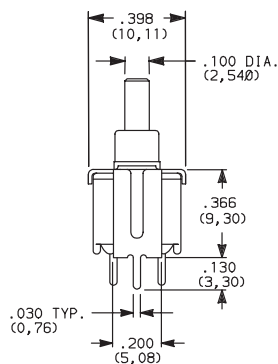
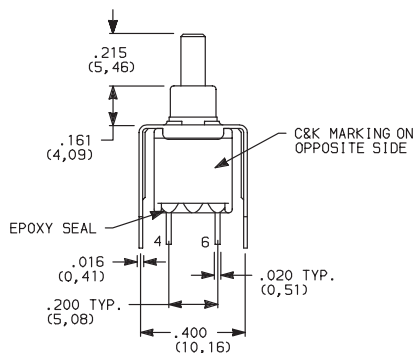


EP11 Models:
omit centerhole.



EP12SD1V3BE
SPDT

- V3** VERTICAL MOUNT, V-BRACKET



EP21SD1V3BE
DPST

CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	1 AMP @ 120 V AC OR 28 V DC.
S		MATTE-TIN ⁶		
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.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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 matte tin over nickel plate.

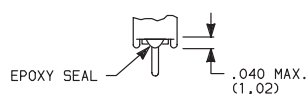
NOTE: Any models supplied with Q, B, P, S, R or G contact material are RoHS compliant.

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

SEAL



- E** EPOXY SEAL



C&K

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

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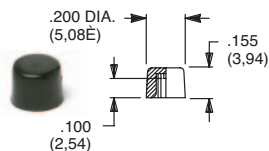
A

Pushbutton

EP Series Sealed Tiny Pushbutton Switches

AVAILABLE HARDWARE

Cap



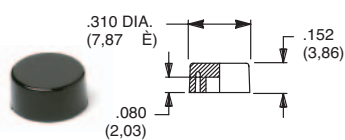
PART NO.

508101000 WHITE
508102000 BLACK
508103000 RED

Material: Nylon
Finish: Gloss

Not for use on S1 plunger

Cap



PART NO.

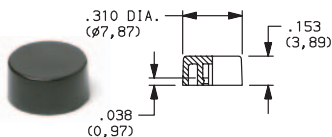
465801000 WHITE
465802000 BLACK
465803000 RED

Material: Nylon
Finish: Gloss

Not for use on S1 plunger

Cap

Compatible with snap-fitting plungers
EP11 & EP12 Models. R option only.



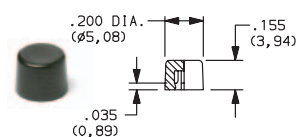
PART NO.

585A01000 WHITE
585A02000 BLACK
585A03000 RED

Material: Nylon
Finish: Gloss

Cap

Compatible with snap-fitting plungers
EP11 & EP12 Models. R option only.



PART NO.

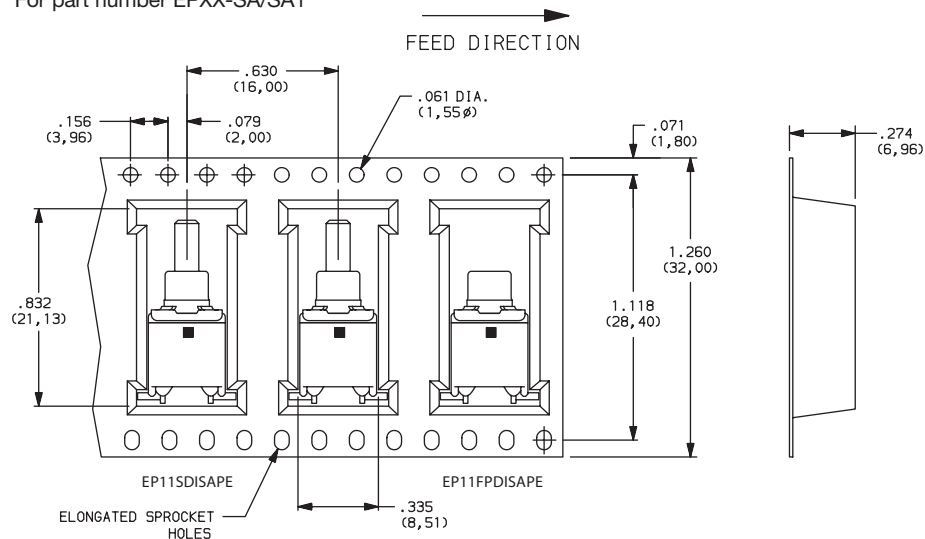
785A01000 WHITE
785A02000 BLACK
785A03000 RED

Material: Nylon
Finish: Gloss

NOTE: Other colors available, consult Customer Service Center.

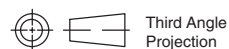
TAPE & REEL

For part number EPXX-SA/SA1



REEL INFORMATION

OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600



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

TP Series Tiny Pushbutton Switches



A

Pushbutton

Features/Benefits

- Subminiature size—capable of switching 1 AMP
- Vertical & right angle terminations
- PC & panel mount models
- Snap-in front panel mounting available
- Epoxy terminal seal-compatible with bottom wash cleaning
- RoHS compliant models available



Models Available

Typical Applications

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



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-19 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: 10⁹Ω 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: Any models supplied with Q, B, P, R or G contact material are RoHS compliant.

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 4/6 or 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, matte-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-19 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-19 for additional contact materials.

TERMINAL SEAL: Epoxy. Refer to soldering and cleaning in Technical Data Chapter

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-16 thru A-20. 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.

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



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



A

Pushbutton

TP Series Tiny Pushbutton Switches

SWITCH FUNCTION

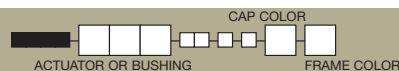


NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
SP	TP11	OFF	MOM.	OPEN	1-3	SPST
	TP12	ON	MOM.	2-1	2-3	SPDT
SPDT Part number shown: TP12SHZQE						
DP	TP21	OFF	MOM.	OPEN	1-3,4-6	DPST
DPST Part number shown: TP21SHZQE						

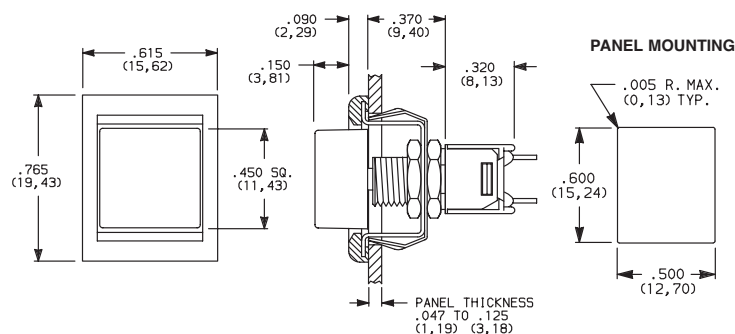
MOM. = Momentary

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

ACTUATOR—SNAP-IN FRONT MOUNT



J81 SNAP-IN WITH FRAME



OPTION CODE	CAP COLOR
2	BLACK
1	WHITE

OPTION CODE	FRAME COLOR
2	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-20.

C&K



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

TP Series Tiny Pushbutton Switches



A

Pushbutton

SH .155" HIGH PLUNGER,
.220" HIGH BUSHING,
THREADED, FLAT

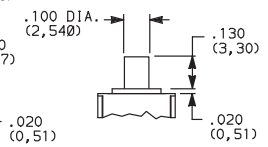
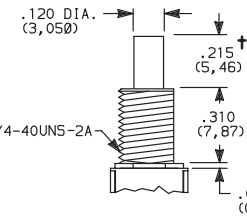
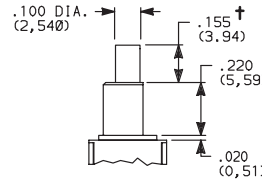
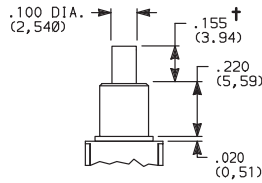
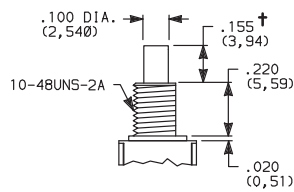
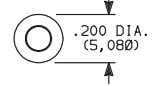
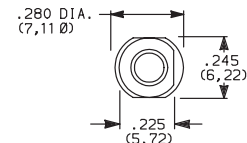
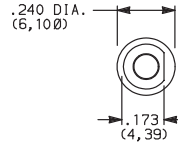
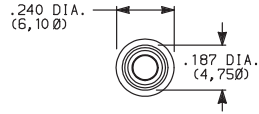
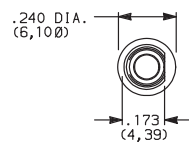
SH8 .155" HIGH PLUNGER,
.220" HIGH BUSHING,
UNTHREADED

SH9 .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.

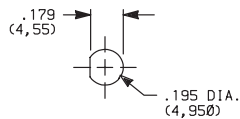
Not available with
Z terminations.

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

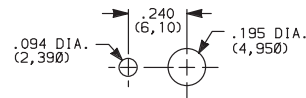
NOTE: Caps available for plunger options, see page A-20.

PANEL MOUNTING

10-48 BUSHING

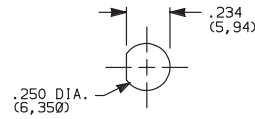


Without locking ring

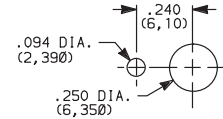


With standard locking ring

1/4 IN. BUSHING



Without locking ring



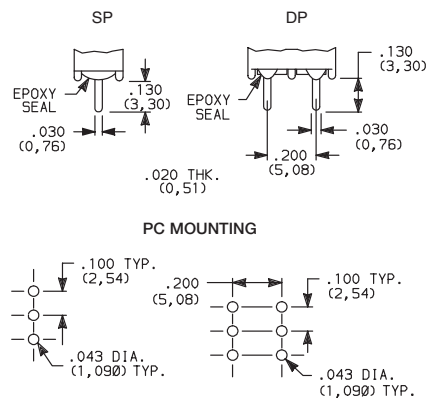
With standard locking ring

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 "Technical Data and Additional Hardware".

TERMINATIONS

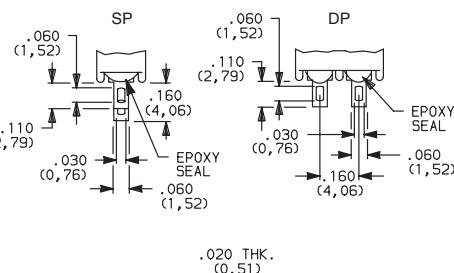


C PC THRU-HOLE



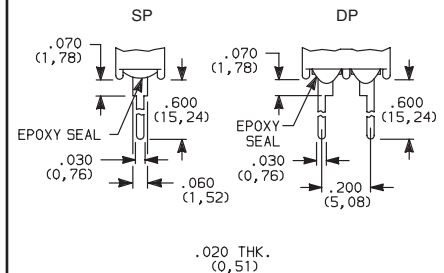
Omit center holes
for TP11 models

Z SOLDER LUG



Not available with MS9 bushing or P
or R contact material.

W WIRE WRAP



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

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**A****Pushbutton**

TP Series Tiny Pushbutton Switches

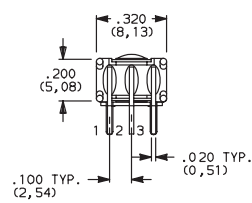
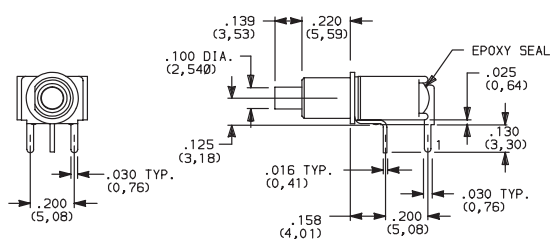
TERMINATIONS



A RIGHT ANGLE, PC THRU-HOLE

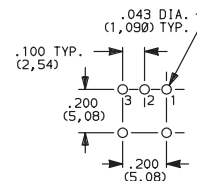


**TP12SH9ABE
SPDT**



**TP11 Models:
omit terminal 2.**

PC MOUNTING

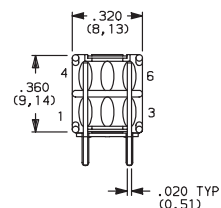
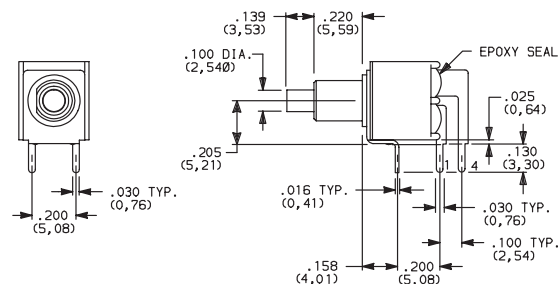


**TP11 Models:
omit hole 2.**

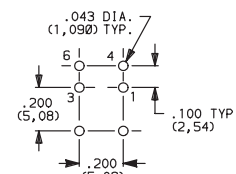
A RIGHT ANGLE, PC THRU-HOLE



**TP21SH9ABE
DPST**



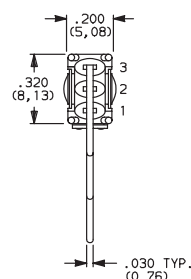
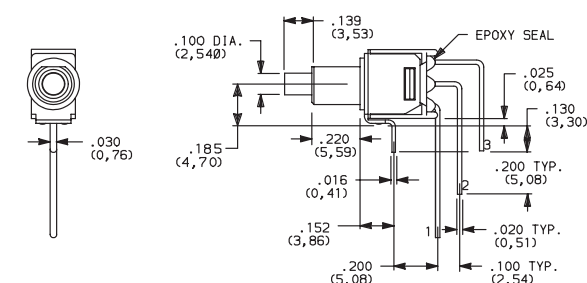
PC MOUNTING



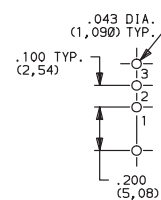
AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



**TP12SH9AVBE
SPDT**



PC MOUNTING



**TP11 Models:
omit hole 2.**

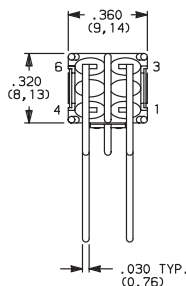
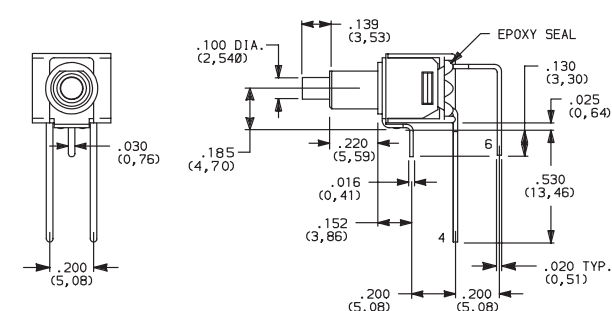
**TP11 Models:
omit terminal 2.**

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

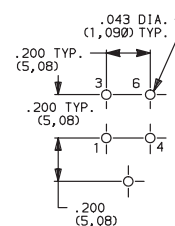
AV VERTICAL RIGHT ANGLE, PC THRU-HOLE



**TP21SH9AVBE
DPST**



PC MOUNTING



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



Third Angle
Projection

C&K

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

TP Series Tiny Pushbutton Switches

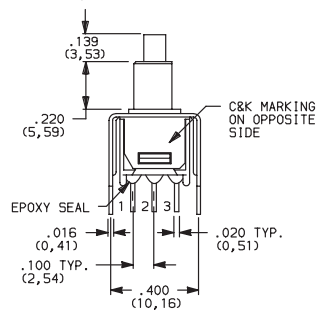


A

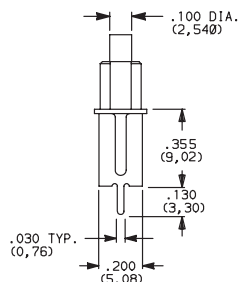
Pushbutton

TERMINATIONS

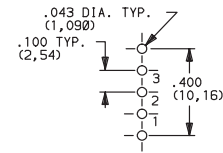
V3 VERTICAL MOUNT, V-BRACKET



TP11 Models:
omit terminal 2.



PC MOUNTING

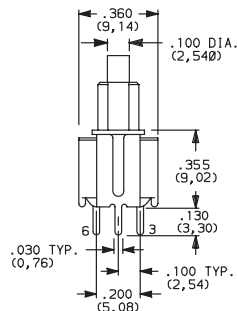
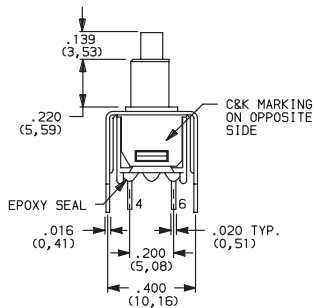


TP11 Models:
omit hole 2.

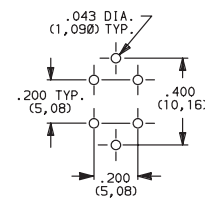


TP12SH9V3BE
SPDT

V3 VERTICAL MOUNT, V-BRACKET



PC MOUNTING



TP21SH9V3BE
DPST

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	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.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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 matte-tin over nickel plate.

NOTE: Any models supplied with P, R, Q, B or G contact material are RoHS compliant.

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

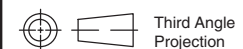
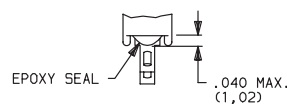
B contact material standard with A, AV, V3 & W terminations.

Q contact material standard with C & Z terminations

P, R contact materials not available with Z terminations.

SEAL

E EPOXY SEAL



Third Angle
Projection

C&K

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

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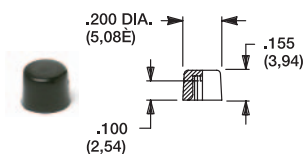


Pushbutton

TP Series Tiny Pushbutton Switches

AVAILABLE HARDWARE

Cap, .100" DIA. Plungers

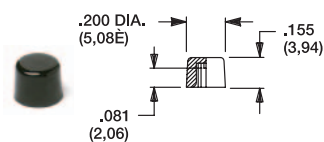


PART NO.

508101000 WHITE
508102000 BLACK

Material: Nylon
Finish: Gloss

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

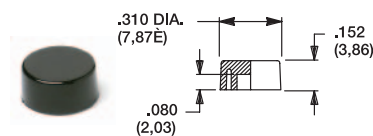


PART NO.

538701000 WHITE
538702000 BLACK

Material: Nylon
Finish: Gloss

Cap, .100" DIA. Plungers

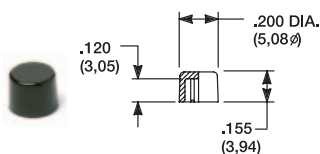


PART NO.

465801000 WHITE
465802000 BLACK

Material: Nylon
Finish: Gloss

Cap, .120" DIA. Plungers

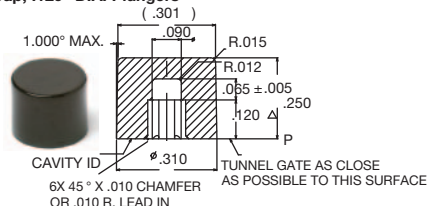


PART NO.

708901000 WHITE
708902000 BLACK

Material: Nylon
Finish: Gloss

Cap, .120" DIA. Plungers

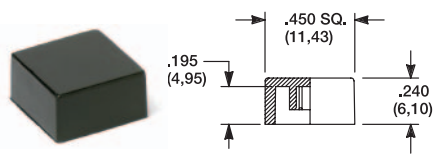


PART NO.

891D01000 WHITE
891D02000 BLACK

Material: Nylon
Finish: Gloss

Cap, J81 option only



PART NO.

484601000 WHITE
484602000 BLACK

Material: Nylon
Finish: Gloss

PART NO.

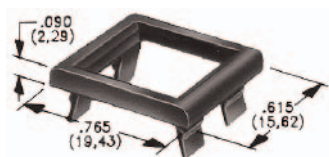
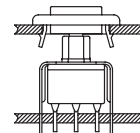
798201000 WHITE
798202263 BLACK

Material: Nylon
Finish: Matte

NOTE: Additional nuts, locking rings and lockwashers available separately, see section "Technical Data and Additional Hardware".
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

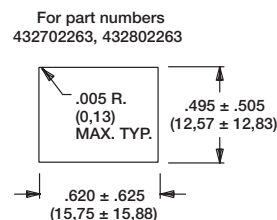
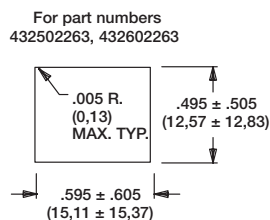
.090" (2,29) PANEL THK.

PART NO.
432702263

.125" (3,18) PANEL THK.

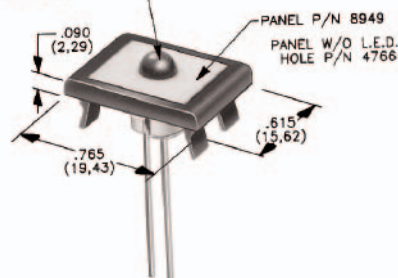
PART NO.
432802263 BLACK

PANEL MOUNTING



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



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

www.ck-components.com

E020 Series

Sealed Snap-acting Momentary Pushbutton Switches



A

Pushbutton

Features/Benefits

- Process sealed with disposable splashproof boot
- Long life contact design
- Snap-fitting plunger available
- RoHS compliant models available

Typical Applications

- Instrumentation
- Telecommunications and networking equipment
- Computers and peripherals



Models Available

Specifications

CONTACT RATING: B contact material (EX25 Models): 0.4 VA max. @ 20 V AC or DC max. G contact material (EX21 Models): 1 AMP @120 V AC or 28 V DC or 0.4 VA max. @ 20 V AC or DC max. Note: Break-before-make contacts. Multi-pole contacts do not make and break simultaneously. See page A-26 for additional ratings.

ELECTRICAL LIFE: 60,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 50 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 75°C.

CAP INSTALLATION FORCE: 10 lbs. max. permissible.

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

NOTE: Any models supplied with P, R, B or G contact material are RoHS compliant.

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 & BUSHING: Glass filled nylon 6/6, flame retardant (UL 94V-0).

PLUNGER: Glass filled nylon or glass filled polyester (PBT) (UL 94V-0).

SWITCH SUPPORT: Brass or steel, matte-tin.

SWITCH SUPPORT RETAINER: Stainless steel.

N.O. & N.C. CONTACTS: EX25 MODELS: B contact material: Copper alloy, with gold plate over nickel plate. EX21 MODELS: G contact material: Coin silver, with gold plate over nickel plate. See page A-26 for additional contact materials.

COMMON CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate. See page A-26 for additional contact materials.

TERMINAL SEAL: Epoxy.

DISPOSABLE BOOT: Vinyl splashproof boot supplied standard. Remove and discard only after soldering and cleaning processes are complete.

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-22 thru A-28. For additional options not shown in catalog, consult our Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

Switch Function

- E121** SPDT On-Mom. 1 Amp
- E221** DPDT On-Mom. 1 Amp
- E125** SPDT On-Mom. 0.4VA
- E225** DPDT On-Mom. 0.4VA

Plunger

- S** .282" high
- M** .331" high, snap-fitting
- S1** .332" high

Bushing

- D1** Unthreaded
- D3** .180" high, unthreaded

Terminations

- A** Right angle, PC thru-hole
- AV2** Vertical right angle, PC thru-hole
- C** PC Thru-hole
- A3** Right angle, snap-in, PC thru-hole
- AV3** Vertical right angle, snap-in, PC thru-hole
- V3** .460" high, V-bracket
- V4** .630" high, V-bracket
- V6** .460" high, V-bracket
- V8** .953" high, V-bracket
- V31** .460" high, snap-in V-bracket
- V41** .630" high, snap-in V-bracket
- V61** .460" high, snap-in V-bracket

Contact Material

- B** Gold
- G** Gold over silver
- P** Gold, matte-tin
- R** Gold over silver, matte-tin

Seal

- E** Epoxy and disposable splashproof boot



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

**A****Pushbutton**

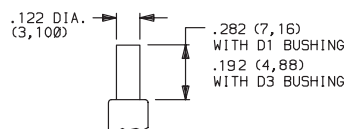
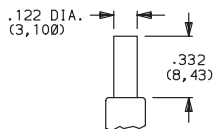
E020 Series Sealed Snap-acting Momentary Pushbutton Switches

SWITCH FUNCTION

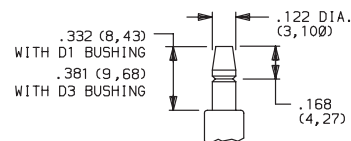
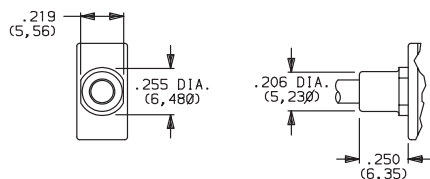
NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
		C&K marking this side		C&K marking this side		
SP	E121	ON	MOM.	1-3	1-2	 SPDT
	E125	ON	MOM.			
SPDT Part number shown: E121SD1CGE						
DP	E221	ON	MOM.	1-3,4-6	1-2,4-5	 DPDT
	E225	ON	MOM.			
DPDT Part number shown: E221SD1CBE						

MOM. = Momentary

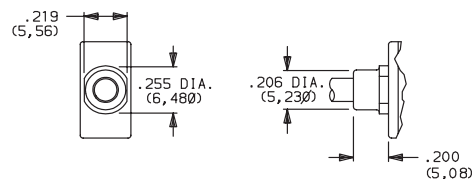
E121, E221 models with all options when ordered with G or R contact material.

EX25 models must be ordered with B or P contact material.
EX21 models must be ordered with G or R contact material.**PLUNGER** **S** .282" HIGH**S1** .332" HIGH

Not Available with D1 bushing.

M .332" HIGH SNAP-FITTING**NOTE:** Caps available for all plunger options, see page A-27.**BUSHING** **D1** UNTHREADED

Not available with S1 actuator.

D3 .180" HIGH UNTHREADED**NOTE:** Disposable splashproof vinyl over actuator and bushing supplied std., see page A-26.**C&K**Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

E020 Series Sealed Snap-acting Momentary Pushbutton Switches



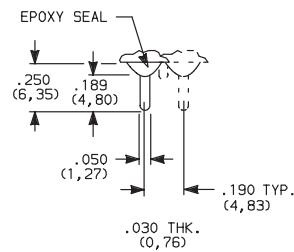
A

Pushbutton

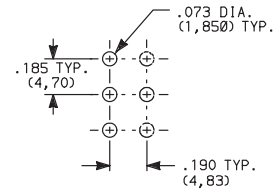
TERMINATIONS



C PC THRU-HOLE

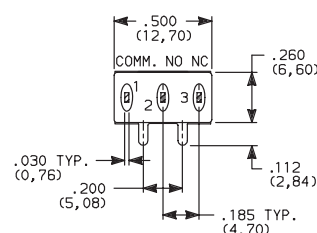
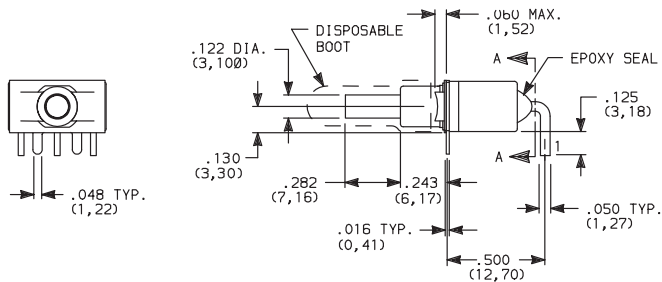


PC MOUNTING



SPDT and DPDT

A RIGHT ANGLE, PC THRU-HOLE



SECTION A-A

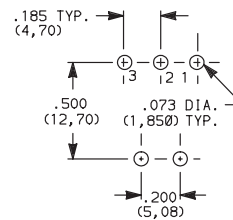


E121SD1AGE
SPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

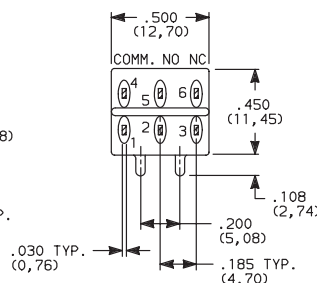
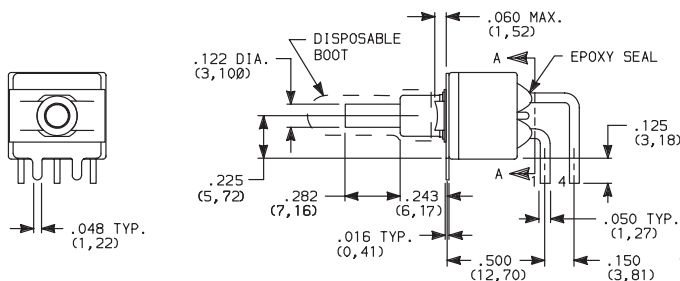


PC MOUNTING



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

A RIGHT ANGLE, PC THRU-HOLE



SECTION A-A

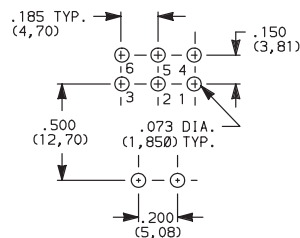


E221SD1AGE
DPDT

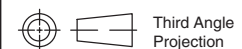
A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



PC MOUNTING



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



Third Angle
Projection

C&K

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

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A

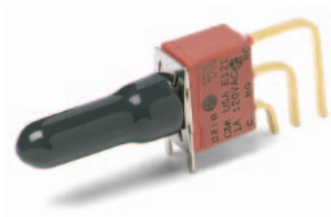
Pushbutton

E020 Series Sealed Snap-acting Momentary Pushbutton Switches

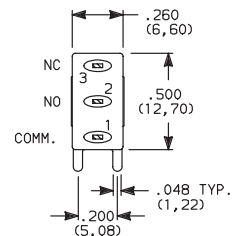
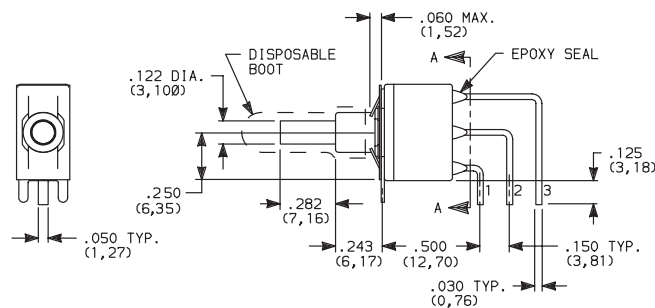
TERMINATIONS



AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH

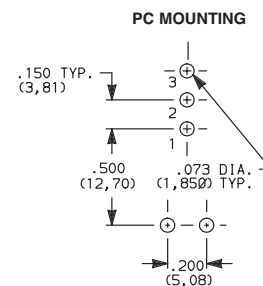
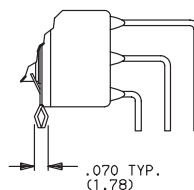
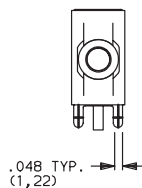


**E121SD1AV2GE
SPDT**



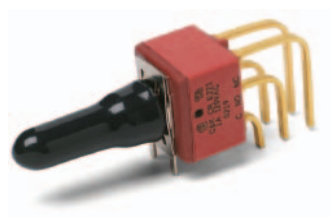
SECTION A-A

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE,
.150" PITCH

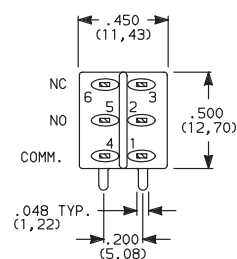
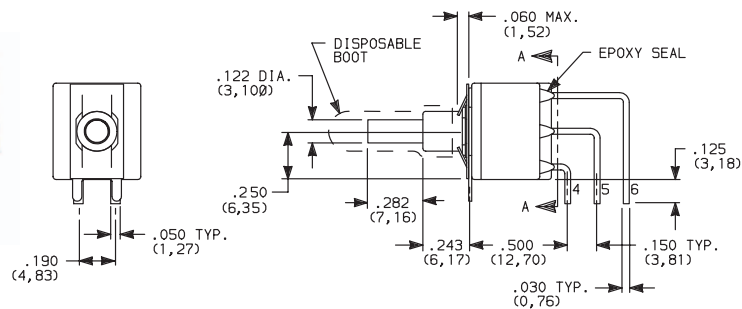


NOTE: Terminal bend radii and lead-in manufacturing option.

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH

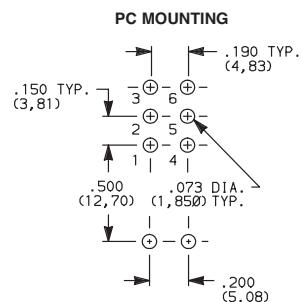
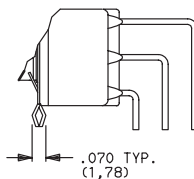
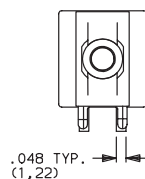


**E221SD1AV2GE
DPDT**

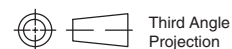


SECTION A-A

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE,
.150" PITCH



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



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

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E020 Series Sealed Snap-acting Momentary Pushbutton Switches

TERMINATIONS

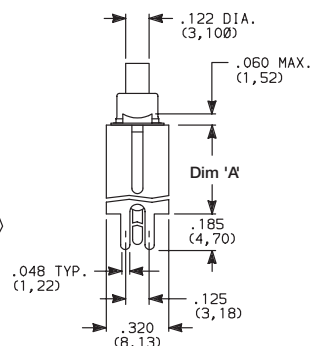
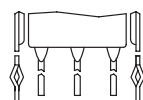
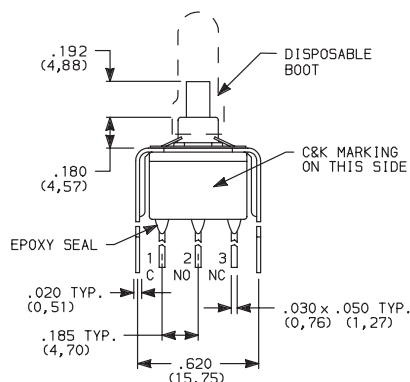


A

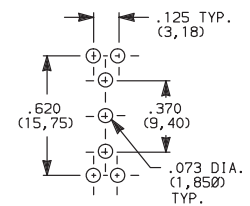
Pushbutton

V3, V4 VERTICAL MOUNT, V-BRACKET

V31, V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING

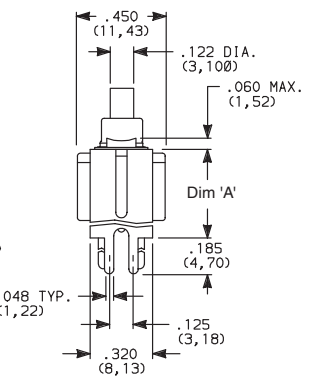
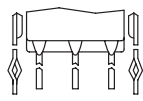
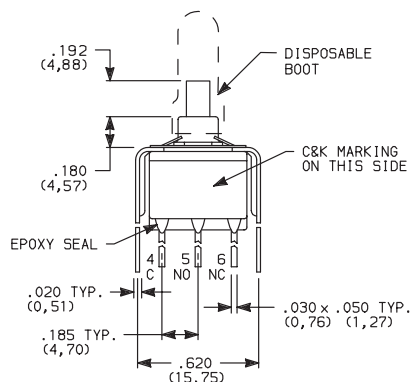


E121SD3_GE
SPDT

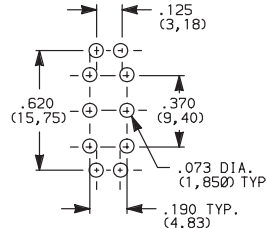
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4, V41	.630 (16,00)

V3, V4 VERTICAL MOUNT, V-BRACKET

V31, V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING

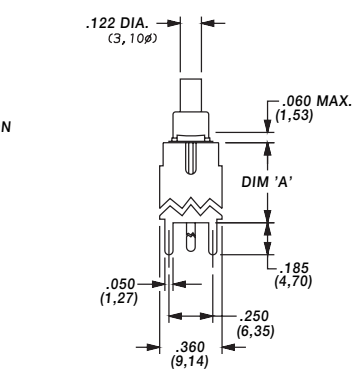
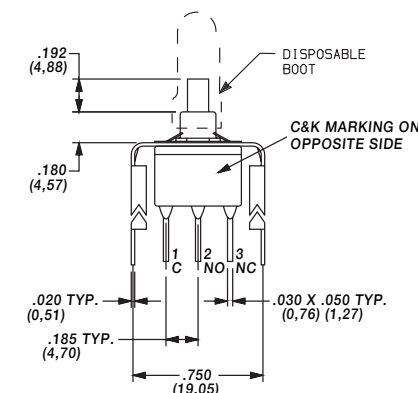


E221SD3_GE
DPDT

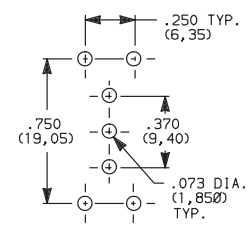
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4, V41	.630 (16,00)

V6, V8 VERTICAL MOUNT, V-BRACKET

V61, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING



E121SD3_GE
SPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)
V8, V81	.953 (24,21)



Third Angle
Projection



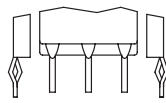
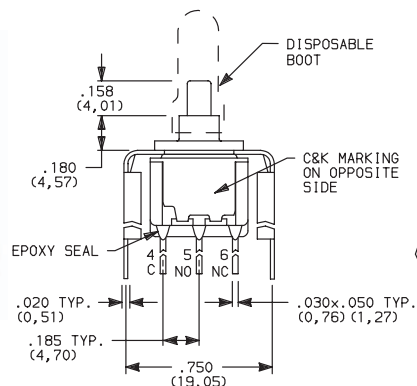
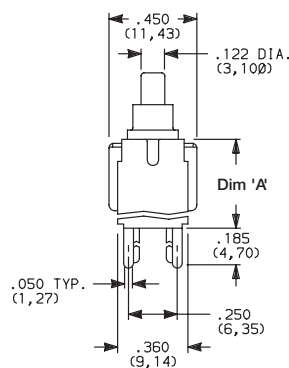
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

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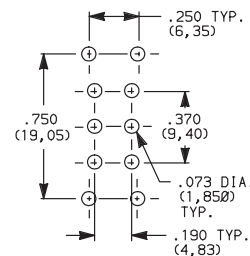
**A****Pushbutton**

E020 Series Sealed Snap-acting Momentary Pushbutton Switches

TERMINATIONS

**V6, V8** VERTICAL MOUNT, V-BRACKET**V61, V81** VERTICAL MOUNT, V-BRACKET, SNAP-IN**E221SD3V6GE
DPDT****SNAP-IN**

PC MOUNTING



OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)
V8, V81	.953 (24,21)

CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	EX25 MODELS ONLY: 0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁴		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	EX21 MODELS ONLY: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 1 AMP @ 120 V AC OR 28 V DC.
R		MATTE-TIN ⁴		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.



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

² N.O. AND N.C. CONTACTS: Coin silver, with gold plate over nickel plate.

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

⁴ TERMINALS: Copper alloy, with matte-tin alloy over nickel plate.

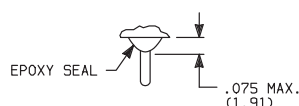
NOTE: Any models supplied with P, R, B or G contact material are RoHS compliant.

E121, E221 models   with all options when ordered with mandatory G, or R contact material.

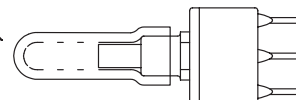
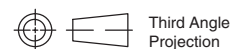
P or B contact material must be ordered with EX25 models.

R or G contact material must be ordered with EX21 models.

SEAL

**E** EPOXY SEAL AND DISPOSABLE SPLASHPROOF BOOT

Disposable splashproof boot supplied standard. Remove and discard boot *only after* soldering and cleaning processes are complete.

**C&K**

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

E020 Series Sealed Snap-acting Momentary Pushbutton Switches

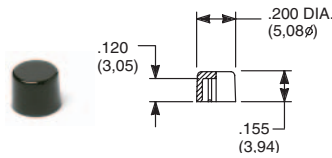


A

Pushbutton

AVAILABLE HARDWARE

Cap

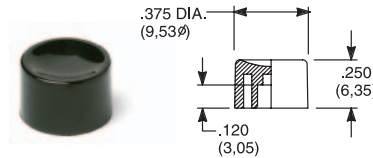


PART NO.

708901000 WHITE
708902000 BLACK
708903000 RED

Material: Nylon
Finish: Gloss

Cap

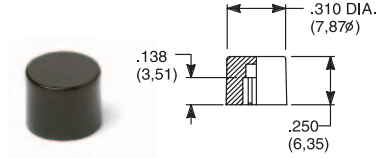


PART NO.

752701000 WHITE
752702000 BLACK
752703000 RED

Material: Nylon
Finish: Gloss

Cap

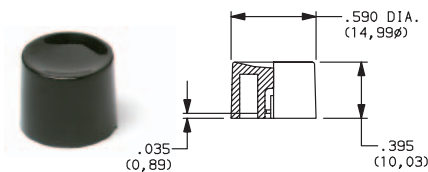


PART NO.

801801000 WHITE
801802000 BLACK
801803000 RED

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

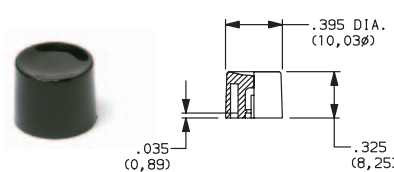


PART NO.

452D01000 WHITE
452D02000 BLACK
452D03000 RED

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

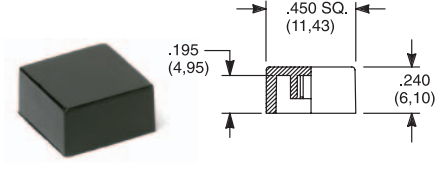


PART NO.

894101000 WHITE
894102000 BLACK
894103000 RED

Material: Nylon
Finish: Gloss

Cap



PART NO.

484601000 WHITE
484602000 BLACK
484603000 RED

Material: Nylon
Finish: Gloss

PART NO.

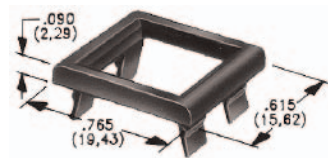
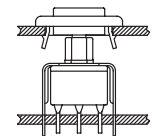
798201000 WHITE
798202263 BLACK
798203000 RED

Material: Nylon
Finish: Matte

NOTE: 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

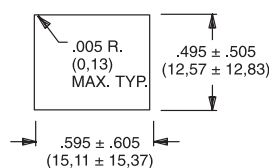
.125" (3,18) PANEL THK.

PART NO.

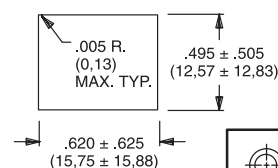
432802263 BLACK

PANEL MOUNTING

For part numbers
4325xxxxx, 4326xxxxx



For part numbers
4327xxxxx, 4328xxxxx



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



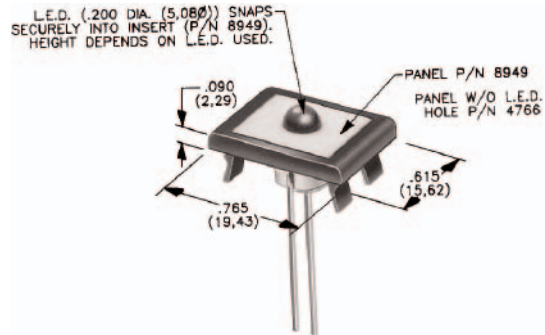
**A****Pushbutton**

E020 Series Sealed Snap-acting Momentary Pushbutton Switches

AVAILABLE HARDWARE

PANEL INSERTS

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

Special colors, custom markings available, consult Customer Service Center.



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

8020 Series Snap-acting Momentary Pushbutton Switches



A

Pushbutton

Features/Benefits

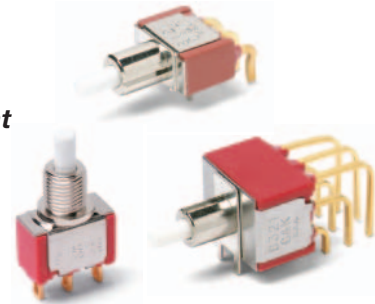
- **Positive tactile feel**
- **Multi-positions available**
- **Wide variety of termination options**
- **Epoxy terminal seal compatible with bottom wash cleaning**
- **RoHS compliant models available**



Models Available

Typical Applications

- **Instrumentation**
- **Computer peripherals**
- **Telecommunications equipment**



Specifications

CONTACT RATING: B contact material (8X25 Models): 0.4 VA max. @ 20 V AC or DC maximum. G contact material (8X21, U8X1 Models): 1 AMP @ 120 V AC or 28 V DC or 0.4 VA max. @ 20 V AC or DC max. Note: Break-before-makecontacts. Multi-pole contacts do not make and break simultaneously. See page A-43 for additional ratings.

ELECTRICAL LIFE: 60,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 50 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: 8X2X MODELS: -30°C to 75°C.
U8X1 MODELS: -30°C to 65°C.

CAP INSTALLATION FORCE: 10 lbs. max. permissible.

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

NOTE: Any models supplied with B, P, R, or G contact material are RoHS compliant.

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 or diallyl phthalate (DAP), flame retardant (UL 94V-0).

PLUNGER: Glass filled nylon or glass filled polyester (PBT) (UL 94V-0).

CAP & FRAME: Nylon, black, standard.

BUSHING: Brass or zinc, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

N.O. & N.C. CONTACTS: 8X21, U8X1 MODELS: G contact material: Coin silver, with gold plate over nickel plate. See page A-43 for additional contact materials.

8X25 MODELS: B contact material: Copper alloy, with gold plate over nickel plate. See page A-43 for additional contact materials.

COMMON CONTACT & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

TERMINAL SEAL: Epoxy. Refer to soldering and cleaning Technical Data Chapter.

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-30 thru A-45. 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	Actuator or Plunger	Bushing	Contact Material	Seal	Cap Color	Frame Color	LED Color
8121 SPDT On-Mom. 1 Amp	S Plunger	D9 .280" high, keyway	B Gold	E Epoxy	2 Black	2 Black	3 Red
8125 SPDT On-Mom. 0.4VA	NONE Snap-in	H .250" high, flat	P Gold, matte-tin	I Epoxy potted base	NONE Models without caps	NONE Models without frame	NONE Models without LED
8221 DPDT On-Mom. 1 Amp	J80 Snap-in	NONE No bushing choice required	G Gold over silver		1 White	1 White	3 Red
8225 DPDT On-Mom. 0.4VA	J81 Snap-in w/frame	D .280" high, keyway	R Gold over silver, matte-tin		3 Red	3 Red	5 Yellow
8321 3PDT On-Mom. 1 Amp	J82 Snap-in w/frame for LED	D2 .288" high, flat			5 Yellow	5 Yellow	6 Green
8325 3PDT On-Mom. 0.4VA	J83 Snap-in w/frame & flush cap	D3 .180" high			6 Green	6 Green	9 Gray
8421 4PDT On-Mom. 1 Amp	J84 Snap-in w/frame for LED, flush cap	D8 .288" high, flat			7 Blue	7 Blue	6 Green
8425 4PDT On-Mom. 0.4VA	J85 Snap-in w/frame & LED	H9 .250" high, flat, hi torque			9 Gray	9 Gray	
	J95 PC w/V-bracket & LED	Y .350" high, keyway					
	L Plunger	Y3 6.35mm high, keyway, hi torque					
	M Snap-fitting plunger	Y4 .378" high, flat, hi torque					
		Y9 .350" high, keyway					

Terminations	Terminations	Terminations
A Right angle, PC thru-hole	A4 Right angle, PC thru-hole, reversed terminals	V2 .555" high, V-bracket
AV2 Vertical right angle, PC thru-hole	A6 Right angle, PC thru-hole	V3 .460" high, V-bracket
C PC Thru-hole	AV Vertical right angle, PC thru-hole	V4 .630" high, V-bracket
Z Solder lug	AV1 Vertical right angle, PC thru-hole	V6 .460" high, V-bracket
A2 Right angle, PC thru-hole	AV3 Vertical right angle, snap-in, PC thru-hole	V7 .630" high, V-bracket
A3 Right angle, snap-in, PC thru-hole	R Right angle with PCB	V8 .953" high, V-bracket
	R2 Right angle with PCB, reversed terminals	V9 1.150" high, V-bracket
		V31 .460" high, snap-in V-bracket
		V61 .460" high, snap-in V-bracket
		W .750" long, wire wrap
		W1 .964" long, wire wrap
		W3 .425" long, wire wrap
		W4 1.062" long, wire wrap
		Z3 Quick connect

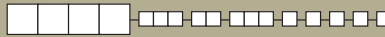


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change



8020 Series Snap-acting Momentary Pushbutton Switches

SWITCH FUNCTION



Pushbutton

A

NO. POLES	MODEL NO.	UL/CSA* 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	8121	U811	ON	MOM.	1-3	1-2	SPDT	
	8125		ON	MOM.				

SPDT

Part number shown: 8121SHZGE

DP	8221	U821	ON	MOM.	1-3,4-6	1-2,4-5	DPDT	
	8225		ON	MOM.				

DPDT

Part number shown: 8221SHZGE

3P	8321	U831	ON	MOM.	1-3,4-6,7-9	1-2,4-5,7-8	3PDT	
	8325		ON	MOM.				

3PDT

Part number shown: 8321SHZGE

MOM. = Momentary

*U811 thru U841 model numbers with all options (except R, R2 terminations) when ordered with G or R contact material.

8X25 models must be ordered with B or P contact material.

8X21 and U8X1 models must be ordered with G or R contact material.



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

C&K

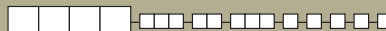
8020 Series Snap-acting Momentary Pushbutton Switches



A

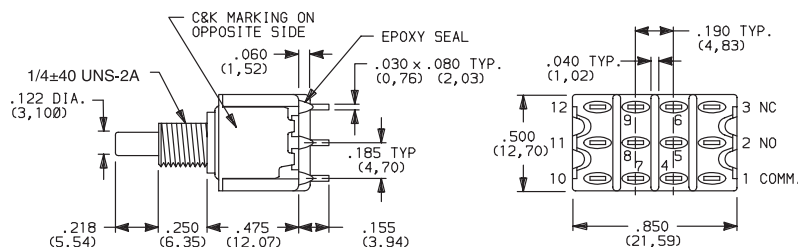
Pushbutton

SWITCH FUNCTION



NO. POLES	MODEL NO.	UL/CSA* MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
			POS. 1	POS. 2	POS. 1	POS. 2	
4P	8421	U841	ON	MOM.	1-3,4-6,7-9,10-12	1-2,4-5,7-8,10-11	
	8425		ON	MOM.			

4PDT



Part number shown: 8421SHZGE

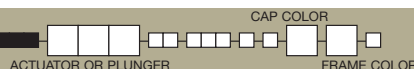
MOM. = Momentary

* U811 thru U841 model numbers with all options (except R, R2 terminations) when ordered with G or R contact material.

8X25 models must be ordered with B or P contact material.

8X21 and U8X1 models must be ordered with G or R contact material.

ACTUATOR—SNAP-IN FRONT MOUNT

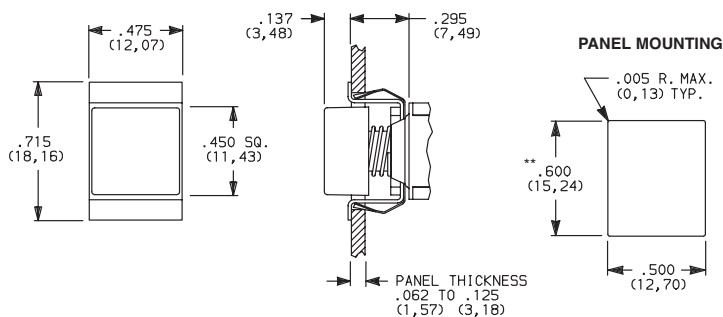


OPTION CODE	CAP AND FRAME COLOR
2	BLACK
NONE	No Frame Color (J80 option)
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

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

NOTE: Caps and frames available separately, see pages A-44 and A-45.

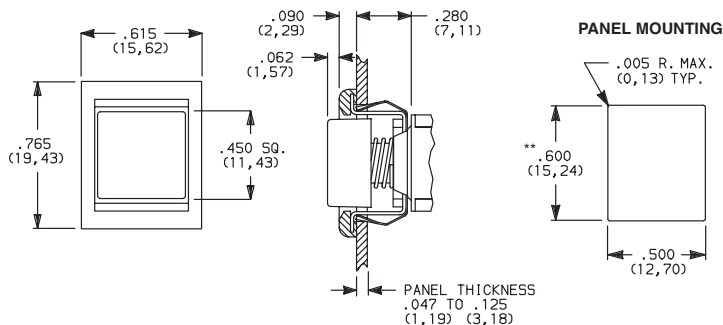
J80 SNAP-IN



NOTE: No frame color choice required.

** Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

J81 SNAP-IN WITH FRAME



NOTE: Available with C, W-W4, Z or Z3 terminations and SPDT and DPDT models only.

** Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.



Third Angle Projection



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

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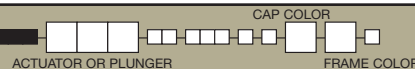


A

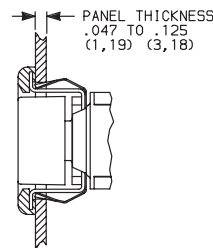
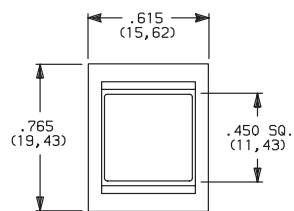
Pushbutton

8020 Series Snap-acting Momentary Pushbutton Switches

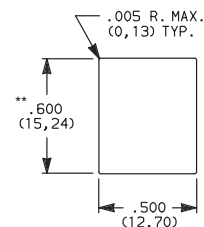
ACTUATOR—SNAP-IN FRONT MOUNT



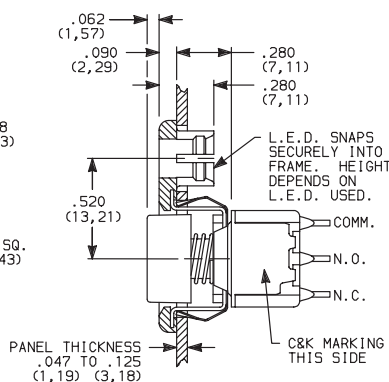
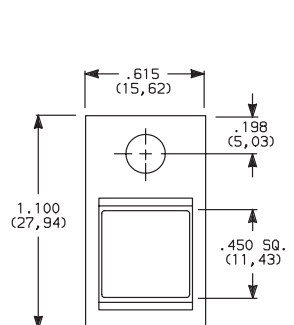
J83 SNAP-IN WITH FRAME AND FLUSH CAP



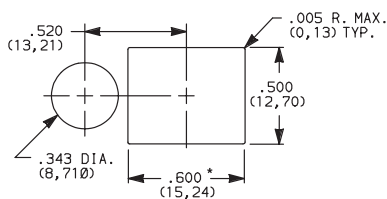
PANEL MOUNTING



J82 SNAP-IN WITH FRAME FOR LED



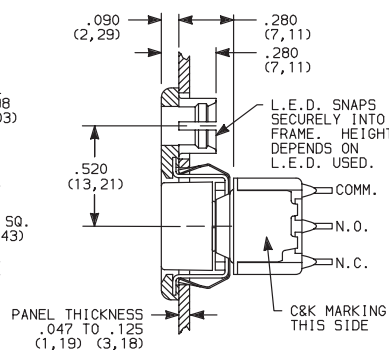
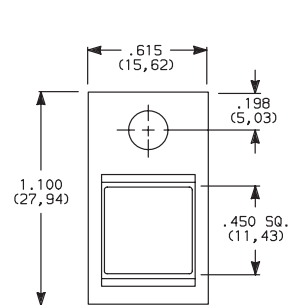
PANEL MOUNTING



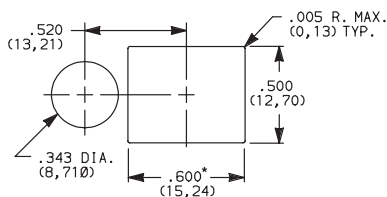
* Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

LED not included.
For LED information, see page A-45.

J84 SNAP-IN WITH FRAME FOR LED, FLUSH CAP



PANEL MOUNTING



* Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

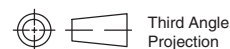
LED not included.
For LED information, see page A-45.

OPTION CODE	CAP AND FRAME COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

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

Available with C, W-W4, Z or Z3 terminations and
SPDT and DPDT models only.

NOTE: Caps and frames available separately,
see pages A-44 and A-45.

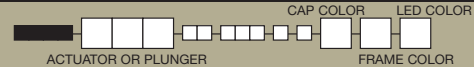


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

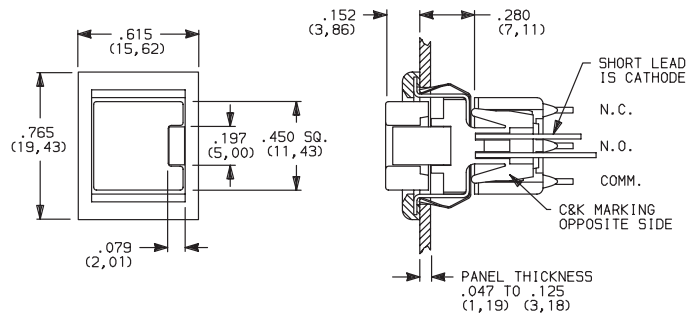


8020 Series Snap-acting Momentary Pushbutton Switches

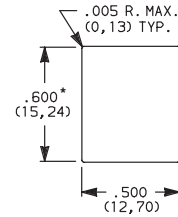
ACTUATOR—SNAP-IN FRONT MOUNT



J85 SNAP-IN WITH FRAME AND LED



PANEL MOUNTING



* Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.



8121J85ZGE223
SPST

Available with C, W-W4, Z or Z3 terminations and SPDT models only. For LED information see page A-45.

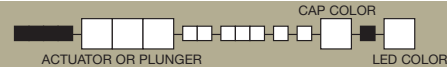
NOTE: Caps & frames available separately, see pages A-44 and A-45.

OPTION CODE	CAP AND FRAME COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

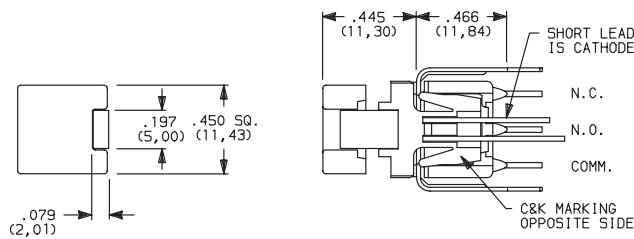
OPTION CODE	LED COLOR
3	RED
5	YELLOW
6	GREEN

For LED information see page A-45.

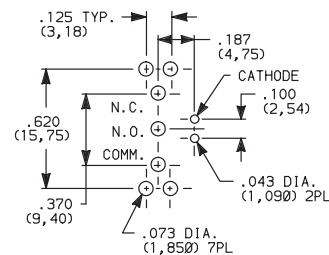
ACTUATOR—PC MOUNT



J95 PC WITH V-BRACKET AND LED



PC MOUNTING



8121J95V3GE23
SPST

OPTION CODE	CAP AND FRAME COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

OPTION CODE	LED COLOR
3	RED
5	YELLOW
6	GREEN

For LED information see page A-45.

NOTE: Caps available separately, see page A-44. Available with V3 terminations and SPDT models only.



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

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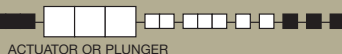


8020 Series Snap-acting Momentary Pushbutton Switches

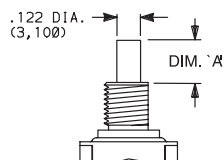
A

Pushbutton

PLUNGER



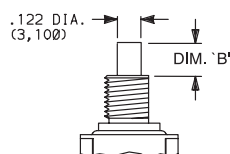
S PLUNGER



NONE NO PLUNGER CHOICE REQUIRED
(JXX ACTUATORS)

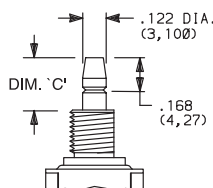
AVAILABLE BUSHINGS	DIM. 'A' FOR C, W-W4, Z & Z3 TERMINATIONS	DIM. 'A' FOR A, A2, A3, A4, A6, AV-A3, R & R2 TERMINATIONS	DIM. 'A' FOR V3-V61 TERMINATIONS
D, D9	.244 (6,20)	.228 (5,79)	.224 (5,69)
H, H9	.218 (5,54)	.202 (5,13)	.198 (5,03)
Y, Y9	.203 (5,16)	.187 (4,75)	.183 (4,65)
Y3	(5,54)	(5,13)	(5,03)
Y4	.185 (4,70)	.169 (4,29)	.165 (4,19)
D2, D8	N/A	.232 (5,89)	.228 (5,79)
D3	N/A	.162 (4,11)	.158 (4,01)

L PLUNGER



AVAILABLE BUSHINGS	DIM. 'B' FOR C, W-W4, Z & Z3 TERMINATIONS	DIM. 'B' FOR A, A2, A3, A4, A6, AV-A3, R & R2 TERMINATIONS	DIM. 'B' FOR V3-V61 TERMINATIONS
Y, Y9	.178 (4,52)	.162 (4,11)	.158 (4,01)
Y4	.090 (2,29)	.074 (1,88)	.070 (1,78)

M SNAP-FITTING PLUNGER



AVAILABLE BUSHINGS	DIM. 'C' FOR C, W-W4, Z & Z3 TERMINATIONS	DIM. 'C' FOR A, A2, A3, A4, A6, AV-A3, R & R2 TERMINATIONS	DIM. 'C' FOR V3-V61 TERMINATIONS
D, D9	.297 (7,54)	.281 (7,14)	.277 (7,04)
H, H9	.267 (6,78)	.251 (6,38)	.247 (6,27)
Y, Y9	.259 (6,58)	.243 (6,17)	.239 (6,07)
Y3	(6,78)	(6,37)	(6,27)
Y4	.259 (6,58)	.243 (6,17)	.239 (6,07)
D2, D8	N/A	.273 (6,93)	.269 (6,83)
D3	N/A	.361 (9,17)	.357 (9,07)

N/A = NOT AVAILABLE

NOTE: When selecting plunger option, bushing selection must also be made, see next page. No plunger option is required when any JXX actuator option is selected. Additional plunger lengths are available on SPDT and DPDT models, consult Customer Service Center. Not all plunger lengths sufficient for use with caps, see page A-44.

BUSHING

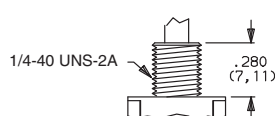
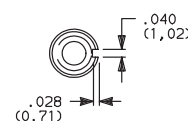
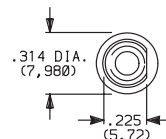
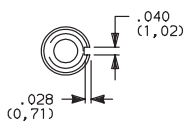


NONE NO BUSHING
CHOICE REQUIRED
(JXX ACTUATORS)

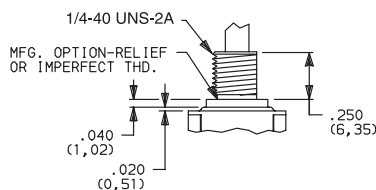
D .280" HIGH THREADED, KEYWAY
D9 .280" HIGH UNTHREADED,
KEYWAY

H .250" HIGH THREADED, FLAT
H9 .250" HIGH UNTHREADED, FLAT

Y .350" HIGH THREADED, KEYWAY
Y9 .350" HIGH UNTHREADED, KEYWAY

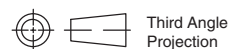
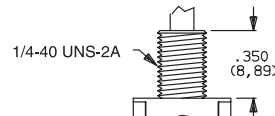


D9 bushing standard with A-A6,
R, R2 AV-AV3 terminations.



H bushing standard with C, W-W4, Z or Z3 terminations.
H, H9 bushings not available on single pole models with
A3-A6, R, R2 terminations.

**Will withstand 12 in./lbs. of torque with
no distortion.**



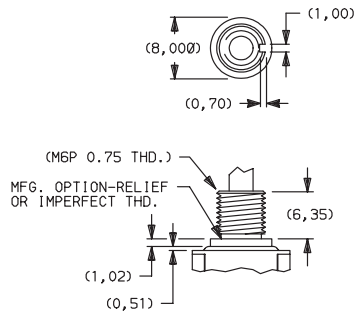
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

C&K

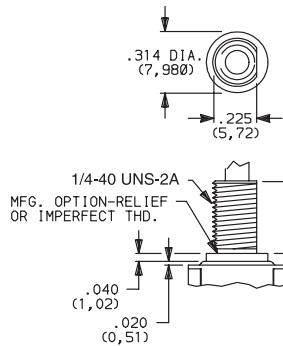
8020 Series Snap-acting Momentary Pushbutton Switches

BUSHING

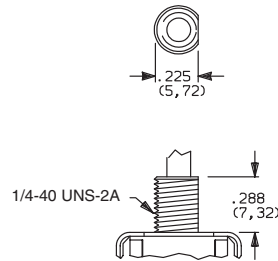
Y3 6.35mm THREADED, KEYWAY



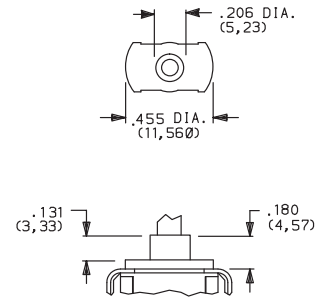
Y4 .378" HIGH THREADED, FLAT



D2 .288" HIGH THREADED, FLAT
D8 .288" HIGH UNTHREADED, FLAT



D3 .180" HIGH UNTHREADED



Y3 & Y4 bushings not available on single pole models with A3-A6, R, R2 terminations. Will withstand 12 in./lbs. of torque with no distortion.

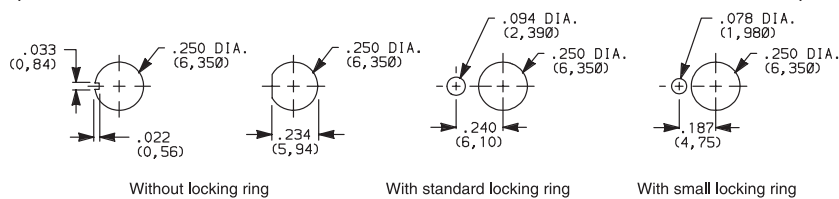
D2, D8 bushings not available with C, W-W4, Z, Z3 terminations.

D3 bushing available with A, A2, A3, AV, AV2, AV3 and V2-V61 terminations only.

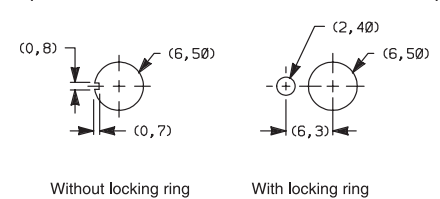
NOTE: No bushing option choice required when JXX actuator option is selected. When selecting bushing option, plunger selection must also be made, see previous page. Plunger lengths vary with bushing and termination options selected.

PANEL MOUNTING

1/4 INCH BUSHING



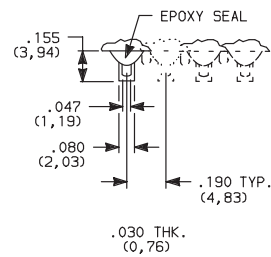
METRIC BUSHING



NOTE: Two mounting nuts, locking ring and lockwasher supplied standard with threaded bushings. Optional mounting nut and locking ring styles available, see section "Technical Data and Additional Hardware".

TERMINATIONS

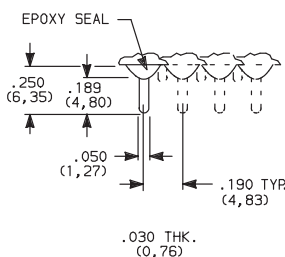
Z SOLDER LUG



SPDT thru 4PDT

Not available with J95 actuator, P or R contact material.

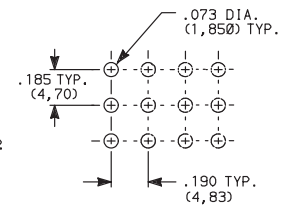
C PC THRU-HOLE



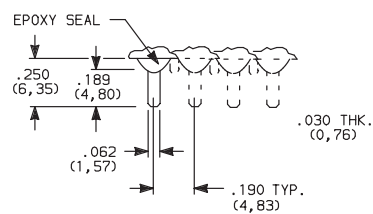
SPDT thru 4PDT

Not available with J95 actuator option.

PC MOUNTING



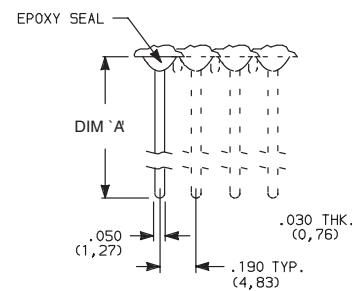
Z3 QUICK CONNECT



SPDT thru 4PDT

Not available with J95 actuator, P or R contact material. Mating quick connector available, order part number 530100000, page A-44.

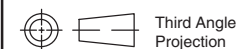
W W1, W3, W4 WIRE WRAP



SPDT thru 4PDT

Not available with J95 actuator option.

OPTION CODE	DIM 'A'
W	.750 (19,05)
W1	.964 (24,49)
W3	.425 (10,80)
W4	1.062 (26,97)



Third Angle Projection

C&K

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

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A

Pushbutton

**A****Pushbutton**

8020 Series Snap-acting Momentary Pushbutton Switches

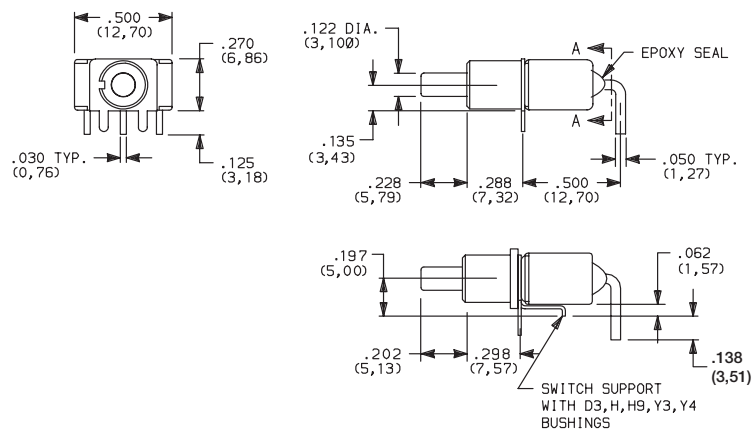
TERMINATIONS



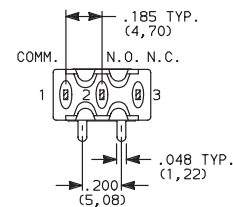
A RIGHT ANGLE, PC THRU-HOLE



**8121SD9AGE
SPDT**



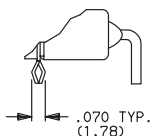
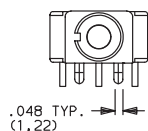
Part Number 8121SH9AGE



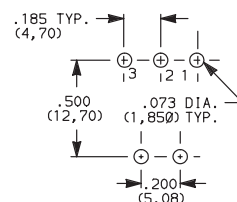
SECTION A-A

Terminal Nos.
For Reference Only.

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

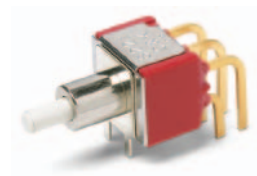


PC MOUNTING

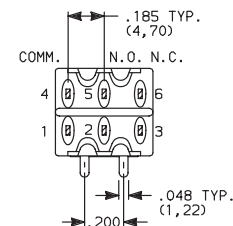
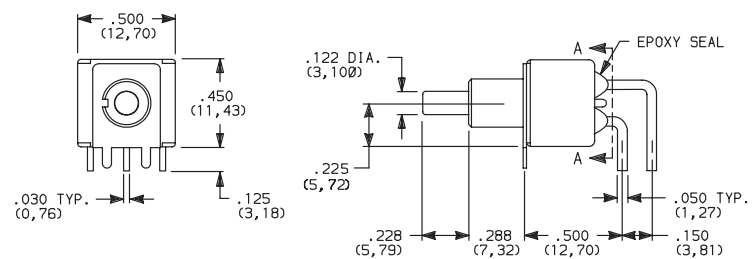


Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

A RIGHT ANGLE, PC THRU-HOLE

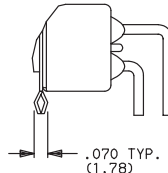
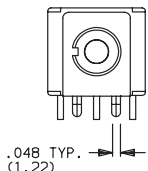


**8221SD9AGE
DPDT**

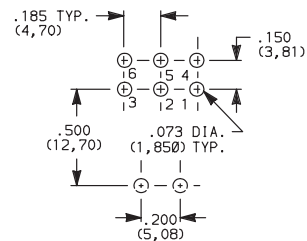


SECTION A-A

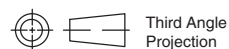
A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



PC MOUNTING



Not available with JXX actuators and I seal option.
Terminal bend radii and lead-in manufacturing option.



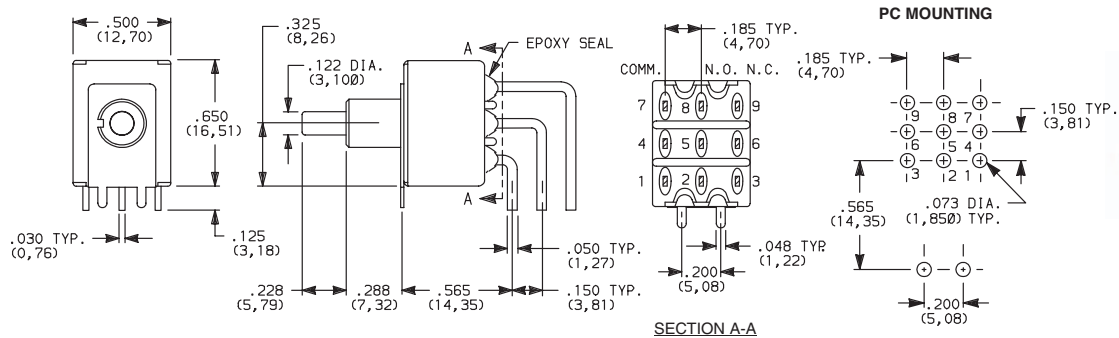
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

C&K

8020 Series Snap-acting Momentary Pushbutton Switches

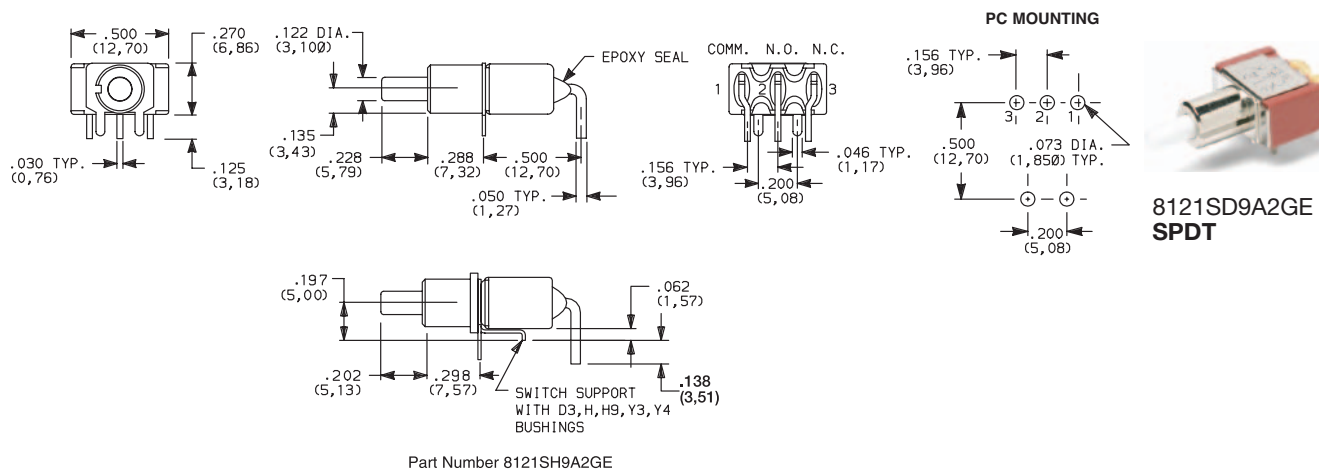
TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE



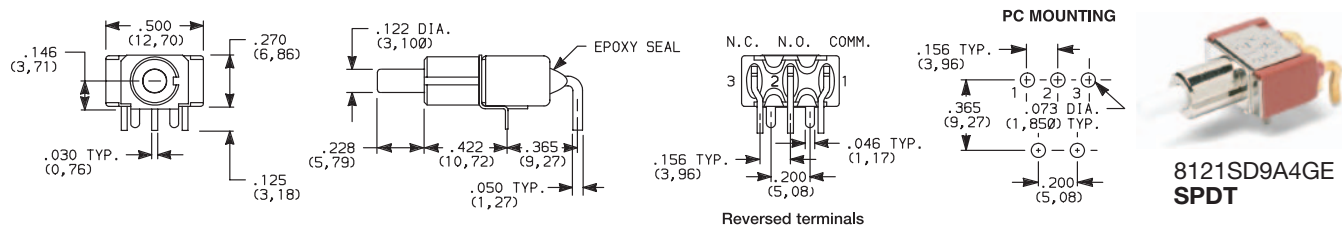
Not available with JXX actuators and I seal option.
Terminal bend radii and lead-in manufacturing option.

A2 RIGHT ANGLE, PC THRU-HOLE



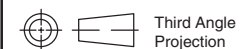
Not available with JXX actuators, I seal option.
Terminal bend radii and lead-in manufacturing option.

A4 RIGHT ANGLE, PC THRU-HOLE, REVERSED TERMINALS



Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings and I seal.
Terminal bend radii and lead-in manufacturing option.

The A4 and R2 termination options are functionally identical and fit the same PC mounting pattern. The switches, however, are shifted relative to the mounting holes. The PC pattern must clear the switch support legs. Unlike the R2, the A4 option is available with UL/CSA.



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

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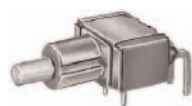
**A****Pushbutton**

8020 Series Snap-acting Momentary Pushbutton Switches

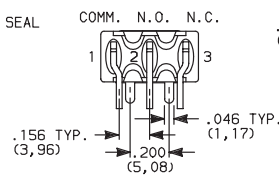
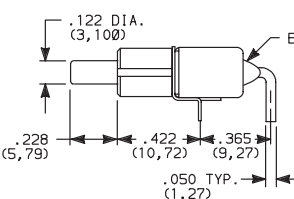
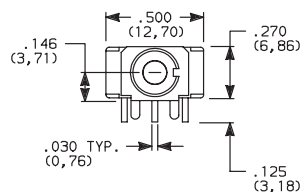
TERMINATIONS



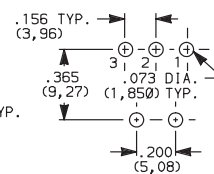
A6 RIGHT ANGLE, PC THRU-HOLE



**8121SD9A6GE
SPDT**



PC MOUNTING



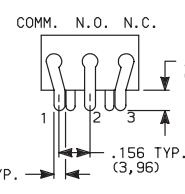
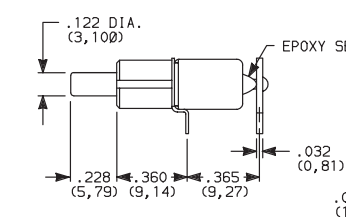
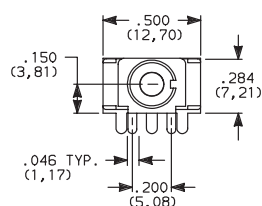
Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings and I seal.
Terminal bend radii and lead-in manufacturing option.

The A6 and R termination options are functionally identical and fit the same PC mounting pattern. The switches, however, are shifted relative to the mounting holes. The PC pattern must clear the switch support legs. Unlike the R, the A6 option is available with UL/CSA.

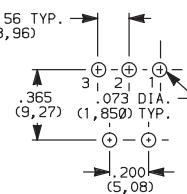
R RIGHT ANGLE WITH PCB



**8121SD9RGE
SPDT**



PC MOUNTING

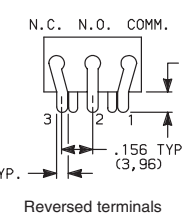
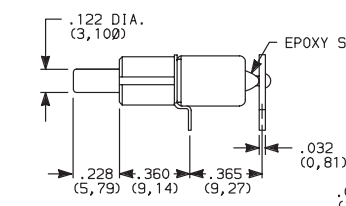
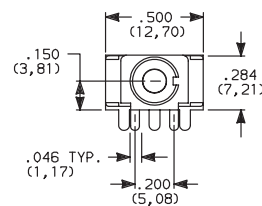


Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings, I seal option.
R termination not UL/CSA approved.

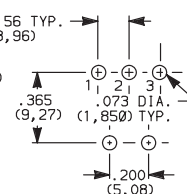
R2 RIGHT ANGLE WITH PCB, REVERSED TERMINALS



**8121SD9R2GE
SPDT**



PC MOUNTING

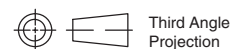
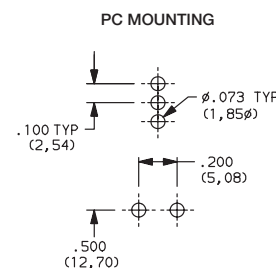
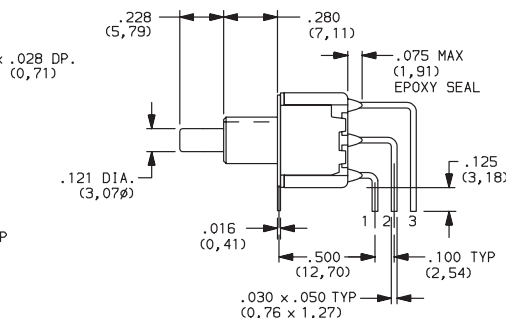
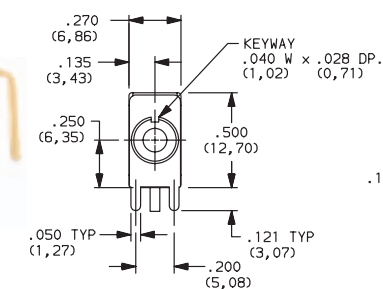


Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings, I seal option.
R2 termination not UL/CSA approved.

AV VERTICAL RIGHT ANGLE, PC THRU-HOLE, .100" PITCH



**8121SD9AVGE
SPDT**



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

C&K

8020 Series Snap-acting Momentary Pushbutton Switches

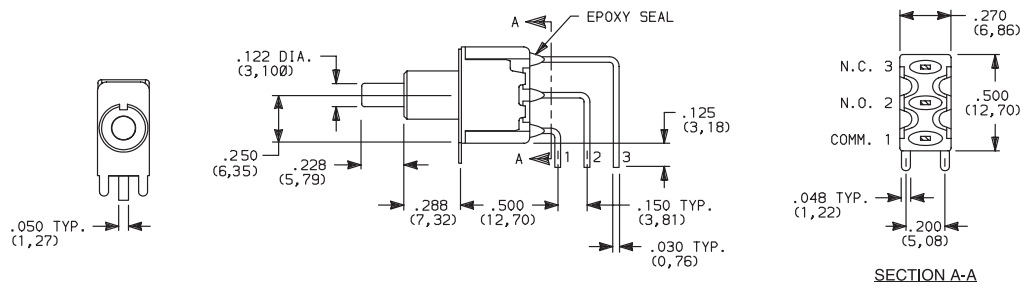
TERMINATIONS



A

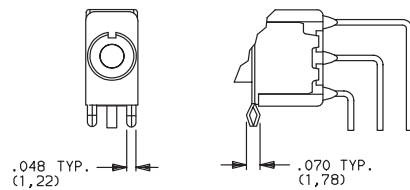
Pushbutton

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

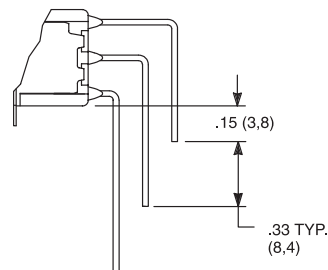


8121SD9AV2GE
SPDT

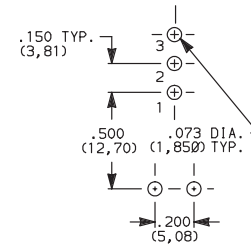
AV3 VERTICAL RIGHT ANGLE, SNAP-IN,, PC THRU-HOLE, .150" PITCH



AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH

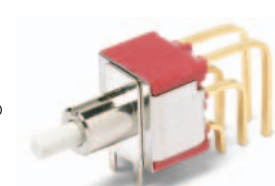
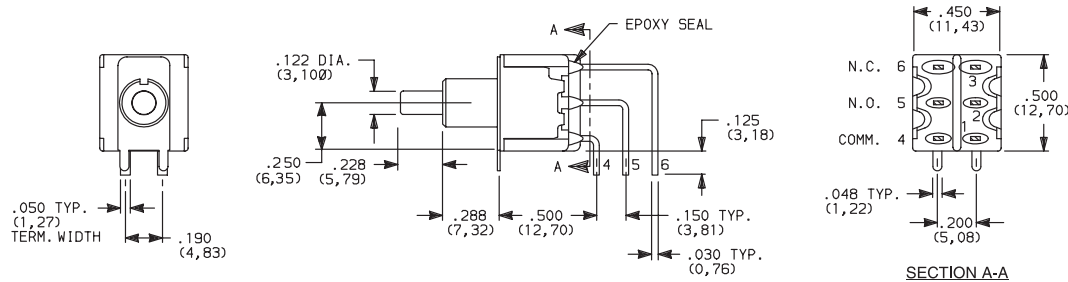


PC MOUNTING



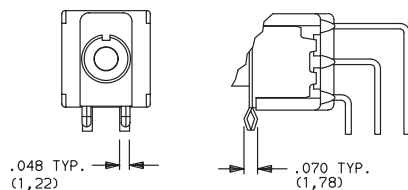
Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

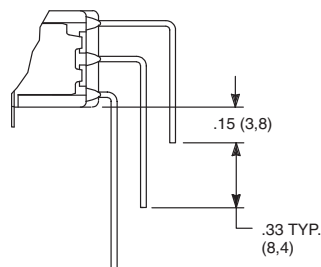


8221SD9AV2GE
DPDT

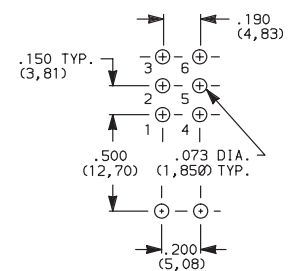
AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH



PC MOUNTING



Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.



Third Angle
Projection

C&K

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

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A

Pushbutton

8020 Series Snap-acting Momentary Pushbutton Switches

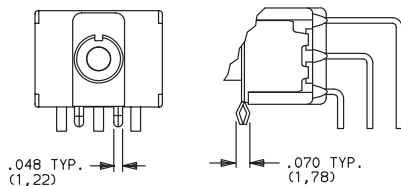
TERMINATIONS

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, 150° PITCH



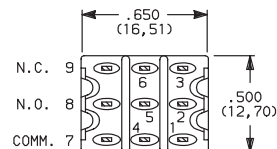
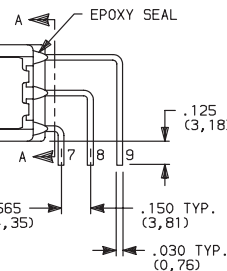
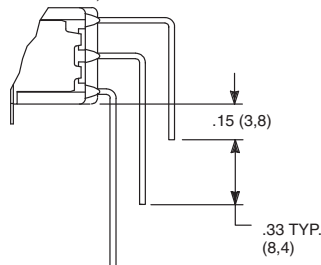
8321SD9AV2GE
3PDT

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



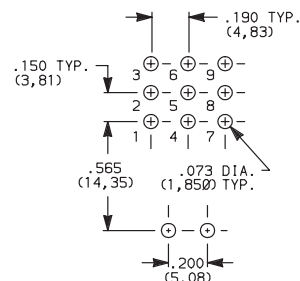
Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH



SECTION A-A

PC MOUNTING

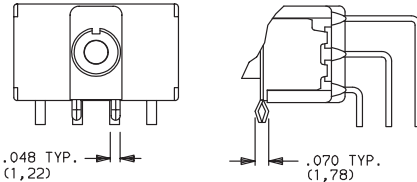


AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, 150° PITCH



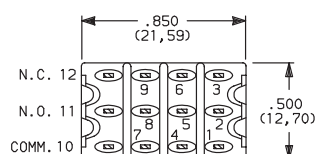
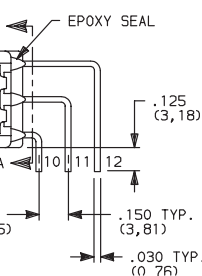
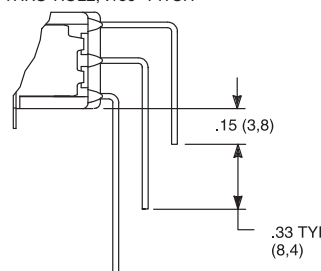
8421SD9AV2GE
4PDT

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



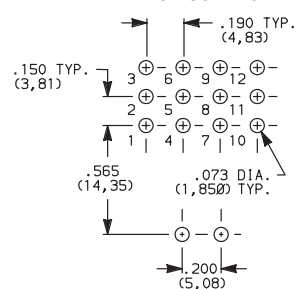
Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH



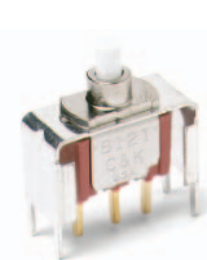
SECTION A-A

PC MOUNTING



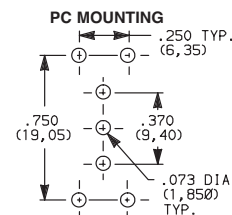
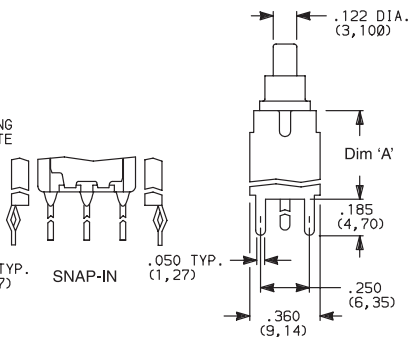
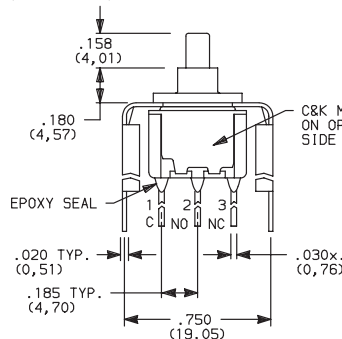
V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN

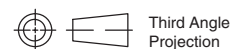


8121SD3_GE
SPDT

Not available with JXX actuators and I seal.



OPTION CODE	DIM 'A'
V2	.555 (14,10)
V6, V61	.460 (11,68)
V7	.630 (16,00)
V8	.953 (24,21)



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

C&K

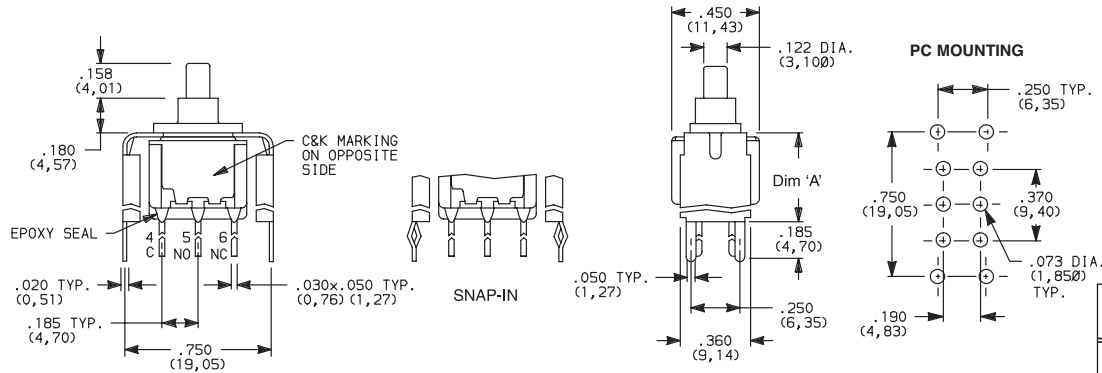
8020 Series Snap-acting Momentary Pushbutton Switches

TERMINATIONS



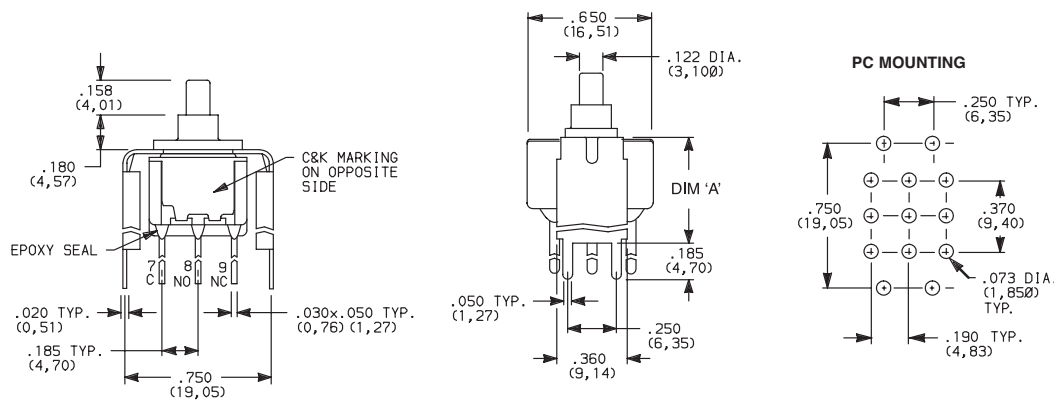
V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



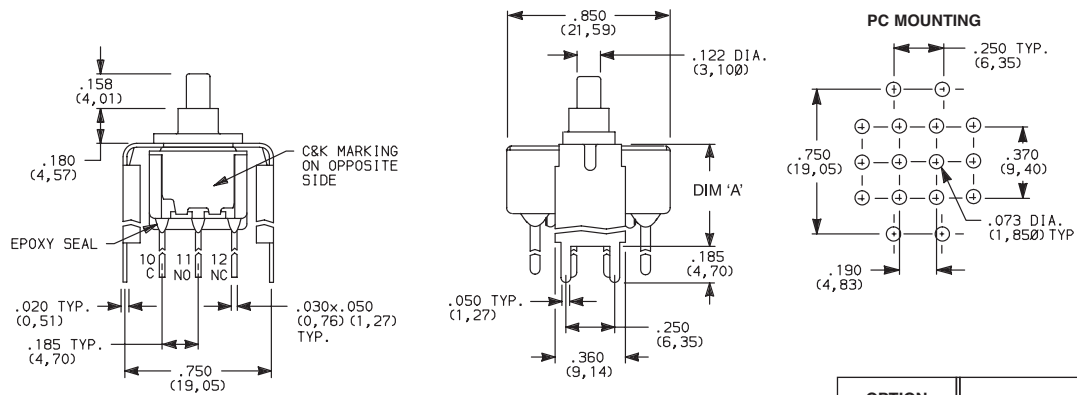
Not available with JXX actuators and I seal.

V2, V7, V8 VERTICAL MOUNT, V-BRACKET



Not available with JXX actuators and I seal.

V2, V7, V8 VERTICAL MOUNT, V-BRACKET



Not available with JXX actuators and I seal.



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

www.ck-components.com



A

Pushbutton



A

Pushbutton

8020 Series Snap-acting Momentary Pushbutton Switches

TERMINATIONS

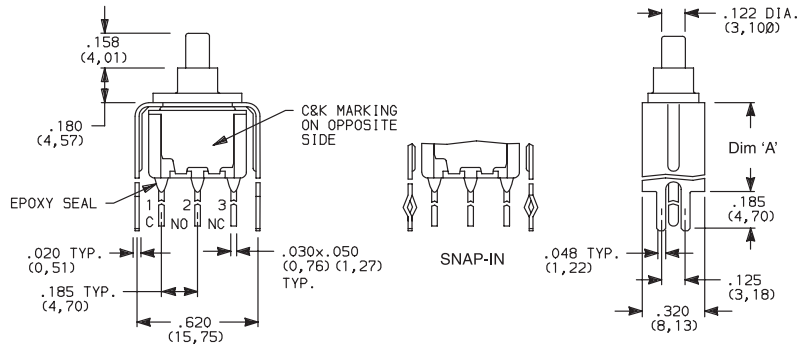


V3, V4, V9 VERTICAL MOUNT, V-BRACKET

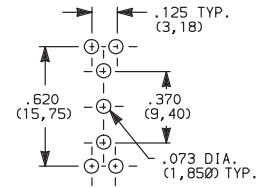
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



8121SD3_GE
SPDT



PC MOUNTING



OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)
V9	1.150 (29,21)

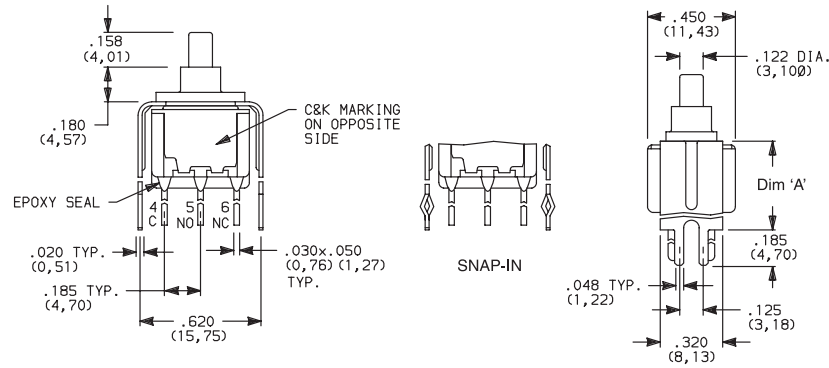
Not available with J8X actuators and I seal.

V3, V4, V9 VERTICAL MOUNT, V-BRACKET

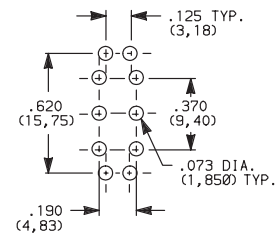
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



8221SD3_GE
DPDT



PC MOUNTING



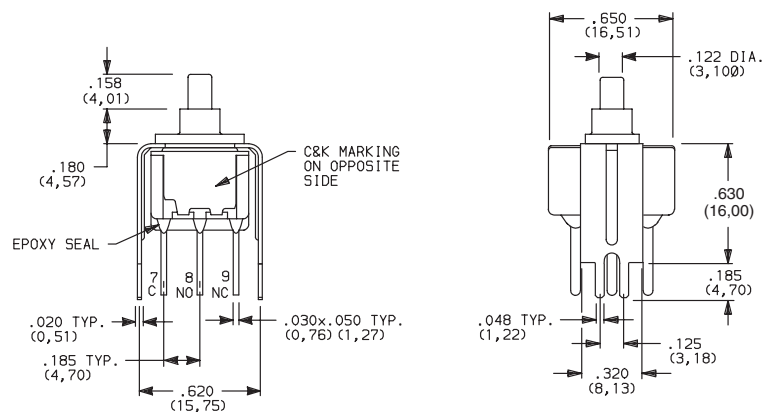
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)
V9	1.150 (29,21)

Not available with J8X actuators and I seal.

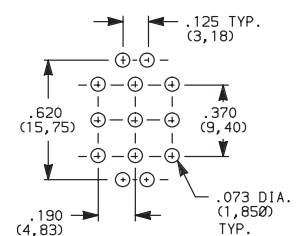
V4, V9 VERTICAL MOUNT, V-BRACKET



8321SD3V4GE
3PDT

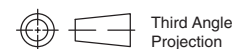


PC MOUNTING



OPTION CODE	DIM 'A'
V4	.630 (16,00)
V9	1.150 (29,21)

Not available with JXX actuators and I seal.



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

www.ck-components.com

8020 Series Snap-acting Momentary Pushbutton Switches



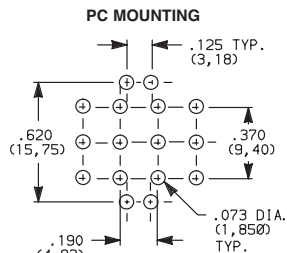
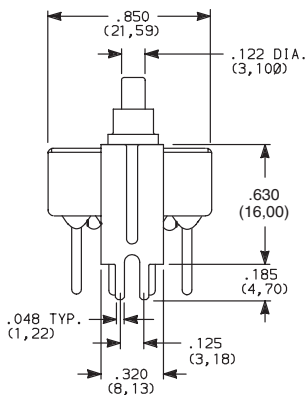
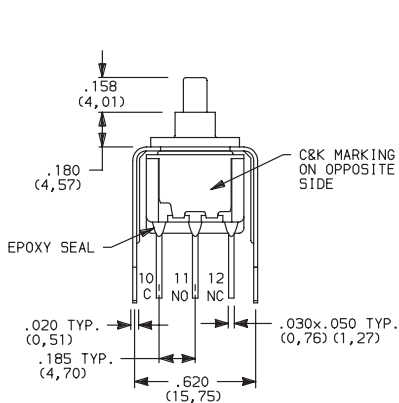
A

Pushbutton

TERMINATIONS



V4, V9 VERTICAL MOUNT, V-BRACKET



8421SD3V4GE
4PDT

OPTION CODE	DIM 'A'
V4	.630 (16,00)
V9	1.150 (29,21)

Not available with JXX actuators and I seal.

CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	8x25 MODELS ONLY: 0.4 MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁴		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	8X21, U8X1 MODELS ONLY: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 1 AMP @ 120 V AC OR 28 V DC.
R		MATTE-TIN ⁴		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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

² N.O. AND N.C. CONTACTS: Coin silver, with gold plate over nickel plate.

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

⁴ TERMINALS: Copper alloy, with matte-tin over nickel plate.

NOTE: Any models supplied with B, P, R or G contact material are RoHS compliant.

U811-U841 models with all options (except R, R2 terminations) when ordered with mandatory G or R contact material.

B or P contact material must be ordered with 8X25 models.

G or R contact material must be ordered with 8X21, U8X1 models.

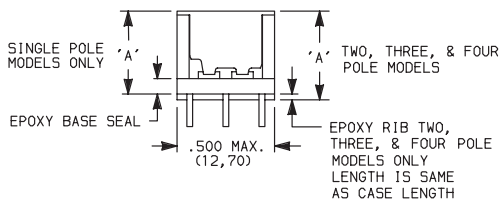
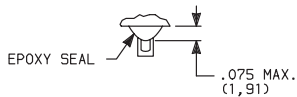
P or R contact material not available with Z, Z3 terminations.

SEAL



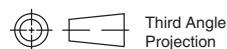
E EPOXY SEAL

I EPOXY POTTED BASE



NO. POLES	DIM 'A'
SP	.410 (10,41)
DP	.440 (11,18)
3P	.505 (12,83)
4P	.505 (12,83)

NOTE: Available with C, W-W4, Z, Z3 terminations only.



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

www.ck-components.com



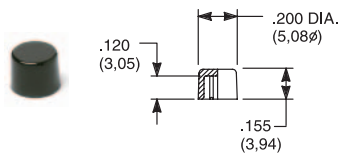
A

Pushbutton

8020 Series Snap-acting Momentary Pushbutton Switches

AVAILABLE HARDWARE

Cap

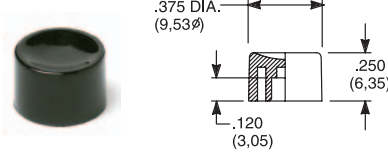


PART NO.

708901000 WHITE
708902000 BLACK
708903000 RED
708904000 ORANGE
708905000 YELLOW
708906000 GREEN
708907000 BLUE
708909000 GRAY

Material: Nylon
 Finish: Gloss

Cap

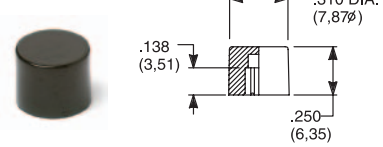


PART NO.

752701000 WHITE
752702000 BLACK
752703000 RED
752704000 ORANGE
752705000 YELLOW
752706000 GREEN
752707000 BLUE
752709000 GRAY

Material: Nylon
 Finish: Gloss

Cap

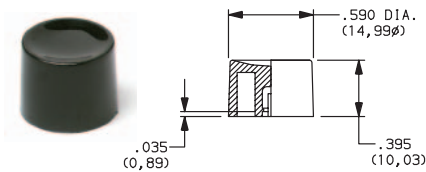


PART NO.

801801000 WHITE
801802000 BLACK
801803000 RED
801804000 ORANGE
801805000 YELLOW
801806000 GREEN
801807000 BLUE
801809000 GRAY

Material: Nylon
 Finish: Gloss

Cap, Snap-fitting plunger

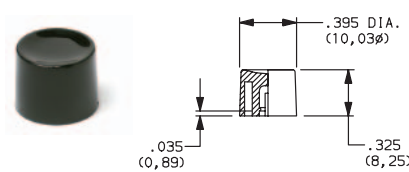


PART NO.

452D01000 WHITE
452D02000 BLACK
452D03000 RED
452D04000 ORANGE
452D05000 YELLOW
452D06000 GREEN
452D07000 BLUE
452D09000 GRAY

Material: Nylon
 Finish: Gloss

Cap, Snap-fitting plunger

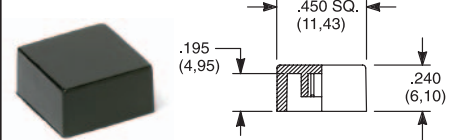


PART NO.

894101000 WHITE
894102000 BLACK
894103000 RED
894104000 ORANGE
894105000 YELLOW
894106000 GREEN
894107000 BLUE
894109000 GRAY

Material: Nylon
 Finish: Gloss

Cap, J80, J81, J82, J83 & J84 options only



PART NO.

484601000 WHITE
484602000 BLACK
484603000 RED
484604000 ORANGE
484605000 YELLOW
484606000 GREEN
484607000 BLUE
484609000 GRAY

Material: Nylon
 Finish: Gloss

PART NO.

798201000 WHITE
798202263 BLACK
798203000 RED
798204000 ORANGE
798205000 YELLOW
798206000 GREEN
798207000 BLUE
798209000 GRAY

Material: Nylon
 Finish: Matte

Frame



PART NO.

615602263 BLACK

Material: Nylon
 Finish: Matte

Frame

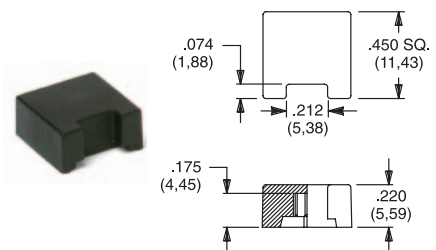


PART NO.

613302263 BLACK

Material: Nylon
 Finish: Matte

Cap, J85 & J95 options only



PART NO.

459701000 WHITE
459702000 BLACK
459703000 RED
459704000 ORANGE
459705000 YELLOW
459706000 GREEN
459707000 BLUE
459709000 GRAY

Material: Nylon
 Finish: Gloss

PART NO.

476801000 WHITE
476802000 BLACK
476803000 RED
476804000 ORANGE
476805000 YELLOW
476806000 GREEN
476807000 BLUE
476809000 GRAY

Material: Nylon
 Finish: Matte

Fits Z3 Termination female connector

PART NO.

530100000

Available in loose pieces.



NOTE: Additional nuts, locking rings and lockwashers available separately, see section "Technical Data and Additional Hardware".
 Other cap & frame colors available, consult Customer Service Center.



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

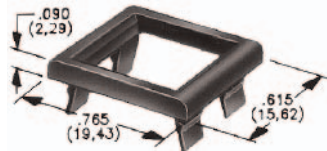
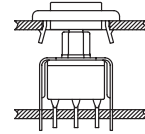
C&K

8020 Series Snap-acting Momentary Pushbutton Switches

AVAILABLE HARDWARE

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.

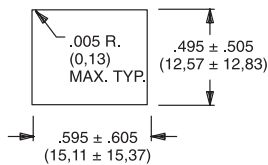
PART NO.
432702263

.125" (3,18) PANEL THK.

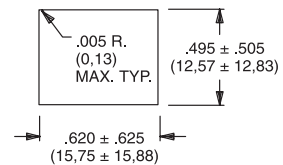
PART NO.
432802263 BLACK

PANEL MOUNTING

For part numbers
4325xxxxx, 4326xxxxx

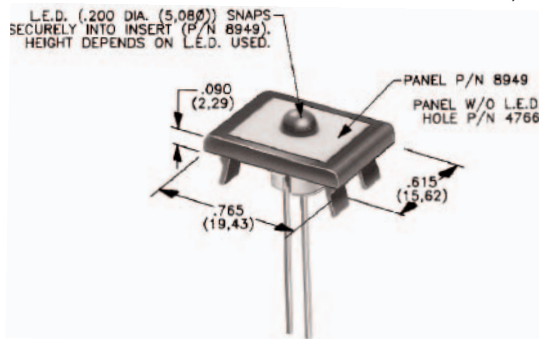


For part numbers
4327xxxxx, 4328xxxxx



Panel Inserts

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

Special colors, custom markings available, consult Customer Service Center.

LED INFORMATION

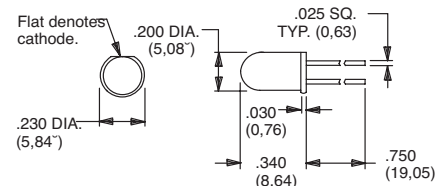
SWITCHES WITH LED SUPPLIED: J85, J95 OPTIONS:

Rectangular LEDs are supplied on 8020 Series pushbutton switches with J85 and J95 options. These LEDs are factory installed and are not replaceable. The following specifications apply:

OPTION CODE	COLOR	TYP. INTENSITY	TYP. FORWARD VOLTAGE	TYP. FORWARD CURRENT	MAX RATINGS AT 25°C AMBIENT TEMPERATURE		
					FORWARD VOLTAGE	CONTINUOUS FORWARD CURRENT	POWER DISSIPATION
6	Green	1.0 mcd	2.1 V	20 mA	2.5 V	50 mA	125 mW
3	Red*	0.5 mcd		10 mA		30 mA	75 mW
5	Yellow	4.0 mcd		20 mA		50 mA	125 mW

Process Information: Soldering to LED leads must be completed within 5 seconds at 500°F (260°C) maximum.

Caution: Circuit elements must limit forward current of LED to 50mA max. continuous.
* Extra-bright red LED available (typ. intensity 4.5 mcd), consult Customer Service Center.
LEDs are not supplied with J82, J84 options. LED snaps into switch frame surrounding actuator and is wired externally.



Suggested LED for J82 & J84 options.
Dimensions for reference only.

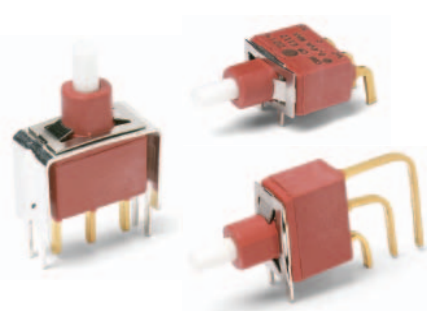


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change



**A****Pushbutton**

E010 Series Sealed Momentary Pushbutton Switches



Features/Benefits

- **Process sealed, withstands soldering and cleaning**
- **Long life contact design**
- **Snap-fitting plunger available, accepts a variety of caps**
- **RoHS compliant models available**

Typical Applications

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



Specifications

CONTACT RATING: Q contact material: 4 AMPS @ 125 V AC or 28 V DC. See page A-50 for additional ratings.

ELECTRICAL LIFE: 40,000 make-and-break cycles at full load.

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

INSULATION RESISTANCE: 10⁹Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 75°C.

CAP INSTALLATION FORCE: 10 lbs. max. permissible.

SOLDERABILITY: Per MIL-STD-202F method 208D, or

EIA RS-186E method 9 (1 hour steam aging).

NOTE: Any models supplied with P, Q, B or G contact material are RoHS compliant.

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 & BUSHING: Glass filled nylon 6/6, flame retardant (UL 94V-0).

PLUNGER: Glass filled nylon or glass filled polyester (PBT) (UL 94V-0), with internal o-ring seal standard.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

SWITCH SUPPORT RETAINER: Stainless steel.

END CONTACTS: Q contact material: Coin silver, silver plated. See A-50 for additional ratings.

CENTER CONTACTS & ALL TERMINALS: Q contact material: Copper alloy, silver plated. See page A-50 for additional ratings.

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-47 thru A-51. For additional options not shown in catalog, consult Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

<div>Switch Function</div> <div>E112 SPDT On-Mom.</div>	<div>Plunger</div> <div>S .222" high L .338" high M .331" high, snap-fitting</div>	<div>Bushing</div> <div>D1 Unthreaded Y Threaded, keyway</div>	<div>Terminations</div> <div>A Right angle, PC thru-hole AV2 Vertical right angle, PC thru-hole C PC Thru-hole A3 Right angle, snap-in, PC thru-hole AV3 Vertical right angle, snap-in, PC thru-hole R2 Right angle with PCB V3 .460" high, V-bracket V4 .630" high, V-bracket V6 .460" high, V-bracket V8 .953" high, V-bracket V31 .460" high, snap-in V-bracket V81 .953" high, snap-in V-bracket V91 1.150" high, snap-in V-bracket W .750" long, wire wrap Z Solder lug</div>	<div>Contact Material</div> <div>B Gold P Gold, matte-tin Q Silver G Gold over silver</div>	<div>Seal</div> <div>E Epoxy</div>
----------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------



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

E010 Series Sealed Momentary Pushbutton Switches



A

Pushbutton

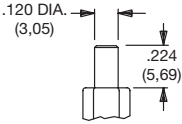
SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
		C&K marking this side		C&K marking this side		
SP	E112	ON	MOM.	2-1	2-3	SPDT NC 1 2 (COMM) 3 NO
SPDT Part number shown: E112SD1CQE						

MOM. = Momentary
All models with all options when ordered with G or Q contact material.

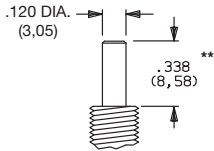
PLUNGER

S .218" HIGH



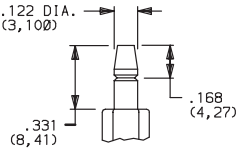
Standard with D1 bushing (as shown).
† Subtract .100 (2, 54) from plunger length when ordered with Y bushing.

L .338" HIGH



Standard with Y bushing (as shown).
** Add .100 (2, 54) from plunger length when ordered with D1 bushing.

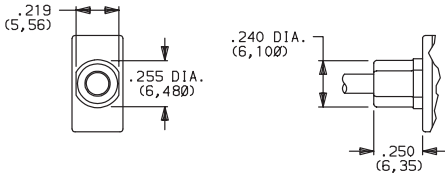
M .331" HIGH, SNAP-FITTING



NOTE: Caps available for all plunger options, see pages A-50 and A-51.

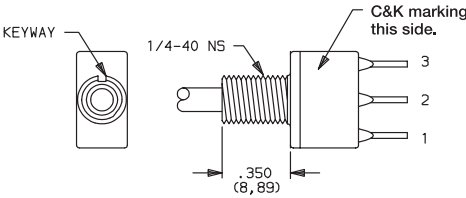
BUSHING

D1 UNTHREADED

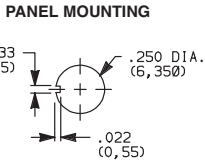


S plunger standard with D1 bushing.

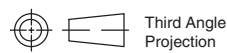
Y THREADED, KEYWAY



L plunger standard with Y bushing. Available only with C, Z terminations.
Hardware: One dress nut part number 299D01201, one hex nut and lockwasher supplied standard.
Withstands 4 in./lbs. without distortion.



NOTE: Internal o-ring actuator seal standard for all bushing options.



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

www.ck-components.com

**A****Pushbutton**

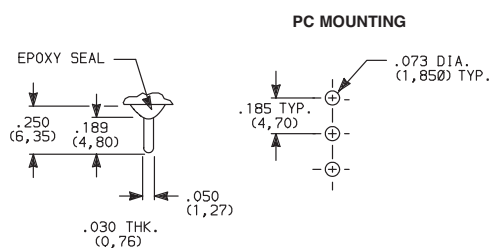
E010 Series

Sealed Momentary Pushbutton Switches

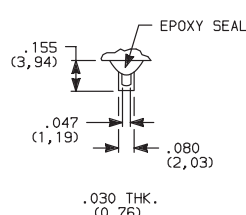
TERMINATIONS



C PC THRU-HOLE

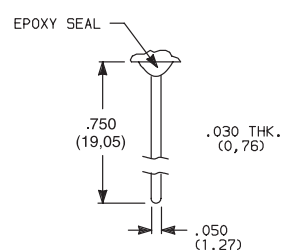
**SPDT**

Z SOLDER LUG

**SPDT**

Not available with P contact materials.

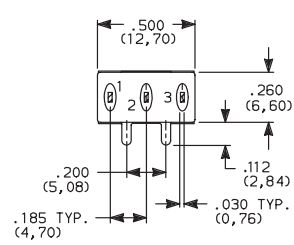
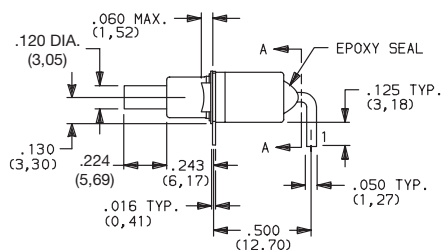
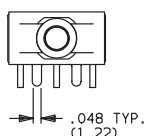
W WIRE WRAP

**SPDT**

A RIGHT ANGLE, PC THRU-HOLE

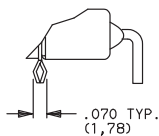
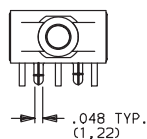


E112SD1ABE
SPDT

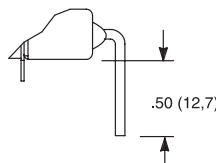


SECTION A-A

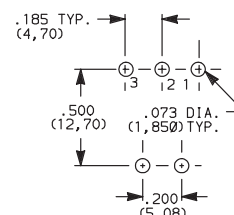
A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



AW RIGHT ANGLE, EXTENDED, PC THRU-HOLE

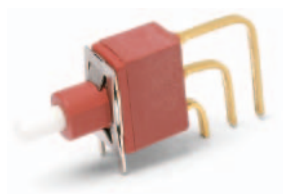


PC MOUNTING

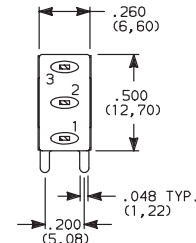
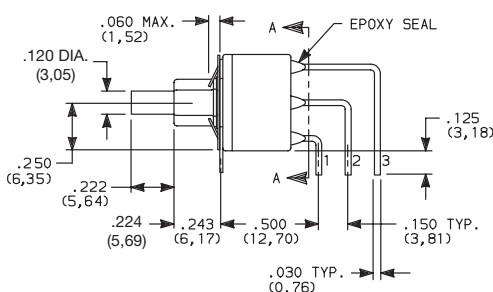
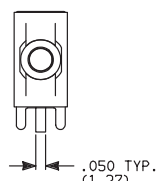


NOTE: Terminal bend radii and lead-in manufacturing option.
Available with D1 bushing only.

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

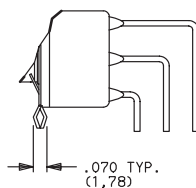
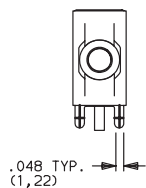


E112SD1AV2BE
SPDT

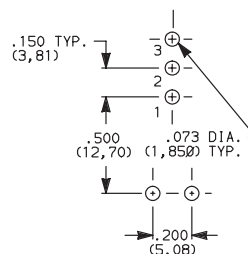


SECTION A-A

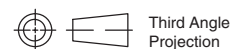
AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



PC MOUNTING



NOTE: Terminal bend radii and lead-in manufacturing option.
Available with D1 bushing only.



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

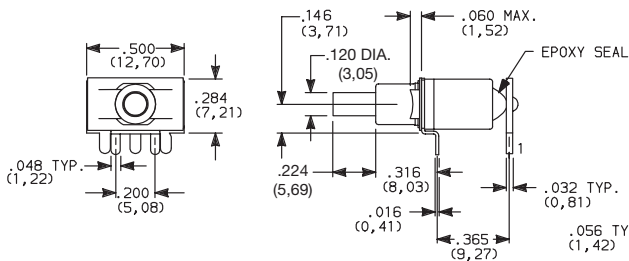
C&K

E010 Series Sealed Momentary Pushbutton Switches

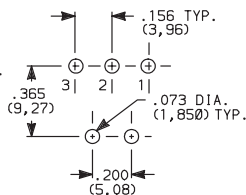
TERMINATIONS



R2 RIGHT ANGLE WITH PCB



PC MOUNTING

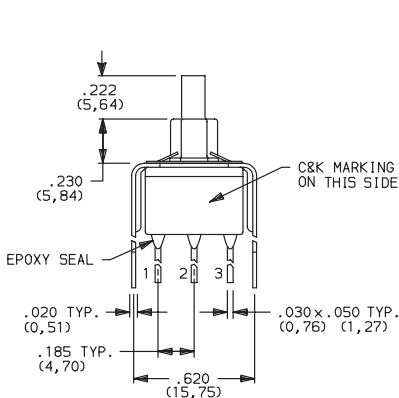


E112SD1R2BE
SPDT

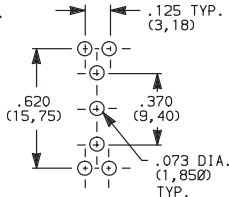
NOTE: Available with D1 bushing and B contact material only.

V3, V4 VERTICAL MOUNT, V-BRACKET

V31, V91 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING



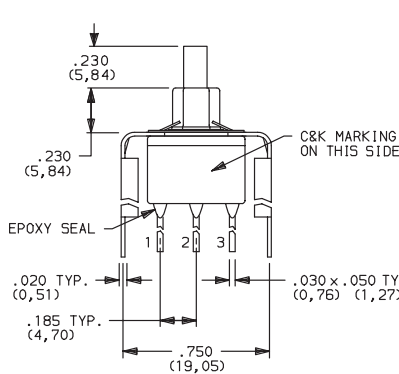
E112SD1_BE
SPDT

OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)
V91	1.150 (29,21)

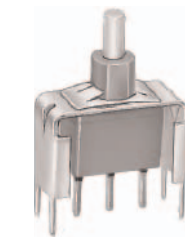
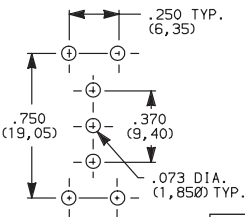
NOTE: Available with D1 bushing only.

V6, V8 VERTICAL MOUNT, V-BRACKET

V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING



E112SD1_BE
SPDT

OPTION CODE	DIM 'A'
V6	.460 (11,68)
V8, V81	.953 (24,21)

NOTE: Available with D1 bushing only.



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

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A

Pushbutton

**A****Pushbutton**

E010 Series Sealed Momentary Pushbutton Switches

CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	4 AMPS @ 125 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 4 AMPS @ 125 V AC OR 28 V DC.

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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: Coin silver, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

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

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

NOTE: Any models supplied with P, Q, B or G contact material are RoHS compliant.

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

B contact material standard with all terminations except C, Z.

B contact material must be ordered with R2 terminations.

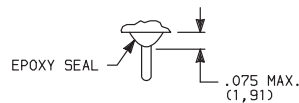
Q contact material standard with C, Z terminations.

P contact materials not available with Z terminations.

SEAL

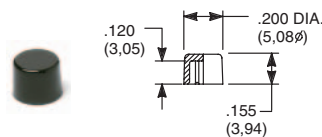


E EPOXY SEAL



AVAILABLE HARDWARE

Cap

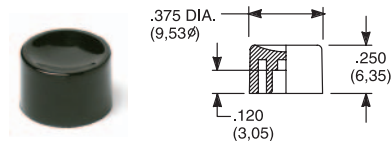


PART NO.

708901000 WHITE
708902000 BLACK
708903000 RED

Material: Nylon
Finish: Gloss

Cap

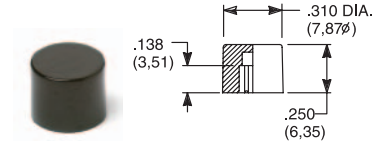


PART NO.

752701000 WHITE
752702000 BLACK
752703000 RED

Material: Nylon
Finish: Gloss

Cap



PART NO.

801801000 WHITE
801802000 BLACK
801803000 RED

Material: Nylon
Finish: Gloss

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



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

E010 Series Sealed Momentary Pushbutton Switches

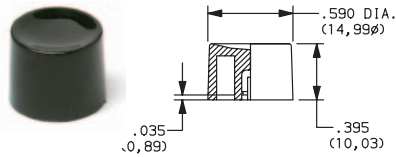


A

Pushbutton

AVAILABLE HARDWARE

Cap, Snap-fitting plunger

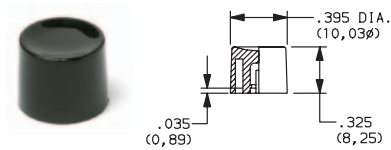


PART NO.

452D01000 WHITE
452D02000 BLACK
452D03000 RED

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

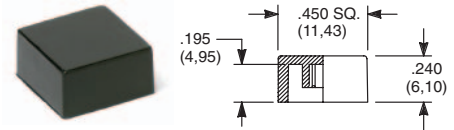


PART NO.

894101000 WHITE
894102000 BLACK
894103000 RED

Material: Nylon
Finish: Gloss

Cap



PART NO.

484601000 WHITE
484602000 BLACK
484603000 RED

Material: Nylon
Finish: Gloss

PART NO.

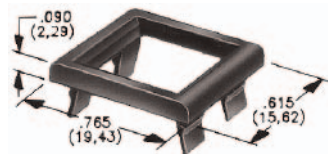
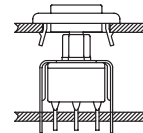
798201000 WHITE
798202263 BLACK
798203000 RED

Material: Nylon
Finish: Matte

NOTE: Additional nuts, locking rings and lockwashers available separately, see section "Technical Data and Additional Hardware". 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.

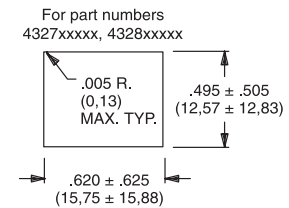
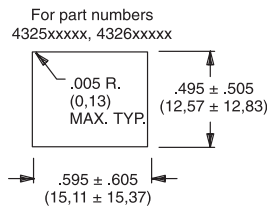
432702263

.125" (3,18) PANEL THK.

PART NO.

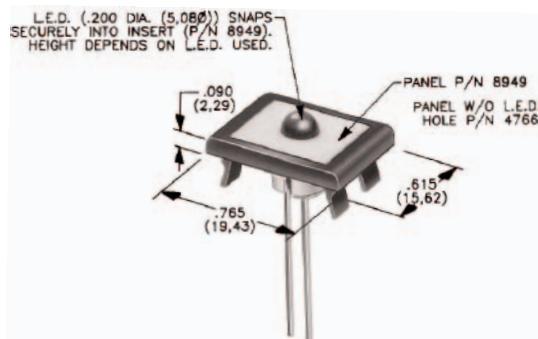
432802263 BLACK

PANEL MOUNTING



Panel Inserts

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

Special colors, custom markings available, consult Customer Service Center.



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



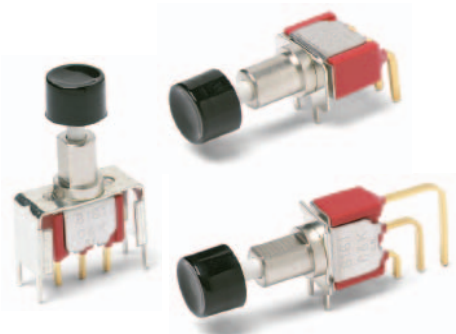
www.ck-components.com



A

Pushbutton

8060 Series Alternate Action and Momentary Pushbutton Switches



Features/Benefits

- Long travel
- Available with LED
- Long life contact design
- Epoxy terminal seal compatible with bottom wash cleaning
- RoHS compliant models available

Typical Applications

- Instrumentation
- Computers and peripherals
- Telecommunications and networking equipment



Models Available

Specifications

CONTACT RATING: Q contact material: 6 AMPS @ 120 V AC or 28 V DC; 3 AMPS @ 250 V AC. See page A-59 for additional ratings.

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.

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

INSULATION RESISTANCE: 10⁹Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 65°C

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

CAP INSTALLATION FORCE: 10 lbs. maximum permissible.

NOTE: Any models supplied with P, R, S, Q, B or G contact material are RoHS compliant.

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 or diallyl phthalate (DAP), flame retardant (UL 94V-0).

PLUNGER: S, S1, S2 Options: Glass filled nylon or glass filled polyester (PBT) (UL 94V-0). L, L1 Options: Brass, nickel plated.

CAP & FRAME: Nylon, black standard.

BUSHING: Brass or zinc, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

END CONTACTS: Q contact material: Coin silver, silver plated. See page A-59 for additional contact materials.

CENTER CONTACT & ALL TERMINALS: Q contact material: Copper alloy, silver plated. See page A-59 for additional contact materials.

TERMINAL SEAL: Epoxy. Refer to soldering and cleaning in Technical Data Chapter.

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-53 thru A-61. 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 8161 SPDT On-On 8168 SPDT On-Mom. 8261 DPDT On-On		Bushing H .300" high, flat, hi torque H9 .300" high, flat, hi torque NONE No bushing choice required Y3 7.6mm, keyway		Contact Material B Gold P Gold, matte-tin Q Silver S Silver, matte-tin G Gold over silver R Gold over silver, matte-tin	
Actuator or Plunger S .710" high plunger with .375" dia. cap J80 Snap-in J81 Snap-in with frame J82 Snap-in with frame for LED J86 Snap-in with frame & LED L .740" high plunger with .395" dia. cap L1 .740" high plunger with .590" dia. cap S1 .615" high plunger with .200" dia. cap S2 .710" high plunger with .310" dia. cap		Terminations A Right angle, PC thru-hole AV2 Vertical right angle, PC thru-hole C PC Thru-hole Z Solder lug A3 Right angle, snap-in, PC thru-hole AV3 Vertical right angle, snap-in, PC thru-hole V3 .460" high, V-bracket V4 .630" high, V-bracket V6 .460" high, V-bracket V21 .555" high, snap-in V-bracket V31 .460" high, snap-in V-bracket W .750" long, wire wrap Z3 Quick connect		Seal E Epoxy I Epoxy potted base	
		Cap Color 2 Black 1 White 3 Red 4 Orange 5 Yellow 9 Gray		Frame Color 2 Black	
				LED Color 3 Red NONE Models without LED	



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

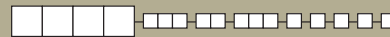
8060 Series Alternate Action and Momentary Pushbutton Switches








A

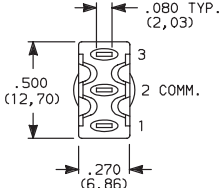
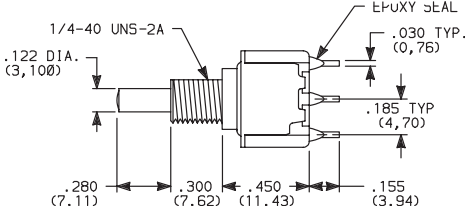
Pushbutton

SWITCH FUNCTION







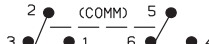
NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
						
		C&K marking this side		C&K marking this side		
SP	8161 8168	ON	ON	2-3	2-1	
		ON	MOM.	2-3	2-1	

SPDT

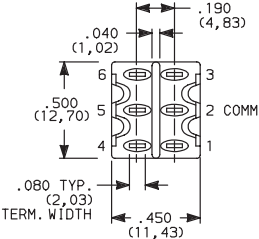
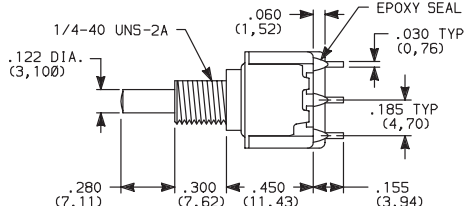


Part number shown: 8161SHZQE

Terminal Nos.
For Reference Only

NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
						
		C&K marking this side		C&K marking this side		
DP	8261	ON	ON	2-3,5-6	2-1,5-4	

DPDT



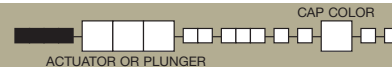
Part number shown: 8261SHZQE

Terminal Nos.
For Reference Only

MOM. = Momentary

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

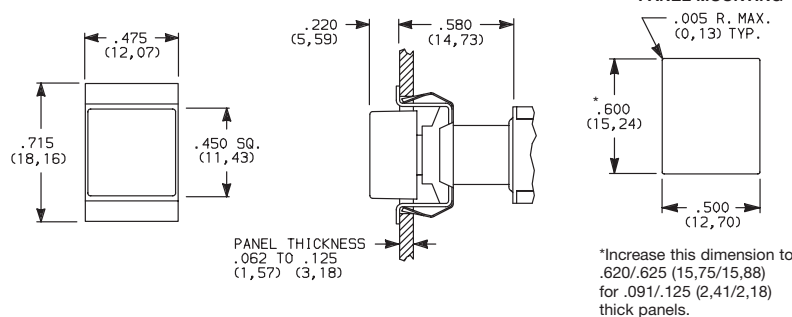
ACTUATOR—SNAP-IN FRONT MOUNT



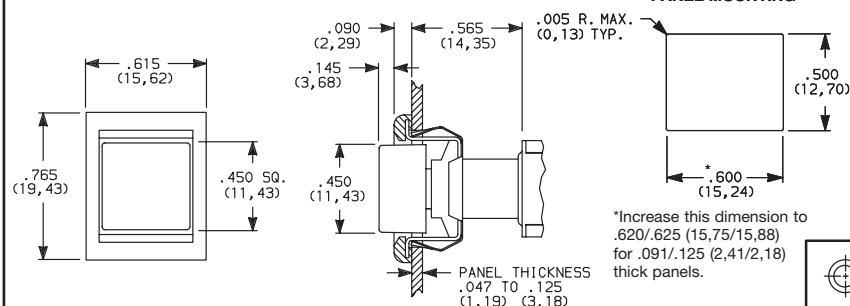
OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
9	GRAY

Cap Finish: matte.
Other colors available, consult Customer Service Center.
Available with C, W, Z or Z3 terminations.
NOTE: Caps & frames available separately, see pages A-60 and A-61.

J80 SNAP-IN



J81 SNAP-IN WITH BLACK FRAME



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

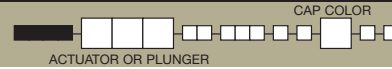
C&K

**A****Pushbutton**

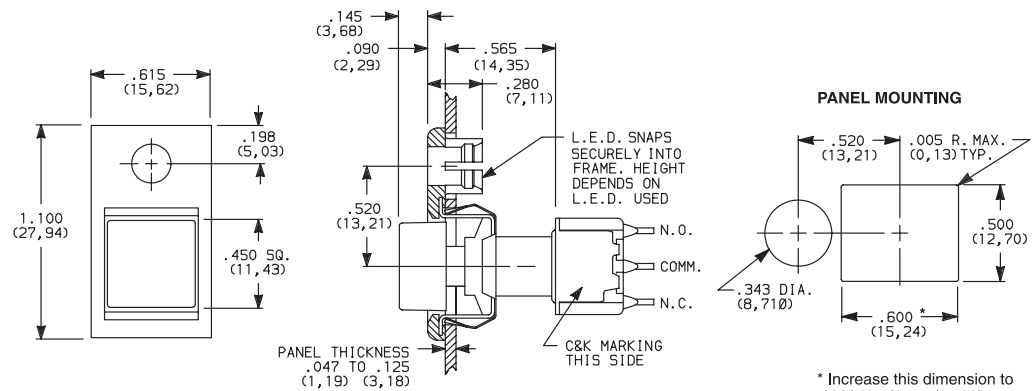
8060 Series

Alternate Action and Momentary Pushbutton Switches

ACTUATOR—SNAP-IN FRONT MOUNT



J82 SNAP-IN WITH BLACK FRAME FOR LED



Available with C, W, Z or Z3 terminations.

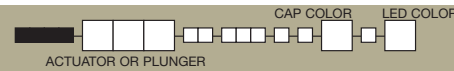
LED not included.
For LED information, see page A-61.

NOTE: Caps & frames available separately, see pages A-60 and A-61.

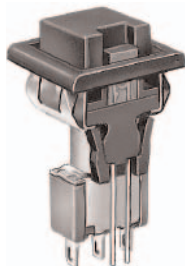
Other colors available, consult Customer Service Center.

OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
9	GRAY

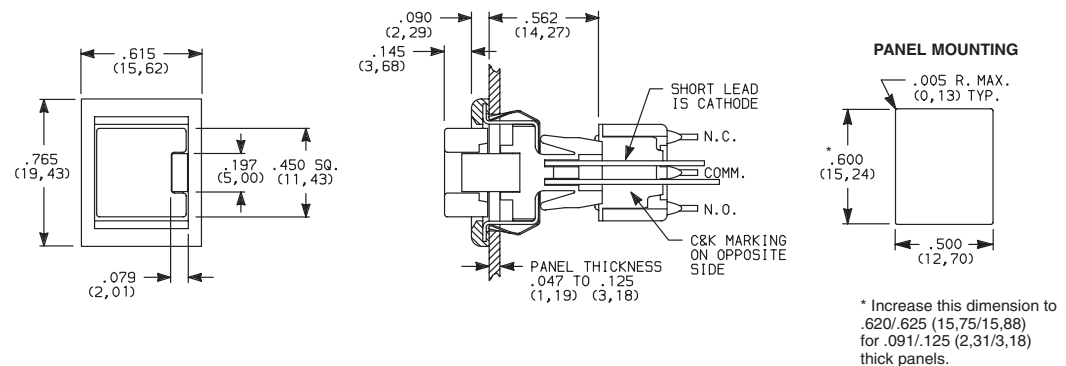
ACTUATOR—SNAP-IN FRONT MOUNT



J86 SNAP-IN WITH BLACK FRAME AND LED



8161J86ZQE223
SPDT



Available with C, W, Z or Z3 terminations and SPDT models only.

NOTE: Caps & frames available separately, see pages A-60 and A-61.

Other colors available, consult Customer Service Center.

OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
9	GRAY

OPTION CODE	LED COLOR
3	RED

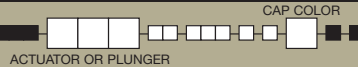
For LED information, see page A-61.



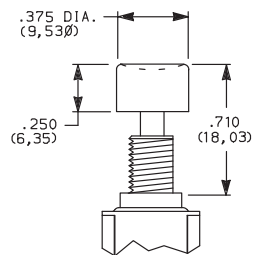
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

8060 Series Alternate Action and Momentary Pushbutton Switches

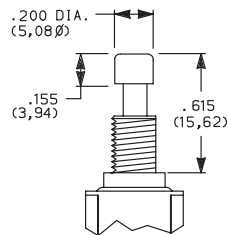
PLUNGER



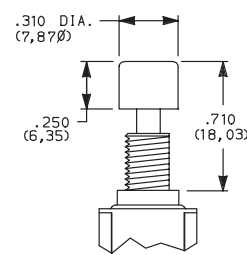
S PLUNGER WITH CAP P/N 7527



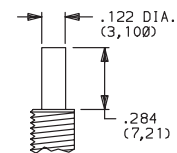
S1 PLUNGER WITH CAP P/N 7089



S2 PLUNGER WITH CAP P/N 8018

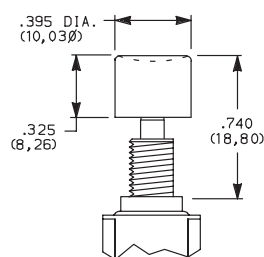


S, S1, S2 plunger dimensions.

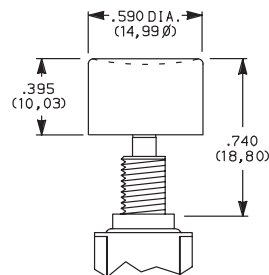


Plunger material: Glass filled nylon or glass filled polyester (UL 94V-0).

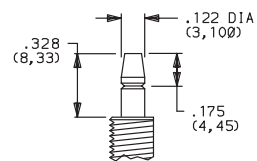
L PLUNGER WITH CAP P/N 8941



L1 PLUNGER WITH CAP P/N 8940



L, L1 plunger dimensions.



Plunger Material: Brass, chrome plated.

OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
9	GRAY

Cap Finish: gloss. Cap supplied not installed. Other colors available, consult Customer Service Center.

NOTE: When selecting plunger and cap option, bushing selection must also be made, see below.

BUSHING

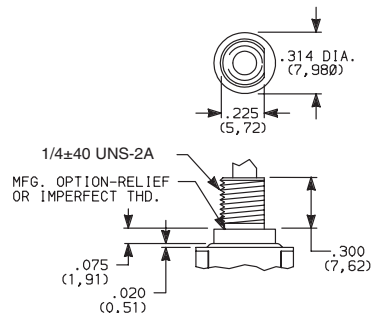


H .300" HIGH THREADED, FLAT

NONE NO BUSHING CHOICE REQUIRED (JXX ACTUATORS)

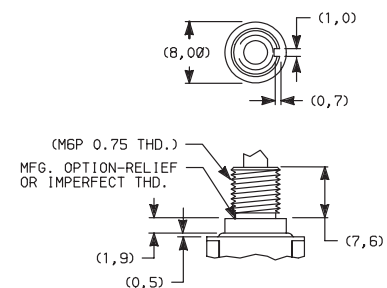
Y3 7.6mm THREADED, KEYWAY

H9 .300" HIGH UNTHREADED, FLAT



H bushing standard with C, W, Z or Z3 terminations. H9 bushing standard with A, A3, AV2, AV3, or V3-V31 terminations.

Withstands 12 in./lbs. of torque with no distortion.

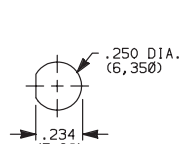


Withstands 12 in./lbs. of torque with no distortion.

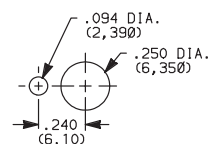
NOTE: When selecting bushing option, plunger selection must also be made, see above. No bushing option choice required when any JXX actuator option is selected.

PANEL MOUNTING

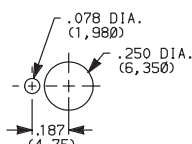
1/4 IN. BUSHING



Without Locking Ring

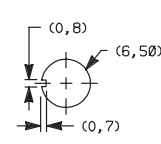


With Standard Locking Ring

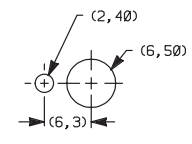


With Small Locking Ring

METRIC BUSHING

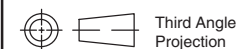


Without Locking Ring



With Locking Ring

NOTE: Two mounting nuts, locking ring and lockwasher supplied standard with threaded bushings. Optional mounting nut and locking ring styles and finishes available, see section "Technical Data and Additional Hardware".



Third Angle Projection

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

C&K



A

Pushbutton

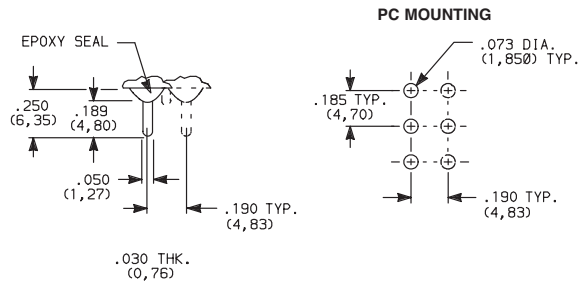


8060 Series Alternate Action and Momentary Pushbutton Switches

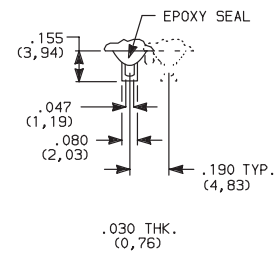
TERMINATIONS



C PC THRU-HOLE



Z SOLDER LUG

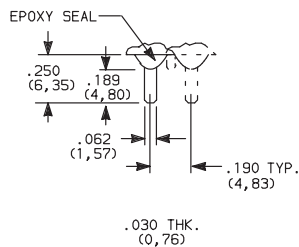


SPDT and DPDT

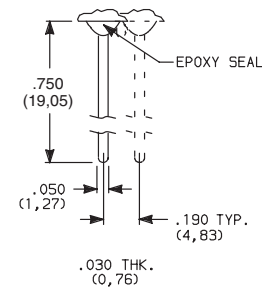
SPDT and DPDT

Not available with P, S or R contact material.

Z3 QUICK CONNECT



W WIRE WRAP



SPDT and DPDT

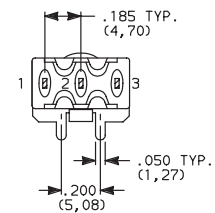
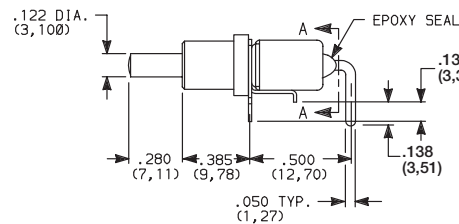
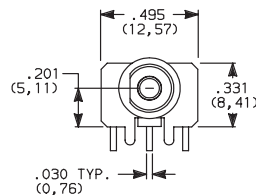
SPDT and DPDT

Not available with P, S or R contact material.
Mating quick connector available;
order part number 530100000, page A-61.

A RIGHT ANGLE, PC THRU-HOLE

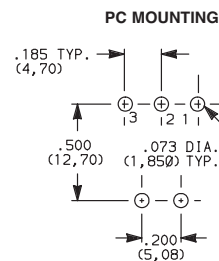
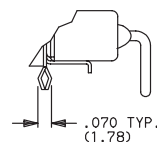
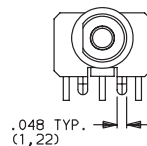


8161SH9ABE2
SPDT



SECTION A-A

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



Not available with I seal.
Terminal bend radii and lead-in manufacturing option.

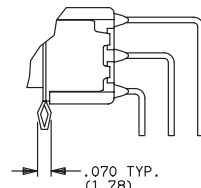

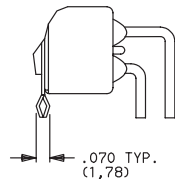
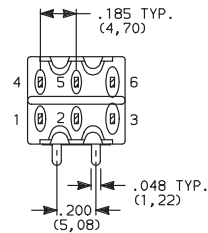
NOTE: PC pattern must clear switch support leg.



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

A

Pushbutton



Technical drawing of a mechanical part with dimensions and tolerances:

- Top horizontal dimension: $.150 \text{ TYP.}$ (3, 81)
- Vertical dimension on the left: $.500$ (12, 70)
- Vertical dimension on the right: $.073 \text{ DIA.}$ (1, 8500) TYP.
- Bottom horizontal dimension: $.200$ (5, 08)



Third Angle Projection





A

Pushbutton

8060 Series

Alternate Action and Momentary Pushbutton Switches

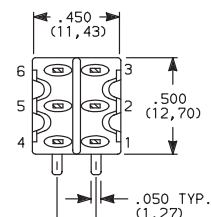
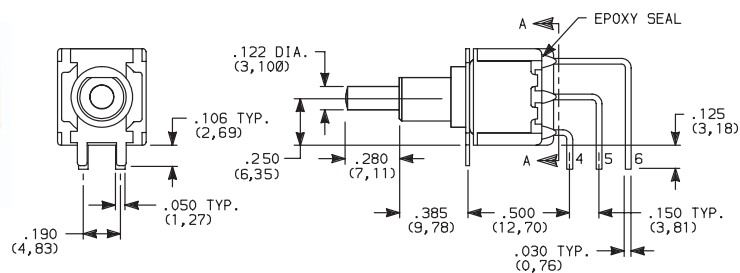
TERMINATIONS



AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

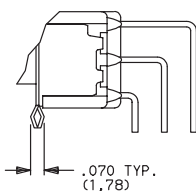
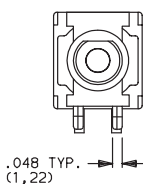


8261SH9AV2BE2
DPDT

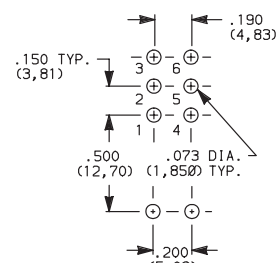


SECTION A-A

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



PC MOUNTING



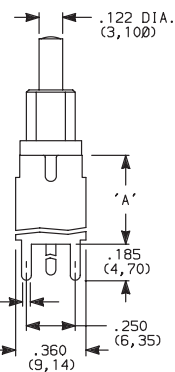
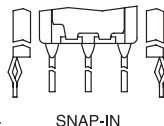
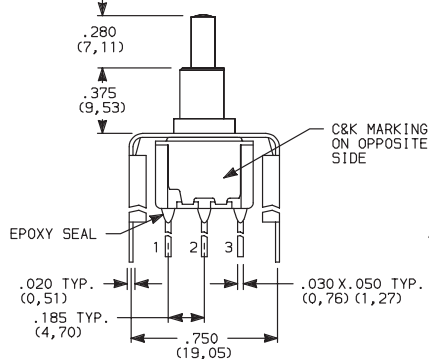
Not available with I seal.
Terminal bend radii and lead-in manufacturing option.

V6 VERTICAL MOUNT, V-BRACKET

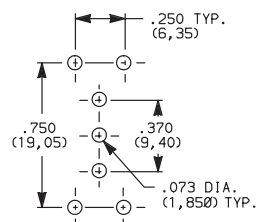
V21 VERTICAL MOUNT, V-BRACKET, SNAP-IN



8161SH9_BE2
SPDT



PC MOUNTING



OPTION CODE	DIM 'A'
V21	.555 (14,10)
V6	.460 (11,68)

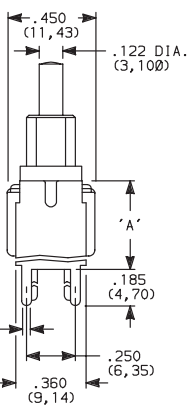
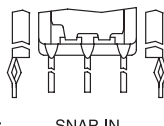
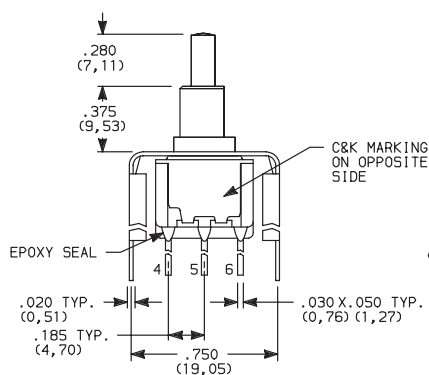
Not available with I seal.

V6 VERTICAL MOUNT, V-BRACKET

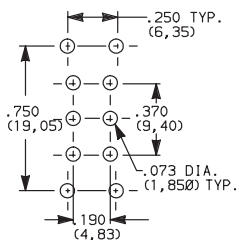
V21 VERTICAL MOUNT, V-BRACKET, SNAP-IN



8261SH9_BE2
DPDT



PC MOUNTING



OPTION CODE	DIM 'A'
V21	.555 (14,10)
V6	.460 (11,68)

Not available with I seal.



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

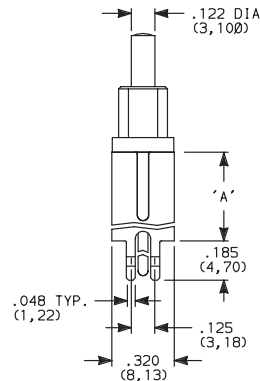
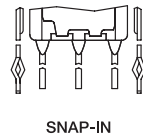
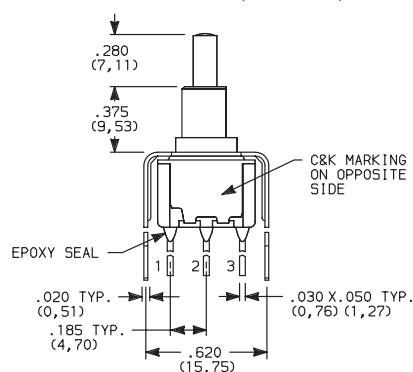
C&K

8060 Series Alternate Action and Momentary Pushbutton Switches

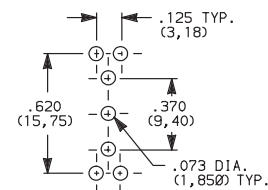
TERMINATIONS

V3, V4 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING



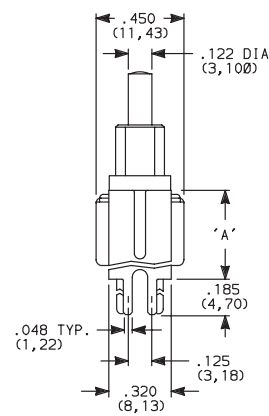
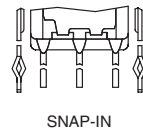
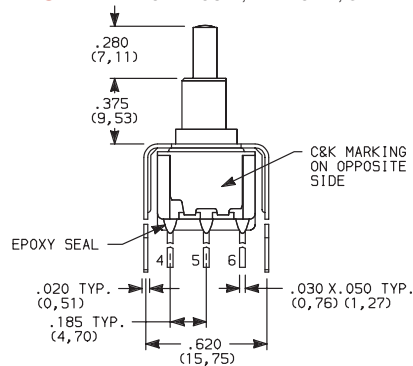
**8161SH9_BE2
SPDT**

OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)

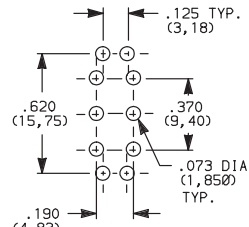
Not available with I seal.

V3, V4 VERTICAL MOUNT, V-BRACKET

V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING



**8261SH9_BE2
DPDT**

OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)

Not available with I seal.

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	6 AMPS @ 120 V AC OR 28 V DC; 3 AMPS @ 250 V AC.
S		MATTE-TIN ⁶		
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 6 AMPS @ 120 V AC OR 28 V DC; 3 AMPS @ 250 V AC.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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 matte-tin over nickel plate.

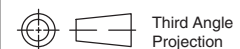
NOTE: Any models supplied with P, S, R, Q, B or G contact material are RoHS compliant.

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

B contact material standard with all terminations except C, Z & Z3.

Q contact material standard with C, Z & Z3 terminations.

P, S & R contact materials not available with Z & Z3 terminations.



Third Angle
Projection



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

www.ck-components.com

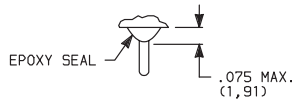


Pushbutton

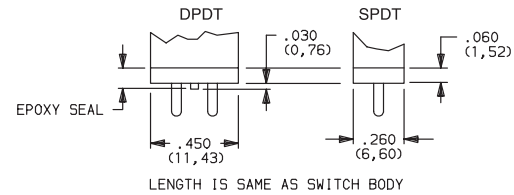
8060 Series Alternate Action and Momentary Pushbutton Switches

SEAL

E EPOXY SEAL



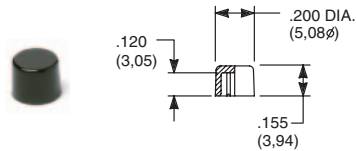
I EPOXY POTTED BASE



NOTE: Available with C, W, Z, Z3 terminations only.

AVAILABLE HARDWARE

Cap

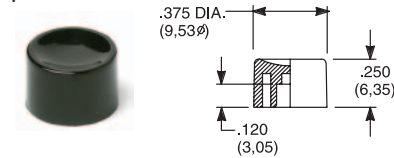


PART NO.

708901000 WHITE
708902000 BLACK
708903000 RED
708904000 ORANGE
708905000 YELLOW
708909000 GRAY

Material: Nylon
Finish: Gloss

Cap

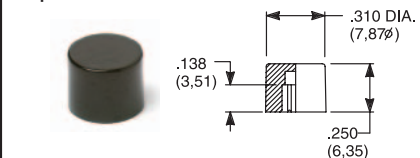


PART NO.

752701000 WHITE
752702000 BLACK
752703000 RED
752704000 ORANGE
752705000 YELLOW
752709000 GRAY

Material: Nylon
Finish: Gloss

Cap

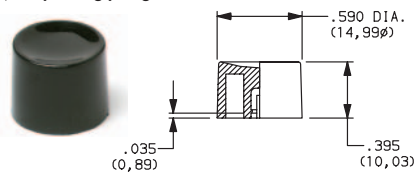


PART NO.

801801000 WHITE
801802000 BLACK
801803000 RED
801804000 ORANGE
801805000 YELLOW
801809000 GRAY

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

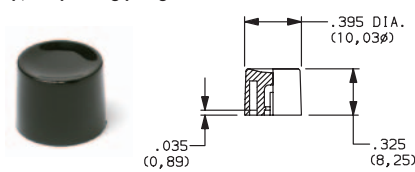


PART NO.

452D01000 WHITE
452D02000 BLACK
452D03000 RED
452D04000 ORANGE
452D05000 YELLOW
452D09000 GRAY

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

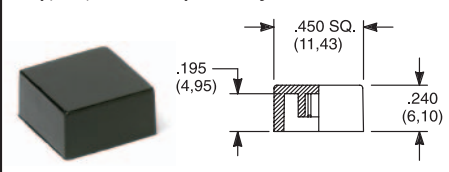


PART NO.

894101000 WHITE
894102000 BLACK
894103000 RED
894104000 ORANGE
894105000 YELLOW
894109000 GRAY

Material: Nylon
Finish: Gloss

Cap, J80, J81 & J82 options only



PART NO.

484601000 WHITE
484602000 BLACK
484603000 RED
484604000 ORANGE
484605000 YELLOW
484609000 GRAY

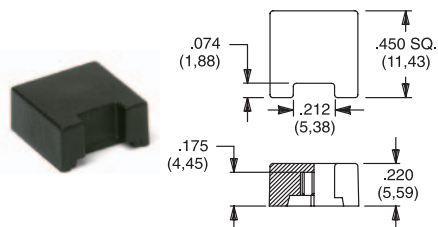
Material: Nylon
Finish: Gloss

PART NO.

798201000 WHITE
798202263 BLACK
798203000 RED
798204000 ORANGE
798205000 YELLOW
798209000 GRAY

Material: Nylon
Finish: Matte

Cap, J86 & J96 options only



PART NO.

459701000
459702000
459703000
459704000
459705000
459709000

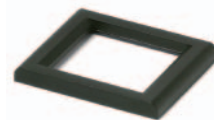
Material: Nylon
Finish: Gloss

PART NO.

476801000 WHITE
476802000 BLACK
476803000 RED
476804000 ORANGE
476805000 YELLOW
476809000 GRAY

Material: Nylon
Finish: Matte

Frame



PART NO.

615602263 BLACK

Material: Nylon
Finish: Matte

Frame

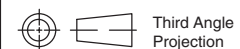


PART NO.

613302263 BLACK

Material: Nylon
Finish: Matte

NOTE: Additional nuts, locking rings and lockwashers available separately, see section "Technical Data and Additional Hardware".
Other cap & frame colors available, consult Customer Service Center.



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

C&K

8060 Series Alternate Action and Momentary Pushbutton Switches

AVAILABLE HARDWARE

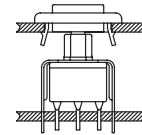
Fits Z3 Termination
female connector

PART NO.
530100000

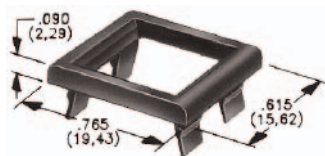
Available in loose pieces.



TYPICAL APPLICATION



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.



.047" (1,19) PANEL THK.

PART NO.
432502263

.062" (1,57) PANEL THK.

PART NO.
432602263

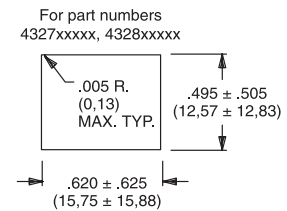
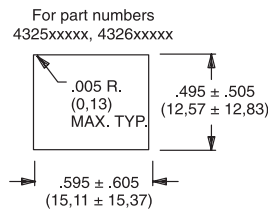
.090" (2,29) PANEL THK.

PART NO.
432702263

.125" (3,18) PANEL THK.

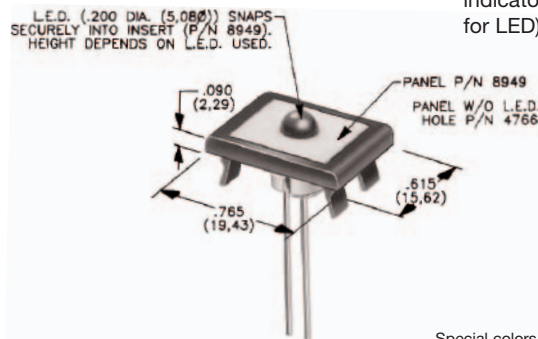
PART NO.
432802263 BLACK

PANEL MOUNTING



Panel Inserts

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

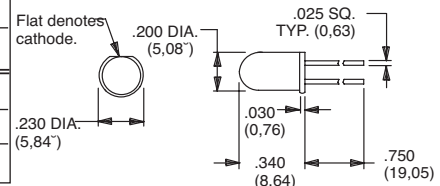
Special colors, custom markings available, consult Customer Service Center.

LED INFORMATION

SWITCHES WITH LED SUPPLIED: J86 OPTION:

Rectangular LEDs are supplied on 8060 Series pushbutton switches with J86 option. These LEDs are factory installed and are not replaceable. The following specifications apply:

OPTION CODE	COLOR	TYP. INTENSITY	TYP. FORWARD VOLTAGE	TYP. FORWARD CURRENT	MAX RATINGS AT 25°C AMBIENT TEMPERATURE		
					FORWARD VOLTAGE	CONTINUOUS FORWARD CURRENT	POWER DISSIPATION
6	Green	1.0 mcd	2.1 V	20 mA	2.5 V	50 mA	125 mW
3	Red*	0.5 mcd		10 mA		30 mA	75 mW
5	Yellow	4.0 mcd		20 mA		50 mA	125 mW



Process Information: Soldering to LED leads must be completed within 5 seconds at 500°F (260°C) maximum.

Caution: Circuit elements must limit forward current of LED to 50mA max. continuous.

* Extra-bright red LED available (typ. intensity 4.5 mcd), consult Customer Service Center.

LEDs are not supplied with J82 & J84 options. LED snaps into switch frame surrounding actuator and is wired externally.

Suggested LED for J82 & J84 options.
Dimensions for reference only.



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



A

Pushbutton

**A****Pushbutton**

8500 Series Subminiature Pushbutton Switches



Features/Benefits

- **Pre-travel or over-travel models available**
- **Ratings up to 3 AMPS**
- **Reliable contact design**
- **RoHS compliant**

Typical Applications

- **Detection**
- **Telecommunications and networking equipment**
- **Computers and peripherals**



Models Available

Specifications

CONTACT RATING: Q contact material (853X Models): 1 AMP @ 120 V AC or 28 V DC; (855X Models): 3 AMPS @ 120 V AC or 28 V DC. See page A-65 for additional ratings.

ELECTRICAL LIFE:

853X MODELS: 250,000 actuations at full load.

855X MODELS: 10,000 actuations at full load.

CONTACT RESISTANCE: Below 30 mΩ typ. initial @

2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 65°C.

NOTE: Any models supplied with Q, B or G contact material are RoHS compliant.

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 phenolic or diallyl phthalate (DAP) (UL 94V-0).

PLUNGER: Phenolic or glass filled polyester, black standard(UL94V-0).

CAP & FRAME: Nylon, black, standard.

BUSHING: Brass, nickel plated.

CONTACTS: Q contact material: Coin silver, silver plated. See page A-65 for additional contact materials.

TERMINALS: Q contact material: Copper alloy, silver plated. See page A-65 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut: Brass, nickel plated; Lockwasher: Steel, bright 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-63 thru A-66. 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.

<div>Switch Function</div> <div><div>8531</div> SPST Off-Mom. 1 Amp</div> <div><div>8532</div> SPST Off-Mom. 1 Amp</div> <div><div>8533</div> SPST On-Mom. 1 Amp</div> <div><div>8534</div> SPST On-Mom. 1 Amp</div> <div><div>8551</div> SPST Off-Mom. 3 Amps</div> <div><div>8552</div> SPST Off-Mom. 3 Amps</div>

* Available with M or S plunger models, and B contact material only.



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

8500 Series Subminiature Pushbutton Switches

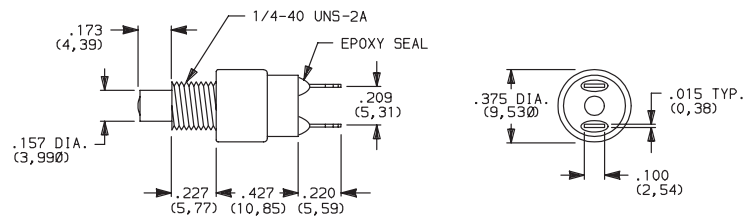


A

Pushbutton

NO. POLES	MODEL NO.	RATING	SWITCH FUNCTION		TOTAL TRAVEL	ACTUATION FORCE	SCHEMATIC
			POS. 1	POS. 2			
SP	8531	1 AMP	OFF	MOM.	.095 (2,41) TYP. with overtravel .042 (1,07) TYP.	7.7 oz (220g) TYP.	N.O. with overtravel
	8551	3 AMPS					

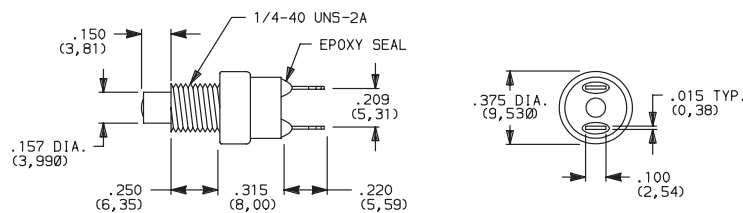
SPST



Part number shown: 8531MZQE2

SP	8532	1 AMP	OFF	MOM.	.050 (1,27) TYP.	6 oz (170g) TYP.	N.O.
	8552	3 AMPS					

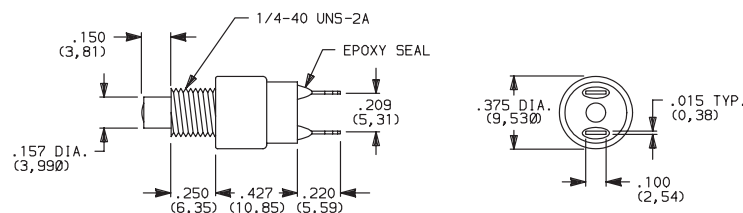
SPST



Part number shown: 8532MZQE2


SP	8533	1 AMP	ON	MOM.	.080 (2,03) TYP. with pretravel .057 (1,45) TYP.	11.5 oz (456 g) TYP.	N.C. with pretravel
	8534	1 AMP	ON	MOM.	.032 (0,81) TYP. with overtravel .028 (0,71) TYP.	10.3 oz (282g) TYP.	N.C. with overtravel

SPST



Part number shown: 8533MZQE2

MOM. = Momentary

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



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

www.ck-components.com

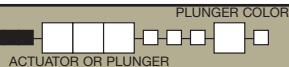


A

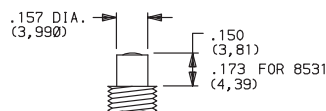
Pushbutton

8500 Series Subminiature Pushbutton Switches

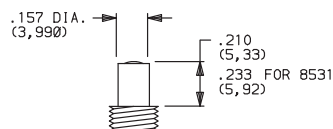
PLUNGER



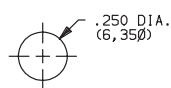
M .150" HIGH PLUNGER



S .210" HIGH PLUNGER



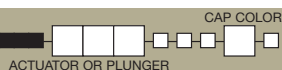
PANEL MOUNTING



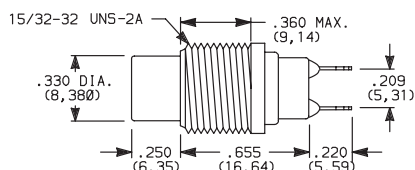
OPTION CODE	PLUNGER COLOR
2	BLACK
3	RED

NOTE: One mounting nut and lockwasher supplied with all actuators (except T actuator: two nuts supplied).

ACTUATOR

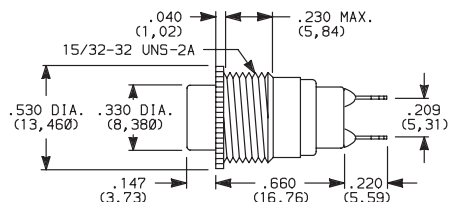


T 15/32 BUSHING



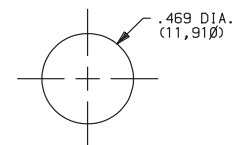
NOTE: No frame color choice required.

T1 15/32 BUSHING WITH FRAME



NOTE: No frame color choice required.
Available with 8532 and 8534 models only.

PANEL MOUNTING



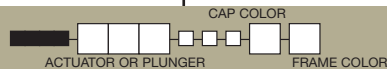
OPTION CODE	CAP COLOR
2	BLACK
1	WHITE
3	RED
9	GRAY

Cap Finish: gloss. Other colors available, consult Customer Service Center.

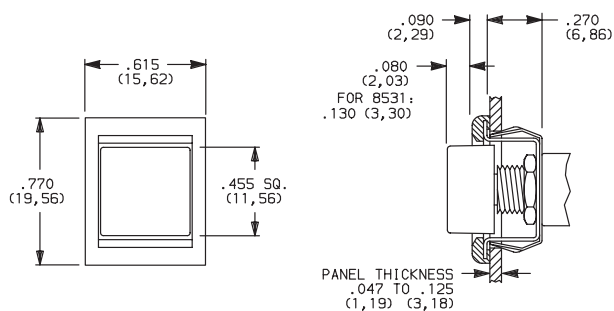
One mounting nut and lockwasher supplied with all actuators (except T actuator: two nuts supplied).

NOTE: Caps available for plunger options, see page A-65.

ACTUATOR—SNAP-IN FRONT MOUNT



J81 SNAP-IN WITH FRAME



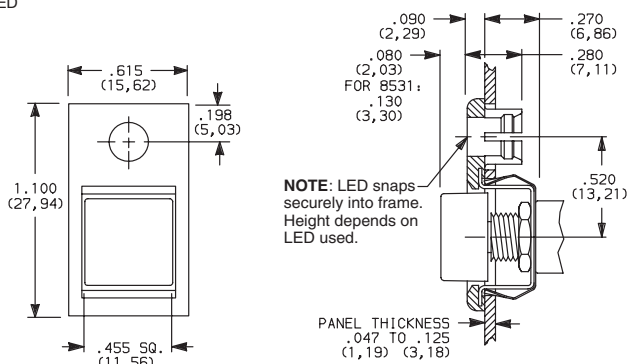
OPTION CODE	CAP AND FRAME COLOR
2	BLACK

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

One mounting nut and lockwasher supplied with all actuators.

NOTE: Caps & frames available separately, see pages A-65 and A-66.

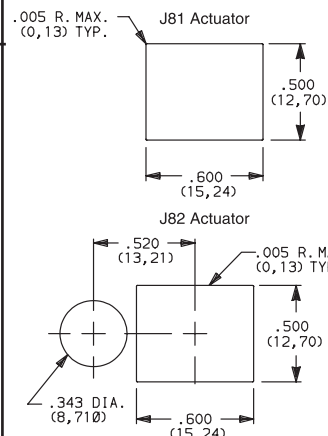
J82 SNAP-IN WITH FRAME FOR LED



NOTE: LED snaps securely into frame. Height depends on LED used.

LED not included.
For LED information, see page A-66.

PANEL MOUNTING



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

C&K

8500 Series Subminiature Pushbutton Switches



A

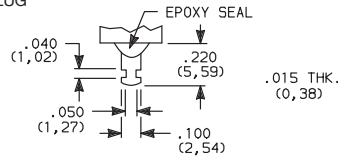
Pushbutton

TERMINATIONS



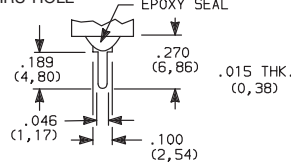
Z

SOLDER LUG

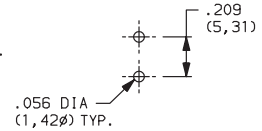


C

PC THRU-HOLE

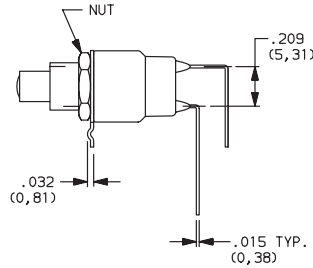
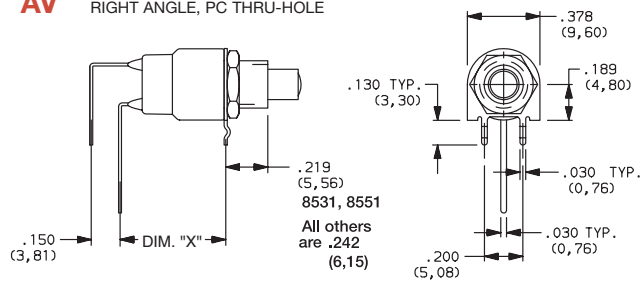


PC MOUNTING

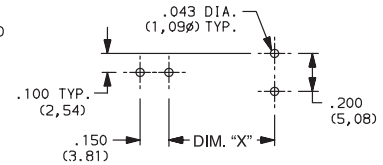


AV

RIGHT ANGLE, PC THRU-HOLE



PC MOUNTING



Available with

MODEL NO.	DIM "X"
8531, 8533	0.550
8532, 8534	0.438

NOTE: Available with M or S plunger models, and B contact material only.

CONTACT MATERIAL



OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	TERMINAL PLATING	CONTACT MATERIAL	RATINGS	
B	YES	YES	GOLD ¹	GOLD	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
Q	YES	YES	SILVER ⁴	SILVER ⁵	POWER	853X MODELS: 1 AMP @ 120 V AC OR 28 V DC. 855X MODELS: 3 AMPS @ 120 V AC OR 28 V DC.
G	YES	YES	GOLD OVER SILVER ²	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 V MAX @ 20 V AC OR DC MAX. OR 853X MODELS: 1 AMP @ 120 V AC OR 28 V DC. 855X MODELS: 3 AMPS @ 120 V AC OR 28 V DC.

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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


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

³ TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ CONTACTS: Coin silver, silver plated.

⁵ TERMINALS: Copper alloy, silver plated.

NOTE: Any models supplied with Q, B or G contact material are RoHS compliant.

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

Q contact material standard with C, Z terminations.

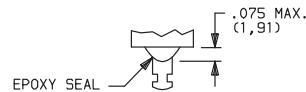
8551 & 8552 available with Q contact material only.

SEAL



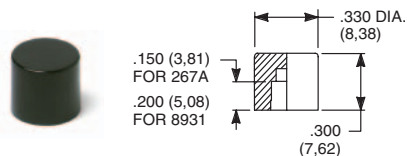
E

EPOXY SEAL



REPLACEMENT HARDWARE

Cap for 0.157" dia. plungers



PART NO.

267A01000 WHITE
267A02000 BLACK
267A03000 RED
267A09000 GRAY

85X2T, 8534T models only

Material: Nylon
Finish: Gloss

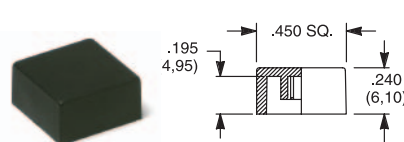
PART NO.

893101000 WHITE
893102000 BLACK
893103000 RED
893109000 GRAY

85X1T, 8532T1, 8533T, 8534T1 models only

Material: Nylon
Finish: Gloss

Cap, J80, J81 & J 82 options only



PART NO.

448901000 WHITE
448902000 BLACK
448903000 RED
448909000 GRAY

Material: Nylon
Finish: Gloss or matte

Frame



PART NO.

613302263 BLACK

Material: Nylon
Finish: Matte



Third Angle
Projection

Other colors available, consult Customer Service Center.

C&K

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

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A

Pushbutton

8500 Series Subminiature Pushbutton Switches

AVAILABLE HARDWARE

Frame

PART NO.

615602263 BLACK

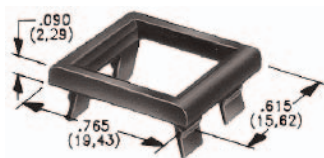
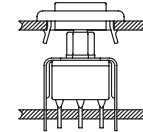
Material: Nylon
Finish: Matte



NOTE: Additional nuts, locking rings and lockwashers available separately, see section "Technical Data and Additional Hardware".
Other 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

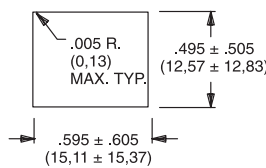
.125" (3,18) PANEL THK.

PART NO.

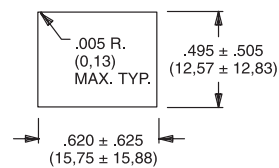
432802263 BLACK

PANEL MOUNTING

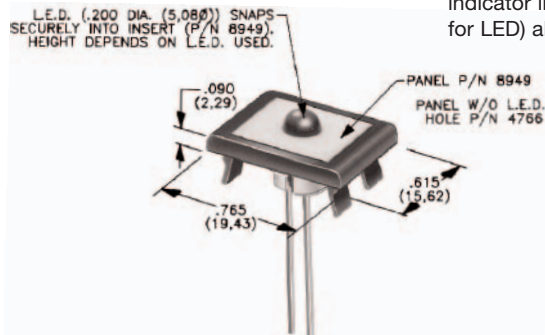
For part numbers
4325xxxxx, 4326xxxxx



For part numbers
4327xxxxx, 4328xxxxx



Panel Inserts



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

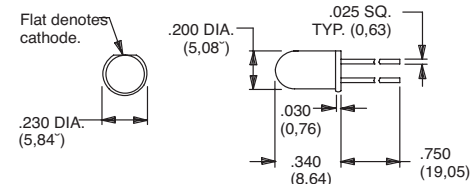
PART NO.

476602000 BLACK

Special colors, custom markings available, consult Customer Service Center.

LED INFORMATION

Process Information: Soldering to LED leads must be completed within 5 seconds at 500°F (260°C) maximum.
LEDs are not supplied with J82 option. LED snaps into switch frame surrounding actuator and is wired externally.



Suggested LED for J82 option.
Dimensions for reference only.



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

www.ck-components.com

KM Series Subminiature Pushbutton Switches



A

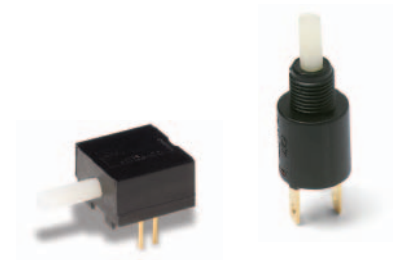
Pushbutton

Features/Benefits

- **Reliable contact design**
- **Available with pretravel and overtravel**
- **RoHS compliant**

Typical Applications

- **Alarm systems**
- **Computers**
- **Detector switch application**



Models Available

Specifications

CONTACT RATING: Q contact material (KM11, KM12 Models): 0.25 AMPS @ 125 V AC or DC (UL); (KM33 Model): 1 AMP @ 125 V AC or 28 V DC. See page A-69 for additional ratings.

ELECTRICAL LIFE: 10,000 actuations min. at full load.

CONTACT RESISTANCE: Below 30 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

CAP INSTALLATION FORCE: 10 lbs. max. permissible.

NOTE: Any models supplied with Q or B contact material are RoHS compliant.

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

Materials

HOUSING & BUSHING: 6/6 nylon (UL94V-2), black.

ACTUATOR: 6/6 nylon (UL 94V-2), natural. Internal o-ring seal, available on KM11 & KM33 models.

MOVABLE CONTACT: B contact material: Bronze or copper, with gold plate over nickel plate. See page A-69 for additional contact materials.

STATIONARY CONTACTS & TERMINALS: B contact material: Copper, with gold plate over nickel plate. See page A-69 for additional contact materials.

RETURN SPRING: Music wire, phosphor coated.

MOUNTING NUT: Brass, nickel plated.

TERMINAL SEAL: Epoxy.

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-68 and A-70. For additional options not shown in catalog, consult Customer Service Center.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Switch Function		Actuator		Bushing/Mounting Style		Terminations	
KM12 On-Mom., SPDT KM11 Off-Mom., SPST, N.O. KM33 On-Mom., SPST, N.C.		02 .398" high, .122" dia. KM12 01 .122" dia. KM11, Stepped, .108" dia. KM33		A Right angle RR 1/4-40 thread, .225" high		05 .110" quick connect 08 Right angle, PC thru-hole 02 PC Thru-hole	
Contact Material				Seal			
B Gold Q Silver				NONE No seal E Epoxy			



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



A

Pushbutton

KM Series Subminiature Pushbutton Switches

SWITCH FUNCTION

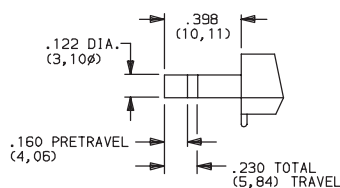


NO. POLES	MODEL NO.	SWITCH FUNCTION		CONNECTED TERMINALS		SCHEMATIC
		POS. 1	POS. 2	POS. 1	POS. 2	
SP	KM11	OFF	MOM.	OPEN	2-1	SPST N.O.
	KM33	ON	MOM.	2-1	OPEN	SPST N.C.
SPST 						
SP	KM12	ON	MOM.	2-1	4-3	SPDT
SPDT 						

ACTUATOR

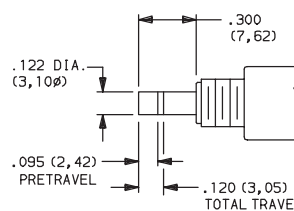


02 .398" HIGH, .122" DIA.

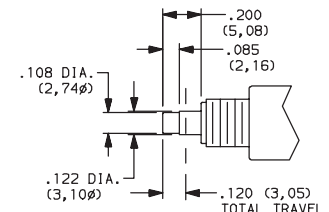


KM12 models only.

01 .122" DIA.



KM11 models only.



KM33 models only.

NOTE: Caps available for plunger options, see page A-70.



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

C&K

KM Series Subminiature Pushbutton Switches



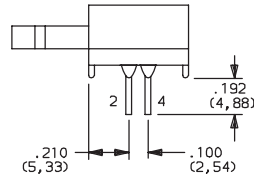
A

Pushbutton

BUSHING/ MOUNTING STYLE

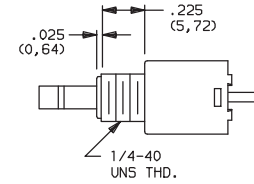


A RIGHT ANGLE



KM12 models only.

RR 1/4-40 THREAD, .225" HIGH



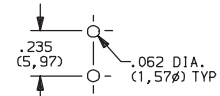
KM11 & KM33 models only.

PANEL MOUNTING

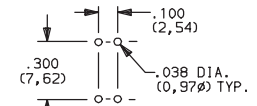


KM11 & KM33 models.

PC MOUNTING



KM11 models only.

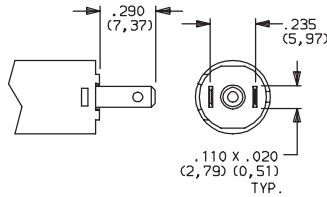


KM12 models only.

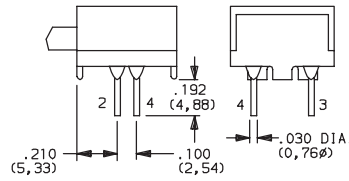
TERMINATIONS



05 .110" QUICK CONNECT

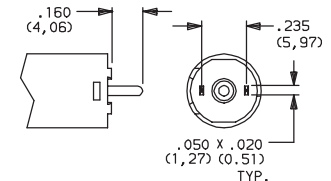


08 RIGHT ANGLE, PC THRU-HOLE



KM12 models only.

02 PC THRU-HOLE



KM11 models only.

CONTACT MATERIAL



OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	CONTACT AND TERMINAL MATERIAL	RATINGS	
B	YES	YES	GOLD ¹	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
Q	YES	YES	SILVER ²	POWER	0.25 AMPS @ 125 V AC OR DC (KM11, KM12) (UL) 1 AMP @ 125 V AC OR 28 V DC (KM33).


* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

¹ STATIONARY CONTACTS & TERMINALS: Copper, with gold plate over nickel plate.
MOVABLE CONTACT: Phosphor bronze or beryllium copper, with gold plate over nickel plate.

² STATIONARY CONTACTS & TERMINALS: Copper, silver plated (standard with all termination options).
MOVABLE CONTACT: Phosphor bronze or beryllium copper, silver plated.

³ STATIONARY CONTACTS & TERMINALS: Copper, with gold plate over nickel plate over silver plate.
MOVABLE CONTACT: Phosphor bronze or beryllium copper, with gold plate over nickel plate over silver plate.

NOTE: Any models supplied with Q or B contact material are RoHS compliant.

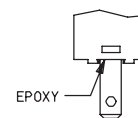
KM11, KM12 models  when ordered with 'Q' contact material.

SEAL



NONE NO SEAL

E EPOXY SEAL



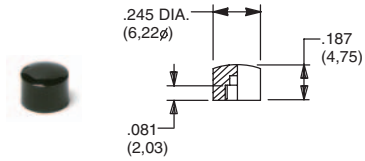
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

C&K

**A****Pushbutton**

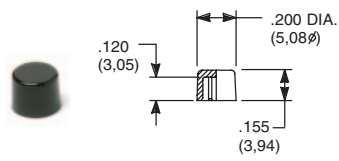
KM Series Subminiature Pushbutton Switches

AVAILABLE HARDWARE

Cap, KM33 models**PART NO.**

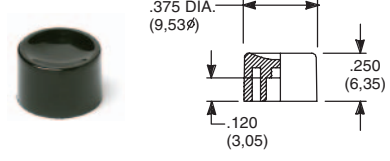
785101000 WHITE
785102000 BLACK
785103000 RED

Material: Nylon
Finish: Gloss

Cap, KM11 models**PART NO.**

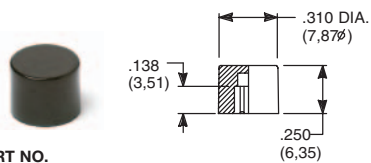
708901000 WHITE
708902000 BLACK
708903000 RED

Material: Nylon
Finish: Gloss

Cap, KM11 models**PART NO.**

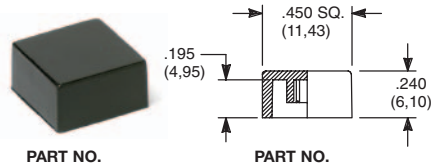
752701000 WHITE
752702000 BLACK
752703000 RED

Material: Nylon
Finish: Gloss

Cap, KM11 models**PART NO.**

801801000 WHITE
801802000 BLACK
801803000 RED

Material: Nylon
Finish: Gloss

Cap, KM11 models**PART NO.**

484601000 WHITE
484602000 BLACK
484603000 RED

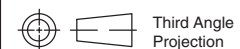
Material: Nylon
Finish: Gloss

PART NO.

798201000 WHITE
798202263 BLACK
798203000 RED

Material: Nylon
Finish: Matte

NOTE: Other cap colors available, consult Customer Service Center.



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

8600 Series Microminiature Pushbutton Switches



A

Pushbutton

Features/Benefits

- Available with overtravel
- Normally closed models available
- Microminiature size ideal for applications where space is limited
- RoHS compliant

Typical Applications

- Detection
- Telecommunications and networking equipment
- Computers and peripherals



Models Available

Specifications

CONTACT RATING: Q contact material (8631, 8632 Models):
500 mA @ 120 V AC or 28 V DC; 250 mA @ 250 V AC;
(8633 Model): 250 mA @ 120 V AC or 28 V DC; 125 mA
@ 250 V AC. See page A-73 for additional ratings.

ELECTRICAL LIFE:

8631 and 8633 MODELS: 250,000 actuations at full load.
8632 MODEL: 100,000 actuations at full load.

CONTACT RESISTANCE: Below 30 mΩ typ. initial @
2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 109 Ω min.

DIELECTRIC STRENGTH: 500 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 65°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or
EIA RS-186E method 9.

Materials

CASE: Glass filled phenolic or diallyl phthalate (DAP), (UL94V-0).

PLUNGER: Glass filled nylon (UL94V-0), black standard.

BUSHING: Brass, nickel plated.

CONTACTS: Q contact material: Coin silver, silver plated.

See page A-73 for additional contact materials.

TERMINALS:

8631, 8632 MODELS: Copper alloy, silver plated.

8633 MODEL: Q contact material: Coin silver.

See page A-73 for additional contact materials.

TERMINAL SEAL:

8633 MODEL: Epoxy.

8631, 8632 MODELS: Terminals insert molded.

HARDWARE: Nut: Brass, nickel plated.

NOTE: Any models supplied with Q, B or G contact material are RoHS compliant.

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

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-72 and A-73. For additional options not shown in catalog, consult Customer Service Center.

Switch Function				Termination		Contact Material		Seal	
8631 SPST Off-Mom.				Z Solder lug		B Gold		D No epoxy	
8632 SPST Off-Mom.				C PC Thru-hole		Q Silver		E Epoxy	
8633 SPST On-Mom.						G Gold over silver		Plunger Color	
								2 Black	
								3 Red	



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



A

Pushbutton

8600 Series Microminiature Pushbutton Switches

SWITCH FUNCTION



NO. POLES	MODEL NO.	SWITCH FUNCTION		TOTAL TRAVEL	ACTUATION FORCE	SCHEMATIC
		POS. 1	POS. 2			
SP	8631	OFF	MOM.	.040 (1,02) TYP.	5 oz (140g) TYP.	N.O.
SPST Part number shown: 8631ZQD2 Terminals Insert Molded PANEL MOUNTING 						
SP	8632	OFF	MOM.	.106 (2,69) TYP. with overtravel .024 (0,61) TYP.	6.25 oz (177g) TYP.	N.O. with overtravel
SPST Part number shown: 8632ZQD2 Terminals Insert Molded PANEL MOUNTING 						
SP	8633	ON	MOM.	.048 (1,22) TYP.	5 oz (140g) TYP.	N.C.
SPST Part number shown: 8633ZQE2 PANEL MOUNTING 						

MOM. = Momentary

NOTE: Caps available for plunger options, see page A-73.

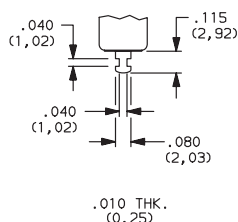
TERMINATIONS



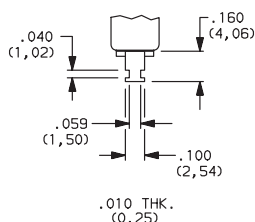
Z SOLDER LUG

C PC THRU-HOLE

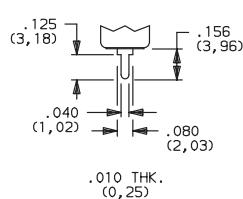
8631, 8632 models only.



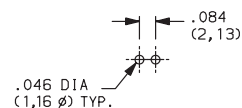
8633 models only.



8631, 8632 models only.



PC MOUNTING



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

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8600 Series Microminiature Pushbutton Switches



A

Pushbutton

CONTACT MATERIAL

OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	YES	YES	GOLD ¹	GOLD ¹	LOW LEVEL/ DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
Q	YES	YES	SILVER ⁴	SILVER ⁵	POWER	8631, 8632 MODELS: 500 mA @ 120 V AC OR 28 V DC; 250 mA @ 250 V AC. 8633 MODELS: 250 mA @ 120 V AC OR 28 V DC; 125 mA @ 250 V AC.
G	YES	YES	GOLD OVER SILVER ⁴	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 VA MAX @ 20 V AC OR DC MAX. OR 8631, 8632 MODELS: 500 mA @ 120 V AC OR 28 V DC; 250 mA @ 250 V AC. 8633 MODELS: 250 mA @ 120 V AC OR 28 V DC; 125 mA @ 250 V AC.

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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


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

³ TERMINALS: Copper alloy, with gold plate over nickel plate.
8633 model only: Coin silver, with gold plate over nickel plate.

⁴ CONTACTS: Coin silver, silver plated.

⁵ TERMINALS: Copper alloy, silver plated. 8633 model only: coin silver.

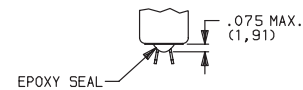
NOTE: Any models supplied with Q, B or G contact material are RoHS compliant.

8631, 8632 models  with all options when ordered with G or Q contact material.
Q contact material standard with C, Z terminations.

SEAL

D NO EPOXY SEAL

E EPOXY SEAL



Not available on 8633 model.
Standard on 8631, 8632 models.

Not available on 8631, 8632 models.
Standard on 8633 model only.

PLUNGER COLOR

OPTION CODE	COLOR
2	BLACK
3	RED

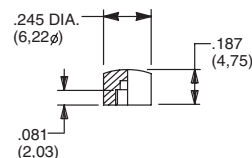
AVAILABLE HARDWARE

Cap

PART NO.

785101000 WHITE
785102000 BLACK
785103000 RED

Material: Nylon
Finish: Gloss



NOTE: Other cap colors available, consult Customer Service Center.



Third Angle
Projection

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

C&K

www.ck-components.com

8700 Series Overtravel Pushbutton Switches



- Features/Benefits**
 - Extended pre-travel or over-travel
 - Heavy-duty brass plunger
 - Long electrical life – 100K cycles
 - RoHS compliant

Typical Applications
 - Telecommunications
 - High end Instrumentation
 - Medical & test equipment
 - Detection

Specifications

CONTACT RATING: Q contact material: 1 AMP @ 120 V AC or 28 V DC. See page A-76 for additional ratings.

ELECTRICAL LIFE: 100,000 actuations at full load.

CONTACT RESISTANCE: Below 30 mΩ typ. Initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: 10³Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 65°C.

NOTE: Any models supplied with Q, or B contact material are RoHS compliant.

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: Diallyl phthalate (DAP) (UL 94V-0).

PLUNGER:
8731 – .390" brass, nickel plated.
8732 – .390" PBT polyester, black.

BUSHING: brass, nickel plated.

CONTACTS: Q contact material: Coin silver, silver plated. See page A-76 for additional contact materials.

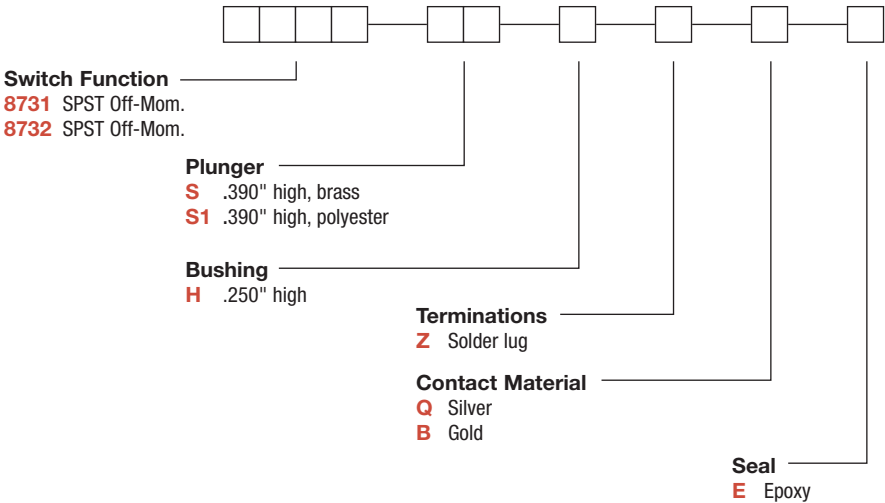
TERMINALS: Q contact material: Copper alloy, silver plated. See page A-76 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut: Brass, nickel plated; lockwasher: Steel, bright nickel plate. One mounting nut & lockwasher supplied with all switches.

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-75 and A-76. 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.



8700 Series
Overtravel Pushbutton Switches



A

Pushbutton

SWITCH FUNCTION

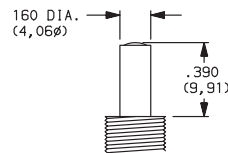
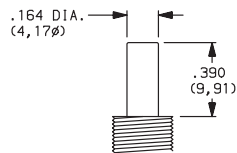
NO. POLES	MODEL NO.	SWITCH FUNCTION		TOTAL TRAVEL	ACTUATION FORCE	SCHEMATIC
		POS. 1	POS. 2			
SP	8731	OFF	MOM.	.390 (9,91) TYP. with overtravel .311 TYP.	4.7 oz TYP.	N.O. with overtravel SPST
SPST 						
SP	8732	OFF	MOM.	.390 (9,91) TYP. with overtravel .350 TYP.	2.2 oz TYP.	N.O. with overtravel SPST
SPST 						

MOM. = Momentary

PLUNGER

S .390" HIGH, BRASS

S1 .390" HIGH, PBT POLYESTER

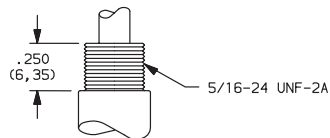


Available with 8731 model only.

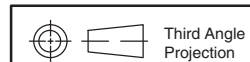
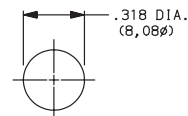
Available with 8732 model only.

BUSHING

H .250" HIGH



PANEL MOUNTING



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

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A

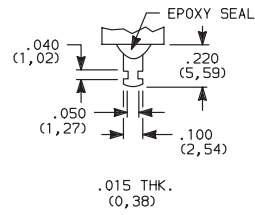
Pushbutton

8700 Series Overtravel Pushbutton Switches

TERMINATIONS



Z SOLDER LUG



CONTACT MATERIAL



OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
					POWER	1 AMP @ 125 V AC OR 28 V DC.
Q	YES	YES	SILVER	SILVER		
B	YES	YES	GOLD	GOLD	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.

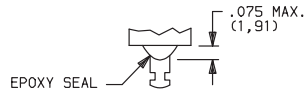
* Note: See Technical Data section of this catalog for RoHS compliant and compatible definition and specifications.

NOTE: Any models supplied with Q, or B contact material are RoHS compliant.

SEAL



E EPOXY SEAL



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

GP Series Sealed Ultraminiature Pushbutton Switches



A

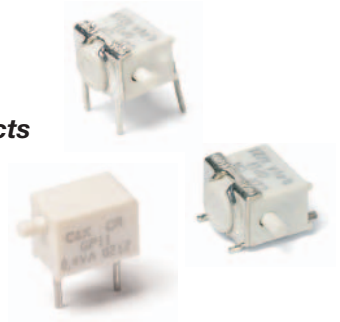
Pushbutton

Features/Benefits

- **Ultraminiature design saves space**
- **Process compatible, withstands most soldering and washing processes**
- **Thru-hole and surface mount models available**
- **Sealed construction—internal o-ring and epoxy base**
- **RoHS compliant**

Typical Applications

- **Telecommunications and network equipment**
- **Computers and peripheral products**
- **Instrumentation**
- **Medical Applications**



Specifications

CONTACT RATING: 0.4 VA max. @ 20 V AC or DC max.

MECHANICAL & ELECTRICAL LIFE: 40,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 50 mΩ typ. initial @ 2-4 V DC, 100 mA.

INSULATION RESISTANCE: $10^9 \Omega$ min.

DIELECTRIC STRENGTH: 500 Vrms min. @ sea level.

OPERATING TEMPERATURE: -40°C to 85°C.

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

DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.

PACKAGING: Surface mount switches standard in anti-static tape and reel packaging per EIA 481-3, see page A-80 for drawings and reel information. Thru-Hole parts are shipped in trays.

All models are RoHS compliant and compliant.

Materials

HOUSING & BASE: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0).

ACTUATOR: Glass filled nylon 4/6, flame retardant (UL 94V-0) with standard internal o-ring seal.

SWITCH SUPPORT: Brass, tin plated.

MOVABLE CONTACT: Copper alloy, with gold plate over nickel plate.

STATIONARY CONTACTS Copper alloy, with gold plate over nickel plate.

TERMINALS: Copper alloy, with gold flash over nickel plate.

TERMINAL SEAL: Epoxy/Urethane. All terminals insert molded.

NOTE: Any models supplied with B contact material are RoHS compliant and compatible.

NOTE: Materials listed above are general specifications. Specifications available for specific and custom switches, consult Customer Service Center.

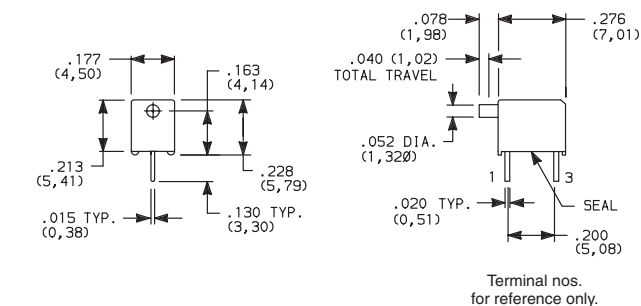
CAUTION: PC mounting layouts and pads as shown are designed to be compatible with the latest equipment and reflow techniques. Care should be taken in the design and location of PC lands to suit individual needs. Orientation relative to reflow direction may significantly impact solder joint integrity.

How To Order

Complete part numbers for GP Series Sealed Ultraminiature Pushbutton Switches are shown on pages A-78 thru A-80.

PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS.1	POS. 2	
GP11MCBE	OFF	MOM.	
Conn. Terms.	OPEN	1-3	
GP12MCBE	ON	MOM.	
Conn. Terms.	2-1	2-3	

MOM. = Momentary

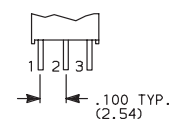


GP11MCBE
SPST

PC MOUNTING



GP11—omit center hole.



GP12 Model



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

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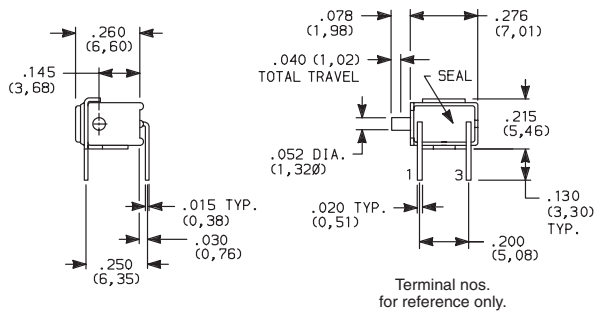
A

Pushbutton

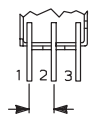
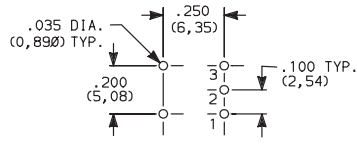
GP Series Sealed Ultraminiature Pushbutton Switches



GP11MABE
SPST



PC MOUNTING



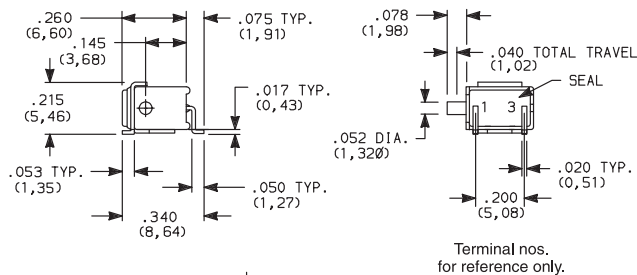
GP12 Model

PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
GP11MABE	OFF	MOM.	
Conn. Terms.	OPEN	1-3	
GP12MABE	ON	MOM.	
Conn. Terms.	2-1	2-3	

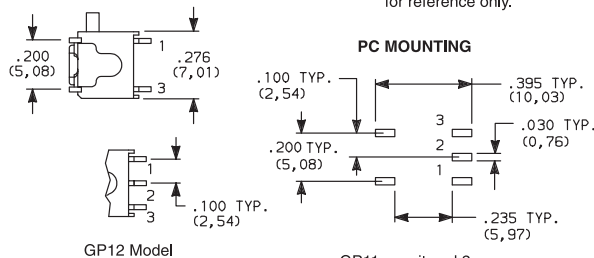
MOM. = Momentary



GP11MSABE
SPST



PC MOUNTING

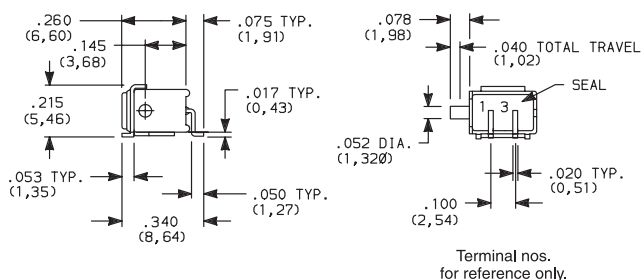


PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
GP11MSABE	OFF	MOM.	
Conn. Terms.	OPEN	1-3	
GP12MSABE	ON	MOM.	
Conn. Terms.	2-1	2-3	

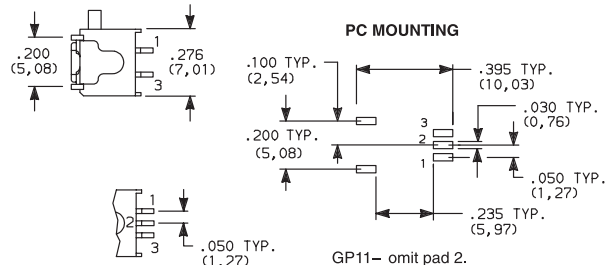
MOM. = Momentary



GP11MSA1BE
SPST

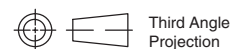


PC MOUNTING



PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS. 1	POS. 2	
GP11MSA1BE	OFF	MOM.	
Conn. Terms.	OPEN	1-3	
GP12MSA1BE	ON	MOM.	
Conn. Terms.	2-1	2-3	

MOM. = Momentary



Third Angle
Projection



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

GP Series Sealed Ultraminiature Pushbutton Switches

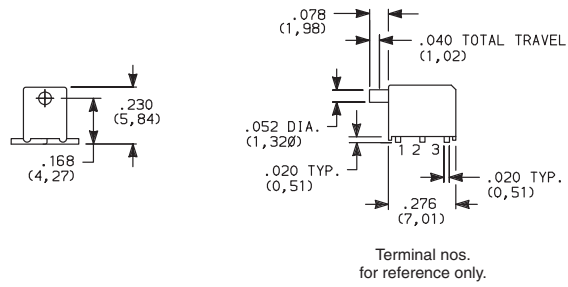


A

Pushbutton

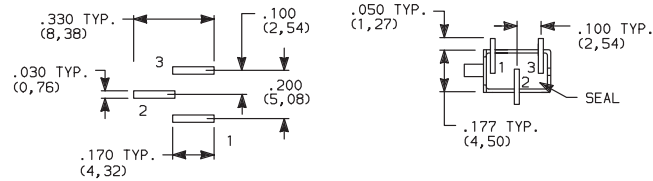
PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS.1	POS. 2	
GP12MSCBE	ON	MOM.	
Conn. Terms.	2-1	2-3	
			SPDT

MOM. = Momentary

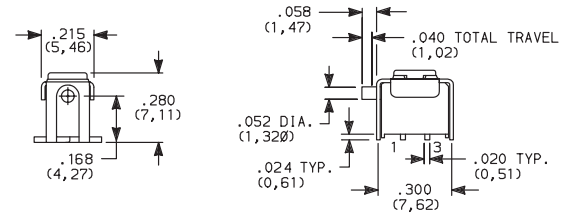


**GP12MSCBE
SPDT**

PC MOUNTING



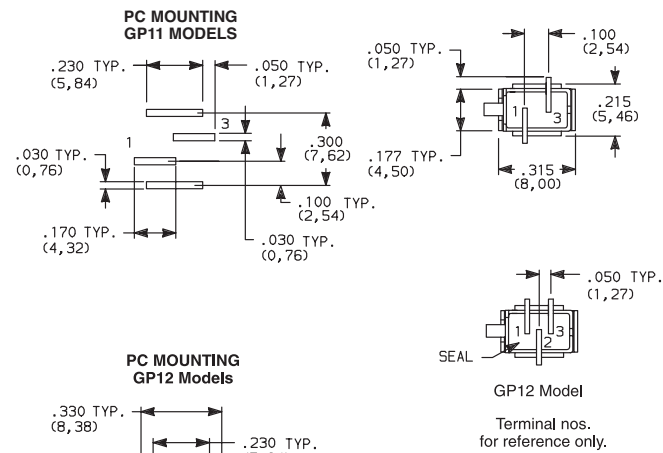
NOTE: Recommended for infrequent use applications only
For increased switch mounting strength, order, SV1 termination style with support bracket (see below).



**GP11MSV1BE
SPST**

PART NUMBER	SWITCH FUNCTION		SCHEMATIC
	POS.1	POS. 2	
GP11MSV1BE	OFF	MOM.	
Conn. Terms.	OPEN	1-3	
			SPST
GP12MSV1BE	ON	MOM.	
Conn. Terms.	2-1	2-3	
			SPDT

MOM. = Momentary



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





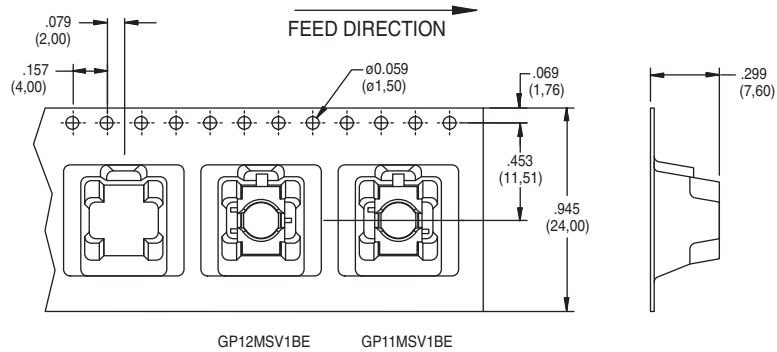
A
Pushbutton

GP Series Sealed Ultraminiature Pushbutton Switches

TAPE & REEL

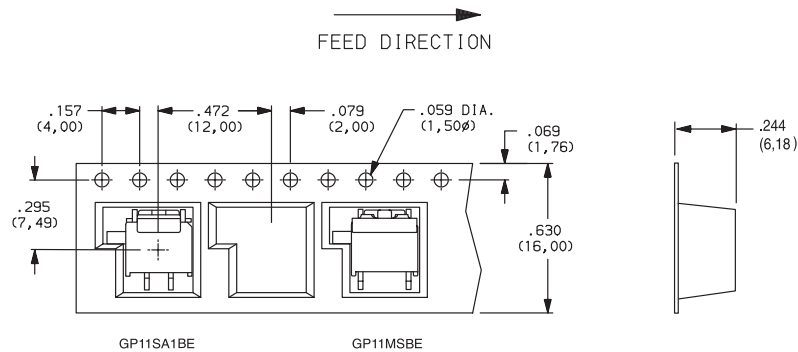
For part numbers GP11MSV1BE, GP12MSV1BE

REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600



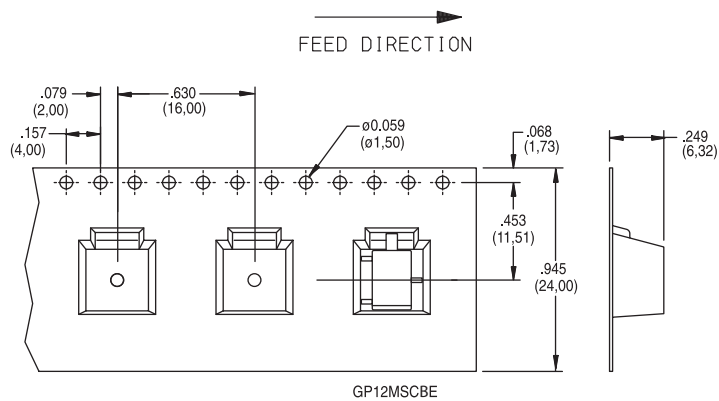
For part numbers GPXXSA1BE, GPXXMSABE

REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600



For part numbers GP12MSCBE

REEL INFORMATION	
OUTSIDE DIAMETER	13.00 (330,0)
PILOT HOLE	.512 (13,0)
QUANTITY PER REEL	600



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

PN Series Alternate & Momentary Action Pushbutton Switches



A

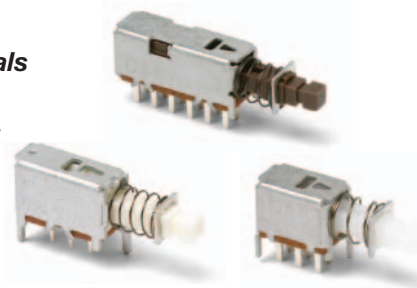
Pushbutton

Features/Benefits

- Momentary or locking action
- 3 actuation forces for customized feel
- Low cost, reliable contact design
- 1-4 poles available
- RoHS compliant

Typical Applications

- Computers and peripherals
- Instrumentation and measurement equipment
- Non-power, on-off switch applications



Specifications

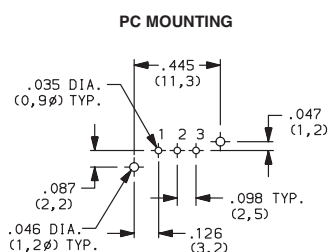
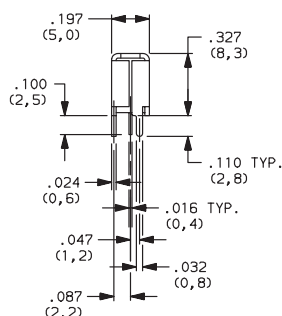
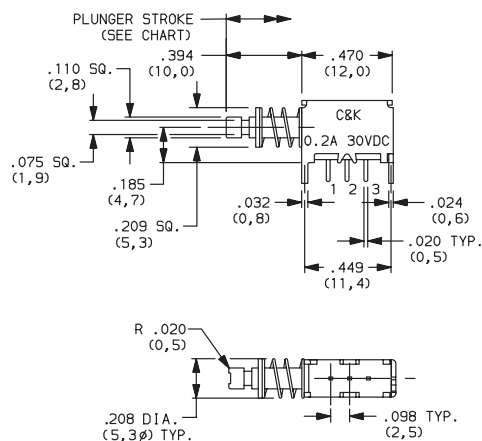
CONTACT RATING: 0.2 AMP @ 30 V DC max.
ELECTRICAL LIFE: 10,000 make-and-break cycles at full load.
MECHANICAL LIFE: 10,000 on/off cycles.
CONTACT RESISTANCE: 50 mΩ max. initial,
100 milliohms max. at end of life.
INSULATION RESISTANCE: 100 MΩ min. at 500 V DC.
DIELECTRIC STRENGTH: 500 V AC min.
OPERATING/STORAGE TEMPERATURES: -10°C to 60°C.
PACKAGING: Switches are supplied in anti-static bags
or anti-static trays.

Materials


FRAME: Tin plated steel.
ACTUATOR: Polyacetal. Color: Manufacturing option.
BASE: Laminated phenolic.
TERMINALS: Silver plated brass.
MOVABLE CONTACTS: Silver plated (or clad) phosphor bronze.
RETURN SPRING: Music wire.
DETENT SPRING: Phosphor bronze.
DETENT SPRING PLATE: Phosphor bronze.
RETURN SPRING RETAINER RING: Nickel (or tin) plated steel.
TERMINAL SEAL: Epoxy.

How To Order

Complete part numbers for PN Series Alternate & Momentary Action Pushbutton Switches are shown on pages A-82 thru A-83.



PN11SBSA03QE
SPDT

PART NUMBER	SWITCH FUNCTION	OPERATING FORCE (typ.)	STROKE		SHORTING/ NON-SHORTING	SCHEMATIC
			LOCK STROKE	FULL STROKE		
PN11SBNA03QE	SPDT Momentary	120g max.	—	.140 (3,5)	Non-Shorting	
PN11SCNA03QE	SPDT Momentary	150g	—			
PN11SHNA03QE	SPDT Momentary	230g	—			
PN11SJNA03QE	SPDT Momentary	330g	—			
PN12SHNA03QE	SPDT Locking	230g	.100g (2,5)			
PN12SJNA03QE	SPDT Locking	330g	.100g (2,5)	.140 (3,5)	Shorting	
PN11SBSA03QE	SPDT Momentary	120g max.	—			
PN11SCSA03QE	SPDT Momentary	150g	—			
PN11SHSA03QE	SPDT Momentary	230g	—			
PN11SJSA03QE	SPDT Momentary	330g	—			
PN12SHSA03QE	SPDT Locking	230g	.100g (2,5)			
PN12JSJA03QE	SPDT Locking	330g	.100 (2,5)			



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

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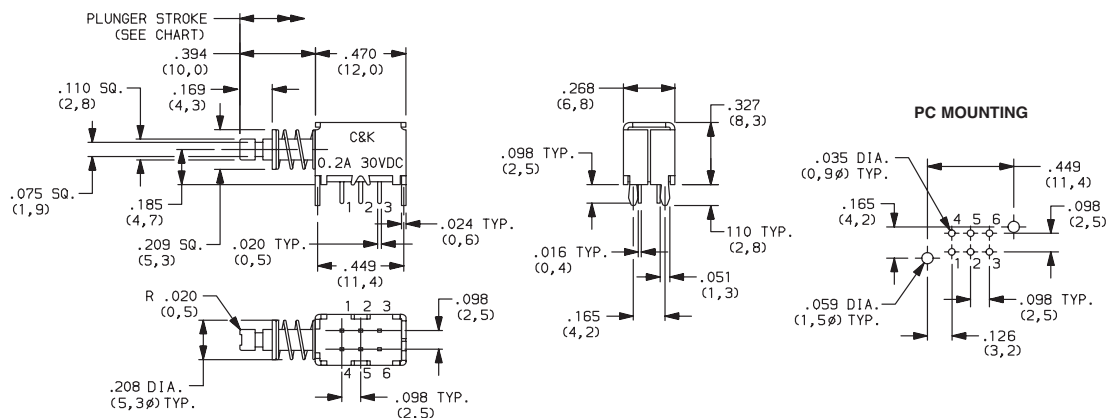
A


Pushbutton

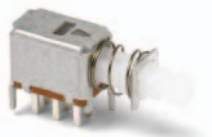
PN Series Alternate & Momentary Action Pushbutton Switches



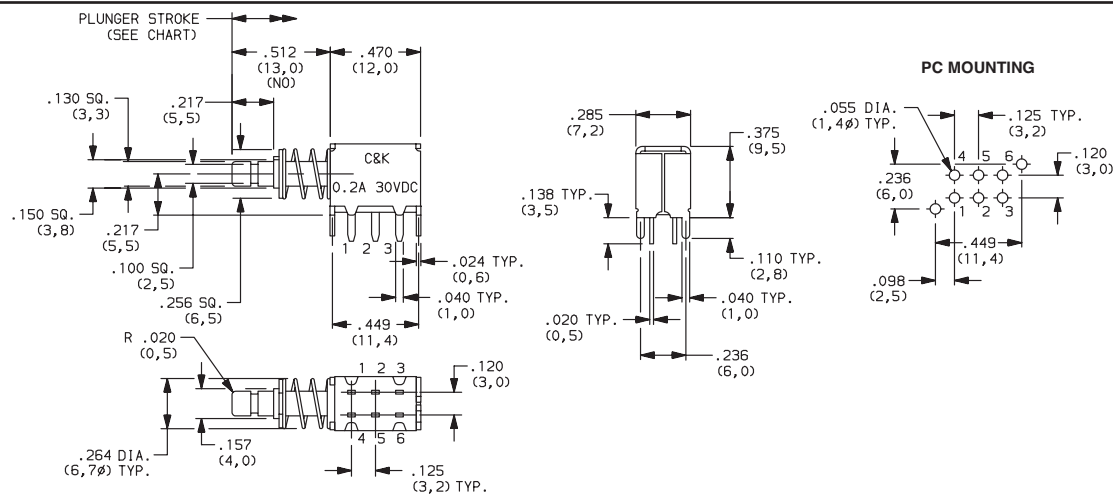
PN21SBSA03QE
DPDT

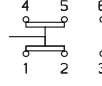


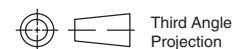
PART NUMBER	SWITCH FUNCTION	OPERATING FORCE (typ.)	STROKE		SHORTING/ NON-SHORTING	SCHEMATIC
			LOCK STROKE	FULL STROKE		
PN21SBNA03QE	DPDT Momentary	120g max.	—	.140 (3,5)	Non-Shorting	
PN21SDNA03QE	DPDT Momentary	175g	—			
PN21SJNA03QE	DPDT Momentary	330g	—			
PN22SJNA03QE	DPDT Locking	330g	.100 (2,5)	.140 (3,5)	Shorting	
PN21SBSA03QE	DPDT Momentary	120g max.	—			
PN21SDSA03QE	DPDT Momentary	175g	—			
PN21SJSA03QE	DPDT Momentary	330g	—			
PN22SJSA03QE	DPDT Locking	330g	.100 (2,5)			



PN21LASA03QE
DPDT



PART NUMBER	SWITCH FUNCTION	OPERATING FORCE (typ.)	STROKE		SHORTING/ NON-SHORTING	SCHEMATIC
			LOCK STROKE	FULL STROKE		
PN21LANA03QE	DPDT Momentary	100g max.	—	.140 (3,5)	Non-Shorting	
PN21LFNA03QE	DPDT Momentary	120g	—			
PN21LDNA03QE	DPDT Momentary	175g	—			
PN21LENA03QE	DPDT Momentary	300g	—			
PN22LENA03QE	DPDT Locking	300g	.100 (2,5)	.140 (3,5)	Shorting	
PN21LASA03QE	DPDT Momentary	100g max.	—			
PN21LFSA03QE	DPDT Momentary	120g	—			
PN21LDSA03QE	DPDT Momentary	175g	—			
PN21LESA03QE	DPDT Momentary	300g	—			
PN22LESA03QE	DPDT Locking	300g	.100 (2,5)			



Third Angle
Projection



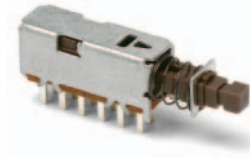
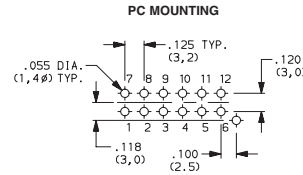
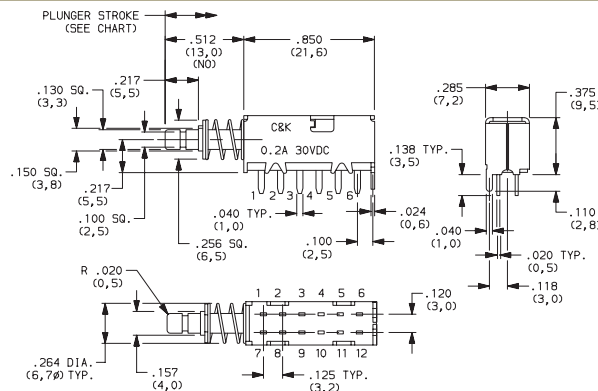
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

PN Series Alternate & Momentary Action Pushbutton Switches



A

Pushbutton

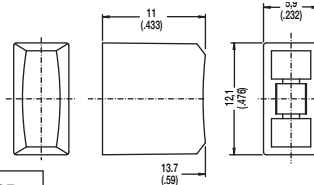
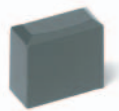


PN41LGSA02QE
4PDT

PART NUMBER	SWITCH FUNCTION	OPERATING FORCE (typ.)	STROKE		SHORTING/ NON-SHORTING	SCHEMATIC
			LOCK STROKE	FULL STROKE		
PN41LGNA02QE	4PDT Momentary	175g	—	.140 (3,5)	Non-Shorting	
PN41LENA02QE	4PDT Momentary	300g				
PN42LENA02QE	4PDT Locking	300g	.100 (2,5)			
PN41LGSA02QE	4PDT Momentary	175g	—	.140 (3,5)	Shorting	
PN41LESA02QE	4PDT Momentary	300g				
PN42LESA02QE	4PDT Locking	300g	.100 (2,5)			

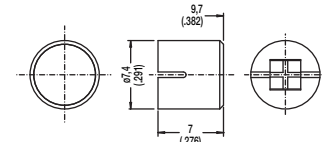
BUTTONS MUST BE ORDERED SEPARATELY. SHIPPED IN BULK.

PE



OPTION CODE	COLOR
RD	Red
GY	Gray
BK	Black
WH	White

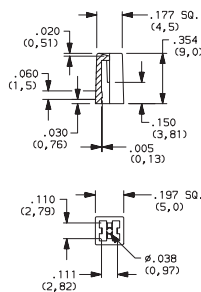
PV



PE and PV buttons fit .130" square plungers

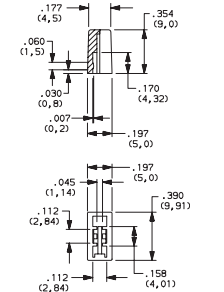
Indexed

- G001A Black
- G001G Gray
- G001I Ivory
- G001R Red



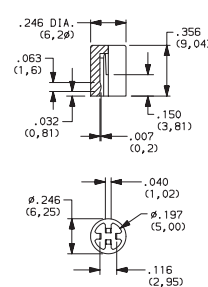
Rectangular

- G002A Black
- G002G Gray
- G002I Ivory
- G002R Red



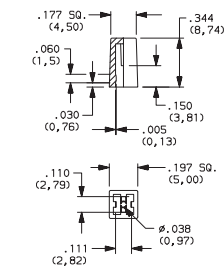
Round

- G003A Black
- G003G Gray
- G003I Ivory
- G003R Red

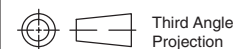


Square

- G004A Black
- G004G Gray
- G004I Ivory
- G004R Red



G001, G002, G003 and G004 buttons fit .110" square plungers.



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

C&K

www.ck-components.com

**A****Pushbutton**

PHB Series Short Stroke Pushbutton Switches

NEW!

Features/Benefits

- Momentary or latching action
- Low cost, reliable contact design
- 2 & 4 pole configurations
- Sealed contacts
- Optional buttons
- RoHS compliant

Typical Applications

- Computers and peripherals
- Instrumentation and measurement equipment
- Non-power, on-off switch applications

Specifications

RATING: 1 A @ 15 V DC

DIELECTRIC STRENGTH (50 Hz/1 min.): 500 V DC between terminals or between terminals and frame for 1 minute

OPERATING LIFE: 10,000 cycles at rated load

CONTACT RESISTANCE: 20 m Ω ohms initial

INSULATION RESISTANCE: 100 M Ω ohms

TOTAL TRAVEL/LATCHING TRAVEL: 2.5mm (\pm 0.5 mm) /
1.5mm (\pm 0.5 mm) to latch EE option (push-push)

OPERATING FORCE:

2U option: 170 grams \pm 100 grams (1.67 \pm 0.98N)

4U option: 230 grams \pm 100 grams (2.26 \pm 0.98N)

OPERATING TEMPERATURE: -10°C to 60°C

BOUNCE TIME: \leq 10 ms

SEALING: Sealed contacts.

PACKAGING: Switches; Tray pack - 100 switches per tray;
Optional Caps; Bulk bag - 100 caps per bag

Materials

FIXED TERMINAL: Brass, silver plated

MOVABLE CONTACT: Phosphor bronze, silver plated

COVER: PA 66 Black

COVER TO BASE RETAINING CLIP: POM

ACTUATOR: POM

RETURN SPRING: Stainless steel

SPRING RETAINING RING: Steel, nickel plate

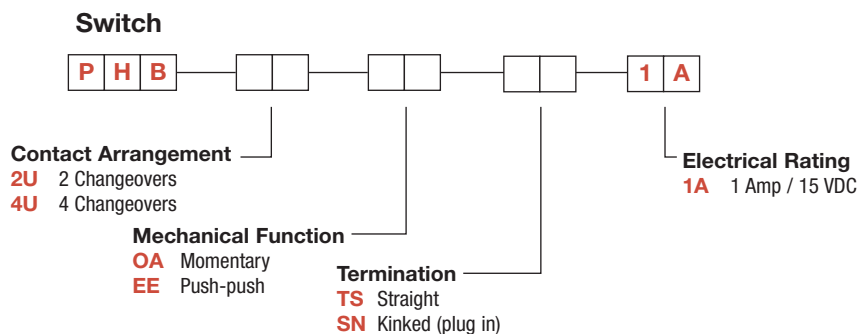
BASE: Phenolic resin

TERMINAL SEAL: Epoxy.

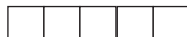
NOTE: Specifications and materials listed above are for switches with standard options.
For information on specific and custom switches, consult Customer Service Center.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. For additional options not shown in catalog, consult Customer Service Center.



Caps (order separately)



INDEXED	COLOR
G001A	BLACK
G001G	GRAY
G001I	IVORY
	RED

RECTANGULAR	COLOR
G002A	BLACK
G002G	GRAY
G002I	IVORY
G002R	RED

ROUND	COLOR
G003A	BLACK
G003G	GRAY
G003I	IVORY
G003R	RED

SQUARE	COLOR
G004A	BLACK
G004G	GRAY
G004I	IVORY
G004R	RED



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

NEW!

PHB Series Short Stroke Pushbutton Switches

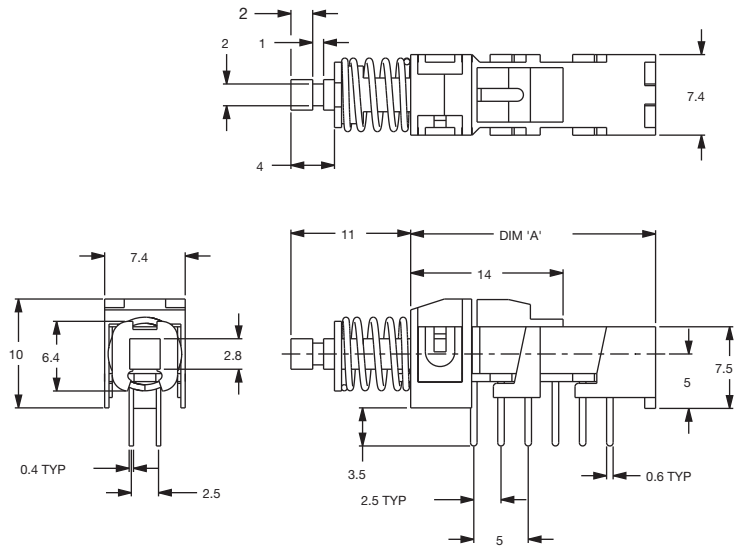


A

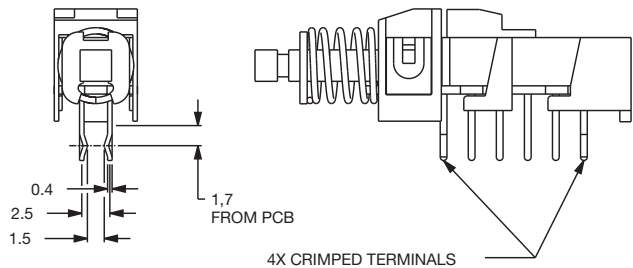
Pushbutton

TERMINATION

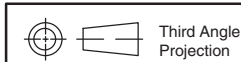
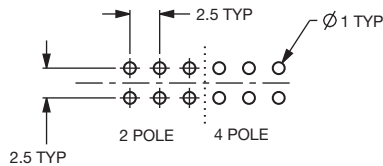
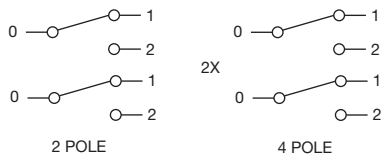
TS STRAIGHT



SN KINKED (PLUG IN)



POLES	MODEL NO.	DIM 'A'	ACTION
4	PHB4UEE1A	22,5	PUSH/PUSH
	PHB4U0A1A	22,5	MOMENTARY
2	PHB2UEE1A	15,0	PUSH/PUSH
	PHB2U0A1A	15,0	MOMENTARY



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

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PHB Series Short Stroke Pushbutton Switches

NEW!

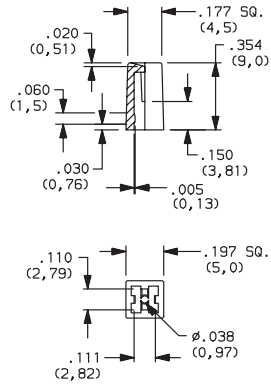
CAPS

A

Pushbutton

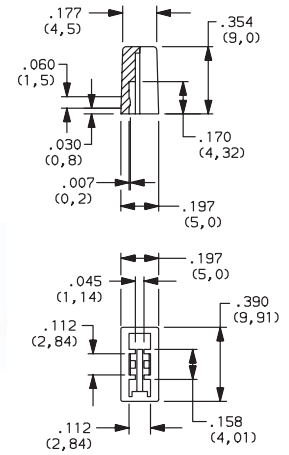
Indexed

- G001A** Black
- G001G** Gray
- G001I** Ivory
- G001R** Red



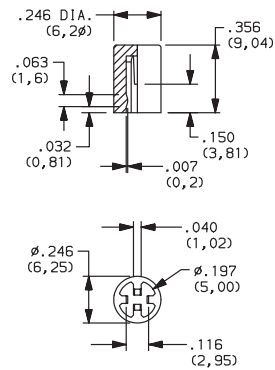
Rectangular

- G002A** Black
- G002G** Gray
- G002I** Ivory
- G002R** Red



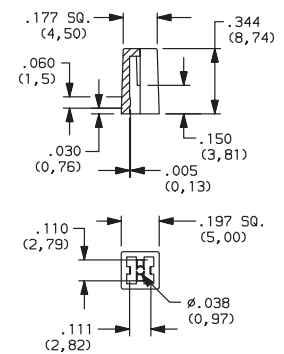
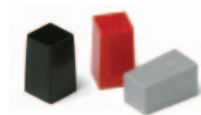
Round

- G003A** Black
- G003G** Gray
- G003I** Ivory
- G003R** Red



Square

- G004A** Black
- G004G** Gray
- G004I** Ivory
- G004R** Red



C&K



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



A

Pushbutton



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

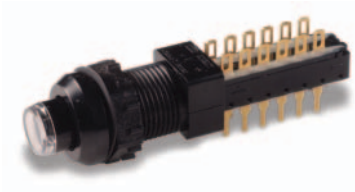
F Series Pushbutton Switches

Features/Benefits

- Up to 10 poles per module
- Various contact terminals
- Various mounting & switch ganging configurations
- Mechanical indicator buttons
- RoHS compliant

Typical Applications

- Audio selection
- Digital equipment interface
- Medical equipment interface



Specifications

SWITCHING POWER: F module max. AC/DC: Silver: 50 VA/15W, Gold: 1 VA/300 mW.

SWITCHING VOLTAGE: F module max. AC/DC: Silver: 125/30V, Gold: 50/30 V.

SWITCHING CURRENT: F module max. AC/DC: Silver: 0.5A/0.5A, Gold: 0.04A/0.01A.

CARRYING CURRENT: Max at du = 20C: Silver: < 2A, Gold: <0.5A.

DIELECTRIC STRENGTH (50 Hz, 1 min.): Chassis/contact: ^1500V Between contacts: ^1500V.

OPERATING LIFE "OA/EE" (24V/200mA): >10⁵ operations "GR": >3.5 x 10⁴ operations.

CONTACT RESISTANCE: Initial: Typical %10 mΩ, max. 20 mΩ After operating life: %100 mΩ

INSULATION RESISTANCE: ^10⁹ Ω between open contacts, ^10⁹ Ω between chassis and contacts.

CAPACITANCE (at f = 10 kHz): %0.7 pF between 2 contacts.

TOTAL TRAVEL/LATCHING TRAVEL: 4.7mm/3.3mm (.185 inch/.130 inch).

All models and options are RoHS compliant and compatible.

NOTE: All models and options are RoHS compliant and compatible.

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

TYPICAL F OPERATING FORCE: 2U: 6.5N (650 grams); 4U: 6.5N (650 grams); 6U: 7.5N (750 grams); 8U: 9.0N (900 grams); 10U: 9.0N (900 grams).

EUROPEAN TYPICAL SF OPERATING FORCE:
2U: 3.5N±0.5N (350 grams±100 grams); 4U: 5N±1N (500 grams±100 grams); 6U: 6.5N±1N (650 grams±100 grams); 8U: 9.0N±1N (900 grams±100 grams).

OPERATING TEMPERATURE RANGE: -40°C to 70°C.

Materials

HOUSING: Polycarbonate UL 94V-0 or polyester UL 94V-0.

ACTUATOR: Polyester UL 94V-0.

MOVABLE CONTACTS: Bimetal brass, silver plated, gold plate over nickel.

STATIONARY CONTACTS & TERMINALS: Brass, silver plated, gold plated.

TERMINAL BOARD: Polyester UL 94V-0.

RETURN SPRING: Music wire.

TERMINAL SEAL: RTV adhesive sealant.

CHASSIS: Steel.

LOCKOUT PIN: Steel.

BLOCKERS: Steel.

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-89 thru A-97. For additional options not shown in catalog, consult Customer Service Center.

If requesting only a switch, select either a North American or European switch as noted below. Chassis and buttons are sold separately. If multiple stations are selected, we will assume all switches are the same unless noted otherwise.

North American Order Code - Switch Only

<div>Designation</div> <div>F F Series</div> <div>FLT Light touch F series</div> <div>ZF Central mounted F series</div>	<div>Contact Arrangement</div> <div>2U 2PDT</div> <div>4U 4PDT</div> <div>6U 6PDT</div> <div>8U SPDT</div> <div>10U 10PDT</div>	<div>Mechanical Function</div> <div>OA Momentary</div> <div>EE Alternate (push-push)</div> <div>GR Interlock</div> <div>AOR Central release</div> <div>OASP Momentary with lockout</div> <div>GRSP Interlock with lockout</div>	<div>Terminal Sealing</div> <div>(NONE) None</div> <div>TB Top/bottom</div>	<div>Terminal Style</div> <div>(NONE) Solder lugs & PC pins</div> <div>01A Cut solder lugs</div> <div>01B Cut PC pins, for other configurations, consult factory</div>	<div>Electrical Function</div> <div>(NONE) BBM Break-Before-Make</div> <div>M MBB (special) Make-Before-Break</div>	<div>Contact Material</div> <div>(NONE) Silver, AG</div> <div>AU Gold</div>	<div>Dress nut*</div> <div>*Central mounted F series only</div> <div>(NONE) No dress nut</div> <div>B Black</div> <div>C Chrome</div>
-------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------



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

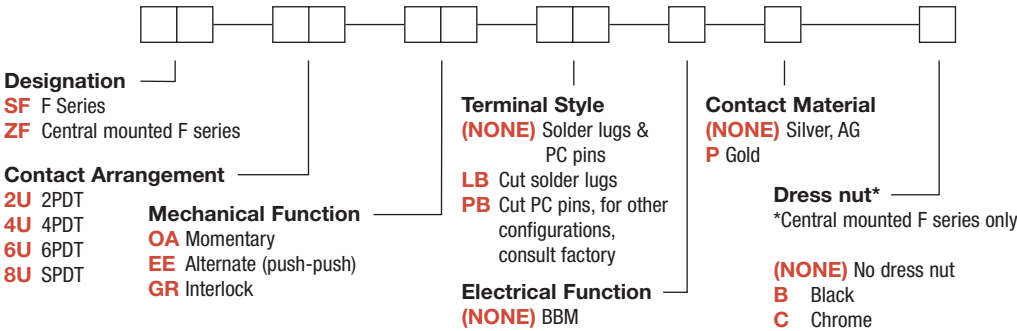
F Series Pushbutton Switches



A

Pushbutton

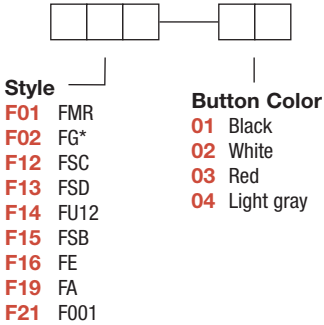
European Order Code - Switch Only



*Minimum order quantities apply.

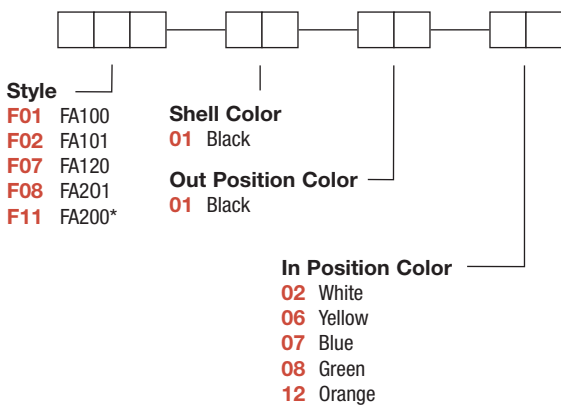
Order Code - Buttons

Solid Buttons



*Button options for central mounting configurations, use 'FG' for central mount with chrome dress nut, use 'FA200' for central mount with black dress nut.

Mechanical Indicator Buttons



BUTTON REMOVAL

A button of a push-push switch should only be removed in the "OFF" non-latching position.



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



A

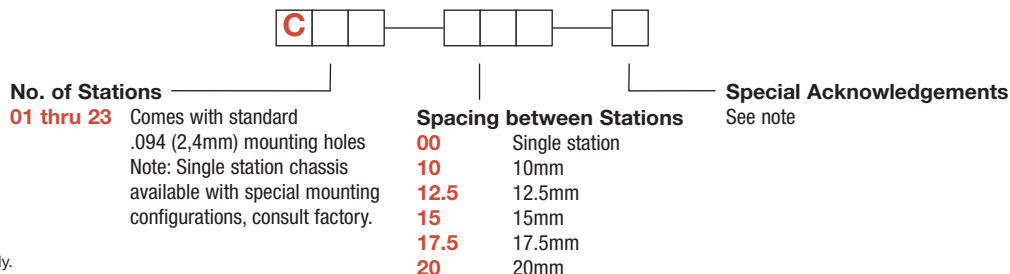
Pushbutton

F Series Pushbutton Switches

Order Code - Chassis

To order a switch with chassis, create the switch part number listed above and add the Chassis part number configurator information at the end of the part number.

Note: We do not guarantee or recommend interlocking beyond 10 stations.

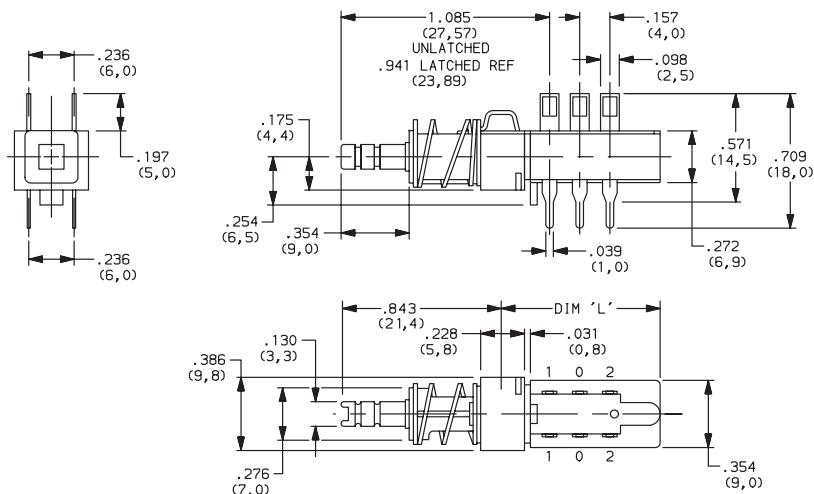


*Minimum order quantities apply.

SWITCHES WITH STANDARD OPTIONS

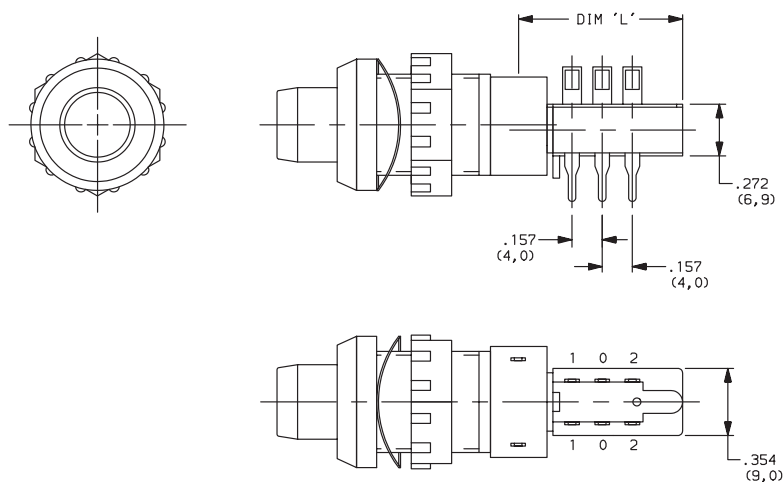
F2UEE

CONTACT ARRANGEMENT	LENGTH DIM 'L'
2U	0.827 (21,00)
4U	1.300 (33,00)
6U	1.770 (45,00)
8U	2.240 (57,00)
10U	2.720 (69,00)



ZF2UEEBF11010108

CONTACT ARRANGEMENT	LENGTH DIM 'L'
2U	0.827 (21,00)
4U	1.300 (33,00)
6U	1.770 (45,00)
8U	2.240 (57,00)
10U	2.720 (69,00)



Third Angle
Projection

C&K

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

F Series Pushbutton Switches



A

Pushbutton

DESIGNATION



Designation, North America

F F Series
FLT Light touch F series
ZF Central mounted F series

Designation, Europe

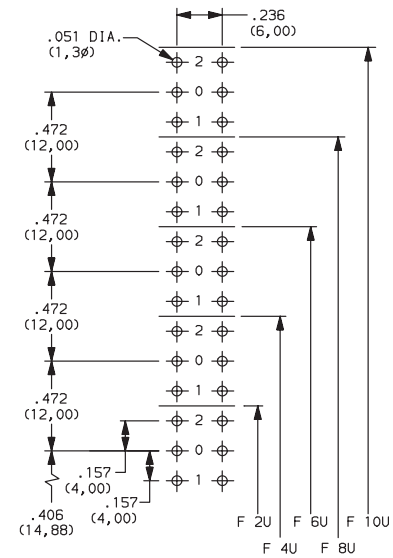
SF F Series
ZF Central mounted F series

CONTACT ARRANGEMENT



OPTION CODE	NO. OF POLES	SCHEMATIC
2U	2PDT	
4U	4PDT	2X
6U	6PDT	3X
8U	8PDT	4X
10U	10PDT	5X

PC MOUNTING



MECHANICAL FUNCTION



North America

OPTION CODE	FUNCTION
OA	Momentary
EE	Alternate (push-push)
GR	Interlock
AOR	Central release
OASP	Momentary with lockout
GRSP	Interlock with lockout

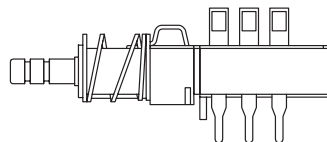
Europe

OPTION CODE	FUNCTION
OA	Momentary
EE	Alternate (push-push)
GR	Interlock

TERMINAL SEALING

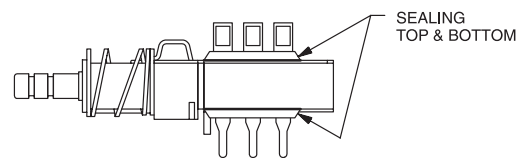


(NONE) NO SEAL

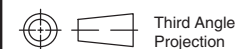


F2UEE shown in example above.

TB TOP & BOTTOM



NOTE: Available for North America only



Third Angle
Projection

C&K

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

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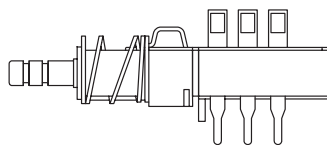
F Series Pushbutton Switches

A

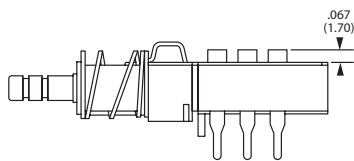
Pushbutton

TERMINAL STYLE

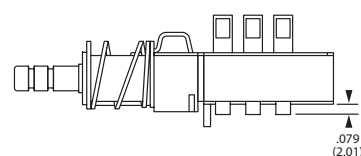
(NONE) SOLDER LUGS & PC PINS



01A CUT SOLDER LUGS (North America)
LB CUT SOLDER LUGS (Europe)



01B CUT PC PINS (North America)
PB CUT PC PINS (Europe)



ELECTRICAL FUNCTION

OPTION CODE	FUNCTION
(NONE)	BBM Non-shorting
M	MBB Shorting (North America only)

CONTACT MATERIAL

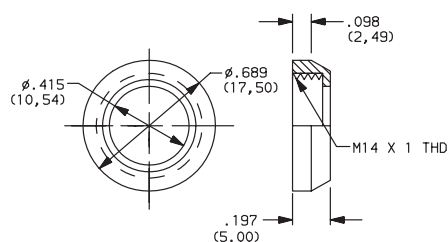
NORTH AMERICA OPTION CODE	EUROPE OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	MATERIAL	RATING
(NONE)	(NONE)	YES	YES	SILVER, AG	50 VA/15 W; 125/30 V; 0.5/0.5 A
AU	P	YES	YES	GOLD	1 VA/300mW; 50/30 V; 0.04 A/0.01 A

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

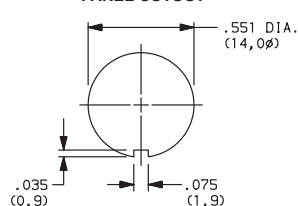
DRESS NUT

(NONE) NO DRESS NUT FOR F & F/LT
DESIGNATIONS

B BLACK

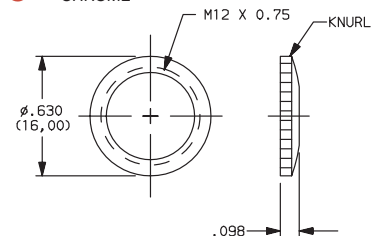


PANEL CUTOUT

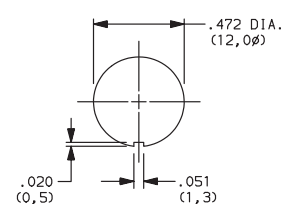


NOTE: Available with ZF designation and FA200 buttons.

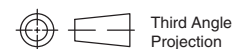
C CHROME



PANEL CUTOUT



NOTE: Available with ZF designation and FG button.



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

C&K

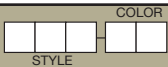
F Series
Pushbutton Switches



A

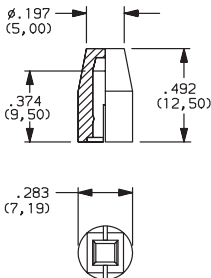
Pushbutton

SOLID BUTTON

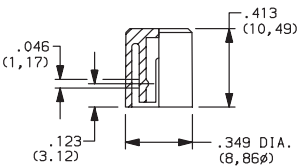


STYLE

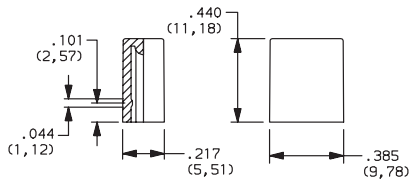
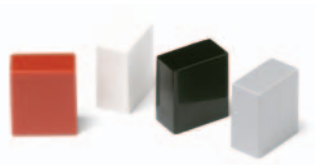
F01 FMR



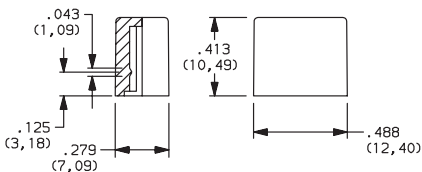
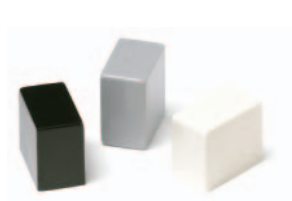
F02 FG



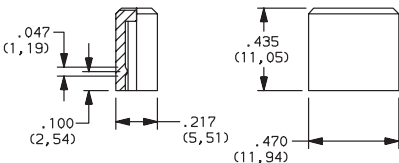
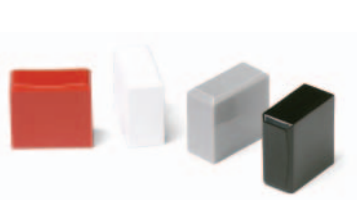
F12 FSC



F13 FSD



F14 FU12



OPTION CODE	COLOR
01	BLACK
02	WHITE
03	RED
04	LT. GRAY



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

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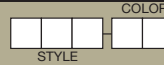


F Series Pushbutton Switches

A

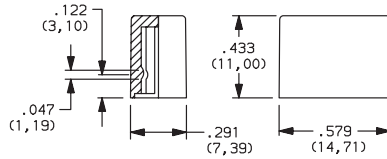
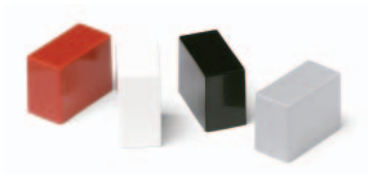
Pushbutton

SOLID BUTTON

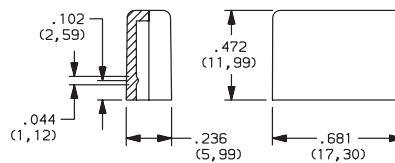


STYLE

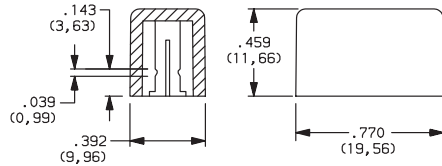
F15 FSB



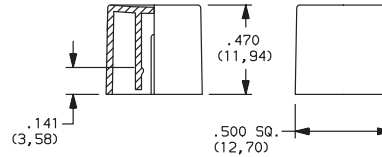
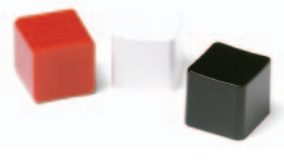
F16 FE



F19 FA

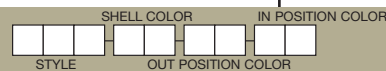


F21 F001



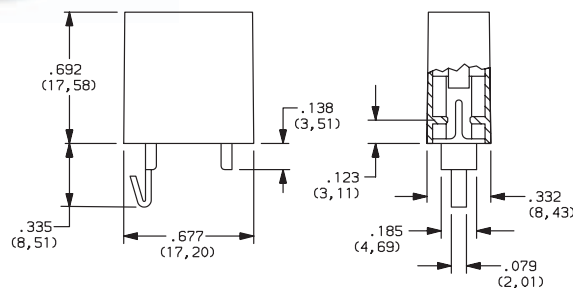
OPTION CODE	COLOR
01	BLACK
02	WHITE
03	RED
04	LT. GRAY

MECHANICAL BUTTON

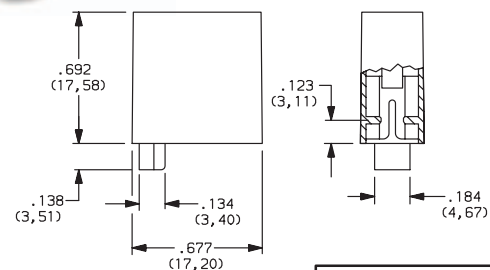


STYLE

F01 FA100



F02 FA101



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

C&K

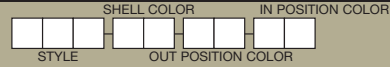
F Series Pushbutton Switches



A

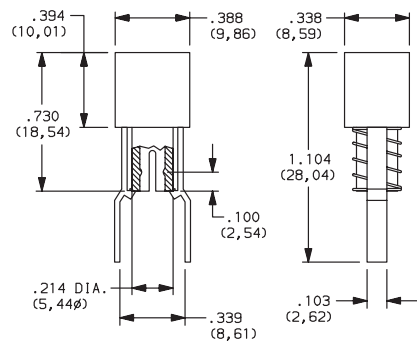
Pushbutton

MECHANICAL BUTTON

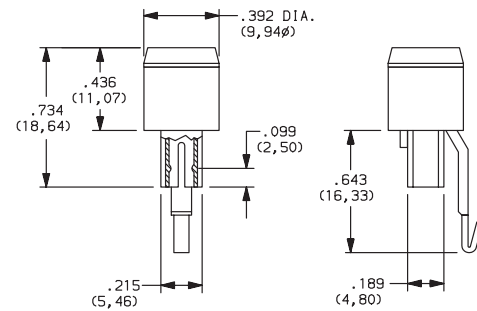


STYLE

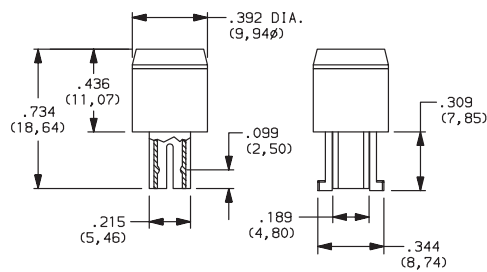
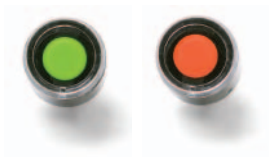
F07 FA120



F08 FA201



F11 FA200



SHELL COLOR

01 BLACK

OUT POSITION COLOR

01 BLACK

IN POSITION COLOR

OPTION CODE	COLOR
02	WHITE
06	YELLOW
07	BLUE
08	GREEN
12	ORANGE

C&K



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

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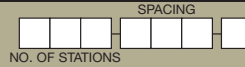


F Series Pushbutton Switches

A

Pushbutton

CHASSIS



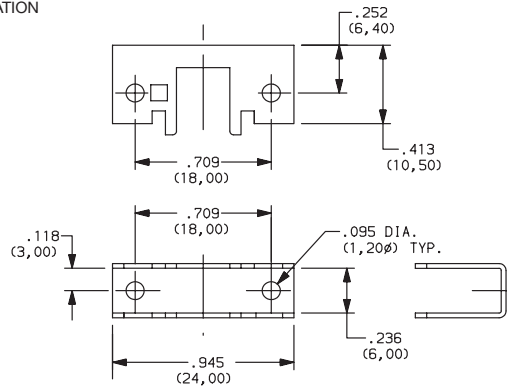
NUMBER OF STATIONS

C00 Thru C10 Comes with standard 0.094 (2,44mm) mounting holes

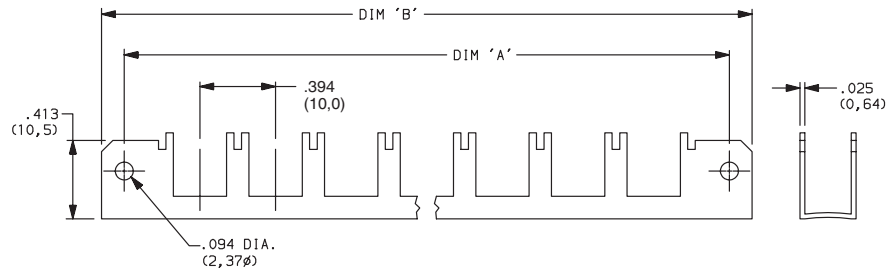
NOTE: Single station chassis available with mounting configurations, consult factory.

SPACING

00 SINGLE STATION

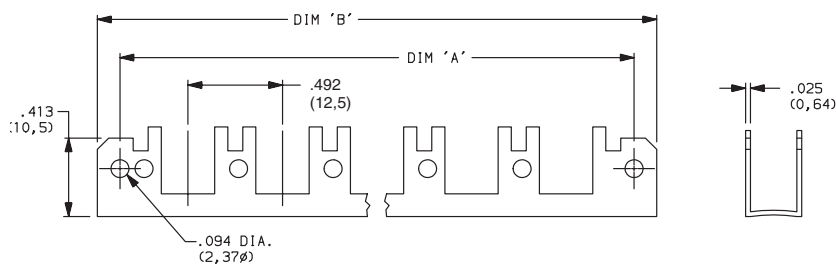


10 10mm



No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.182 (30,02)	1.418 (36,02)	0.005
3	1.575 (40,01)	1.811 (46,00)	0.010
4	1.969 (50,01)	2.205 (56,01)	0.010
5	2.363 (60,02)	2.599 (66,01)	0.010
6	2.757 (70,03)	2.993 (76,02)	0.015
7	3.150 (80,01)	3.386 (86,00)	0.015
8	3.544 (90,02)	3.780 (96,01)	0.015
9	3.938 (100,03)	4.174 (106,02)	0.015
10	4.331 (110,01)	4.567 (116,00)	0.015

12.5 12.5mm



No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.200 (30,48)	1.436 (36,47)	0.005
3	1.692 (42,98)	1.928 (48,97)	0.010
4	2.184 (55,47)	2.420 (61,47)	0.010
5	2.676 (67,97)	2.912 (73,96)	0.010
6	3.169 (80,49)	3.405 (86,49)	0.015
7	3.661 (92,99)	3.897 (98,98)	0.015
8	4.153 (105,49)	4.389 (111,48)	0.015
9	4.645 (117,98)	4.881 (123,98)	0.015
10	5.137 (130,48)	5.373 (136,47)	0.015



Third Angle
Projection

C&K

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

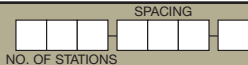
F Series Pushbutton Switches



A

Pushbutton

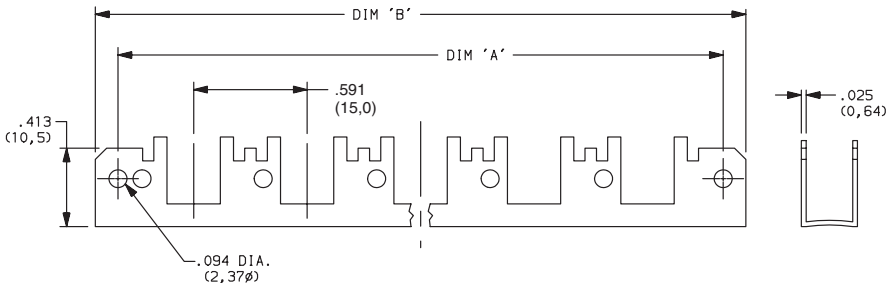
CHASSIS



SPACING

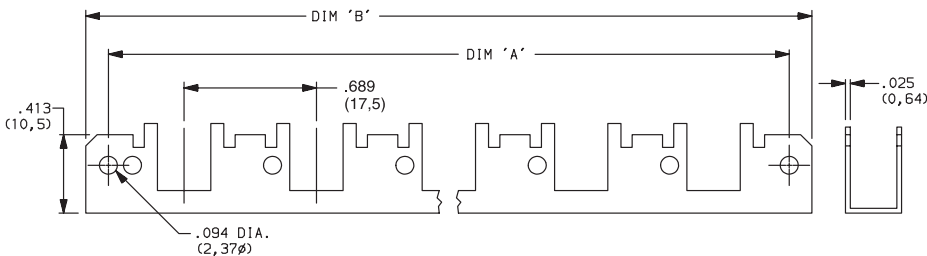
15 15mm

No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.374 (34,90)	1.615 (41,02)	0.005
3	1.969 (50,01)	2.205 (56,01)	0.010
4	2.560 (65,02)	2.796 (71,02)	0.010
5	3.150 (80,01)	3.386 (86,00)	0.010
6	3.741 (95,02)	3.977 (101,02)	0.015
7	4.332 (110,03)	4.568 (116,03)	0.015
8	4.922 (125,02)	5.158 (131,01)	0.015
9	5.513 (140,03)	5.749 (146,02)	0.015
10	6.103 (155,02)	6.339 (161,01)	0.015



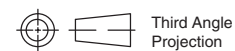
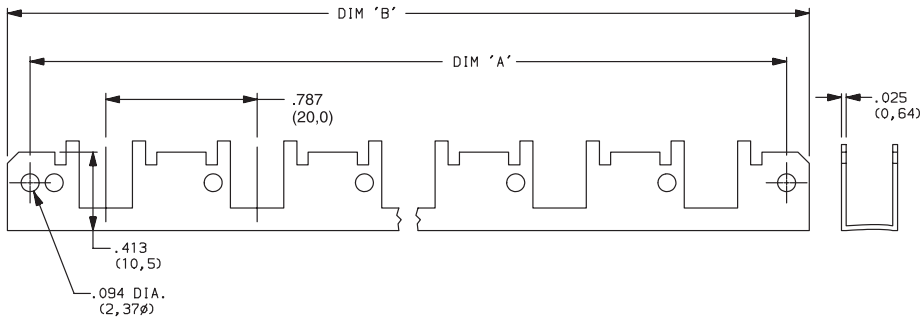
17.5 17.5mm

No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.477 (37,52)	1.713 (43,51)	0.005
3	2.166 (55,02)	2.402 (61,01)	0.010
4	2.855 (75,52)	3.091 (78,51)	0.010
5	3.544 (90,02)	3.780 (96,01)	0.010
6	4.233 (107,52)	4.469 (113,51)	0.015
7	4.922 (125,02)	5.158 (131,01)	0.015
8	5.611 (142,52)	5.847 (148,51)	0.015
9	6.300 (160,02)	6.536 (166,01)	0.015
10	6.989 (177,52)	7.225 (183,52)	0.015



20 20mm

No. of Stations	Dim. 'A'	Dim. 'B'	Tolerance
2	1.575 (40,01)	1.811 (46,00)	0.005
3	2.363 (60,02)	2.599 (66,01)	0.010
4	3.150 (80,01)	3.386 (86,00)	0.010
5	3.938 (100,03)	4.174 (106,02)	0.010
6	4.725 (120,02)	4.961 (126,01)	0.015
7	5.512 (140,00)	5.748 (146,00)	0.015
8	6.300 (160,02)	6.536 (166,01)	0.015
9	7.087 (180,01)	7.323 (186,00)	0.015
10	7.875 (200,03)	8.111 (206,02)	0.015



Third Angle
Projection

C&K

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

**A****Pushbutton**

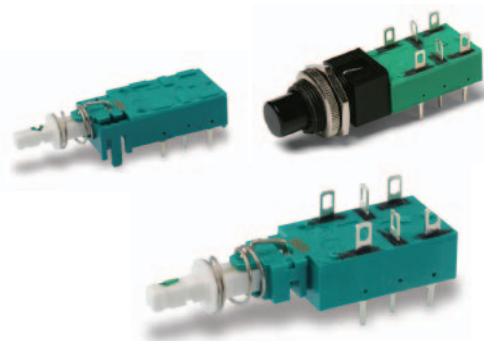
NE-18 Series Mains / Power Switches

Features/Benefits

- Chassis or panel mount
- Various buttons
- Various contact configurations
- RoHS compliant

Typical Applications

- Mains/power switching
- Consumer electronics
- Audio equipment
- Digital products



Specifications

POWER CONTACT:

SWITCHING POWER MAX. AC/DC: NE18: 1500/100 W,
NE18CTII: 1000/100 W; AC (Inductive $\cos \phi = 0.6$): NE18: 900W,
NE18CTII: 600W.

SWITCHING VOLTAGE MAX. AC/DC: 250/100V

SWITCHING CURRENT MAX. AC/DC

AC (Inductive $\cos \phi = 0.6$): NE18: $6 A^2/1 A$, NE18CTII: $4 A^2/1 A$

INRUSH CURRENT MAX. AC¹: NE18: 36 A, NE18CTII: 64 A

DIELECTRIC STRENGTH (50 Hz, 1 min.): 2000 V

OPERATING LIFE AT MAX. LOAD AND AT MAX. INRUSH
CURRENT: $\sim 10^4$ operations⁵

CONTACT RESISTANCE: Initial: 50m Ω ; After 10^4 operations: 70m Ω .

INSULATION RESISTANCE: $\sim 10^{12} \Omega$ chassis – nearest contact;
 $\sim 10^{12} \Omega$ mains contact – mains contact; $\sim 10^{12} \Omega$ mains contact –
mains contact after 10^4 operations.

LOW VOLTAGE CONTACT:

SWITCHING POWER MAX.: 12W

SWITCHING VOLTAGE MAX.: 24V

SWITCHING CURRENT MAX.: 0.5A

TOTAL TRAVEL: 4.7mm (.185 inch)

LATCHING TRAVEL: 3.3mm (.130 inch)

OPERATING FORCE: Without auxiliary low voltage contacts:

NE18: 7N (700 grams); NE18CTII: 9.5N (950 grams).

With auxiliary low voltage contacts: NE18: 8N (800 grams);

NE18CTII: 11N (1100 grams).

SEALING: Dust proof.

Materials

HOUSING, ACTUATOR & TERMINAL BOARD: Thermoplastic
polyester (UL 94V-0).

MOVABLE CONTACT: Silver nickel alloy, silver plated.

FIXED CONTACTS: Silver nickel alloy, silver plated.

COMMON CONTACTS & TERMINALS: Copper alloy, silver plated.

RETURN SPRING: Music wire.

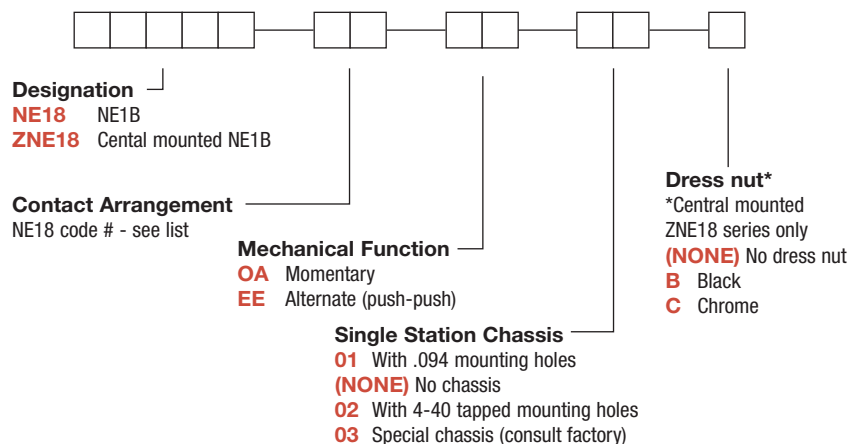
NOTE: All models are RoHS compliant and compatible.

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

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-99 thru A-106. For additional options not shown in catalog, consult Customer Service Center.

If requesting only a switch, select the switch as noted below. Buttons are sold separately.



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

NE-18 Series Mains / Power Switches



A

Pushbutton

Order Code - Buttons

Solid Buttons

Style	Button Color
F01 FMR	01 Black
F02 FG*	02 White
F12 FSC	03 Red
F13 FSD	04 Light gray
F14 FU12	
F15 FSB	
F16 FE	
F19 FA	
F21 F001	

Mechanical Indicator Buttons

Style	Shell Color	Out Position Color	In Position Color
F01 FA100	01 Black	01 Black	02 White
F02 FA101			06 Yellow
F07 FA120			07 Blue
F08 FA201			08 Green
F11 FA200*			12 Orange

*Button options for central mounting configurations, use 'FG' for central mount with chrome dress nut, use 'FA200' for central mount with black dress nut.

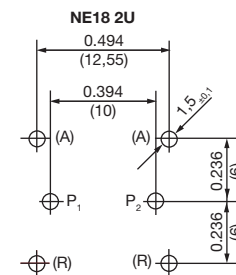
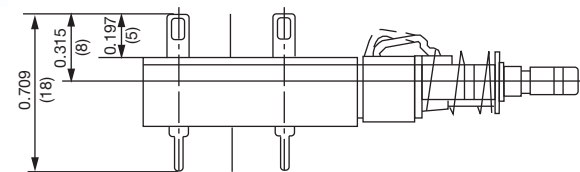
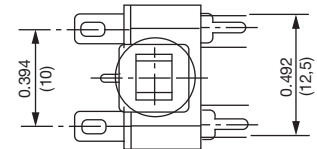
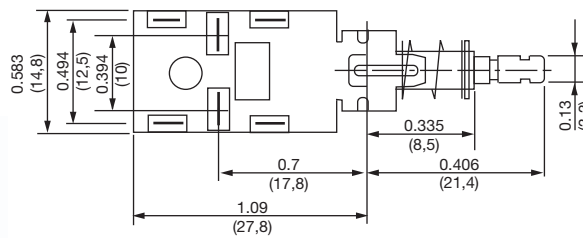
BUTTON REMOVAL

A button of a push-push switch should only be removed in the "OFF" non-latching position.

DESIGNATION & SWITCHES WITH STANDARD OPTIONS



NE1838EE



C&K

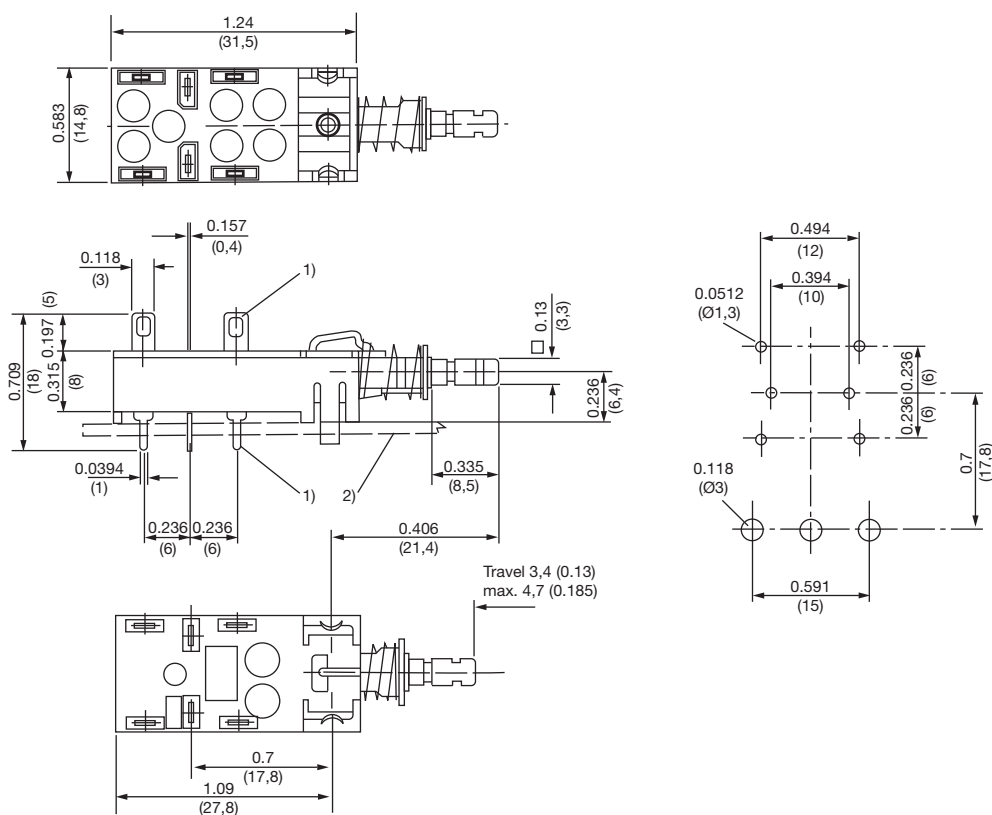


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

www.ck-components.com



DESIGNATION & SWITCHES WITH STANDARD OPTIONS



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

NE-18 Series Mains / Power Switches



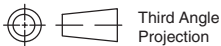
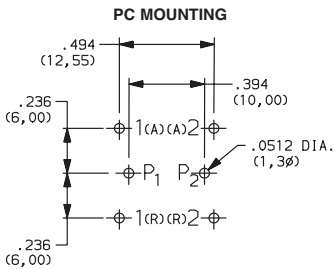
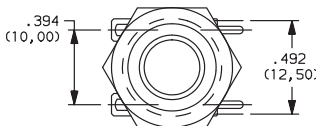
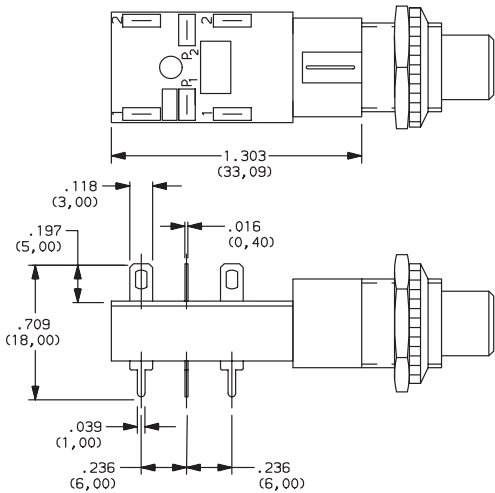
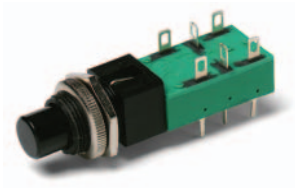
A

Pushbutton

DESIGNATION & SWITCHES WITH STANDARD OPTIONS



ZNE1838EECF0201



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

www.ck-components.com



A

Pushbutton

NE-18 Series Mains / Power Switches

CONTACT ARRANGEMENT



OPTION CODE Contact capacity and availability	STYLE	ELECTRICAL CIRCUIT
37	NE18 — 2AX	DPST
38	NE18 — 2UX	DPDT
51	2U + NE18 — 2AX	DPST*
52 (4A/64)	NE18CTII — 2AX	DPST
39	2U + NE18 — 2UX	DPDT*
41	NE18 — 2AP	DPST
42	NE18 — 2UP	DPDT
43	NE18 — 2AW	DPST
44	NE18 — 2UW	DPDT
45	NE18 — 2ASX	DPST

* 2U + Denotes auxiliary set of low current contacts DPDT
 2A = DPST
 2U = DPDT
 S = Snap-in mounting
 X = Solder lug/PC pins
 W = Solder lugs only
 P = PC pins only

OPTION CODE Contact capacity and availability	STYLE	ELECTRICAL CIRCUIT
46	NE18 — 2USX	DPDT
47	NE18 — 2ASP	DPST
48	NE18 — 2USP	DPDT
49	NE18 — 2ASW	DPST
50	NE18 — 2USW	DPDT
53 (4A/64)	2U + NE18CTII — 2AX	DPST
54	2U + NE18 — 2AW	DPST
55	2U + NE18 — 2AP	DPST
56	2U + NE18 — 2UW	DPDT
57	2U + NE18 — 2UP	DPDT

NOTES

1. Contact plating is silver on all Power Switches.
2. The electrical function is Break Before Make (BBM) on all Power Switches.
3. The terminals will be epoxy sealed.

TYPE	POSSIBLE CONTACT ARRANGEMENT		CONTACT SPACING	PROTECTION CLASS (CEE 24)	APPROVALS
	POWER CONTACTS ¹	AUXILIARY CONTACTS			
NE18	2A ²	2U	> 3mm (.118 inch)	II	VDE, UL
NE18	2A ² 2U	2U	> 3mm (m) (.118 inch)	I	VDE, UL
NE18CTII	2A ²	2U	> 3mm (.118 inch)	II	VDE, UL

- 1) A = make contact, R = break contact, U = changeover contact, m = VDE sign for switches with a contact spacing (air gap) < 3mm (.118 inch) according to VDE 0630/CEE 24.
 2) With 2A mains contacts: Mounting only by PC pins is not sufficient.
 3) BSI only for 2U mains contacts.

MECHANICAL FUNCTION



OPTION CODE	FUNCTION
OA	Momentary
EE	Alternate (push-push)



Third Angle
Projection

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

NE-18 Series Mains / Power Switches



A

Pushbutton

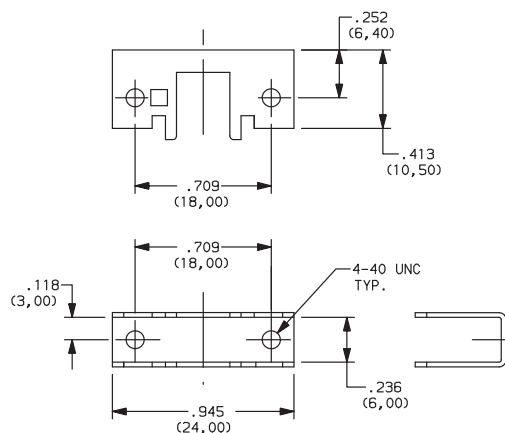
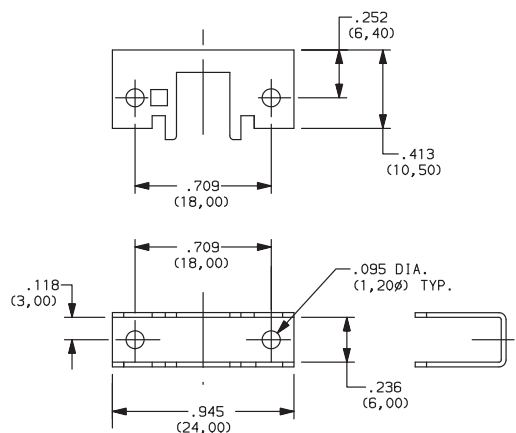
SINGLE STATION CHASSIS



01 WITH .094 MOUNTING HOLES

(NONE) NO CHASSIS

02 WITH 4-40 TAPPED MOUNTING HOLES



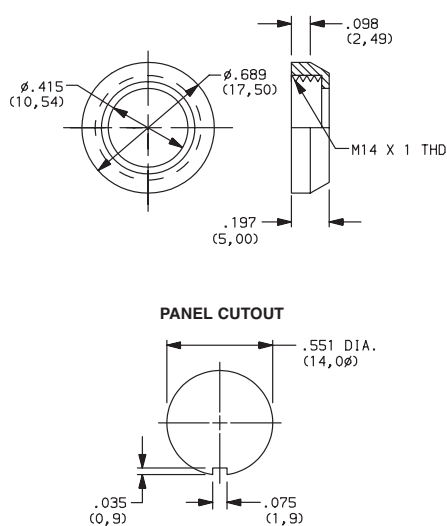
03 SPECIAL CHASSIS (CONSULT FACTORY)

DRESS NUT



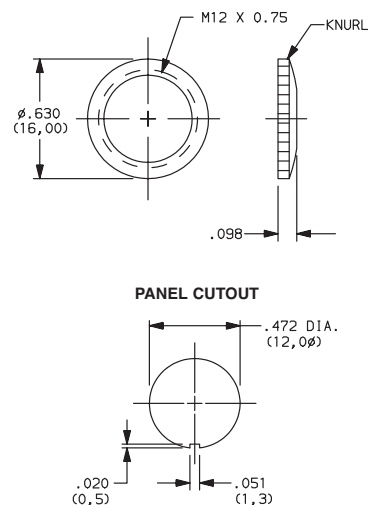
(NONE) NO DRESS NUT

B BLACK



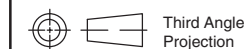
NOTE: Available with ZNE18 designation and FA200 buttons.

C CHROME



NOTE: Available with ZNE18 designation and FG button.

C&K



Third Angle
Projection

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

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NE-18 Series Mains / Power Switches

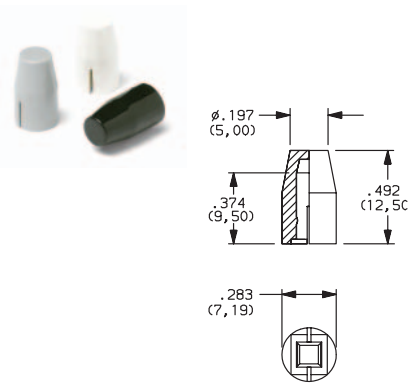
SOLID BUTTON



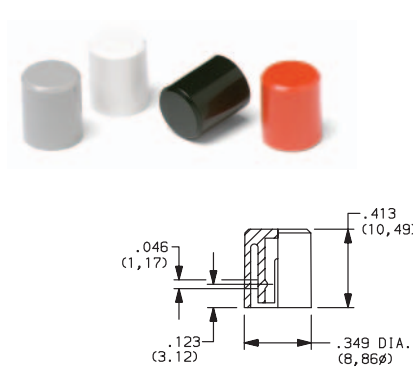
Pushbutton
A

STYLE

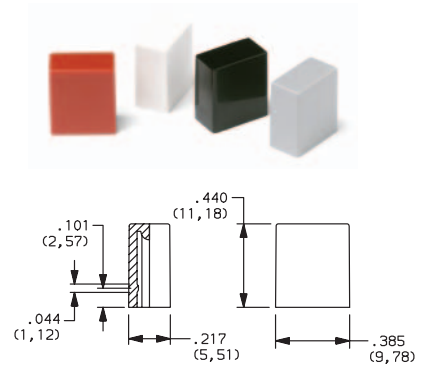
F01 FMR



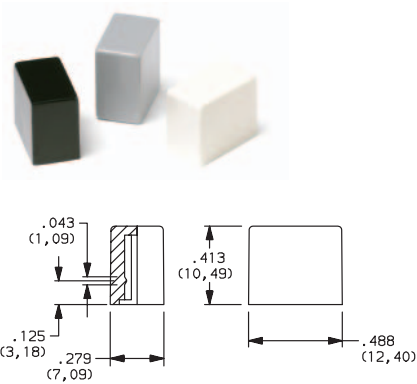
F02 FG



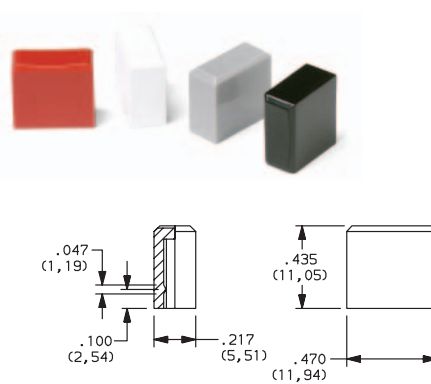
F12 FSC



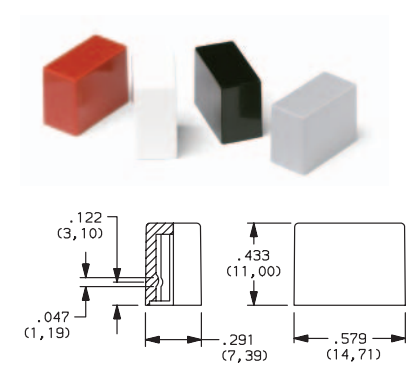
F13 FSD



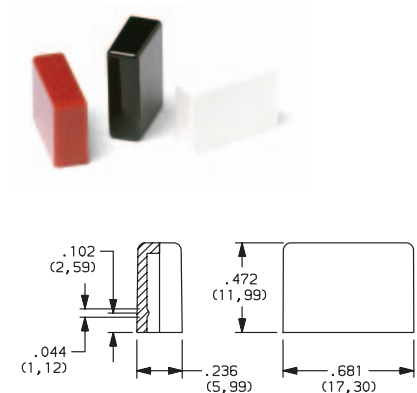
F14 FU12



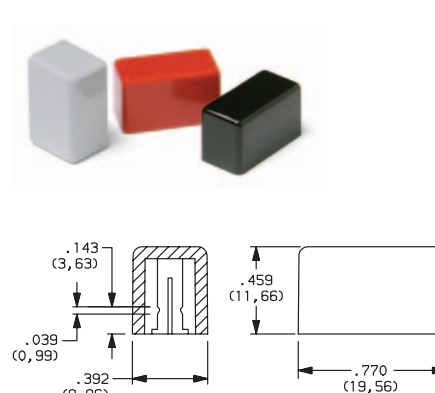
F15 FSB



F16 FE



F19 FA



OPTION CODE	COLOR
01	BLACK
02	WHITE
03	RED
04	LT. GRAY

C&K



Third Angle
Projection

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

www.ck-components.com

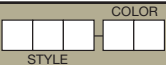
NE-18 Series Mains / Power Switches



A

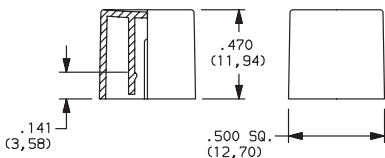
Pushbutton

SOLID BUTTON



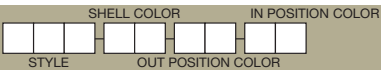
STYLE

F21 F001



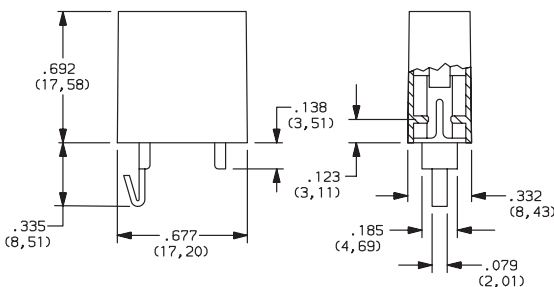
OPTION CODE	COLOR
01	BLACK
02	WHITE
03	RED
04	LT. GRAY
09	BLACK/CHROME (F03, F06 & F07 buttons only)

MECHANICAL BUTTON

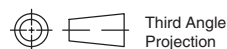
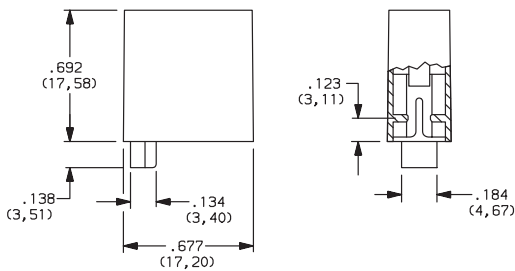


STYLE

F01 FA100



F02 FA101



Third Angle
Projection

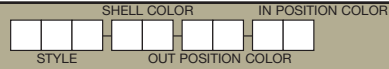
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

www.ck-components.com



NE-18 Series Mains / Power Switches

MECHANICAL BUTTON

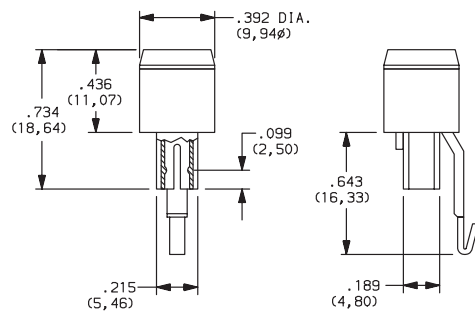


Pushbutton

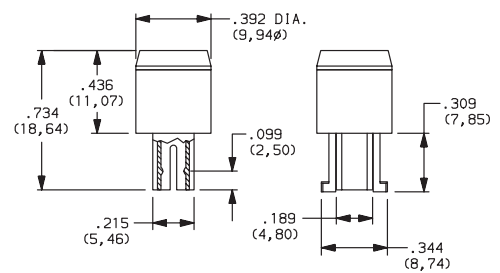
A

STYLE

F08 FA201



F11 FA200



SHELL COLOR

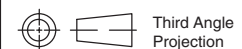
01 BLACK

OUT POSITION COLOR

01 BLACK

IN POSITION COLOR

OPTION CODE	COLOR
02	WHITE
06	YELLOW
07	BLUE
08	GREEN
12	ORANGE



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

NEW!

FP Series Sealed Ultra Miniature Pushbutton Switches



A

Pushbutton

Features/Benefits

- Vertical and right angle mount
- Extended operating life 50,000 cycles
- Optional caps
- Sealed against soldering and cleaning processes
- RoHS compliant

Typical Applications

- Networking equipment
- Modems
- Reset functions
- Instrumentation



Specifications

CONTACT RATING: Max. 0.4 VA (28 V DC or V AC).

ELECTRICAL LIFE: 50,000 cycles.

CONTACT RESISTANCE: (10mA @ 2 V DC) 80 mΩ max. initial.

INSULATION RESISTANCE: 500MΩ min. @ 500 V DC - 1 minute.

OPERATING TEMPERATURE: -20°C to 80°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or

EIA RS-186E method 9.

PACKAGING:

Tray pack - 100 switches per tray.

Caps (optional) - Bulk bag; 100 caps per bag.

Materials

MOVABLE CONTACTS:

Base metal: Phosphor bronze

Plating: Gold over nickel plate

FIXED CONTACTS:

Base metal: Brass

Plating: Gold over nickel plate

COVER: PA66 - Black

ACTUATOR: PPS - Black

BASE: PPS - Black

SUPPORT BRACKET (A1 Terminal Style only): Steel with tin plate

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

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-108 thru A-109. For additional options not shown in catalog, consult Customer Service Center.

	F	P	1	1	S	P			B	1	T	P		
Designation														
FP11	SPST N.O.													
Actuator Length														
SP	Standard plunger 3.3mm													
Terminal Style														
C1	Vertical													
A1	Right Angle													
Contact Plating														
B1	Gold over nickel plate													
Packaging														
TP	Tray packaging													
Cap														
00	No cap													
01	White cap - bulk bagged													
02	Black cap - bulk bagged													
03	Red cap - bulk bagged													



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



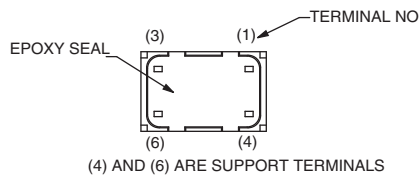
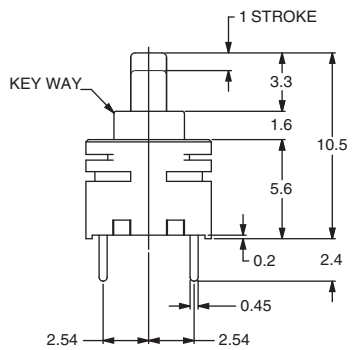
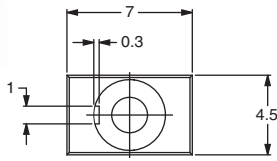
A

Pushbutton

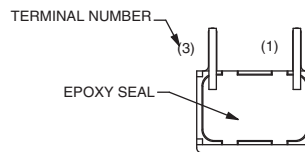
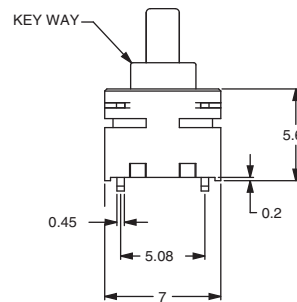
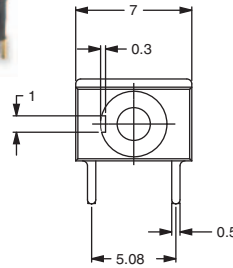
FP Series Sealed Ultra Miniature Pushbutton Switches **NEW!**

SWITCH FUNCTION

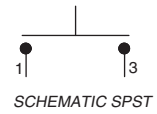
C1 VERTICAL



A1 RIGHT ANGLE

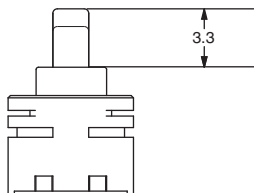


MODEL NO.	SWITCH FUNCTION	
	POS. 1	POS. 2
FP11		
	OFF	MOM
	CONNECTED TERMINALS	
	OPEN	1-3

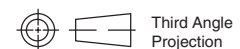


ACTUATOR LENGTH

SP STANDARD PLUNGER 3.3MM



C&K



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

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NEW!

FP Series Sealed Ultra Miniature Pushbutton Switches

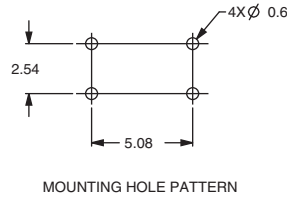
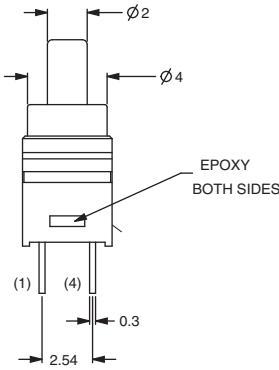


A

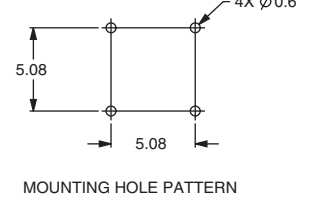
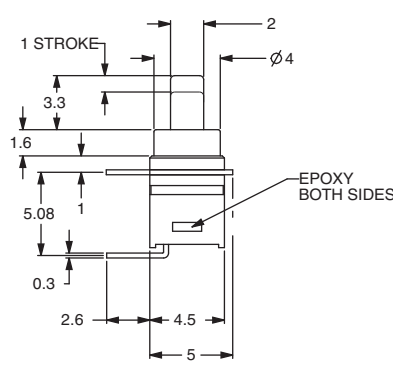
Pushbutton

TERMINAL STYLE

C1 VERTICAL



A1 RIGHT ANGLE



CONTACT PLATING

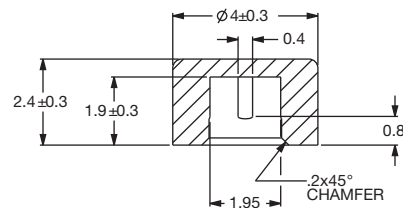
B1 GOLD OVER NICKEL PLATE

PACKAGING

TP TRAY PACKAGING

CAPS

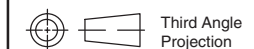
OPTION CODE	DESCRIPTION
00	NO CAP
01	WHITE CAP, BULK BAGGED
02	BLACK CAP, BULK BAGGED
03	RED CAP, BULK BAGGED



To purchase Caps separately without switch,
please use these part numbers

PART #	COLOR
798D01000	WHITE
798D02000	BLACK
798D03000	RED

C&K



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

www.ck-components.com



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
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 $50 \text{ m}\Omega$ 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
WIRE LEADS: UL1569 Black 22 AWG

Operating Environment

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

Process Environment

SEALING: IP67 for threaded body
IP65 for snap-in version (no panel seal)

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 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)	Termination Z Solder Lug W 12" Wire Leads 22 AWG C*** PC Terminals	Bushing Style** S** Snap-in plastic T Threaded plastic	Terminal Seal E Epoxy All models are epoxy sealed	Contact Material B Gold
-------------------------------------------	--------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------	-----------------------------------------------------------------------	------------------------------------------

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

* No LED available in short body only

** No panel seal option
*** PC terminals not available with illumination

Contact Customer Service for additional hardware options.



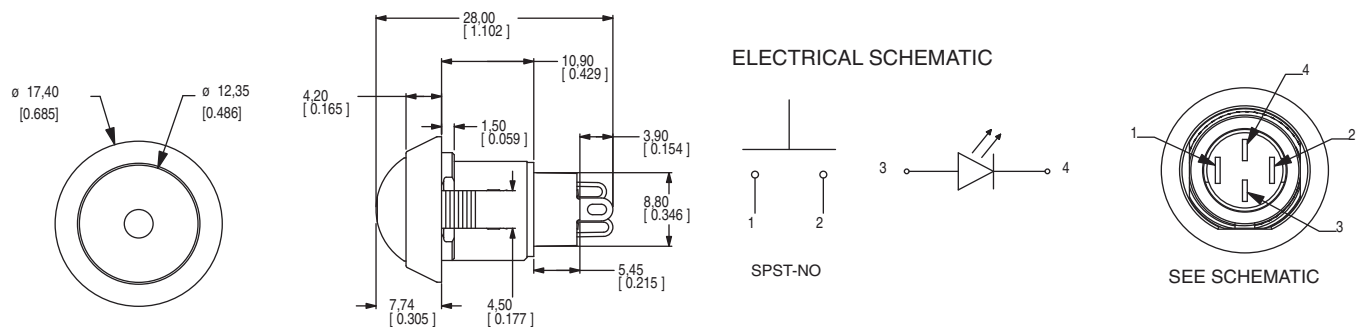
AP Series
Industrial Pushbutton Switch



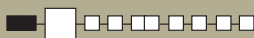
A

Pushbutton

STANDARD VIEW

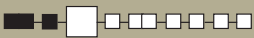


OPERATING FORCE

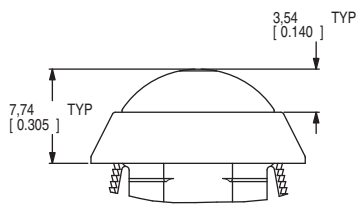


OPTION CODE	OPERATING FORCE
2	2 N, 200 g
4	4 N, 400 g

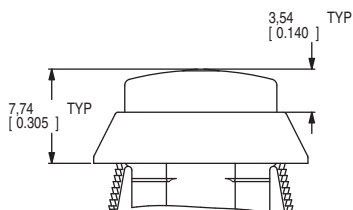
ACTUATOR STYLE



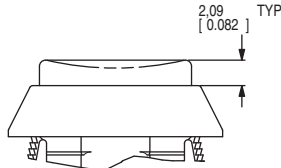
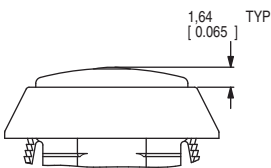
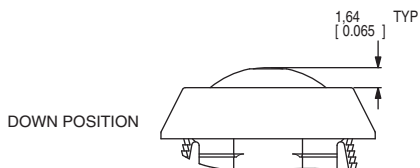
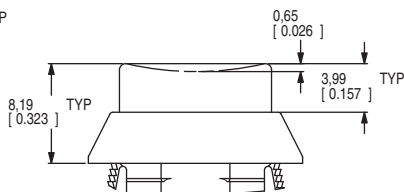
D DOME / CONVEX



E EXTENDED DOME



C CONCAVE

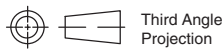


ACTUATOR COLOR



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



12 Feb 14

A-111

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

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**A****Pushbutton**

AP Series Industrial Pushbutton Switch

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

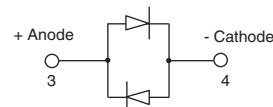
LED FORWARD VOLTAGE: see chart above

LED REVERSE VOLTAGE: 5.0 V MAX

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

NOTE:

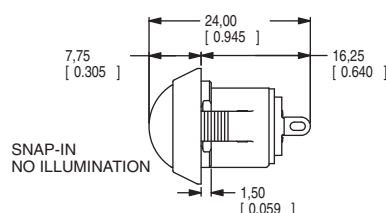
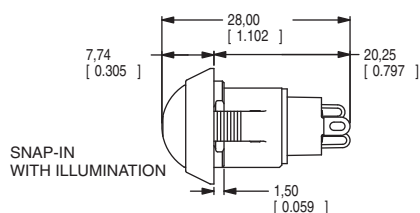
For bi-color LED's the polarity must be reversed to alternate the color



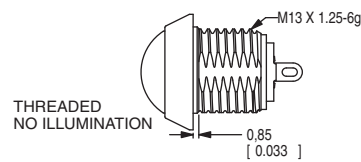
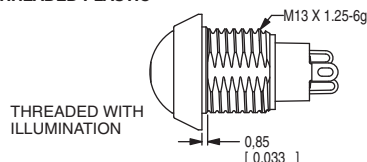
BUSHING STYLE



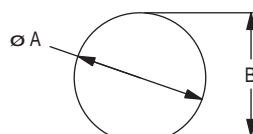
S SNAP-IN



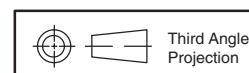
T THREADED PLASTIC



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]



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

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

AP Series Industrial Pushbutton Switch

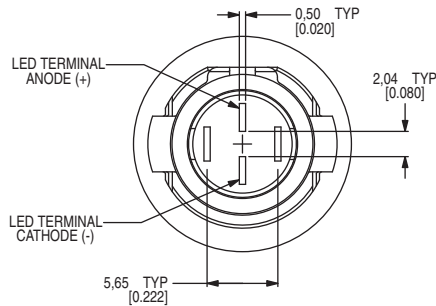
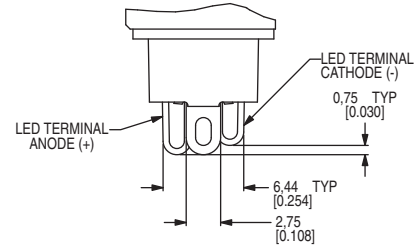
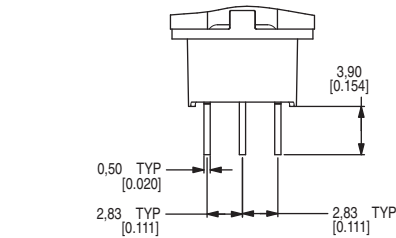


A

Pushbutton

TERMINATION

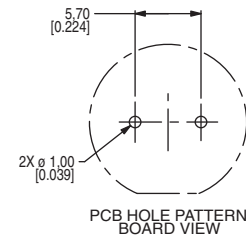
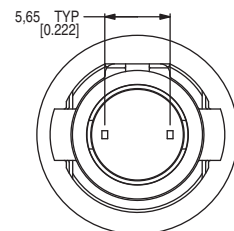
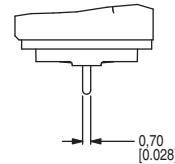
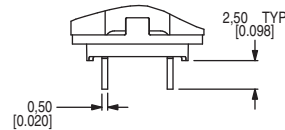
Z SOLDER LUG



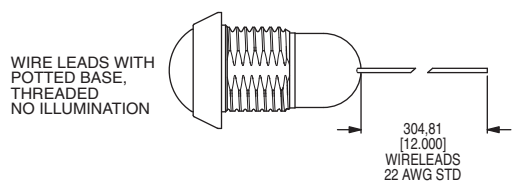
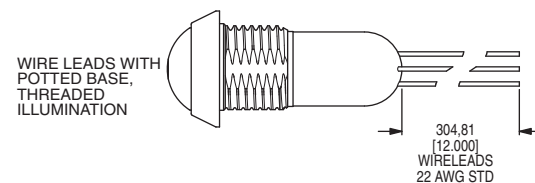
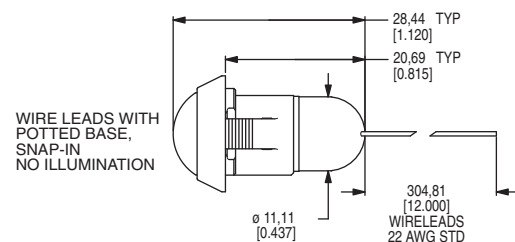
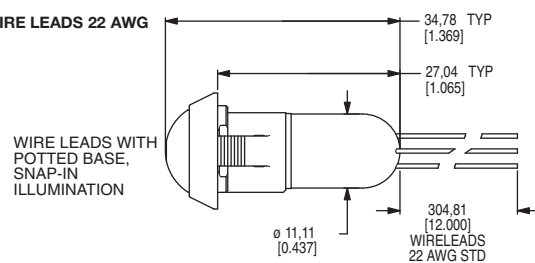
* Switching terminals are gold and LED terminals are silver

C PC TERMINALS

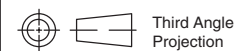
*** Illumination not available with PC Terminals



W 12" WIRE LEADS 22 AWG



Wires: Black wires - Terminals
Red wires - LED (+) Positive
White wire - LED (-) Negative



C&K

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A-113

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

www.ck-components.com



AP Series Industrial Pushbutton Switch

A

Pushbutton

CONTACT MATERIAL



B GOLD

OPTION CODE	CONTACT MATERIAL
B	Gold

TERMINAL SEAL



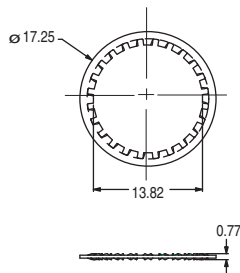
E EPOXY

All models are epoxy sealed

HARDWARE

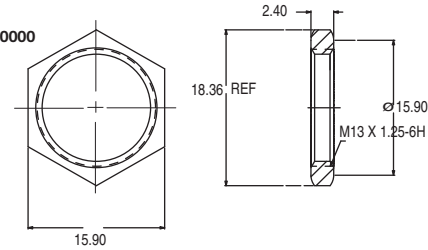
LOCK WASHER

Part Number 647D00000



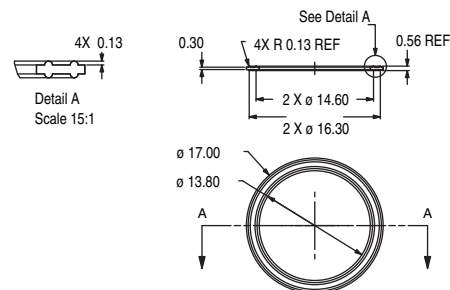
HEX NUT

Part number 515D00000



PANEL SEAL

Part Number 655D00000

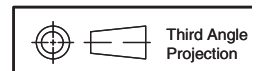


Caps available on next page



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A-114



Third Angle
Projection

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

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AP Series Industrial Pushbutton Switch



A

Pushbutton

AVAILABLE CAPS



481D XX XXX

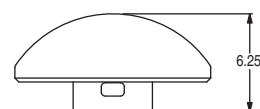
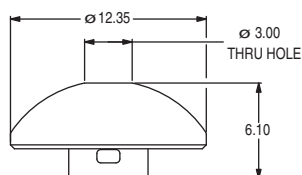
Cap Color
Style

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

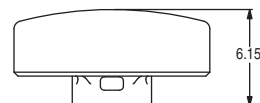
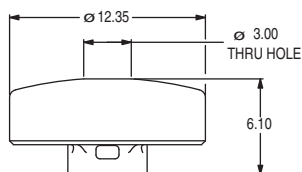
DOME

481DXX000 = NO HOLE
481DXX001 = HOLE



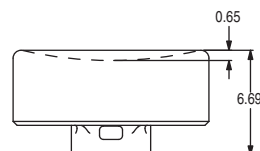
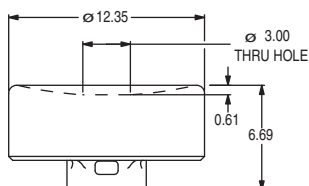
EXTENDED DOME

481DXX002 = NO HOLE
481DXX003 = HOLE



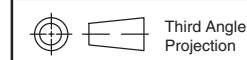
CONCAVE

481DXX004 = NO HOLE
481DXX005 = HOLE



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A-115



Third Angle
Projection

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

www.ck-components.com



Features/Benefits

- ## Typical Applications

- 

CASE / BUSHING: Anodized Aluminum
INSIDE HOUSING: PBT
CAP: PBT
ACTUATOR: PBT

OPERATING TEMPERATURE: -40°C to 85°C
OPERATING LIFE: 10,000,000 cycles
SEALING: IP68S

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

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



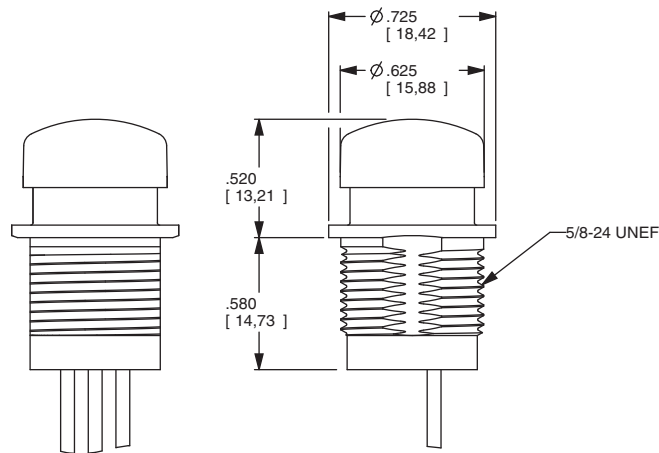
HP Series Hall Effect Pushbutton Switch



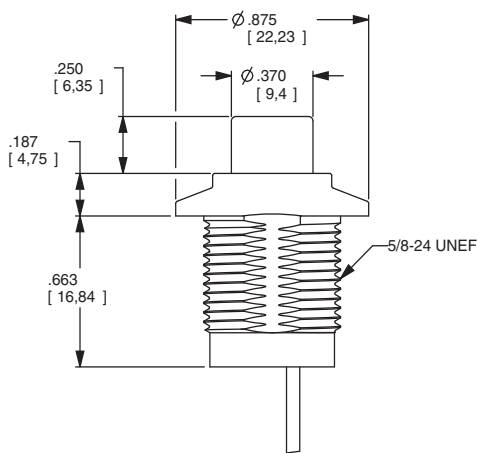
A

Pushbutton

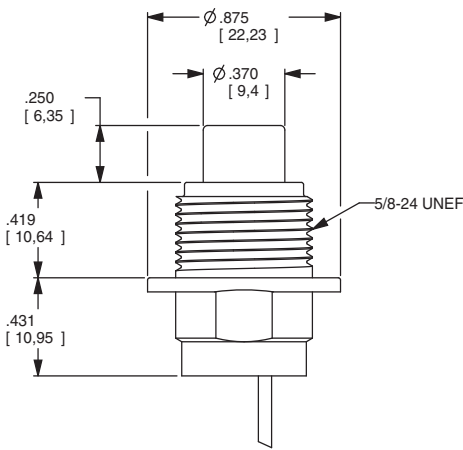
STANDARD VIEW



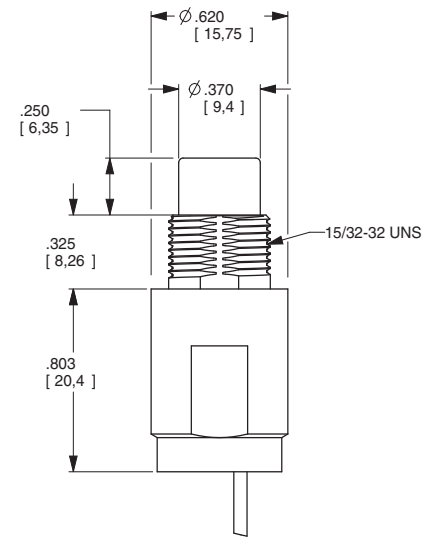
HP11



HP12



HP22



HP32

FIGURE 1: OUTPUT VOLTAGE

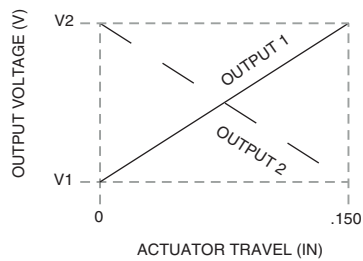
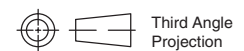
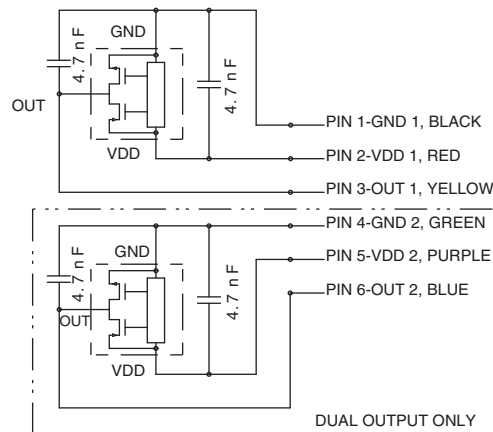


FIGURE 2- SCHEMATIC



Third Angle
Projection



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

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**A****Pushbutton**

NP Series Sealed Industrial Pushbutton Switch

Features/Benefits

- IP68 sealed
- 1,000,000 life cycle
- Multiple housing styles
- Capable of up to 5A resistive load
- Wirelead options available
- RoHS compliant

Typical Applications

- Harsh environments
- Off-Road
- Industrial
- Transportation
- Military



Specifications

FUNCTION: SPDT Double Break (Form Z) Momentary
CONTACT ARRANGEMENT: N.O. and N.C.
MOUNTING TYPE: Threaded front or rear mount and slot mount
TORQUE SPEC FOR THREADED BODY: Do not exceed 50 in-lbs (5.65 N-m)

Mechanical

OPERATING LIFE: 1,000,000 cycles
TOTAL TRAVEL: 1.6 ± 0.15 mm
OPERATING POINT 0.9 ± 0.25 mm
OVER TRAVEL: 0.45 min.
OPERATING FORCE: 8N ± 1.5N
VIBRATION: 10-500 Hz 10g Max
SHOCK: 50g 11ms sawtooth wave

Electrical

CONTACT RATING:
Option G - Gold over Silver
10mA/5 VDC (1,000,000 cycles)
Option Q - Silver
1A/32 VDC resistive (100,000 cycles)
5A/32 VDC resistive (25,000 cycles)
3A/32 VDC resistive (25,000 cycles)

Electrical (cont.)

DIELECTRIC STRENGTH: 1000 V AC for 1 min.
INSULATION RESISTANCE: 1 G Ω @ 500 VDC
INITIAL CONTACT RESISTANCE 50 mΩ max (without wire leads)
BOUNCE TIME: <5 ms

Materials

HOUSING: 6061-T6 Aluminum, black or clear anodized
BASE: PBT
CAP: PBT
ACTUATOR: PBT
INTERNAL SEAL: Silicone rubber
TERMINALS: Copper with silver nickel inlay, silver plating
MOVABLE CONTACT: Copper alloy, gold over silver plating
TERMINAL SEAL: Epoxy

Operating Environment

OPERATING TEMPERATURE: -40°C to +85°C
ESD PROTECTION: 15KV min.

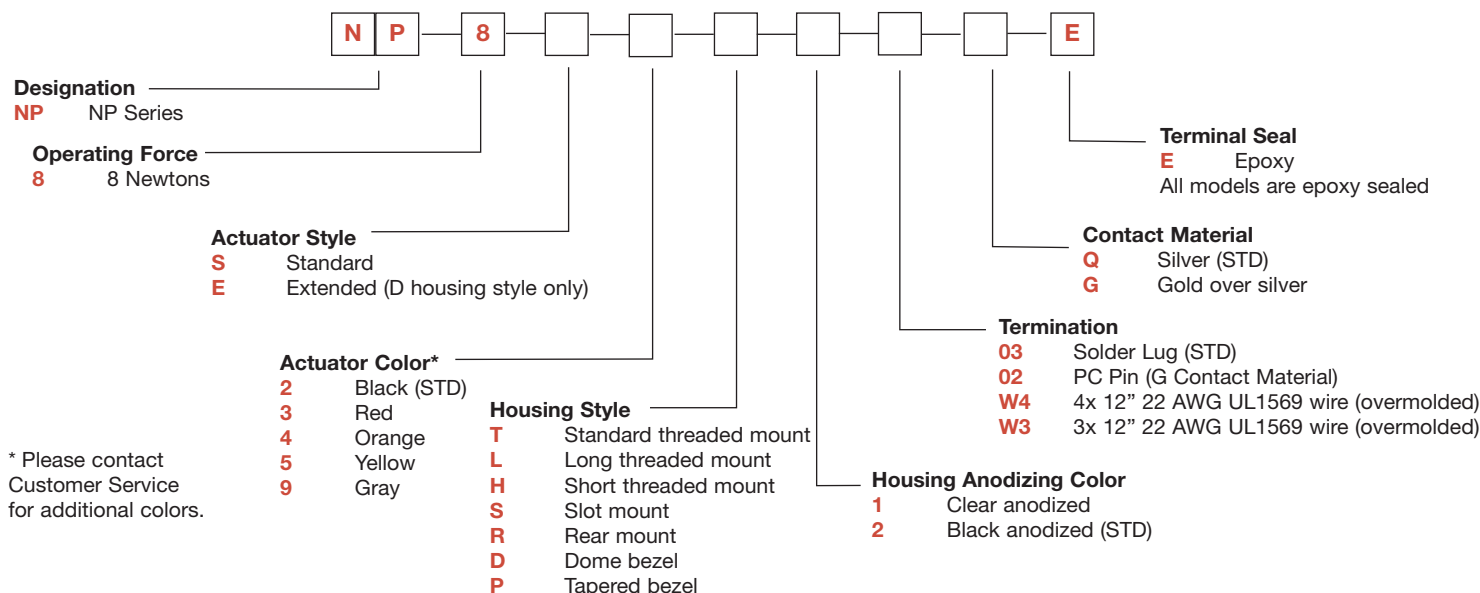
Process Environment

SEALING: IP68

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.



Specifications and dimensions subject to change

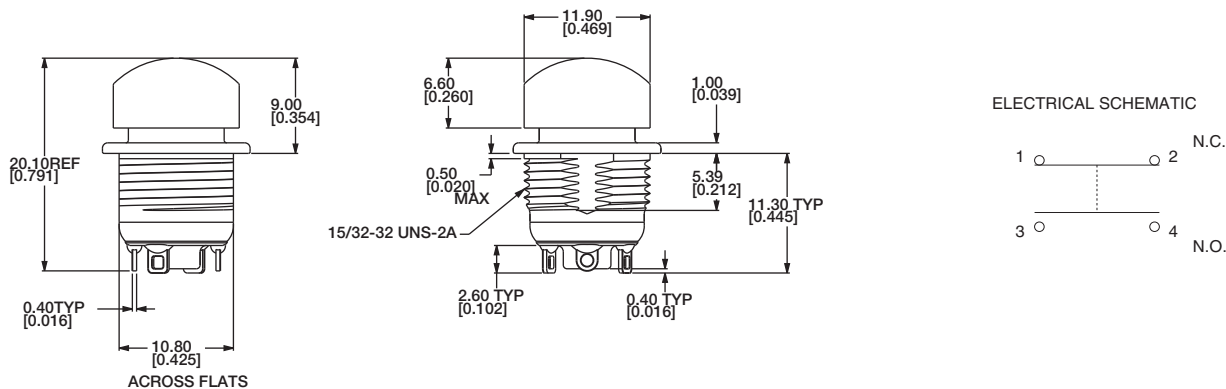
NP Series Sealed Industrial Pushbutton Switch



A

Pushbutton

STANDARD VIEW



OPERATING FORCE

OPTION CODE	OPERATING FORCE
8	8 N

ACTUATOR STYLE

S STANDARD

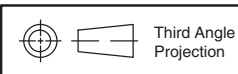
E EXTENDED (D HOUSING STYLE ONLY)



ACTUATOR COLOR

OPTION CODE	ACTUATOR COLOR
2	Black
3	Red
4	Orange
5	Yellow
9	Gray

For additional colors please contact Customer Service.



Third Angle
Projection



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



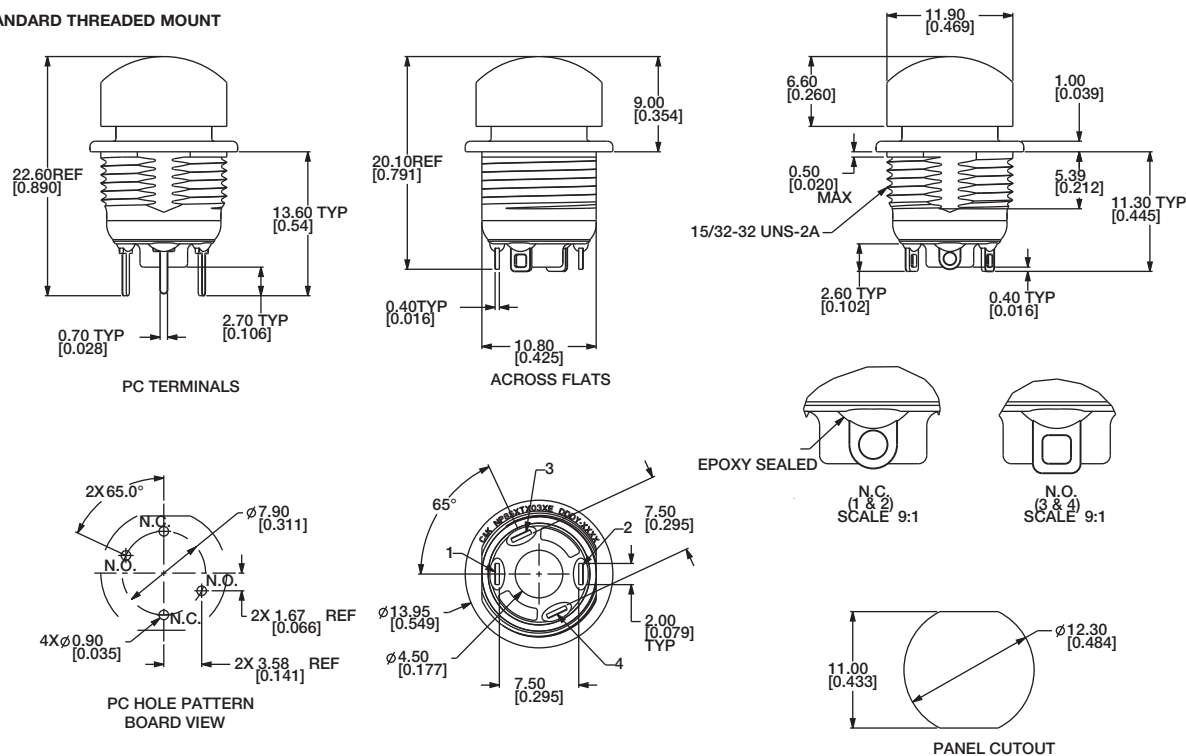
NP Series Sealed Industrial Pushbutton Switch

HOUSING STYLE

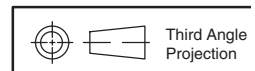
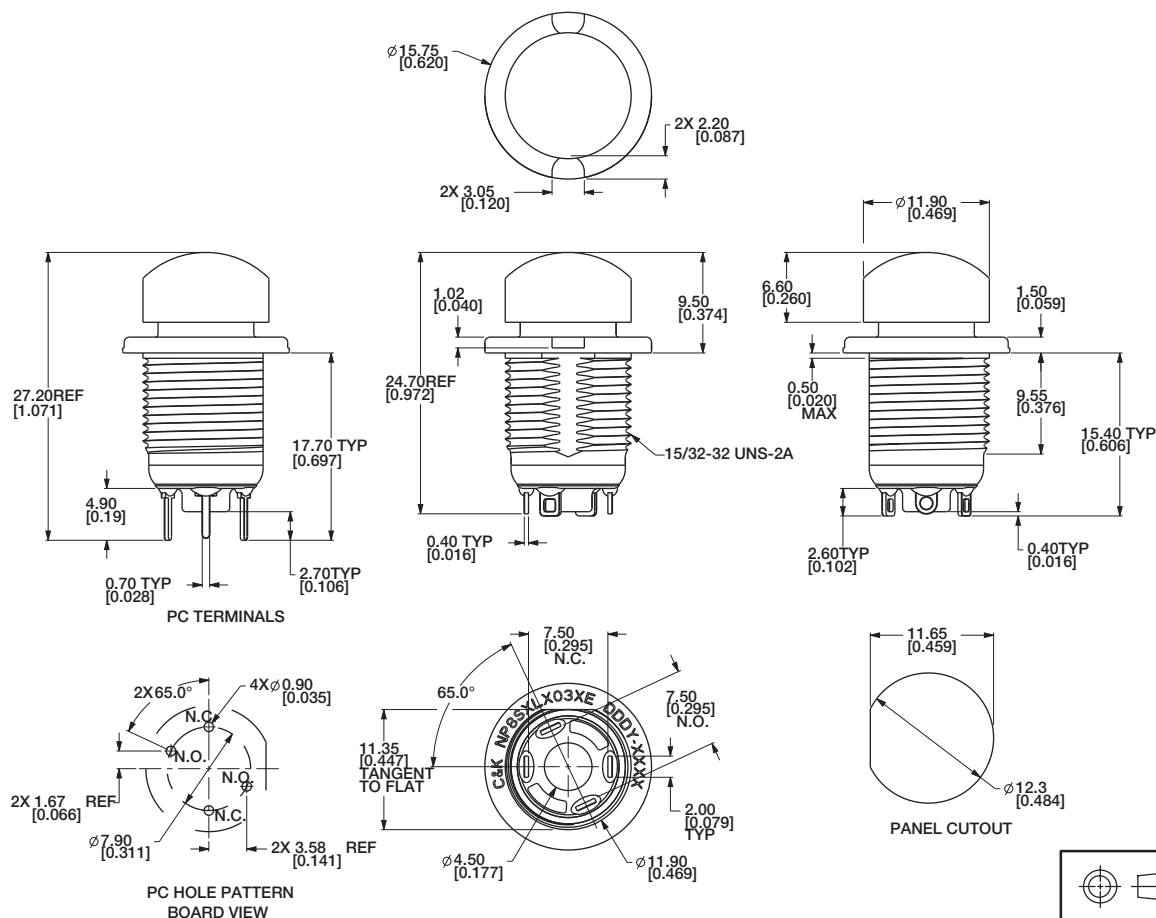
Pushbutton

A

T STANDARD THREADED MOUNT



L LONG THREADED MOUNT



Third Angle
Projection

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

NP Series Sealed Industrial Pushbutton Switch

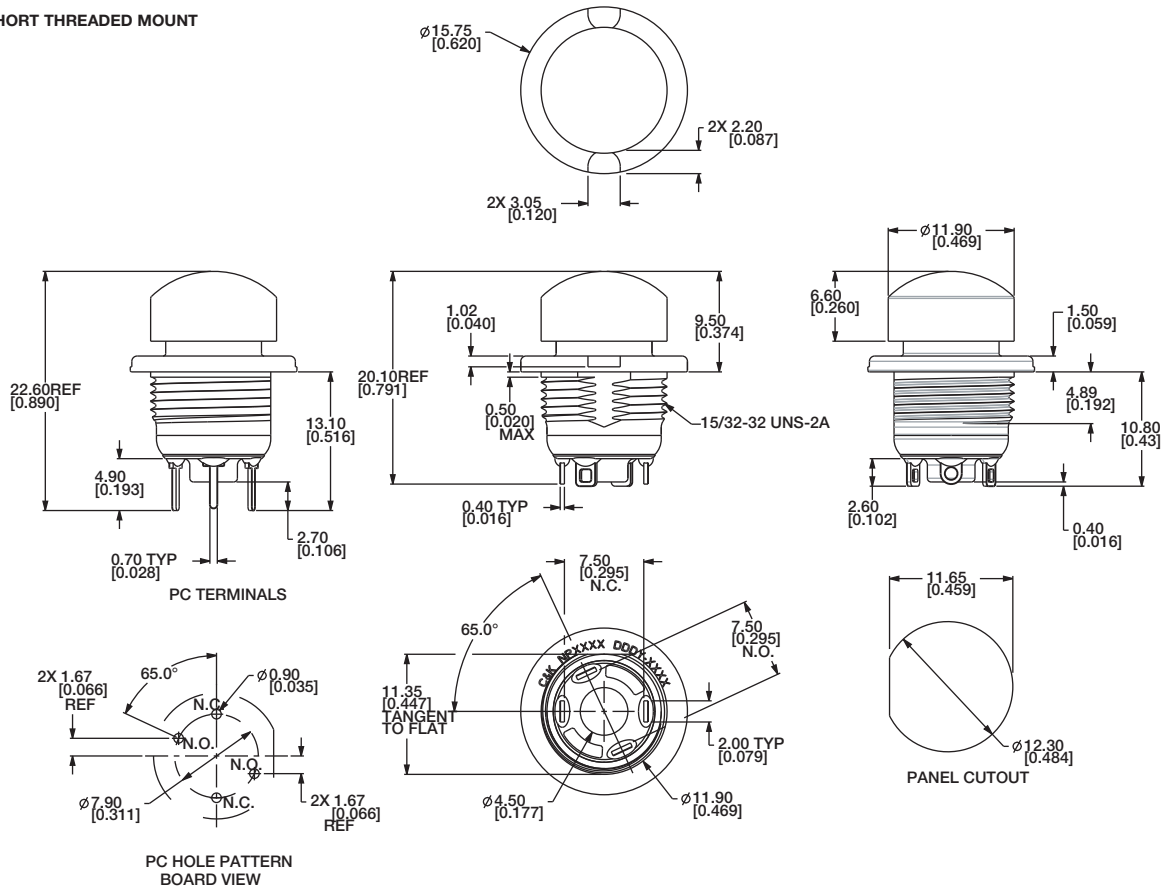


A

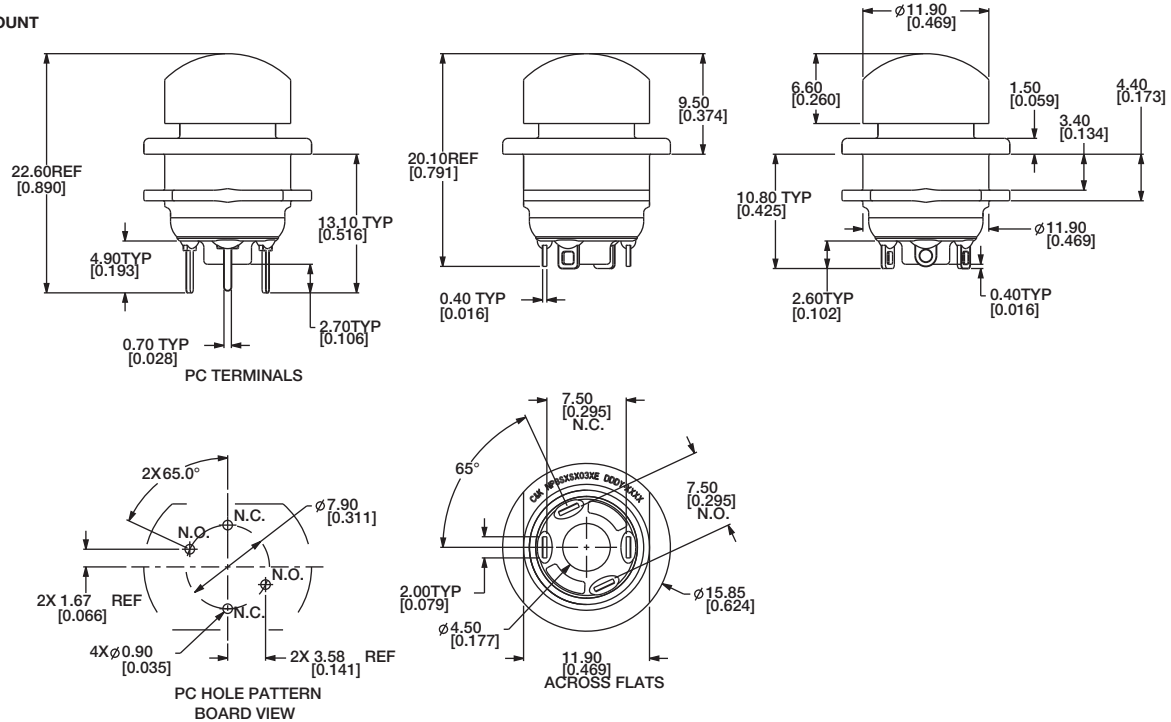
Pushbutton

HOUSING STYLE

H SHORT THREADED MOUNT



S SLOT MOUNT



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

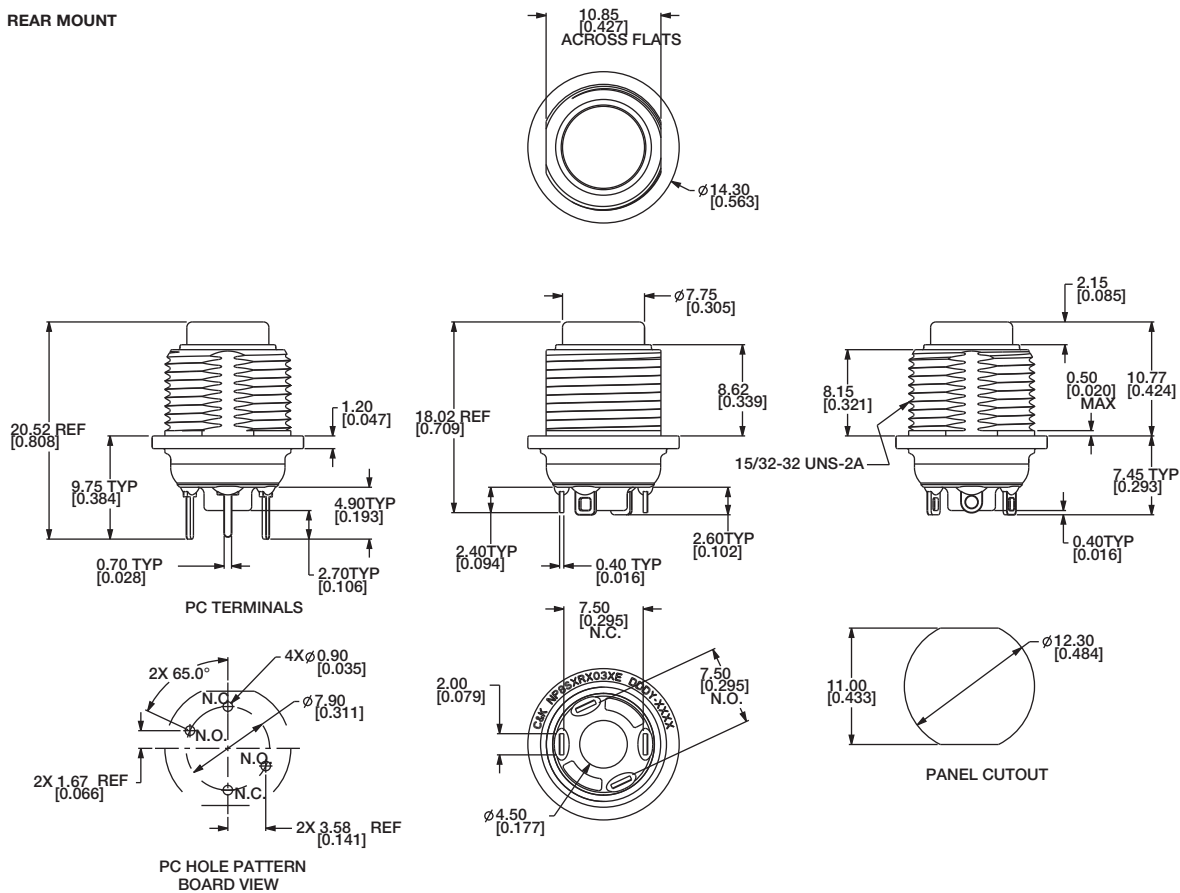


NP Series Sealed Industrial Pushbutton Switch

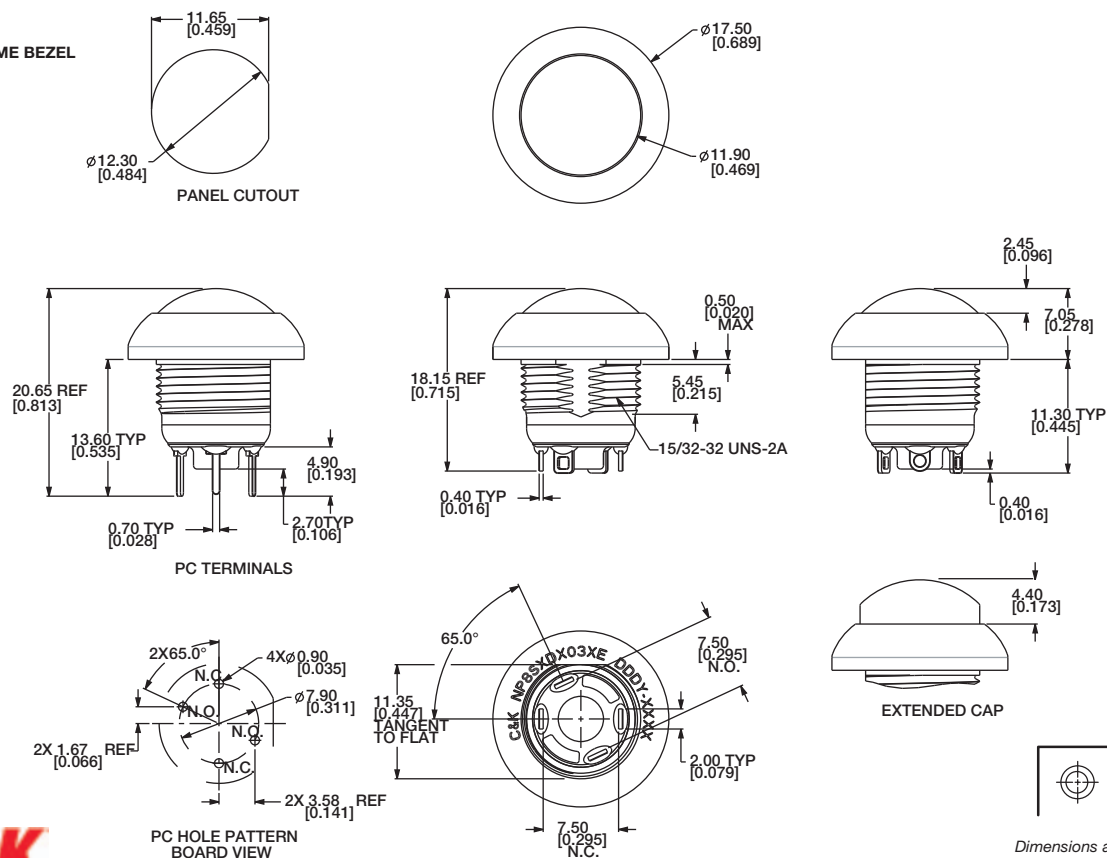
HOUSING STYLE

A
Pushbutton

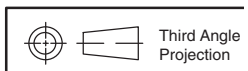
R REAR MOUNT



D DOME BEZEL



C&K



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

NP Series Sealed Industrial Pushbutton Switch

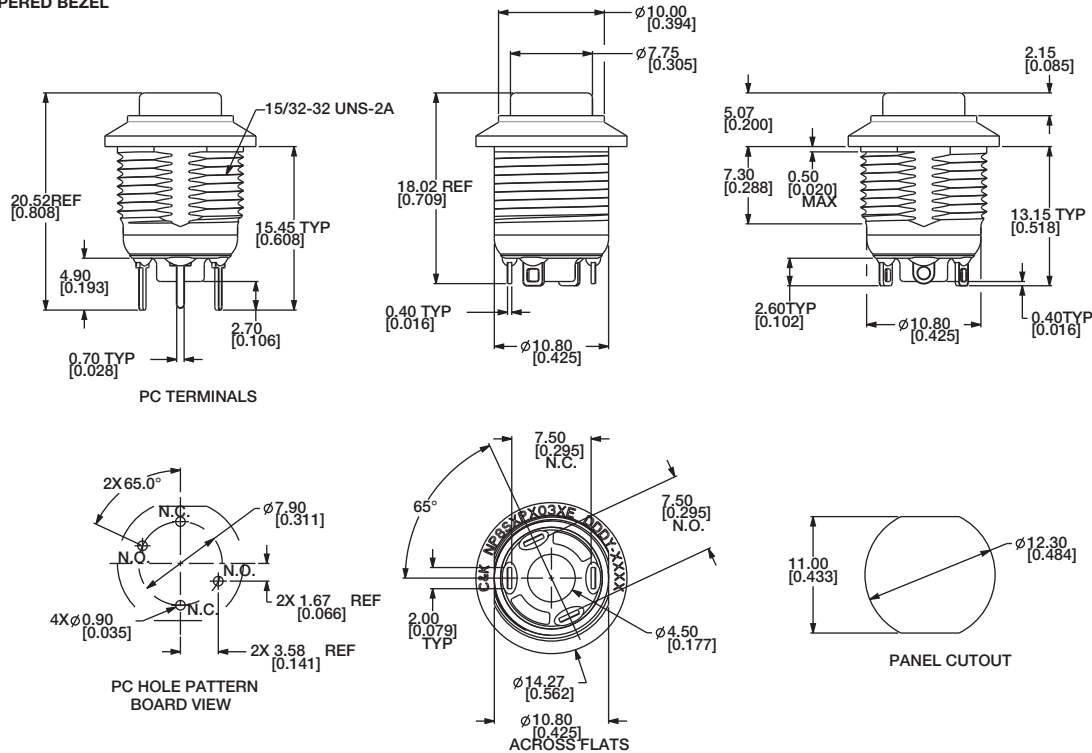


A

Pushbutton

HOUSING STYLE

P TAPERED BEZEL

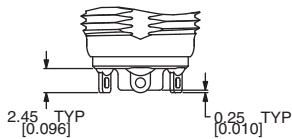


HOUSING ANODIZING COLOR

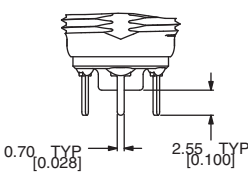
OPTION CODE	ANODIZING COLOR
1	Clear anodized
2	Black anodized (STD)

TERMINATION

03 SOLDER LUG (STD)



02 PC PIN (G CONTACT MATERIAL)



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

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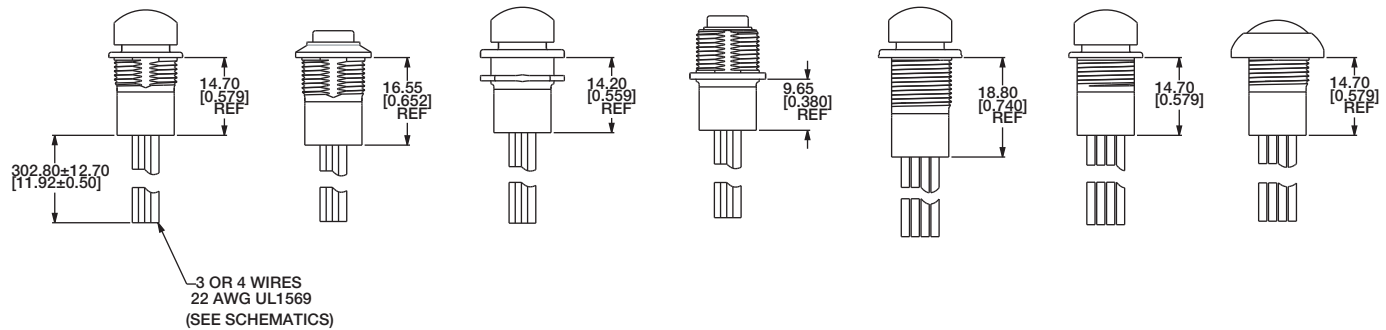


NP Series Sealed Industrial Pushbutton Switch

A

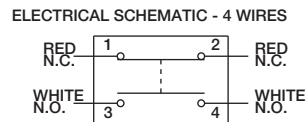
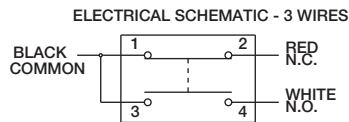
Pushbutton

TERMINATION



W3 3X 12" 22 AWG UL1569 WIRE (OVERMOLDED)

W4 4X 12" 22 AWG UL1569 WIRE (OVERMOLDED)



CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL
Q	Silver (STD)
G	Gold over Silver

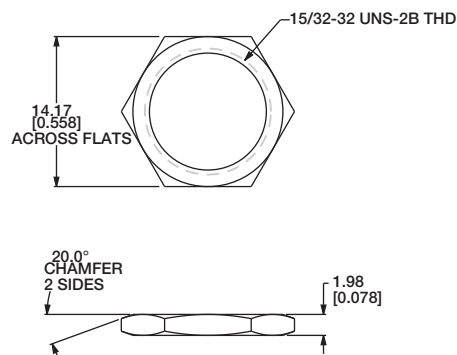
TERMINAL SEAL

E EPOXY

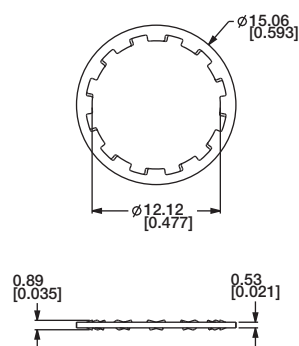
All models are epoxy sealed

HARDWARE

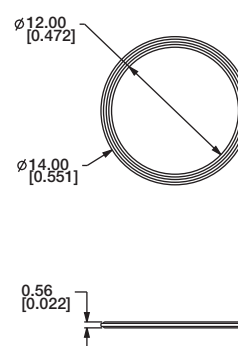
HEX NUT
707100201 Nickel-plated



LOCKWASHER
700302202



PANEL GASKET
851D02000



C&K



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

PBA Series Illuminated Pushbutton



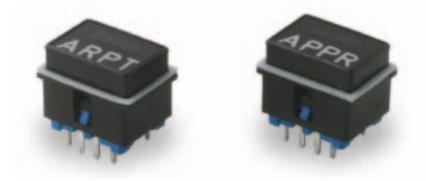
Pushbutton
A

Features/Benefits

- **Illuminated display**
- **Small size**
- **Cold lighting**
- **Tactile feed back**

Typical Applications

- **Avionic**



Mechanical

ACTUATION FORCE: 5,5 N \pm 0,5 N
MAXIMUM FORCE: 80 N
TRAVEL TO CONTACT: 1,2 \pm 0,1 mm
OVERTRAVEL: >0,3 mm
TOTAL TRAVEL: 1,5 \pm 0,1 mm
LIFE EXPECTANCY: 10⁸ operations 28 V - 10 mA
WEIGHT: 2 grams
VIBRATION: \pm 0,45mm from 33 Hz to 75 Hz
ACCELERATION: 10 g max

Electrical

CONTACTS: Gold plated
VOLTAGE: Max 100 V - Min 20 mV DC
CARRYING CURRENT: Max 250 mA - Min 50 μ A
SWITCHING CURRENT: Max 50 mA - Min 50 μ A
MAX SWITCHING POWER: 1 W
CONTACT RESISTANCE: < 50 Ω
DIELECTRIC STRENGTH: 500 V rms
INSULATION RESISTANCE (100 V): > 5000 M Ω
BOUNCE: < 3 ms
SWITCHING OF 2 POLES MATCHING: < 10 ms

Environmental Data

STORAGE TEMPERATURE: -55°C TO 85°C
OPERATING TEMPERATURE: -30°C TO 85°C
TEMPERATURE OF KEY TO CAP: < Ambient +25°C
HUMIDITY TEST: 21 days (-40°C - 93% HR)
ALTITUDE PRESSURE: From 20 hPa to 1070 hPa

Soldering Data

WAVE SOLDERING: 260°C / 5s
MANUAL SOLDERING: 350°C / 2s
SEALING: According to IP64

Plastic Material

Housing and Cap: UL-94 VO

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 **PBA** PBA Series

Size

1	9,5 x 14
2	11,5 x 14
3	14 x 14

Marking Location

H	High
M	Middle
L	Low

Type of Marking

T	Text / Legend
S	Status Indicator

LED Color

0	White	λ
1	Green	λ 560 nm
2	Yellow Green	λ 568 nm
3	Amber	λ 590 nm
4	Red	λ 660 nm
5	Other	λ

Display Type

		LED Non-Illuminated	LED Illuminated
N	Text Marking	White	LED Color
	Background	Black	Black
S	Text Marking	Not visible	LED Color
	Background	Black	Black
R	Text Marking	White	LED Color
	Background	Red	Red
G	Text Marking	Green	Green
	Background	Black	Black

LED Supply or Type

AC	Alternative
DC	Direct
XX	for each marking 1:6 LEDs in parallel for direct current

Repeat sequence for 2nd Marking

Third Angle Projection



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



PBA Series Illuminated Pushbutton

A

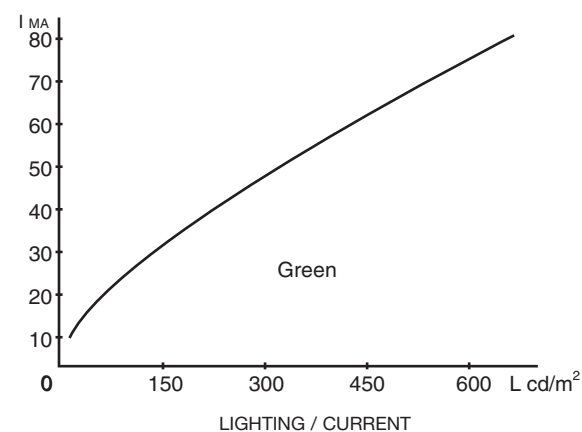
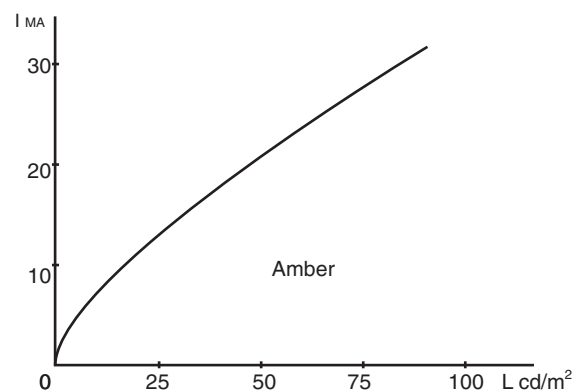
Pushbutton

LIGHTING DATA

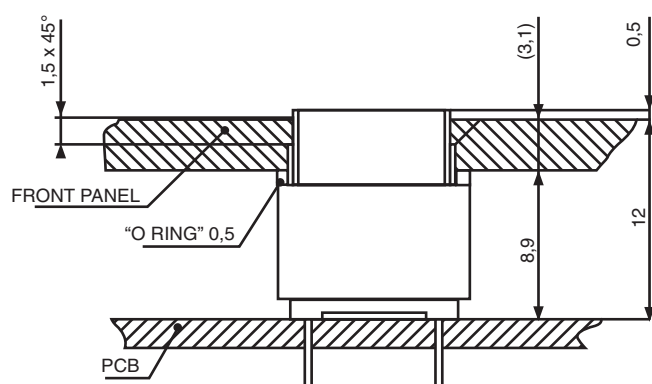
The legends of function and the status indicator can be illuminated separately.

Color	Amber	Green
Wave Length	$586 < \lambda < 592$	$555 < \lambda < 560$
Current Max	80 mA	80 mA
Chromaticity	X Y	$0,54 < X < 0,58$ $0,40 < Y < 0,44$
Contrast Min.	1,2	0,85

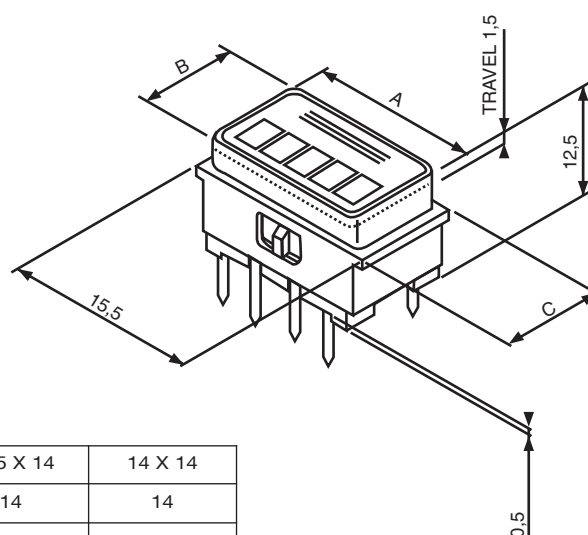
For other colors and displays, please contact Customer Service.



DIMENSIONS (applicable for any size)



Tolerance: $\pm 0,1$ mm



	9,5 X 14	11,5 X 14	14 X 14
A	14	14	14
B	9,5	11,5	14
C	11	11,5	15,5

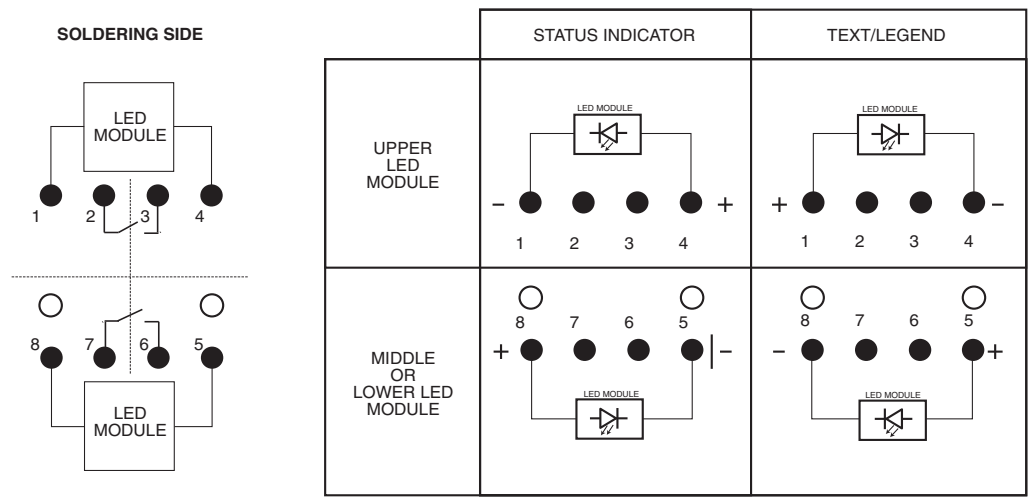


Dimensions are shown: mm
Specifications and dimensions subject to change

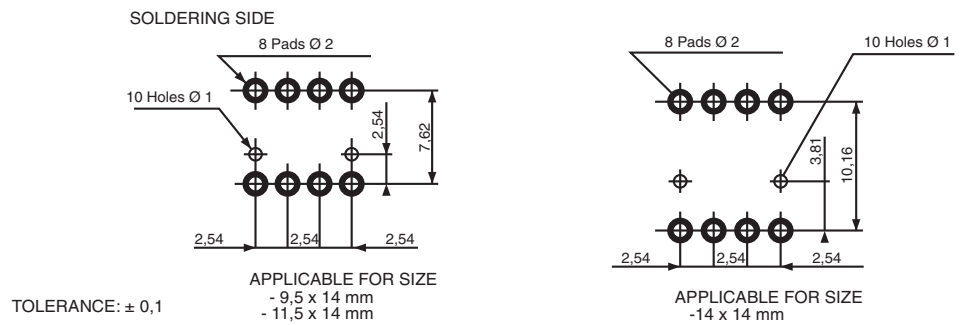
PBA Series Illuminated Pushbutton



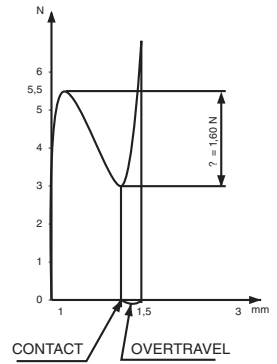
LED MODULE LAYOUT



PCB Layout

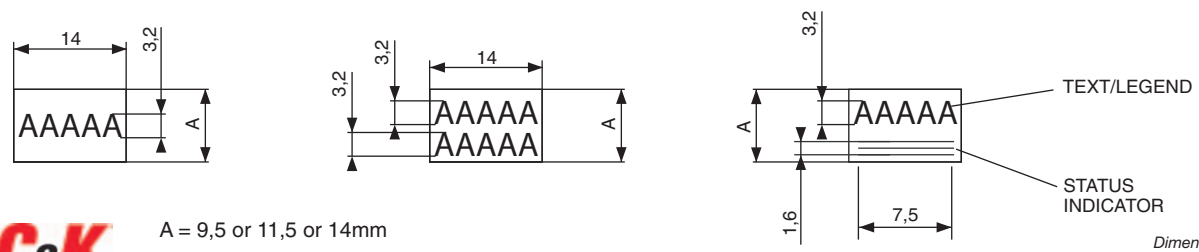


TACTILE EFFECT



- TRAVEL**
- TRAVEL TO CONTACT: $1,2 \pm 0,1$ mm
 - OVERTRAVEL: $> 0,3$ mm
 - TOTAL TRAVEL: $1,5 \pm 0,1$ mm
- FORCE**
- ACTUATOR FORCE: $5,5 \text{ N} \pm 0,5 \text{ N}$
 - TACTILE FEELING: $1,6 \text{ N}$

1 or 2 markings are available in any combination of text / legend or status indicator.



Dimensions are shown: mm
Specifications and dimensions subject to change



Pushbutton A

PWR Series Power Pushbutton

NEW!

**Patent
Pending**

Features/Benefits

- Movable contact with redundant high power contact points to form a momentary, SPST, double break switch
- Rubber actuator provides sealing and tactile feel.
- Small SMT packaging allows applications to integrate power and signal switch on same PCB
- RoHS compliant and compatible
- IP65

Typical Applications

- Computers and peripherals
- Automotive power function
- White goods and appliances
- Industrial power applications



Specifications

OPERATING FORCE: 7N typical.
OPERATING LIFE: Q1: 25,000 cycles; Q2: 100,000 cycles.
CONTACT RATING: 2A @ 125 VAC / 1A @ 250 VAC.
CONTACT RESISTANCE: 100mΩ max. initial.
DIELECTRIC STRENGTH: 1500 VRMS min.
INSULATION RESISTANCE: 100 Mega-ohms min.
BOUNCE TIME: 20 milliseconds max.
OPERATING TEMPERATURE: -20°C to 85°C

Materials

MOVABLE CONTACTS: Silver alloy.
FIXED CONTACTS/TERMINALS: Silver alloy / Tin over brass.
BASE: PPS.
FRAME: Stainless steel.
ACTUATOR: Silicone rubber.

Packaging

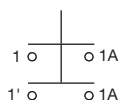
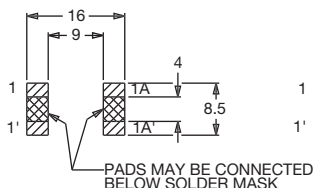
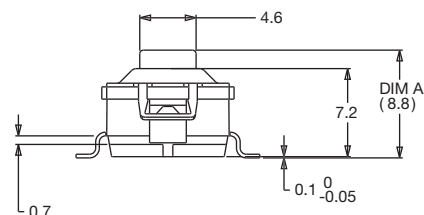
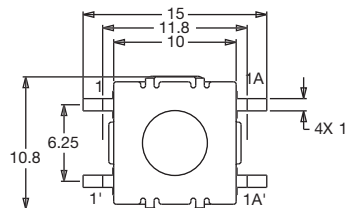
In reels of 425 pieces.
Dimensions of reels according to EIA RS481 or IEC 60286-3.
External diameter 330 mm ± 2 mm.

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.

P	W	R	7	0			S	R
Designation PWR Power pushbutton			Actuation Force 70 7N		Contact Rating Q1 2A @125 VAC/ 1A @ 250VAC Q2 5A @12 VDC		Termination S SMT	
							Packaging NONE Standard, tray R Tape & reel	



SWITCH STATE	DIM A
Free position	8.7
Operate position	7.7
Max travel	7.1



Dimensions are shown: mm
Specifications and dimensions subject to change

NEW!

PB Series Single Pole and Multi-Key Pushbutton Switches



A

Pushbutton

Features/Benefits

- Momentary or latching options
- Reliable contact design
- 2, 4, and 6 pole configurations
- Long travel and extended life cycles

Typical Applications

- Appliances
- Audio and visual equipment
- Consumer electronics
- Industrial equipment



Specifications

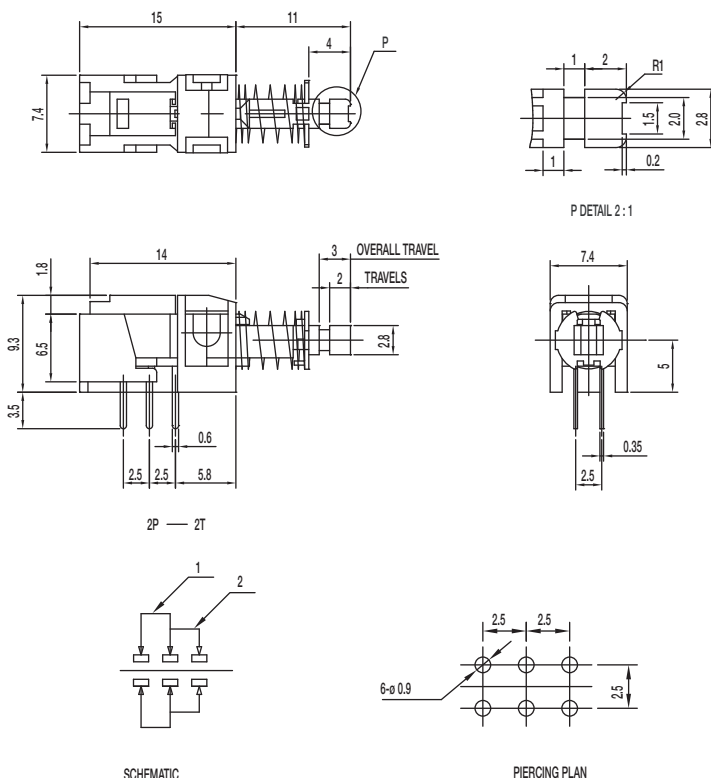
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 $250 \pm 100 \text{ gf}$ ($2.45 \pm 0.98 \text{ N}$)
 LOCK TRAVEL: $2 \pm 0.3 \text{ mm}$
 TOTAL TRAVEL: $3 \pm 0.3 \text{ mm}$
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
 PLASTIC CLIP: POM (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

PB-22D01-L 2PDT LOCK / LATCHING

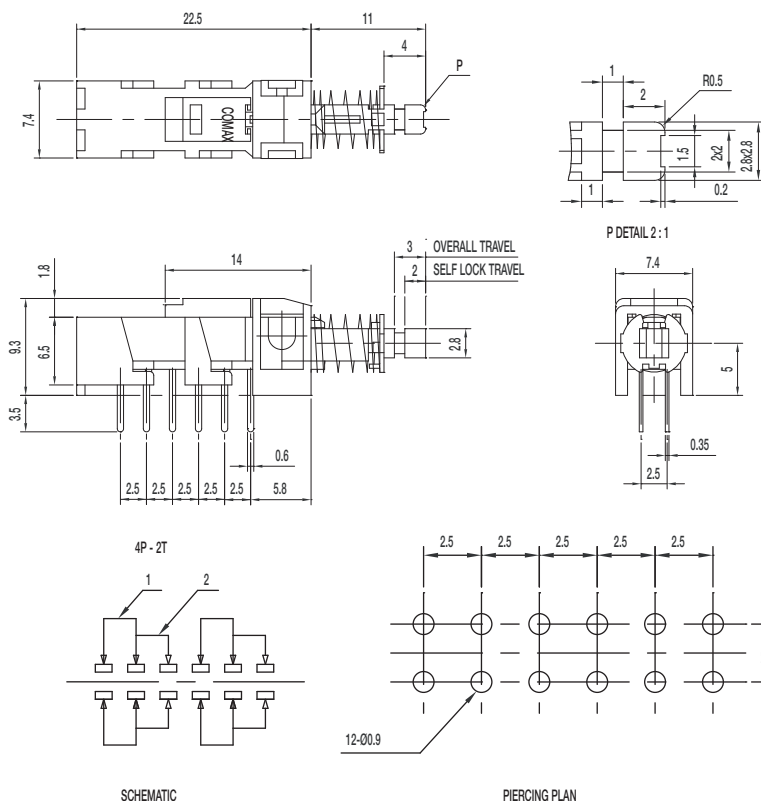


Dimensions are shown: mm
 Specifications and dimensions subject to change

**A****Pushbutton**

PB Series Single Pole and Multi-Key Pushbutton Switches **NEW!**

PB-42D01-L 4PDT LOCK / LATCHING



Specifications

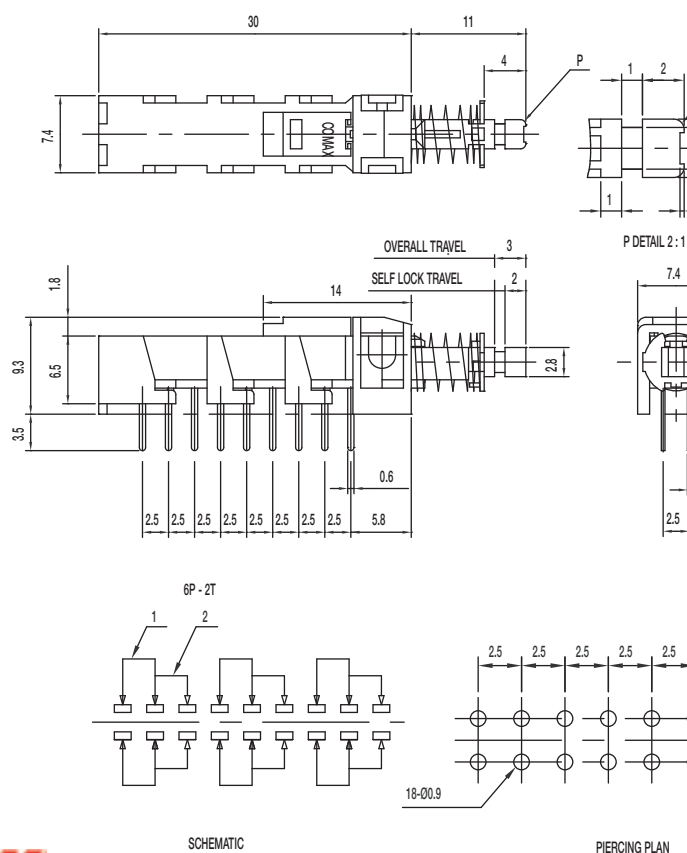
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 280 ± 100 gf
 LOCK TRAVEL: 2 ± 0.3 mm
 TOTAL TRAVEL: 3 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
 PLASTIC CLIP: POM (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

PB-62D01-L 6PDT LOCK / LATCHING



Specifications

CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 300 ± 100 gf (2.94 ± 0.98 N)
 LOCK TRAVEL: 2 ± 0.3 mm
 TOTAL TRAVEL: 3 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
 PLASTIC CLIP: POM (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

C&K

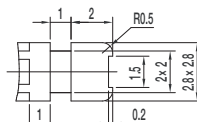
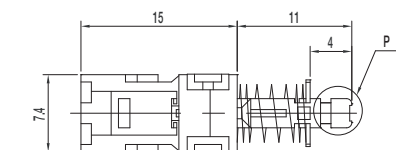
Dimensions are shown: mm
 Specifications and dimensions subject to change

NEW!

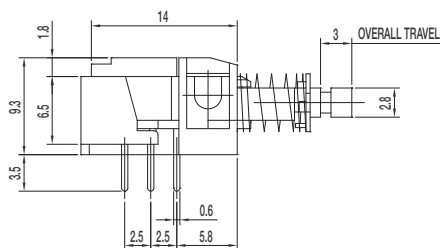
PB Series Single Pole and Multi-Key Pushbutton Switches

**A****Pushbutton**

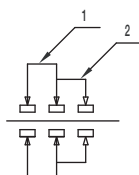
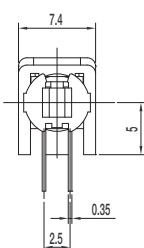
PB-22D01-F 2PDT NON-LOCK / MOMENTARY



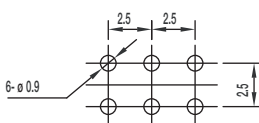
P DETAIL 2:1



2P — 2T



SCHEMATIC



PIERCING PLAN

Specifications

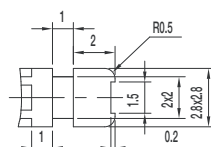
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 250 ± 100 gf (2.45 ± 0.98 N)
 TOTAL TRAVEL: 3 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

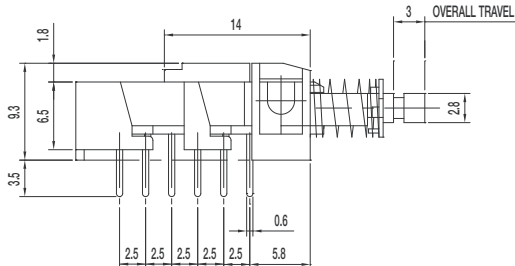
CASE: PC (UL 94HB)
 PLASTIC CLIP: POM (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

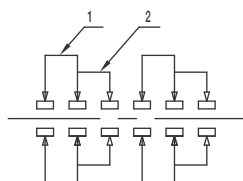
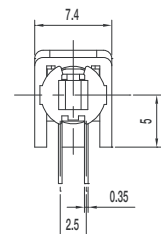
PB-42D01-F 4PDT NON-LOCK / MOMENTARY



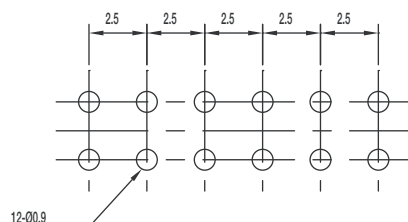
P DETAIL 2:1



4P - 2T



SCHEMATIC



PIERCING PLAN

Specifications

CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 280 ± 100 gf (2.477 ± 0.98 N)
 TOTAL TRAVEL: 3 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
 PLASTIC CLIP: POM (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

C&K

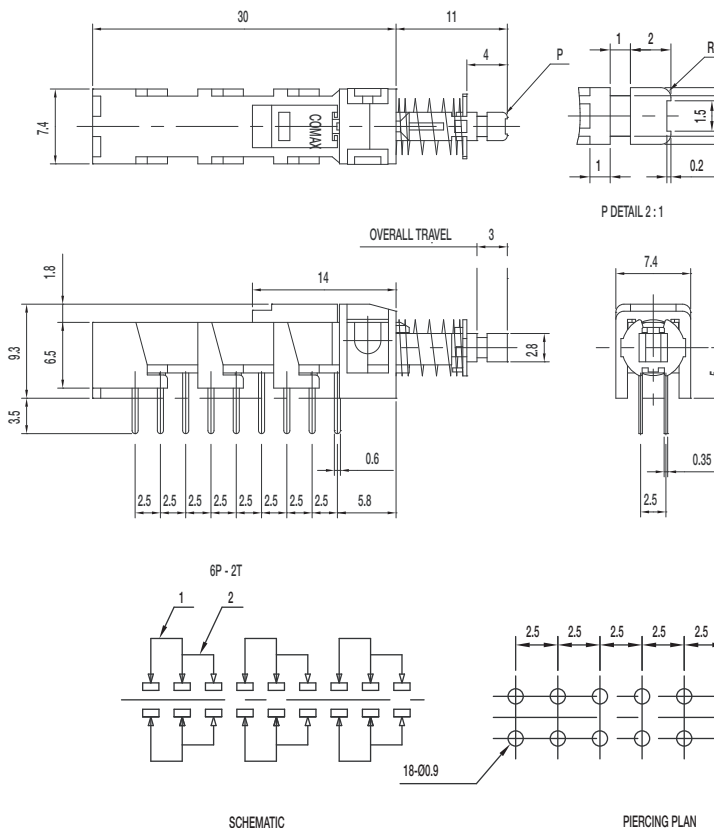
Dimensions are shown: mm
 Specifications and dimensions subject to change



Pushbutton

A

PB Series Single Pole and Multi-Key Pushbutton Switches

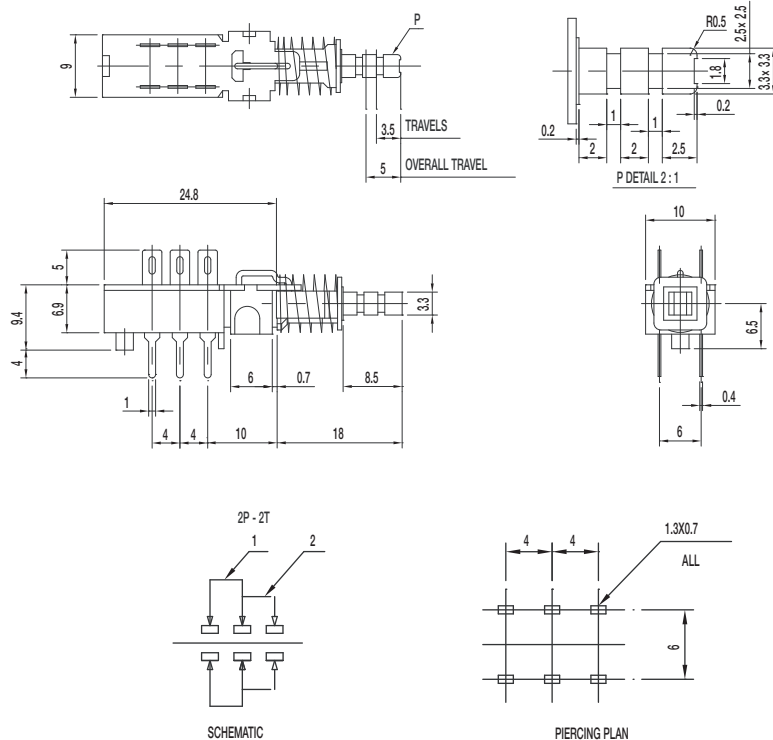
NEW!**PB-62D01-F** 6PDT NON-LOCK / MOMENTARY**Specifications**

CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 $300 \pm 100 \text{ gf}$ ($2.94 \pm 0.98 \text{ N}$)
 TOTAL TRAVEL: $3 \pm 0.3 \text{ mm}$
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
 PLASTIC CLIP: POM (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

PB-22G02-L 2PDT LOCK / LATCHING**Specifications**

CONTACT RATING: 1A @ 25 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles without load
 OPERATING FORCE:
 $350 \pm 150 \text{ gf}$ ($3.43 \pm 1.47 \text{ N}$)
 LOCK TRAVEL: $3.5 \pm 0.3 \text{ mm}$
 TOTAL TRAVEL: $5 \pm 0.3 \text{ mm}$
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
 SPRING: SUS
 KNOB: POM
 TERMINAL: Silver plated

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

C&K

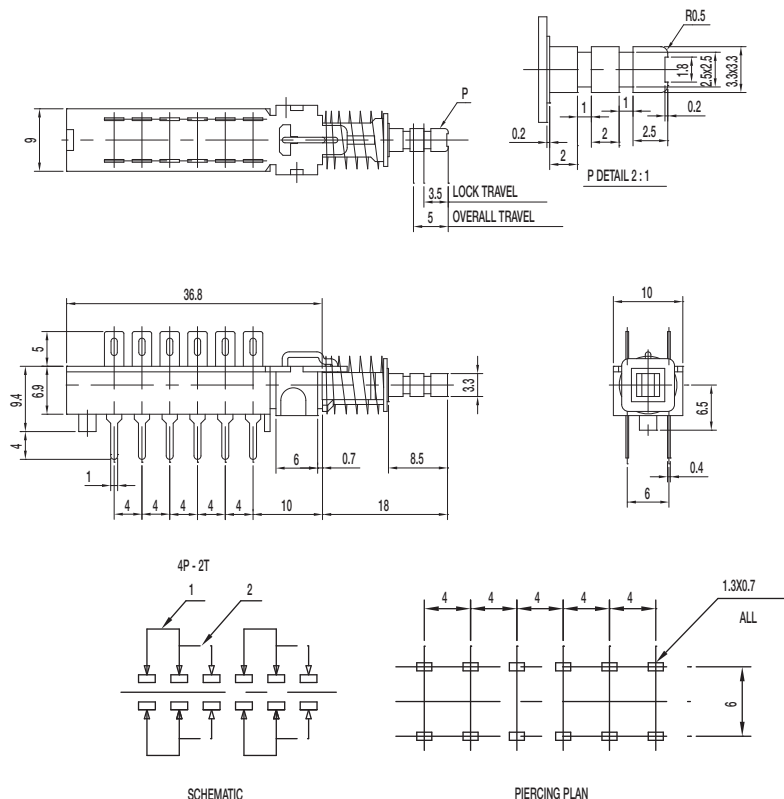
Dimensions are shown: mm
 Specifications and dimensions subject to change

NEW!

PB Series Single Pole and Multi-Key Pushbutton Switches

**A****Pushbutton**

PB-42G02-L 4PDT LOCK / LATCHING



Specifications

CONTACT RATING: 1A @ 25 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles without load

OPERATING FORCE:

400 ± 150 gf (3.92 ± 1.47N)

LOCK TRAVEL: 3.5 ± 0.3mm

TOTAL TRAVEL: 5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

HOUSING: PC (UL 94HB)

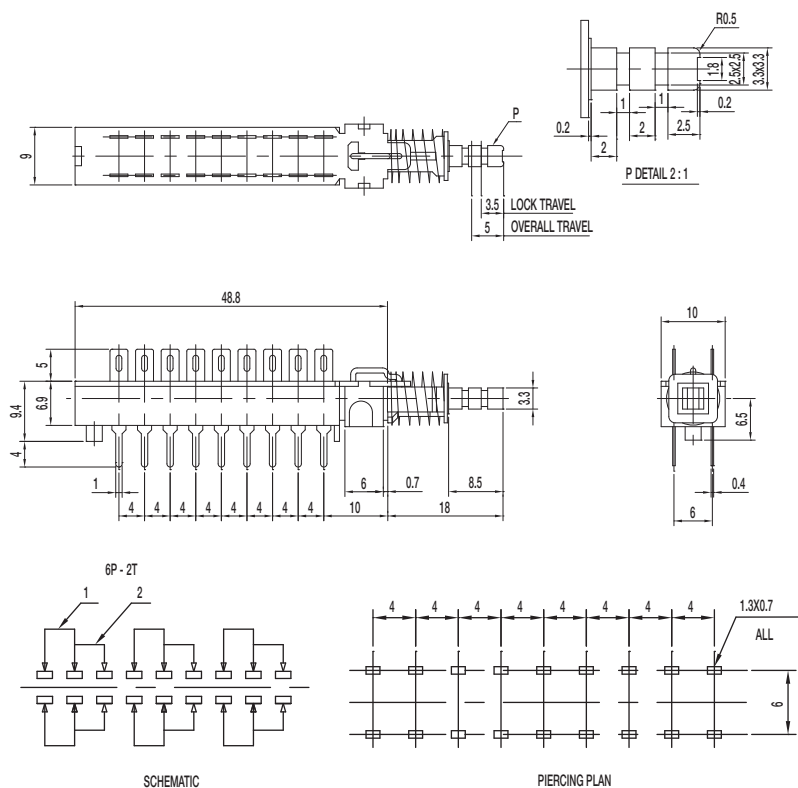
SPRING: SUS

KNOB: POM

TERMINAL: Silver plated

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

PB-62G02-L DPDT LOCK / LATCHING



Specifications

CONTACT RATING: 1A @ 25 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles without load

OPERATING FORCE:

450 ± 150 gf

LOCK TRAVEL: 3.5 ± 0.3mm

TOTAL TRAVEL: 5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

HOUSING: PC (UL 94HB)

SPRING: SUS

KNOB: POM

TERMINAL: Silver plated

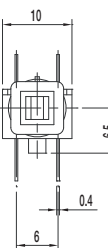
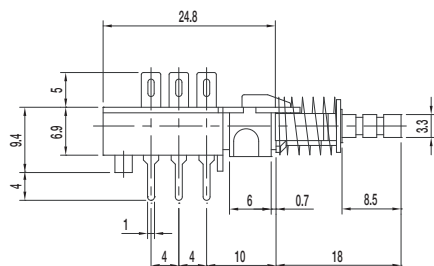
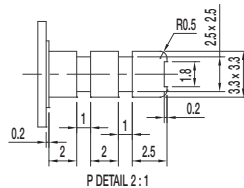
NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, please contact Customer Service.

C&K

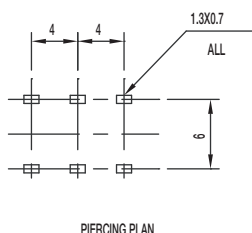
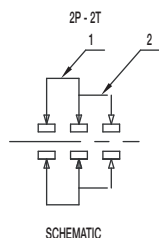
Dimensions are shown: mm
Specifications and dimensions subject to change



NEW!

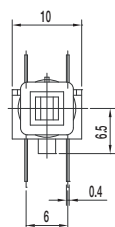
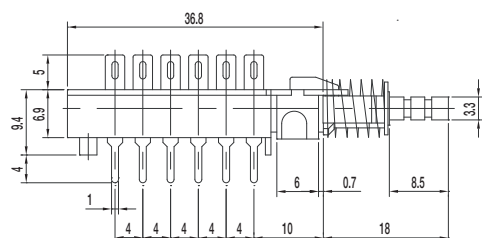
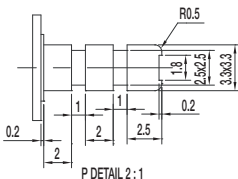


TERMINAL: Silver plated

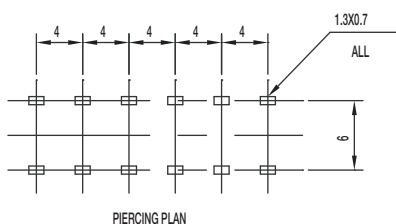
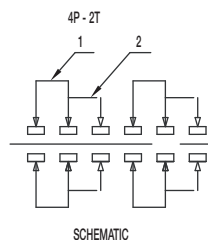


NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, please contact Customer Service.

Technical drawing of a shaft with a diameter of 100mm and a length of 500mm. The shaft features a 5mm diameter hole and a 0.2mm diameter hole. The overall travel is 5mm.



TERMINAL: Silver plated



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



www.ck-components.com

NEW!

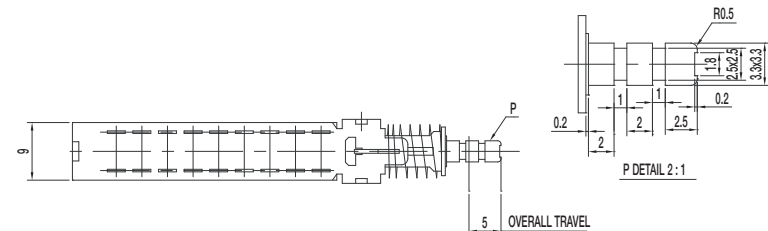
PB Series Single Pole and Multi-Key Pushbutton Switches

PB-62G02-F 6PDT NON-LOCK / MOMENTARY



A

Pushbutton



Specifications

CONTACT RATING: 1A @ 25 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles without load

OPERATING FORCE:

450 ± 150 gf (4.41 ± 1.47N)

TOTAL TRAVEL: 5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

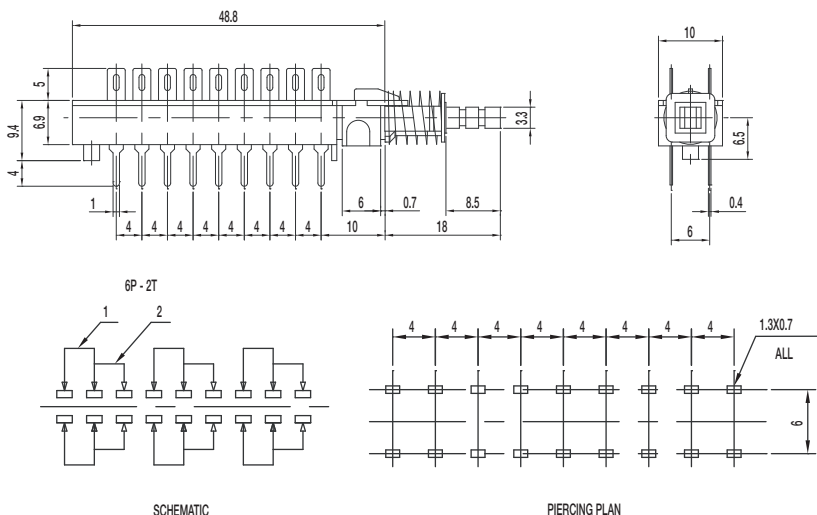
Materials

HOUSING: PC (UL 94HB)

SPRING: SUS

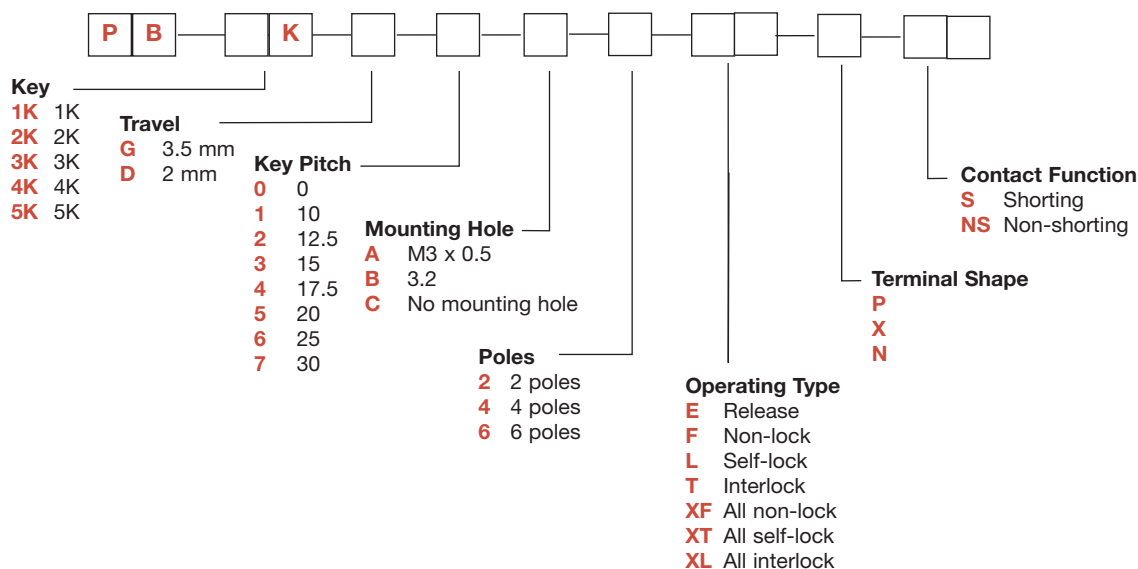
KNOB: POM

TERMINAL: Silver plated



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

PB Multi-Key Series



C&K

Dimensions are shown: mm
Specifications and dimensions subject to change



PB Multi-Key Series

Pushbutton



CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles without load

OPERATING FORCE:
250 ± 100 gf (2.45 ± 0.98N)

TOTAL TRAVEL: 3 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

CASE: PC (UL 94HB)
PLASTIC CLIP: POM (UL 94HB)
SPRING: SUS
KNOB: POM
TERMINAL: Silver plated

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

NEW!

PS Series Pushbutton Switches



A

Pushbutton

Features/Benefits

- Latching pushbutton
- Non-shorting with lock
- 4.5mm travel
- SPDT

Typical Applications

- Automotive interior lighting
- Computer peripherals
- Appliances



Specifications

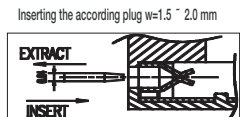
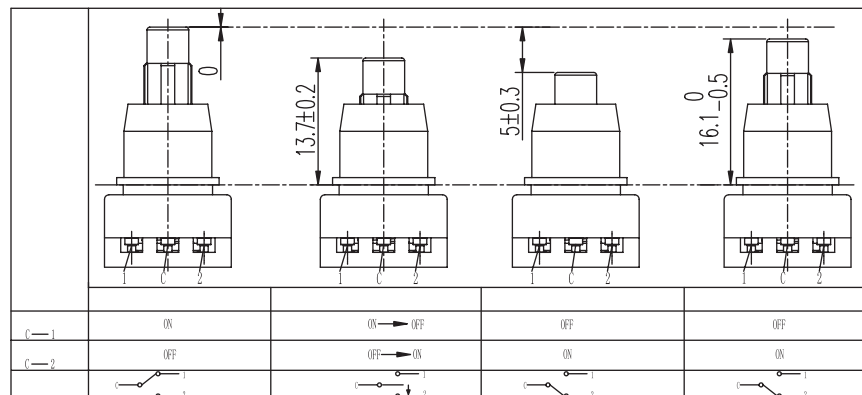
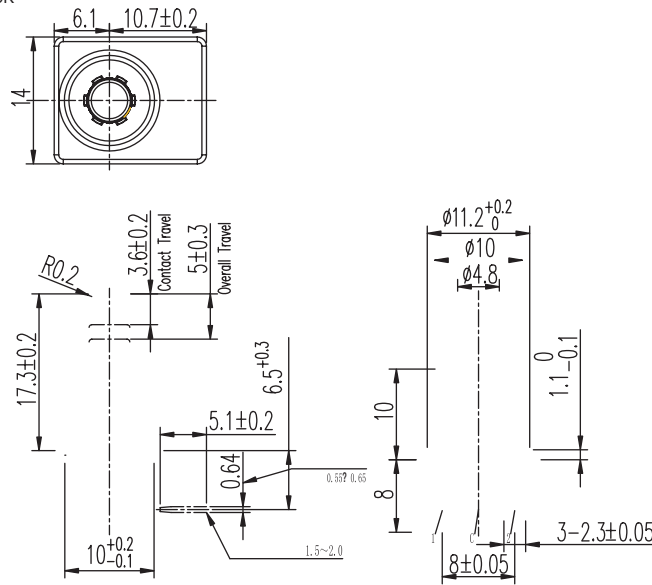
CONTACT RATING: 1A @ 14 VDC
 INITIAL CONTACT RESISTANCE: 100 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 20,000 cycles with load
 OPERATING FORCE: 400 ± 100 gf
 OPERATING POSITION: 3.6 ± 0.2 mm
 TOTAL TRAVEL: 5 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

KNOB: POM (UL 94HB) Lock version
 HOUSING: PBT (UL 94V-0)
 COVER: PBT (UL 94V-0)
 ROTOR: PBT (UL 94V-0)
 SLIDER: POM (UL 94HB)
 TERMINAL: Phosphor bronze, silver plated
 SPRING: SUS
 CONTACT: Phosphor bronze

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

PS-12G01 SPDT NON-SHORTING WITH LOCK



C&K

Dimensions are shown: mm
 Specifications and dimensions subject to change



PS Series Pushbutton Switches

NEW!

A

Pushbutton

Specifications

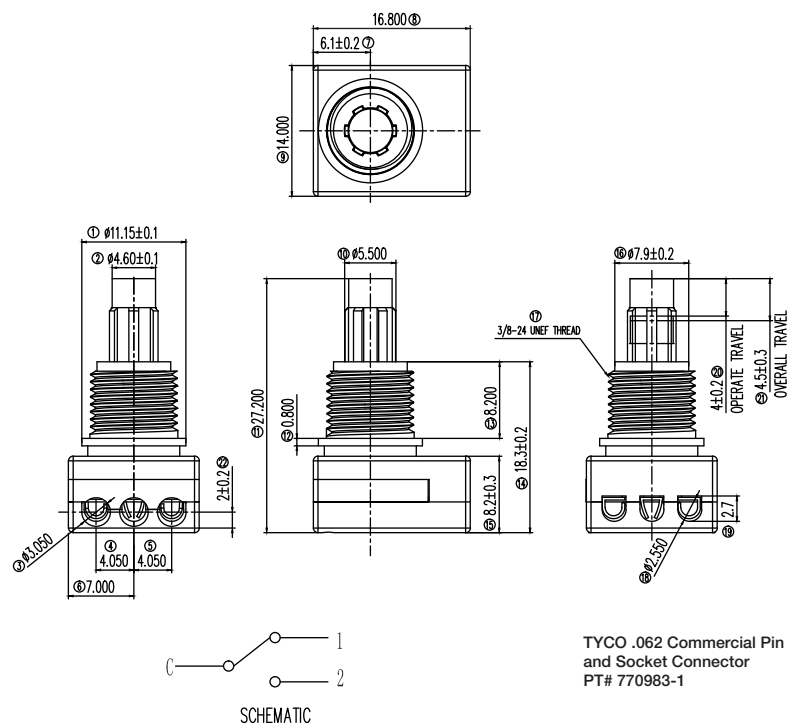
CONTACT RATING: 2.2A @ 14.5 VDC
INITIAL CONTACT RESISTANCE: 50 m ohms max.
INSULATION RESISTANCE: 100 M ohms min.
DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
OPERATING LIFE: 20,000 cycles with load
OPERATING FORCE: 650 ± 200 gf
OPERATING POSITION: 4.00 ± 0.2 mm
TOTAL TRAVEL: 4.5 ± 0.3 mm
OPERATING TEMPERATURE: -40°C to 85°C

Materials

KNOB: POM (UL 94HB)
HOUSING: Housing A: PBT (UL 94V-0)
Housing B: PA (UL 94V-0)
COVER: PBT (UL 94V-0)
ROTOR: PBT (UL 94V-0)
SLIDER: POM (UL 94HB)
TERMINAL: Brass, silver plated
SPRING: SUS
CONTACT: Phosphor bronze, silver plated

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

PS-12G03 SPDT NON-SHORTING WITH LOCK



C&K

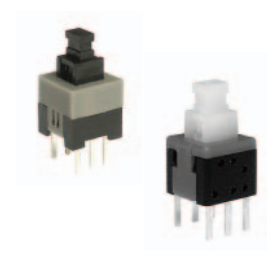
Dimensions are shown: mm
Specifications and dimensions subject to change

PS Series Pushbutton Switches



A

Pushbutton



Features/Benefits

- ***Broad range of products***
- ***Momentary or latching options***
- ***Robust control for automotive***
- ***Compact miniature push switch***
- ***Shorting or non-shorting***
- ***Custom design available***

Typical Applications

- **Consumer electronics**
- **Computer peripherals**
- **Telecommunications**
- **Audio and visual equipment**
- **Medical**
- **Automotive**

PS-2203-L NS PA DPDT NON-SHORTING WITH LOCK
PS-2203-F NS PA DPDT NON-SHORTING

DPDT NON-SHORTING WITH LOCK
DPDT NON-SHORTING

Specifications

CONTACT RATING: 0.1A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE:

 $200 \pm 100 \text{ gf } (1.96 \pm 0.98\text{N})$

LOCK TRAVEL: 1 + 0.30/ -0.00 mm

TOTAL TRAVEL: 2 ± 0.15 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

KNOB: POM (UL 94HB) Lock version

NOB: No lock version

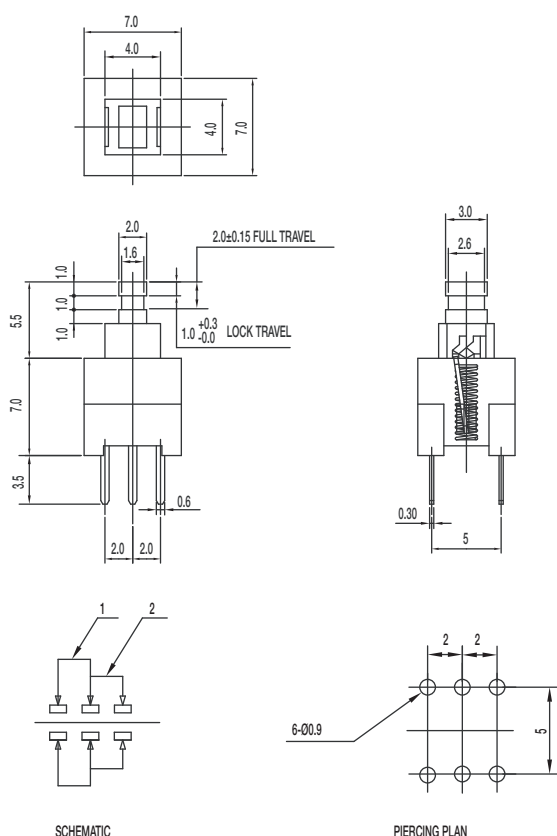
HOUSING: PA (UL 94HB)

COVER: POM (UL 94HB)

TERMINAL: Silver plated

CONTACT CLIP: Silver plated

SPRING: SUS



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



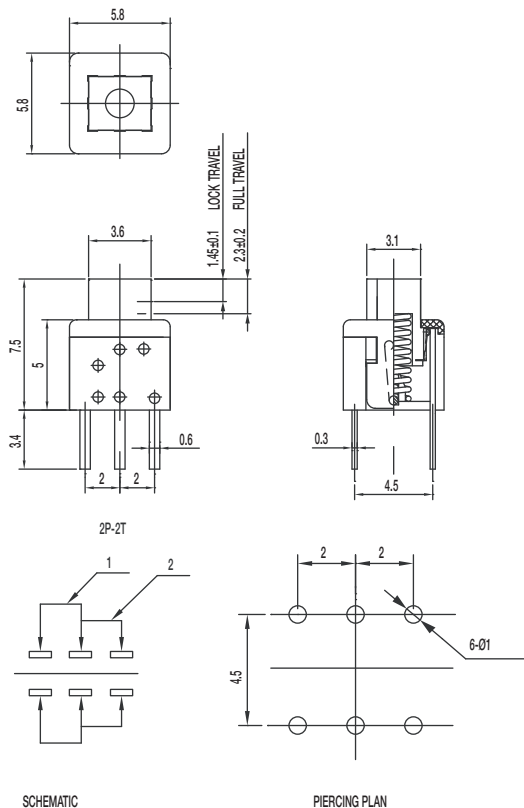
Pushbutton

A

PS Series Pushbutton Switches

NEW!

PS-2214-L NS PA DPDT NON-SHORTING WITH LOCK
PS-2214-F NS PA DPDT NON-SHORTING



Specifications

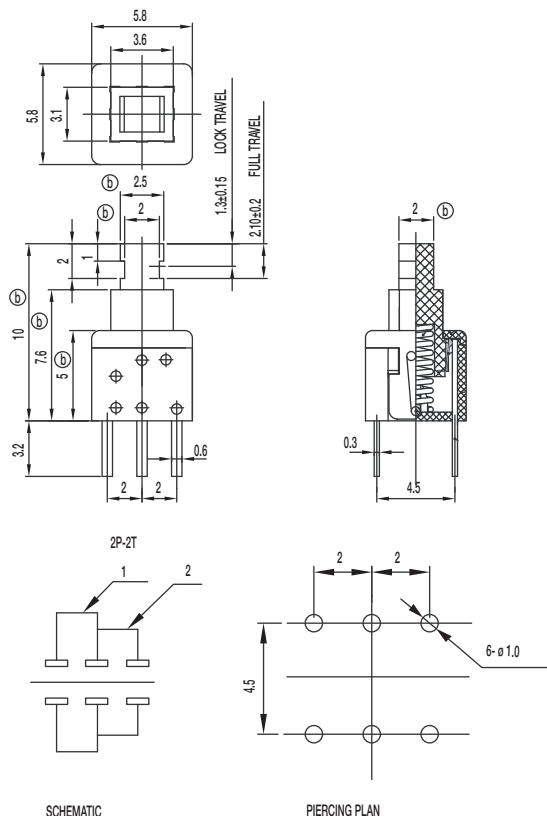
CONTACT RATING: 0.1A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 80 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE:
 $150 \pm 50 \text{ gf}$ ($1.47 \pm 0.49\text{N}$)
 LOCK TRAVEL: $1.45 \pm 0.1 \text{ mm}$
 TOTAL TRAVEL: $2.3 \pm 0.2 \text{ mm}$
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

KNOB: POM (UL 94HB) Lock version
 KNOB: PA (UL 94V-2) No lock version
 HOUSING: PA (UL 94V-0)
 COVER: PA (UL 94V-2)
 TERMINAL: Silver plated
 SPRING: SUS

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

PS-221605-L NS PA DPDT NON-SHORTING WITH LOCK
PS-221605-F NS PA DPDT NON-SHORTING



Specifications

CONTACT RATING: 0.1A @ 30 VDC / 2A @ 2 VDC
 INITIAL CONTACT RESISTANCE: 80 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE:
 $150 \pm 50 \text{ gf}$ ($1.47 \pm 0.49\text{N}$)
 LOCK TRAVEL: $1.3 \pm 0.15 \text{ mm}$
 TOTAL TRAVEL: $2.1 \pm 0.2 \text{ mm}$
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

KNOB: POM (UL 94HB) Lock version
 KNOB: No lock version
 HOUSING: PA (UL 94V-0)
 COVER: PC (UL 94HB)
 TERMINAL: Silver plated
 SPRING: SUS

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

C&K

Dimensions are shown: mm
 Specifications and dimensions subject to change

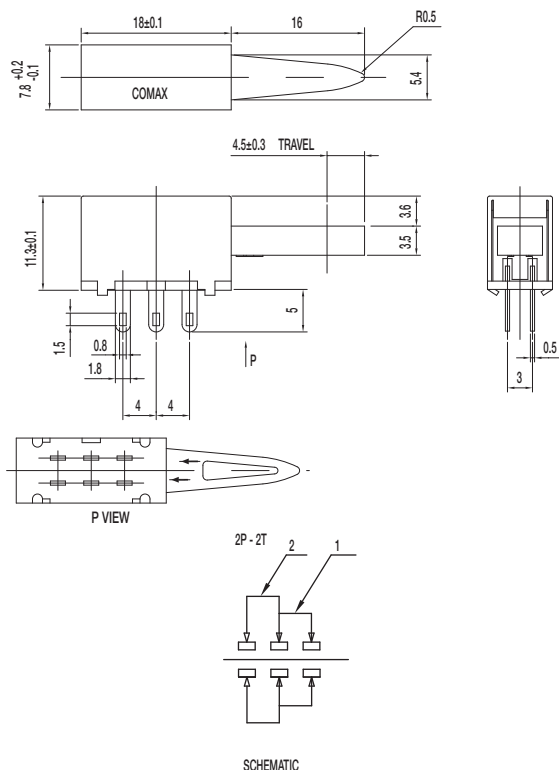
NEW!

PS Series Pushbutton Switches

**A**

Pushbutton

PS-22105 DPDT NON-SHORTING



Specifications

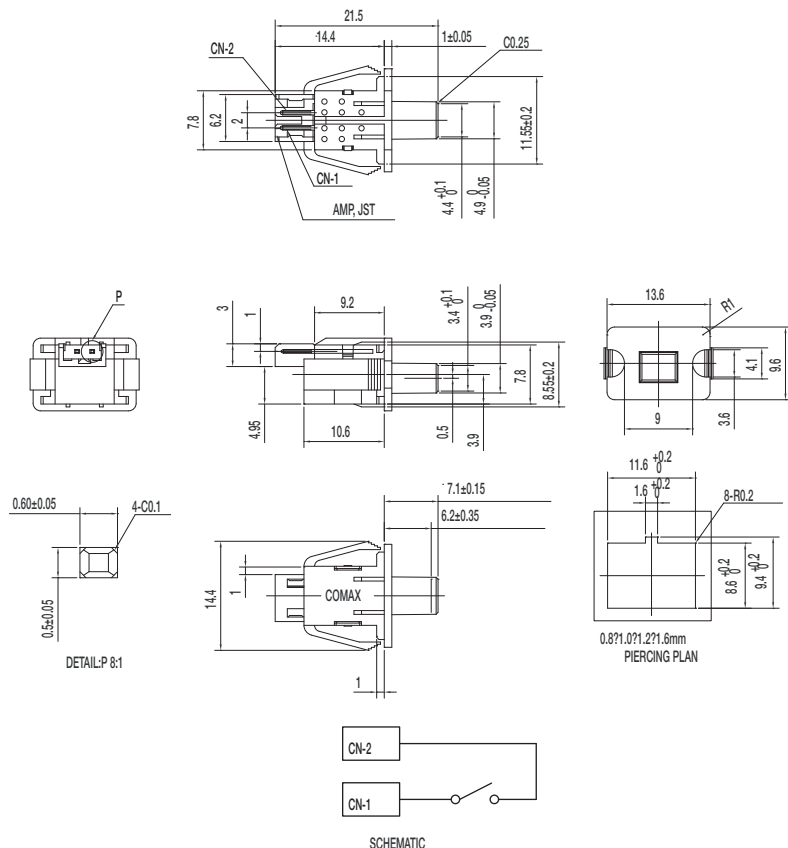
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 400 ± 150 gf (3.92 ± 1.47 N)
 TOTAL TRAVEL: 4.5 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SECC
 KNOB: POM (UL 94HB)
 CONTACT PLATE: Silver clad
 SPRING: SUS
 TERMINAL: Silver plated

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

PS-12C02-F NS SPST NON-SHORTING



Specifications

CONTACT RATING: 100 μ A @ 3 VDC min. / 10mA @ 5 VDC max
 INITIAL CONTACT RESISTANCE: 100 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 250 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 100,000 cycles with load
 OPERATING FORCE: 50 ± 15 gf (0.49 ± 0.147 N)
 PRE-TRAVEL: 6.20 ± 0.35 mm
 OPERATING TEMPERATURE: -40°C to 85°C

Materials

KNOB: POM (UL 94HB)
 COVER: PA (UL 94V-0)
 HOUSING: PA (UL 94V-0)
 SPRING: SUS
 TERMINAL: Silver plated

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

C&K

Dimensions are shown: mm
 Specifications and dimensions subject to change

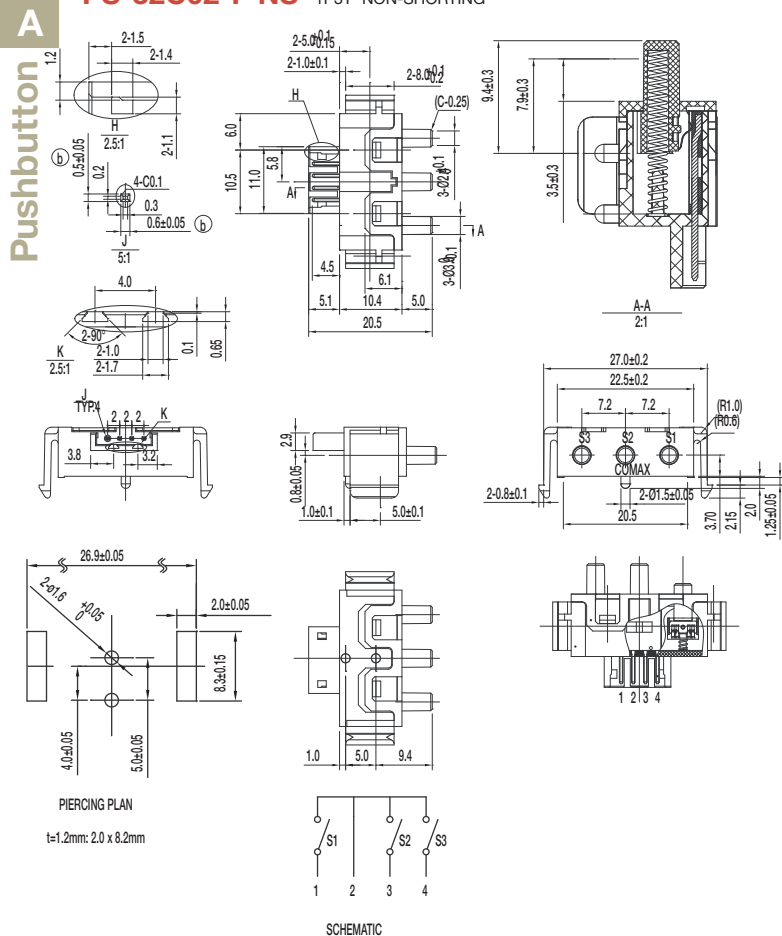
www.ck-components.com



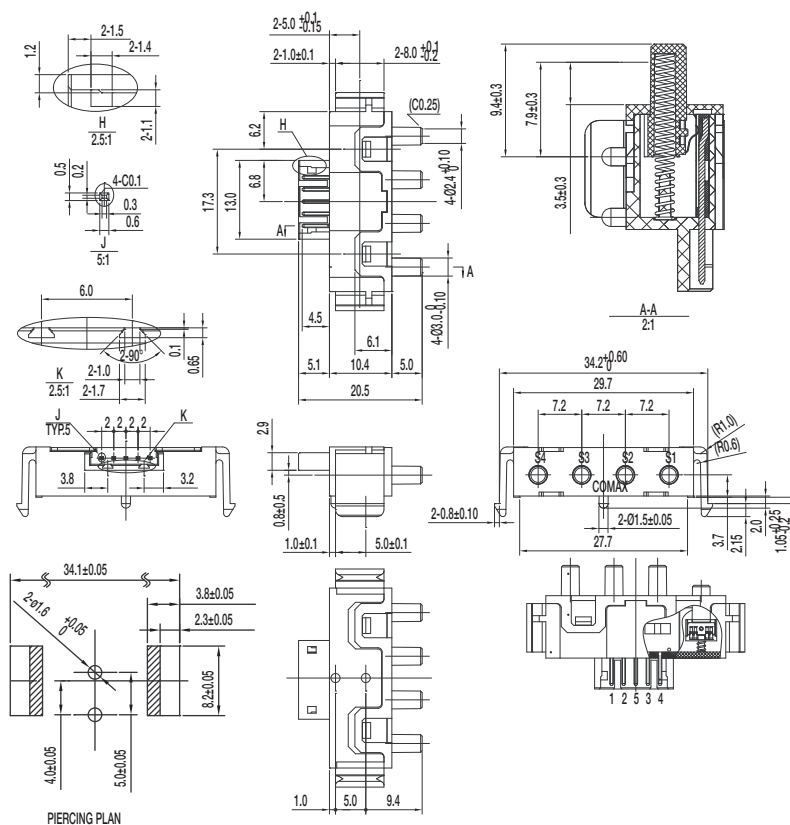
PS Series Pushbutton Switches

NEW!

PS-32C02-F NS 1P3T NON-SHORTING



PS-42C02-F NS 1P4T NON-SHORTING



Specifications

CONTACT RATING: 100 μ A @ 3 VDC min. /
10mA @ 5 VDC max

INITIAL CONTACT RESISTANCE: 100 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 250 V AC (50-60 Hz)
between open terminals and between the
frame and terminal.

OPERATING LIFE: 100,000 cycles with load

OPERATING FORCE: 80 ± 20 gf (0.784 ± 0.196 N)

PRE-TRAVEL: 1.5 ± 0.3 mm

OVER-TRAVEL: 3.5 ± 0.3 mm

TOTAL TRAVEL: 5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 65°C

Materials

KNOB: POM (UL 94HB)

COVER: PA (UL 94V-0)

HOUSING: PA (UL 94V-0)

SPRING: SUS

TERMINAL: Silver plated

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

Specifications

CONTACT RATING: 100 μ A @ 3 VDC min. /
10mA @ 5 VDC max

INITIAL CONTACT RESISTANCE: 100 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 250 V AC (50-60 Hz) between
open terminals and between the frame and terminal.

OPERATING LIFE: 100,000 cycles with load

OPERATING FORCE: 80 ± 20 gf (0.784 ± 0.196 N)

PRE-TRAVEL: 1.5 ± 0.3 mm

OVER-TRAVEL: 3.5 ± 0.3 mm

TOTAL TRAVEL: 5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 65°C

Materials

KNOB: POM (UL 94HB)

COVER: PA (UL 94V-0)

HOUSING: PA (UL 94V-0)

SPRING: SUS

TERMINAL: Silver plated

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

Dimensions are shown: mm
Specifications and dimensions subject to change

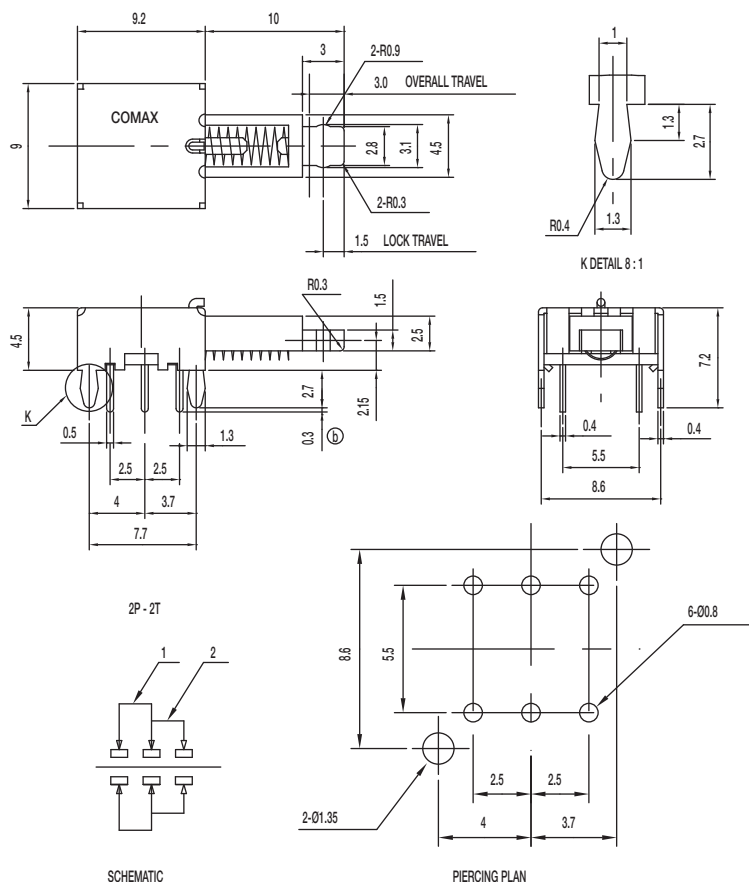
PS Series Pushbutton Switches



A

Pushbutton

PS-22C08-G10 NS DPDT NON-SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles without load

OPERATING FORCE: 200 ± 100 gf (1.96 ± 0.98 N)

LOCK TRAVEL: 1.5 ± 0.3 mm

OVER-TRAVEL: 3 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

Knob: POM (UL 94HB)

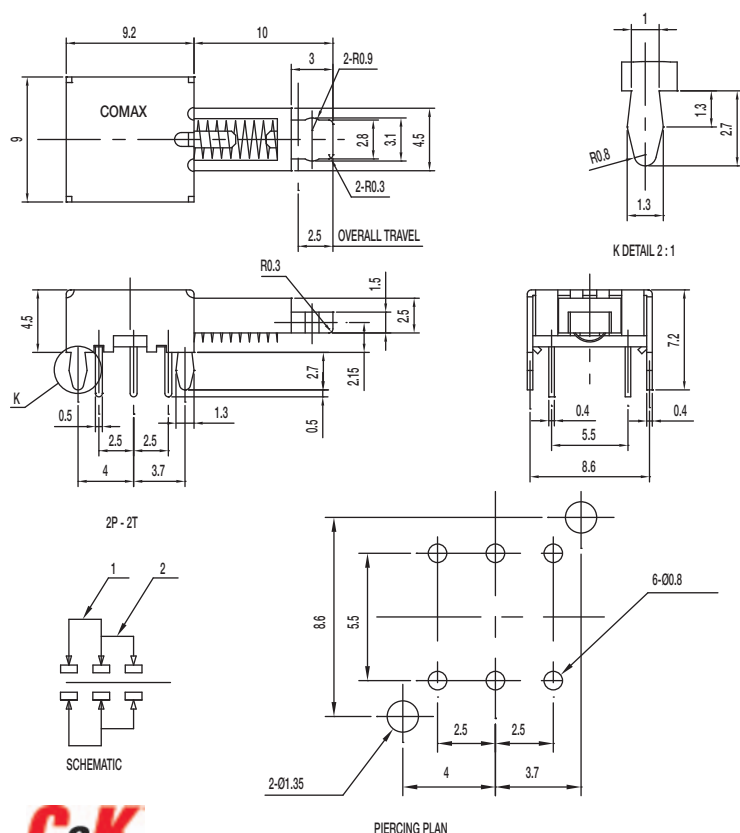
CONTACT: Silver plated

SPRING: SUS

TERMINAL: Silver plated

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

PS-22E08-G10 NS DPDT NON-SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles without load

OPERATING FORCE: 200 ± 100 gf (1.96 ± 0.98 N)

TOTAL TRAVEL: 2.5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

Knob: POM (UL 94HB)

CONTACT: Silver plated

SPRING: SUS

TERMINAL: Silver plated

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

Dimensions are shown: mm
Specifications and dimensions subject to change

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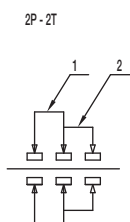
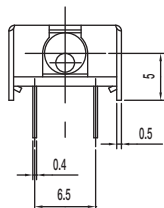
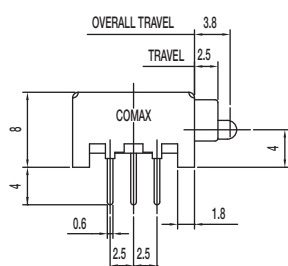
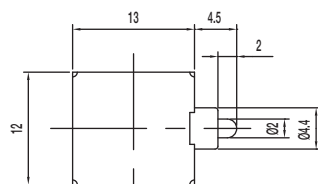


NEW!

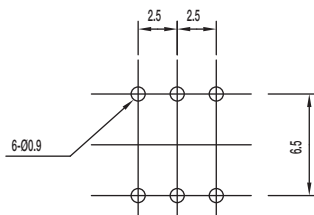
PS-22E09-G 4.5 NS DPDT NON-SHORTING

Pushbutton A

A



SCHEMATIC



PIERCING PLAN

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 70 ± 20 gf (0.686 ± 0.196 N)

TRAVEL: 2.5 ± 0.3 mm

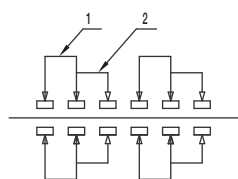
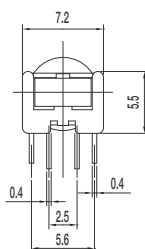
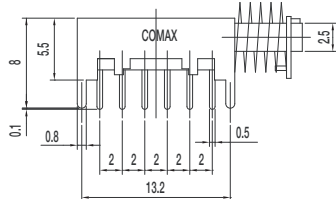
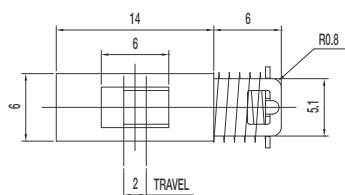
TOTAL TRAVEL: 3.8 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

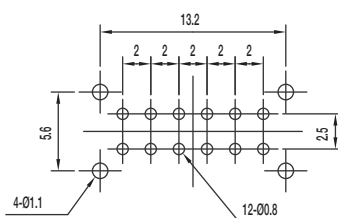
FRAME: SPCC
KNOB: POM (UL 94HB)
CONTACT: Silver plated
SPRING: SUS
TERMINAL: Silver plated

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

PS-42D09-NS 4P2T NON-SHORTING



SCHEMATIC



PIERCING PLAN

CONTACT RATING: 0.3A @ 30 VDC
INITIAL CONTACT RESISTANCE: 30 m ohms max.
INSULATION RESISTANCE: 100 M ohms min.
DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
OPERATING LIFE: 10,000 cycles with load
OPERATING FORCE: 250 ± 100 gf (2.45 ± 0.98N)
TRAVEL: 2 ± 0.3 mm
OPERATING TEMPERATURE: -20°C to 70°C

FRAME: SPCC
KNOB: POM (UL 94HB)
CONTACT PLATE: Silver plated
SPRING: Steel
TERMINAL: Silver plated

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



Dimensions are shown: mm
Specifications and dimensions subject to change

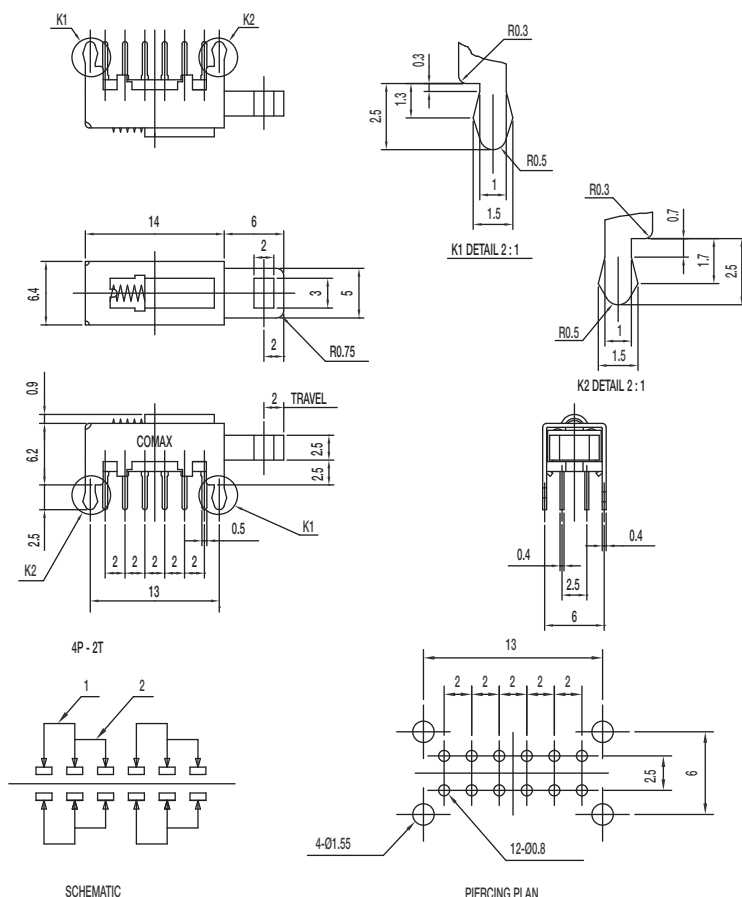
PS Series Pushbutton Switches



A

Pushbutton

PS-42D13-NS 4P2T NON-SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 250 ± 100 gf (2.45 ± 0.98 N)

TRAVEL: 2 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

KNOB: POM (UL 94HB)

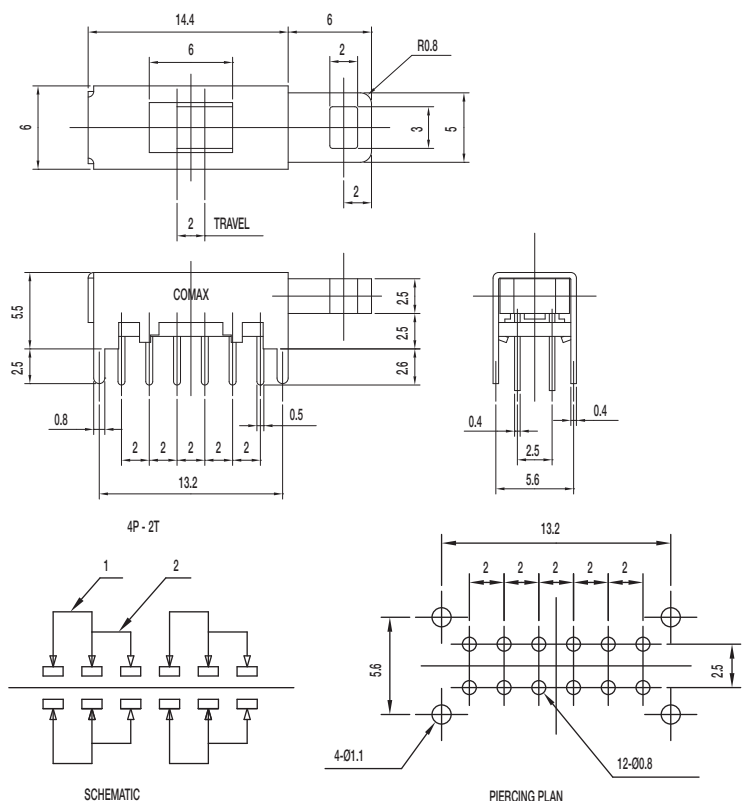
CONTACT: Silver plated

SPRING: Steel

TERMINAL: Silver plated

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

PS-42D16-S 4P2T SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 60 ± 30 gf (0.59 ± 0.29 N)

TRAVEL: 2 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

KNOB: POM (UL 94HB)

CONTACT: Silver plated

TERMINAL: Silver plated

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

Dimensions are shown: mm
Specifications and dimensions subject to change

www.ck-components.com



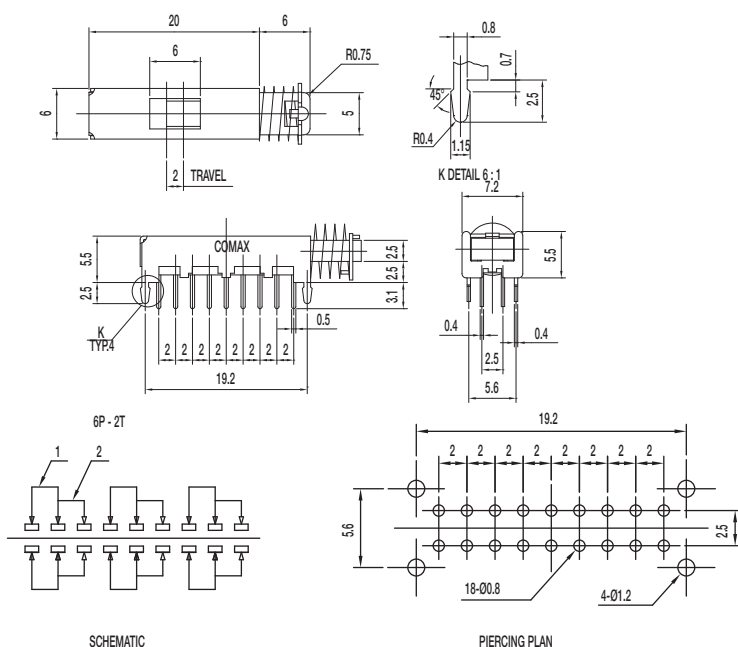
PS Series Pushbutton Switches

NEW!

A

Pushbutton

PS-62D10-S 6P2T SHORTING



Specifications

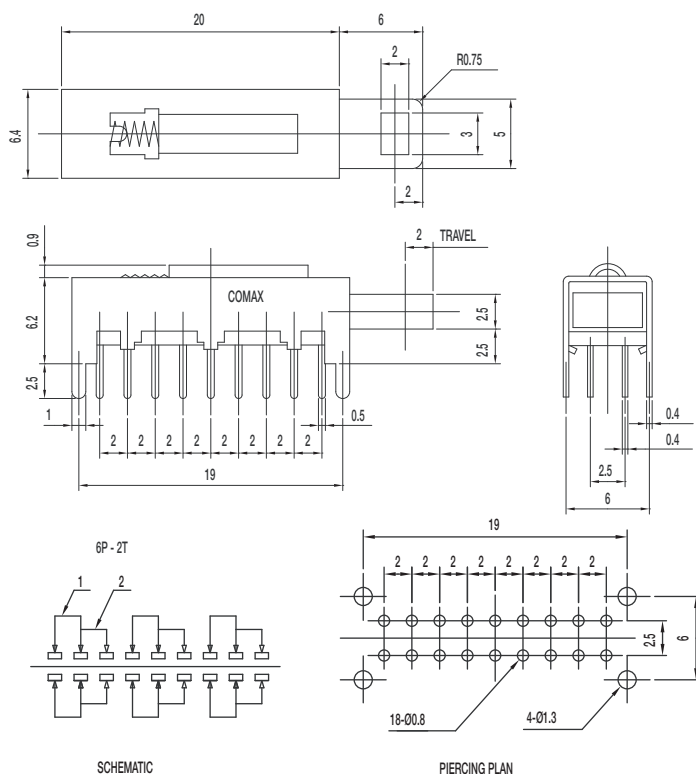
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 250 ± 100 gf (2.45 ± 0.98N)
 TRAVEL: 2 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
 KNOB: POM (UL 94HB)
 CONTACT: Silver plated
 SPRING: Steel
 TERMINAL: Silver plated

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

PS-62D13-S 6P2T SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98N)
 TRAVEL: 2 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
 KNOB: POM (UL 94HB)
 CONTACT PLATE: Silver plated
 SPRING: Steel
 TERMINAL: SUS

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

C&K

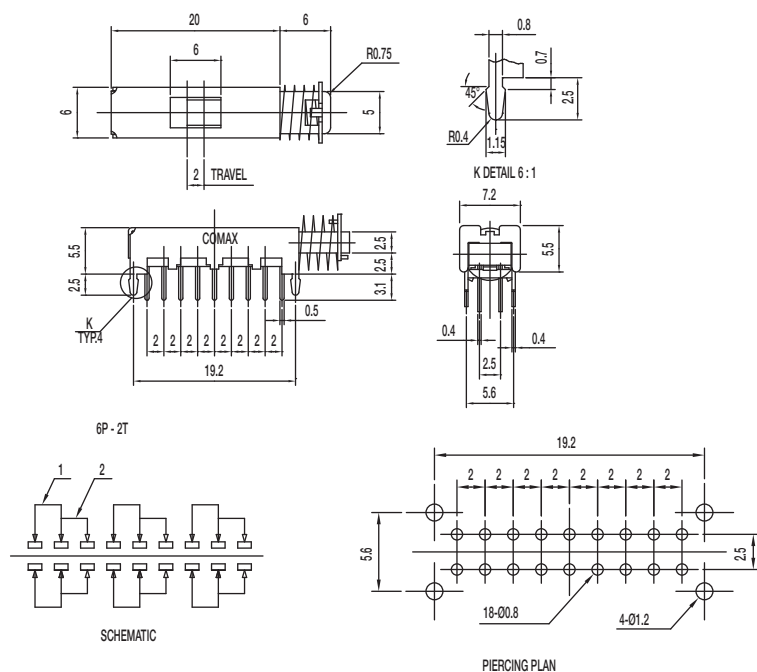
Dimensions are shown: mm
 Specifications and dimensions subject to change

NEW!

PS Series Pushbutton Switches

**A****Pushbutton**

PS-62D15-S 6P2T SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 250 ± 100 gf (2.45 ± 0.98N)

TRAVEL: 2 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

KNOB: POM (UL 94HB)

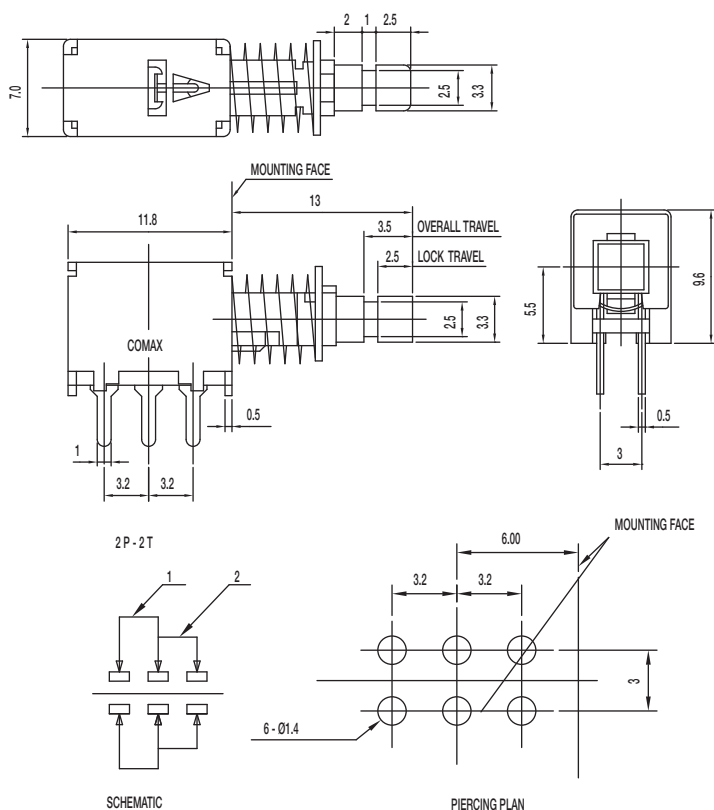
CONTACT: Silver plated

SPRING: Steel

TERMINAL: Silver plated

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

PS-22E02-G13 S DPDT SHORTING WITH LOCK



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98N)

LOCK TRAVEL: 2.5 ± 0.3 mm

TOTAL TRAVEL: 3.5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

KNOB: POM (UL 94HB)

CONTACT: Silver plated

SPRING: Steel

TERMINAL: Silver plated

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

C&K

Dimensions are shown: mm
Specifications and dimensions subject to change



NEW!

PS-22E04-G13 NS DPDT NON-SHORTING WITH LOCK

Pushbutton A

A



Specifications

CONTACT RATING: 0.3A @ 30 VDC
INITIAL CONTACT RESISTANCE: 30 m ohms max.
INSULATION RESISTANCE: 100 M ohms min.
DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
OPERATING LIFE: 10,000 cycles with load
OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98N)
LOCK TRAVEL: 2.5 ± 0.3 mm
TOTAL TRAVEL: 3.5 ± 0.3 mm
OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
KNOB: POM (UL 94HB)
CONTACT: Silver plated
SPRING: Steel
TERMINAL: Silver plated

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

Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98N)

LOCK TRAVEL: 2.5 ± 0.3 mm

TOTAL TRAVEL: 3.5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
KNOB: POM (UL 94HB)
CONTACT: Silver plated
SPRING: Steel
TERMINAL: Silver plated

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

Dimensions are shown: mm
Specifications and dimensions subject to change

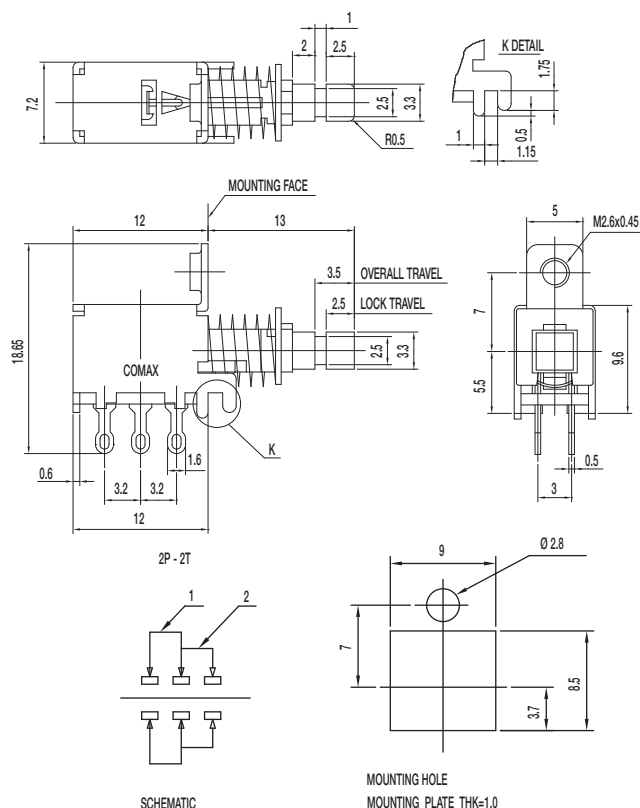
PS Series Pushbutton Switches



A

Pushbutton

PS-22E75-G13 NS DPDT NON-SHORTING WITH LOCK



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98 N)

LOCK TRAVEL: 2.5 ± 0.3 mm

TOTAL TRAVEL: 3.5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

Knob: POM (UL 94HB)

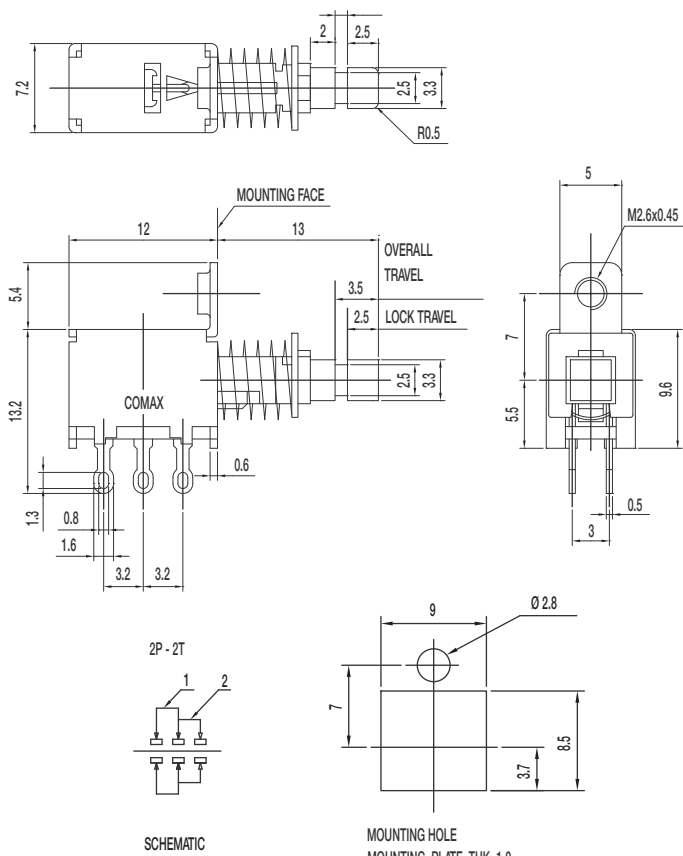
CONTACT: Silver plated

SPRING: Steel

TERMINAL: Silver plated

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

PS-22E95-G13 NS DPDT NON-SHORTING WITH LOCK



Specifications

CONTACT RATING: 0.3A @ 30 VDC

INITIAL CONTACT RESISTANCE: 30 m ohms max.

INSULATION RESISTANCE: 100 M ohms min.

DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.

OPERATING LIFE: 10,000 cycles with load

OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98 N)

LOCK TRAVEL: 2.5 ± 0.3 mm

TOTAL TRAVEL: 3.5 ± 0.3 mm

OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC

Knob: POM (UL 94HB)

CONTACT: Silver plated

SPRING: Steel

TERMINAL: Silver plated

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



Dimensions are shown: mm
Specifications and dimensions subject to change

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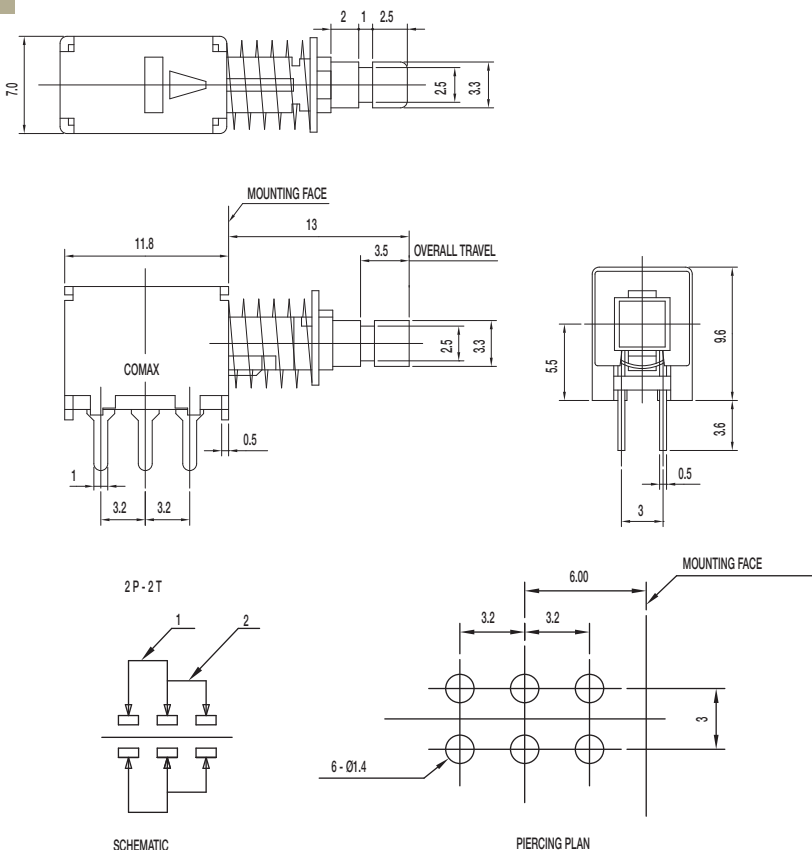
PS Series Pushbutton Switches

NEW!

A

PS-22F02-G13 S DPDT SHORTING

Pushbutton



Specifications

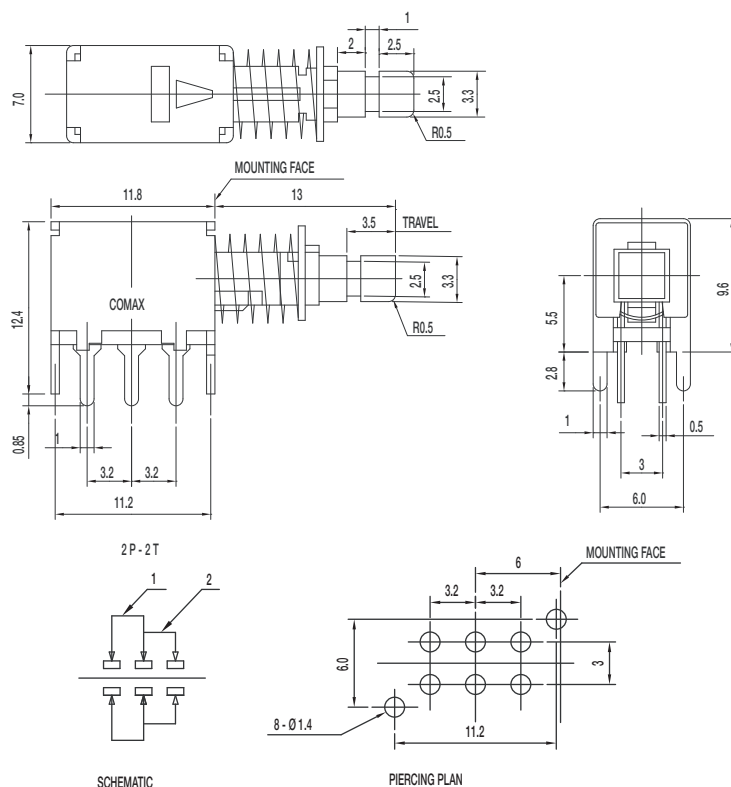
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98N)
 TOTAL TRAVEL: 3.5 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
 KNOB: POM (UL 94HB)
 CONTACT: Silver plated
 SPRING: Steel
 TERMINAL: Silver plated

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

PS-22F04-G13 NS DPDT NON_SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98N)
 TOTAL TRAVEL: 3.5 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
 KNOB: POM (UL 94HB)
 CONTACT: Silver plated
 SPRING: Steel
 TERMINAL: Silver plated

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

C&K

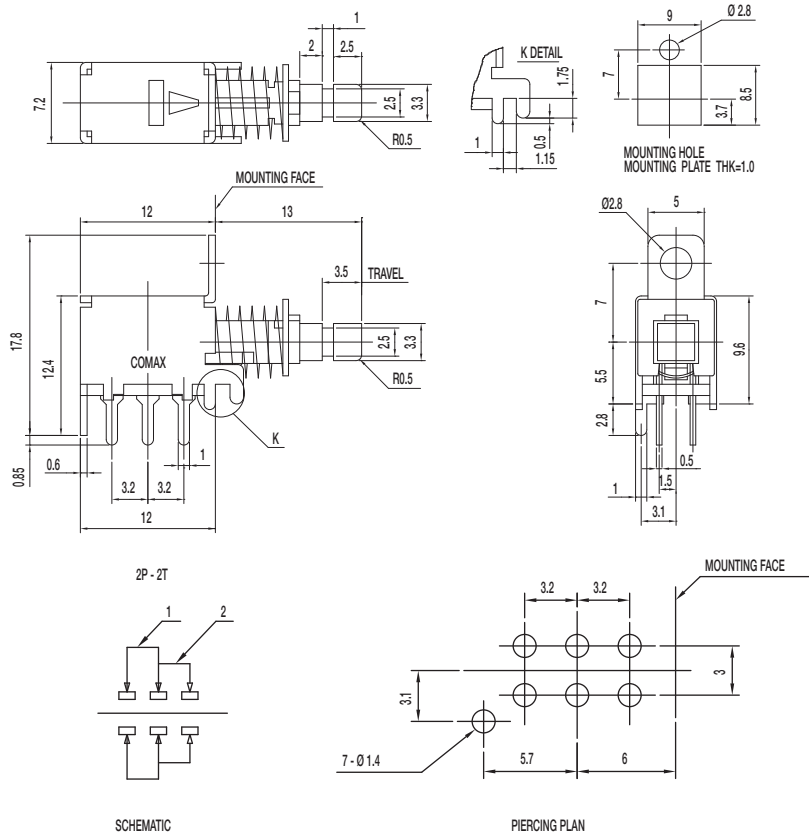
Dimensions are shown: mm
 Specifications and dimensions subject to change

NEW!

PS Series Pushbutton Switches

**A****Pushbutton**

PS-22F24-G13 NS DPDT NON_SHORTING



Specifications

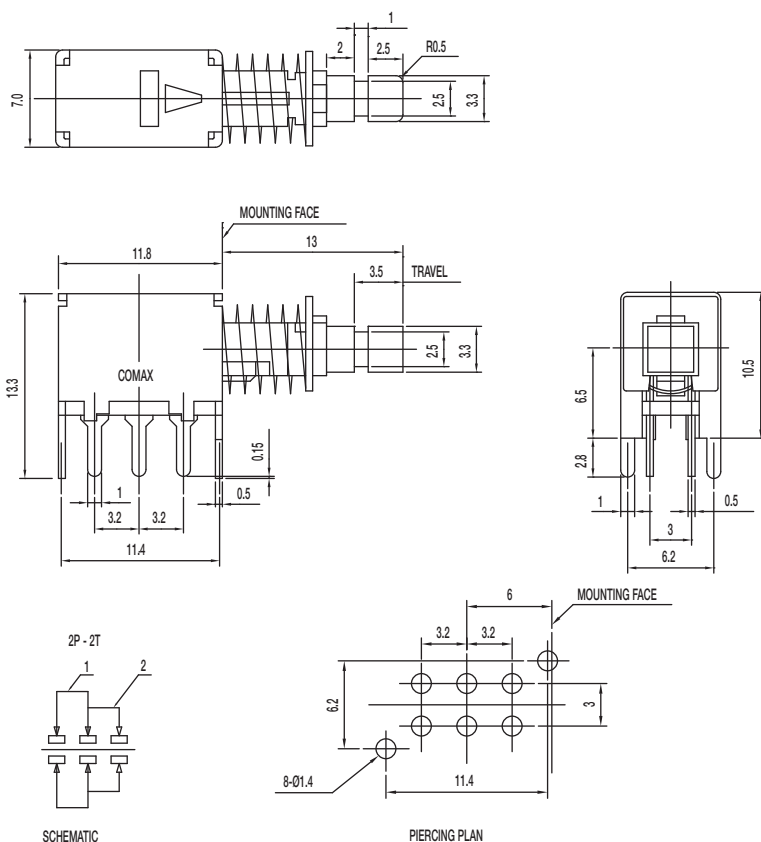
CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98 N)
 TOTAL TRAVEL: 3.5 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
 KNOB: POM (UL 94HB)
 CONTACT: Silver plated
 SPRING: Steel
 TERMINAL: Silver plated

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

PS-22F44-G13 NS DPDT NON_SHORTING



Specifications

CONTACT RATING: 0.3A @ 30 VDC
 INITIAL CONTACT RESISTANCE: 30 m ohms max.
 INSULATION RESISTANCE: 100 M ohms min.
 DIELECTRIC STRENGTH: 500 V AC (50-60 Hz) between open terminals and between the frame and terminal.
 OPERATING LIFE: 10,000 cycles with load
 OPERATING FORCE: 300 ± 100 gf (2.94 ± 0.98 N)
 TOTAL TRAVEL: 3.5 ± 0.3 mm
 OPERATING TEMPERATURE: -20°C to 70°C

Materials

FRAME: SPCC
 KNOB: POM (UL 94HB)
 CONTACT: Silver plated
 SPRING: Steel
 TERMINAL: Silver plated

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

C&K

Dimensions are shown: mm
 Specifications and dimensions subject to change