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Micro Miniature Pushbuttons with Tactile Feel Vertical Thru-Hole Mounting

FSM Series

MATERIAL SPECIFICATIONS:

Contacts.....Silverplate
Case MaterialPolyamide
Actuator Material.....Polyester
Terminals/Fixed Contacts.....Silver plate

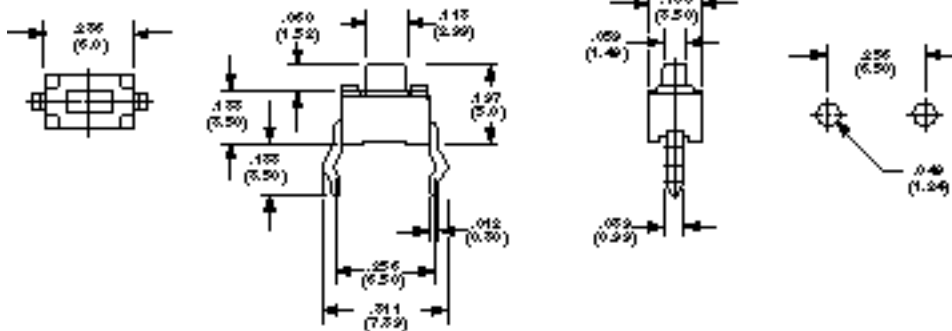
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-40°F to +176°F (-40°C to + 80°C)
Storage Temperature.....-40°F to +176°F (-40°C to + 80°C)
Solder Heat ResistanceSee Page M6



TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
Initial Contact Resistance.....500 Milliohms max.
Insulation Resistance500 Megohms min. @ 500 VDC
Dielectric Strength250 VAC
Actuation Force.....100 Grams
Actuator Travel0.010" (.254)
Life Expectancy20,000 Cycles

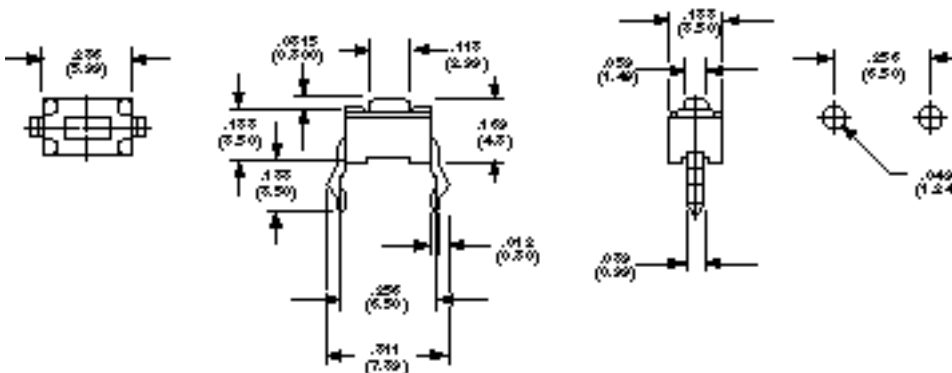
6 x 3.5mm





FSM

Model	Type		
FSM	SPST	Off	(On)
(On) indicates momentary position.			

6 x 3.5mm



FSMC

Model	Type		
FSMC	SPST	Off	(On)
(On) indicates momentary position.			

Need more technical information?
Consult your local Augat sales office

AUGAT Inc.
452 John L. Dietsch Blvd.
Attleboro Falls, MA 02762, USA

FSMJ Series *Micro Miniature Vertical Pushbuttons with Tactile Feel & ESD Grounding Terminal*

MATERIAL SPECIFICATIONS:

Contacts.....Copper alloy, silver plate
 CasePolyamide
 Actuator Button.....Polyacetal Resin
 Frame.....Copper alloy, tin plate
 TerminalsCopper alloy, silver plate

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC
 Actuation Force.....160 Grams AVG (STD.)
 Actuator Travel012" (0,3)
 Electrostatic Discharge
 w/ESD Ground Terminal.....5Kv w/no discharge
 Life Expectancy100,000 Cycles

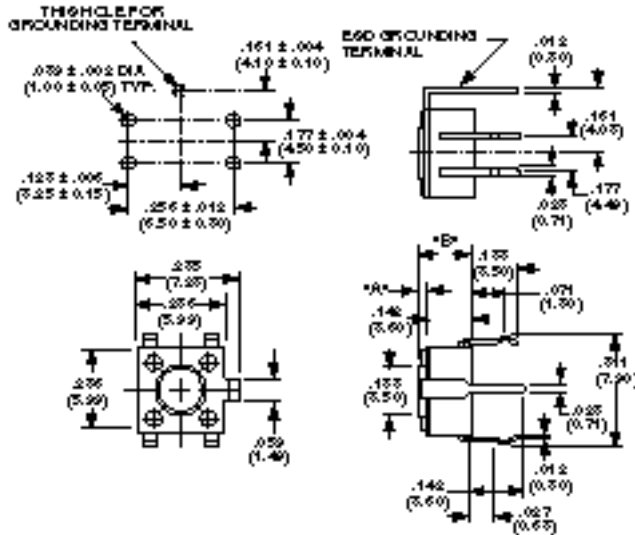
ENVIRONMENTAL SPECIFICATIONS

Operating Temperature.....-4°F to +158°F (-20°C to + 70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceSee Page M6

6 x 6 mm



FSM1J
WITH
ESD
TERMINAL

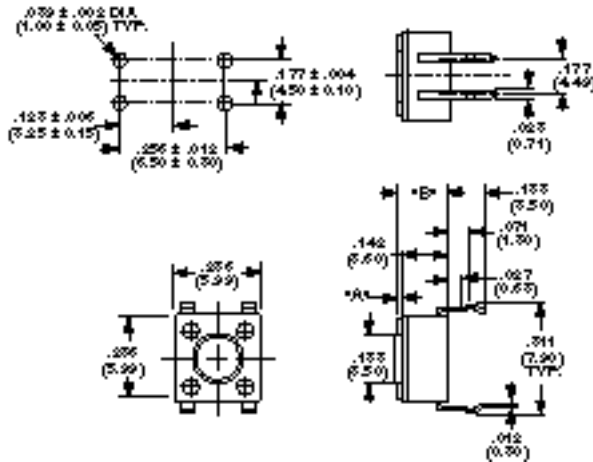


Part Number	Dim. A	Dim B	Button Color
FSM 1J	.028" (0,70)	.169" (4,30)	Black
FSM 3J	.055" (1,40)	.196" (5,00)	Black
FSM 5J	.134" (3,40)	.276" (7,00)	Blue
FSM 7J	.232" (5,90)	.374" (9,50)	Black
FSM 9J	.146" (3,70)	.287" (7,30)	Ivory
FSM 11J	.173" (4,40)	.315" (8,00)	White
FSM 13J	.370" (9,40)	.512" (13,00)	Black
FSM 15J	.527" (13,40)	.669" (17,00)	Black
FSM 17J	.193" (4,90)	.335" (8,51)	Black

6 x 6 mm

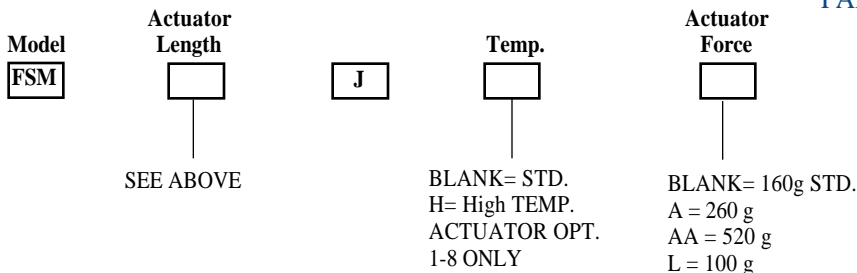


FSM2J
WITHOUT
ESD
TERMINAL



Part Number	Dim. A	Dim B	Button Color
FSM 2J	.028" (0,70)	.169" (4,30)	Black
FSM 4J	.055" (1,40)	.196" (5,00)	Black
FSM 6J	.134" (3,40)	.276" (7,00)	Blue
FSM 8J	.232" (5,90)	.374" (9,50)	Black
FSM 10J	.146" (3,70)	.287" (7,30)	Ivory
FSM 12J	.173" (4,40)	.315" (8,00)	White
FSM 14J	.370" (9,40)	.512" (13,00)	Black
FSM 16J	.527" (13,40)	.669" (17,00)	Black
FSM 18J	.193" (4,90)	.335" (8,51)	Black

PART NUMBERING SEQUENCE



Micro Miniature Pushbuttons with Tactile Feel "Radial Tape" FSMJRT Series

MATERIAL SPECIFICATIONS:

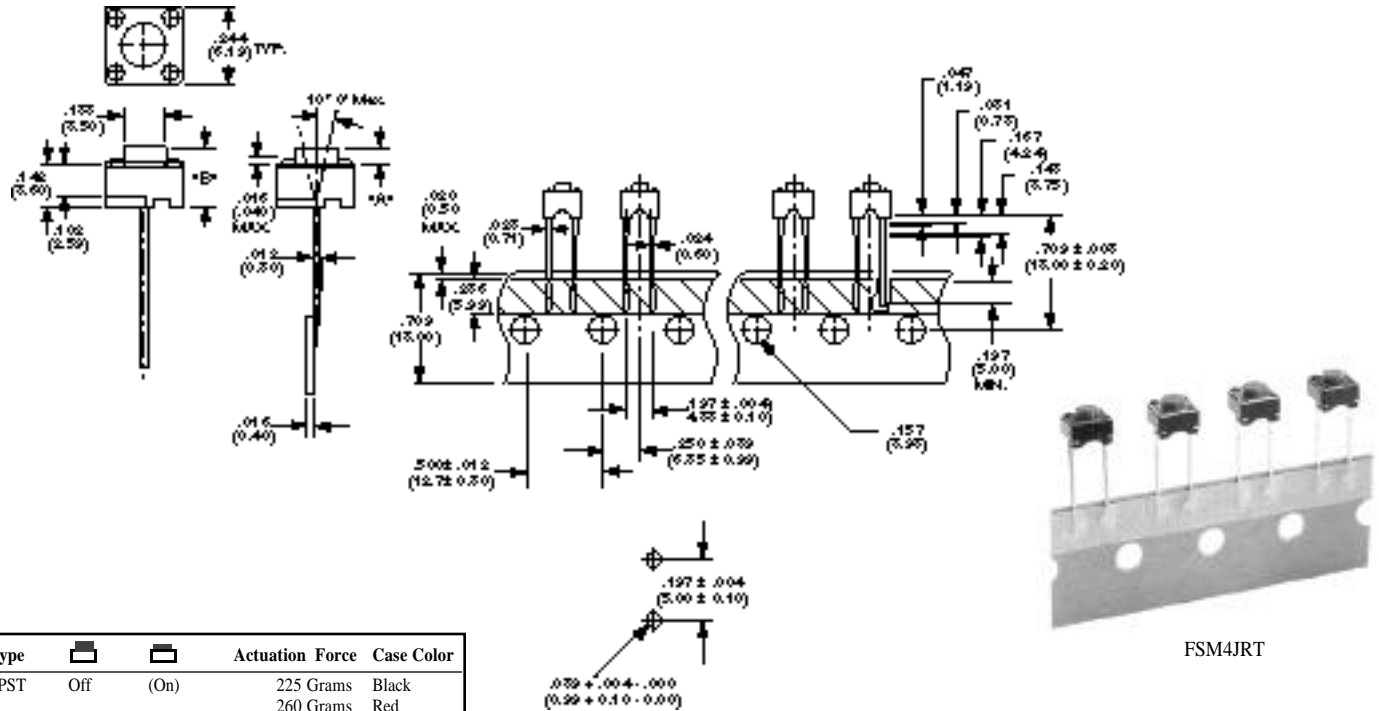
Contacts.....Copper alloy, silver plate
 CasePolyamide
 Actuator Button.....Polyacetal Resin
 Frame.....Stainless Steel
 TerminalsCopper alloy, silver plate

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC
 Actuation Force.....See Below
 Actuator Travel010" (.254)
 Life Expectancy100,000 Cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature..... -4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceSee Page M6



Type			Actuation Force	Case Color
SPST	Off	(On)	225 Grams	Black
			260 Grams	Red

(On) indicates momentary position.

PART NUMBERING SEQUENCE

Model	Actuator Length		Actuation Force	Packaging
FSM		J		RT
ACTUATOR LENGTH DIM. "A"	W/O ESD TERMINAL	SWITCH HEIGHT DIM "B"	BLANK = 225 g (STD.) A = 260 g (OPT.)	
.028"(0,71)	2	.169" (4,30)		
.055"(1,40)	4	.196" (5,00)		
.134"(3,40)	6	.276" (7,00)		
.232"(5,89)	8	.374" (9,50)		
.146"(3,70)	10	.287" (7,30)		
.173"(3,63)	12	.315" (8,00)		
.370"(9,40)	14	.512" (13,00)		
.527"(1,34)	16	.669" (17,00)		
.193"(4,90)	18	.335" (8,51)		

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

FSMRAJ Series

Micro Miniature Pushbuttons with Tactile Feel "Right Angle"

MATERIAL SPECIFICATIONS:

Contacts.....Copper alloy, silver plate
 CasePolyamide
 Actuator Button.....Polyacetal Resin
 Frame.....Copper alloy, tin plate
 TerminalsCopper alloy, silver plate

TYPICAL PERFORMANCE CHARACTERISTICS:

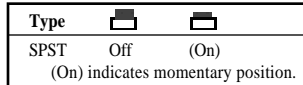
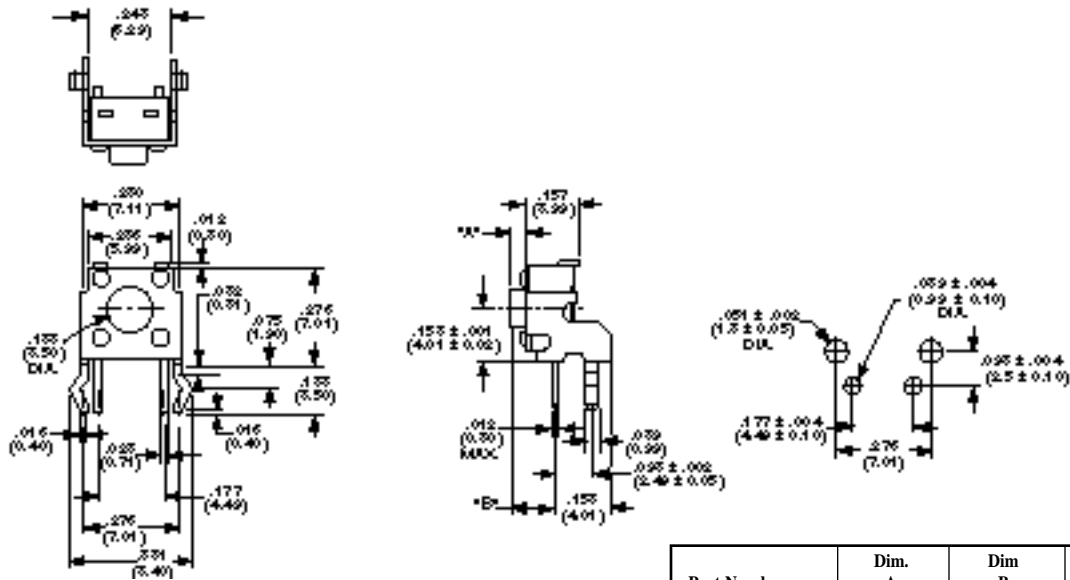
Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC
 Actuation Force.....See Below
 Actuator Travel012" (0,3)
 Life Expectancy100,000 Cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature..... -4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceSee Page M6

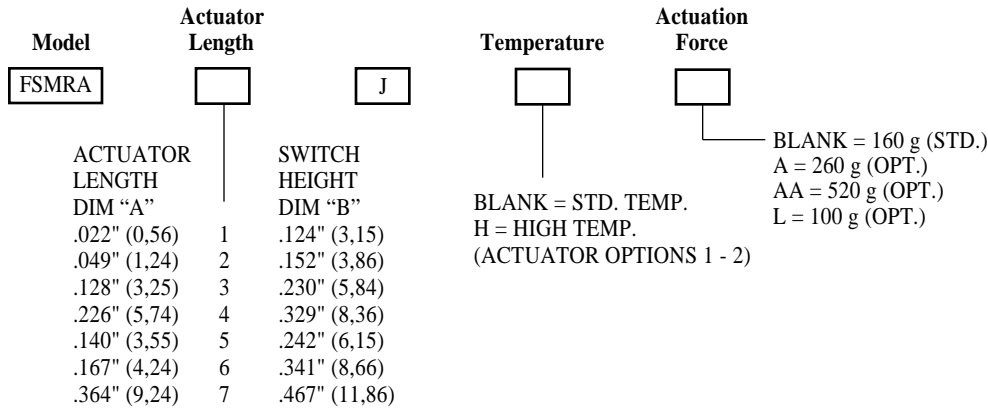


FSMRA1J



Part Number	Dim. A	Dim B	Button Color
FSMRA 1J	.022" (0,55)	.124" (3,15)	Black
FSMRA 2J	.049" (1,25)	.152" (3,86)	Black
FSMRA 3J	.128" (3,25)	.230" (5,84)	Blue
FSMRA 4J	.226" (5,74)	.329" (8,36)	Black
FSMRA 5J	.140" (3,55)	.242" (6,15)	Ivory
FSMRA 6J	.167" (4,25)	.341" (8,66)	White
FSMRA 7J	.364" (9,25)	.467" (11,86)	Black

PART NUMBERING SEQUENCE



CONSULT FACTORY FOR OTHER OPTIONS



Micro Miniature Pushbuttons "Horizontal Gang" FSMRAJ Series

MATERIAL SPECIFICATIONS:

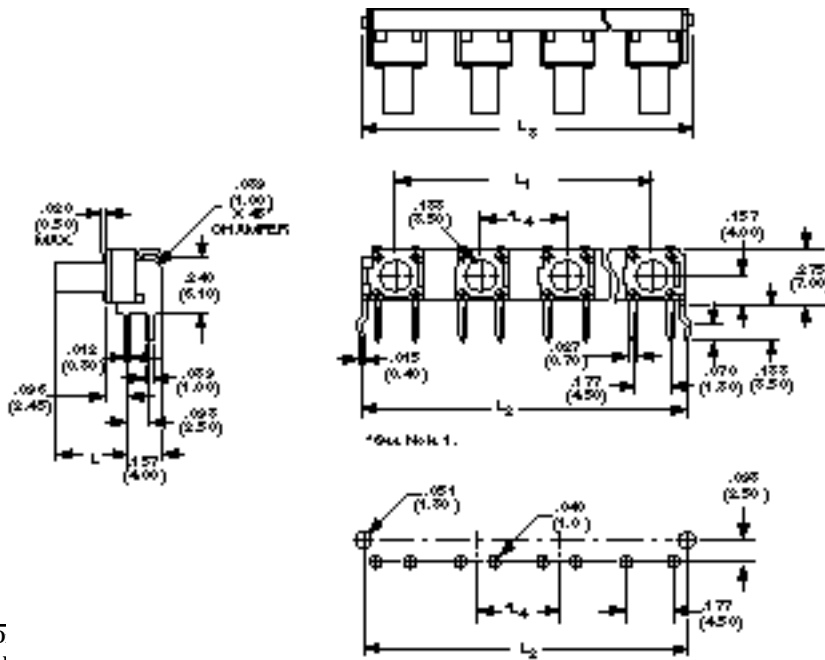
Contacts.....Copper alloy, silver plate
 CasePolyamide
 Actuator Button.....Polyacetal Resin
 Frame.....Stainless Steel
 TerminalsCopper alloy, silver plate

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC
 Actuation Force.....See Below
 Actuator Travel012" (0,3)
 Life Expectancy100,000 Cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature..... -4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceSee Page M6



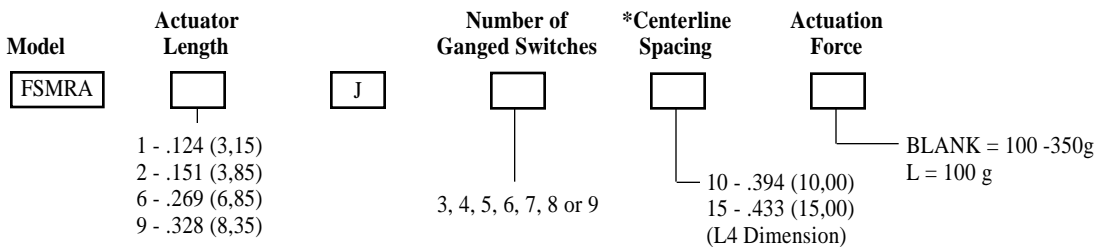
# of Positions	D		
	L ₁	L ₂	L ₃
3	.787" (20,00)	1.06" (27,00)	1.11" (28,19)
4	1.18" (30,00)	1.46" (37,00)	1.51" (38,35)
5	1.57" (40,00)	1.85" (47,00)	1.90" (48,26)
6	1.97" (50,00)	2.24" (57,00)	2.30" (58,42)
7	2.36" (60,00)	2.64" (67,00)	2.69" (68,32)
9	3.15" (80,00)	3.43" (87,00)	3.48" (88,40)

Type	Off	On
SPST		

(On) indicates momentary position.

*Note 1: L₄ = .394 (10,00) or .590 (15,00) Center line spacing

PART NUMBERING SEQUENCE



CONSULT FACTORY FOR OTHER OPTIONS

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

FSM2RA2J Series *Micro Miniature Pushbuttons with "Vertical Dual Two Story"*

MATERIAL SPECIFICATIONS:

Contacts.....Copper alloy, silver plate
 CasePolyamide
 Actuator Button.....Polyacetal Resin
 Frame.....Copper alloy, tin plate
 TerminalsCopper alloy, silver plate

ENVIRONMENTAL SPECIFICATIONS

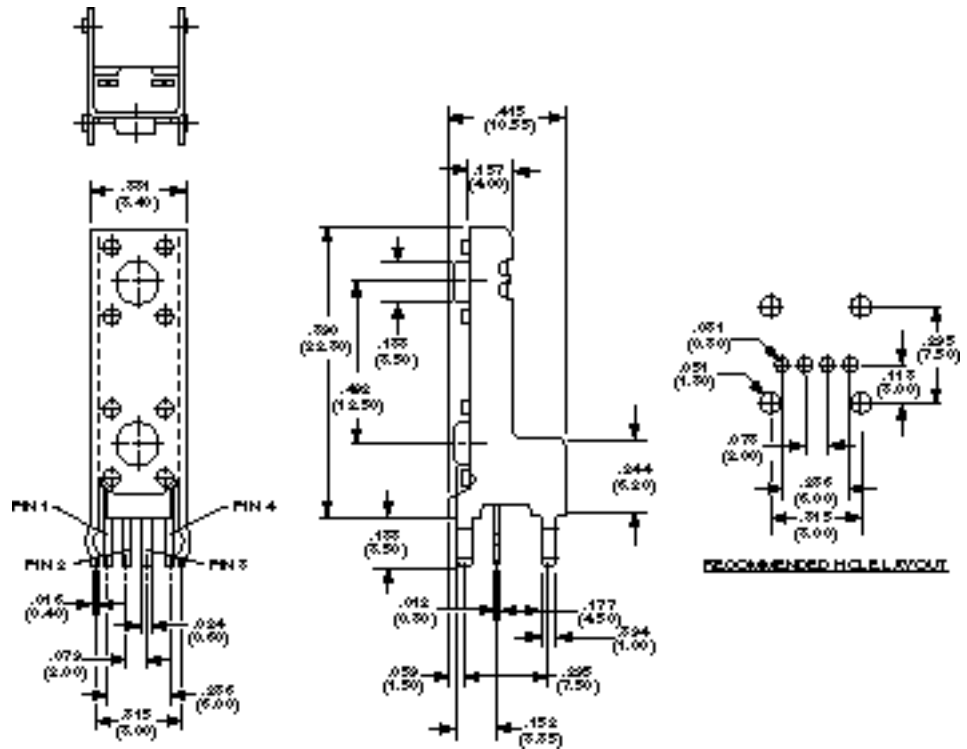
Operating Temperature..... -4°F to +158°F (-20°C to + 70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceSee Page M6

TYPICAL PERFORMANCE CHARACTERISTICS:



Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC
 Actuation Force.....160 Grams AVG.
 Actuator Travel010"(.254)
 Life Expectancy100,000 cycles



FSM2RA2J



Note: Pins #1 and #4 are designated for the top switch
 Pins #2 and #3 are designated for the bottom switch

Model	Type		
FSM2RA2J	SPST	Off	(On)
(On) indicates momentary position.			

Micro Miniature Pushbuttons with "Square Button"

FSMCD/A & FSMRACD/A

MATERIAL SPECIFICATIONS:

Contacts.....Copper alloy, silver plate
CasePolyamide
Actuator Button.....Polyacetal Resin
Frame.....Stainless Steel
TerminalsCopper alloy, silver plate

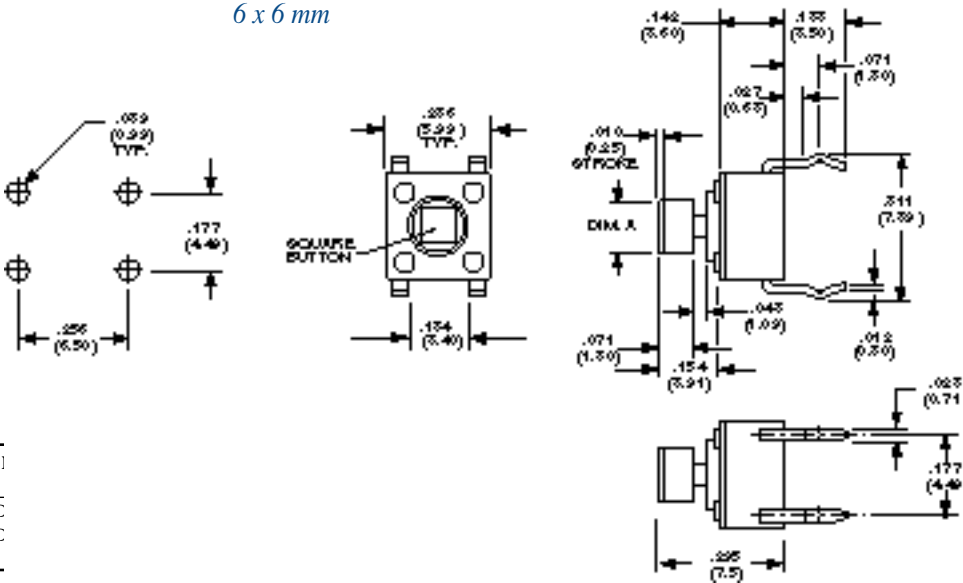
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
Initial Contact Resistance.....100 Milliohms Max.
Insulation Resistance100 Megohms min. @ 100 VDC
Dielectric Strength250 VAC
Actuation Force.....100 - 350 Grams
Actuator Travel010"(,254)
Life Expectancy100,000 Cycles

ENVIRONMENTAL SPECIFICATIONS

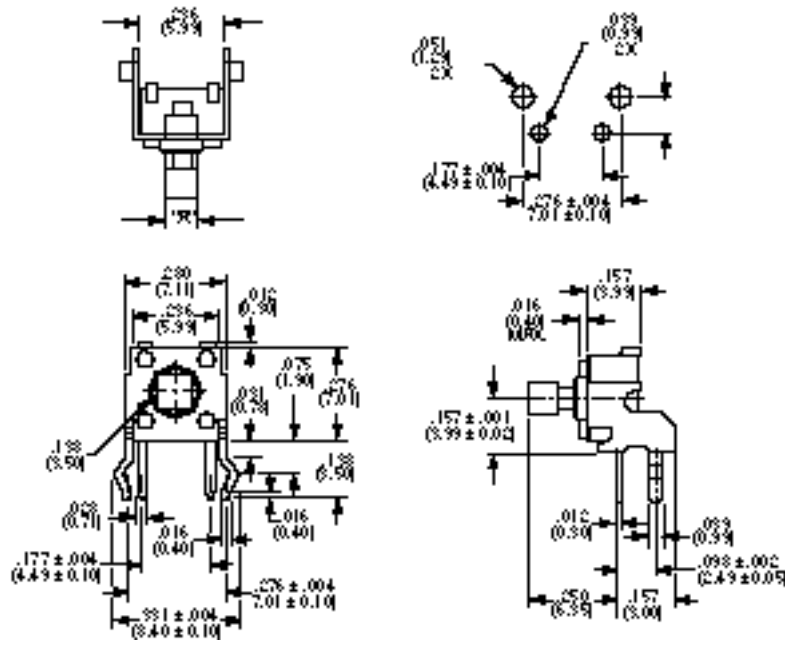
Operating Temperature..... -4°F to +158°F (-20°C to +70°C)
Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
Solder Heat ResistanceSee Page M6

6 x 6 mm



FSMCD/A

Model
FSMCE
FSMCE



FSMRACD/A

Model Number	Dim. A	Button Color
FSMRACD	.095 (2,42)	Blue
FSMRACDA	.110 (2,80)	Black

Need more technical information?
Consult your local Augat sales office

AUGAT Inc.
452 John L. Dietsch Blvd.
Andover Falls, MA 02762, USA

FSMSM/JM Series *Micro Miniature Pushbuttons* “Surface Mount Gullwing”

MATERIAL SPECIFICATIONS:

Contacts.....Silverplate
 Case MaterialSee Below
 Actuator Material.....Polyamide
 TerminalsSilver plate

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....500 Milliohms max.
 Insulation Resistance500 Megohms min. @ 500 VDC
 Dielectric Strength250 VAC
 Actuation Force.....100 Grams
 Actuator Travel0.10"(.254)
 Life Expectancy20,000 Cycles

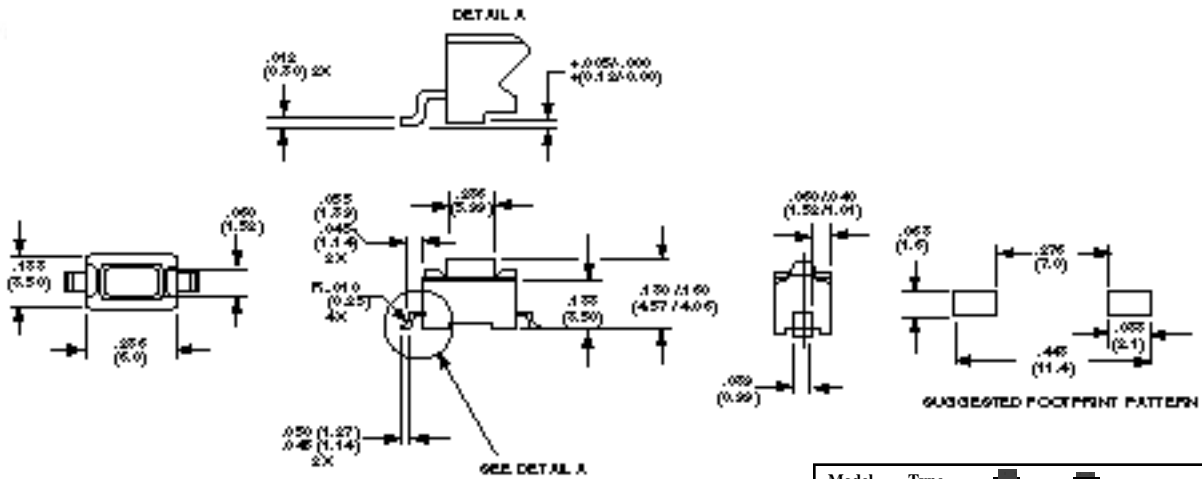
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-40°F to +176°F (-40°C to + 80°C)
 Storage Temperature.....-40°F to +176°F (-40°C to + 80°C)
 Solder Heat ResistanceFSMSM IR Soldering EIA-364-56,
 Procedure 5 Level 1, 215° C
 FSMJM IR Soldering per EIA 364-56
 Procedure 5, level 2, 240° C

3.5 x 6.0 mm



FSMSM



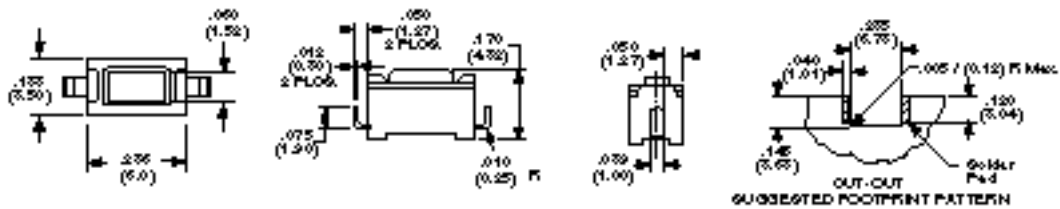
Model	Type		
FSMSM	SPST	Off	(On)
(On) indicates momentary position.			

Available in optional Tape & Reel P/N FSMSMTR
 Case Material Polyester

3.5 x 6.0 mm



FSMJM



Model	Type		
FSMJM	SPST	Off	(On)
(On) indicates momentary position.			

Available in optional Tape & Reel P/N FSMJMTR
 Case Material Polyamide

Micro Miniature Pushbuttons with “Surface Mount Gull Wing” **FSMJ SMA Series**

MATERIAL SPECIFICATIONS:

Contacts.....Copper alloy, silver plate
 CasePolyamide
 Actuator Button.....Polyamide
 Frame.....Copper alloy, tin plate
 TerminalsCopper alloy, silver plate

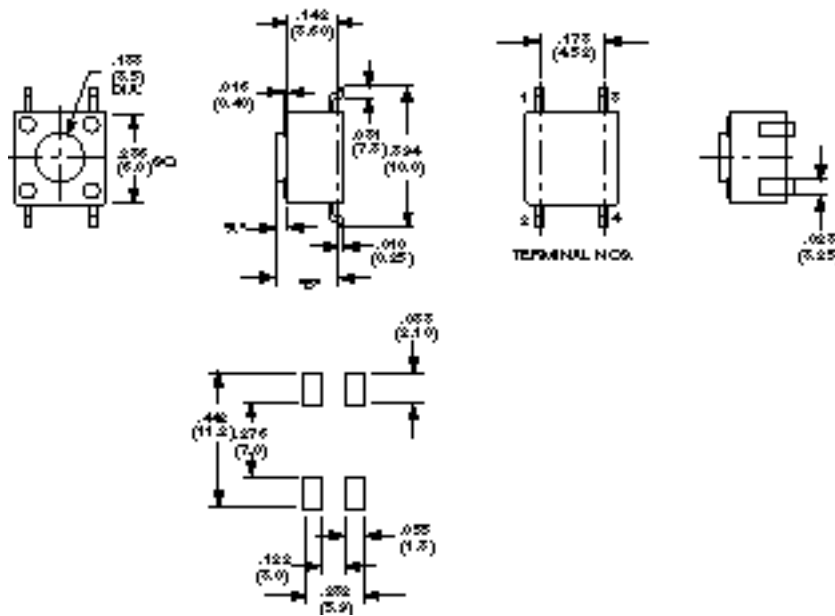
ENVIRONMENTAL SPECIFICATIONS

Operating Temperature..... -4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceIR Soldering EIA-364-56
 Procedure 5 Level 3, 260° C

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC for 1 minute
 Actuation Force.....100 - 350 Grams
 Actuator Travel010"(.254)
 Life Expectancy100,000 Cycles

6 x 6 mm



FSMJ SMA

Part Number	Dim. A	Dim. B	Button Color
FSM2JSMA	.028" (0,70)	.169" (4,30)	Black
FSM4JSMA	.055" (1,40)	.196" (5,00)	Black
FSM6JSMA	.134" (3,40)	.276" (7,00)	Blue

Type	Off	On
SPST		

(On) indicates momentary position.

See pages M2-M4 for application specific indexing.

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

FSM1LP Series *Micro Miniature Pushbuttons with ESD GND Surface Mount Termination "Low Profile"*

MATERIAL SPECIFICATIONS:

Contacts.....Copper Alloy, silver plated
 Case MaterialPPS
 Stem.....PPS
 CoverNickel, silver
 TerminalsCopper alloy, silver plated

ENVIRONMENTAL SPECIFICATIONS:

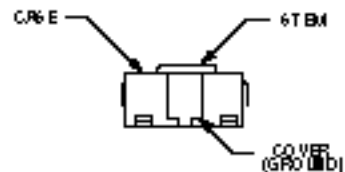
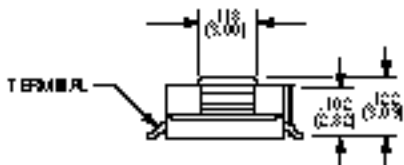
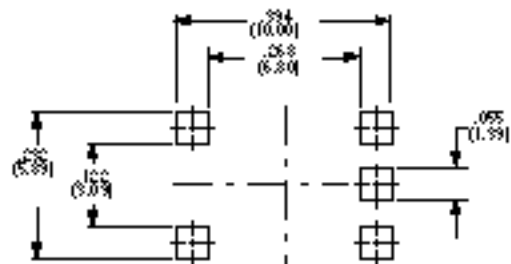
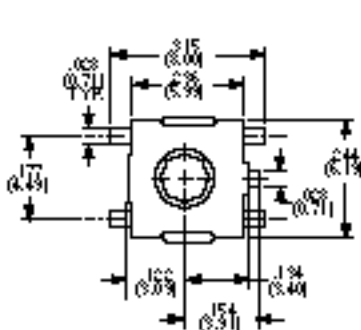
Operating Temperature.....-4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceIR Soldering EIA-364-56
 Procedure 5 Level 2, 240° C

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC. 1 minute
 Actuation Force.....See Below.
 Life Expectancy100,000 Cycles



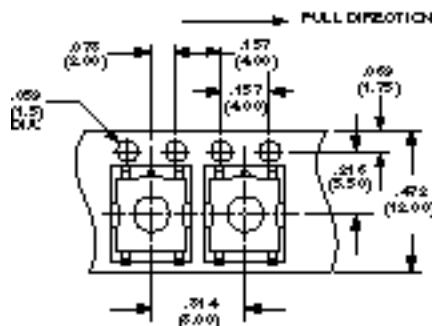
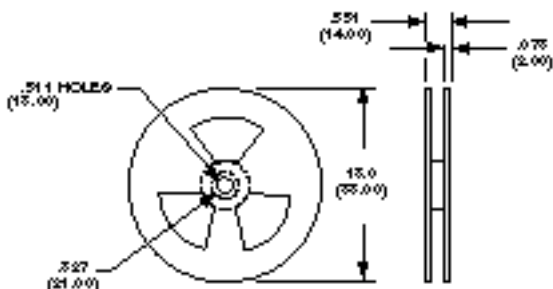
FSM1LP



Type	Off	On
SPST		
	(On) indicates momentary position.	

Part Number	Actuator Color	Actuation Force
FSM1LP	Black	160 g.
FSM1LPA	Red	260 g.

FOR TAPE & REEL OPTION ADD "TR" SUFFIX TO PART NUMBER (QTY. PER REEL: 2K)



Micro Miniature Pushbuttons with Surface Mount "Dustproof" FSMLBASM Series

MATERIAL SPECIFICATIONS:

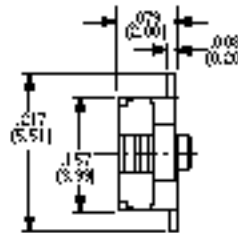
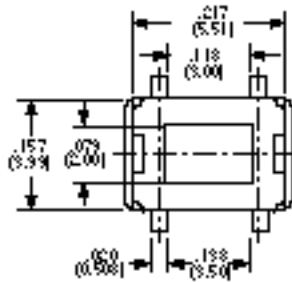
Contacts.....Copper Alloy, silver plated
 Case MaterialPPS
 Stem.....PPS
 CoverStainless Steel
 TerminalsCopper alloy, silver plated

ENVIRONMENTAL SPECIFICATIONS:

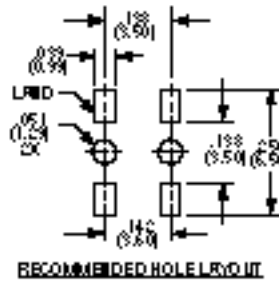
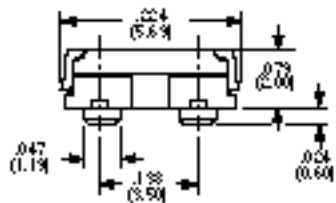
Operating Temperature.....-4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceIR Soldering per EIA-364-56
 Procedure 5 Level 2, 240° C



TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating50mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @ 100 VDC
 Dielectric Strength250 VAC 1 minute
 Actuation Force.....200 Grams
 Actuator Travel010"(.254)
 Life Expectancy20,000 Cycles

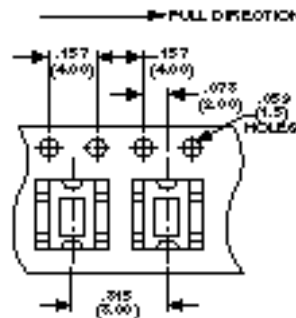
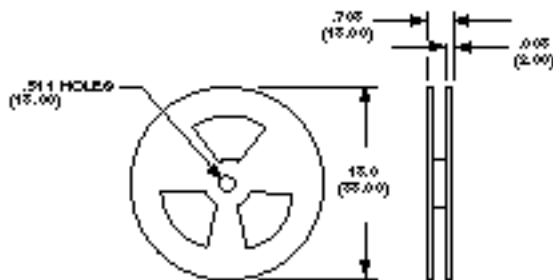


FSMLBASM



Model	Type		
FSMLBASM	SPST	Off	(On)
(On) indicates momentary position.			

FOR TAPE & REEL OPTION ADD "TR" SUFFIX TO PART NUMBER



Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

FSM100 - 104 Series *12mm Pushbuttons with "Flush and Extended Actuators"*

MATERIAL SPECIFICATIONS:

Contacts.....Copper alloy, silver plate
 CasePolyester
 Actuator Button.....Polyacetal Resin
 Frame.....Polyamide
 TerminalsCopper alloy

TYPICAL PERFORMANCE CHARACTERISTICS:

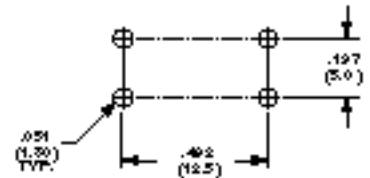
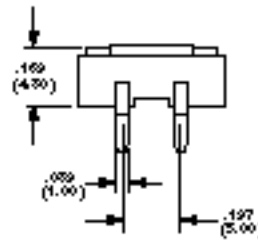
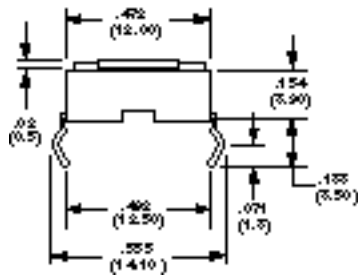
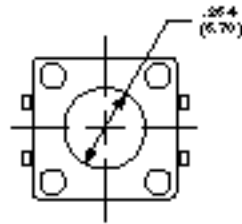
Contact Rating50 mA @ 12 VDC
 Initial Contact Resistance.....100 Milliohms max.
 Insulation Resistance100 Megohms min. @100 VDC
 Dielectric Strength250 VAC
 Actuation Force.....160 Grams AVG.
 Actuator Travel012"(0,3)
 Life Expectancy100,000 cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature.....4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-22°F to +176°F (-30°C to +80°C)
 Solder Heat ResistanceSee Page M6



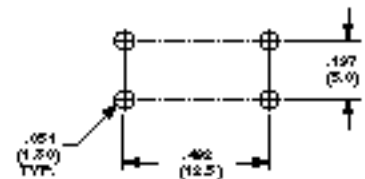
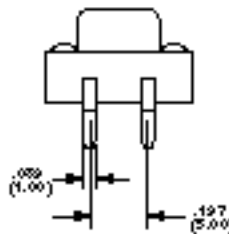
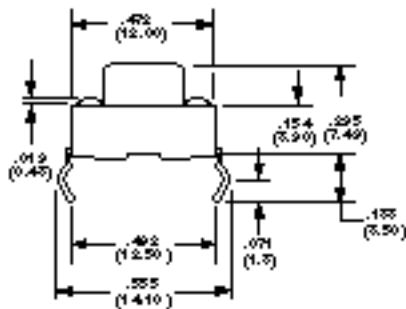
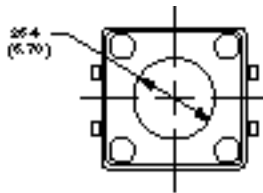
FSM100



Model	Type		
FSM100	SPST	Off	(On)
(On) indicates momentary position.			

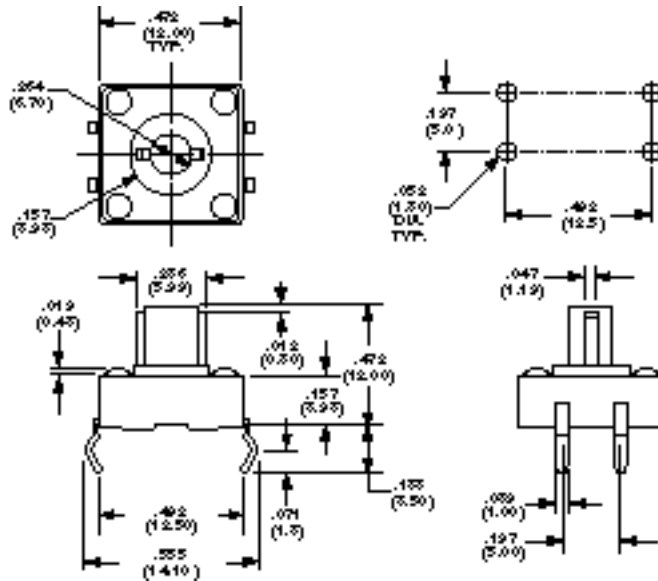


FSM101





Model	Type		
FSM101	SPST	Off	(On)
(On) indicates momentary position.			

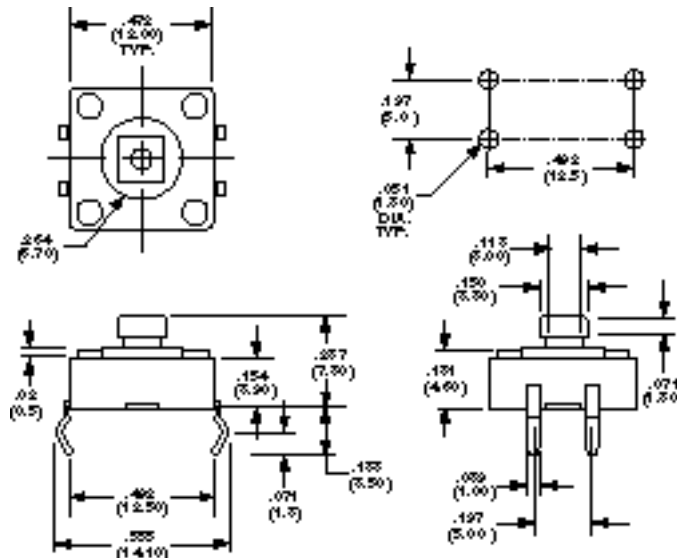
12mm Pushbuttons with Tactile Feel Vertical and "Right Angle" FSM100 - 104 Series





FSM102

Model	Type		
FSM102	SPST	Off	(On)

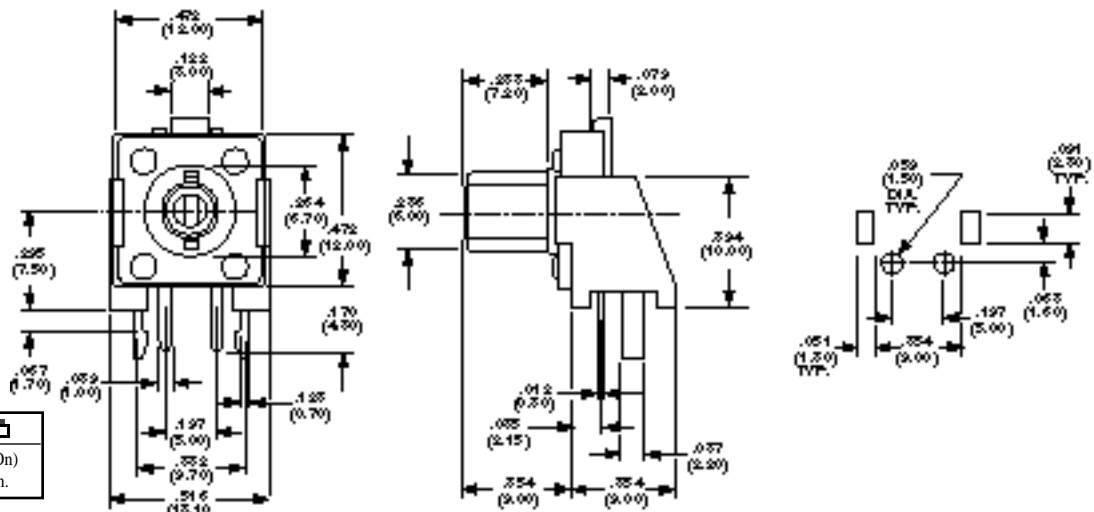
(On) indicates momentary position.





FSM103

Model	Type		
FSM103	SPST	Off	(On)

(On) indicates momentary position.



Model	Type		
FSM104	SPST	Off	(On)

(On) indicates momentary position.

Need more technical information?
Consult your local Augat sales office

AUGAT Inc.
452 John L. Dietsch Blvd.
Arlington Falls, MA 02762, USA

TSP Series *Tiny "Sealed Momentary" Pushbutton*

Refer to Page D18 for Additional Options

FEATURES:

- High temperature plastics — liquid crystal polymer (LCP)
- Specifically designed for thru-hole and surface mount
- Mount Applications — tin-lead plated terminals
- Washable process sealed construction — internal actuator O-ring

MATERIAL SPECIFICATIONS:

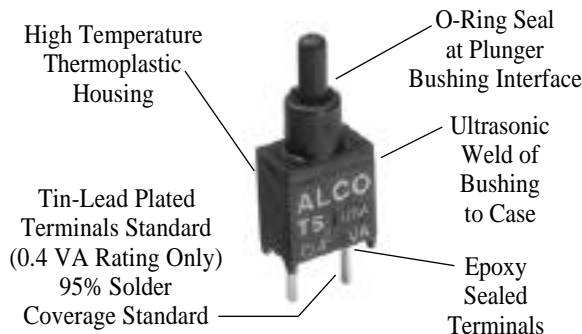
Contacts.....Copper Alloy with gold over nickel plating-
 Case & BushingThermoplastic (LCP)
 Actuator.....Glass reinforced nylon
 Nickel Plating InsideTin plating outside
 Support BracketTin plated steel
 TerminalsCopper alloy with gold over

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature..... -22°F to +185°F (-30°C to +85°C)
 Storage Temperature.....-67°F to +185°F (-55°C to +85°C)

TYPICAL PERFORMANCE CHARACTERISTICS:

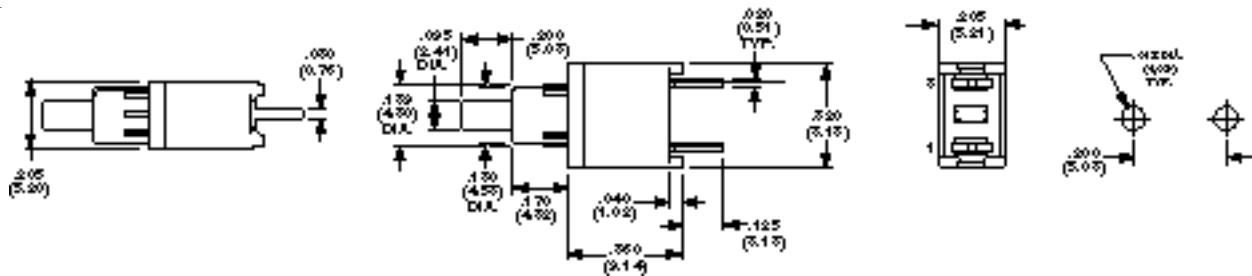
Contact Rating0.4 VA @ 20 VAC/DC
 Initial Contact Resistance.....20 Milliohms max.
 Insulation Resistance1,000 Megohms @ 500 VDC min.
 Terminal Seal.....Epoxy
 Actuator Travel035" (0,89)
 Actuator Seal.....O-Ring
 Dielectric StrengthC - 100 VDC RMS @ sea level
 F - 500 VDC RMS @ sea level
 Life ExpectancyC - 80,000 Cycles
 F - 60,000 Cycles



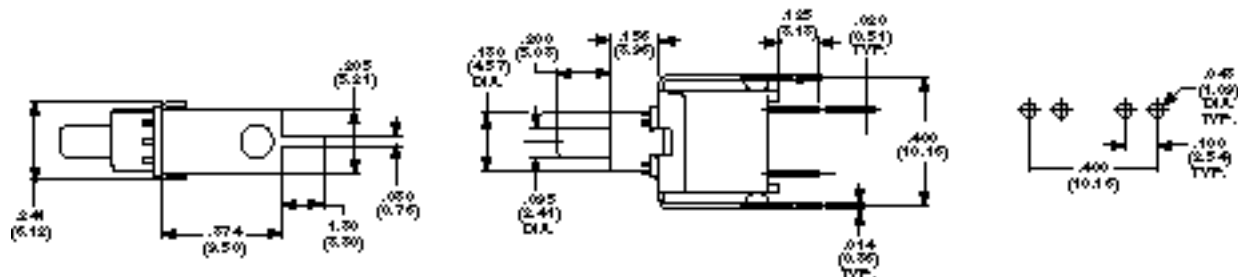
FUNCTION CHART			
The following functions available in single pole.			
<input type="checkbox"/> C Function	2 Positions	Off	(On)
SPST	Terminals Connected		<input type="checkbox"/> 1-3
Omit center terminal for function <input type="checkbox"/> C			
<input type="checkbox"/> F Function	2 positions	On	(On)
SPDT	Terminal Connected	<input type="checkbox"/> 1-2	<input type="checkbox"/> 2-3
Off Indicates a mechanical position with no electrical connection. (ON) INDICATES MOMENTARY ACTION			

PART NUMBERING SEQUENCE, PAGE D18

PC PC MOUNT



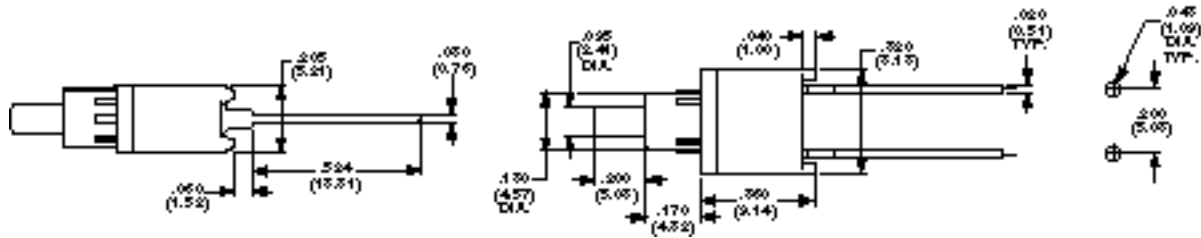
PC PC WITH VERTICAL SUPPORT BRACKET



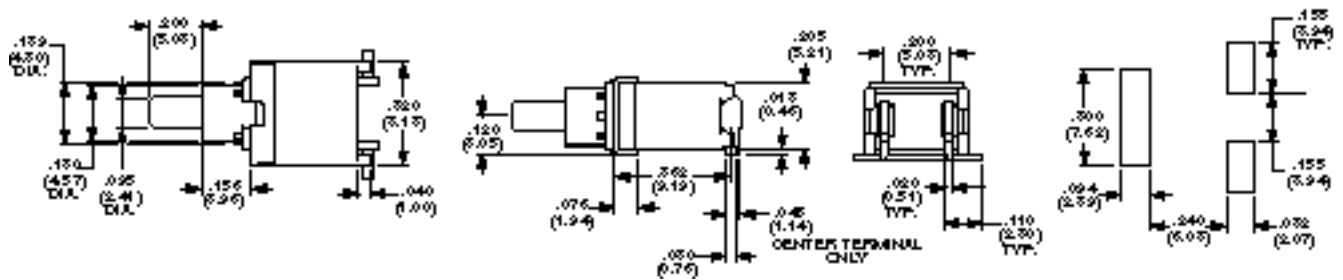
Tiny "Sealed Momentary" Pushbuttons TSP Series

Thru-Hole and Surface Mount

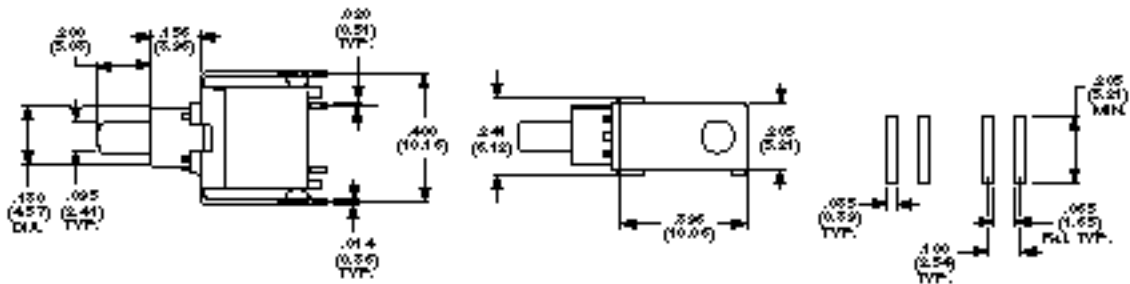
WIRE WRAP **WW**



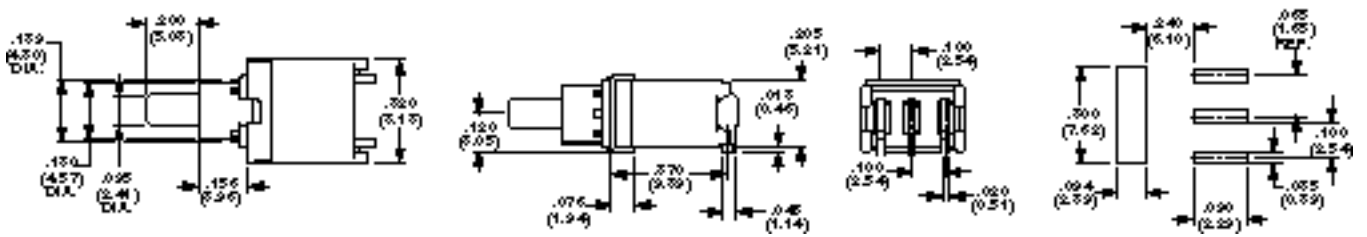
SURFACE MOUNT RIGHT ANGLE "L" BEND **SRA**



SURFACE MOUNT **SPC**



SURFACE MOUNT RIGHT ANGLE BUTT **SRAB**

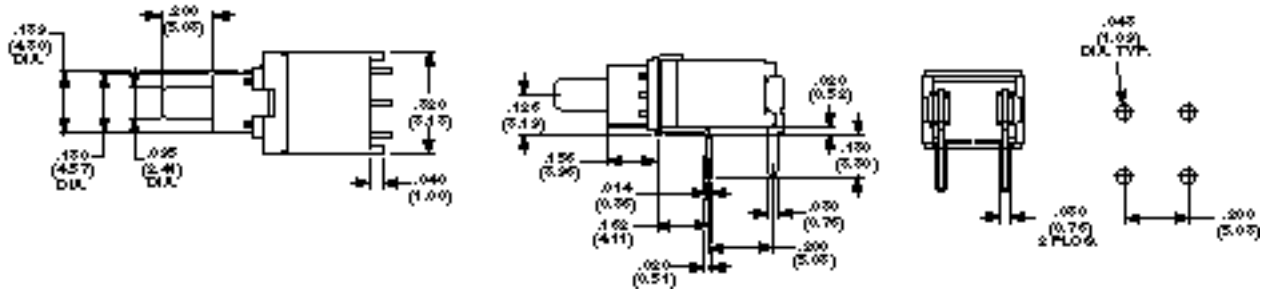


Need more technical information?
Consult your local Augat sales office

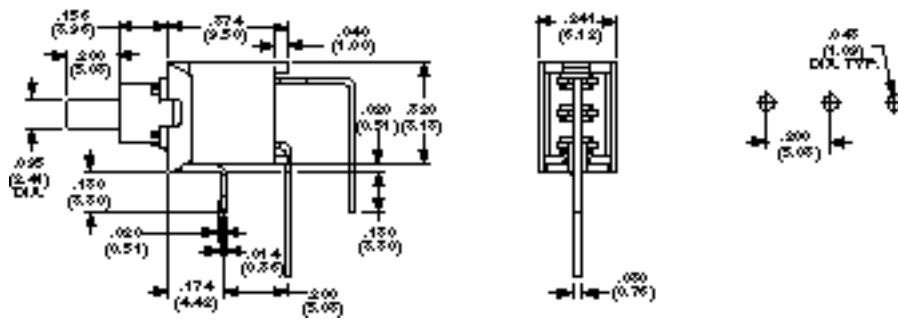
AUGAT Inc.
452 John L. Dietsch Blvd.
Arlington Falls, MA 02762 USA

TSP Series *Tiny Sealed Momentary Pushbutton, "How to Order"* Thru-Hole and Surface Mount

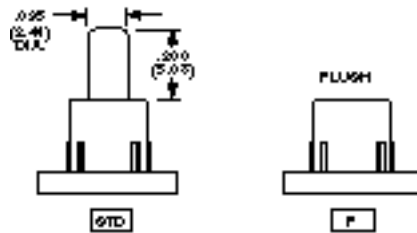
RA RIGHT ANGLE



VRA PC WITH VERTICAL SUPPORT BRACKET



ACTUATORS



PART NUMBERING SEQUENCE

See pages M2-M4 for application specific indexing.

Model	Bushing (Plain)	Actuator	Poles	Rating	Function	Contacts	Terminations	Colors
TSP	D		1	1		G		
		Std. .200" long F = Flush			C = Off (On) F = On (On)	PC = P.C. PCV = P.C. w/bracket RA = Right Angle VRA = Vertical Right Angle WW = Wire Wrap SPC = SurfaceMount SRA = Surface Mount R.A. SRAB = SurfaceMount R.A. Butt		0=Black 2=Red 6=Blue

Application Note:

For sealed toggle switches, See pages C6-C8
For 6 amp pushbuttons see page D37



Pushbutton Switches, Vertical and Right Angle TP Series

Refer to Page D29 for Additional Options

MATERIAL SPECIFICATIONS:

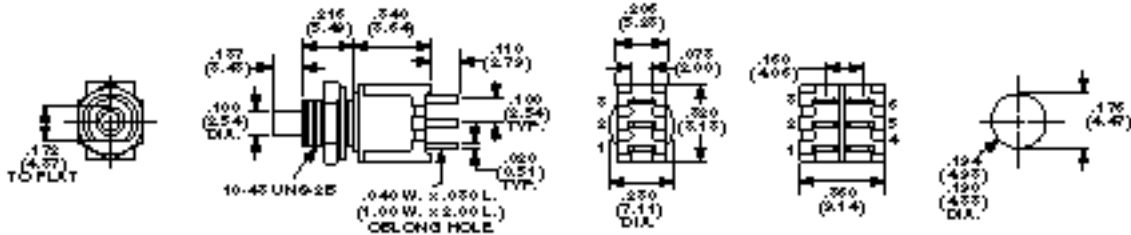
Contacts.....Gold - gold plate, silver - silver plate
 Case MaterialHigh temperature polyester
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Tin lead plate
 Terminal Seal.....SP epoxy, DP epoxy optional

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature..... -22°F to +149°F (-30°C to +65°C)
 Storage Temperature..... -22°F to +149°F (-30°C to +65°C)
 Solder Heat Resistance See page M6-7

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact RatingSilver: 20 VDC (resistive)
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms @ 500VDC min.
 Dielectric Strength1,000 Volts @ sea level
 Actuation Force.....50 to 400 Grams
 Plunger/Actuator Travel030" (.762)
 Life Expectancy1 Pole: 60,000 cycles
 2 Pole: 50,000 cycles



Model	Type	Act. Code	P. M9	Action	Contact Type
TPC13C(*)	SPST	C		N.O. Momentary	Silver
TPC13F(*)	SPDT	F		Momentary	Silver
TPC23M(*)	DPST	M		N.O. Momentary	Silver
TPC23R(*)	DPST	R		Momentary	Silver

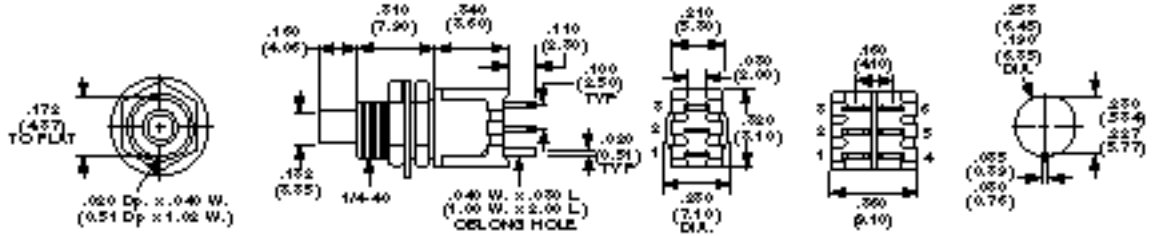
(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue, (9) White.
 Note: No center terminal on "C" or "M" action switches.

1 & 2 POLE



TPC23M

TPC13C



Model	Type	Act. Code	P. M9	Action	Contact Type
TPF13C(*)	SPST	C		N.O. Momentary	Silver
TPF13F(*)	SPDT	F		Momentary	Silver
TPF23M(*)	DPST	M		N.O. Momentary	Silver
TPF23R(*)	DPST	R		Momentary	Silver

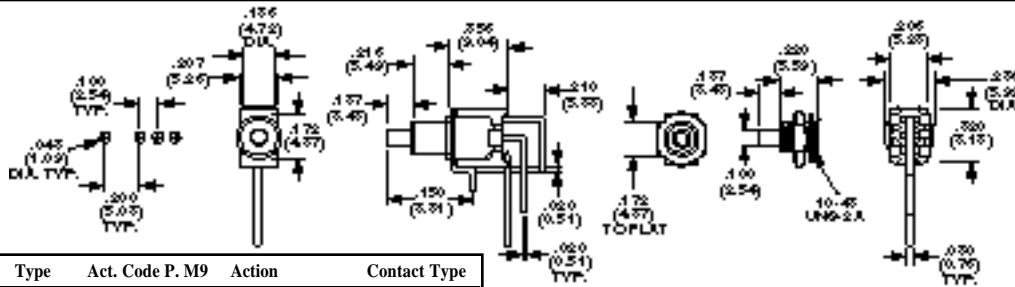
(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" or "M" action switches.

1 & 2 POLE



TPF23M

TPF13C



Model	Type	Act. Code	P. M9	Action	Contact Type
TPB11CGVRA(*)	SPST	C		N.O. Momentary	Gold
TPB11FGVRA(*)	SPDT	F		Momentary	Gold
TPC11CGVRA(*)	SPST	C		N.O. Momentary	Gold
TPC11FGVRA(*)	SPDT	F		Momentary	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" action switches.

TPB11FGVRA

Need more technical information?

Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Andover Falls, MA 02762, USA

TP Series *Tiny Pushbuttons with "Flush Plunger"*

Refer to Page D29 for Additional Options



MATERIAL SPECIFICATIONS:

Contacts.....Gold over nickel barrier or silver
 Case MaterialHigh temperature polyester
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Tin lead plate
 Terminal Seal.....SP epoxy, DP epoxy optional

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact RatingGold: 0.4 VA Max. @ 20 VDC or peak AC
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms @ 500 VDC min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....50 to 400 Grams
 Plunger/Actuator Travel030" (.762)
 Life ExpectancySee page D29

ENVIRONMENTAL SPECIFICATIONS:

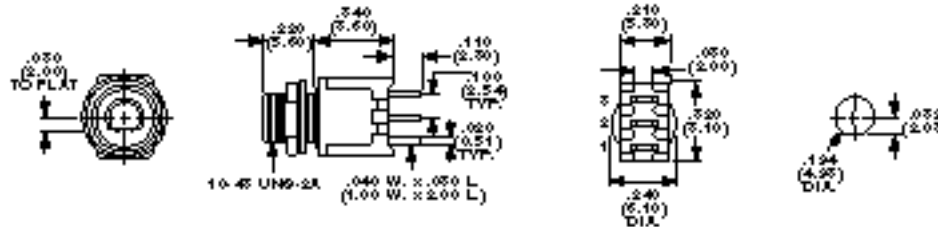
Operating Temperature.....-22°F to +149°F (-30°C to +65°C)
 Storage Temperature.....-22°F to +149°F (-30°C to +65°C)
 Solder Heat ResistanceSee page M6-7

SPST/SPDT

Wire Lugs 10-48 Bushing



TPCF13C



Model	Silver Contacts	Type	Act. Code P. M9	Action	Bushing Type
TPCF13C(*)	SPST	C	N.O. Momentary	Threaded	
TPCF13F(*)	SPDT	F	Momentary	Threaded	

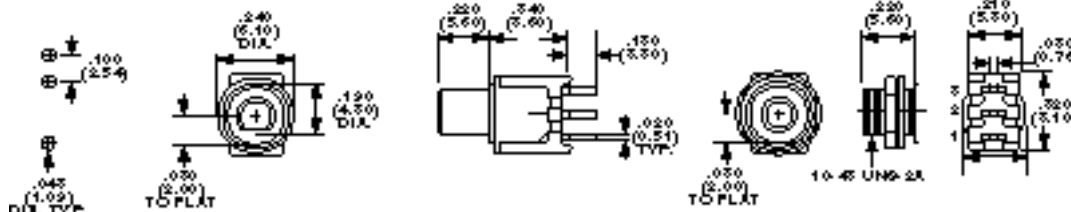
(*) Specify button color by adding suffix numbers: (0) Black, (2) Red, (6) Blue, (9) White.
 Note: No center terminal on "C" action switch.

SPST/SPDT

PC 10-48 Bushing



TPBF11FGPC



Model	Gold Contacts	Type	Act. Code P. M9	Action	Bushing Type
TPBF11CGPC(*)	SPST	C	N.O. Momentary	Unthreaded	
TPBF11FGPC(*)	SPDT	F	Momentary	Unthreaded	
TPCF11CGPC(*)	SPST	C	N.O. Momentary	Threaded	
TPCF11FGPC(*)	SPDT	F	Momentary	Threaded	

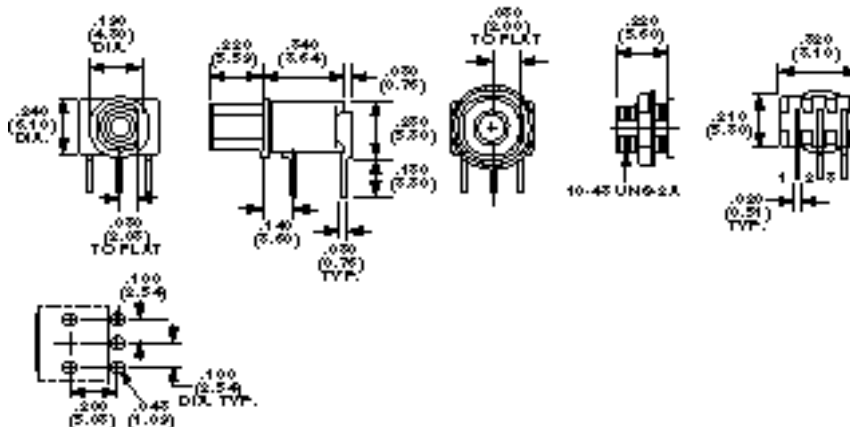
(*) Specify button color by adding suffix numbers: (0) Black, (2) Red, (6) Blue, (9) White.
 Note: No center terminal on "C" action switch.

SPST/SPDT

RA10-48 Bushing



TPBF11CGRA



Model	Gold Contacts	Type	Act. Code P. M9	Action	Bushing Type
TPBF11CGRA(*)	SPST	C	N.O. Momentary	Unthreaded	
TPBF11FGRA(*)	SPDT	F	Momentary	Unthreaded	
TPCF11CGRA(*)	SPST	C	N.O. Momentary	Threaded	
TPCF11FGRA(*)	SPDT	F	Momentary	Threaded	

(*) Specify button color by adding suffix numbers: (0) Black, (2) Red, (6) Blue, (9) White.
 Note: No center terminal on "C" action switch.



Pushbuttons Switches TP/TPA Series

“Square or Round Single /Dual Actuators”

MATERIAL SPECIFICATIONS:

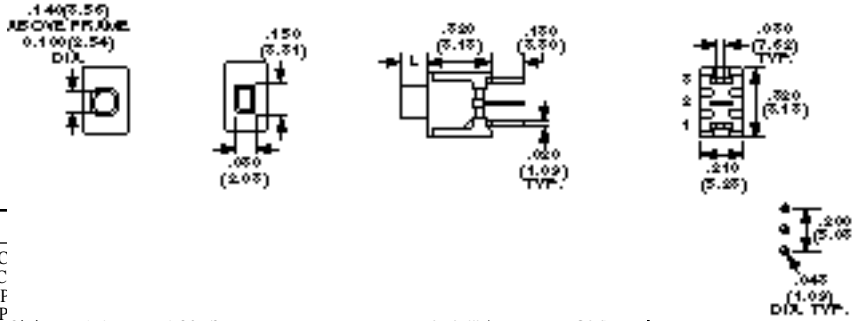
Contacts.....Gold over nickel barrier
 Case MaterialHigh temperature polyester
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Tin lead plate
 Terminal Seal.....SP epoxy, DP epoxy optional

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak before make
 Insulation Resistance1,000 Megohms @ 500 VDC min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....50 to 400 Grams
 Plunger/Actuator Travel030" (.762)
 Life ExpectancySee page D29

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-22°F to +149°F (-30°C to +65°C)
 Storage Temperature.....-22°F to +149°F (-30°C to +65°C)
 Solder Heat ResistanceSee page M6-7



SPST/SPDT



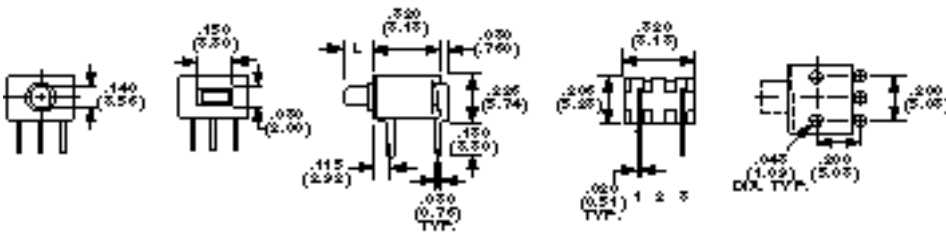
TP11CGPC0



TPA11CGPC0

Model
TP11CGPC
TP11FGPC
TPA11CGF
TPA11FGF

Note: No center terminal on "C" action switch.
 (*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.



SPST/SPDT



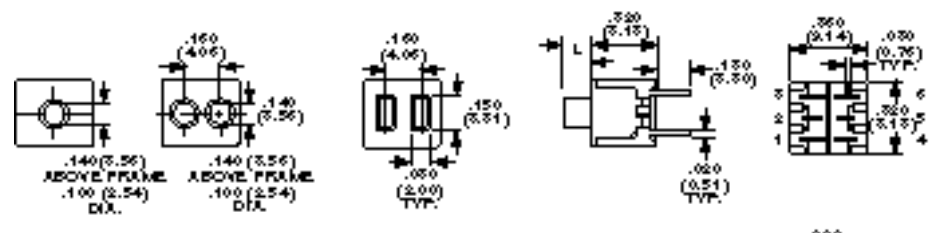
TPA11CGRA



TP11CGRA

Model	Actuator Type	Dim.L	Type	Act. Code	P. M9	Action	Contact Type
TP11CGRA(*)	SQ.	.125	SPST	C		N.O. Momentary	Gold
TP11FGRA(*)	SQ.	.125	SPDT	F		Momentary	Gold
TPA11CGRA(*)	RND.	.150	SPST	C		N.O. Momentary	Gold
TPA11FGRA(*)	RND.	.150	SPDT	F		Momentary	Gold

Note: No center terminal on "C" action switch.
 (*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.



SPST/SPDT (DUAL)
 DPST



TP21CGPC0



TPA21MGPC0

Model
TP21C
TPA2
TPA2

Note:
 (*) Sp

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

TP/TPA Series *Pushbuttons Switches* "Right Angle Square/Round Actuators"

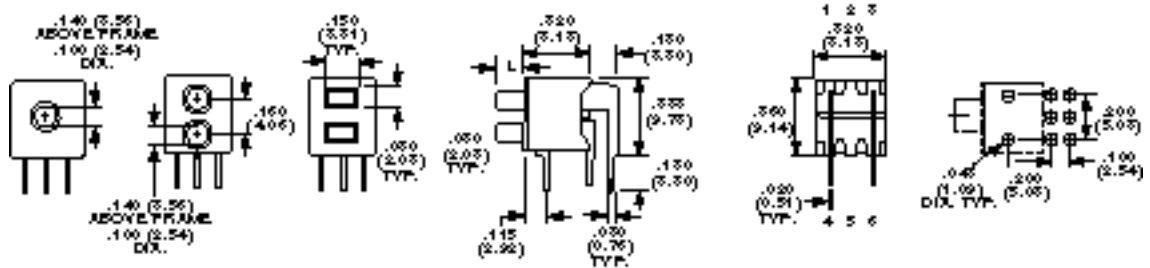


SEE PAGE D21 FOR PRODUCT SPECIFICATIONS

SPST/SPDT (DUAL)



TP21CCGRA0



Model	Actuator Type	Dim.L	Type	Act. Code	P. M9	Action	Contact Type
TP21CCGRA(*)	SQ.	.125	2xSPST	C		N.O. Momentary	Gold
TP21FFGRA(*)	SQ.	.125	2xSPDT	F		Momentary	Gold
TPA21MGRA(*)	RND.	.150	DPST	M		N.O. Momentary	Gold
TPA21CCGRA(*)	RND.	.150	2xSPST	C		N.O. Momentary	Gold
TPA21FFGRA(*)	RND.	.150	2xSPDT	F		Momentary	Gold

Note: No center terminal on "C" or "M" action switch.
(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.

TPB/TPC Series *Pushbuttons Switches* Refer to Page D29 for Additional Options

MATERIAL SPECIFICATIONS:

Contacts.....Gold over nickel barrier
Case MaterialHigh temperature polyester
Actuator Material.....Polyamide
Terminals/Fixed Contacts.....Tin lead plate
Terminal Seal.....SP epoxy, DP epoxy optional

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
Initial Contact Resistance.....20 Milliohms max.
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms @ 500VDC min.
Dielectric Strength1,000 Volts RMS @ sea level
Actuation Force......26 Kg.
Plunger/Actuator Travel030" (.762)
Life Expectancy80,000 Cycles

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-22°F to +149°F (-30°C to +65°C)
Storage Temperature.....-22°F to +149°F (-30°C to +65°C)
Solder Heat ResistanceSee page M6-7

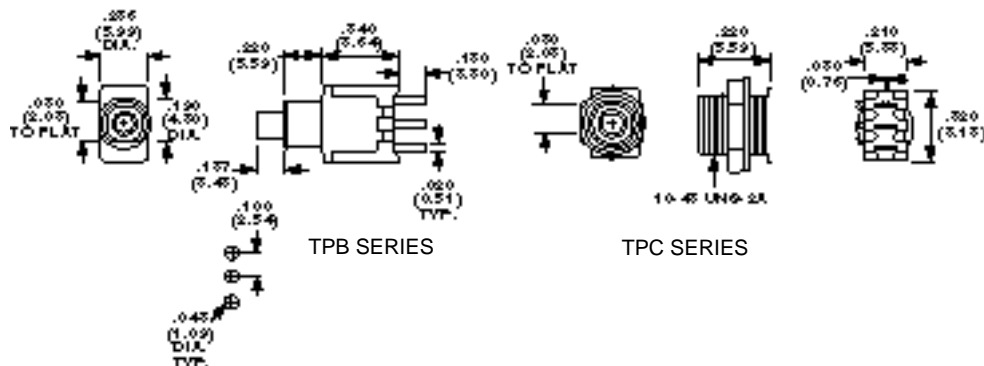
SPST/SPDT



TPB11CGPC



TPC11FGPC



Model	Actuator Type	Dim.L	Type	Act. Code	P. M9	Action	Contact Type
TPB11CGPC(*)	SPST	.125	C			N.O. Momentary	Gold
TPC11FGPC(*)	SPDT	.125	F			Momentary	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
Note: No center terminal on "C" action switch.

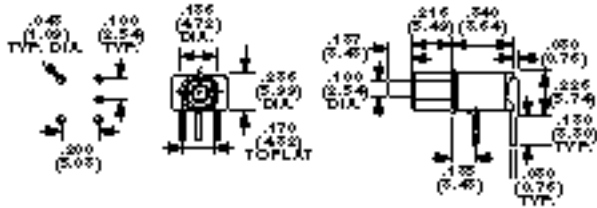




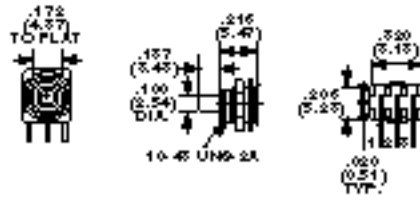
Pushbutton Series TPB/TPC Series

Refer to page D29 for other Options

SEE PAGE D22 FOR PRODUCT SPECIFICATIONS



TPB SERIES



TPC SERIES

DPST/DPDT



TPB11CGRA

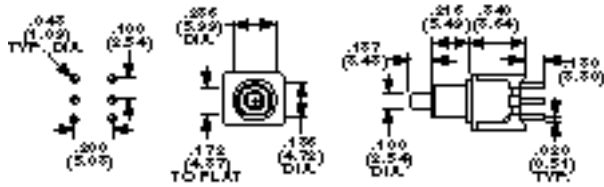


TPC11CGRA

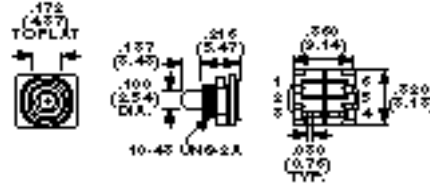
Model	Type	Act. Code	P. M9	Action	Bushing Code	Contact Type
TPB11CGRA(*)	SPST	C		N.O. Momentary	.188	Gold
TPB11FGRA(*)	SPDT	F		Momentary	.188	Gold
TPC11CGRA(*)	SPST	C		N.O. Momentary	10-48	Gold
TPC11FGRA(*)	SPDT	F		Momentary	10-48	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" action switch.

DPST/DPDT



TPB SERIES



TPC SERIES



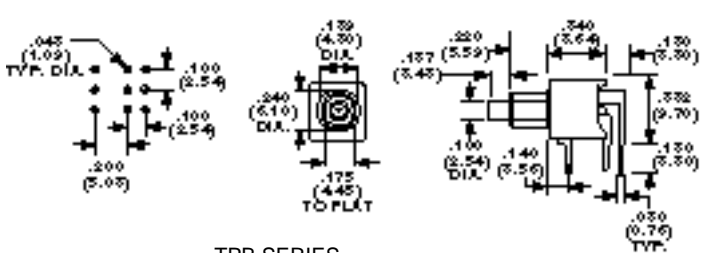
TPB21MGPC



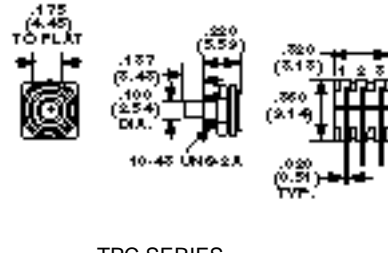
TPC21RGPC

Model	Type	Act. Code	P. M9	Action	Bushing Dia.	Contact Type
TPB21MGPC(*)	DPST	M		N.O. Momentary	.188	Gold
TPB21RGP(*)	DPDT	R		Momentary	.188	Gold
TPC21MGPC(*)	DPST	M		N.O. Momentary	10-48	Gold
TPC21RGP(*)	DPDT	R		Momentary	10-48	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "M" action switch.



TPB SERIES



TPC SERIES

DPST/DPDT



TPC21MGRA

Model	Type	Act. Code	P. M9	Action	Bushing Dia.	Contact Type
TPB21MGRA(*)	DPST	M		N.O. Momentary	.188	Gold
TPB21RGRA(*)	DPDT	R		Momentary	.188	Gold
TPC21MGRA(*)	DPST	M		N.O. Momentary	10-48	Gold
TPC21RGRA(*)	DPDT	R		Momentary	10-48	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "M" action switch.

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

TPD/TPF Series *Pushbutton Switches Vertical Thru-Hole*

Refer to pages D29 for other Options



MATERIAL SPECIFICATIONS:

Contacts.....Gold over nickel barrier
 Case MaterialHigh temperature polyester
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Tin lead plate
 Terminal Seal.....SP epoxy, DP epoxy optional

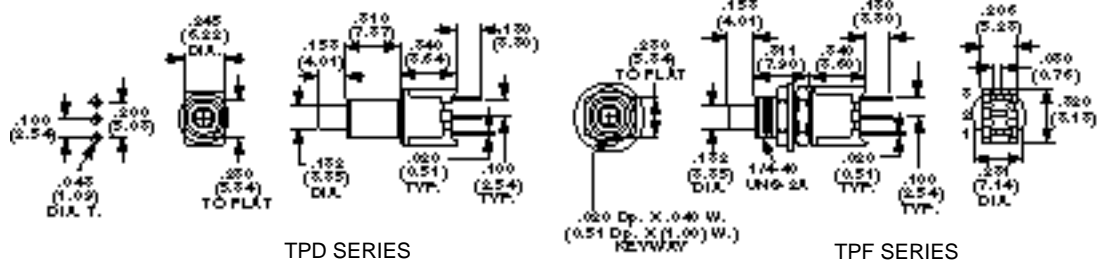
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms @ 500 VDC min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....50 to 400 Grams
 Plunger/Actuator Travel030" (.762)
 Life Expectancy80,000 Cycles

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-22°F to +149°F (-30°C to +65°C)
 Storage Temperature.....-22°F to +149°F (-30°C to +65°C)
 Solder Heat ResistanceSee page M6-7

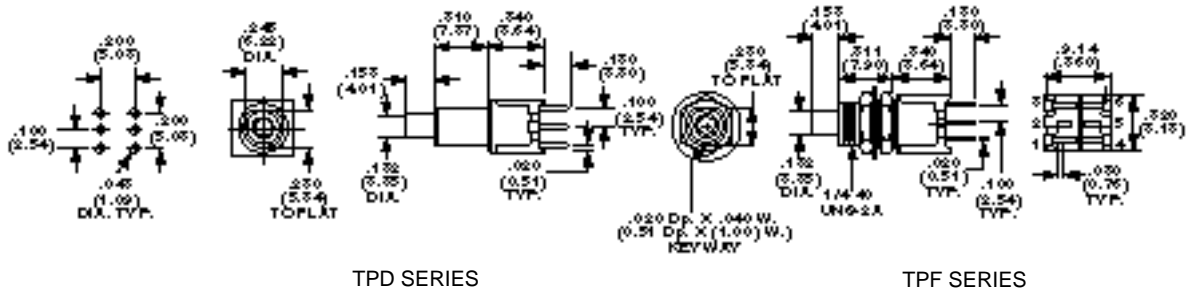
SPST/SPDT



Model	Type	Act. Code	P. M9	Action	Bushing Dia.	Contact Type
TPD11CGPC(*)	SPST	C		N.O. Momentary	.250	Gold
TPD11FGPC(*)	SPDT	F		Momentary	.250	Gold
TPF11CGPC(*)ES	SPST	C		N.O. Momentary	1/4-40	Gold
TPF11FGPC(*)SW	SPDT	F		Momentary	1/4-40	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 NOTE: No center terminal on "C" action switch.

DPST/DPDT



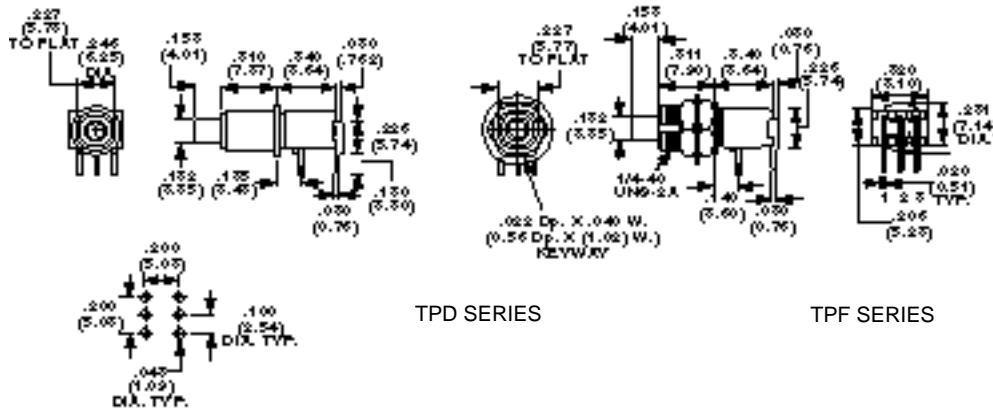
Model	Type	Act. Code	P. M9	Action	Bushing Dia.	Contact Type
TPD21MGPC(*)	DPST	M		N.O. Momentary	.250	Gold
TPD21RGPC(*)	DPDT	R		Momentary	.250	Gold
TPF21MGPC(*)	DPST	M		N.O. Momentary	1/4-40	Gold
TPF21RGPC(*)	DPDT	R		Momentary	1/4-40	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.



Pushbutton Switches Right Angle Thru-Hole TPD/TPF Series

SPST/SPDT



TPD SERIES

TPF SERIES



TPD11CGRA

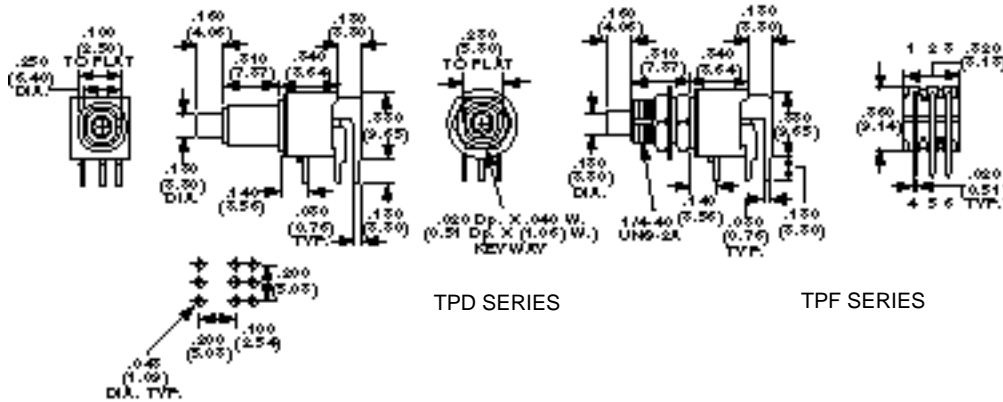


TPF11CGRA

Model	Type	Act. Code P. M9	Action	Bushing Dia.	Contact Type
TPD11CGRA(*)	SPST	C	N.O. Momentary	.250	Gold
TPD11FGRA(*)	SPDT	F	Momentary	.250	Gold
TPF11CGRA(*)	SPDT	C	N.O. Momentary	1/4-40	Gold
TPF11FGRA(*)	SPDT	F	Momentary	1/4-40	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" action switch.

DPST/DPDT



TPD SERIES

TPF SERIES



TPF21MGRA



TPD21MGRA

Model	Type	Act. Code P. M9	Action	Bushing Dia.	Contact Type
TPD21MFRA(*)	DPST	M	N.O. Momentary	.250	Gold
TPD21MGRA(*)	DPST	M	N.O. Momentary	.250	Gold
TPD21RGRA(*)	DPDT	R	Momentary	.250	Gold
TPF21MGRA(*)	DPST	M	N.O. Momentary	1/4-40	Gold
TPF21RGRA(*)	DPDT	R	Momentary	1/4-40	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

TP-ES Series *Process Sealed for Washing Vertical and Right Angle*



MATERIAL SPECIFICATIONS:

Contacts.....Gold over nickel barrier
 Case MaterialPolyamide
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Tin lead plate
 Terminal Seal.....Epoxy
 Process Seal.....Disposable boot, epoxied double case

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms @ 500VDC min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....50 to 400 Grams
 Plunger/Actuator Travel030" Approx.
 Life ExpectancySee page D29

ENVIRONMENTAL SPECIFICATIONS

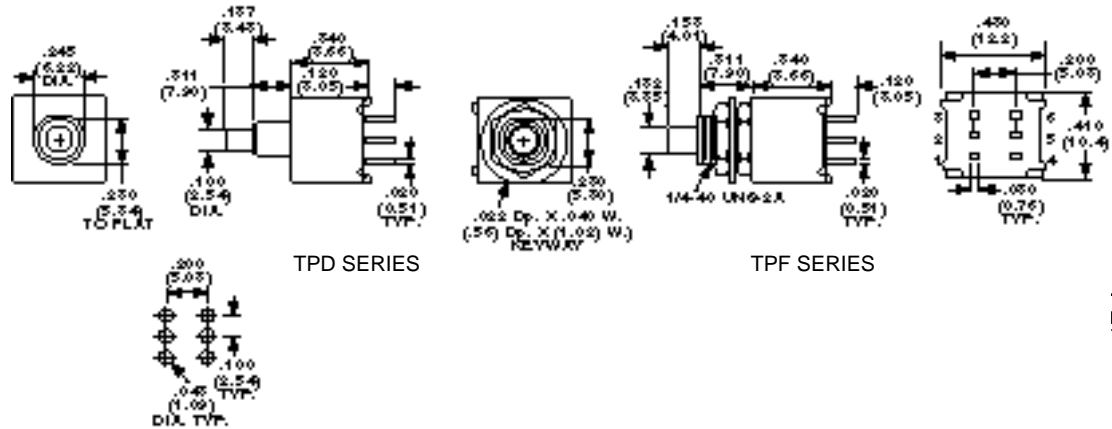
Operating Temperature.....-22°F to +149°F (-30°C to +65°C)
 Storage Temperature.....-22°F to +149°F (-30°C to +65°C)
 Solder Heat ResistanceSee page M6-7

Notice: Each switch provided with disposable boot used only during cleaning operation.

DPST/DPDT



TPD21MGPCES

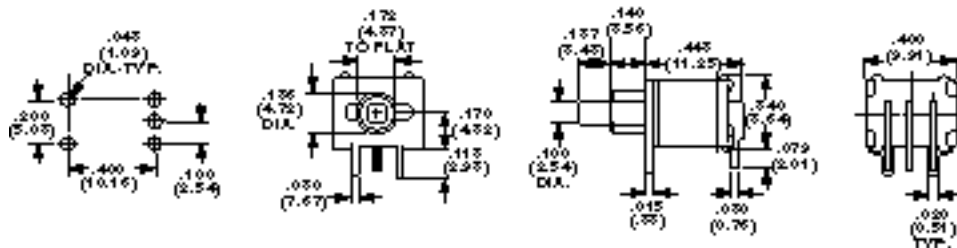


Note: No center terminal on "M" action switch.

SPST/SPDT



TPB11CGRAES



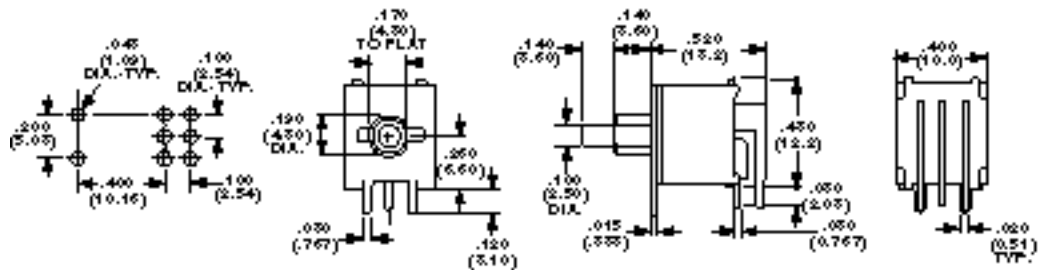
Model	Type	Act. Code	P. M9	Action	Bushing Dia.	Contact Type
TPB11CGRAES(*)	SPST	C		N.O. Momentary	.188	Gold
TPB11FGRAES(*)	SPDT	F		Momentary	.188	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" action switch.

DPST/DPDT



TPB21RGRAES



Model	Type	Act. Code	P. M9	Action	Bushing Dia.	Contact Type
TPB21MGRAES(*)	DPST	M		N.O. Momentary	.188	Gold
TPB21RGRAES(*)	DPDT	R		Momentary	.188	Gold

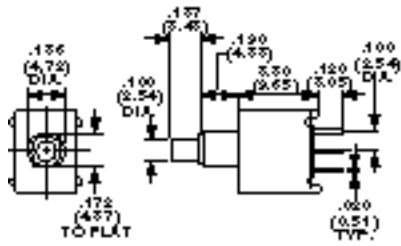
(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "M" action switch.



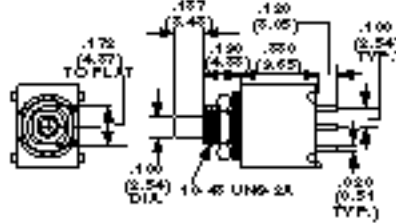
Process Sealed for Washing TP-ES Series

Refer to page D29 for other Options

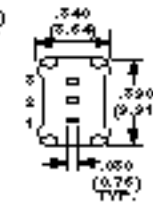
SEE PAGE D26 FOR PRODUCT SPECIFICATIONS



TPB SERIES



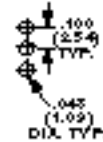
TPC SERIES



SPST/SPDT



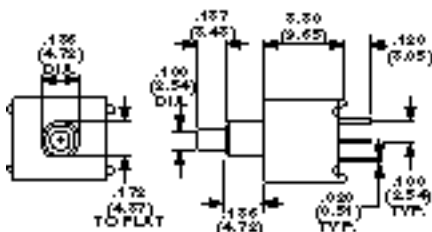
TPB11CGPCES



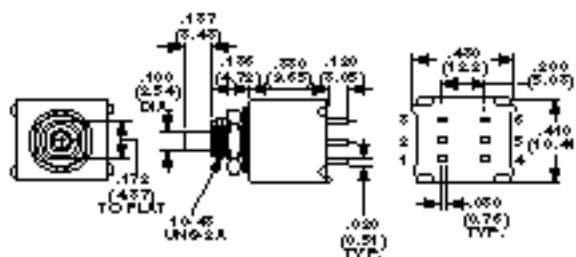
TPC11CGPCES

Model					
TPB11FGPCES(*)	SPDT	F	Momentary	.188	Gold
TPC11CGPCES(*)	SPST	C	N.O. Momentary	10-48	Gold
TPC11FGPCES(*)	SPDT	F	Momentary	10-48	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" action switch.



TPB21M

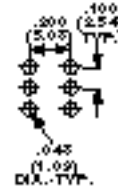


TPC21M

DPST/DPDT

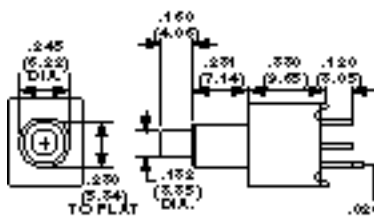


TPB21R

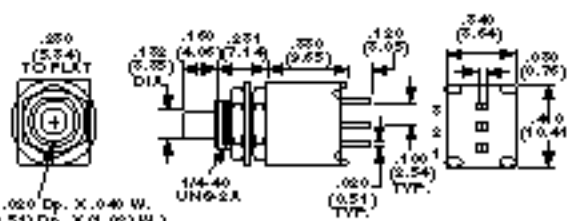


Model					
TPB21M					
TPB21R					
TPC21MGPCE(*)	DPST	M	N.O. Momentary	10-48	Gold
TPC21RGPCE(*)	DPDT	R	Momentary	10-48	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "M" action switch.



TPD SERIES

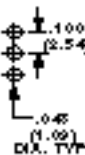


TPF SERIES

SPST/SPDT



TPD11CGPCES



TPF11CGPCES

Model					
TPD1					
TPD1					
TPF1					
TPF11FGPCES(*)	SPDT	F	Momentary	.250	Gold

(*) Specify button color by adding suffix number: (0) Black, (2) Red, (6) Blue.
 Note: No center terminal on "C" action switch.

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

TP-ES Series *Tiny Pushbutton With Process Seal and "Flush Plunger"*



MATERIAL SPECIFICATIONS:

Contacts.....Gold over nickel barrier
 Case MaterialHigh temperature polyester
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Tin lead plate
 Terminal Seal.....Epoxy
 Process Seal.....Disposable boot, epoxied double case

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 28 VDC or peak AC
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms @ 500 VDC min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....50 to 400 Grams
 Plunger/Actuator Travel030" (.762)
 Life ExpectancySee page D29

ENVIRONMENTAL SPECIFICATIONS:

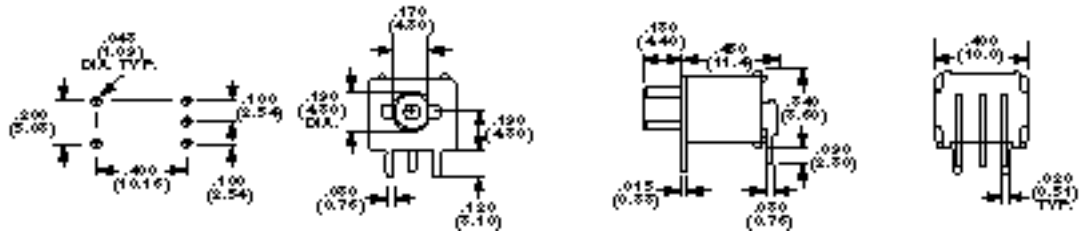
Operating Temperature..... -22°F to +149°F (-30°C to +65°C)
 Storage Temperature..... -22°F to +149°F (-30°C to +65°C)
 Solder Heat Resistance See page M6-7

Application Note:.....Each switch is provided with a disposable boot used only during the cleaning operation.

SPST/SPDT



TPBF11CGRAESO



TPBF Series

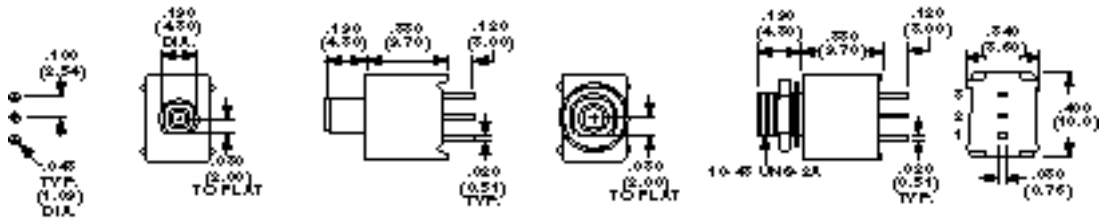
Model	Type	Act. Code P. M9	Action
TPBF11CGRAES(*)	SPST	C	N.O. Momentary
TPBF11FGRAES(*)	SPDT	F	Momentary

(*) Specify button color by adding suffix numbers: (0) Black, (2) Red, (6) Blue, (9) White.

SPST/SPDT



TPBF11CGPCES



TPBF Series

TPCF Series

Model	Type	Act. Code P. M9	Action
TPBF11CGPCES(*)	SPST	C	N.O. Momentary
TPBF11FGPCES(*)	SPDT	F	Momentary
TPCF11FGPCES(*)	SPDT	F	Momentary

(*) Specify button color by adding suffix numbers: (0) Black, (2) Red, (6) Blue, (9) White.
 Note: No center terminal on "C" action switch.

APA Series *Momentary Pushbutton Switches* *Vertical .120" Actuator Length*



MATERIAL SPECIFICATIONS:

Contacts.....Gold plate
Case MaterialPolyester
Actuator Material.....Polyester
Terminal Seal.....Epoxy

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
Storage Temperature.....-40°F to +176°F (-40°C to +80°C)

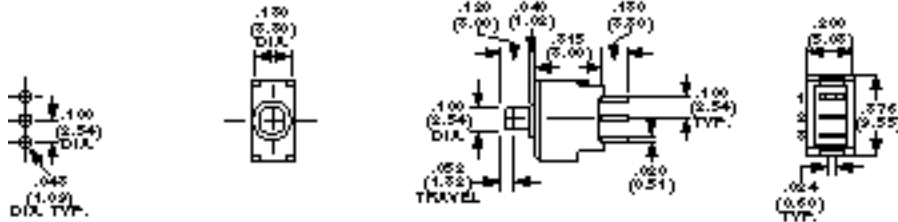
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
Initial Contact Resistance.....50 Milliohms max.
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms @ 500 VDC min.
Dielectric Strength500 Volts RMS @ sea level
Actuator Travel050" (1.27)
Life Expectancy10,000 Cycles

SPST/SPDT



APA1BGPC



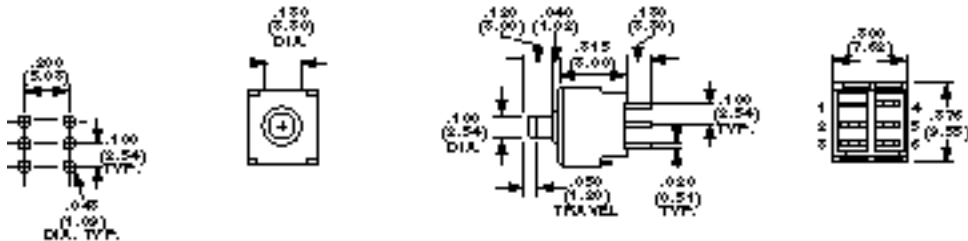
Model	Type	Action	Actuator Color	Contact Type
APA1BGPC	SPST	Normally Closed	Black	Gold
APA1CGPC	SPST	Normally Open	Black	Gold
APA1FGPC	SPDT	Momentary	Black	Gold

DPST/DPDT

Application Note: For Sealed versions, See page D33



APA2MGPC



Model	Type	Action	Actuator Color	Contact Type
APA2LGPC	DPST	Normally Closed	Black	Gold
APA2MGPC	DPST	Normally Open	Black	Gold
APA2RGPC	DPDT	Momentary	Black	Gold



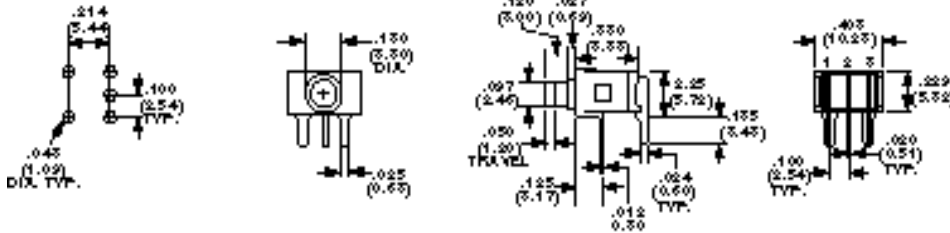
Momentary Pushbutton Switches **APA Series**

Right Angle .120" Actuator Length

SPST/SPDT



APA1FGRA



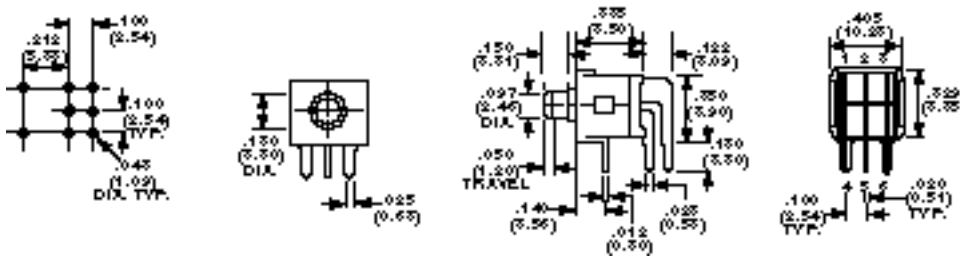
Model	Type	Action	Actuator Color	Contact Type
APA1BGRA	SPST	Normally Closed	Black	Gold
APA1CGRA	SPST	Normally Open	Black	Gold
APA1FGRA	SPDT	Momentary	Black	Gold

Application Note: For Sealed versions, See page D34

DPST/DPDT



APA2RGRA



Model	Type	Action	Actuator Color	Contact Type
APA2MGRA	DPST	Normally Open	Black	Gold
APA2RGRA	DPDT	Momentary	Black	Gold

Need more technical information?
Consult your local Augat sales office

AUGAT Inc.
452 John L. Dietsch Blvd.
Attleboro Falls, MA 02762, USA

APB Series

Momentary Pushbutton Switches Vertical and Right Angle .157" Actuator Length



MATERIAL SPECIFICATIONS:

Contacts.....Gold plate
Case MaterialPolyester
Actuator Material.....Polyester
Terminal Seal.....Epoxy

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
Initial Contact Resistance.....50 Milliohms max.
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms @ 500 VDC min.
Dielectric Strength500 Volts RMS @ sea level
Actuator Travel050" (1.27)
Life Expectancy10,000 Cycles

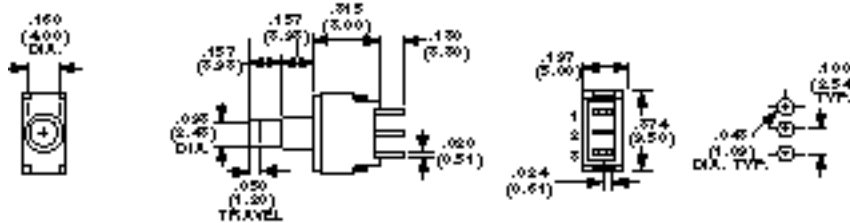
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
Storage Temperature.....-40°F to +176°F (-40°C to +80°C)

SPST/SPDT



APB1BGPC



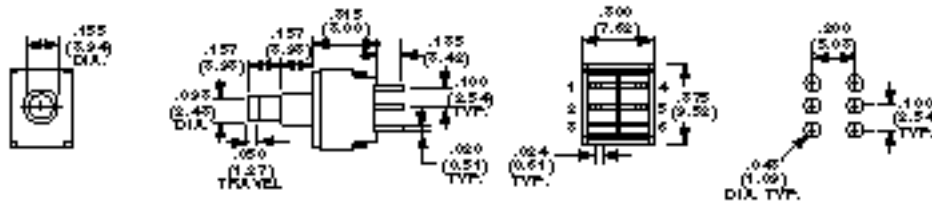
Model	Type	Action	Actuator Color	Contact Type
APB1BGPC	SPST	Normally Closed	Black	Gold
APB1CGPC	SPST	Normally Open	Black	Gold
APB1FGPC	SPDT	Momentary	Black	Gold

Note: No center terminal on "B" and "C" action switches.

DPST/DPDT



APB2RGPC



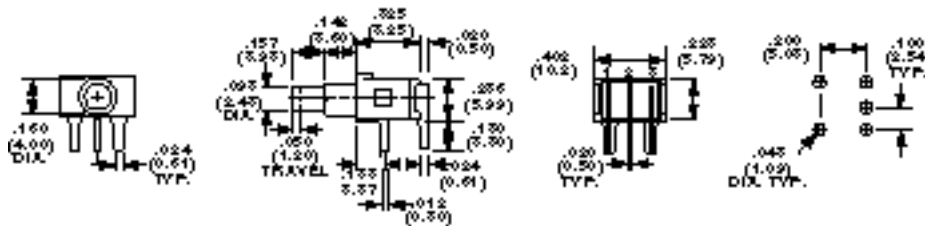
Model	Type	Action	Actuator Color	Contact Type
APB2LGPC	DPST	Normally Closed	Black	Gold
APB2RGPC	DPDT	Momentary	Black	Gold

Note: No center terminal on "L" action switches.

SPST/SPDT



APB1FGRA



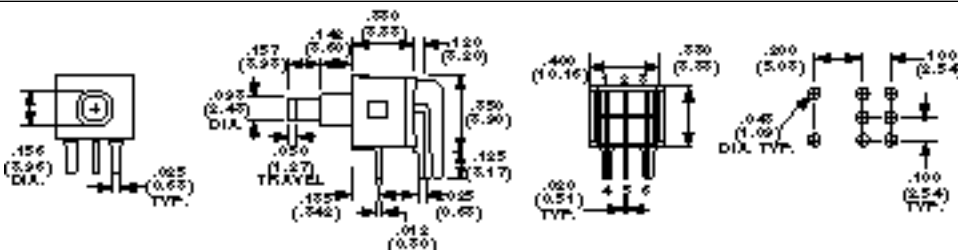
Model	Type	Action	Actuator Color	Contact Type
APB1BGRA	SPST	Normally Closed	Black	Gold
APB1CGRA	SPST	Normally Open	Black	Gold
APB1FGRA	SPDT	Momentary	Black	Gold

Note: No center terminal on "B" and "C" action switches.

DPST/DPDT



APB2MGRA



Model	Type	Action	Actuator Color	Contact Type
APB2MGRA	DPST	Normally Open	Black	Gold
APB2RGRA	DPDT	Momentary	Black	Gold

Note: No center terminal on "M" action switches.



Momentary Pushbuttons Process Epoxy "Sealed" for Washing PC Retention Terminals **APBE Series**

MATERIAL SPECIFICATIONS:

Contacts.....Gold plated
 Case MaterialPolyester
 Actuator Material.....Polyester
 Terminals/Fixed Contacts.....Copper alloy
 Terminal Seal.....Epoxy

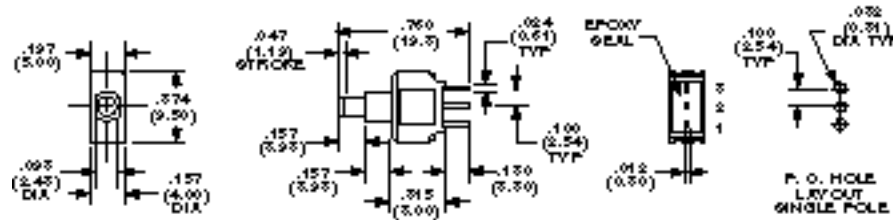
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA Max. @ 20 VDC or peak AC
 Initial Contact Resistance.....50 Milliohms max.
 Insulation Resistance500 Megohms @ 250 VDC min.
 Dielectric Strength500 Volts RMS @ sea level
 Actuator Travel047" (1.19)
 Life Expectancy10,000 Cycles

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
 Storage Temperature.....-40°F to +176°F (-40°C to +80°C)

SPDT

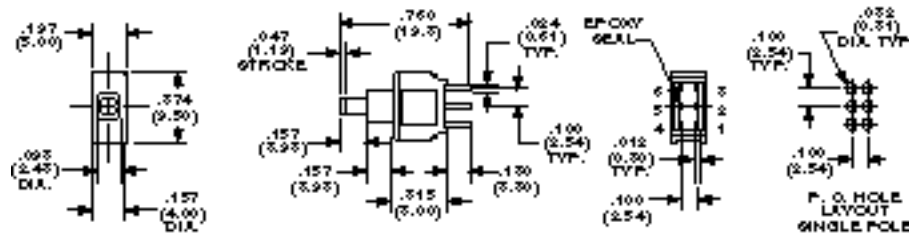


APBE1FGPC

Model	Type			Contact Type
APBE1FGPC	SPDT	On	(On)	Gold
Terminals Connected:		2-3	2-2	
(On) indicates momentary position.				

DPDT

Extra compact double pole saves PCB real estate.



APBE2RGP

Model	Type			Contact Type
APBE2RGP	DPDT	On	(On)	Gold
Terminals Connected:		2-3 & 5-6	2-1 & 5-4	
(On) indicates momentary position.				

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Andover Falls, MA 02762, USA

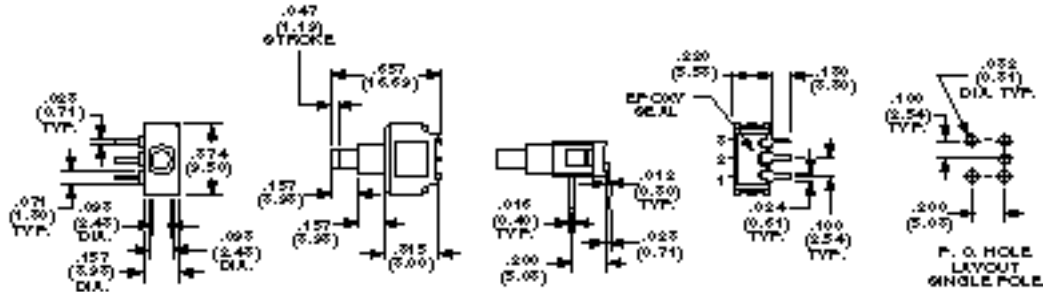
APBE Series *Pushbuttons Switches Process Epoxy Sealed for Washing PC Retention Terminals*



SEE PAGE D29 FOR PRODUCT SPECIFICATIONS.

SPDT



APBE1FGR4



Model	Type			Contact Type
APBE1FGR4	SPDT	On	(On)	Gold
Terminals Connected:		2-3	2-1	(On) indicates momentary position.

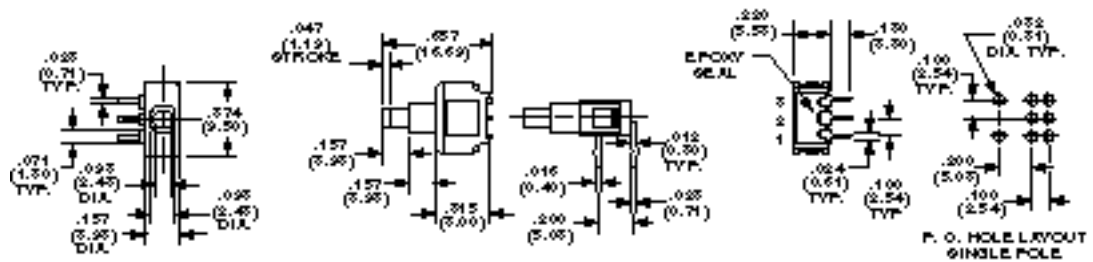
DPDT



Extra compact double pole saves PCB real estate.

Extra compact double pole saves PCB real estate.



APBE2RGR4



Model	Type			Contact Type
APBE2RGR4	DPDT	On	(On)	Gold
Terminals Connected:		2-3 & 5-6	2-1 & 5-4	(On) indicates momentary position.

See pages M2-M4 for application specific indexing.

Sub-Miniature **MPA3 Series** "Panel Mount" Pushbutton

MATERIAL SPECIFICATIONS:

Contacts.....Silver clad
 Case MaterialThermost
 Actuator Material.....Polyamide
 TerminalsSilver plate

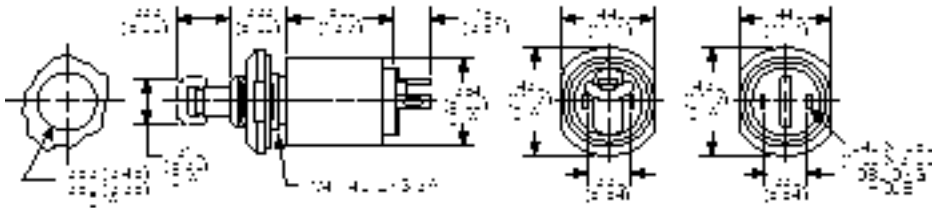
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +158°F (-20°C to +70°C)
 Storage Temperature.....-40°F to +176°F (-40°C to +80°C)
 Solder Heat Resistance.....See page M6-7

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating500 mA @ 125 VAC Butt contact
 MPA 103B & C
 3 A @ 125 VAC Snap action
 MPA 103D & F
 Initial Contact Resistance.....20 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....10 oz. SPST, 16 oz. SPDT average
 Actuator Travel100" (2.54)
 Life Expectancy10,000 Cycles

SPST/SPDT



MPA103C

Model	Type	Act. Code P. M9	Action	Contact Rating
MPA103B	SPST	14	Normally closed, momentary	500 mA
MPA103C	SPST	13	Normally open, momentary	500mA
MPA103D	SPDT	16	Push on/push off- (tactile)	3 Amp
MPA103F	SPDT	15	Momentary - (tactile)	3 AMP

Black Cap supplied. Other colors available, order separately.
 (See Cap C5 and C8 on Page D45.)

Miniature Pushbutton Momentary with Over-Travel **MPB Series**

MATERIAL SPECIFICATIONS:

Contacts.....Silver plate
 Case MaterialThermost
 Actuator Material.....Polyamide
 TerminalsSilver plate

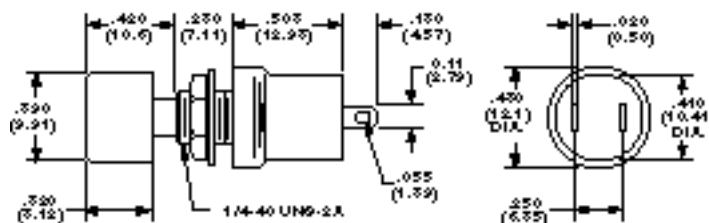
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....+14°F to +140°F (-10°C to +60°C)
 Storage Temperature.....+5°F to +158°F (-15°C to +70°C)
 Solder Heat ResistanceSee page M6-7

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating3 A @ 125 VAC
 Initial Contact Resistance.....20 Milliohms max.
 Insulation Resistance1,000 Megohms min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuator Travel100" (2.54)
 Life Expectancy20,000 Cycles

SPST



MPB103B

Model	Type	Act. Code P. M9	Action	Actuator Color
MPB103B	SPST	14	Normally Closed	Black
MPB103C	SPST	13	Normally Open	Red

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762 USA

MPA6 Series "6 Amp" Panel Mount Pushbutton Wire-Lug Termination



MATERIAL SPECIFICATIONS:

Contacts.....Silver clad copper with gold flash
Case MaterialThermoset
Actuator Material.....Nickel plated copper alloy
TerminalsCopper with gold flash
Terminal Seal.....Molded in

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating6 A @ 125 VAC, 3 A @ 250 VAC
Initial Contact Resistance.....10 Milliohms max.
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms min.
Dielectric Strength1,500 Volts RMS @ sea level
Actuation Force.....1.3 to 2.7 lbs.
Actuator Travel140" (3.56)
Life Expectancy50,000 Actuations

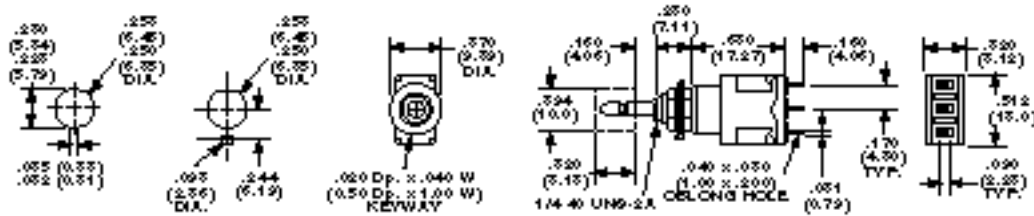
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
Storage Temperature.....-40°F to +176°F (-40°C to +80°C)
Solder Heat ResistanceSee page M6-7

SPDT



MPA106D



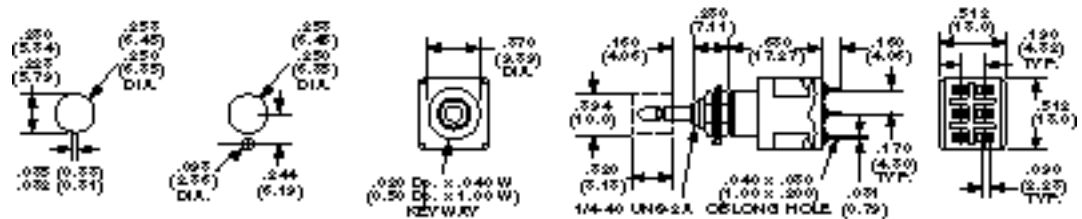
Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

Model	Type	Act. Code P. M9	Action
MPA106D	SPDT	23	Push-on/Push-off
MPA106F	SPDT	19	Momentary

DPDT



MPA206N



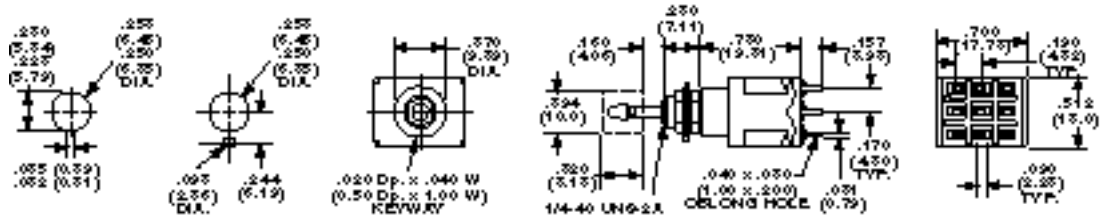
Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

Model	Type	Act. Code P. M9	Action
MPA206N	DPDT	24	Push-on/Push-off
MPA206R	SPDT	20	Momentary
MPA206NPC	DPDT	24	Push-on/Push-off
MPA206RPC	DPDT	20	Momentary

3PDT



MPA306D



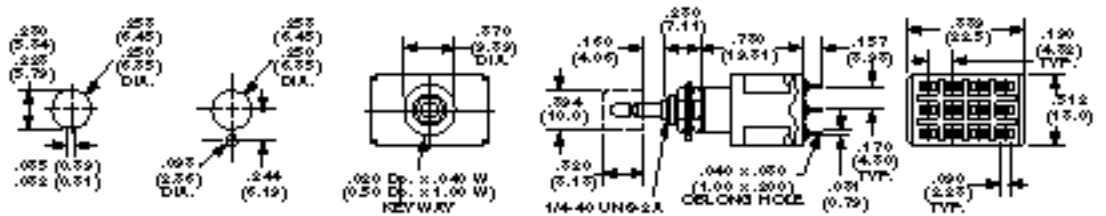
Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

Model	Type	Act. Code P. M9	Action
MPA306D	3PDT	25	Push-on/Push-off
MPA306F	3PDT	21	Momentary

4PDT



MPA406N



Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

Model	Type	Act. Code P. M9	Action
MPA406N	4PDT	26	Push-on/Push-off
MPA406R	4PDT	22	Momentary



Panel Mount Pushbutton MPE Series

6 Amp "Splashproof"

MATERIAL SPECIFICATIONS:

Contacts.....Silver clad copper with gold flash
 Case MaterialThermost
 Actuator Material.....Nickel plated copper alloy
 TerminalsCopper with gold flash
 Terminal Seal.....Molded in

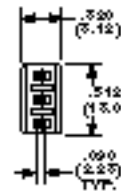
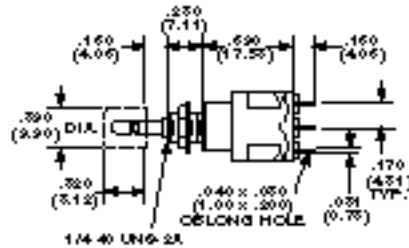
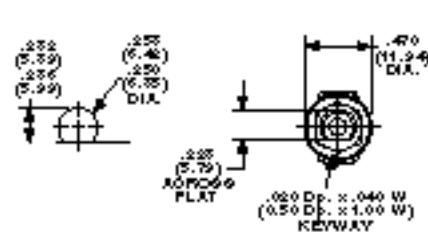
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating6 A @ 125 VAC, 3 A @ 250 VAC
 Initial Contact Resistance.....10 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms min.
 Dielectric Strength1,500 Volts RMS @ sea level
 Actuation Force.....1.3 to 2.7 lbs.
 Actuator Travel140" (3.56)
 Life Expectancy50,000 Actuations

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
 Storage Temperature.....-40°F to +176°F (-40°C to +80°C)

Notice: O-ring on shoulder and inside moveable shaft provides splashproof seal.



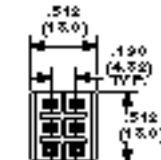
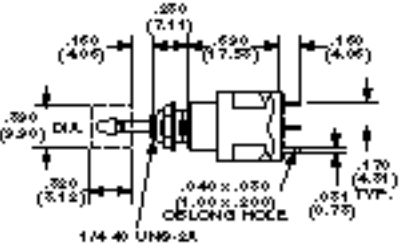
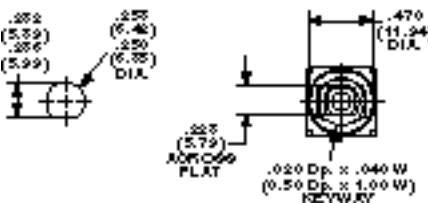
Model	Type	Act. Code	P. M9	Action
MPE106D	SPDT	23		Push on/Push off
MPE106F	SPDT	19		Momentary

Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

SPDT



MPE106D



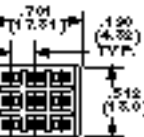
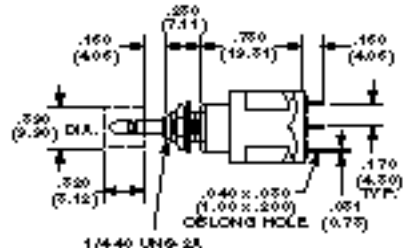
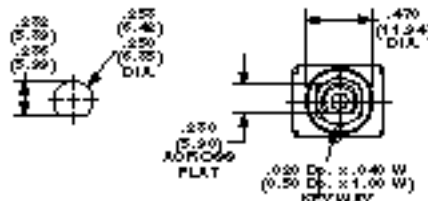
Model	Type	Act. Code	P. M9	Action
MPE206N	DPDT	24		Push on/Push off
MPE206R	DPDT	20		Momentary

Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

DPDT



MPE206N



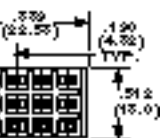
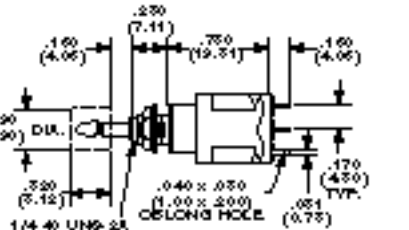
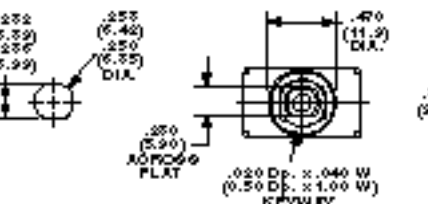
Model	Type	Act. Code	P. M9	Action
MPE306D	3PDT	25		Push on/Push off
MPE306F	3PDT	21		Momentary

Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

3PDT



MPE306F



Model	Type	Act. Code	P. M9	Action
MPE406N	4PDT	26		Push on/Push off
MPE406R	4PDT	22		Momentary

Cap not supplied, order separately (See Cap Model C22 and C23 on page D45.)

4PDT



MPE406N

Need more technical information?

Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Andover Falls, MA 02762 USA

MPG Series Mustang Pushbutton 15/32" Bushing "6 Amp" Wire Lug or PC Termination



MATERIAL SPECIFICATIONS:

Contacts.....Silver clad copper with gold flash
Case MaterialThermoset
TerminalsCopper with gold flash finish
Terminal Seal.....Molded in

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating6 A @ 125 VAC, 3 A @ 250 VAC
Initial Contact Resistance.....10 Milliohms max.
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms min.
Dielectric Strength1,500 Volts RMS @ sea level
Actuation Force.....1.3 to 2.7 lbs.
Actuator Travel138" (3.51)
Life Expectancy50,000 Actuations

ENVIRONMENTAL SPECIFICATIONS:

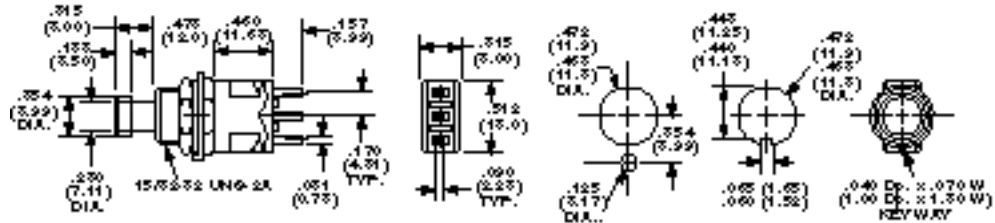
Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
Storage Temperature.....-40°F to +176°F (-40°C to +80°C)
Solder Heat ResistanceSee page M6-7

SPDT

Black Cap supplied.



MPG106D



Other cap colors available, order separately. (See Cap Model C9 on Page D45.)

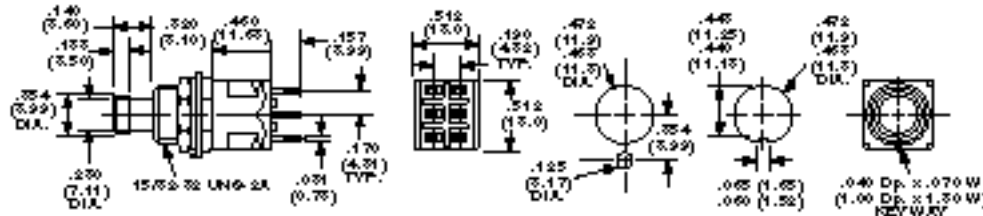
Model	Type	Act. Code P. M9	Action	Terminals
MPG106D	SPDT	23	Push on/Push off	Wire Lug
MPG106F	SPDT	19	Momentary	Wire Lug

DPDT

Black Cap supplied.



MPG206NPC



Other cap colors available, order separately. (See Cap Model C9 on Page D45.)

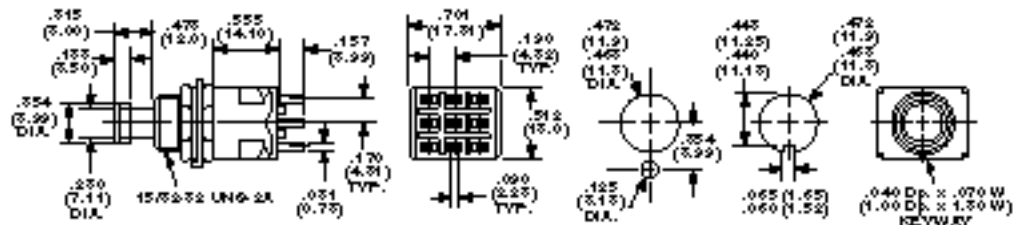
Model	Type	Act. Code P. M9	Action	Terminals
MPG206N	DPST	24	Push on/Push off	Wire Lug
MPG206R	DPST	20	Momentary	Wire Lug
MPG206NPC	DPDT	24	Push on/Push off	PC
MPG206RPC	DPDT	20	Momentary	PC

3PDT

Black Cap supplied.



MPG306D



Other cap colors available, order separately. (See Cap Model C9 on Page D45.)

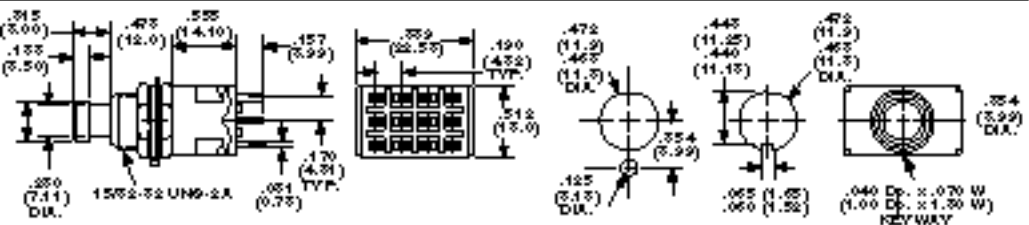
Model	Type	Act. Code P. M9	Action	Terminals
MPG306D	3DPT	25	Push on/Push off	Wire Lug
MPG306F	3PDT	21	Momentary	Wire Lug

4PDT

Black Cap supplied.



MPG406N



Other cap colors available, order separately. (See Cap Model C9 on Page D45.)

Model	Type	Act. Code P. M9	Action	Terminals
MPG406N	4PDT	26	Push on/Pushoff	Wire Lug
MPG406R	4PDT	22	Momentary	Wire Lug



Snap Action/Pushbutton/Silver Contacts Standard MPS Series

MATERIAL SPECIFICATIONS:

Contacts.....Silver
 Case MaterialEpoxy resin
 Actuator Material.....Copper alloy, nickel plate
 TerminalsSilver
 Terminal Seal.....Epoxy

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....+5°F to +158°F (-15°C to +70°C)
 Storage Temperature.....+5°F to +158°F (-15°C to +70°C)
 Solder Heat ResistanceSee page M6-7

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating3 A @ 115 VAC or 28 VDC
 Initial Contact Resistance.....10 Milliohms max.
 Contact TimingBreak-before-make
 Insulation Resistance1,000 Megohms @ 500 VDC min.
 Dielectric Strength1,000 Volts RMS @ sea level
 Actuation Force.....Single pole - 7 to 14 oz. (200 to 400 grams)
 Double pole - 14 to 25 oz. (400 to 700 grams)
 Actuator TravelMomentary .040" (1.02)
 Push on/off .098" (2.49)
 Life Expectancy50,000 Actuations

Notice: MPNS available with bi-color LED illumination.

SPDT/DPDT

MPS203R	DPDT	Momentary	.040	Wire Lug
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Caps not supplied, order separately. (See Cap Model C22 and C23 on Page D45.)

SPDT

LED Specifications:
 Max. V_{fwd} @ 20 mA dc : 3 Vdc.
 Max. V rev. : 5 Vdc.
 Max. I fws. : 30 mA dc.
 Recommended series resistance: R = 120 ohm @ 5 Vdc. (add 50 ohms/volt above 5 volts)

Note: LEDs are red and green.				
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SPDT/DPDT

M	MPSR203R	DPDT	Momentary	Wire Lug
M	Model	Description	Color	
	SDRO	Plastic beveled frame	Black	
	C33(*)	Square button for MPNSR	Black	
(*) Specify color by adding suffix number: (0) Black, (2) Red, (9) White.				

C-33(*) Button not supplied, Plastic (black) beveled edged frame Model SDRO, not supplied.

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762 USA

MPS Series *Snap-Action/Pushbutton/Silver Contacts Standard* *"PC and Wire Wrap Termination"*

SEE PAGE D40 FOR PRODUCT SPECIFICATIONS

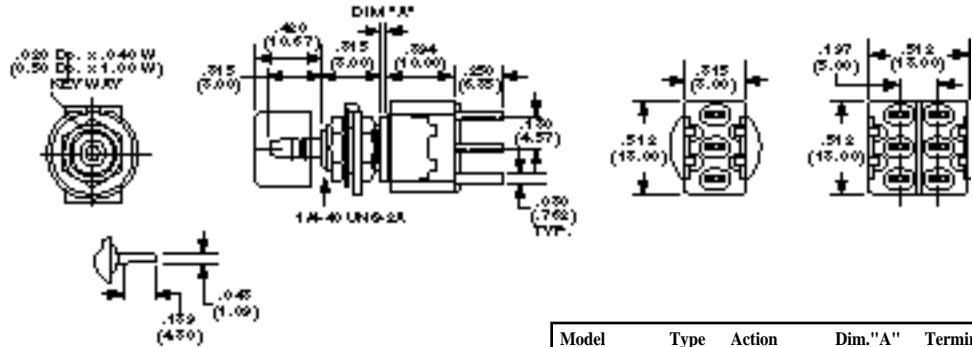
SPDT/DPDT



MPS103FPC



MPS203RPC



Model	Type	Action	Dim."A"	Terminals
MPS103DPC	SPDT	Push-on/Off	.100	PC Terminals
MPS103FPC	SPDT	Momentary	.040	PC Terminals
MPS203NPC	DPDT	Push-on/Off	.100	PC Terminals
MPS203RPC	DPDT	Momentary	.040	PC Terminals

Caps not supplied, order separately. (See Cap Model C22 and C23 on Page D45.)

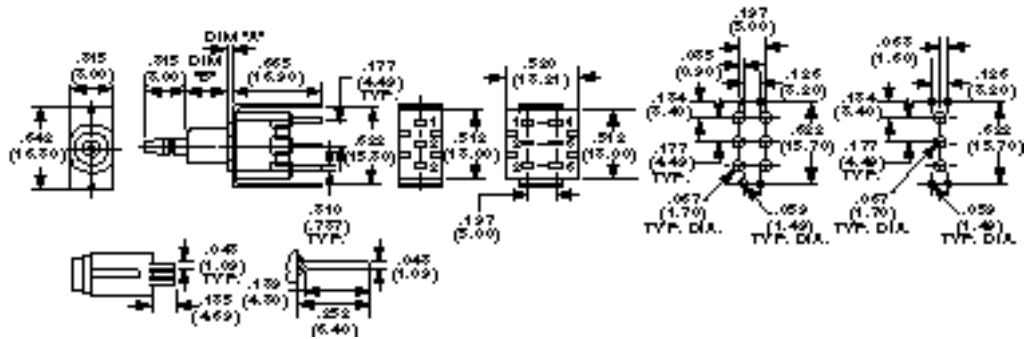
SPDT/DPDT



MPS103FPCV



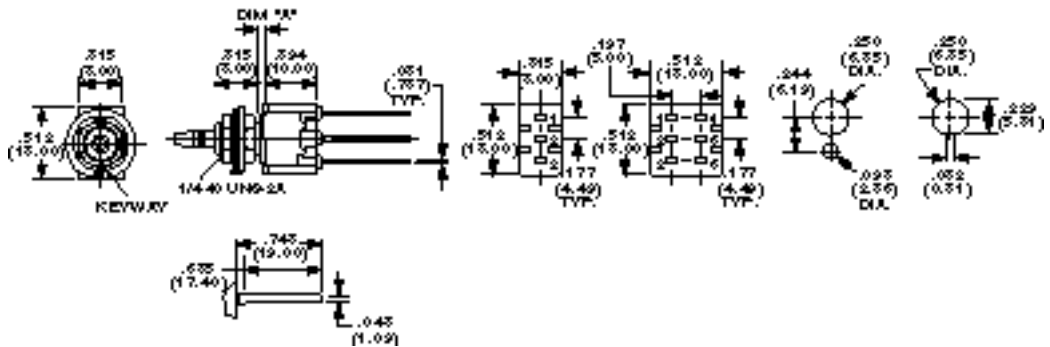
MPS203RPCV



Model	Type	Action	Dim."A"	Dim."B"	Terminals
MPS103DPCV	SPDT	Push-on/Off	.080(2.03)	.315(8.00)	PC w/support
MPS103FPCV	SPDT	Momentary	.040(1.01)	.295(7.49)	PC w/support
MPS203RPCV	DPDT	Momentary	.040(1.01)	.295(7.49)	PC w/support

Caps not supplied, order separately. (See Cap Model C22 and C23 on Page D45.)

SPDT/DPDT



MPS103FWW

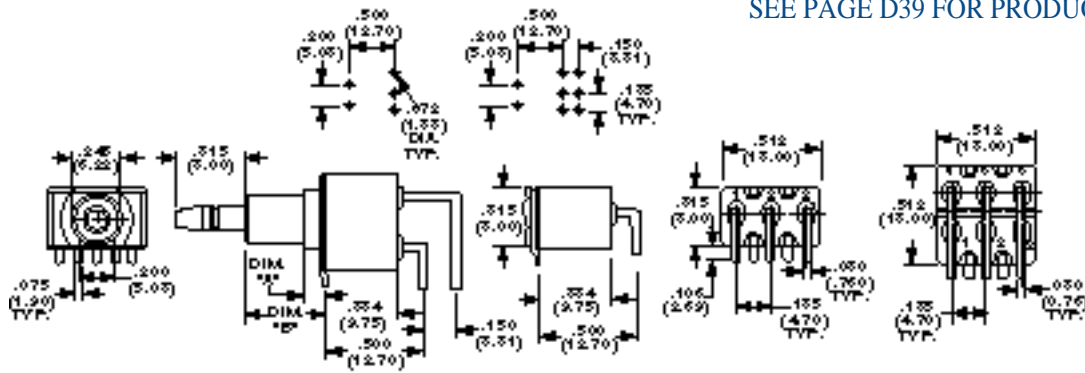
MPS203RWW

Caps not supplied, order separately. (See Cap Model C22 and C23 on Page D45.)

Model	Type	Action	Dim."A"	Terminals
MPS103FWW	SPDT	Momentary	.040(1.01)	Extended PC
MPS203NWW	DPDT	Push-on/Off	.100(2.54)	Extended PC
MPS203RWW	DPDT	Momentary	.040(1.01)	Extended PC

Snap-Action/Pushbutton/Silver Contacts Standard **MPS Series**

SEE PAGE D39 FOR PRODUCT SPECIFICATIONS



SPDT/DPDT



MPS103DRA



MPS203NRA

Model	Type	Action	Dim."A"	Dim."B"	Terminals
MPS103DRA	SPDT	Push-on/Off	.100(2.54)	.423(10.7)	Right Angle PC
MPS103FRA	SPDT	Momentary	.060(1.52)	.364(9.24)	Right Angle PC
MPS203NRA	DPDT	Push-on/Off	.100(2.54)	.423(10.7)	Right Angle PC
MPS203RRA	DPDT	Momentary	.060(1.52)	.364(9.24)	Right Angle PC

Caps not supplied, order separately.
(See Cap Model C22 and C23 on Page D45.)

Pushbutton/Momentary **MSP3/MSPS**

MATERIAL SPECIFICATIONS:

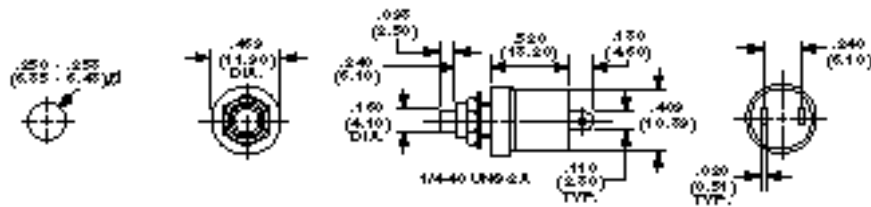
Contacts.....Silver plate over copper alloy
Case MaterialThermoplastic
Actuator Material.....Thermoplastic
TerminalsSilver plate

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
Storage Temperature.....+5°F to +153°F (-15°C to +75°C)
Solder Heat ResistanceSee page M6-7

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact RatingMSP103 - 3 Amps @ 125 VAC
(with over travel)
MSPS103 - 0.5 Amps @ 125 VAC
(Butt contact)
Initial Contact Resistance.....100 Milliohms
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms min.
Dielectric Strength1,000 Volts RMS @ sea level
Life Expectancy10,000 Cycles
Travel2.5 mm

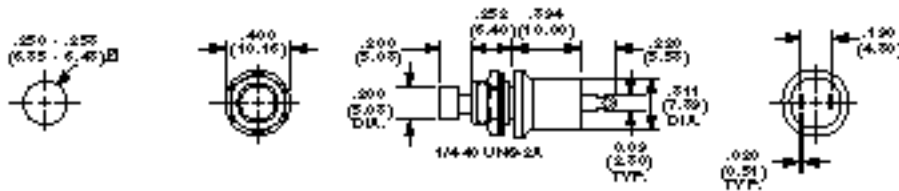


SPST



MSP103B

Model	Type	Act. Code P. M7	Momentary Action	Bushing Length	Actuator Color
MSP103B	SPST	14	Normally Closed	.235	Black
MSP103C	SPST	13	Normally Open	.234	Red
MSP103CO	SPST	13	Normally Open	.235	Black
MSP103C2	SPST	13	Normally Open	.235	Red



MSPS103B

Model	Type	Act. Code P. M9	Momentary Action	Bushing Length	Actuator Color
MSPS103B	SPST	14	Normally Closed	.245	Black
MSPS103C	SPST	13	Normally Open	.245	Red
MSPS103C0	SPST	13	Normally Open	.245	Black

Need more technical information?

Consult your local Augat sales office

AUGAT Inc.
452 John L. Dietsch Blvd.
Attleboro Falls, MA 02762, USA

MSPF Series *Momentary Pushbutton 15/32" Bushing* *Front or Rear Entry Mount*

MATERIAL SPECIFICATIONS:

Contacts.....Silver plate
Case MaterialThermoset
Actuator Material.....Thermoplastic
TerminalsSilver plate
Terminal Seal.....Epoxy

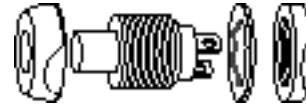
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +176°F (-20°C to +80°C)
Storage Temperature.....-4°F to +176°F (-20°C to +80°C)

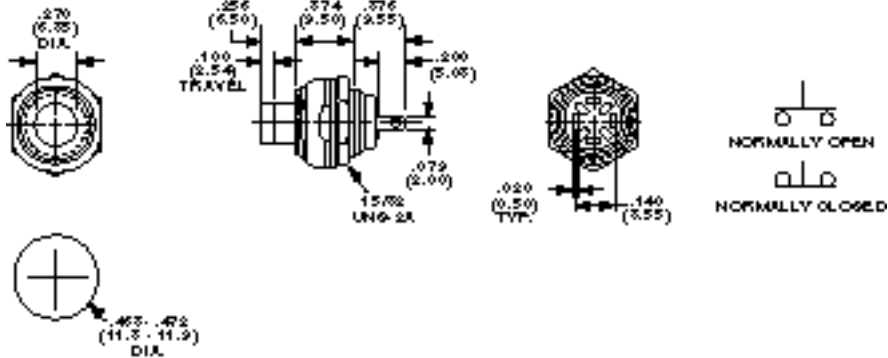
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.5 A @ 125 VAC
Initial Contact Resistance.....100 Milliohms
Contact TimingBreak-before-make
Insulation Resistance1,000 Megohms min.
Dielectric Strength1,000 Volts RMS @ sea level
Actuator Travel098" (2.49)
Life Expectancy10,000 Cycles

Application Note: Illustration shows versatile front or rear entry usage, with hardware supplied.



MSPF101B

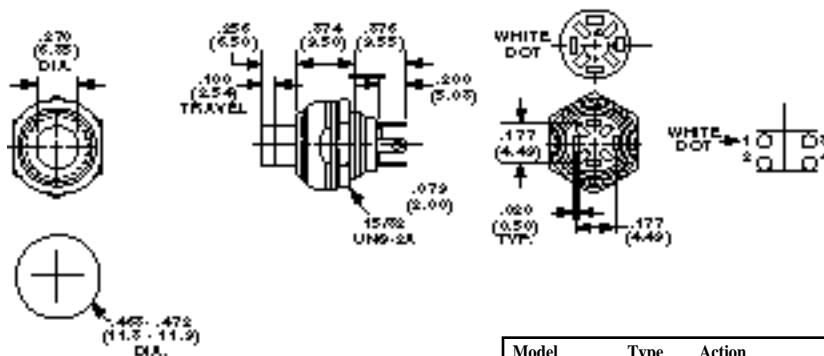


Model	Type	Action	Actuator Color
MSPF101B	SPST	Normally Closed	Black
MSPF101C	SPST	Normally Open	Red

2 CIRCUIT



MSPF101BC



Model	Type	Action	Actuator Color
MSPF101BC0	2 Circuit	Normally open-normally closed	Black
MSPF101BC2	2 Circuit	Normally open-normally closed	Red
MSPF101BC6	2 Circuit	Normally open-normally closed	Blue
MSPF101BC9	2 Circuit	Normally open-normally closed	White

Magnetic-Reed Long Life/Hermetically Sealed/ Momentary Pushbutton **MSPM Series**

MATERIAL SPECIFICATIONS:

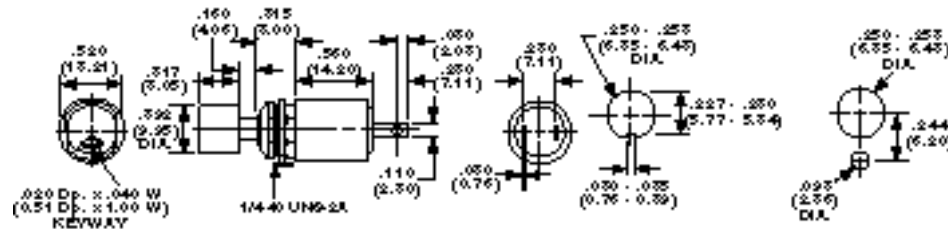
Contacts.....Gold
 Case MaterialSteel
 Actuator Material.....Polyamide
 Terminals/Fixed Contacts.....Wire Lug
 Pin useable for PC applications

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating.....1.0 VA optimum (100 mA max., 50 VDC max.)
 Initial Contact Resistance.....100 Milliohms max.
 Actuation Force.....Tactile "keyboard feel" 4 to 7 oz.
 "breakaway" reducing immediately to 1.5 oz.
 "follow-through"
 Actuator Travel078" nominal
 Life Expectancy5,000,000 Cycles @ .1 VA; 50,000 cycles @
 5VA
 Solder Heat ResistanceSee page M6-7

ENVIRONMENTAL SPECIFICATIONS:

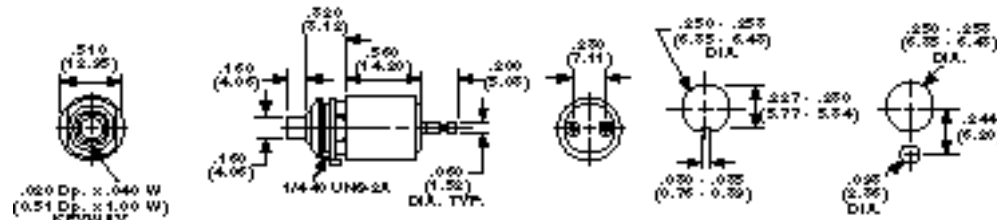
Operating Temperature.....+14°F to +176°F (-10°C to +80°C)
 Storage Temperature.....+14°F to +176°F (-10°C to +80°C)



N.C. OR N.O.
SOFT DETENT

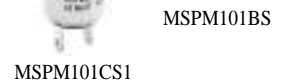
Model	Type	Act. Code	P. M9	Action	Actuator Type	Terminals
MSPM101B0	SPST	14		Normally Closed	Black Cap	Pin
MSPM101C2	SPST	13		Normally Open	Red Cap	Pin
MSPM101B1	SPST	14		Normally Closed	Black Cap	Lug
MSPM101C1	SPST	13		Normally Open	Red Cap	Lug

Cap Model C22 supplied with unit.



N.C. OR N.O.
AUDIBLE DETENT

Model	Type	Act. Code	P. M9	Action	Actuator Type	Terminals
MSPM101BS	SPST	14		Normally Closed	Black Plunger	Pin
MSPM101CS	SPST	13		Normally Open	Red Plunger	Pin
MSPM101BS1	SPST	14		Normally Closed	Black Plunger	Lug
MSPM101CS1	SPST	13		Normally Open	Red Plunger	Lug

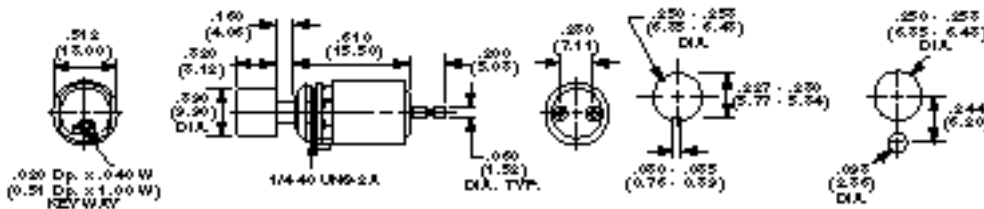


Magnetic-Reed/Long Life Maintained Push-Pull **MSPM Series**

SPECIFICATIONS (Same as above except):

Travel125" (3.18) nominal

Actuation Force.....Tactile feel 5 to 8 oz. "breakaway" with
 magnetically accelerated "follow-through"



N.C. OR N.O.

Model	Type	Act. Code	P. M9	Push	Pull	Actuator Type	Terminals
MSPM101BP	SPST	18		Open	Closed	Black Cap	Pin
MSPM101CP	SPST	17		Closed	Open	Red Cap	Pin

Cap Model C22 supplied with unit.
 Model C23 available, order separately. (See Page D45.)



Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762 USA

BP Series *Splashproof Pushbutton Boot Seals*

A wide selection of stock boot seals for pushbuttons available in a variety of styles and thread sizes. AUGAT/ALCOSWITCH seals replace standard mounting hardware to provide environmental seal. Fabricated of Neoprene in black and optional red or gray. Custom colors and thread sizes are also available on special order.

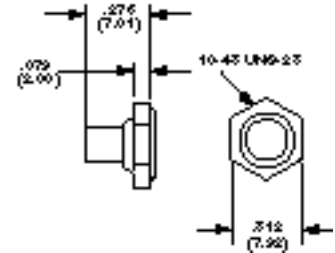


BP10480

10-48 PUSHBUTTON BOOT SEALS

Splashproof seal designed for "TINY" pushbutton switches having a 10-48 bushing and .14" long button actuators. The hex nut is molded-in to the Neoprene seal. No O-Ring is required. Custom colors are available on special order.

Model	Mount Color	Boot Color	Thread Size	Use with Switch Types
BP10480	Black	Black	10-48	Recommended for TP Series
BP10482	Red	Red	10-48	Recommended for TP Series
BP10488	Gray	Gray	10-48	Recommended for TP Series



BPA14400

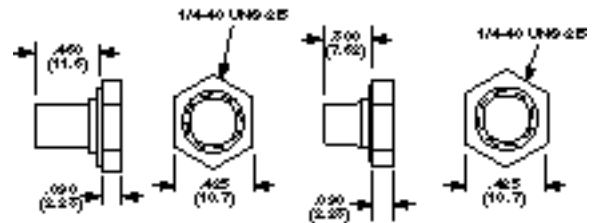


BP14400

1/4-40 PUSHBUTTON BOOT SEALS

Splashproof seals for miniature pushbuttons having a 1/4-40 bushing. The two models allow use with buttons that extend up to .17" (BPA) or up to .33" (BP). The hex nut is molded-in and no O-Ring is required.

Model	Mount Color	Boot Color	Thread Size	Use with Switch Types
BP14400	Black	Black	1/4-40	MSPM, MPA3, MPS and TP Series
BP14402	Red	Red	1/4-40	MSPM, MPA3, MPS and TP Series
BP14408	Gray	Gray	1/4-40	MSPM, MPA3, MPS and TP Series
BPA14400	Black	Black	1/4-40	MSPMBS, MSPMCS, MSP3, MPA3, TP Series
BPA14402	Red	Red	1/4-40	MSPMBS, MSPMCS, MSP3, MPA3, TP Series
BPA14408	Gray	Gray	1/4-40	MSPMBS, MSPMCS, MSP3, MPA3, TP Series



BP20100

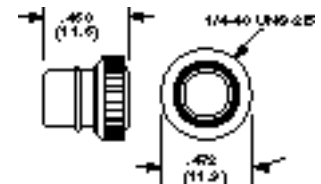


BP1900

1/4-40 PUSHBUTTON BOOT SEALS

Splashproof seals having 1/4-40 blind nuts integrally mounted to the black Neoprene seal. Supplied with a captive O-Ring to complete the panel seal. Used with actuators up to .37" long. Choice of two-tone having knurled ring with nickel finish or all black appearance.

Model	Mount Color	Boot Color	Thread Size	Use with Switch Types
BP1900	Nickel	Black	1/4-40	MSPM, MSP3, MPA3 and TP Series
BP2010	Black	Black	1/4-40	MSPM, MPS3, MPA3 and TP Series

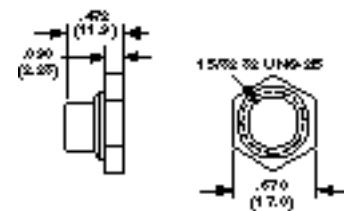


BP15320

15/32-32 PUSHBUTTON BOOT SEALS

Splashproof seals incorporating a molded-in hex nut for washer tight and dust tight protection. Replaces standard hardware usually supplied. Recommended for large size pushbutton switches with actuators extending up to .31" long.

Model	Mount Color	Boot Color	Thread Size	Use with Switch Types
BP15320	Black	Black	15/32-32	MSPF and MPG Series
BP15322	Red	Red	15/32-32	MSPF and MPG Series
BP15328	Gray	Gray	15/32-32	MSPF and MPG Series



BP5900

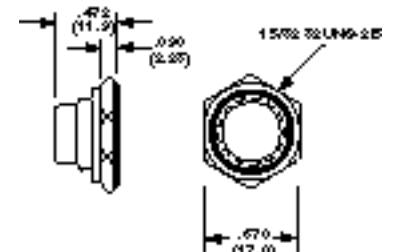


BP5890

15/32-32 PUSHBUTTON BOOT SEALS

Splashproof seals having 15/32-32 hex shape mounts integrally bonded onto the black Neoprene seal. Supplied with a captive O-Ring for use against the panel. Readily accepts actuators up to .38" in length. Available in two tone with nickel finish hex-mount, or all black appearance.

Model	Mount Color	Boot Color	Thread Size	Use with Switch Types
BP5890	Nickel	Black	15/32-32	MSPF and MPG Series
BP5900	Black	Black	15/32-32	MSPF and MPG Series

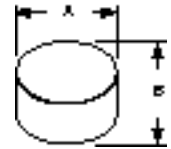


Accessories

CAPS



Model	ID.	Description	Use Guard	Color	"A" Diameter	B Height
C5(*)	Snapfit	Small plastic cap for MPA3 Series	-	(0), (2), (5), (9)	.195	.120
C8(*)	Snapfit	Large plastic cap for MPA3 Series	-	(0), (2), (5), (9)	.310	.160
C9(*)	Snapfit	Spare color cap for MPG Series	-	(0), (2), (4), (6), (9), (12)	.354	.138
C12(*)	Threaded**	Small plastic cap	G12	(0), (2), (5)	.312	.315
C13(*)	Threaded**	Large plastic cap	G13	(0), (2), (5)	.587	.390
C14(*)	Threaded**	Small metal cap	-	Chrome only	.177	.283
C14L(*)	Threaded**	Large metal cap	-	Chrome only	.313	.315
C22(*)	Snapfit	MPS/MSPM/MPE/MPA6	G12	(0), (2), (3), (4), (5), (6), (9)	.394	.315
C23(*)	Snapfit	MPS/MSPM/MPE/MPA6	G13	(0), (2), (3), (4), (5), (6), (9)	.590	.394
C33(*)	Snapfit	Square button for MPSR	-	(0), (2), (6), (9)	.378SQ.	.201

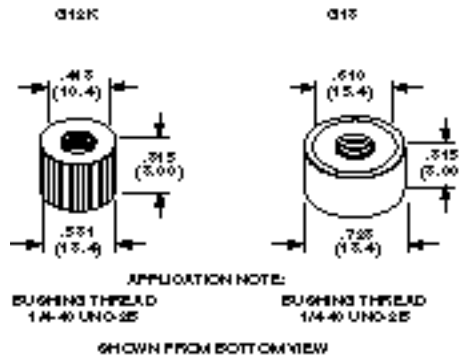


(*) Specify color by adding suffix number: (0) Black, (2) Red, (3) Orange, (4) Yellow, (5) Green, (6) Blue, (9) White, (12) Pink.

**Threaded 3-56 UNF-2B

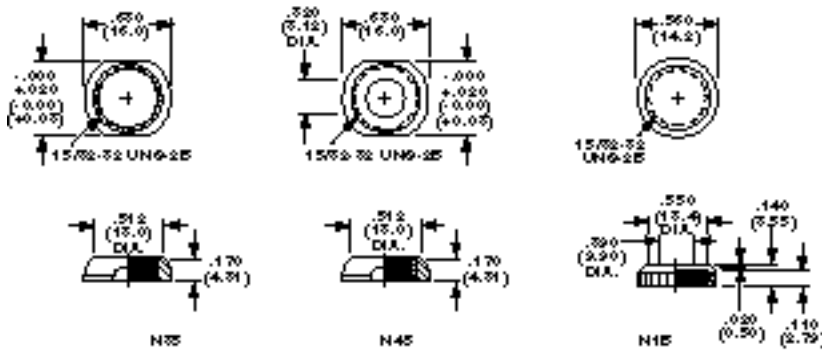
GUARDS

Model	Type	Color	Finish	Use Cap
G12A	1/4-40	Clear aluminum	Plain	C12 C22
G12B	1/4-40	Black aluminum	Plain	C12 C22
G12C	1/4-40	Chromed brass	Plain	C12 C22
G12KA	1/4-40	Clear aluminum	Knurled	C12 C22
G12KB	1/4-40	Black aluminum	Knurled	C12 C22
G12KC	1/4-40	Chromed brass	Knurled	C12 C22
G13A	1/4-40	Clear aluminum	Plain	C13 C23
G13B	1/4-40	Black aluminum	Plain	C13 C23
G13C	1/4-40	Chromed brass	Plain	C13 C23
G13KA	1/4-40	Clear aluminum	Knurled	C13 C23
G13KB	1/4-40	Black aluminum	Knurled	C13 C23
G13KC	1/4-40	Chromed brass	Knurled	C13 C23
Model	Type	Color	Finish	Use Cap
G15*	15/32"	Clear aluminum	Plain	



*G15 Model used on the MSPF Series

DECORATIVE HARDWARE



Model	Type	Description
N1B	15/32"	"Perfect Fit" knurled nut
N35	15/32"	Decorative nut (supplied on switch)
N45	15/32"	"Perfect Fit" decorative nut

Need more technical information?
Consult your local Augat sales office

AUGAT Inc.
452 John L. Dietsch Blvd.
Attleboro Falls, MA 02762, USA

BP T/M Series *Panel Seal*

FEATURES

The BP Series offers a unique means of sealing any pushbutton switch, using a standard 1/4-40 threading bushing, to almost any thickness panel. Simply install the BP adaptor into a 15/32" dia. or 1/2" dia. panel opening and secure with its hex nut. The appropriate switch is then threaded into the previously mounted adaptor and tightened in place. That's all there is to it, and a complete and decorative panel seal is the result.

MATERIALS

The flexible panel seal is custom molded of Neoprene rubber for long life, flexibility and chemical resistance. The threaded plastic adaptor is molded of ABS thermoplastic, is impact resistant and designed for ease of mounting.

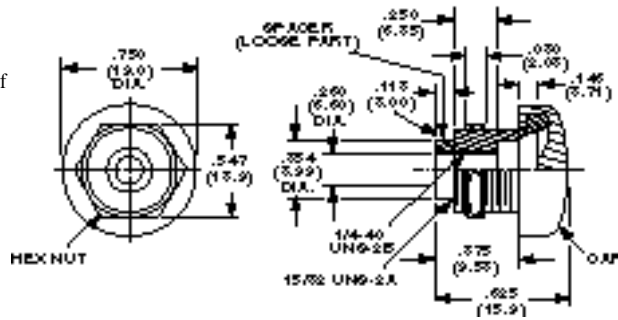
BPM

For use with Miniature Pushbutton

The BPM seal adaptor accommodates all AUGAT/ALCOSWITCH MPA Series of pushbutton switches utilizing the 1/4-40 threaded bushing.



BPM15320



Model	Color* of Seal
BPM15320	Black
BPM15322	Red
BPM15328	Gray

(* Custom seal colors are available upon special request.
Note: Silk screened colored legends are available on face of seal by special request.

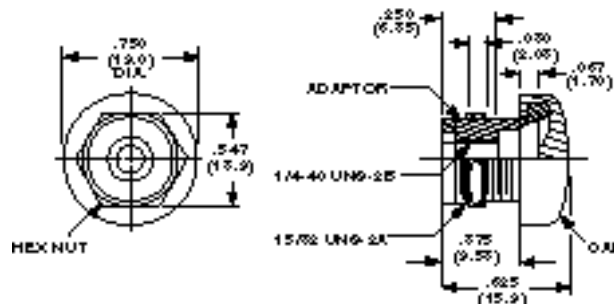
BPT

For use with Tiny Series TPF Pushbutton

The BPT seal adaptor accommodates all AUGAT/ALCOSWITCH TPF Series Tiny Pushbutton switches utilizing the 1/4-40 threading bushing.



BPT15328



Model	Color* of Seal
BPT15320	Black
BPT15322	Red
BPT15328	Grey

(* Custom seal colors are available upon special request.
Note: Silk screened colored legends are available on face of seal by special request.

Printed Circuit Mount TP-200 Illuminated Pushbuttons

MATERIAL SPECIFICATIONS:

Contacts.....Silver plated
 Case MaterialPolyester
 Actuator Material.....Polyamide
 TerminalsSilver plated
 Terminal Seal.....Epoxy
 Button MaterialPolycarbonate

TYPICAL PERFORMANCE CHARACTERISTICS:

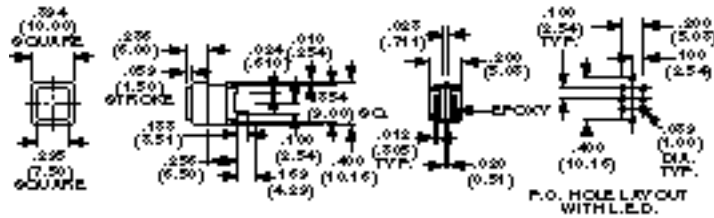
Contact Rating0.4 VA Max. @ 20 VDC
 Initial Contact Resistance.....500 Milliohms max.
 Contact TimingBreak-Before-Make
 Insulation Resistance1,000 Megohms @ 500 VDC
 Dielectric Strength500 VAC
 Actuation Force.....200 Grams average
 Plunger/Actuator Travel059" (1.50)
 Life Expectancy10,000 Cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature.....-10°C to + 70°C (+14°F to +158°F)
 Storage Temperature.....-25°C to + 85°C (-13°F to +185°F)
 Solder Heat Resistance270°C 3 seconds, per MIL-STD-202, Method 210

Momentary

Non-Illuminated (No LED)	Type	Button Color
TP1M2A2FA8	DPDT	Red
Illuminated (with LED)	Type	Button Color
TP2M2AL2FA8	DPDT	Red
TP2M4AL4FA8	DPDT	Yellow
TP2M5AL5FA8	DPDT	Green



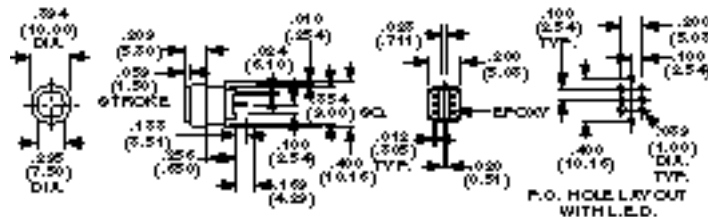
DPDT
Momentary



TP2M2AL2FA8

Momentary

Non-Illuminated (No LED)	Type	Button Color
TP1M2C2FC8	DPDT	Red
TP1M4C4FC8	DPDT	Yellow
TP1M5C45FC8	DPDT	Green
Illuminated (with LED)	Type	Button Color
TP2M2CL2FC8	DPDT	Red
TP2M4CL4FC8	DPDT	Yellow
TP2M5CL5FC8	DPDT	Green



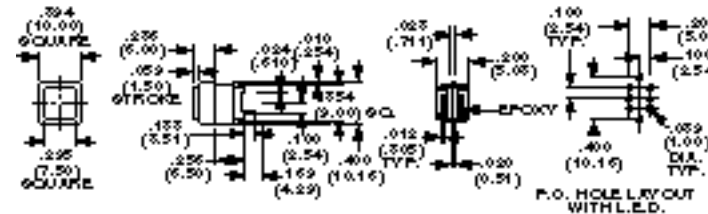
DPDT
Momentary



TP2M2CL2FC8

Maintained

Non-Illuminated (No LED)	Type	Button Color
TP1L2A2FA8	DPDT	Red
TP1L4A2FA8	DPDT	Yellow
TP1L5A5FA8	DPDT	Green
Illuminated (with LED)	Type	Button Color
TP2L2AL2FA8	DPDT	Red
TP2L4AL4FA8	DPDT	Yellow
TP2L5AL5FA8	DPDT	Green



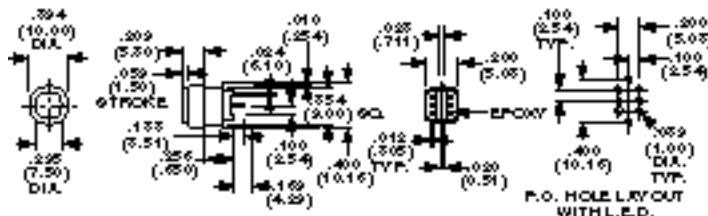
DPDT
Latching



TP2L2AL2FA8

Maintained

Non-Illuminated (No LED)	Type	Button Color
TP1L2C2FC8	DPDT	Red
Illuminated (with LED)	Type	Button Color
TP2L2CL2FC8	DPDT	Red
TP2L4AL4FA8	DPDT	Yellow
TP2L5CL5FC8	DPDT	Green



DPDT
Latching



TP2L2CL2FC8

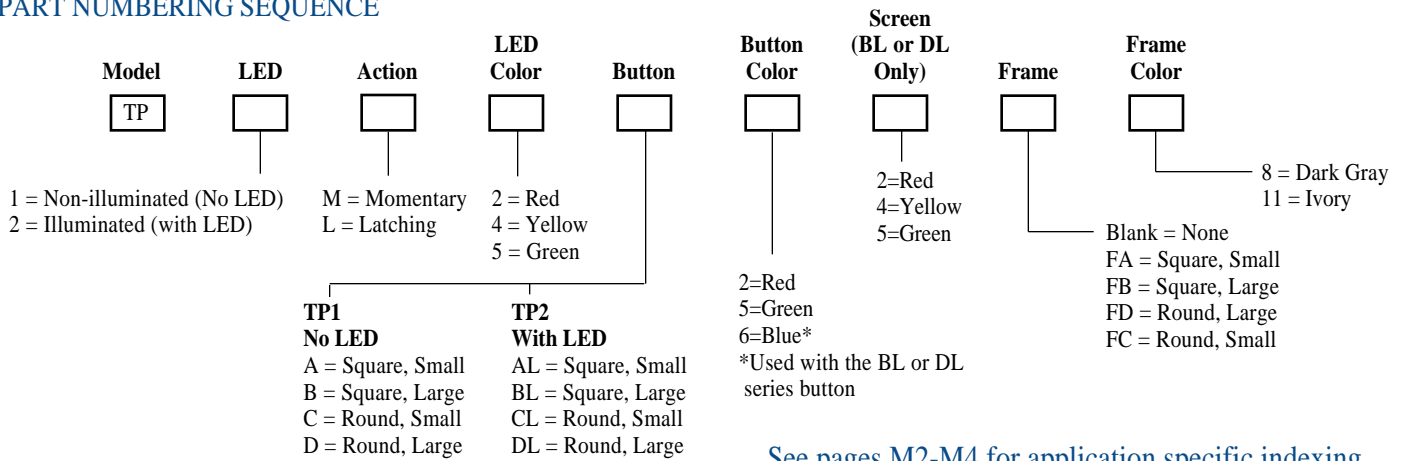
Need more technical information?

Consult your local Augat sales office

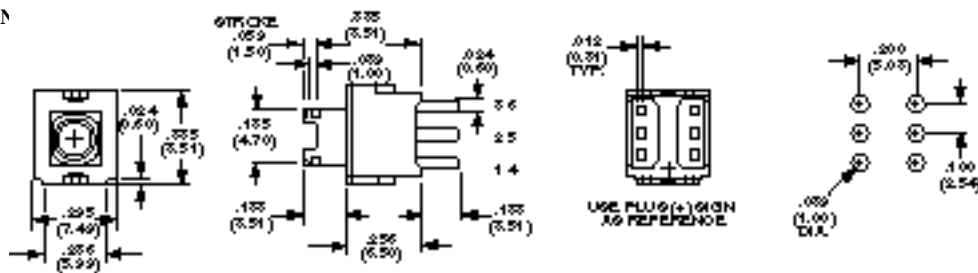
AUGAT Inc.
 452 John L. Dietsch Blvd.
 Andover Falls, MA 02762, USA

How To Order/TP-200 Series

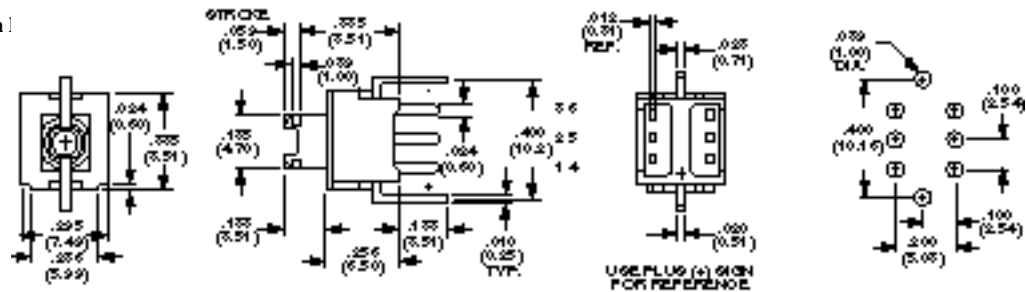
PART NUMBERING SEQUENCE



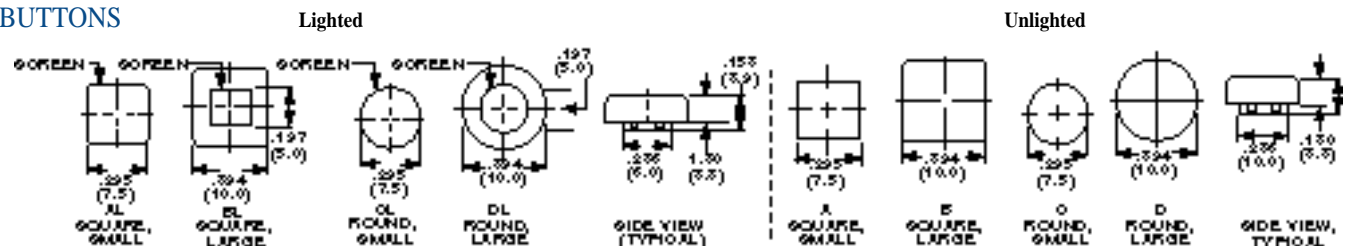
TP1M Non-Illuminated (N)
TP1L



TP2M Illuminated (With)
TP2L



BUTTONS



FRAMES

Lighted Unlighted

TYPICAL SWITCH CIRCUIT DIAGRAM

ASSEMBLY NOTES

Mount frame to switch, taking notice that tab orientation is necessary. Mount button to switch by noting proper orientation of flats on plunger, then snap in place.

LED Specifications					
Color	VR	IF	Operating Current	VF Nom.	VF Max.
(2) Red	5VDC	30mA	20mA	2.0V	2.8V
(5) Green	5VDC	20mA	15mA	2.0V	2.8V
(4) Yellow	5VDC	20mA	15mA	1.9V	2.5V

Current applied to LED must be lower than forward current (IF) indicated. Value of the resistor is calculated by the formula:

Current applied to LED must be lower than forward current (IF) indicated. Value of the resistor is calculated by the formula:

Illuminated Pushbuttons **Command Series**

FEATURES:

Command Series Illuminated Pushbuttons are instrument-grade switches having snap-acting double break contacts, silver clad and gold plated to satisfy the requirements of logic level and power switching. **Contacts are electrically independent of one another and are isolated from the lamp circuit.** Tactile feel is excellent and maintained models have latching feature for visible indication of status. Uses T1-3/4 midget flanged base lamp, relampable from front of panel. Legends may be provided using printed transparent tape affixed to inner button. Oiltight models meet NEMA 1, 12 & 13 requirements. UL Recognized, File E-51302, CSA LR-20479

MATERIAL SPECIFICATIONS:

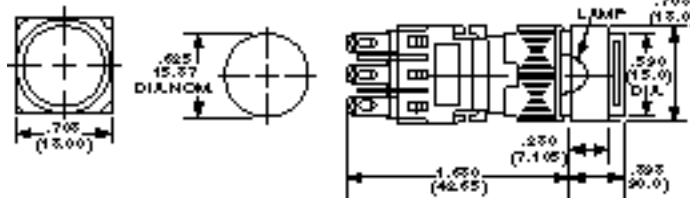
Contacts.....Gold plate over silver clad

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA @ 20 VDC or Peak AC
 5 A @ 250 VAC or 24 VDC (Resistive)
 Initial Contact Resistance.....20 Milliohms max.
 Insulation Resistance100 Megohms min.
 Dielectric Strength1,500 VAC
 Life Expectancy100,000 Operations @ rated current

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-44°F to +122°F (-20°C to +50°C)



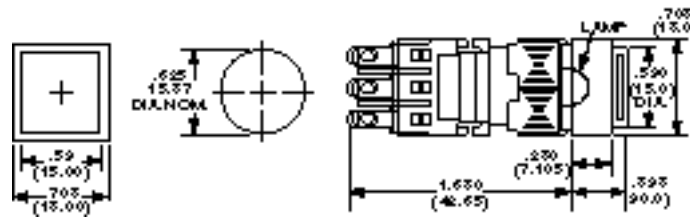
ROUND



164EL11

Non-Oiltight	Oiltight	Contact	Action
164EL11	165EL11	1 N.O. & N.C.	Momentary
164EL22	165EL22	2 N.O. & N.C.	Momentary
164EL33	165EL33	3 N.O. & N.C.	Momentary
164EL511	165EL511	1 N.O. & N.C.	Push on/Push off
164EL522	165EL522	2 N.O. & N.C.	Push on/Push off
164EL533	165EL533	3 N.O. & N.C.	Push on/Push off

Application Note: For lens sets and lamps, see page D51
 LED's not supplied, order separately See page K10



SQUARE

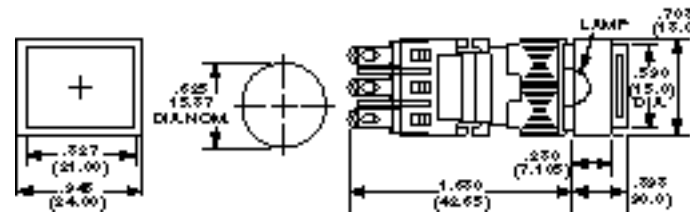
Lens set and lamps not supplied.



164SL11

Non-Oiltight	Oiltight	Contact	Action
164SL11	165SL11	1 N.O. & N.C.	Momentary
164SL22	165SL22	2 N.O. & N.C.	Momentary
164SL33	165SL33	3 N.O. & N.C.	Momentary
164SL511	165SL511	1 N.O. & N.C.	Push on/Push off
164SL522	165SL522	2 N.O. & N.C.	Push on/Push off
164SL533	165SL533	3 N.O. & N.C.	Push on/Push off

Application Note: For lens sets and lamps, see page D51



RECTANGULAR

Lens set and lamps not supplied.



164TL11

Non-Oiltight	Oiltight	Contact	Action
164TL11	165TL11	1 N.O. & N.C.	Momentary
164TL22	165TL22	2 N.O. & N.C.	Momentary
164TL33	165TL33	3 N.O. & N.C.	Momentary
164TL511	165TL511	1 N.O. & N.C.	Push on/Push off
164TL522	165TL522	2 N.O. & N.C.	Push on/Push off
164TL533	165TL533	3 N.O. & N.C.	Push on/Push off

Application Note: For lens sets and lamps, see page D51

Need more technical information?

Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762 USA

Command Series *Selector and 2 & 3-Position Keylock*

FEATURES:

Command Series Selector & Keylock Switches are 2 & 3-position rotary types with snap-cutting double break contacts. All models have 90° throw. Contacts are silver-clad and gold-plated to provide reliable operation at logic levels as well as for power switching applications. Contacts are electrically isolated from one another. Keylock types are supplied with two keys. Oiltight models meet NEMA 1, 12 & 13 requirements. PC/Wirewrap terminations also available. Consult factory.

UL Recognized File E-51302

CSA LR-20479

MATERIAL SPECIFICATIONS:

Contacts.....Gold plate over silver clad

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA @ 20 VDC or Peak AC
5 A @ 250 VAC or 24 VDC (Resistive)

Initial Contact Resistance.....20 Milliohms max.

Insulation Resistance100 Megohms min.

Dielectric Strength1,500 VAC

Life Expectancy100,000 Operations at rated current

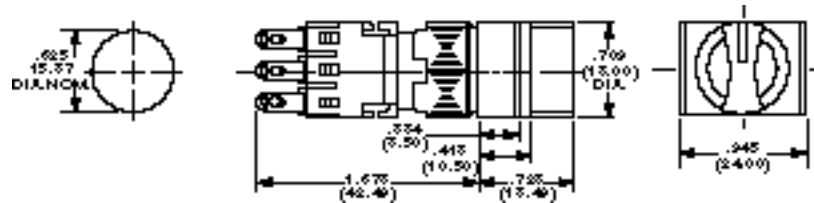
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +158°F (-20°C to +70°C)

SELECTORS



164P2B11

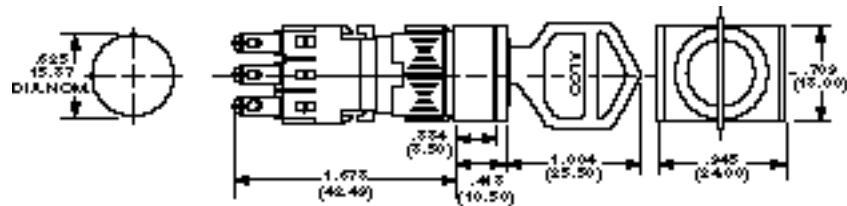


Non-Oiltight	Oiltight	Contact	Action
164P2B11	165P2B11	1N.O. & N.C.	2 Pos. Maintained
164P2B22	165P2B22	2N.O. & N.C.	2 Pos. Maintained
164P2B33	165P2B33	3N.O. & N.C.	2 Pos. Maintained
164P0B22		2N.O. & N.C.	2 Pos. Momentary Right
164P0B33		3N.O. & N.C.	2 Pos. Momentary Right
164P3B22	165P3B22	2N.O. & N.C.	3 Pos. Center Off/Maintained
164P3B33	165P3B33	3N.O. & N.C.	3 Pos. Center Off

KEYLOCKS



164J2A11



2 Position Keylocks				3 Position Keylocks			
Non-Oiltight	Oiltight	Contact	Action	Non-Oiltight	Oiltight	Contact	Action
164J2A11	165J2A11	1N.O. & N.C.	Maintained, key pull left	164J3A22	165J3A2	2N.O. & N.C.	Maintained, key pull left
164J2A22	165J2A2	2N.O. & N.C.	Maintained, key pull left	164J3A33	165J3A33	3N.O. & N.C.	Maintained, key pull left
164J2A33	165J2A33	3N.O. & N.C.	Maintained, key pull left	164J3E22	165J3E22	2N.O. & N.C.	Maintained, key pull center
164J2B11	165J2B11	1N.O. & N.C.	Maintained, key pull both	164J3E33	165J3E33	3N.O. & N.C.	Maintained, key pull center
164J2B22	165J2B22	2N.O. & N.C.	Maintained, key pull both	164J3C22	165J3C22	2N.O. & N.C.	Maintained, key pull all
164J2B33	165J2B33	3N.O. & N.C.	Maintained, key pull both	164J3C33	165J3C33	3N.O. & N.C.	Maintained, key pull all
164JOA11		1N.O. & N.C.	Momentary right, key pull left	164J7A22	165J7A22	2N.O. & N.C.	Momentary right, key pull left
164JOA22		2N.O. & N.C.	Momentary right, key pull left				
164JOA33		3N.O. & N.C.	Momentary right, key pull left				

Application Note: Spare key part number for 164J-165J Series is **164KA**

Pilot Light Indicators Command Series

FEATURES

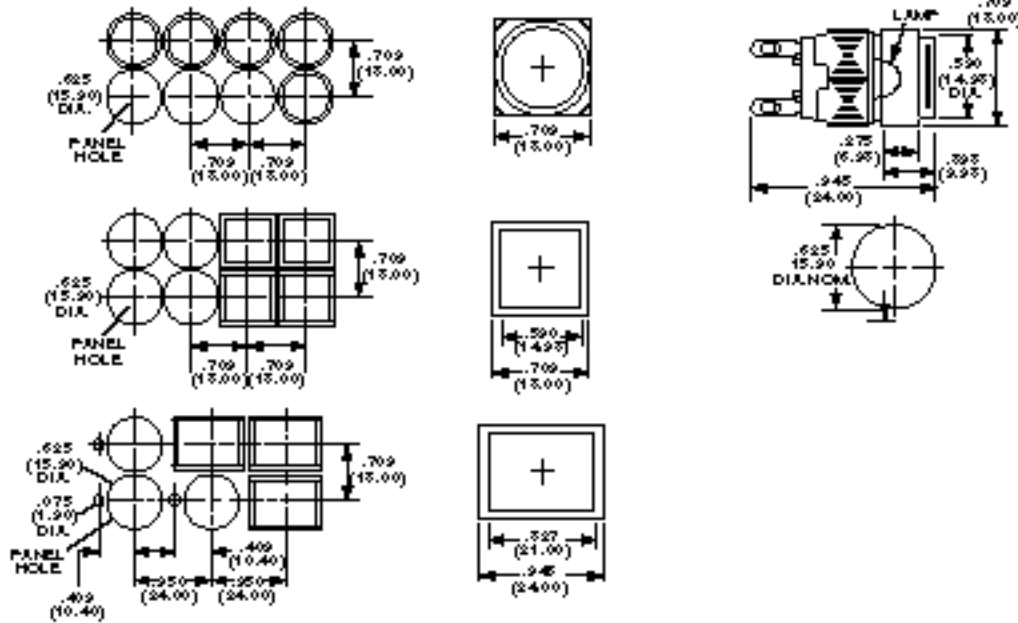
Command Series Pilot Light Indicators match the appearance of both lighted and unlighted Command Series pushbuttons. The same lens buttons are snapped into place and legends may be easily inserted. Illumination is from T - 1 3/4 midget flange based lamps, which are installed from the front panel. Lenses and lamps are ordered separately and be sure to specify color. Oiltight models meet NEMA 1, 12 & 13 requirements. UL File No. E-51302 CSA LR-20479

TYPICAL PERFORMANCE CHARACTERISTICS:

LAMP DISSIPATION 1.2W MAX.
 Insulation Resistance100 Megohms min.
 Dielectric Strength1,500 VAC

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-44°F to +122°F (-20°C to +50°C)



PILOT LIGHT INDICATORS

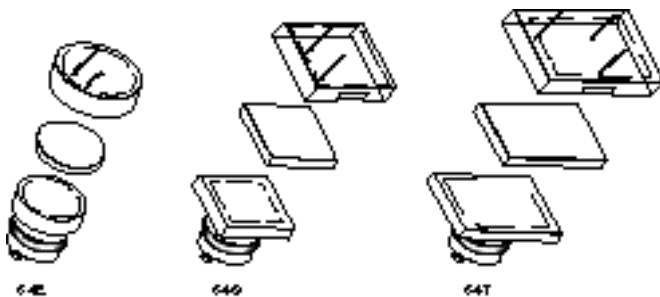


164EZ

Non-Oiltight	Oiltight	Description
164EZ	165EZ	Round
164SZ	165SZ	Square
164TZ	165TZ	Rectangular

Lens set and lamp not supplied, order separately, see below.
 U.L. Recognized E-51301

LENS SET



64E

Model	Description
64E(*)	Round lens set
64S(*)	Square lens set
64T(*)	Rectangular lens set

All fit oiltight and non-oiltight indicators.
 (*) Specify color by adding suffix number: (2) Red, (3) Orange, (4) Yellow, (5) Green, (6) Blue, (9) White/Clear.

Application Note:
 Lens sets include, button, diffuser and cap.

Need more technical information?
 Consult your local Augat sales office

AUGAT Inc.
 452 John L. Dietsch Blvd.
 Attleboro Falls, MA 02762, USA

Command Series *Standard Lengths*

FEATURES:

Standard Legends on Transparent Adhesive Tape are available for Illuminated Command Series switches and pilot lights. Legends are easily affixed to the translucent white button and are protected by the lens cap. The black lettering is back-lit by the lamp and the inscription is visible through the lens cap. This method of providing legends is also suitable in some applications using non-illuminated white (clear), yellow or orange lens caps.

Standard legends, listed below, are intended to be used with round, square or rectangular pushbuttons and pilot lights. Sold only in sheets of 10 identical legends.

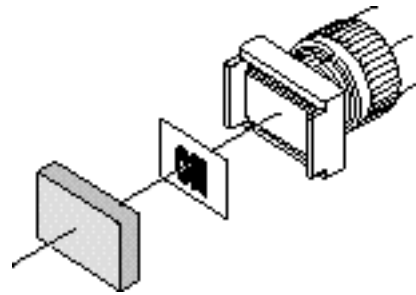
CUSTOM LEGENDS:

Special legends can be supplied for square and rectangular pushbuttons and indicators. These are computer typeset and laser printed on transparent plastic sheet, ready for insertion between color cap and inner light-diffusing button. Contact factory for details.

LEGEND MODEL NUMBERS



Legend (film)



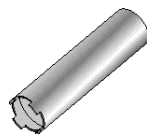
616 On	616 Power	616 STD BY	616 Reset	616 High	616 Test	616 Read
616 Off	616 Open	616 MAN	616 FWD	616 Low	616 Erase	616 Enter
616 Start	616 Close	616 Up	616 REV	616 Print	616 XMIT	616 Clear
616 Stop	616 Auto	616 Down	616 Run	616 Ready	616 XFER	

Note: Model numbers must include complete legend nomenclature.

Accessories

MOUNTING WRENCH

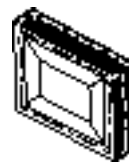
Sturdy tubular brass wrench fits mounting nuts on all Command Series switches.



Model Number
601

SPLASH PROOF SEAL

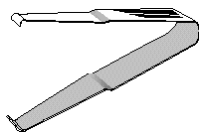
Flexible clear seal fits all rectangular pushbuttons and pilot lights.



Model Number
668

LENS REMOVER

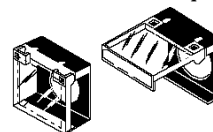
Dual purpose metal tool facilitates removal of lenses, buttons.



Model Number
618

FLIP COVER SWITCH GUARD

669 used with rectangular series pushbutton switches.
671 used with square and round series pushbutton switches.



Model Number
669 Rectangular
671 Square and Round