

SMT TP series

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Surface mount tiny washable pushbutton switches

Distinctive features and specifications



- ❑ Entirely designed for surface mount
- ❑ Tape and reel packaging
- ❑ Reflow solderable
 - High temperature plastic materials
 - Tin plated ground plate
 - Terminal coating : tin alloy over nickel plating
 - Terminals turned to the outside, preventing the shadow effect in infrared soldering and permitting visual inspection of solder joints
 - Distance between case and circuit : 0,55 mm (.021)
 - End stackable with 10,16 mm (.40) pitch
 - Available with positioning pins to ensure switch orientation during the reflow process and increasing switch mechanical resistance
- ❑ Protected against electrostatic discharges (ESD) up to 10 KV
- ❑ Washable

Construction withstands cleaning processes, including hot water under pressure

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load : 0,4VA 20V max. AC or DC
- Minimum load : 10mA 50mV or 10µA 5VDC
- Initial contact resistance : 50 mΩ max
- Insulation resistance : 1.000 MΩ min. at 500VDC
- Dielectric strength : 1.000 Vrms. 50 Hz min. between terminals and frame
- 500 Vrms. 50 Hz min. between terminals
- Electrical life at full load : 60.000 cycles
- Static resistance : 10 KV (Schaffner equipment)

GENERAL SPECIFICATIONS

- Actuator travel : function 2 : 1 mm (.039) - function 3 : 0,8 mm (.031)
- Operating temperature : -40°C to +85°C
- Moisture resistance : 21 days per IEC 512-6 test 11c
- Vibration resistance : 10-500 Hz / 10 g per IEC 512-4 test 6d
- Shock resistance : 50 g per IEC 512-4 test 6c

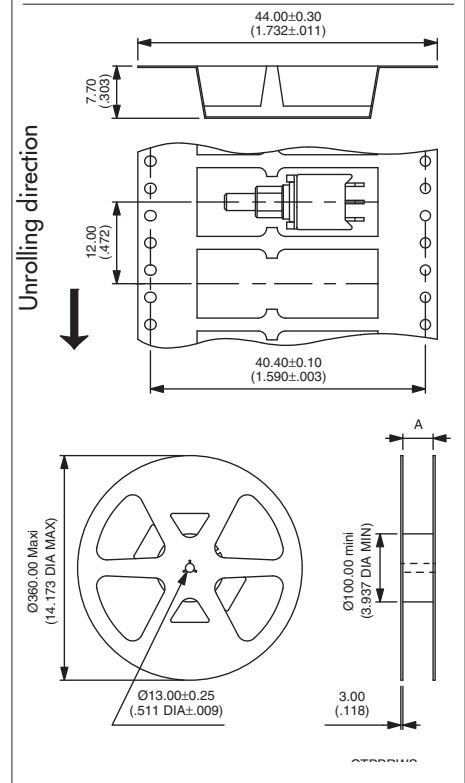
MATERIALS

- Case : high temperature plastic material UL94-V0
- Actuator : high temperature plastic material UL94-V0
- Ground plate and positioning pins : steel, tin plated
- Contacts : brass, gold plated
- Terminals : brass, with pure tin plating over nickel barrier

SOLDERING AND CLEANING

- Reflow soldering : infrared, vapor phase or infrared convection
- Washable per IEA-RS448-2 :
 - water + detergent - preferred
 - solvents
- Further information on reflow soldering : see end of catalogue.

PACKAGING



Tape width	24.00 (.944)	44.00 (1.732)
Reel (dimension A)	24.40+2.00/0.00 (.960+.078/.000)	44.40+2.00/0.00 (1.748+.078/.000)

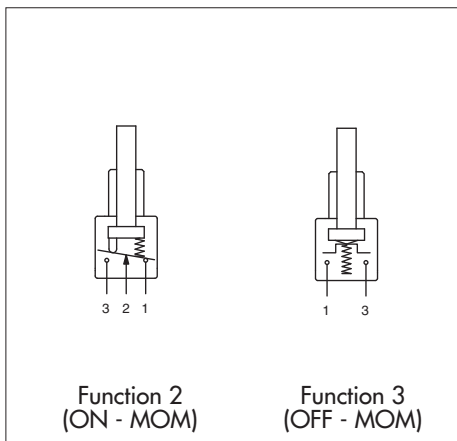
Standard packaging unit : 700 pieces
Tape meeting international standard IEC - Publication 286-3 (EIA481A)
Start leader : 400 mm min.



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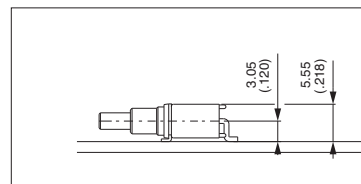
Dimensions : First dimensions are in mm while inches are shown as bracketed numbers.

B2



- With or without positioning pins
- Single pole

Also available for vertical mounting. On request.



B2

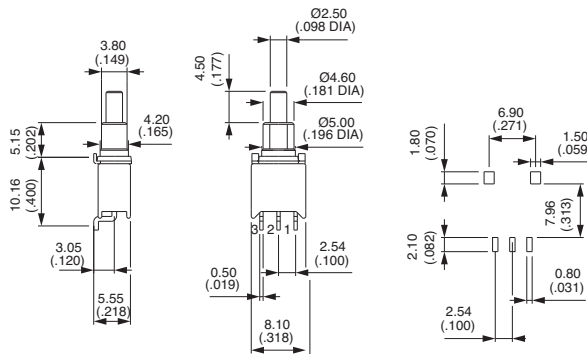
Pushbutton switches



TP32WS83500



TP33WS83500



Shown in function 2

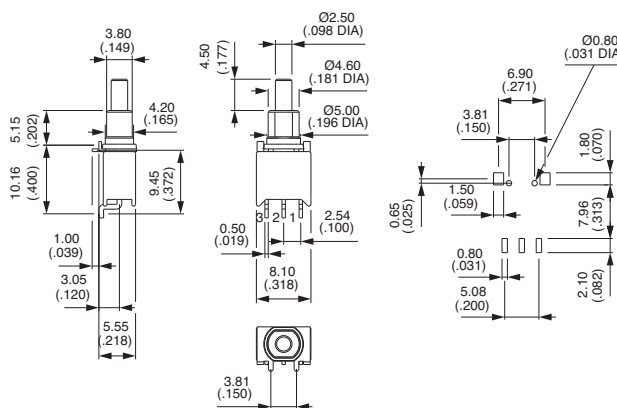
Pushbutton switches - with positioning pins



TP32WS83565

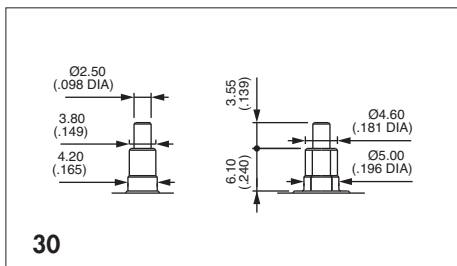


TP33WS83565

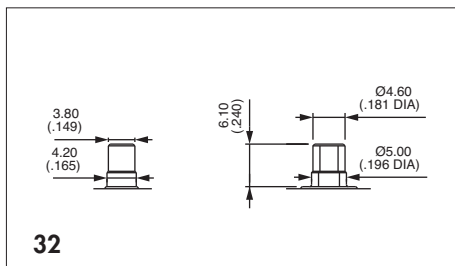


Shown in function 2

PLUNGER OPTIONS



Short
Replace 35 with 30 in the above P/N's



Flush
Replace 35 with 32 in the above P/N's.



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Tiny washable momentary pushbutton switches

Distinctive features and specifications



- Process sealed**
 - Single piece case
 - O-ring seal between actuator and bushing
 - Epoxy sealed terminals
- Wide variety of contact materials**
- Same PCB layout as TL, TR and TG tiny switches**

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
 - gold plated contacts : 0,4VA 20V max. AC or DC
 - silver plated contacts : 0,5A 48V max. AC or DC
- Minimum load : 10mA 50mV - 10 μ A 5VDC
- Contact resistance : 50 m Ω max.
- Insulation resistance : 1.000 M Ω min. at 500VDC
- Dielectric strength :
 - 1.000 Vrms 50 Hz min. between terminals and frame
 - 500 Vrms 50 Hz min. between terminals
- Electrical life at full load :
 - gold plated contacts : 60.000 cycles
 - silver plated contacts : 20.000 cycles

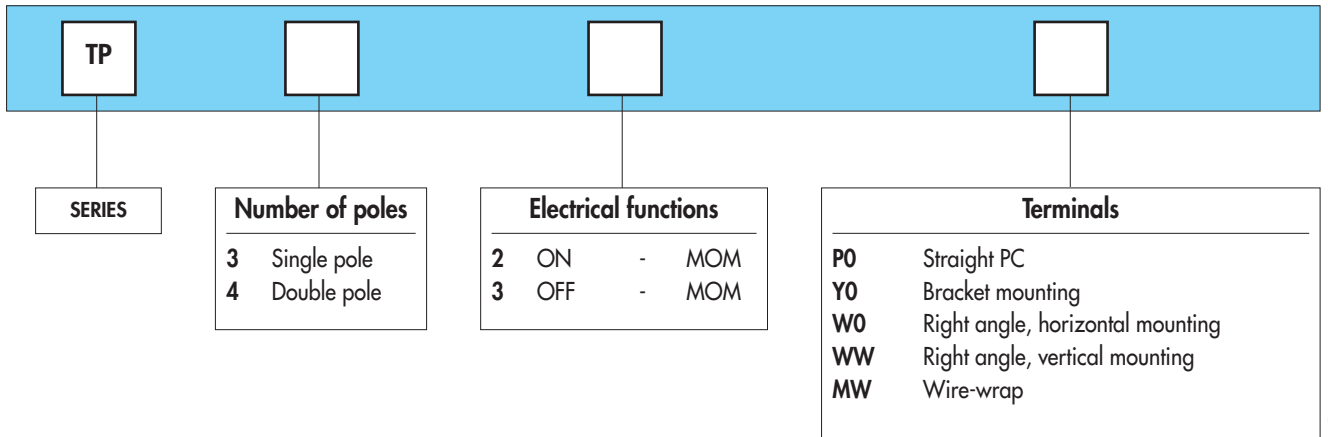
GENERAL SPECIFICATIONS

- Total travel :
 - function 2 : 1 mm (.039)
 - function 3 : 0,8 mm (.031)
- Strength of terminals : pull-out force - 10N max.
- Operating temperature : -30°C to +85°C
- Moisture : 21 days 95 % (NFC 20-603 - IEC 68-2-3)
- Cleaning : solvents or water + detergent
- Wave soldering : 260°C - 5 sec.

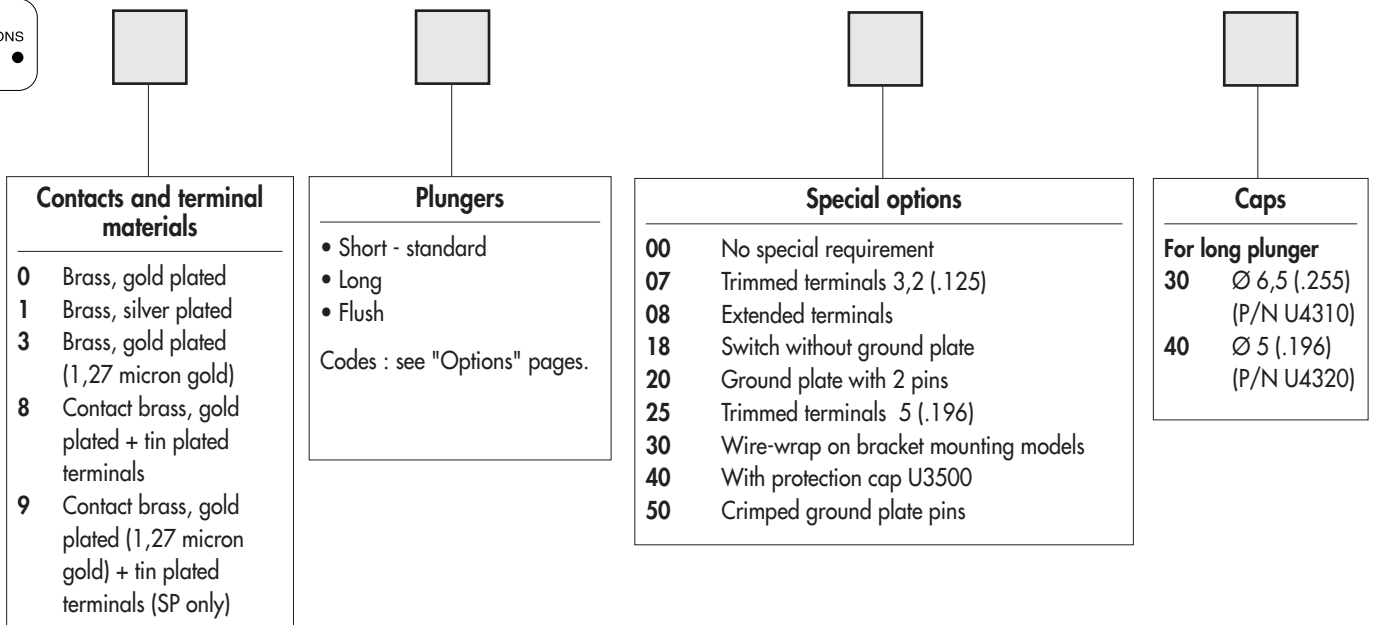
MATERIALS

- Case : PBT
- Actuator : polyamide, glass filled
- Contacts and terminals :
 - 0 : brass, gold plated
 - 1 : brass, silver plated
 - 3 : brass, gold plated (1,27 micron gold)
 - 8 : contact brass, gold plated + tin plated terminals
 - 9 : contact brass, gold plated (1,27 micron gold) + tin plated terminals
- Terminal seal : epoxy

MODEL STRUCTURE



OPTIONS



ABOUT THIS SERIES

On the following pages, you will find successively :

- model structure of switches
- options in the same order as in above chart

Dimensions : first dimensions are in mm while inches are shown as bracketed numbers.



NOTICE : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

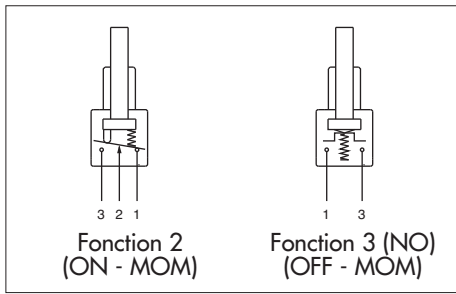


Packaging unit : 100 pieces, except for models with WW terminals (50 pieces).

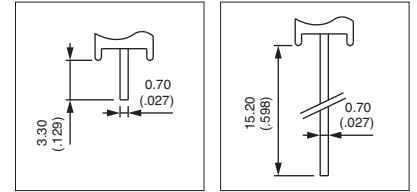


TP series

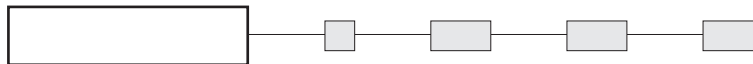
Tiny washable momentary pushbutton switches



- Straight PC, right angle or wire-wrap terminals
- 1 and 2 pole configurations



MODEL STRUCTURE

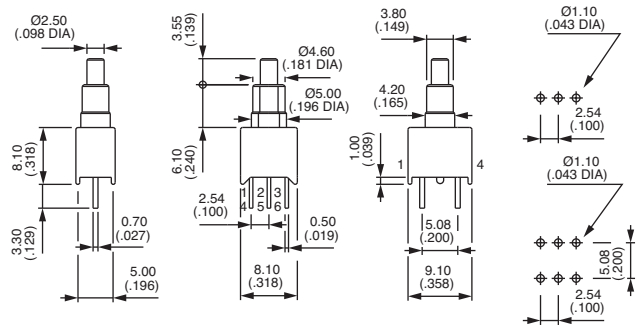


Shown in function 2, with standard plunger

Straight PC terminals : TP..P0



	Single pole	Double pole	ON	MOM
TP32P0		TP42P0		
TP33P0		TP43P0	OFF	MOM

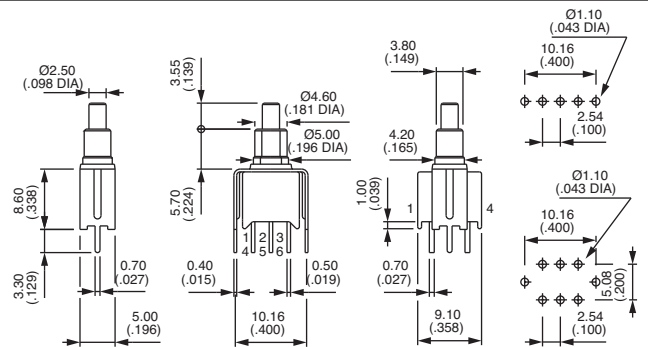


Function 3 has two terminals only (3 and 1) per pole

Straight terminals - bracket mounting : TP..Y0



	Single pole	Double pole	ON	MOM
TP32Y0		TP42Y0		
TP33Y0		TP43Y0	OFF	MOM

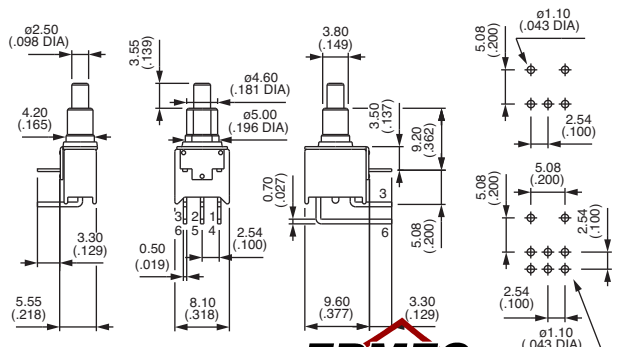


Function 3 has two terminals only (3 and 1) per pole

Right angle terminals - horizontal mounting : TP..W0



	Single pole	Double pole	ON	MOM
TP32W0		TP42W0		
TP33W0		TP43W0	OFF	MOM



Function 3 has two terminals only (3 and 1) per pole



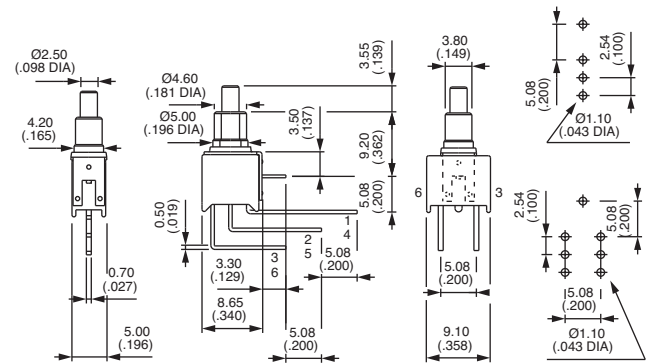


Shown in function 2, with standard plunger

Right angle terminals - vertical mounting : TP..WW



Single pole	Double pole	ON	MOM
TP32WW	TP42WW	ON	MOM
TP33WW	TP43WW	OFF	MOM

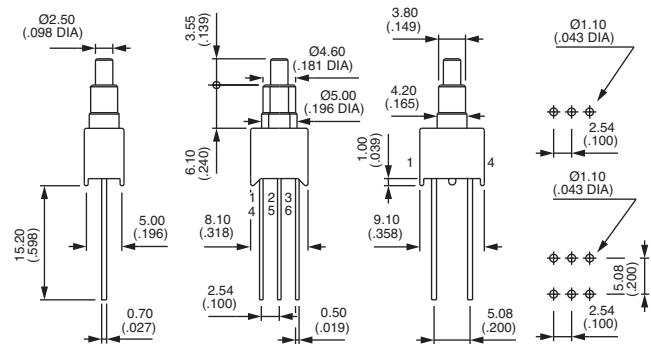


Function 3 has two terminals only (3 and 1) per pole

Wire-wrap terminals : TP..MW

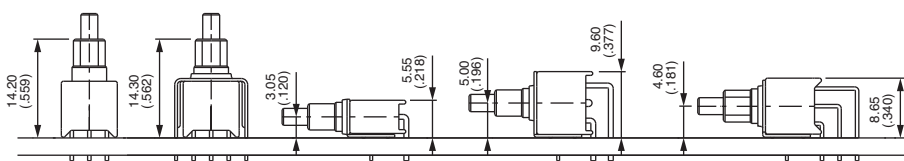


Single pole	Double pole	ON	MOM
TP32MW	TP42MW	ON	MOM
TP33MW	TP43MW	OFF	MOM



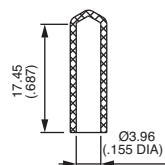
Function 3 has two terminals only (3 and 1) per pole

PCB MOUNTING



CAP FOR PCB PROCESSING

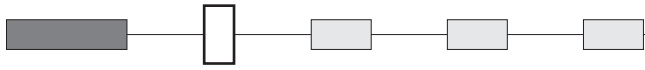
Provide additional protection during PCB processing. Supplied separately. For cap mounted on the switch, see special option 40. Material : vinyl



U3502



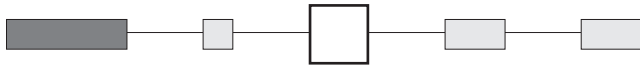
CONTACT AND TERMINAL MATERIALS



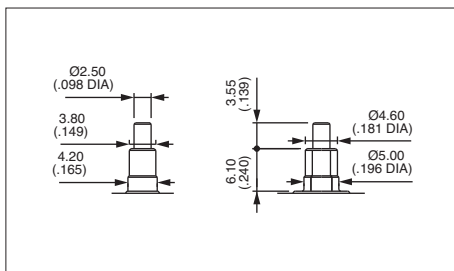
- 0 Brass, gold plated
- 1 Brass, silver plated
- 3 Brass, gold plated (1,27 micron gold)
- 8 Contact brass, gold plated + tin plated terminals
- 9 Contact brass, gold plated (1,27 micron gold) + tin plated terminals (single pole only)

B2

PLUNGERS



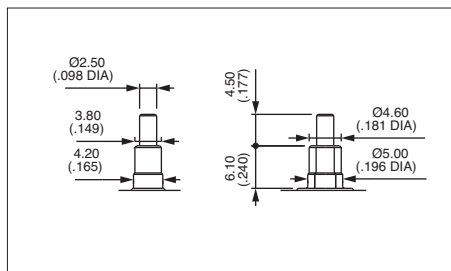
Standard plunger colour is black.



Short - standard

With blue
case
30

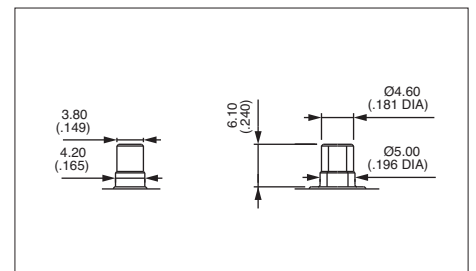
With black
case
80



Long

With blue
case
35

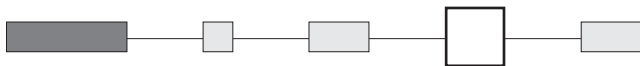
With black
case
85



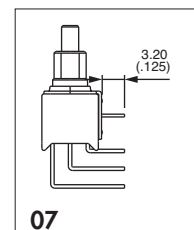
Flush

With black
case
82

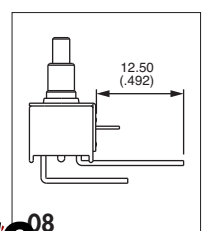
SPECIAL OPTIONS



- 00 No special requirement
- 07 **Trimmed terminals** - length 3,2 mm (.125) for TP..WW models only
- 08 **Extended terminals** for TP..WO models only



07

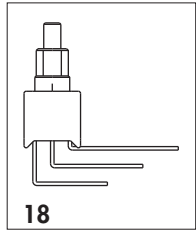


08

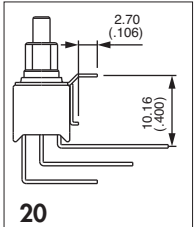


SPECIAL OPTIONS (continued)

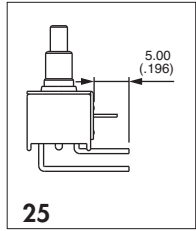
- 18** Switch **without ground plate** for TP..WW models only
- 20** **Ground plate with 2 pins** for TP..WW models only
- 25** **Trimmed terminals** - length 5 mm (.196) for all models, except TP..WW
- 30** **Wire-wrap terminals** on models with mounting **bracket**
- 40** With cap U3500 mounted over plunger and bushing
Further protects the switch during PCB processing
- 50** **Crimping of ground plate pins.**
Retains switch on PC during handling and wave soldering.
For models TP..WO, TP..WW and TP..YO single and double pole.



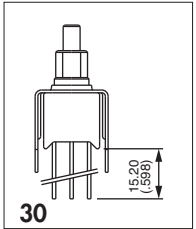
18



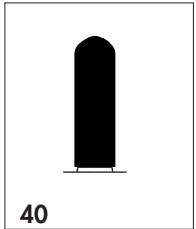
20



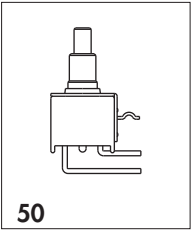
25



30

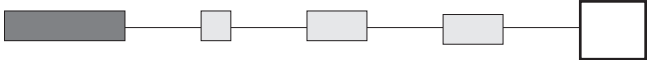


40

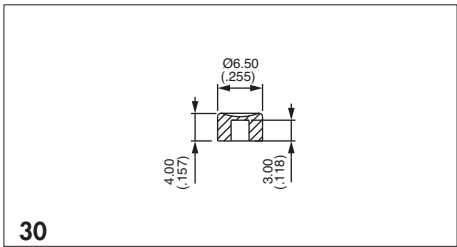


50

CAPS

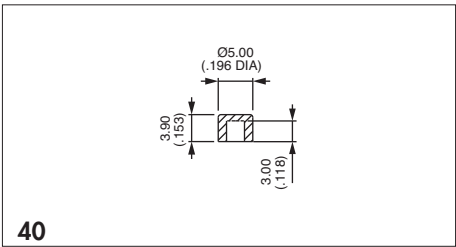


Blank Without cap



30

P/N U4310 - for long plunger only



40

P/N U4320 - for long plunger only

To order caps separately, use their part number (U...).

Cap colours	
Replace "0" by number	
1	blue
1/4	dark blue
2	black
3	green
4	grey
5	yellow
6	red
7	ivory
7/1	white
9	orange

