

TL series

Subminiature washable toggle switches



DISTINCTIVE FEATURES

- Process sealed
- Single piece case
- Front and rear sealing
- Wide variety of contact materials
- Same PCB layout as TP, TR and TG subminiature switches



ENVIRONMENTAL SPECIFICATIONS

- Operating temperature : -30 °C to +85 °C (-22 °F to +185 °F)
- Moisture : 21 days 95 % (NFC 20-603 - IEC 68-2-3)



ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
 - gold plated contacts : 0.4 VA 20 V max. AC or DC
 - silver plated contacts : 0.5 A 48 V max. AC or DC
- Minimum load : 10 mA 50 mV - 10 μ A 5 VDC
- Contact resistance : 20 m Ω max.
- Insulation resistance : 1,000 M Ω min. at 500 VDC
- Dielectric strength :
 - 1,000 Vrms 50 Hz min. between terminals and frame
 - 500 Vrms 50 Hz min. between terminals
- Electrical life at full load :

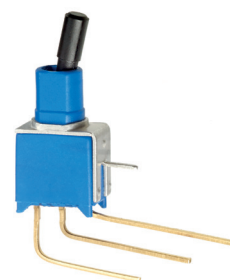
Contacts	Number of cycles	
	2 positions	3 positions
Gold plated	60,000	30,000
Silver plated	20,000	10,000



GENERAL SPECIFICATIONS

- Strength of terminals : pull-out force - 10 N max.
- Cleaning : solvents or water + detergent
- Wave soldering : 260 °C (500 °F) - 5 sec.

The company reserves the right to change specifications without notice.



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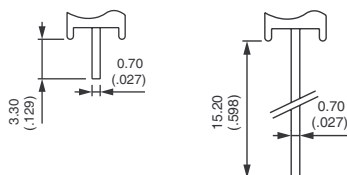
MATERIALS

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

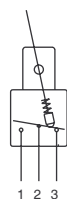
APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.



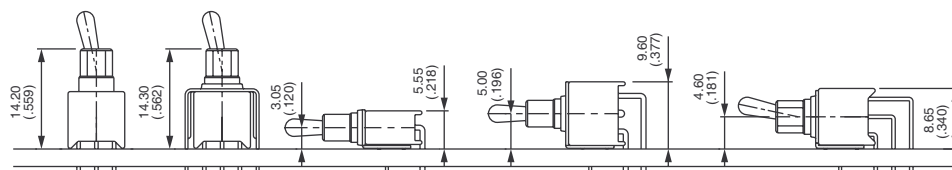
TERMINALS



ELECTRICAL FUNCTIONS



PCB MOUNTING





BUILD YOUR PART NUMBER

BASIC PART NUMBER			
TL			
SERIES	NUMBER OF POLES	ELECTRICAL FUNCTIONS	TERMINALS
	3 Single pole	6 ON - ON	P0 Straight PC
	4 Double pole	9 ON OFF ON	Y0 Bracket mounting
		7 MOM OFF MOM	W0 Right angle, horizontal mounting
		8 ON OFF MOM	WW Right angle, vertical mounting
		2 ON - MOM	

OPTIONS		
CONTACT AND TERMINAL MATERIALS	LEVER STYLES / CASE COLORS	SPECIAL OPTIONS
0 Brass, gold plated	With blue case	00 No special requirement
1 Brass, silver plated	00 Short lever, nickel plated	07 Trimmed terminals - length 3.2 (.125)
3 Brass, gold plated (1.27 micron)	01 Short lever, black	08 Extended terminals
8 Contact brass, gold plated + tin plated terminals	02 Long lever, nickel plated	18 Switch without ground plate
9 Contact brass, gold plated (1.27 micron) + tin plated terminals (SP only)	03 Long lever, black	20 Ground plate with 2 pins
	04 Medium lever, nickel plated	25 Trimmed terminals - length 5 (.196)
	05 Medium lever, black	50 Crimped ground plate pins
	40 Short insulated lever	
	30 Long insulated lever	
	With black case	
	50 Short lever, nickel plated	
	51 Short lever, black	
	52 Long lever, nickel plated	
	53 Long lever, black	
	54 Medium lever, nickel plated	
	55 Medium lever, black	
	56 Cylindrical lever, nickel plated	
	94 Short insulated lever	
	90 Long insulated lever	



ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.



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

CONTACT AND TERMINAL MATERIALS

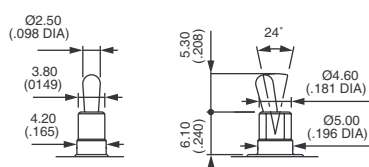
BASIC P/N

- 0 Brass, gold plated
- 1 Brass, silver plated
- 3 Brass, gold plated (1.27 micron)
- 8 Contact brass, gold plated + tin plated terminals
- 9 Contact brass, gold plated (1.27 micron) + tin plated terminals (single pole only)

LEVER AND CASE STYLES

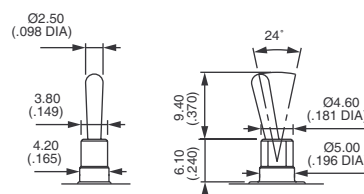
BASIC P/N

SHORT - STANDARD



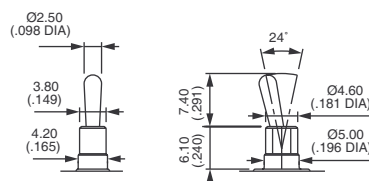
CASE	Blue	Black
LEVER		
Nickel plated	00	50
Black	01	51

LONG



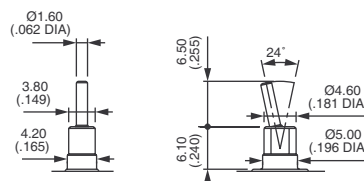
CASE	Blue	Black
LEVER		
Nickel plated	02	52
Black	03	53

MEDIUM



CASE	Blue	Black
LEVER		
Nickel plated	04	54
Black	05	55

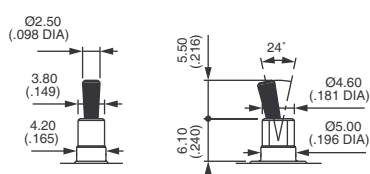
CYLINDRICAL



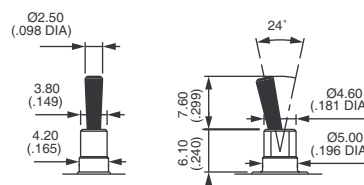
CASE	Blue	Black
LEVER		
Nickel plated	-	56

INSULATED LEVERS

Protected against electrostatic discharges (ESD) up to 10 KV.



CASE	Blue	Black
LEVER		
Black	40	94

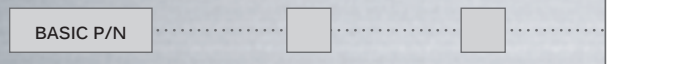


CASE	Blue	Black
LEVER		
Black	30	90

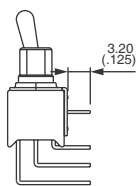
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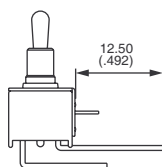
SPECIAL OPTIONS



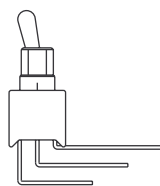
- 00 No special requirement
- 07 **Trimmed terminals** - length 3,2 mm (.125) for TL..WW models only
- 08 **Extended terminals** for TL..W0 models only
- 18 **Switch without ground plate** for TL..WW models only
- 20 **Ground plate with 2 pins** for TL..WW models only
- 25 **Trimmed terminals** - length 5 mm (.196) for all models, except TL..WW
- 50 **Crimped ground plate pins.**
Retains switch on PCB during handling and wave soldering.
For models TL..W0, TL..WW and TL..Y0 single and double pole.



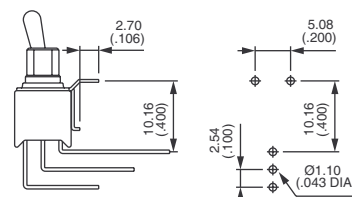
07



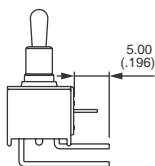
08



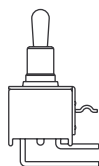
18



20



25



50