

# TL series

## Tiny washable toggle switches

*Distinctive features and specifications*



### Sealed

- Single piece case
- O-ring seal between actuator and bushing
- Epoxy sealed terminals

### Wide variety of contact materials

### Same PCB layout as TP, 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 $\mu$ A 5VDC
- Contact resistance : 20 m $\Omega$  max.
- Insulation resistance : 1.000 M $\Omega$  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 :

Contacts	Number of cycles	
	2 positions	3 positions
Gold plated	60.000	30.000
Silver plated	20.000	10.000

#### 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 gold)
  - 8 : contact brass, gold plated + tin plated terminals
  - 9 : contact brass, gold plated (1,27 micron gold) + tin plated terminals
- Terminal seal : epoxy

#### GENERAL SPECIFICATIONS

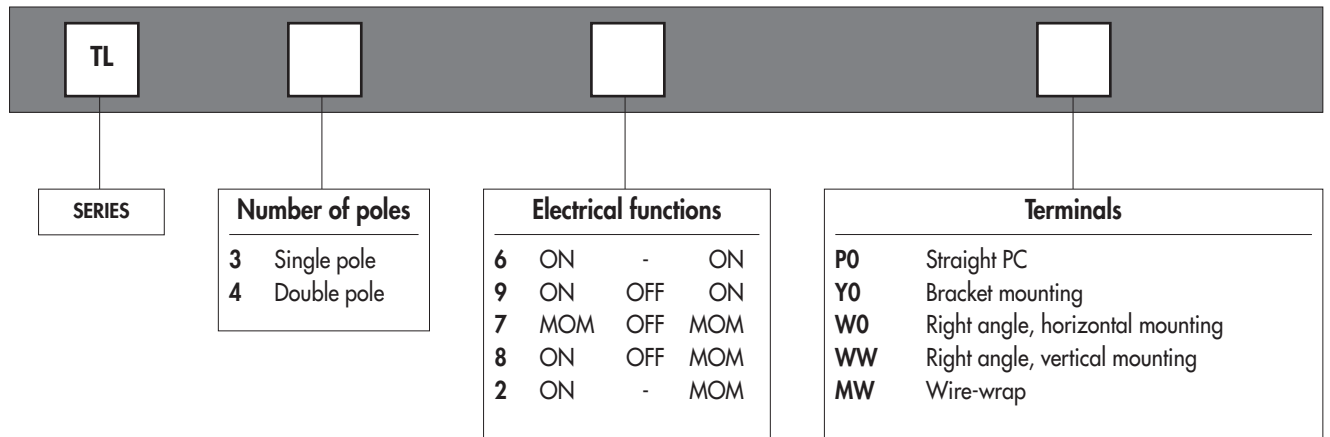
- Strength of terminals : pull-out force - 10N max.
- Operating temperature : -30°C to +85°C
- Moisture : 21 days 95 % (NFC 20-603 - IEC 68-2-3)
- Cleaning : solvents or water + detergent
- Wave soldering : 260°C - 5 sec.

# TL series

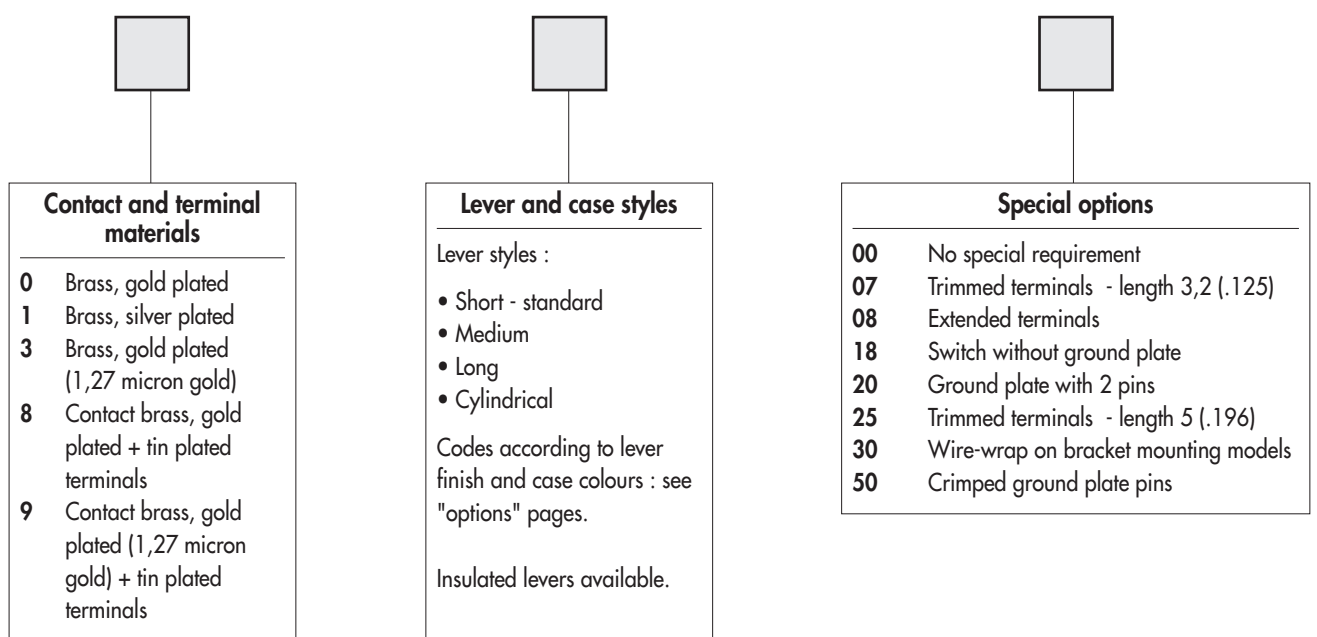
## Tiny washable toggle switches

Overview

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.

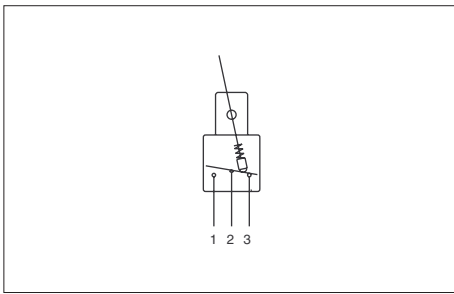


**Packaging unit** : 100 pieces, except for models with WW terminals (50 pieces)

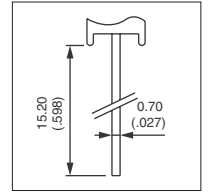
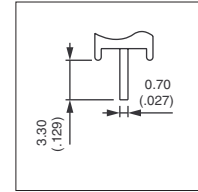


# TL series

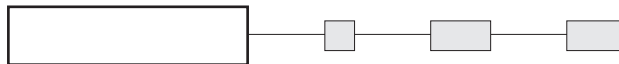
## Tiny washable toggle switches



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



MODEL  
STRUCTURE



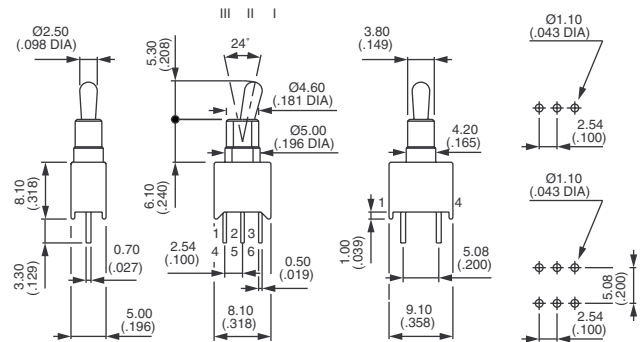
Shown with standard lever

### Straight PC terminals : TL..PO



Single pole	Double pole
TL36PO	TL46PO
TL39PO	TL49PO
TL37PO	TL47PO
TL38PO	TL48PO
TL32PO	TL42PO

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM

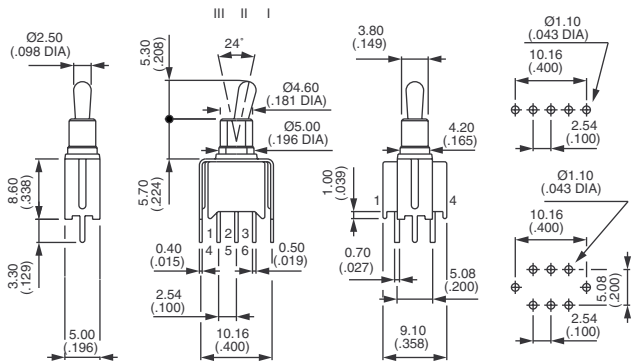


### Straight PC terminals - bracket mounting : TL..YO



Single pole	Double pole
TL36YO	TL46YO
TL39YO	TL49YO
TL37YO	TL47YO
TL38YO	TL48YO
TL32YO	TL42YO

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM

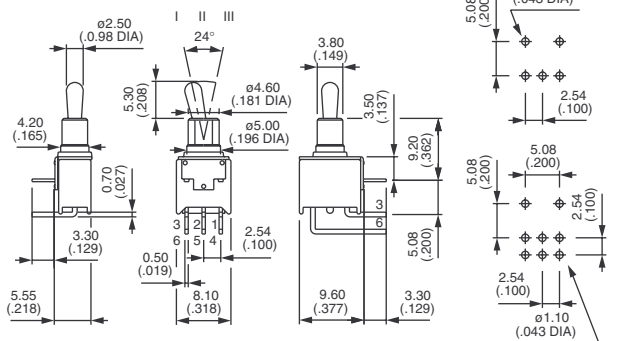


### Right angle terminals - horizontal mounting : TL..WO



Single pole	Double pole
TL36WO	TL46WO
TL39WO	TL49WO
TL37WO	TL47WO
TL38WO	TL48WO
TL32WO	TL42WO

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM



# TL series

Tiny washable toggle switches

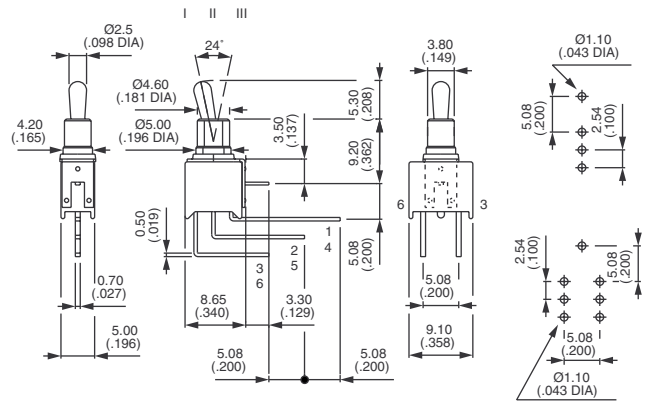
MODEL  
STRUCTURE

## Right angle terminals - vertical mounting : TL..WW



Single pole	Double pole
TL36WW	TL46WW
TL39WW	TL49WW
TL37WW	TL47WW
TL38WW*	TL48WW*
TL32WW*	TL42WW*

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM

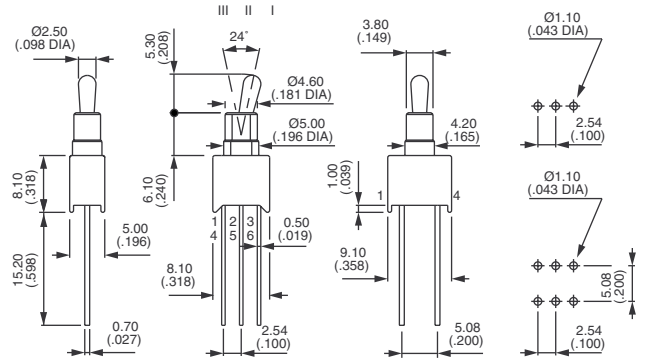


## Wire-wrap terminals : TL..MW



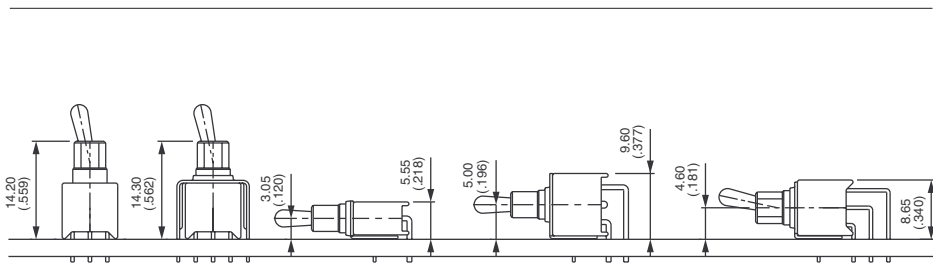
Single pole	Double pole
TL36MW	TL46MW
TL39MW	TL49MW
TL37MW	TL47MW
TL38MW	TL48MW
TL32MW	TL42MW

III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM



\* Functions 2 and 8 : reversed connection available. Consult factory.

## PCB MOUNTING

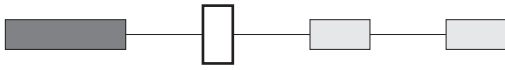




# TL series

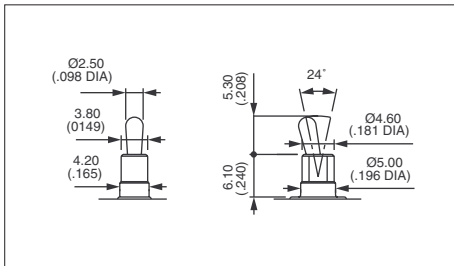
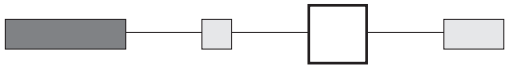
Tiny washable toggle switches

## CONTACT AND TERMINAL MATERIALS



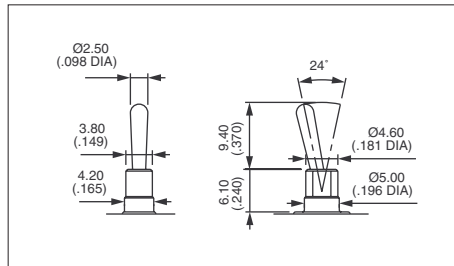
- 0 Brass, gold plated
- 1 Brass, silver plated
- 3 Brass, gold plated (1,27 micron gold)
- 8 Contact brass, gold plated + tin plated terminals
- 9 Contact brass, gold plated (1,27 micron gold) + tin plated terminals

## LEVER AND CASE STYLES



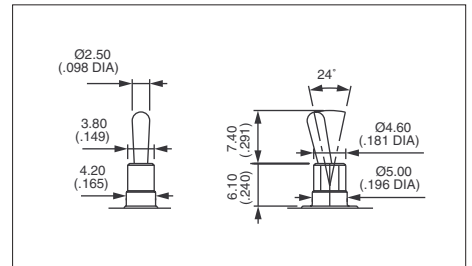
Short - standard

LEVER \ CASE	Blue	Black
Nickel plated	00	50
Matt black	01	51



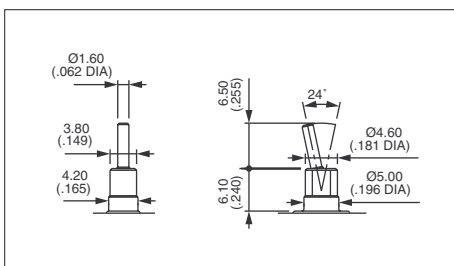
Long

LEVER \ CASE	Blue	Black
Nickel plated	02	52
Matt black	03	53



Medium

LEVER \ CASE	Blue	Black
Nickel plated	04	54
Matt black	05	55



Cylindrical

LEVER \ CASE	Blue	Black
Nickel plated	-	56

A

# TL series

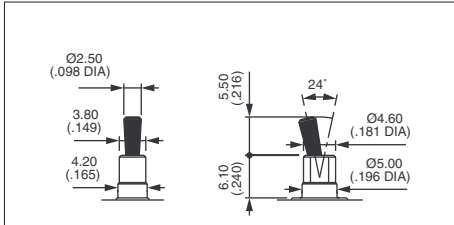
Tiny washable toggle switches

OPTIONS

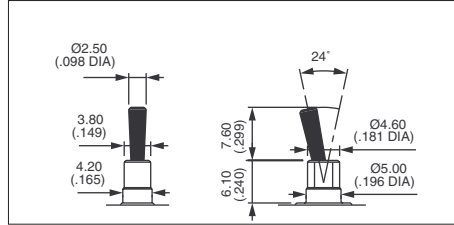


## LEVER AND CASE STYLES (continued)

**Insulated levers** - Protected against electrostatic discharges (ESD) up to 10KV. Black colour.

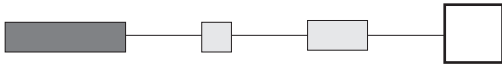


**40** With blue case  
**94** With black case

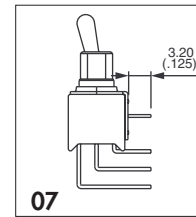


**30** With blue case  
**90** With black case

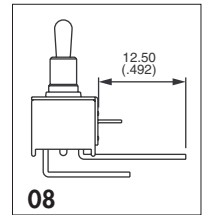
## SPECIAL OPTIONS



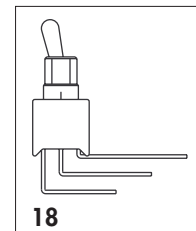
- 00** No special requirement
- 07** **Trimmed terminals** - length 3,2 mm (.125) for TL..WW models only
- 08** **Extended terminals** for TL..W0 models only
- 18** Switch **without ground plate** for TL..WW models only
- 20** **Ground plate with 2 pins** for TL..WW models only
- 25** **Trimmed terminals**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



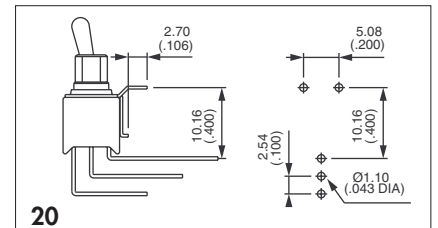
**07**



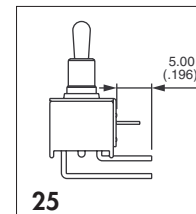
**08**



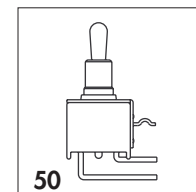
**18**



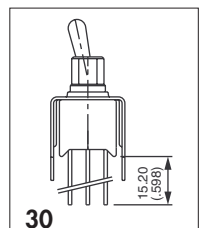
**20**



**25**



**50**



**30**