

## Surface mount tiny washable rocker 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 : 20 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 :
  - 2 position switches : 60.000 cycles
  - 3 position switches : 30.000 cycles
- Static resistance : 10 KV (Schaffner equipment)

### GENERAL SPECIFICATIONS

- Operating temperature : -40°C to +85°C
- Moisture resistance : 21 days per IEC 512-6 test 11 c
- Vibration resistance : 10-500 Hz / 10 g per IEC 512-4 test 6d
- Shock resistance : 50 g per IEC 512-4 test 6c

### MATERIALS

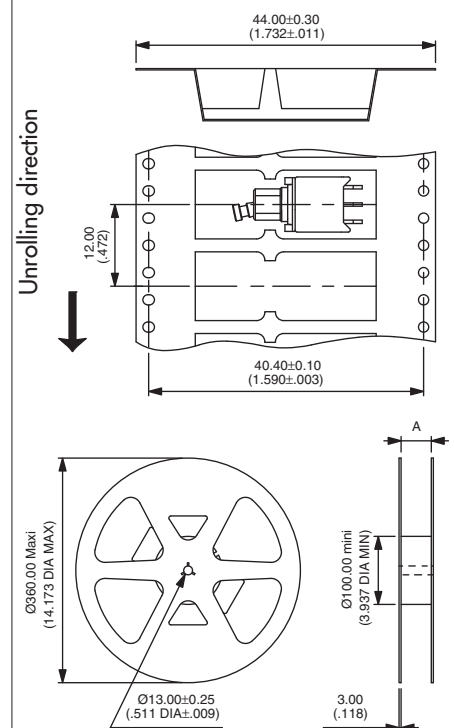
- Case : high temperature plastic material UL94-V0
- Actuator : high temperature plastic rocker
- Ground plate and positioning pins : steel, tin plated
- Contacts : brass, gold plated
- Terminals : brass, with pure tin plating over nickel barrier

### 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.

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

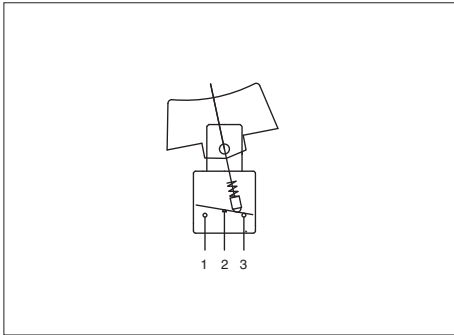
### PACKAGING



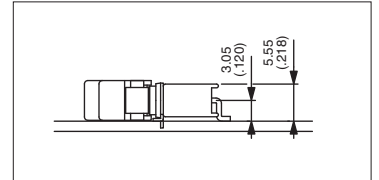
Tape width	24.00 (.944)	44.00 (1.732)
Reel (dimension A)	24.40+2.00/0.00 (.960+.078/.000)	44.40+2.00/0.00 (1.748+.078/.000)

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





- With or without positioning pins
- Single pole

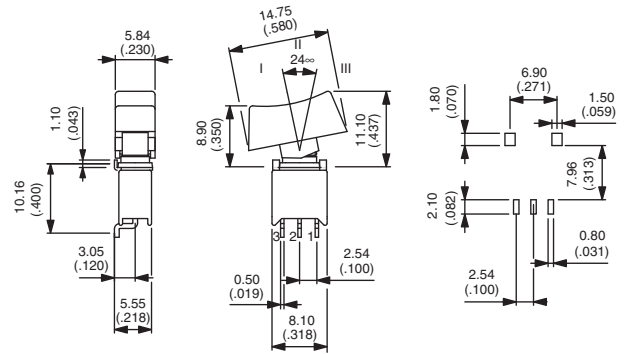


### Without positioning pins



TR36WS80000  
TR39WS80000  
TR37WS80000  
TR38WS80000  
TR32WS80000

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



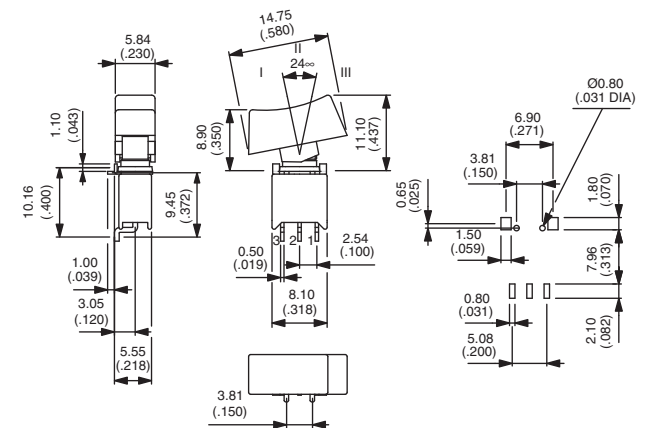
Supplied without rocker.

### With positioning pins



TR36WS80065  
TR39WS80065  
TR37WS80065  
TR38WS80065  
TR32WS80065

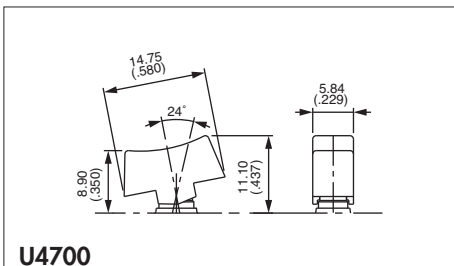
III	II	I
ON	-	ON
ON	OFF	ON
MOM	OFF	MOM
ON	OFF	MOM
ON	-	MOM



Supplied without rocker.

### ROCKERS

Order separately.



#### Rocker colours

Replace last "0" by number

1	blue	5	yellow
1/4	dark blue	6	red
2	black	7	ivory
3	green	7/1	white
4	grey	9	orange



www.ermec.com

## Tiny washable rocker 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 tiny toggle (TL), pushbutton (TP) and slide switches (TG)**

### 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

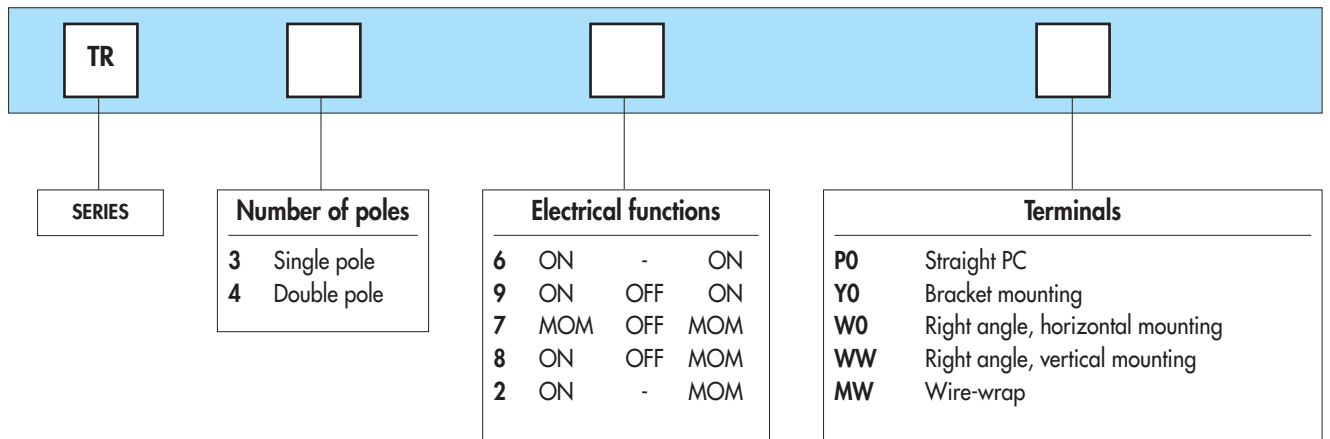
- Case : PBT
- Actuator : polyamide
- Contacts and terminals :
  - 0 : brass, gold plated
  - 1 : brass, silver plated
  - 3 : brass, gold plated (1,27 micron gold)
  - 8 : contact brass, gold plated + tin plated terminals
  - 9 : contact brass, gold plated (1,27 micron gold) + tin plated terminals
-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

### GENERAL SPECIFICATIONS

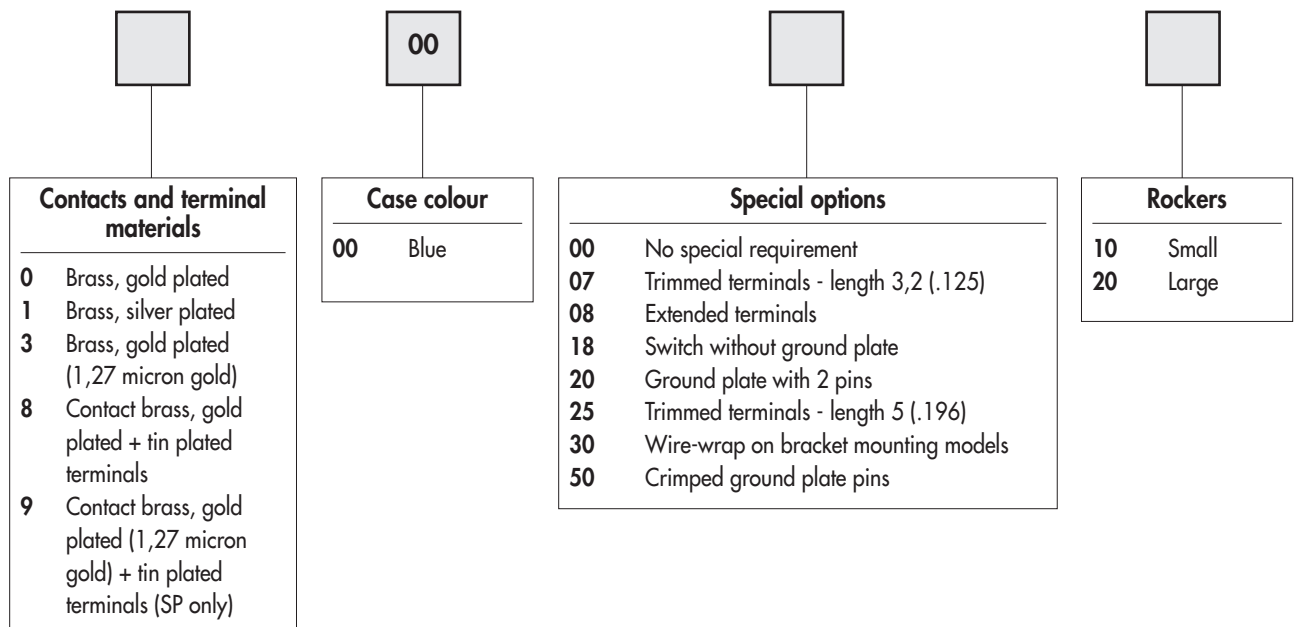
- Strength of terminals : pull-out force - 10N max.
- Operating temperature : -30°C to +85°C
- Moisture : 21 days 95 % (NFC 20-603 - IEC 68-2-3)
- Cleaning : solvents or water + detergent
- Wave soldering : 260°C - 5 sec.



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.

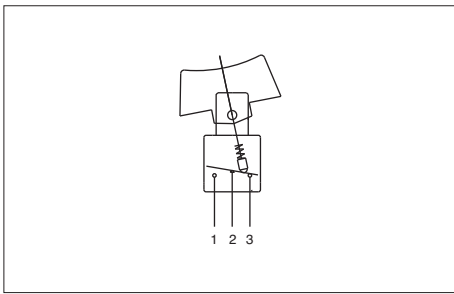


**Packaging unit** : 50 pieces.

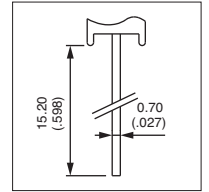
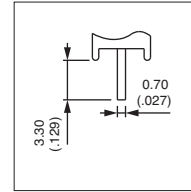


# TR series

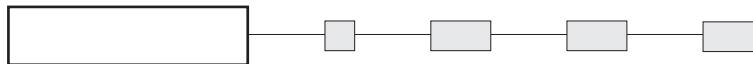
Tiny washable rocker switches



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



MODEL STRUCTURE



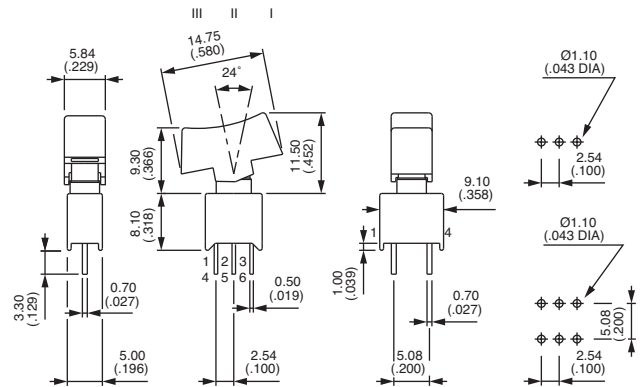
Shown with small rocker (code 10)

## Straight PC terminals : TR..PO



Single pole	Double pole
TR36PO	TR46PO
TR39PO	TR49PO
TR37PO	TR47PO
TR38PO	TR48PO
TR32PO	TR42PO

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

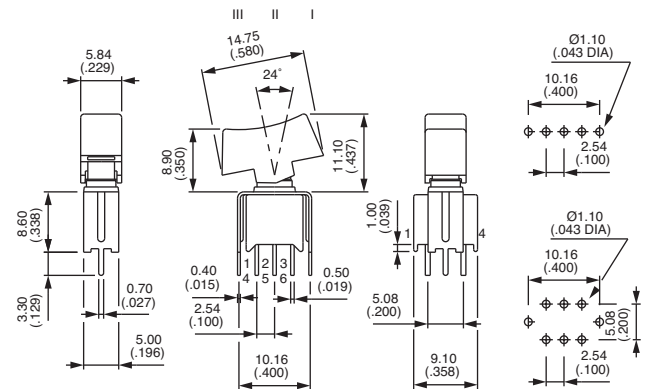


## Straight terminals - bracket mounting : TR..YO



Single pole	Double pole
TR36YO	TR46YO
TR39YO	TR49YO
TR37YO	TR47YO
TR38YO	TR48YO
TR32YO	TR42YO

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

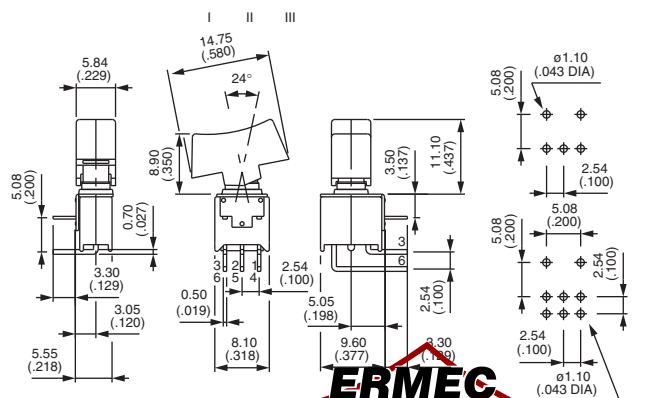


## Right angle terminals - horizontal mounting : TR..WO



Single pole	Double pole
TR36WO	TR46WO
TR39WO	TR49WO
TR37WO	TR47WO
TR38WO	TR48WO
TR32WO	TR42WO

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

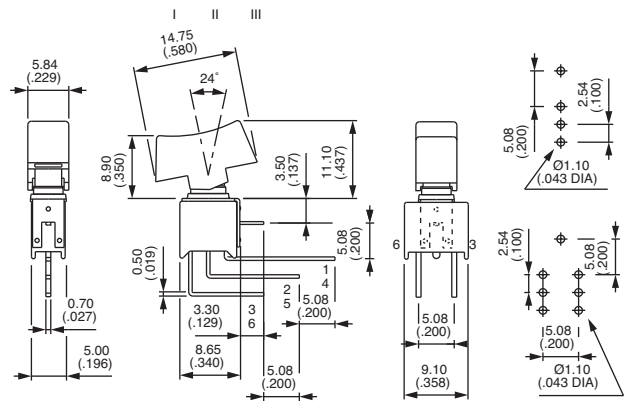




### Right angle terminals - vertical mounting : TR..WW



	Single pole	Double pole	III	II	I
TR36WW	ON	-	ON		
TR39WW	ON	OFF	ON		
TR37WW	MOM	OFF	MOM		
TR38WW*	ON	OFF	MOM		
TR32WW*	ON	-	MOM		

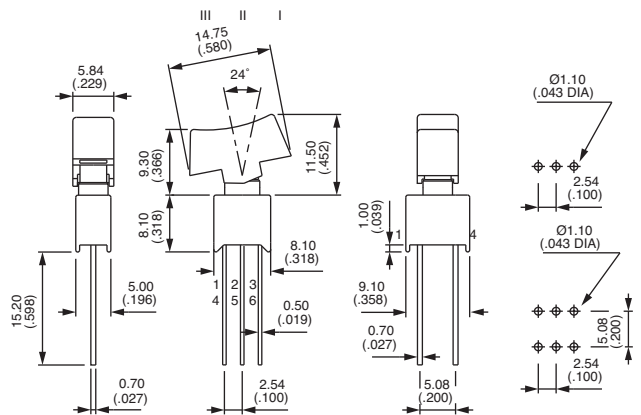


\* Functions 2 and 8 : reversed connection available . Consult factory.

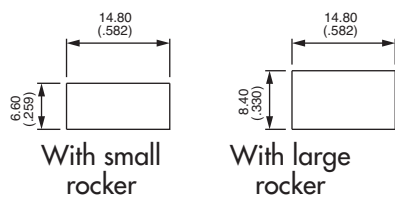
### Wire-wrap terminals : TR..MW



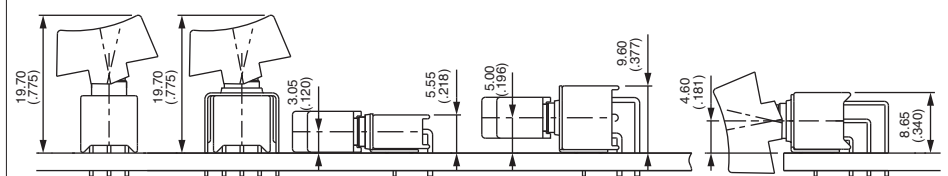
	Single pole	Double pole	III	II	I
TR36MW	ON	-	ON		
TR39MW	ON	OFF	ON		
TR37MW	MOM	OFF	MOM		
TR38MW	ON	OFF	MOM		
TR32MW	ON	-	MOM		



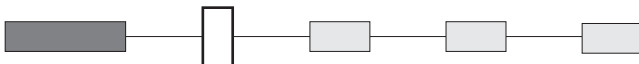
#### PANEL CUT-OUT



#### PCB MOUNTING

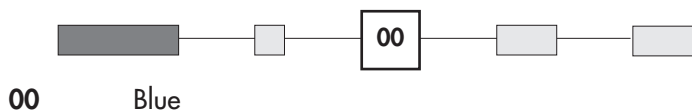


### CONTACT AND TERMINAL MATERIALS



- 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)

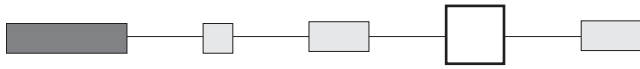
### CASE COLOUR



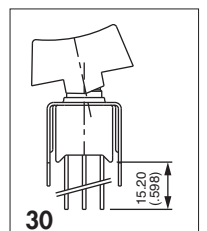
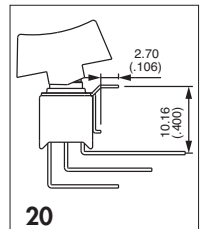
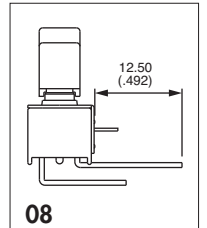
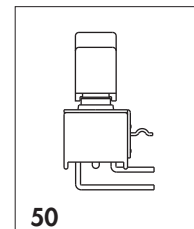
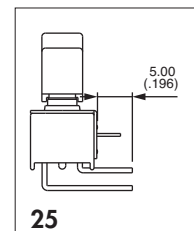
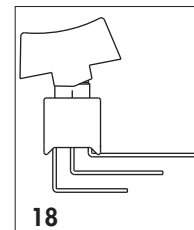
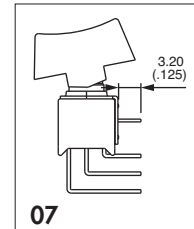
# TR series

Tiny washable rocker switches

## SPECIAL OPTIONS

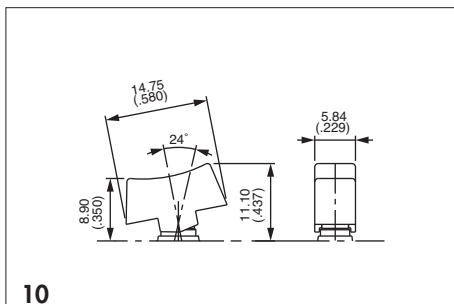
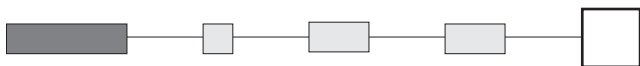


- 00 No special requirement
- 07 **Trimmed terminals** - length 3,2 mm (.125) for TR..WW models only
- 08 **Extended terminals** for TR..WO models only
- 18 Switch **without ground plate** for TR..WW models only
- 20 **Ground plate with 2 pins** for TR..WW models only
- 25 **Trimmed terminals** - length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

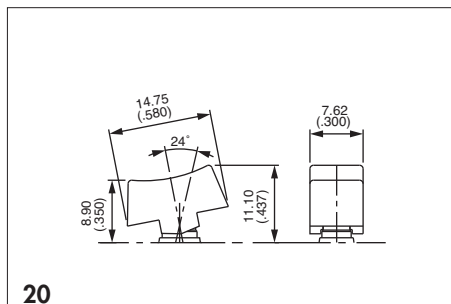


Marking on rocker : consult factory.

## ROCKERS



10  
Small



20  
Large

Rocker 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



www.ermec.com

# Selection guide - Section D ermec@ermec.com

## Rocker and paddle switches

					<i>New!</i> 		
Series	SMT TR	TR	S-SR	AS	MT	7000	FM
Page	D-2	D-4	D-9	D-19	D22	D-24	D-42
Poles	1	1,2	1,2	1	1	1,2	1
Maximum ratings	0,4VA 20V AC/DC	0,5A 48V AC/DC	(2A 250VAC)* 4A 30VDC	(2A 250VAC)*	4A 30VDC	(3A 250VAC)* 4A 30VDC	(10A 250VAC)*
Illuminated							X
Mounting options							
Horizontal SMT	X						
Vertical Through hole		X	X	X	X	X	X
Horizontal Through hole		X	X			X	
Vert. right angle TH		X	X			X	
Snap-in			X	X		X	X
Rear mounting			X			X	
Panel cut-out				18,65X8,9	Ø 17,65		19,2x12,9
Terminal options							
PCB	X	X	X	X	X	X	X
Solder lugs			X	X	X	X	X
Quick-connect							X
Sealing	Process sealed	Process sealed	Process sealed	No	No	No	Optional boot

						( ) * See applicable approvals
Series	2600	KR	KL	KI	KG	
Page	D-45	D-53	D-62	D-71	D-76	
Poles	1,2	1,2	1,2	1,2	1,2	
Maximum ratings	(16A 250VAC)*	10A 24VDC	10A 24VDC	24VDC	(12A 250VAC)* 15A 12VDC	
Illuminated	X	X	X	X	X	
Mounting options						
Snap-in	X	X	X	X	X	
Panel cut-out	30 x 22	36,8 X 21,08	36,8 X 21,08	36,8 X 21,08	36,8 X 21,08	
Terminal options						
Solder lugs	X	X	X	X	X	
Quick-connect	X	X	X	X	X	
Screw	X	X	X		X	
Sealing	Optional boot	IP68	IP68	IP68	IP65	

