



360° Electrical Angle



## FEATURES

### Electrical travel: 360°

Conceived and designed for customisation

SMD, Horizontal or Through-hole Mount

Endless Rotation (360°)

Extended Mechanical Life

Working Temperature Range (-40°C to +120°C)

Low Profile (4.4 mm)

Precision: up to ± 6°

Embossed Tape or Bulk packaging

Reflow Soldering capability

Plug-in shafts

Shaft insertable from both sides

Polarised "T" rotor (European Home Appliance standard)

Ideal for Consumer Control and position sensing applications

## STANDARD SPECIFICATIONS

Resistance values*:	5k, 10k
Tolerance:	± 40%
Nominal Power:	0.15 W @ 50°C
Precision*:	± 7°
Mechanical Life**:	100,000 cycles
Temperature Range:	-40°C to +120°C
Mechanical Angle:	360°
Rotational Torque:	≤ 20 mN.m
Max. Voltage:	250 VDC

(\*) Others upon request

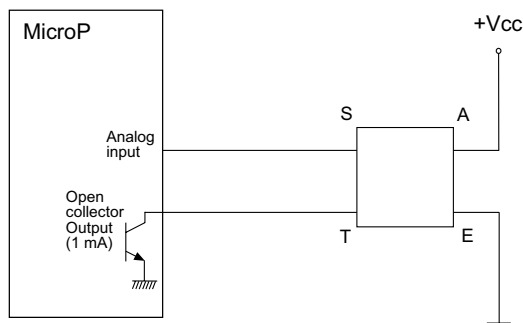
(\*\*) 200,000 cycles version available upon request

## TYPICAL APPLICATIONS

**This product was designed to be a cost-effective replacement for absolute encoders of up to 5 bits.**

The A15 series offers an SMD, Vertical and Through Hole mount solution for the majority of **Position/Angle Rotary Sensor** and **multi-purpose Control** applications.

## SCHEMATIC AND FUNCTIONALITY



The absolute position is obtained by making 2 separate readings of the value at (S): one with (T) opened and the other with (T) closed.

## HOW TO ORDER

<b>A-15</b>	<b>T</b>	<b>S</b>	<b>103</b>	<b>4040</b>
Series	Rotors	Mounting Method	Value	Tolerance
A-15	T	V = Through Hole S = SMD H = Horizontal Adjust	502 = 5 K 103 = 10 K	4040 = ± 40%

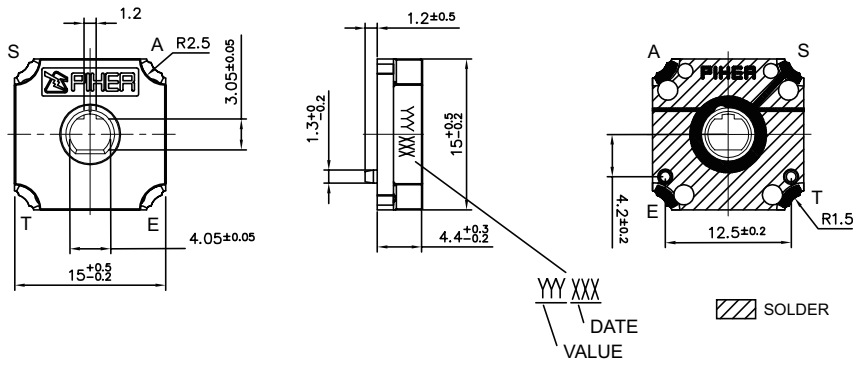
### NOTES:

Shafts are not available mounted to the potentiometer and should be ordered separately  
Horizontal adjust versions will be studied case by case

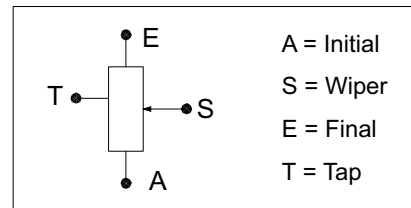
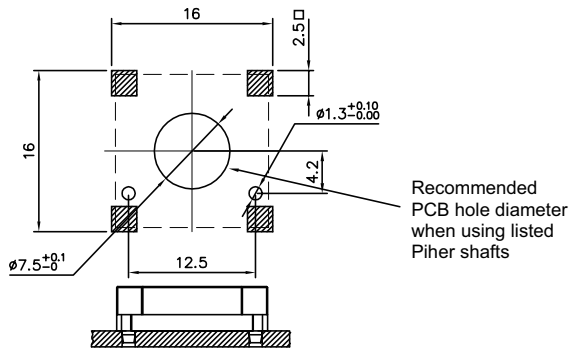
## ISO TS 16949 / ISO 14001

NOTE: The information contained here should be used for reference purposes only.

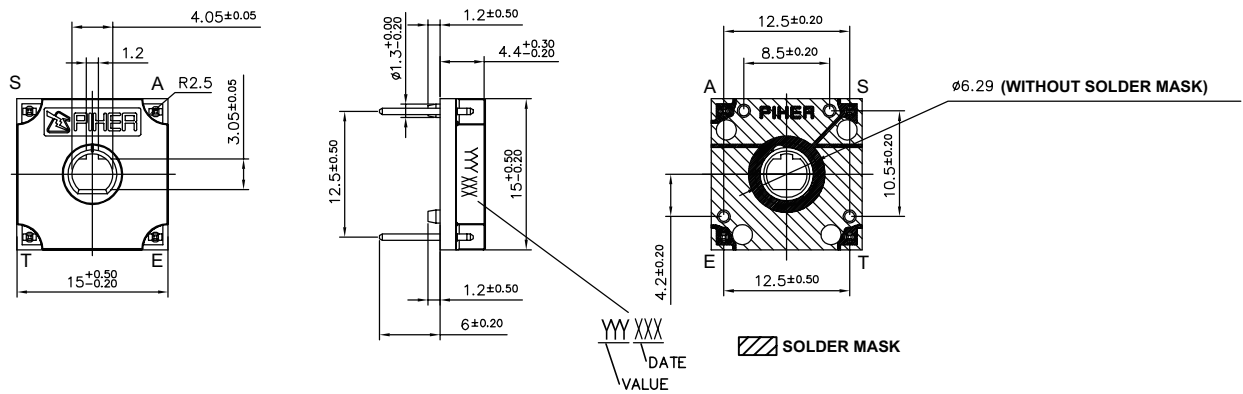
## SMD MOUNT



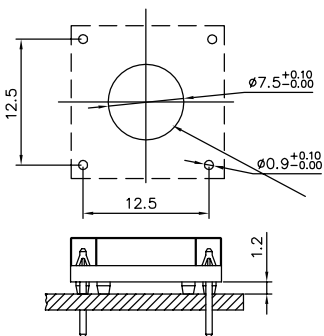
FOOT - PRINT



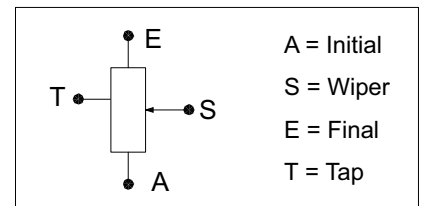
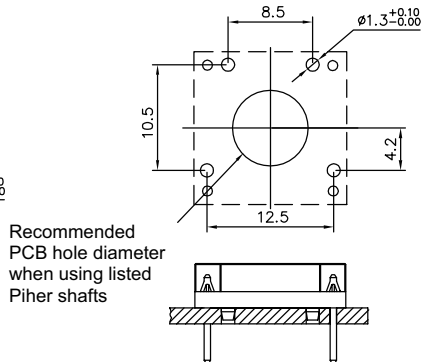
## THROUGH HOLE MOUNT



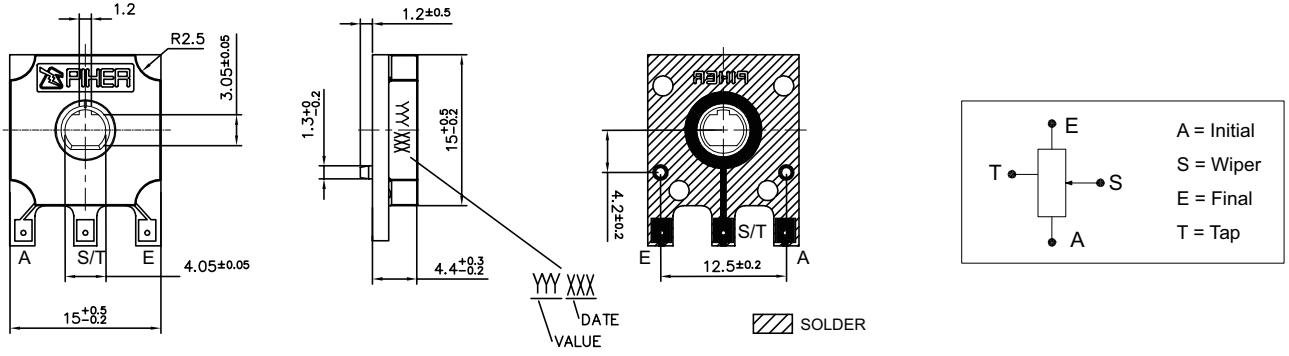
PCB HOLE LAYOUT 1



PCB HOLE LAYOUT 2



## HORIZONTAL ADJUST - VERTICAL MOUNT



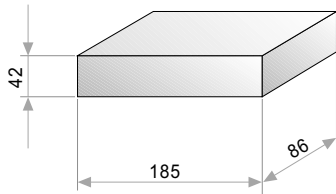
### TESTS

### TYPICAL VARIATIONS

ELECTRICAL LIFE	1.000 h. @ 50°C; 0.15 W	±40 %
MECHANICAL LIFE (CYCLES)	100,000 @ 20 CPM	±40 % (Rn < 100 K)
TEMPERATURE COEFFICIENT	-40°C to +120°C	±300 ppm (Rn < 100 K)
THERMAL CYCLING	10h. @ 120°C; 10h. @ -40°C	±40 %
DAMP HEAT	500 h. @ 40°C @ 95% HR	±40 %

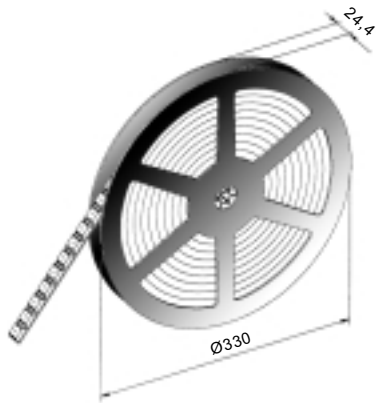
NOTE : Out of range values may not comply these results.

### PACKAGING



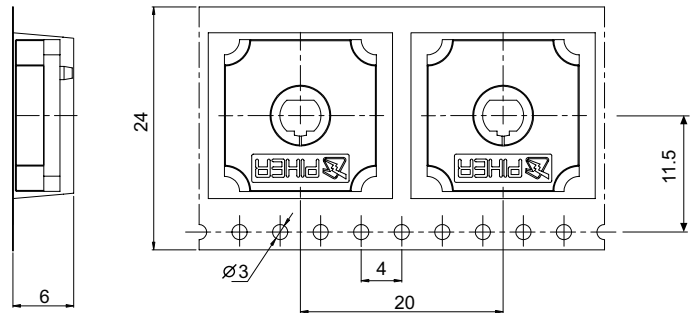
#### BULK

150 Units per box.  
Through hole version only



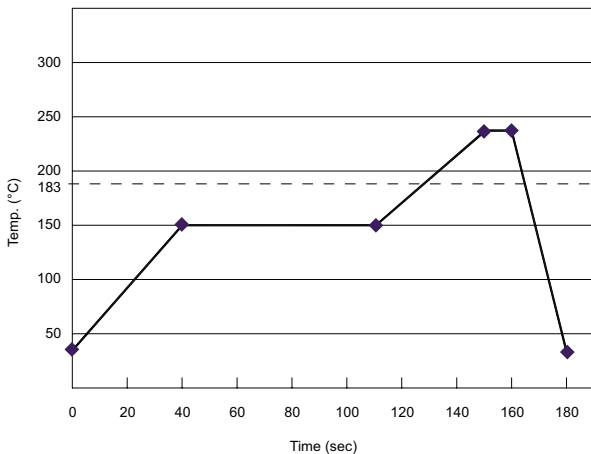
#### EMBOSSED TAPE

500 Units per Reel  
SMD version only

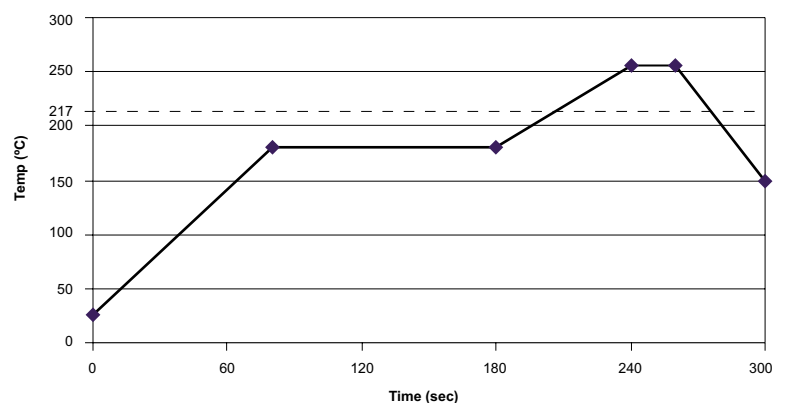


### RECOMMENDED REFLOW PROFILE (SMD types)

#### SnPb Reflow Profile



#### Lead Free Reflow Profile



# SHAFTS

## Hollow model shafts

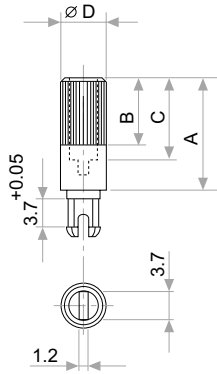


FIG.	A	B	C	D	Ref.
1	12	9	8	6	5272
2	19	9	15	6	5214
5	9.5	6.5	5.5	6	5208
9	35	9	15	6	5216
10	37.8	9	33.8	6	5218
11	35	25	15	6	5209
13	7.8	4.8	3.8	6	5265

## Solid model shafts

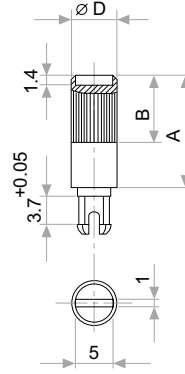


FIG.	A	B	D	Ref.
6	15	9	6	5219
7	16.8	9	6	5220
8	25.3	9	6	5207
12	46	5	6	5227

Slot (1 x 1.4) perpendicular to wiper position. Fig. 12 slot is on line with wiper position.

A = Length (FRS); B=Knurling length; C=Hollow depth; D=Shaft diameter; FRS=From rotor surface

## Other shafts

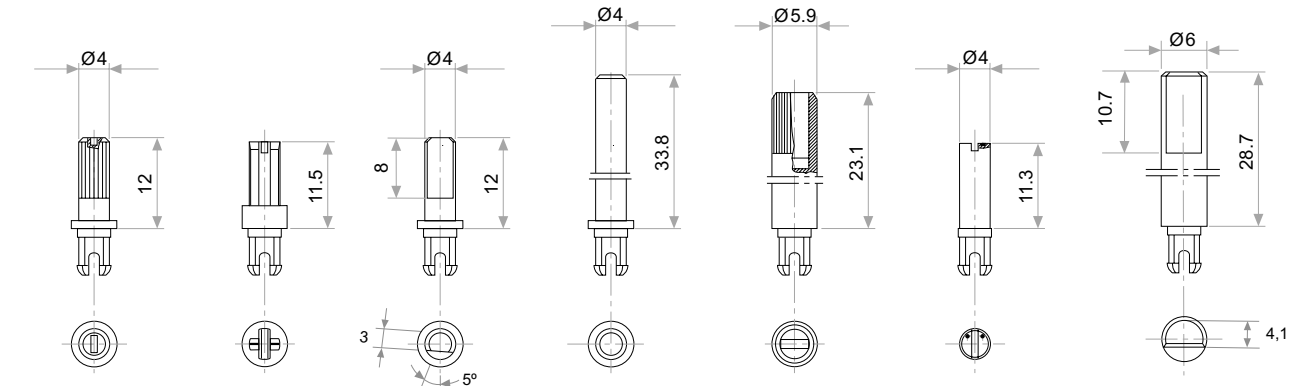


Fig. 3 / Ref. 5372

Fig. 14 / Ref. 5248

Fig. 15 / Ref. 5217

Fig. 16 / Ref. 5262\*

Fig. 17 / Ref. 5210

Fig. 18 / Ref. 5271

Fig. 19 / Ref. 6032\*

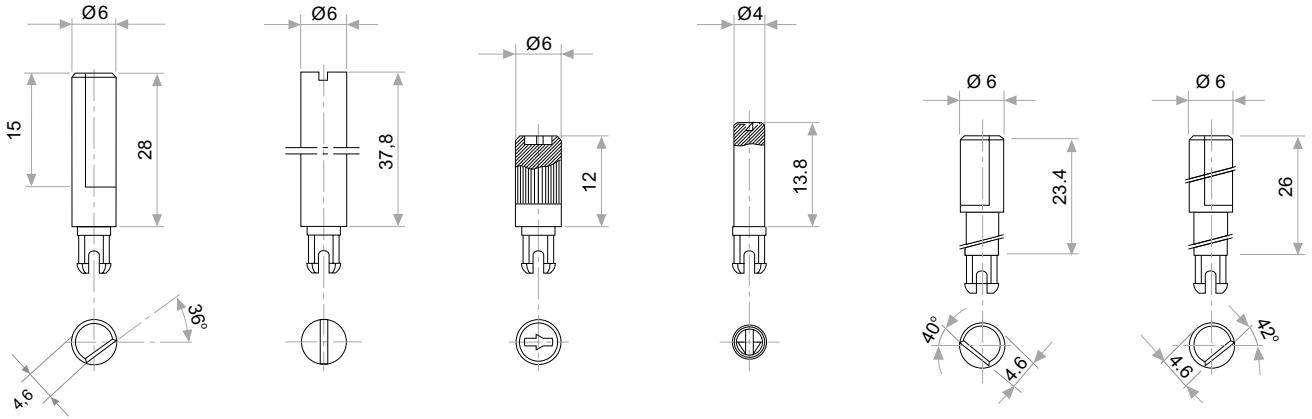


Fig. 20 / Ref. 5369\*

Fig. 21 / Ref. 6031\*

Fig. 22 / Ref. 6029

Fig. 23 / Ref. 6022

Fig. 24 / Ref. 6058

Fig. 25 / Ref. 6059

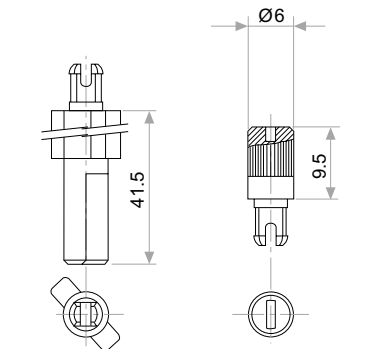


Fig. 27 / Ref. 5268\*

Fig. 28 / Ref. 6055

\* Not available in self extinguishable plastic

## POWER RATING CURVE

