

A15-3P

Position Sensor / Control



360° Electrical Angle
NO DEAD BAND

✓ Fully Customisable
360° Electrical Angle
✓ Reflow Soldering

FEATURES

Electrical angle: 360°

Designed for direct input to microprocessor.

SMD, Horizontal or Through-hole Mount

Endless Rotation

Extended Mechanical Life

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

Low Profile (4.4 mm)

Linearity (independent): ±2%

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

IP54 protection according to IEC 60529

STANDARD SPECIFICATIONS

Resistance values*:	3.3k
Tolerance:	± 40%
Nominal Power:	0.15 W @ 50°C
Linearity (independent):	± 2%
Mechanical Life**:	100K cycles
Temperature Range:	-40°C to +120°C
Mechanical Angle:	360°
Rotational Torque:	≤ 20 mN.m
Max. Voltage:	22 VDC

(*) Others upon request

(**) 200K cycles version available upon request

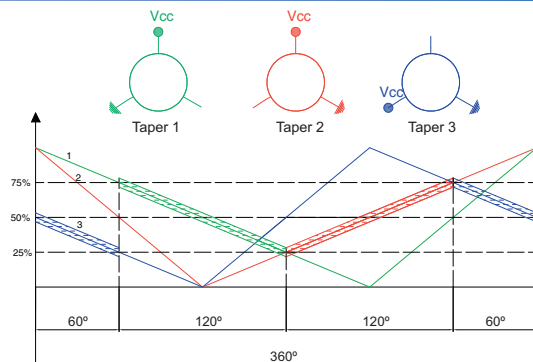
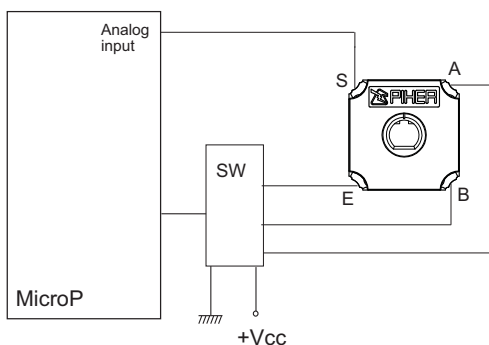
APPLICATIONS

This device is aimed to applications that need on-field arbitrary initial and final travel reference points calibration.

Once these have been set, the A15-3P provides accurate position feedback output to the controller.

Designed to be a cost-effective replacement for absolute encoders, the A15-3P series offers an SMD, Vertical and Through Hole mount solution for the majority of **Position/Angle Rotary Sensor** and **multi-purpose Control applications** such as garage door openers, gauges, rotary actuators and robotics.

SCHEMATIC AND FUNCTIONALITY



HOW TO ORDER

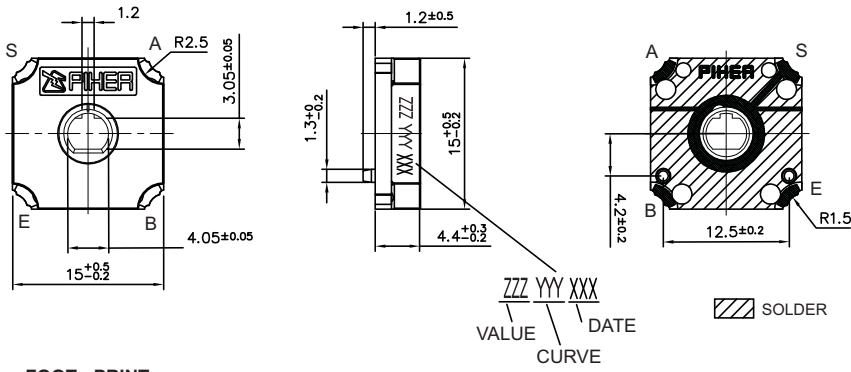
A15 3P	T	S	-	332	DDB	4040
Series	Rotor	Mounting Method		Value	Curve code	Tolerance
A15 3P	T	V = Through Hole S = SMD		332 = 3.3 K Others upon request	DDB	4040 = ± 40%

NOTES:

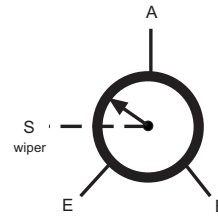
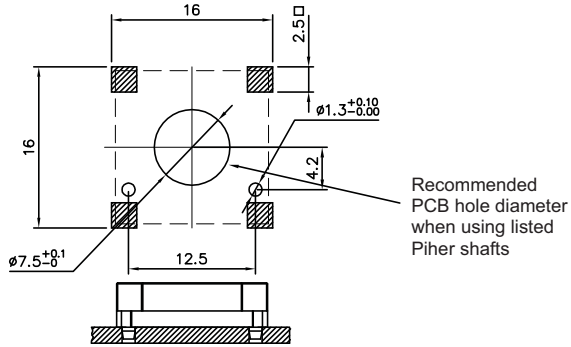
Shafts are not available mounted to the potentiometer and should be ordered separately
Through hole versions will be studied case by case

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

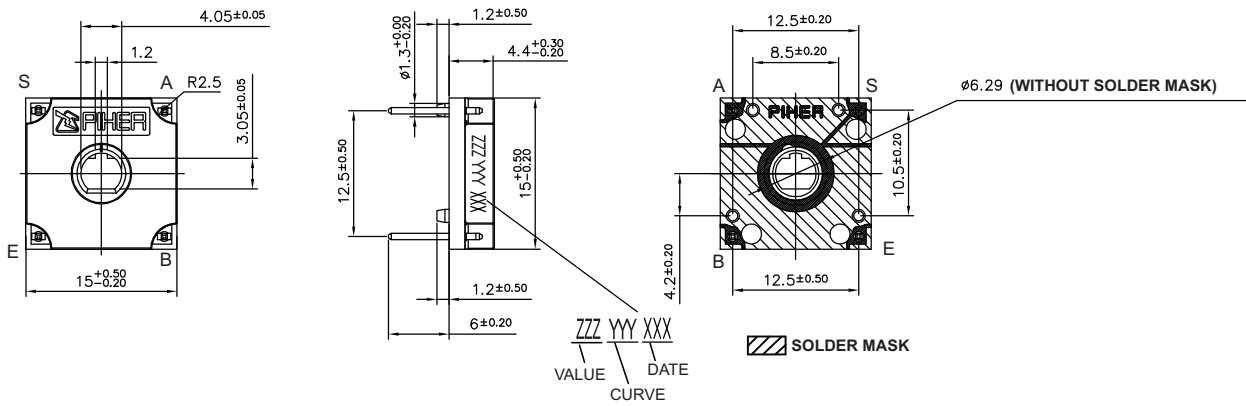
SMD MOUNT



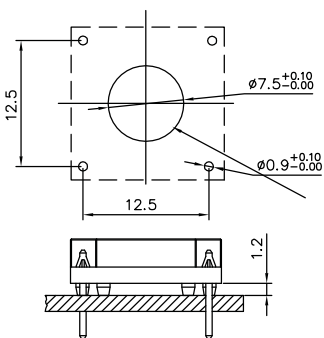
FOOT - PRINT



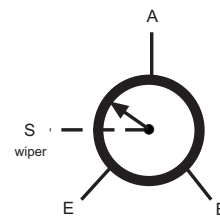
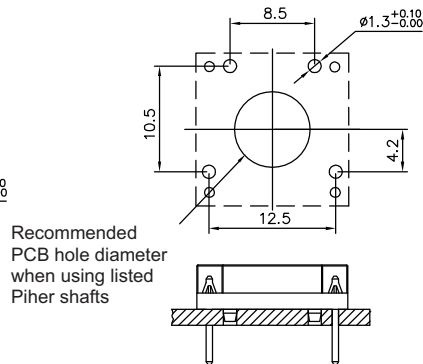
THROUGH HOLE MOUNT



PCB HOLE LAYOUT 1



PCB HOLE LAYOUT 2



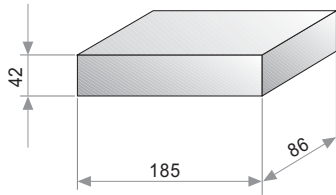
TESTS

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 %

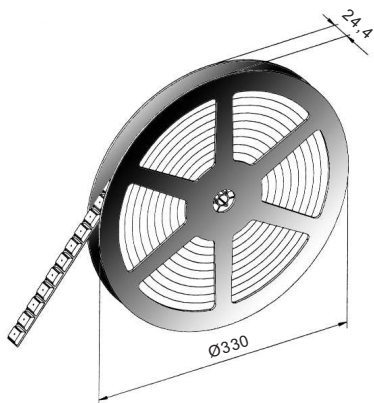
NOTE : Out of range values may not comply these results.

PACKAGING



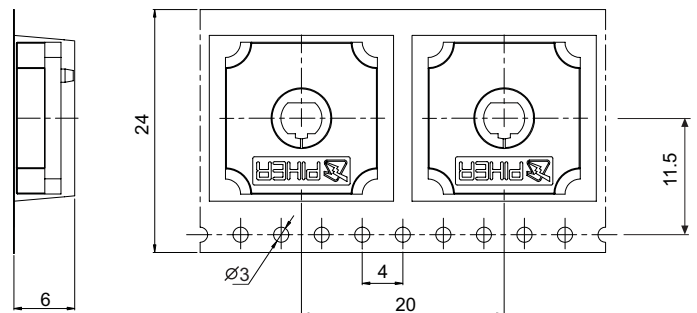
BULK

150 Units per box.
Through hole version only



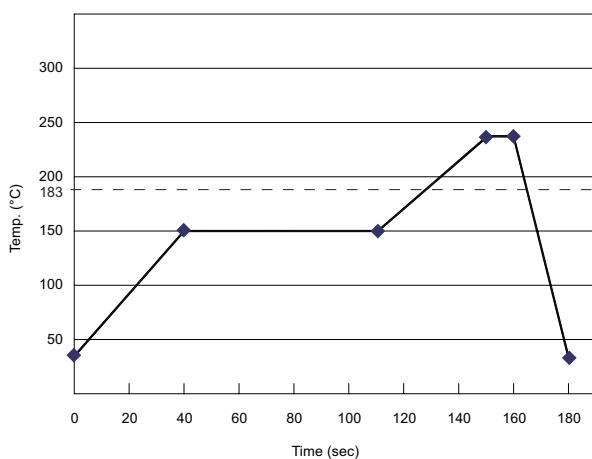
EMBOSSED TAPE

500 Units per Reel
SMD version only

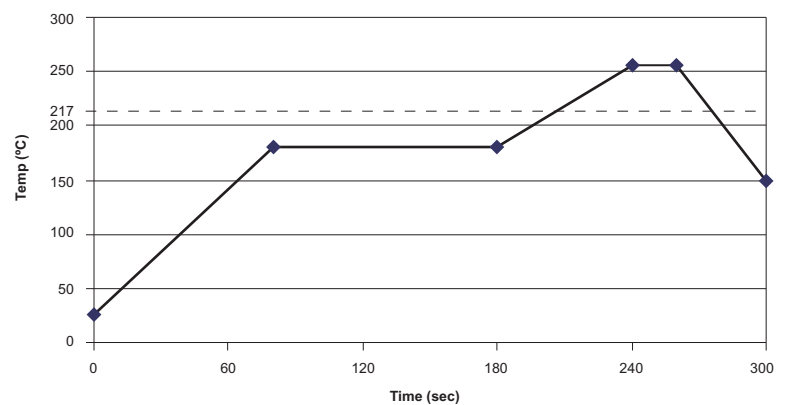


RECOMMENDED REFLOW PROFILE (SMD types)

SnPb Reflow Profile



Lead Free Reflow Profile



The recommended reflow profile is provided as a guideline. Optimal profile may differ due to oven type, assembly layout or other design or process variables. Customers should verify actual device performance in their specific application and reflow process. Please contact Piher if you require additional support.

SHAFTS

Hollow model shafts

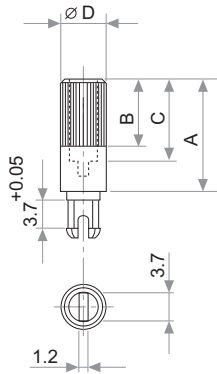


FIG.	A	B	C	D	Ref.
1	12	9	8	6	5272
2	19	9	15	6	5214
5	9.5	6.5	5.5	6	5208
9	35	9	15	6	5216
10	37.8	9	33.8	6	5218
11	35	25	15	6	5209
13	7.8	4.8	3.8	6	5265

Solid model shafts

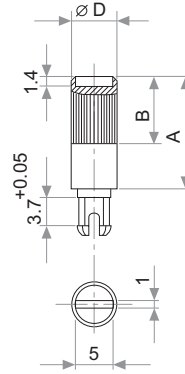


FIG.	A	B	D	Ref.
6	15	9	6	5219
7	16.8	9	6	5220
8	25.3	9	6	5207
12	46	5	6	5227

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

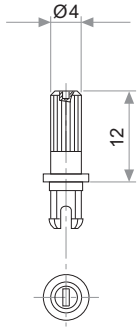


Fig. 3 / Ref. 5372

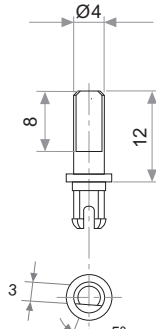


Fig. 15 / Ref. 5217

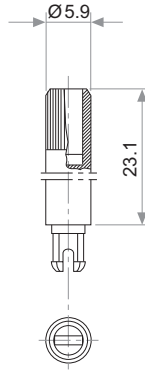


Fig. 17 / Ref. 5210

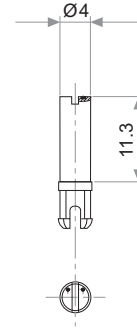


Fig. 18 / Ref. 5271

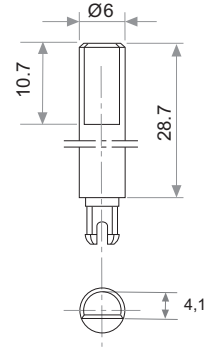


Fig. 19 / Ref. 6032*

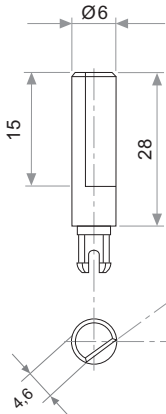


Fig. 20 / Ref. 5369*

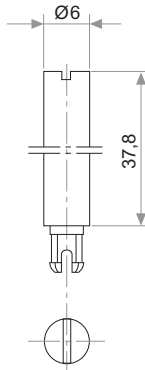


Fig. 21 / Ref. 6031*

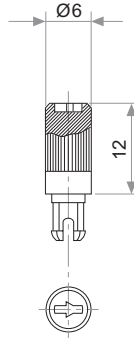


Fig. 22 / Ref. 6029

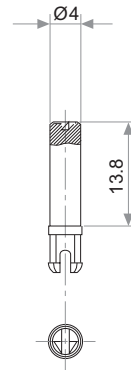


Fig. 23 / Ref. 6022

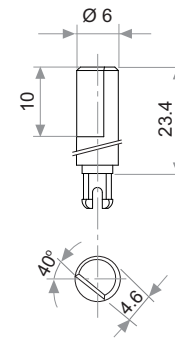


Fig. 29 / Ref. 6162

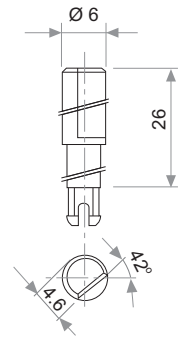


Fig. 25 / Ref. 6059

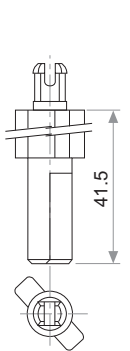


Fig. 27 / Ref. 5268*

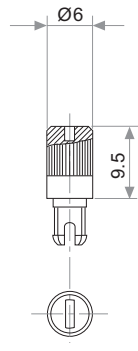
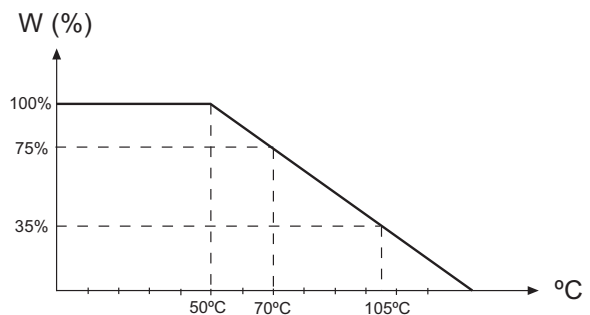


Fig. 28 / Ref. 6055

* Not available in self extinguishable plastic

POWER RATING CURVE



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