

## Automotive / Appliance control

# 6 mm carbon trimmer potentiometer PT6



## Mechanical specifications

Mechanical rotation angle		$235^\circ \pm 5^\circ$
Electrical rotation angle		$200^\circ \pm 20^\circ$
Torque	Rotational	0.2 to 2 Ncm . (0.3 to 2.7 in - oz)
	Stop	> 4 Ncm. (>5.6 in-oz)
Life*		Up to 10K cycles

## Electrical specifications

Range of values *		$220\Omega \leq R_n \leq 5M\Omega$ (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
Tolerance *	$220\Omega \leq R_n \leq 1M\Omega$	$\pm 20\%$
	$1M\Omega \leq R_n \leq 5M\Omega$	$\pm 30\%$
Max. voltage		100 VDC (lin) 50 VDC (no lin)
Nominal power 50°C (122°F) (see power rating curve)		0.1 W (lin) 0.05 W (no lin)
Taper *		Lin; Log; Alog (Log. & Alog. only $R_n > 1K$ )
Residual resistance*		$\leq 0.5\% R_n$ (5Ω min.)
Equivalent noise resistance		$\leq 3\% R_n$ (3Ω min.)
Operating temperature **		-25°C to +70°C (-13°F to + 158°F)

\* Others: check availability.

\*\* Up to 85°C depending on application.

## Main features

- Carbon resistive element
- Mechanical detents feature
- IP54 protection according to IEC 60529
- Polyester substrate
- Wiper positioned at initial, 50% or fully clockwise
- Loose and assembled shaft and knobs
- Linear, logarithmic and antilogarithmic tapers
- Also available:
  - Magazines packaging for automatic insertion
  - Long life models (10K cycles)
  - Self extinguishable plastic (UL94V0)
  - SMD versions available (see PS-6 and N-6 datasheets)
  - SPDT switch function

## Description

The PT-6 potentiometer offers control where frequent adjustment is required. The shaftless design allows for employment of different engagement mechanisms, such as a customized shaft, a motor control or a human interface adjustment.

This potentiometer can also control variable outputs including frequency, change in motor speed or volume.

Typical applications include automotive controls, test and measurement equipment, consumer electronics, appliances, timer relays, light dimmers, motion alarms, thermostats adjust, home and building automation and medical equipment control panels.

This datasheet shows you the basics of the PT-6 potentiometer that is quite versatile and easy to tailor.

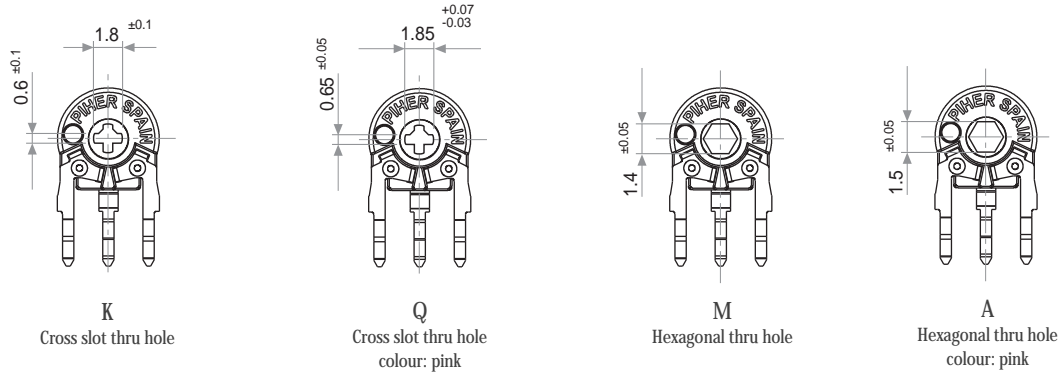
Do not hesitate to contact Piher for advice.



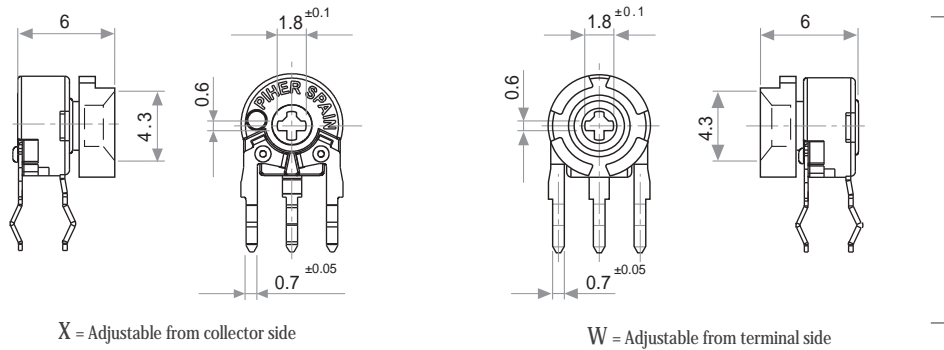
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## Rotors



Default delivery is at initial position. Wipers are shown positioned at 50% for the picture.

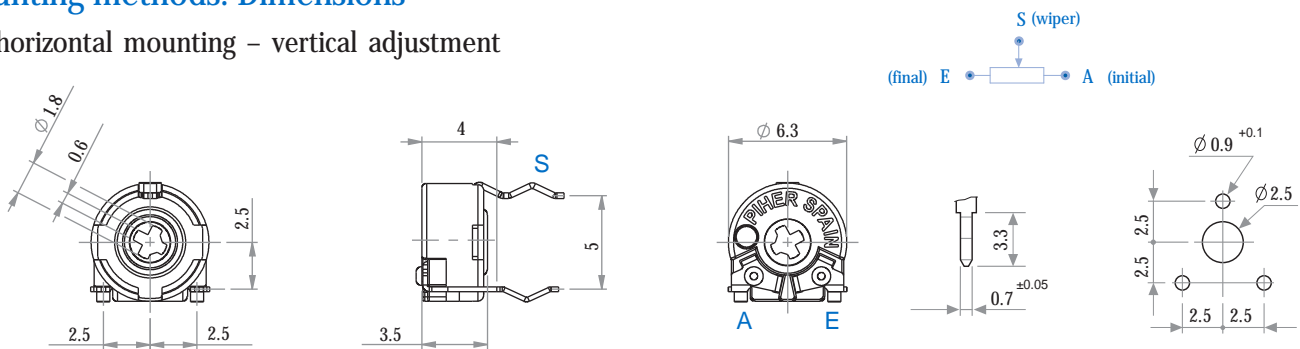


With inserted knob / shaft.

Example with knob ref. 5155

## Mounting methods. Dimensions

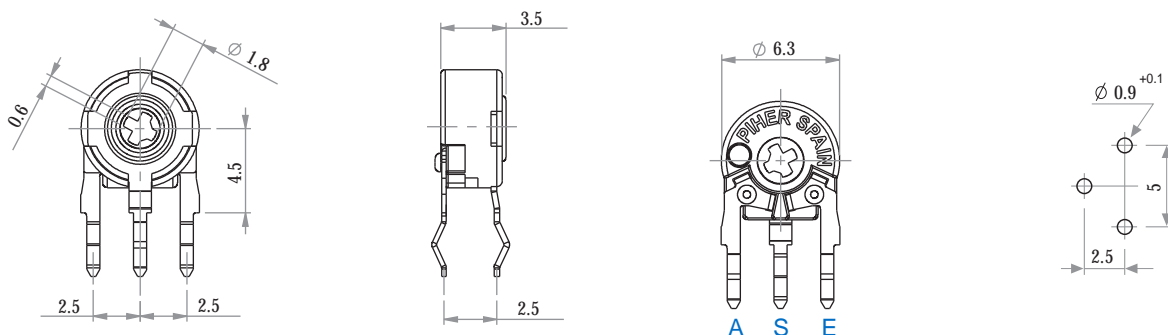
V = horizontal mounting – vertical adjustment



H = vertical mounting – horizontal adjustment



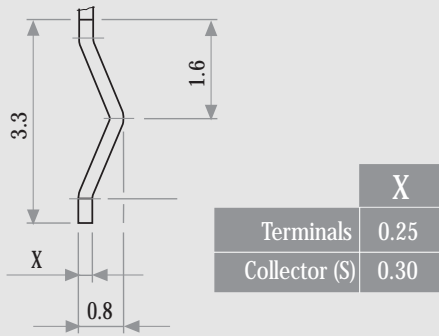
Download STEP files here:  
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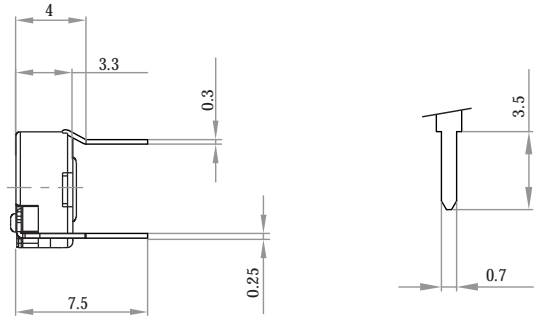
# 6 mm carbon trimmer potentiometer PT6

## Crimped terminals (detail)



This is the default terminals type.

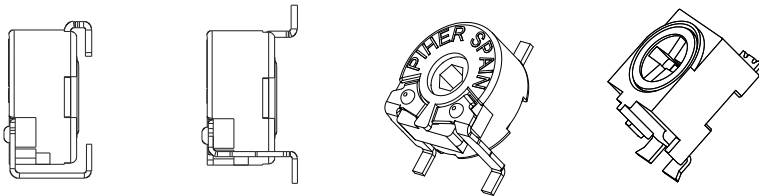
## Not-crimped terminals dimensions



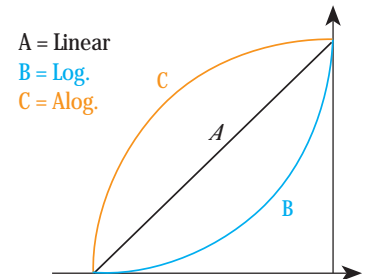
Please indicate "SC" at the end of the part number for this version.

## SMD versions

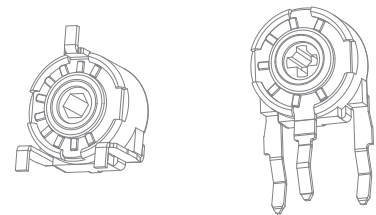
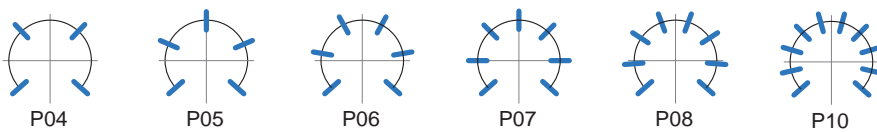
SMD / SMT version available. See [PS-6](#) and [N-6](#) datasheets at: [www.piher.net](http://www.piher.net)



## Standard Tapers



## Detents / Stop positions



— Relative detent positions along the total mechanical travel.

### NOTES FOR DETENTED VERSIONS

- All detented versions will be studied case by case. Contact Piher for leadtimes and availability.
- Others: check availability. Unless otherwise specified the detents are evenly spaced (using the end points as reference).  
For more than 10 detents versions please contact Piher for more information.
- Standard mechanical life: 100 cycles.
- Long life versions are available under request. Contact Piher for more information.
- Detent torque can vary from 1.2 to 2.5 times the standard potentiometer torque.
- The colour of the rotor will be purple-violet.

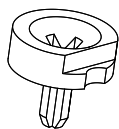
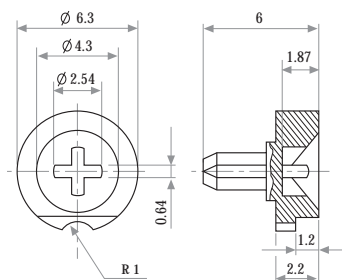
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### Knobs/Shfts

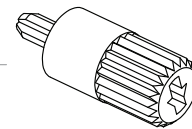
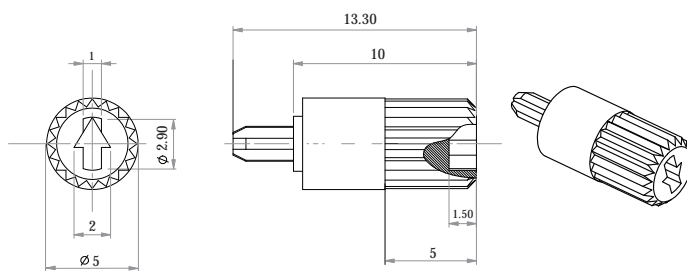
If you wish to use your own plastic shaft/knob/actuator please contact Piher for advice about compatible materials.  
By default shafts and knobs are delivered unassembled and fit the "K" rotor type.  
Mounted shafts are delivered at random position. Custom positioning available.

Ref.: 5155 / Fig. 1



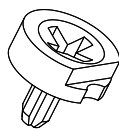
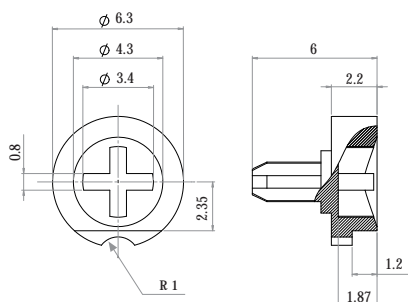
Ref.: 6132 / Fig. 2

Shaft. Not suitable for magazine packaging



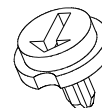
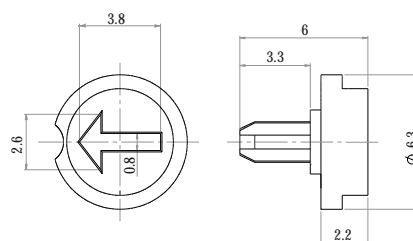
Ref.: 5141 / Fig. 3

Colour: grey. For other colours check availability.



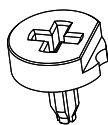
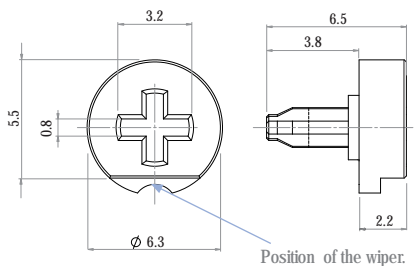
Ref.: 6172 / Fig. 4

Colour: grey. For other colours check availability.



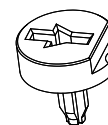
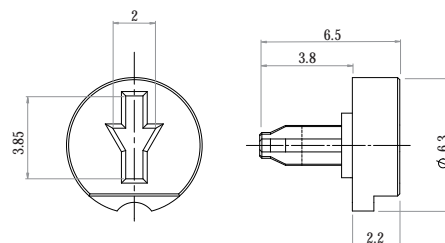
Ref.: 6148 / Fig. 5

Standard knob. Suitable for V models only. Default color: cream.



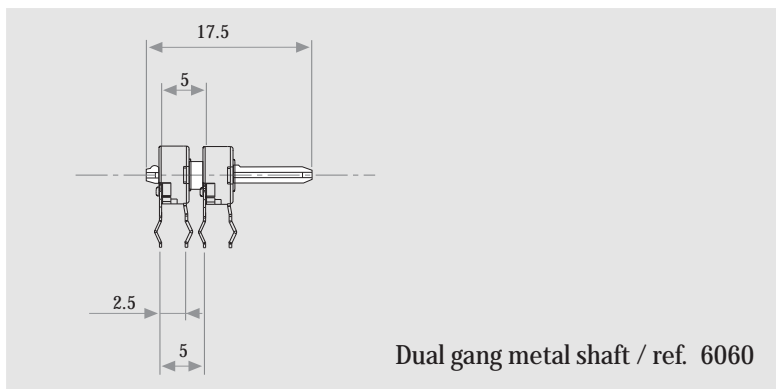
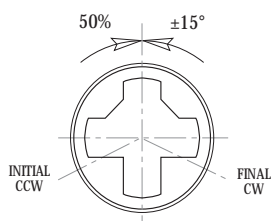
Ref.: 6160 / Fig. 6

Suitable for V models only. Default color: cream.



### Positioning

Default position = CCW



Dual gang metal shaft / ref. 6060

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### Packaging

#### BOXES / BULK

Model

Units per box

All

1.000

Box dimensions (mm):  
185x85x40



#### AUTOMATIC INSERTION

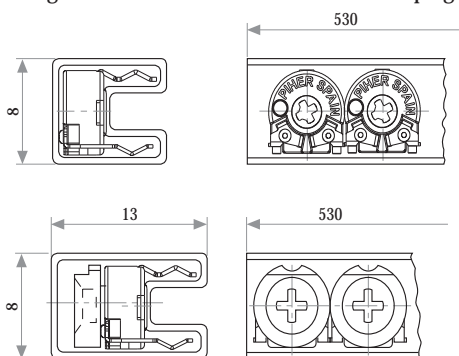
Magazines

Units per magazine

PT-6 V & PT-6 WV

80 Pieces

Magazines for PT-6 V with or without crimping.



### Tests

Test	Conditions	Typical variations
Electrical life	1.000 h. @ 50° C; 0.25 W	±5 %
Mechanical life (cycles)	1000 @ 10 CPM ...15 CPM	±3 % (Rn < 1 M )
Temperature coefficient	-25° C; +70° C	±300 ppm (Rn <100 K)
Thermal cycling	16 h. @ 85° C; 2h. @ -25° C	±2.5 %
Damp heat	500 h. @ 40° C @ 95% HR	±5 %
Vibration (for each plane,X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	±2 %

Out of range values may not comply these results

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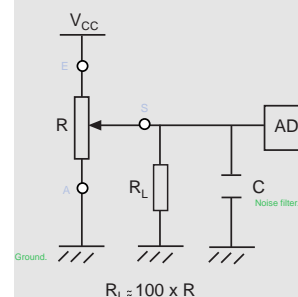
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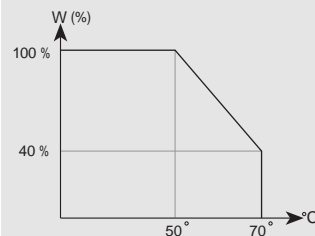
Potentiometers | Hall effect contactless sensors | Inductive sensors  
Printed electronics | Value added assemblies

### Recommended connections

Piher potentiometer's recommended connection circuit for a position sensor or control application. (voltage divider circuit electronic design)



### Power rating curve



### Contact

Piher Sensing Systems  
Poligono Industrial Municipal  
Vial T2 N°22  
31500 Tudela - Spain  
Tel: +34-948-820450

[sales@piher.net](mailto:sales@piher.net)

[www.piher.net](http://www.piher.net)

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