

# PT-6

6 mm Carbon  
Potentiometer



## FEATURES

- Carbon resistive element.
- IP54 protection according to IEC 60529.
- Polyester substrate.
- SMD version available (see PS-6 datasheet).
- Also upon request:
  - Wiper positioned at initial, 50% or fully clockwise.
  - Supplied in magazines for automatic insertion.
  - Long life model (10K cycles).
  - Housing available in self extinguishable plastic (UL94V0).
  - Mechanical detents.

## MECHANICAL SPECIFICATIONS

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

\* Others check availability.

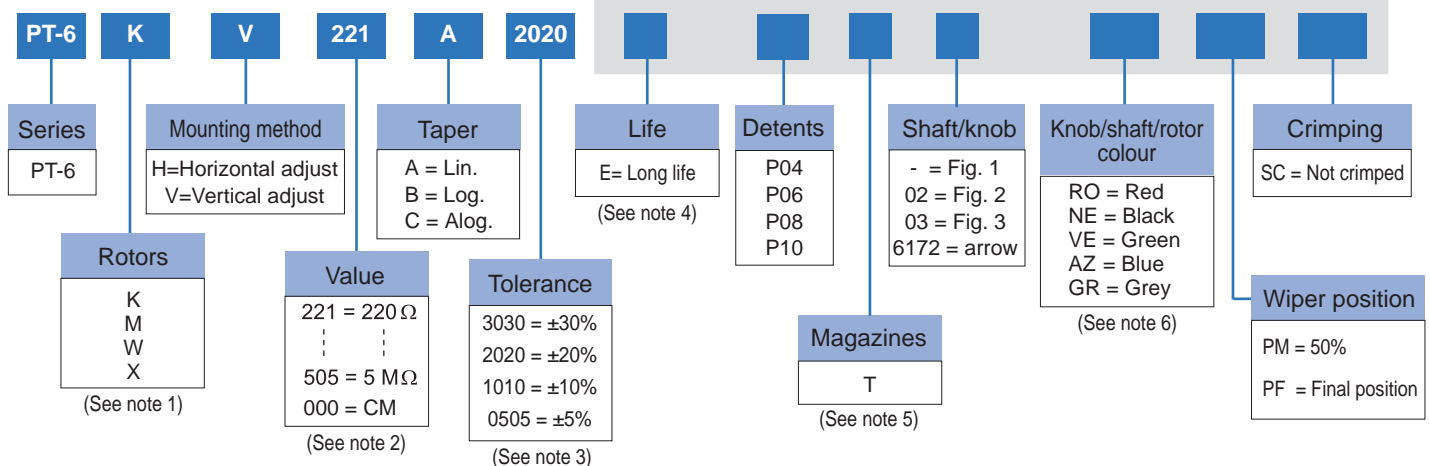
\*\* Up to 85°C depending on application.

## ELECTRICAL SPECIFICATIONS

- Range of values\*  
 $220\Omega \leq R_n \leq 5M$  (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Standard tolerance\*:  $220\Omega \leq R_n \leq 1M\Omega$  .....  $\pm 20\%$   
 $1M\Omega < R_n \leq 5M\Omega$  .....  $\pm 30\%$
- 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  $R_n \geq 1K$ )
- Residual resistance\*:  $\leq 0.5\% R_n$  ( $5\Omega$  min)
- Equivalent Noise Resistance:  $\leq 3\% R_n$  ( $3\Omega$  min)
- Operating Temperature\*\*:  $-25^\circ C + 70^\circ C$  ( $-13^\circ F + 158^\circ F$ )

## HOW TO ORDER

### OPTIONAL EXTRAS



### NOTES:

(1) Adjust. type: «X» is only available with horizontal adjusting method.

(2) Value: – Code:  $\overbrace{22}^{\text{First two digits.}} \overbrace{1}^{\text{Number of zeros.}} = 220\Omega$   
– 000 = CM = switch version (contact us)

(3) Tolerance (non standard, custom): check availability..... Code eg.:  $\begin{matrix} +7 \\ -5 \end{matrix} = \overbrace{07}^{\text{Negative tolerance}} \overbrace{05}^{\text{Positive tolerance}}$

(4) Life: • Standard = 1000 cycles • Long = 10K cycles (non-detented models)

(5) Only for "V" mounting method. "W" rotor with shaft Fig. 2 is not available in magazines.

(6) Potentiometer without knob or shaft, only the rotor. Potentiometer with knob or shaft, only the knob/shaft. Default colour for knob/shaft is cream. Shaft only available in cream or black colour.

Online product configurator: <https://piher.net/configurator/2017/08/24/pt6-6-configurator-potentiometer/>

## HOW TO ORDER CUSTOM DRAWING

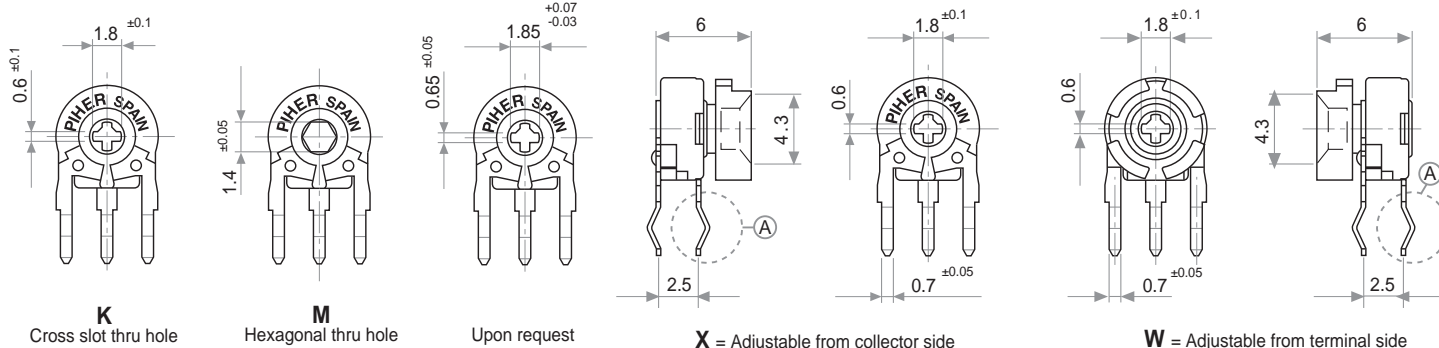
PT-6 KV + DRAWING NUMBER (Max. 16 characters)

This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

## STANDARD OPTIONS

Packing .....	Bulk
Rotor colour .....	White
Wiper position .....	Initial
Crimping .....	Yes
Knob colour .....	White
Mechanical life .....	1000 cycles

## ROTORS

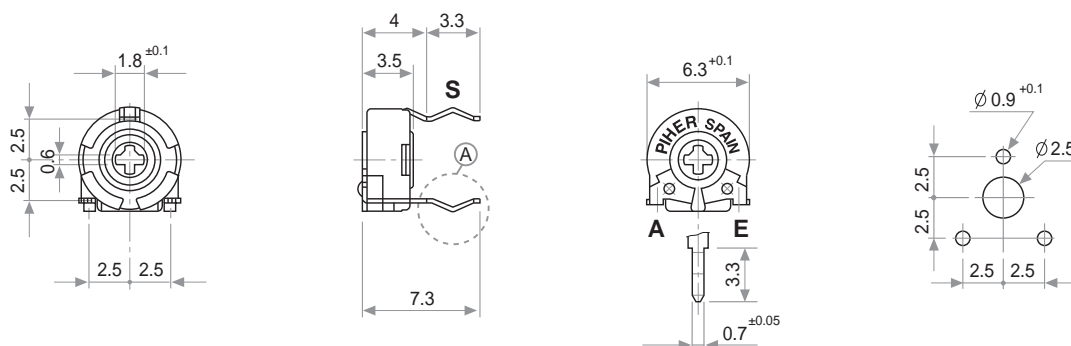


Wipers are shown positioned at 50% for the picture

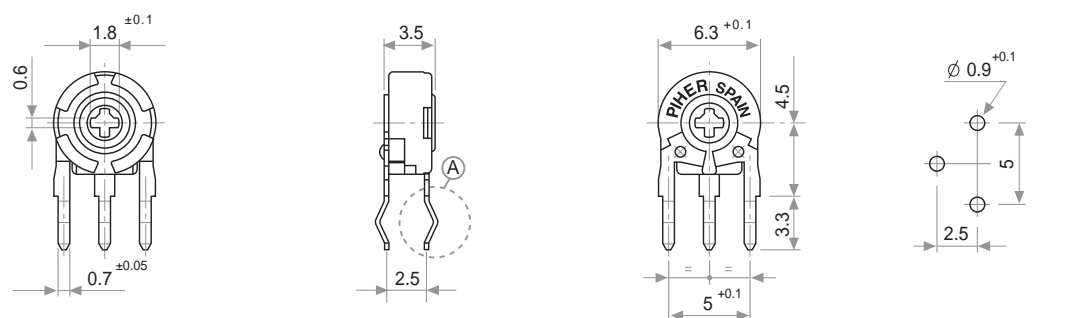
With inserted knob / shaft. Default knob is ref. 5155

## MOUNTING METHODS. VARIATIONS

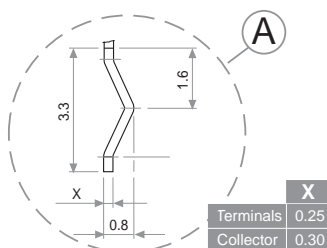
**V** = Horizontal mounting / Vertical adjust



**H** = Vertical mounting / Horizontal adjust

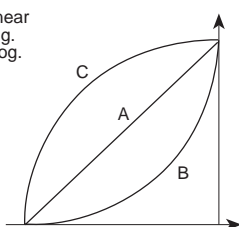


## DETAIL A

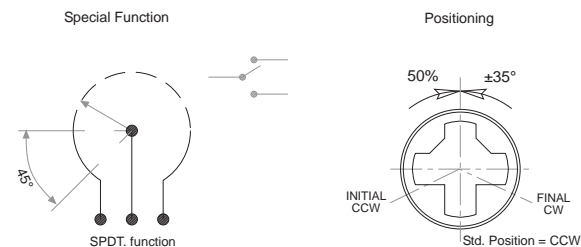


## TAPERS

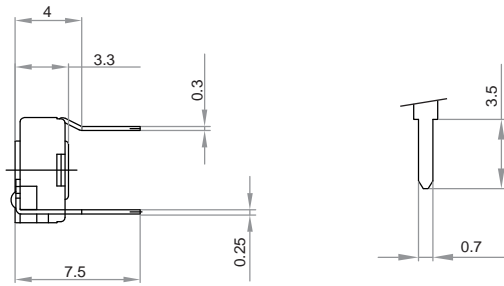
A = Linear  
B = Log.  
C = Alog.



## OPTIONS



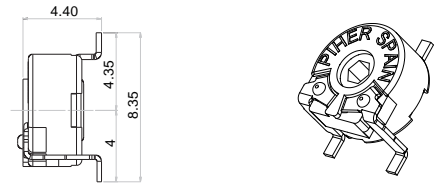
## NOT-CRIMPED TERMINALS DIMENSIONS



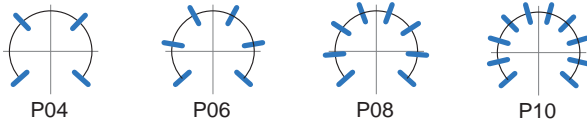
## SMD VERSION

SMD / SMT version available:

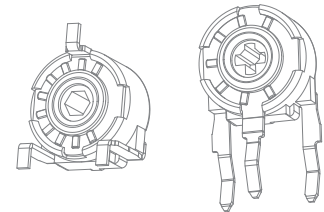
See N-6 and PS(x)-6 product datasheets at: [www.piher.net](http://www.piher.net)



## STANDARD DETENT CONFIGURATIONS



— Relative detent positions along the total mechanical travel.



Examples of custom configurations.

### NOTES FOR DETENTED VERSIONS:

- (1) All detented versions will be studied case by case. Contact Piher for leadtimes and availability.
- (2) 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 your nearest PIHER authorised distributor.

- (3) Standard mechanical life: 100 cycles.

- (4) Long life versions are available under request and have the following characteristics at T<sup>a</sup>:
  - Potentiometers with 1 to 3 detents: up to 10K cycles.
  - Potentiometers with 4 and more detents: up to 5K cycles.

- (5) Detent torque can vary from 1.2 to 2.5 times the standard potentiometer torque.

## PACKAGING

### BOXES

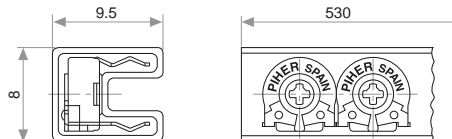
#### Model

All

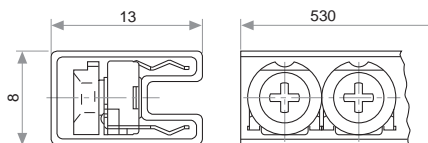
#### Units

1.000

### Magazines for PT-6 V with or without crimp.



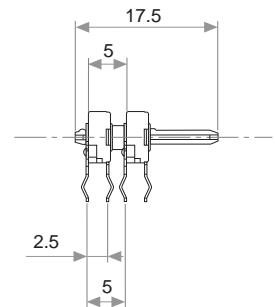
### Magazines for PT-6 WV with or without crimp.



## PT-6 DUAL GANG VERSION

### Ref.: 6060

For PT-6 dual gang version contact your nearest PIHER supplier



### AUTOMATIC INSERTION

#### Magazines

PT-6 V & PT-6 WV

#### Units per magazine

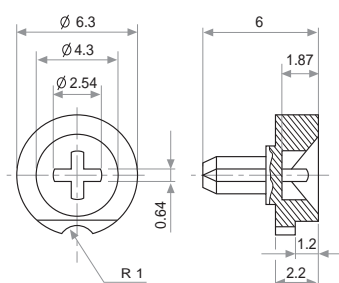
80 Pieces

## KNOBS

If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.

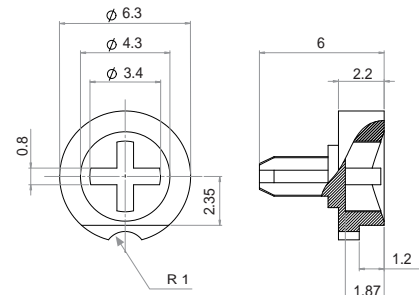
### Ref.: 5155 / Fig. 1

Default knob. Standard colour: white.



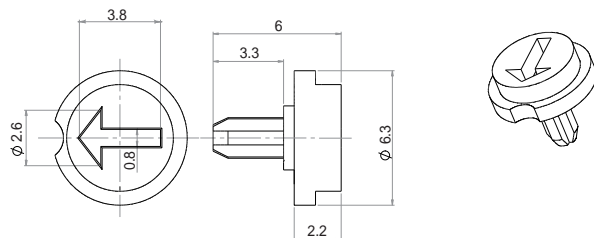
### Ref.: 5141 / Fig. 3

Colour: grey. For other colours check availability.



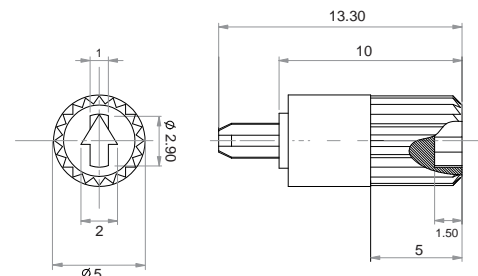
## Ref.: 6172

Colour: grey. For other colours check availability.



## Ref.: 6132 / Fig. 2

Shaft. Not suitable for magazine packaging



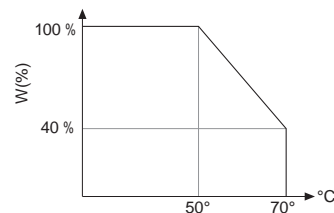
### TESTS

ELECTRICAL LIFE	1.000 h. @ 50°C: 0.1 W
MECHANICAL LIFE (CYCLES)	1000 @ 10 CPM ... 15 CPM
TEMPERATURE COEFFICIENT	-25°C; +70°C
THERMAL CYCLING	16 h. @ 85°C; 2h. @ -25°C
DAMP HEAT	500 h. @ 40°C @ 95% HR
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.

### TYPICAL VARIATIONS

±5 %
±4 % (Rn < 1 M Ω)
±300 ppm (Rn < 100 K)
±2.5 %
±5 %
±2 %

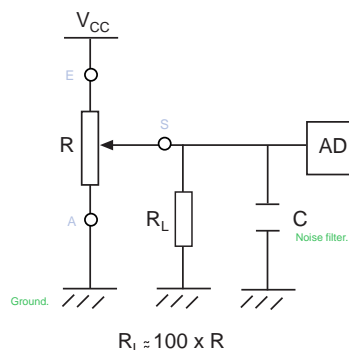
### POWER RATING CURVE



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

### RECOMMENDED CONNECTIONS

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



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The product information in this catalogue is for reference purposes. Please consult for the most up to date and accurate design information.

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