Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® company

PT-6

6-mm carbon through-hole trimmer potentiometer



Up to 10 detents | IP54 | Lead-free | Flame retardant

KEY FEATURES

- Excellent performance
- Carbon resistive element
- Up to 10 mechanical detents
- Up to 10.000 life cycles
- IP54 protection
- Magazine packaging for automatic insertion
- Polyester substrate
- Wiper positioned at the initial, 50% or fully clockwise position
- Loose or assembled shaft and knobs
- Linear, logarithmic and antilogarithmic tapers
- SPDT switch function

On request

- Embossed tape packaging



Up to 10 detents

The **only 6 mm miniature trimmer** potentiometer with optional **stop positions** for haptic feedback.

ELECTRICAL SPECIFICATIONS	
Taper*	Lin, Log, Alog
Range of values*	(Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
Lin	220Ω ≤ Rn ≤ 5MΩ
Log, Alog	1KΩ ≤ Rn ≤ 5MΩ
Tolerance*	
220Ω ≤ Rn ≤ 1MΩ	± 20%
1MΩ < Rn ≤ 5MΩ	± 30%
Max. Voltage	
Lin	100 VDC
Log, Alog	50 VDC
Nominal power 50°C (122°F)	
Lin	0.1 W
Log, Alog	0.05 W
Residual resistance	≤ 0.5% Rn (5Ω min.)
Equivalent noise resistance	≤ 3% Rn (3Ω min.)
Operating temperature**	-25°C to +70°C (-13°F to + 158°F)

* Others available on request

** Up to 85°C depending on application.

POTENTIAL APPLICATIONS

- Appliance program selection
- Thermostat adjustment
- Timer and control relays
- Consumer electronics
- Power tool controls
- Test and measurement equipment
- Alarms and detectors
- Circuit breakers

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MECHANICAL SPECIFICATIONS	
Mechanical rotation angle	235° ± 5°
Electrical rotation angle*	200° ± 20°
Torque Rotational Stop	 0.2 to 2 Ncm (0.3 to 2.7 in-oz) › 4 Ncm (›7 in-oz)
Life**	up to 10,000 cycles

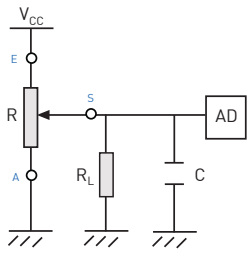
*Increased rotational angle of 215º± 20° available upon request ** Others available on request

ENVIRONMENTAL TESTING		
	Test conditions (CEI 393-1)	ΔR(%) - Typical test results
Electrical life	1,000h at 50°C; 0.1 W	±5%
Mechanical life	1,000 cycles at 10 to15 cpm	±3% (Rn ‹ 1M)
Temperature coefficient	–25°C to +70°C	±300 ppm/°C (Rn ‹ 100K)
Thermal cycling	16h at 85°C and 2h at -25°C	±2.5%
Damp heat	500 h at 40°C and 95% relative humidity (RH)	±5%
Vibration	2h each plane at 10Hz - 55Hz	±2%
Storage	6 months at 23°C ±2°C and 50% RH	±2.5%

Out of range values may not comply with these results. Standard test conditions: temperature:23°C ±2°C and 45% to 70% RH.
Mechanical life of detented versions is 100 cycles

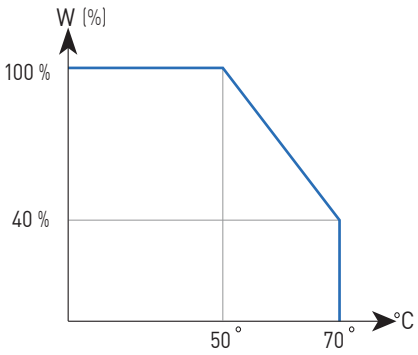
RECOMMENDED CONNECTIONS

Recommended connection circuit for a position sensor or control application (voltage divider circuit electronic design).



$R_L \approx 100 \times R$

POWER RATING CURVE

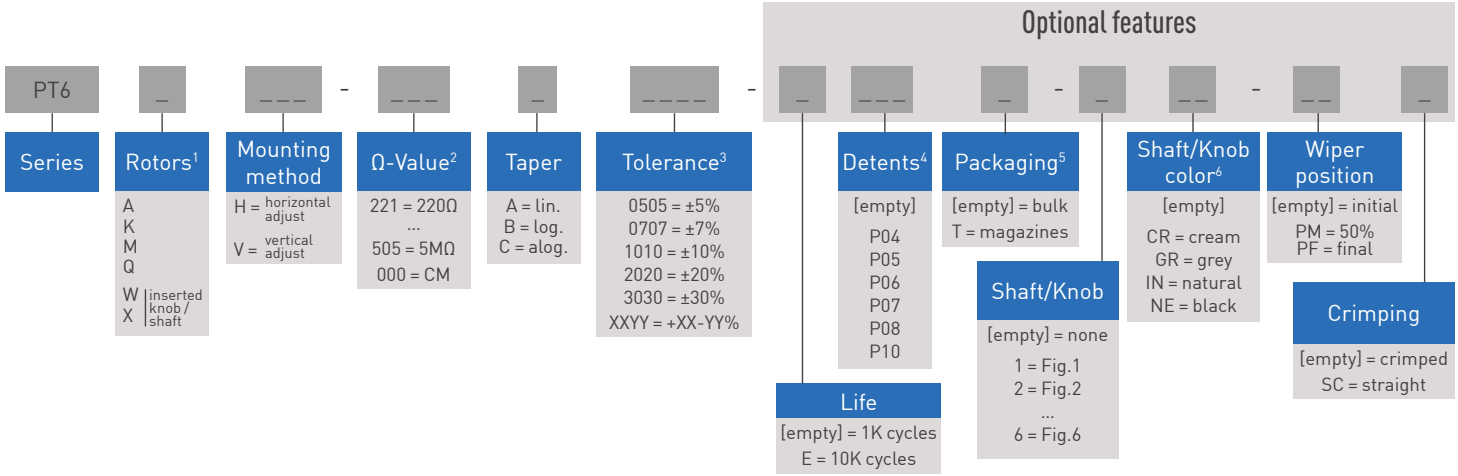


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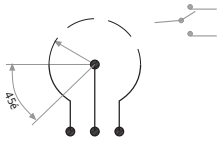
6-mm carbon through-hole trimmer potentiometer

HOW TO ORDER

Example: PT6KV-221A2020



1. Rotors: "X" rotor only available on "H" mounting versions. Default color is white. Other rotor colours on request.
2. Ω- Value: XXX - First two digits of Ω-value 000 = CM = switch SPDT version
   XXX - Number of zeros



3. Tolerance: for custom tolerance please check availability at info@piher.net
4. Detents: Detented versions use purple rotor color (rotor color code "VI"). Ordering code example: PT6KH-254A2020-P04-VI
5. Packaging: Only for "V" mounting method. "W" rotor with shaft Fig. 2 is not available in magazines. Embossed tape packaging on request.
6. Default colour for knob/shaft is cream

check inventory

DEFAULT CONFIGURATION

	PT-6
Life	1.000 cycles (forth and back the mechanical angle travel)
Detents	none
Housing color	black
Rotor color	white
Wiper Position	initial
Packaging	bulk

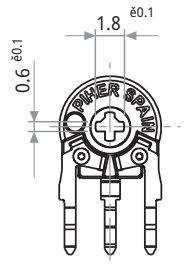
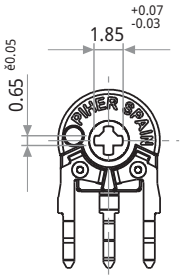
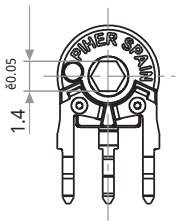
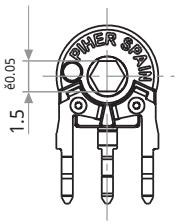
ORDER CODE EXAMPLES

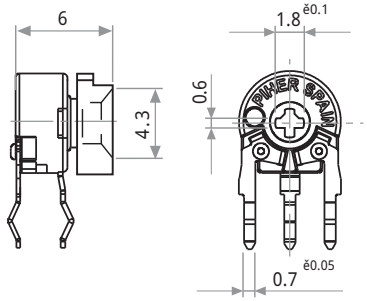
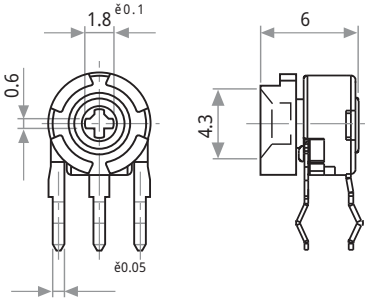
PT6WV-104A1010-5NE-SC
6mm potentiometer with factory pre-inserted knob, V mounting method (vertical adjustment), 100K resistive value, linear taper, 10% resistive tolerance, black knob ref. 6148 and straight terminals (not crimped).
PT6KH-103A2020
6mm potentiometer with rotor "K" (cross shape), H mounting method (horizontal adjustment), 10K resistive value, linear taper, 20% resistive tolerance and crimped terminals.

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6-mm carbon through-hole trimmer potentiometer

ROTORS

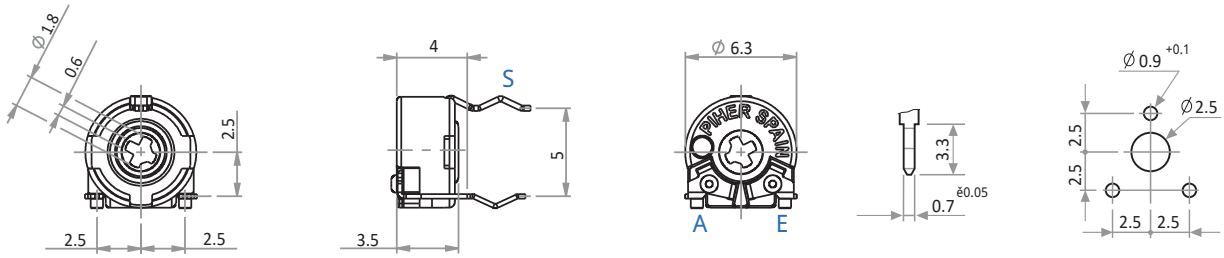
K Cross slot through hole	Q Cross slot through hole colour: pink	M Hexagonal through hole	A Hexagonal through hole colour: pink
			

X Adjustable from collector side	W Adjustable from terminal side
	
With inserted knob / shaft. Example with knob ref. 5155	With inserted knob / shaft. Example with knob ref. 5155

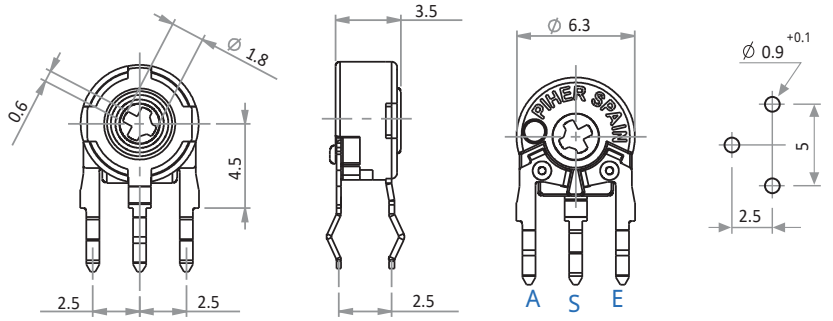
Default delivery is at initial position. Wipers are shown positioned at 50% for the picture.

MOUNTING METHOD

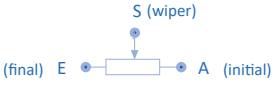
V = Vertical Adjustment - Horizontal Mounting



H = Horizontal Adjustment - Vertical Mounting



Download STEP Eles here:
www.piher.net

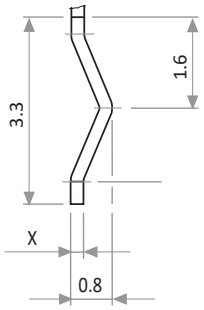


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6-mm carbon through-hole trimmer potentiometer

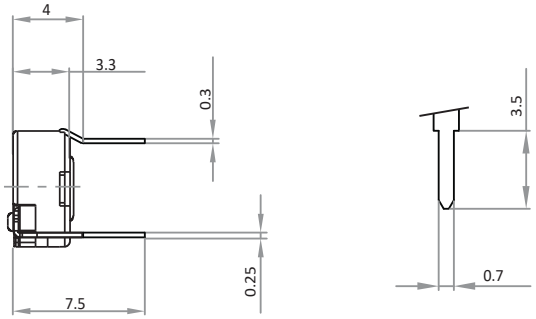
CRIMPING

Crimped



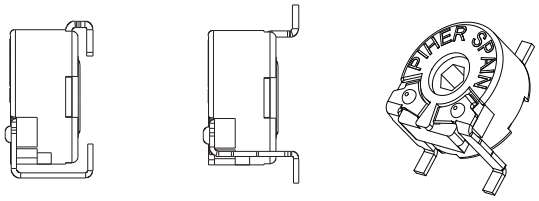
	X
Terminals	0.25
Collector (S)	0.30

Non-crimped

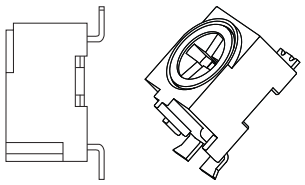


SMD MOUNTING AVAILABLE

PS-6



N-6



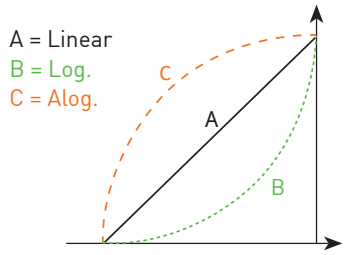
For more information visit: www.piher.net

STANDARD RESISTANCE-VALUES AND TOLERANCES

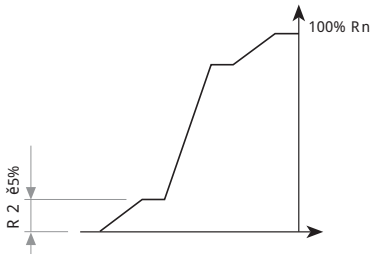
Resistance Ω	100	200	220	250	470	500	1K	2K	2.2K	2.5K	4.7K	5K	10K	20K	22K	25K	47K	50K	100K	200K	220K	250K	470K	500K	1M	2M	2.5M	4.7M	5M
Order Code	101	201	221	251	471	501	102	202	222	252	472	502	103	203	223	253	473	503	104	204	224	254	474	504	105	205	255	475	505
Tolerance	30%		20%																							30%			

TAPERS

Standard

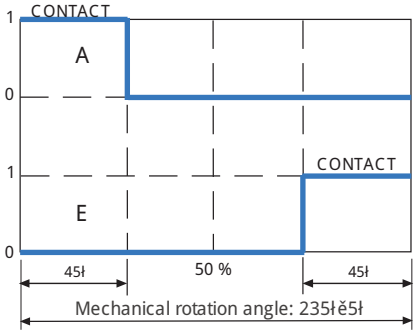


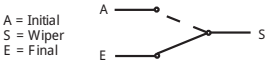
Example: special custom taper



For more information on custom tapers contact Piher Sensing Systems.

SWITCH VERSION

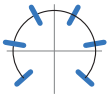
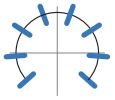
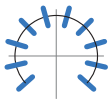




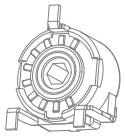
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6-mm carbon through-hole trimmer potentiometer

DETENTS / STOP POSITIONS

P04	P05	P06	P07	P08	P10
					





Relative detent positions along total mechanical travel

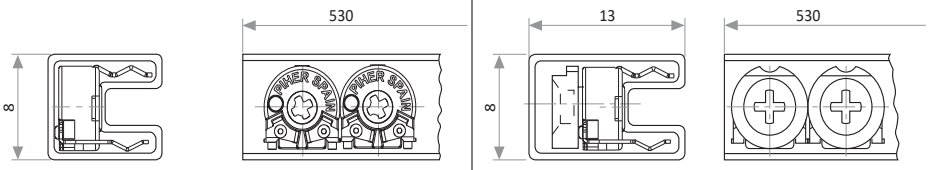
All detented versions will be studied case by case, more than 10 detents available on request.
Unless otherwise specified the detents are evenly spaced (using the end points as reference).
Standard mechanical life of detented versions: 100 cycles. Long life versions are available on request.
Detent torque can vary from 1.2 to 2.5 times the standard potentiometer torque.
Rotor color of detented versions is purple-violet.

PACKAGING

Bulk (1000 units per box)	Magazine / Automatic Insertion (80 units per magazine)	
All models	PT-6 V models	PT-6 WV models

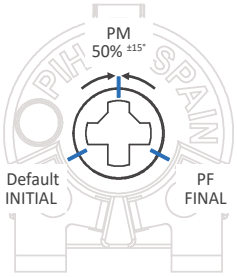


Dimensions (mm): 185x85x40



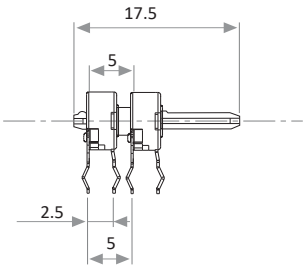
Embossed tape/reel packaging on request.

WIPER POSITION



Wiper positioning on initial position is standard. Special delivery positions available on request.

DUAL GANG METAL SHAFT ON REQUEST - REF.: 6060



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6-mm carbon through-hole trimmer potentiometer

KNOBS / SHAFTS (FOR K ROTOR)

Fig. 1 - Ref.: 5155
Colors available: white, cream and black.
Default color: white.

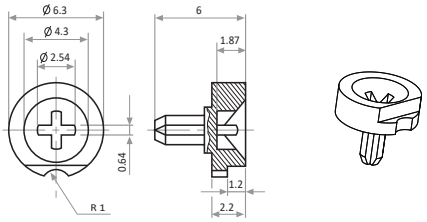


Fig. 2 - Ref. 6132
Shaft - Not suitable for magazine packaging
Colours*: cream and black. Other colours upon request.

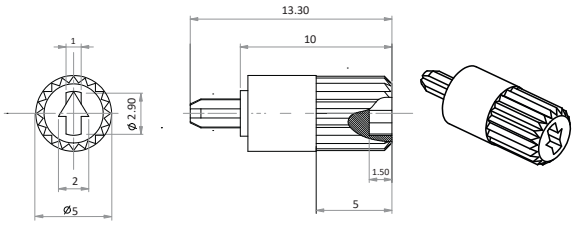


Fig. 3 - Ref.: 5141
Color: grey*

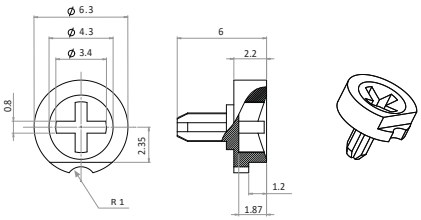


Fig. 4 - Ref.: 6172
Color*: grey

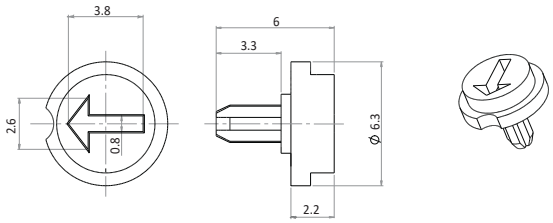


Fig. 5 - Ref.: 6148
For V models only. Colors available: cream and black. Default color: cream.

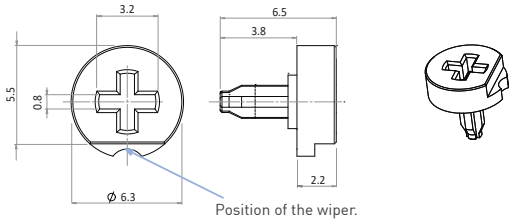
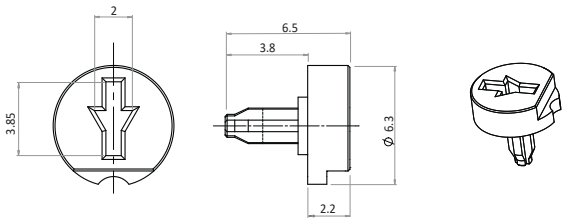


Fig. 6 - Ref.: 6160
For V models only. Colors available: cream and black. Default color: cream.



If you wish to use your own plastic shaft/knob/actuator please contact Piher Sensing Systems for advice about compatible materials.
Shaft and knobs (Fig 1 to 4) are delivered unassembled if not specified otherwise in part number code ("W" or "X"). The position of assembled knobs can be indicated in part number code: Initial (default), 50% (PM) or Final (PF). Mounted shaft fig. 2 will be delivered by default at random position. Custom specific positions are available for shaft and all knobs on request.
* We offer this product in other colors. Please contact us at info@piher.net to check availability.

Please always use the latest updated datasheets and 3D models published on our website.

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