## PIHE



# PT-15 15 mm Carbon Potentiometer

#### **FEATURES**

- Carbon resistive element.
- Dust proof enclosure.
- Polyester substrate.
- Also upon request:
  - · Wiper positioned at 50% or fully clockwise.
  - · Long life model for low cost control pot. applications
  - Low torque option
  - Supplied in magazines for automatic insertion.
  - Self extinguishable plastic UL 94V-0
  - Cut track option
  - Special Tapers
  - Mechanical detents

### **MECHANICAL SPECIFICATIONS**

265° ± 5° – Mechanical rotation angle:  $240^{\circ} \pm 5^{\circ}$  available under drawing (blue housing only)

- Electrical rotation angle: 240° ± 20°

- Torque: 0.5 to 2.5 Ncm. (0.7 to 3.4 in-oz)

- Stop torque: > 10 Ncm. ( >14 in-oz)

– Life: up to 200K cycles

## **ELECTRICAL SPECIFICATIONS**

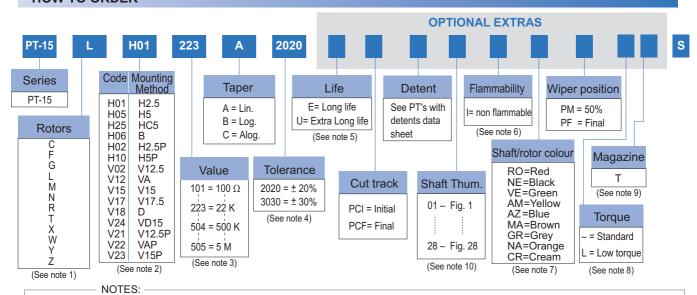
- Range of values (\*)

 $100\Omega \le Rn \le 5 M$  (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)

– Tolerance (\*):  $100\Omega \le Rn \le 1M \Omega$  \_\_\_\_ ± 20%  $1M\Omega \, < Rn \leq \, 5M \qquad \dots \pm 30\%$ 

- Max. Voltage: 250 VDC (lin) 125 VDC (no lin)
- Nominal Power 50°C (122°F) (see power rating curve) 0.25 W (lin) 0.12 W (no lin)
- Taper (\*) (Log. & Alog. only Rn≥1K) Lin; Log; Alog.
- Residual resistance(\*):  $\leq 0.5 \%$  Rn ( $5 \Omega$  min.)
- Equivalent Noise Resistance:  $\leq$  3% Rn (3  $\Omega$  min.)
- Operating temperature\*\*: -25°C + 70°C (-13°F + 158°F)
- \* Others upon request
- \*\* Up to 85°C depending on application

## **HOW TO ORDER**



- "Z" adjustment only available on "H" versions. Standard colour for the "T" rotor: Orange (1)
- Terminal styles: "P" are crimped terminals. V24 not available with steel terminals. V=Vertical adjust; H=Horizontal Adjust (2)(3)
- Example: Code: 100  $\Omega$ 10 Numb of zeros

First two digits of the value.

Non standard tolerance, upon request. Example: +7% (4) Code: 07

Life • Standard 500 cycles
• Long life 10000 cycles
• Extra Long life 100000 cycles (to be studied case by case) (5)

- Non flammable: housing, rotor and shaft. According to UL 94V-0 (6) Colour shaft/rotor: Potentiometer without shaft: only rotor (7)
- Cream colour only available in standard plastic
- (8) Low Torque: ≤1.5Ncm. No detent option available for low torque models
- Magazines (35 pcs/mag): available for VA (12.5), V (12.5), V (12.5P), V (15), V15 (P) and H models. For more information please contact your nearest Piher supplier.
- If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.



negative tolerance

positive tolerance

Potentiometer with shaft: only shaft



## HOW TO ORDER CUSTOM DRAWING

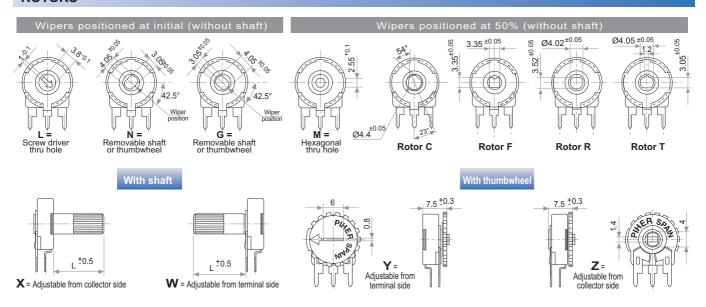
## STANDARD OPTIONS

PT-15 LH 01 + DRAWING NUMBER (Max. 16 digits)

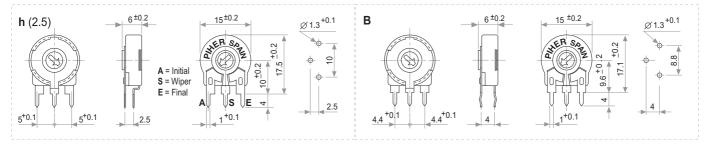
This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

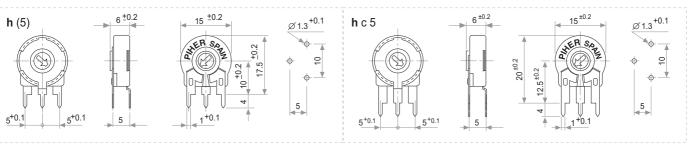
Cut track	No
Detents	None
Non flammable	No
Rotor colour	White
Shaft colour	Natural
Wiper position	
Torque	Standard

## **ROTORS**

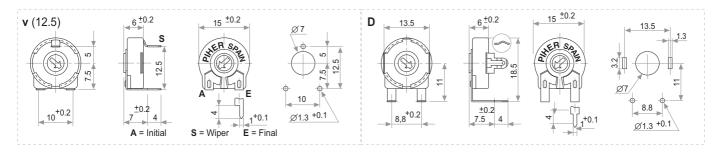


## **VERTICAL MOUNT - HORIZONTAL ADJUST**

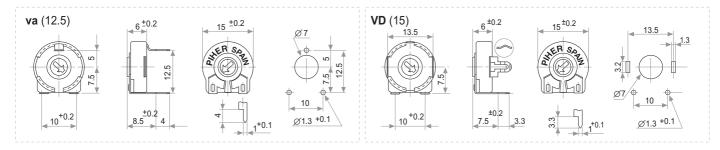


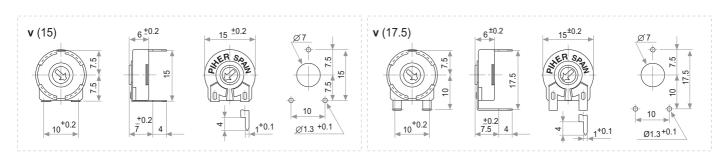


## HORIZONTAL MOUNT - VERTICAL ADJUST



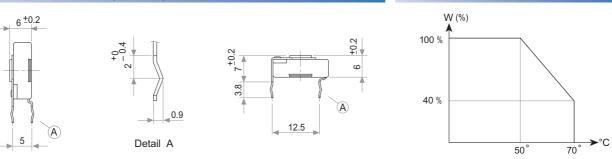
## HORIZONTAL MOUNT - VERTICAL ADJUST





## **CRIMPED TERMINALS (DETAIL)**

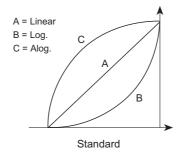
## **POWER RATING CURVE**

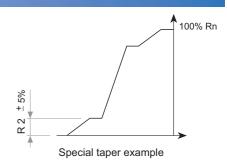


## **TAPERS**

NOTE: Please note terminals disposition when ordering non linear curves.

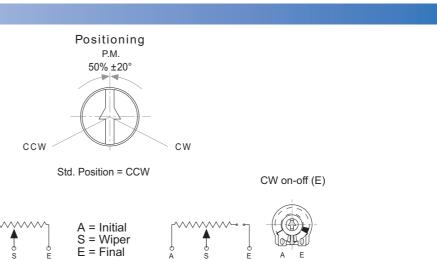
CCW on-off (A)





## **OPTIONS**

**Cut Track** 

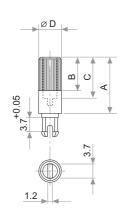


#### **TESTS TYPICAL VARIATIONS**

ELECTRICAL LIFE	1.000 h. @ 50°C; 0.25 W	±5 %
MECHANICAL LIFE (CYCLES)	500 @ 10 CPM15 CPM	±3 % (Rn < 1 MΩ)
TEMPERATURE COEFFICIENT	–25°C; +70°C	±300 ppm (Rn <100 K)
THERMAL CYCLING	16 h. @ 85°C; 2h. @ <sup>-</sup> 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 %

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

## **SHAFTS**



- A = Length (FRS) B = Knurling length

- C = Hollow depth
  D = Shaft diameter
  FRS = From rotor surface

#### Hollow model shafts

FIG.	Α	В	С	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	31	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

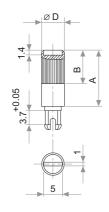
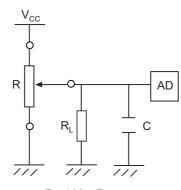


FIG.	Α	В	D	Ref.
6	15	9	6	5219
7	16.8	9	6	5220
8	25.3	9	6	5207
12	46	5	6	5227

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

## **RECOMMENDED CONNECTIONS**

Recommended connection scheme for Piher's position sensors (voltage divider)

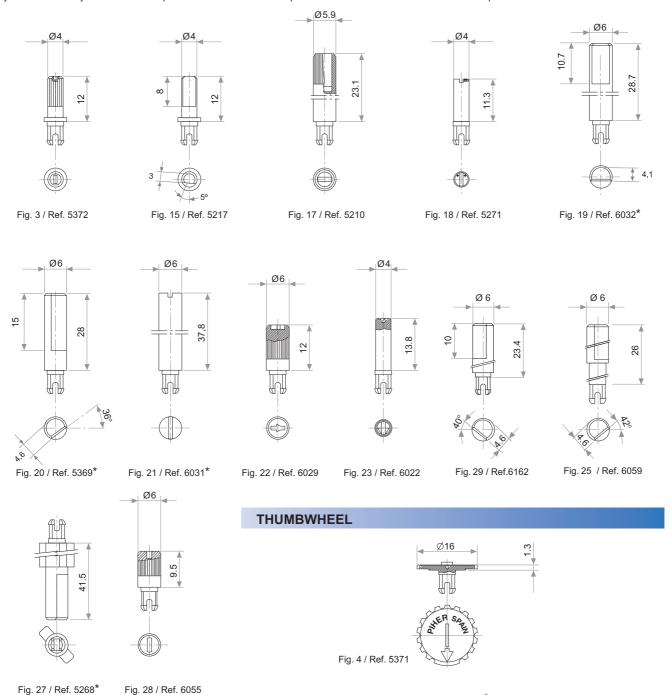


R<sub>L</sub> ≈ 100 x R

#### **SHAFTS**

Shafts & thumweels are delivered unassembled.

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



#### Disclaimer

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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\* Not available in self extinguishable plastic



