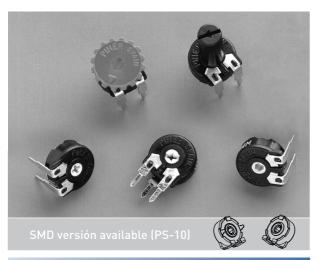
# PIHER



#### **MECHANICAL SPECIFICATIONS**

 $235^{\circ} \pm 5^{\circ}$ - Mechanical rotation angle: - Electrical rotation angle: 220° ± 20° 0.4 to 2 Ncm. (0.6 to 2.7 in-oz) - Torque: > 5 Ncm. ( >7 in-oz) - Stop torque: -Life\*: Up to 10.000 cycles

# PT-10

# 10 mm Carbon Potentiometer

- · Carbon resistive element
- IP54 protection according to IEC 60529
- Polyester substrate
- Also upon request:
  - Wiper positioned at 50% or fully clockwise.
  - Supplied in magazines for automatic insertion.
  - Long life model for low cost control potentiometer applications
  - Self extinguishable plastic UL 94V-0
  - Cut track option
  - Special tapers
  - Mechanical detents
  - Low torque version
  - · Special switch option
  - 3% Linearity and 100K cycles mechanical life

#### **ELECTRICAL SPECIFICATIONS**

- Range of values (\*)

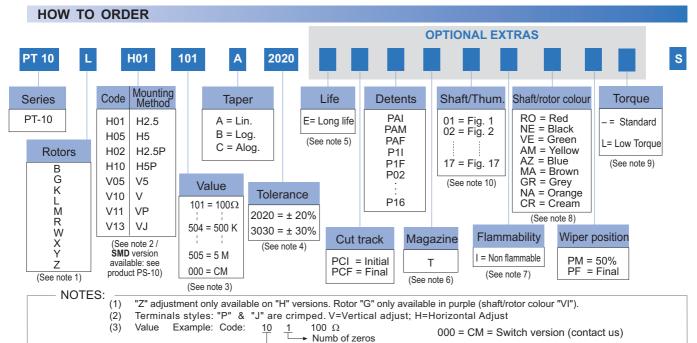
 $100\Omega \le Rn \le 5 M \text{ (Decad. } 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)$ 

- Tolerance (\*):  $100\Omega \le Rn \le 1M \Omega$  \_\_\_\_\_± 20%  $1M\Omega$  < Rn  $\leq$  5M  $\Omega$  .....± 30%

- Max. Voltage: 200 VDC (lin) 100 VDC (no lin)
- Nominal Power 50°C (122°F) (see power rating curve) 0.15 W (lin) 0.07 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)

negative tolerance

(\*) Others upon request \*\* Up to 85°C depending on application



(5) positive tolerance Magazines: not available with the H10, V05 and V13 models, nor with adjustment types X, W, Y, Z. (6)

(7) Non flammable: housing, rotor and shaft. According to UL 94V-0

Non standard tolerance, upon request. Example: +7%

• Potentiometer without shaft: only rotor · Potentiometer with shaft: only shaft (8) Colour shaft/rotor:

First two digits of the value.

Code:

- · Cream colour only available in standard plastic.
- Low Torque: ≤ 1 Ncm No detent option available for low torque models.
- If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.

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

Up to 10.000 cycles.



(4)

<sup>\*</sup> Others upon request

# HOW TO ORDER CUSTOM DRAWING

# STANDARD OPTIONS

PT-10 LH 01 + DRAWING NUMBER (Max. 16 characters)

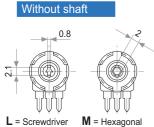
This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

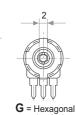
Cut track No Detents None Packing Bulk Non flammable No White Rotor colour Shaft colour Natural Initial Wiper position Standard Torque

With shaft

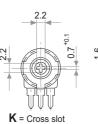
# **ROTORS**

thru hole

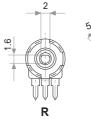


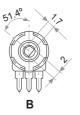


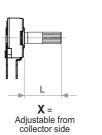
thru hole

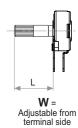


thru hole

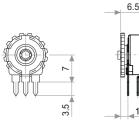








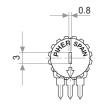
With thumbwheel



thru hole





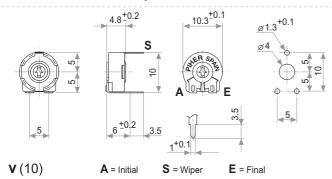


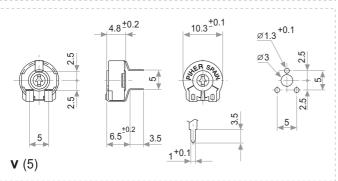
Y = Adjustable from terminal side

**Z** = Adjustable from collector side

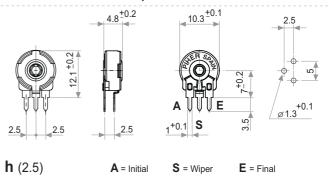
### **MOUNTING METHODS**

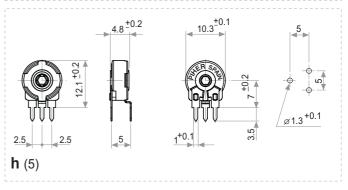
v = horizontal mount - vertical adjust





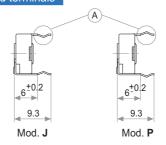
**h** = vertical mount – horizontal adjust

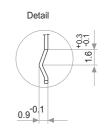




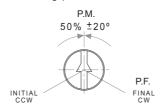
NOTE = Please note relative terminal positions when ordering non linear tapers.

Crimped terminals



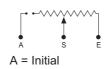


Positioning (Std. Position = CCW)



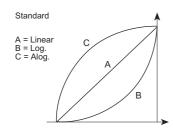


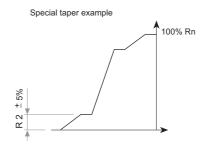






## **TAPERS**





NOTE = Please note relative terminal positions when ordering non linear tapers.

## TESTS TYPICAL VARIATIONS

ELECTRICAL LIFE
MECHANICAL LIFE (CYCLES)
TEMPERATURE COEFFICIENT
THERMAL CYCLING
DAMP HEAT

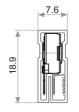
1.000 h. @ 50°C; 0.15 W 500 @ 10 CPM ...15 CPM -25°C; +70°C 16 h. @ 85°C; 2h. @ -25°C 500 h. @ 40°C @ 95% HR 2 h. @ 10 Hz. ... 55 Hz. ±5 % ±3 % (Rn < 1 M Ω) ±300 ppm (Rn <100 K) ±2.5 % ±5 % ±2 %

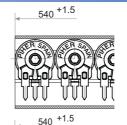
VIBRATION (for each plane X,Y,Z)

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

#### **PACKAGING**

BOXES	
Model	Units
Without shaft	1000 (80 x 85 x 185 mm.)
With thumbwheel	800 (80 x 85 x 185 mm.)
With shaft	400 (80 x 85 x 185 mm.)





Magazines for PT-10 h 2.5; h 5

Also crimped term. h 2.5 P

#### **AUTOMATIC INSERTION**

Magazines	Units per magazine
PT-10H & PT-10V	50 Pieces



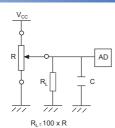


Magazines for PT-10 V

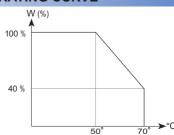
Also crimped term. VP

# RECOMMENDED CONNECTION

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

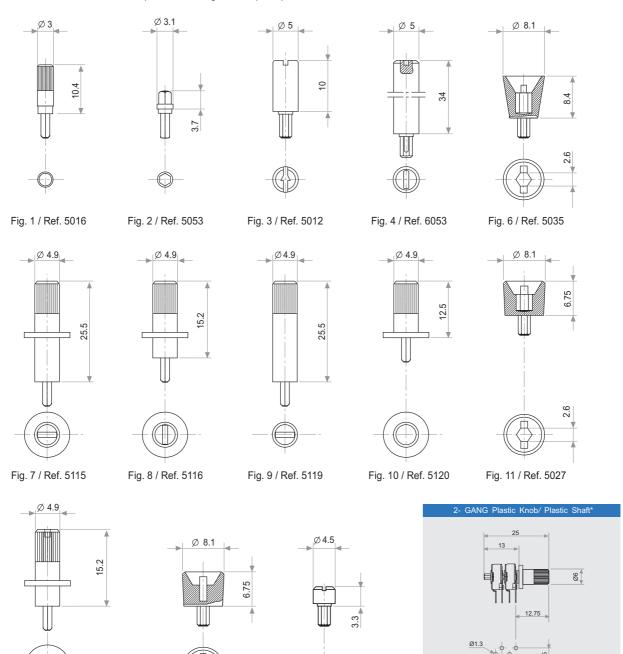


# **POWER RATING CURVE**



# SHAFTS (for G and M rotor types, top view)

Shafts, knobs & thumbweels are delivered at random position. Positioning available upon request.



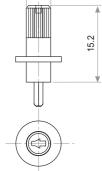


Fig. 12 / Ref. 6052

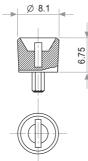


Fig. 13 / Ref. 5121

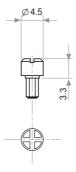
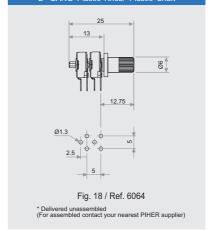


Fig. 14 / Ref. 5055



# THUMBWHEELS (for G and M rotor types, top view)

Shafts, knobs & thumbweels are delivered at random position. Positioning available upon request.

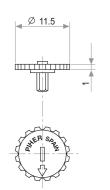


Fig. 5 / Ref. 5034

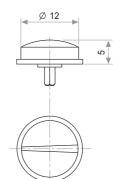


Fig. 15 / Ref. 6008

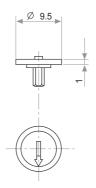


Fig. 16 / Ref. 5039

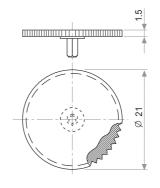
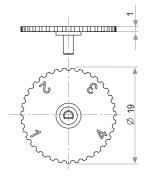


Fig. 17 / Ref. 5062

THUMBWHEEL

Marking: configurable number of positions. Example of four positions marking:



Upon request

### **DETENT CONFIGURATIONS EXAMPLES**

This innovative PT's with detents family has been specifically developed to allow the integration of otherwise large and expensive external mechanisms into the body of the majority of the 10 & 15 mm. PS/PT/PTC potentiometer series thus allowing a high range of configurations: special tapers, torque, tolerances, linearity, cut track, etc.

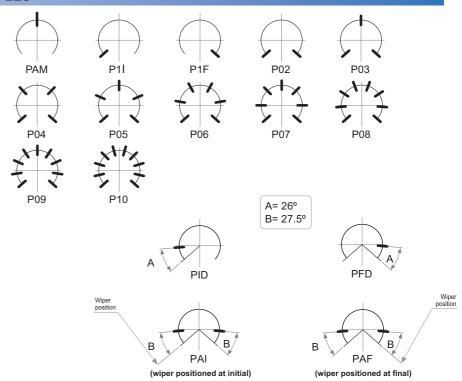
This detent design not only adds a "click" sensation of position, but also offers enormous savings in both cost and space for any given application.

Strong and weak detents can be mixed as per cutomer's request.

Detent number and positions can be made or fitted to the customer needs or preferences

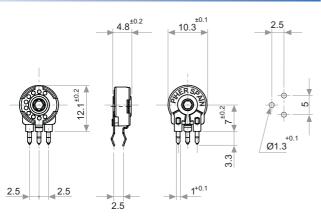
 Relative detent positions along the total mechanical travel Unless otherwise specified the detents are evenly spaced (using the end points as reference)

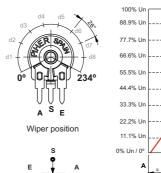
\*For more than 10 detents versions please contact your nearest PIHER distributor. Mechanical and/or electrical features may be affected by detents. Please see our separate PTs with detents datasheet at www.piher.net

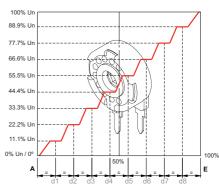


# **DETENT DETAILS**

## **DETENTS COMBINED WITH SILVER ZONES**

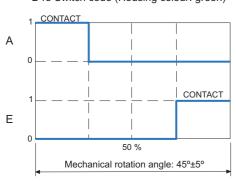




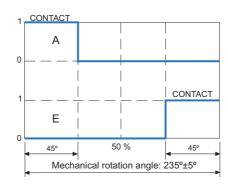


# STANDARD SWITCH VERSIONS

D48 Switch code (Housing colour: green)



### A80 Switch code







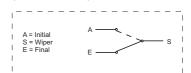
ON position resistance:  $\leq 5 \Omega$ 

SW Standard specs.

Insulation Resistance: ≥ 30 MΩ

Please contact Piher for ordering information

#### (Rotor at Final Position)



#### 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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