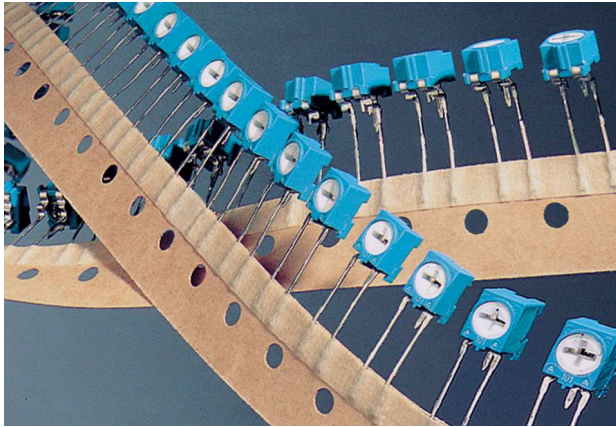


# PIHER



# N-6

## 6 mm Carbon Potentiometer

### FEATURES

- RoHS compliant materials.
- Carbon resistive element.
- Plastic substrate.
- Over-moulding manufacturing technique.
- SMD or through hole.
- Embossed Tape (for SMD), Tape on reel, Ammopack and Magazine packaging for automatic insertion and bulk for manual assembly.
- Wiper positioned at 50%.
- Both sides cross slot easy adjustment.
- Accidental rotor movement protected.
- Traceability insured through date code marking.
- Assembly method: stand up and lay down.

### MECHANICAL SPECIFICATIONS

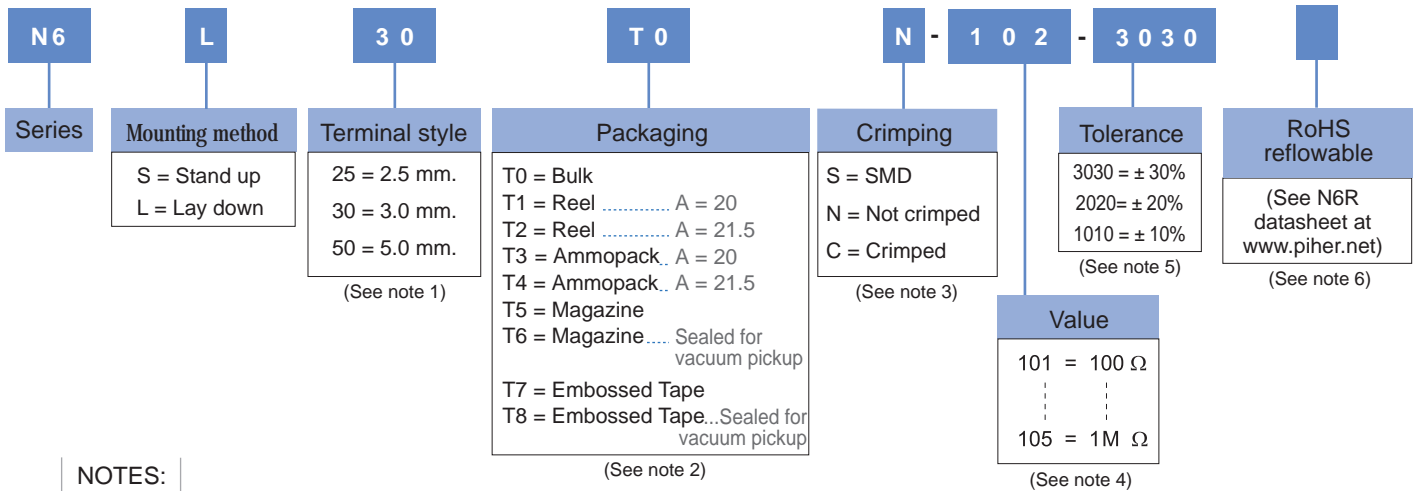
- Mechanical rotation angle:  $280^\circ \pm 10^\circ$
- Electrical rotation angle:  $245^\circ \pm 25^\circ$
- Torque: 0.2 to 3 Ncm. (0.28 to 4.2 in-oz)
- Stop torque: > 7.5 Ncm. ( 10.5 in-oz)

### ELECTRICAL SPECIFICATIONS

- Range of values\*  
 $100\Omega \leq R_n \leq 1M\Omega$  (1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Tolerance\*:  $100\Omega \leq R_n \leq 1M\Omega \dots \pm 30\%$
- Max. Voltage: 100 VDC
- Nominal Power 50°C (122°F) (see power rating curve): 0.1W
- Taper: linear
- End resistance:  $\leq 2\% R_n$  (10Ω min.)
- Equivalent noise resistance:  $\leq 5\% R_n$
- Operating temperature\*\*:  $-25^\circ\text{C} + 70^\circ\text{C}$  (-13°F + 158°F)

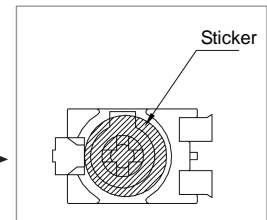
\* Others check availability. \*\* Up to 85°C depending on application.

### HOW TO ORDER



#### NOTES:

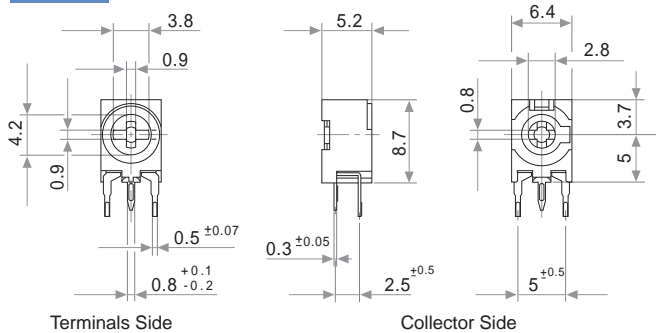
- (1) - Type "N-6 S" is only available with terminal style "25".  
- Terminal style "50" is only available with bulk packing "T0", "T1", "T3", "T5", "T6", "T7", "T8"
- (2) - Delivery for "T2" and "T4" only available in: N-6 S 25 and N-6 L 30  
- "T5", "T6", "T7" and "T8" only available in SMD.  
- "T7", "T8" Embossed Tape 750 Units per Reel. Diameter: 330 mm, aprox. thickness: 30 mm.  
- "T6" and "T8" are sealed for vacuum pickup (sticker at the bottom side)
- (3) - Crimped terminals are only available in bulk packing "T0".  
- Type "S" is only available in N-6 L 50 T0, N-6 L 50 T5, N-6 L 50 T6, N-6 L 50 T7, N-6 L 50 T8
- (4) Value: Example: Code: 10 2 = 1 K  
Number of zeros  
First two digits of the value.
- (5) - Default tolerance is ± 30%. For ± 10%, ± 20% and others: check availability.
- (6) - Option R: black housing & rotor colour. Range of values:  $250\Omega \leq R_n \leq 500K\Omega$  (see separate datasheet "N6R" at www.piher.net)



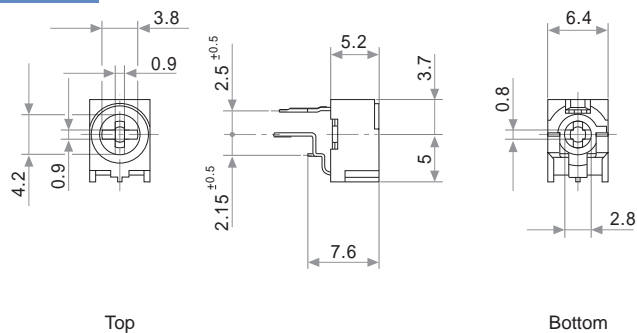
This project has been financially supported by the Spanish Technological Development Institute (CDTI).

# MOUNTING METHOD

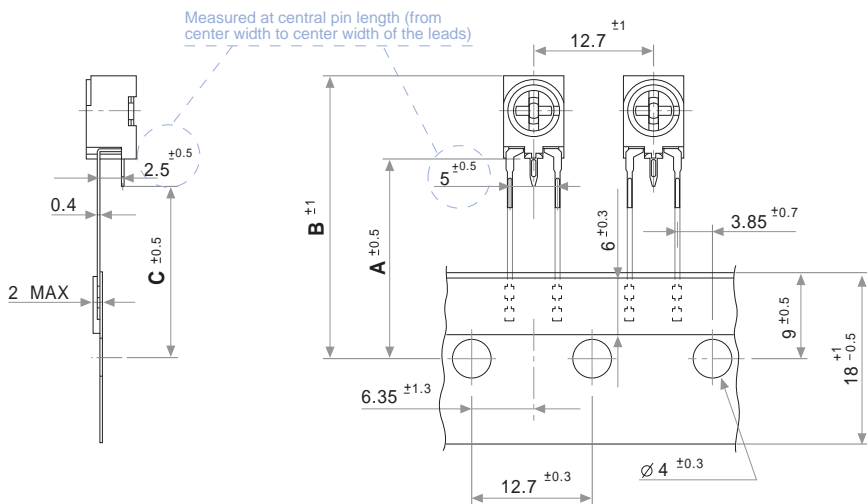
## Type S



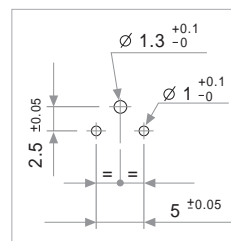
## Type L



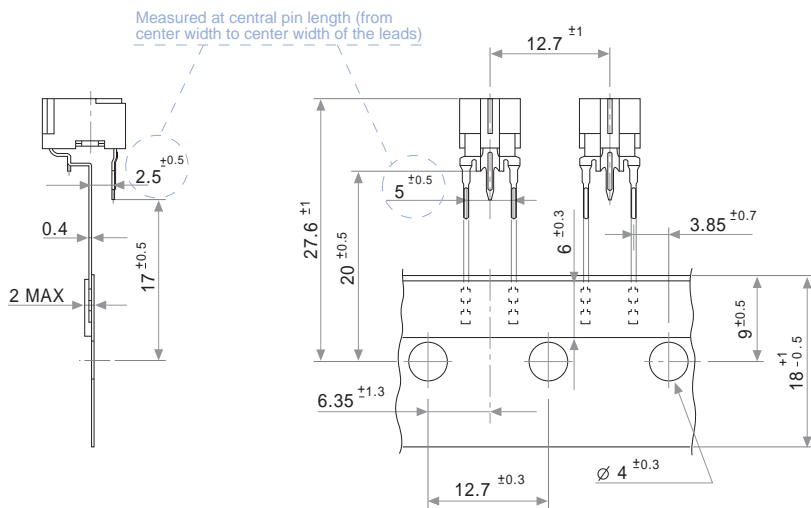
# TAPE



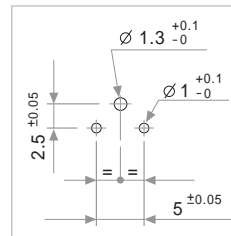
### PCB Hole Layout



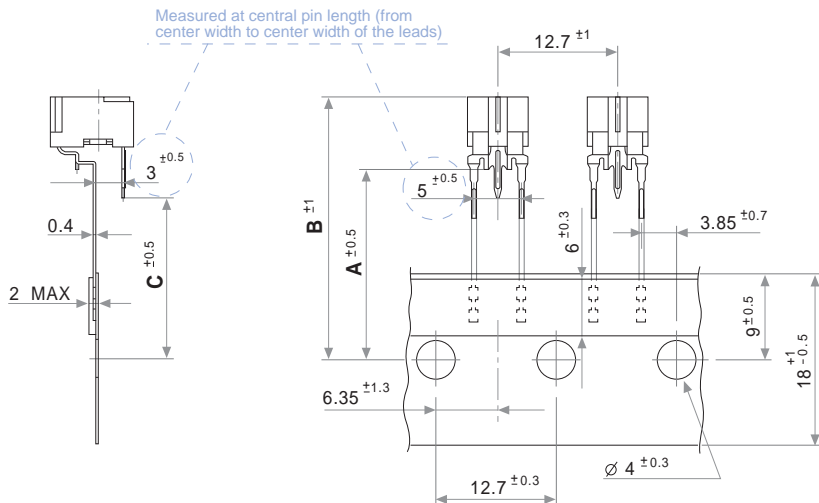
MODEL	A	B	C
N-6 S 25 T1 / T3	20	28.7	17
N-6 S 25 T2 / T4	21.5	30.2	18.5



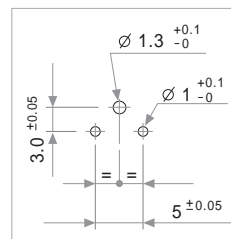
### PCB Hole Layout



## N-6 L 25 T1 / T3

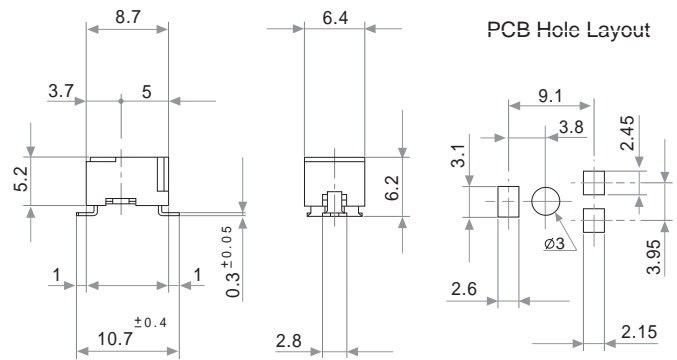
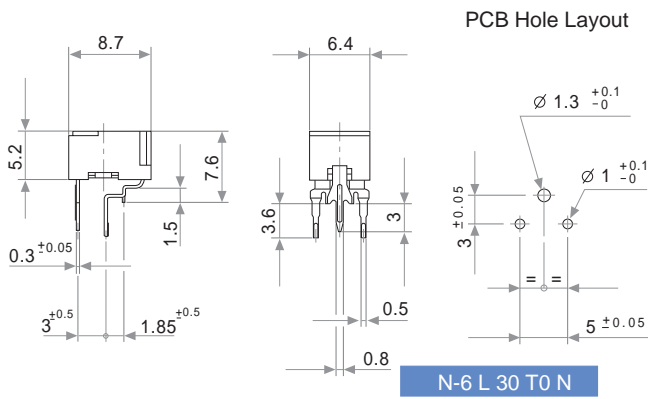
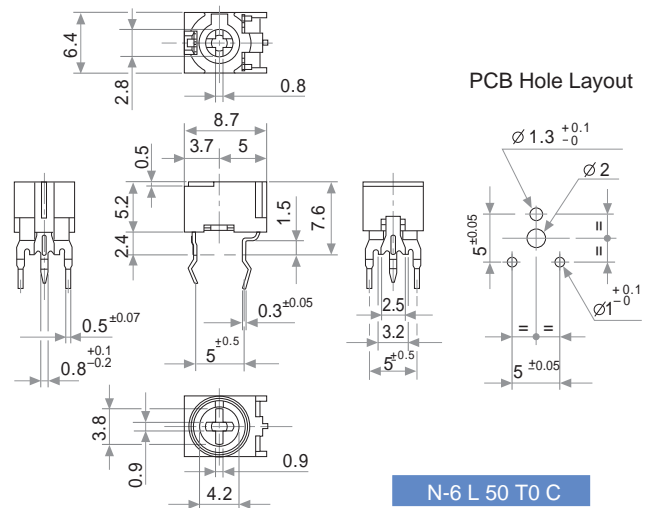
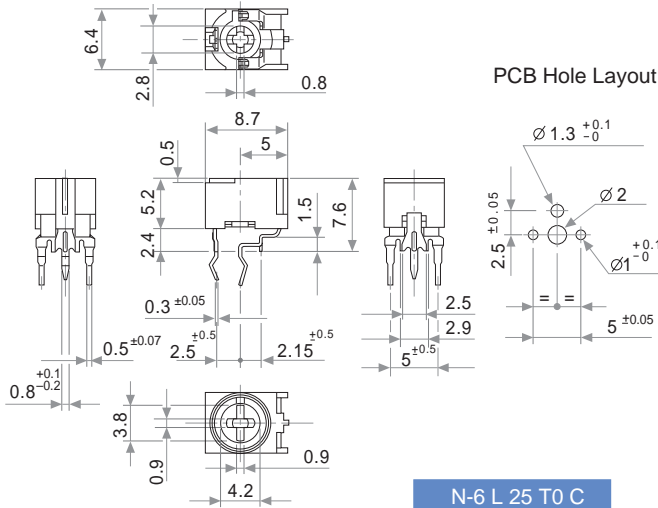


### PCB Hole Layout

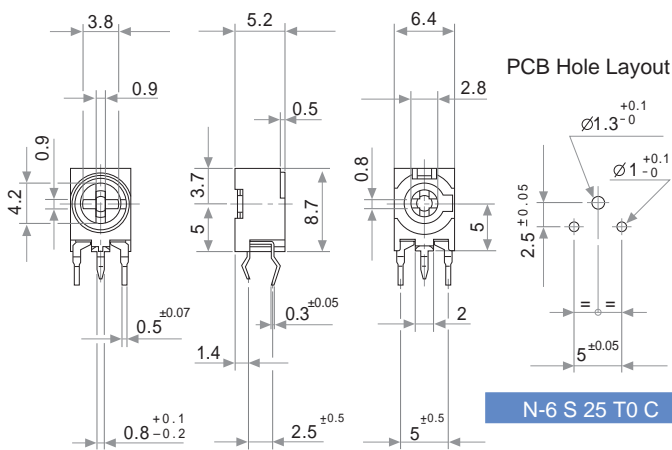


MODEL	A	B	C
N-6 L 30 T1 / T3	20	27.6	17
N-6 L 30 T2 / T4	21.5	29.1	18.5

## BULK TYPE L



## BULK TYPE S

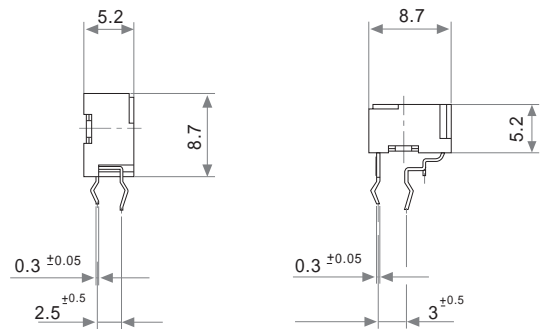


**N-6 L 50 T0 S**

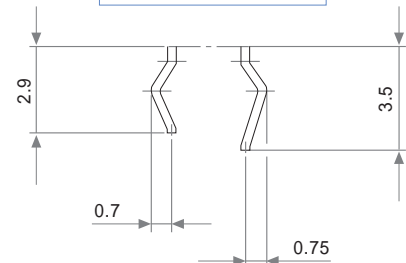
## CRIMPING DETAIL "C"

**Type S**

**Type L**



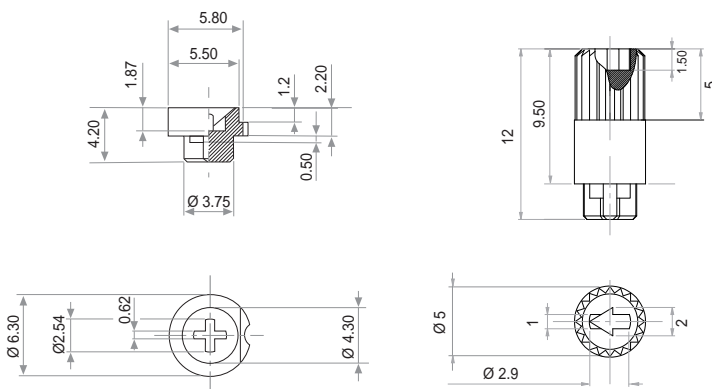
## CRIMPING DETAIL

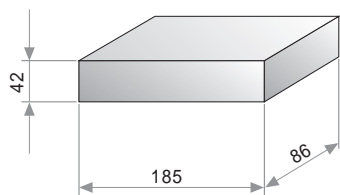


## KNOB Ref.: 5680

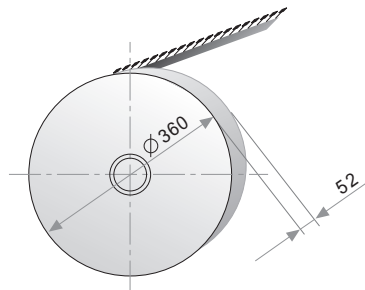
## SHAFT Ref.: 6133

Please order both Knob and Shaft separately. If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.

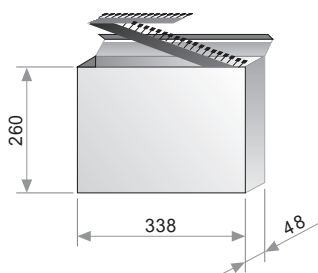




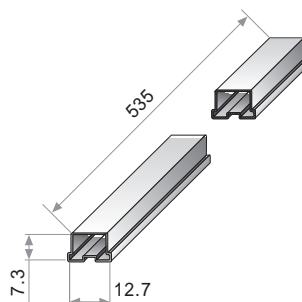
**T0 BULK**  
500 Units per box.



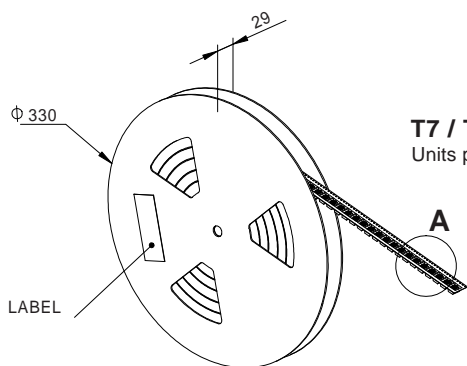
**T1 / T2 TAPE ON REEL**  
Units per Reel according to type:  
S: 1.000  
L: 750



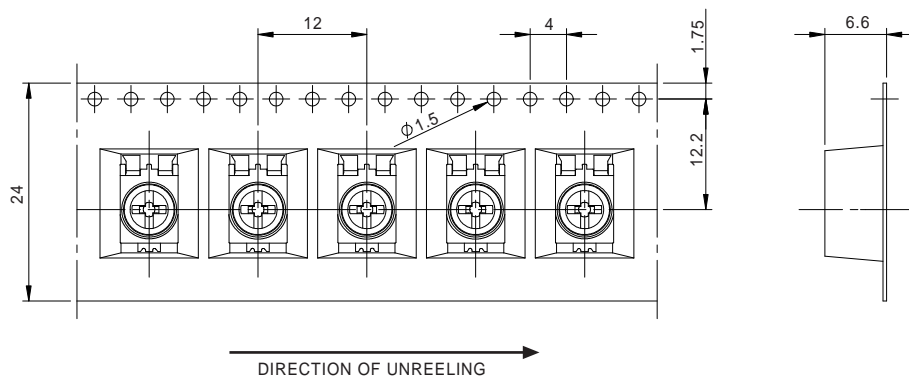
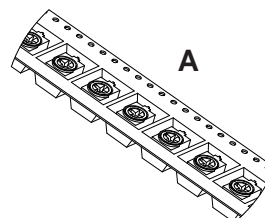
**T3 / T4 AMMOPACK**  
Units per Box according to type.  
S: 1.000  
L: 750



**T5 / T6 MAGAZINE**  
Units per magazine: 80



**T7 / T8 EMBOSSED TAPE**  
Units per reel: 750



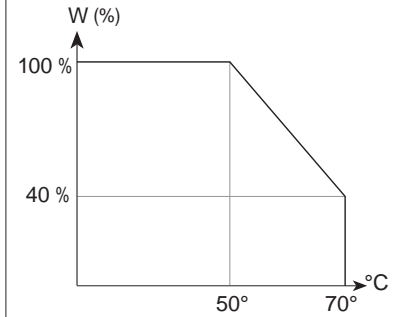
AVAILABLE COMBINATIONS	TAPE				MAGAZINE		EMB.	BULK	
	T1	T2	T3	T4	T5	T6	T7/T8	SMD	CRIMP
N-6 S 25	●	●	●	●					●
N-6 L 25	●		●						●
N-6 L 30	●	●	●	●					●
N-6 L 50	●		●		●	●	●	●	●

## TESTS

## TYPICAL VARIATIONS

## POWER RATING CURVE

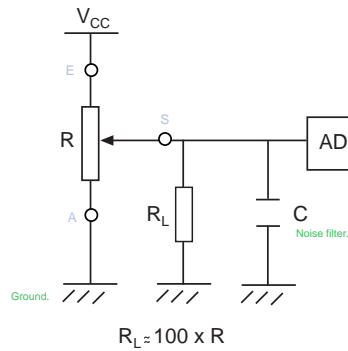
ELECTRICAL LIFE	1.000 h. @ 50°C: 0.1 W	±10 %
MECHANICAL LIFE (CYCLES)	100 @ 10 CPM ...15 CPM	±3 % (Rn < 1 M Ω)
TEMPERATURE COEFFICIENT	-25°C; +70°C	±300 ppm (1K ≤ Rn ≤ 100K)
THERMAL CYCLING	16 h. @ 85°C; 2h. @ -25°C	±5 %
DAMP HEAT	500 h. @ 40°C @ 95% HR	±5 %
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	±2 %



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

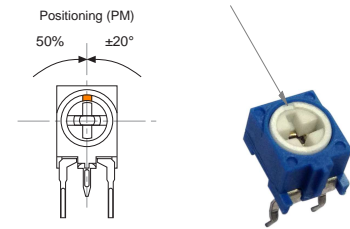
## RECOMMENDED CONNECTIONS

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



## POSITIONING

This mark in the rotor shows the wiper's position.



(example of 50% of the travel)

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