Enabling the Electronics Revolution

PIHER sensing an Amphenol[®] company

N-6

6 mm miniature carbon potentiometer

The N6 is a unique, fully RoHS & REACH ready Miniature Control Potentiometer with all the features of traditional full size potentiometers. The combination of wide electrical angle, reduced form factor, tape on reel packaging for automated high speed placement and overmoulding technology provides market leading performance in a compact & robust design. A ROHS reflow version (N6-R) with extra long mechanical life is also available.

The N6 has been conceived for the Industrial, Automotive and Appliance markets to provide a cost effective control solution. Further options include improved linearity and a selection of custom shafts and knobs.



KEY FEATURES

- RoHS compliant materials
- Carbon resistive element
- ▶ Plastic substrate
- ▶ Over-molding manufacturing technique
- ► SMD or through hole mounting
- Embossed Tape (for SMD), Tape on reel, Ammopack packaging for automatic insertion and bulk for manual assembly
- ▶ Wiper positioned at 50%
- ▶ Both sides cross slot easy adjustment
- Accidental rotor movement protected
- ► Traceability ensured by date code marking
- Assembly method: stand up and lay down
- ▶ IP54 protection according to IEC 60529

ELECTRICAL SPECIFICATIONS

Taper	Linear
Range of values*	(Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0) 100Ω ≤ Rn ≤ 1MΩ
Tolerance*	± 30%
Max. Voltage	100 VDC
Nominal power 50°C (122°F)	0.1 W
Residual resistance	≤ 2% Rn (10Ω min.)
Equivalent noise resistance	≤ 5% Rn
Operating temperature **	-25°C to +70°C (-13°F to + 158°F)

APPLICATIONS

- ► Home and building automation
- ▶ Appliances
- ► Timer and control relays
- ▶ Power Supplies
- ► Alarms and Detectors
- ▶ Light dimmers

* Others available on request ** Up to 85°C depending on application.

MECHANICAL SPECIFICATIONS Mechanical rotation angle 280° ± 10° Electrical rotation angle 245° ± 25° Torque 0.2 to 3 Ncm (0.28 to 4.2 in-oz) Stop > 7.5 Ncm (>10.5 in-oz) Life 100 cycles

ENVIRONMENTAL TESTING

	Test conditions (CEI 393-1)	ΔR - Typical test results	
Electrical life	1.000h at 50°C; 0.1 W	±5%	
Mechanical life	100 cycles at 10 to15 cpm	±3 % (Rn < 1M)	
Temperature coefficient	-25° C; +70° C	±300 ppm/°C (Rn ≤ 100K)	
Thermal cycling	16h at 85°C and 2h at -25°C	±2.5%	
Damp heat	500h at 40°C and 95% relative humidity (RH)	±5%	
Vibration	2h each plane at 10Hz - 55Hz	±2%	
Storage	6 month 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

POWER RATING CURVE



POSITIONING

Marking in the rotor indicates the wiper's position.



(shown at 50% of travel)

RECOMMENDED CONNECTIONS

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





Crimped

SMD

N-6 L 50

N-6 S 25

N-6 L 25

N-6 L 30

N-6 L 50

N-6 L 50

Ν

C x

CX

C x

C x

S x

х

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х

х





DIMENSIONS IN MM

Tape

N6S25



PCB Hole Layout Ø 1.3 +0.1 Ø 1 -0

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PACKAGING	А	В	С
T1 / T3	20	28.7	17
T2 / T4	21.5	30.2	18.5

N6L25 T1 / T3



PCB Hole Layout







PCB Hole Layout



PACKAGING	А	В	С
T1 / T3	20	27.6	17
T2 / T4	21.5	29.1	18.5

DIMENSIONS IN MM



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.