Enabling the Electronics Revolution

#### **PIHER** sensing systems an Amphenol<sup>®</sup> company

## PC-16 16-mm carbon panel mount potentiometer

The PC-16 is a single-turn panel control potentiometer using a carbon resistive element with plastic housing and incorporated shaft. A wide variety of configurable options, such as single or tandem models, different shaft types and tapers, make the PC-16 suitable for numerous applications in the home appliance and industrial markets.



- ▶ IP54 protection according to IEC 60529
- Single and tandem models
- Housing and bushing made of self extinguishable material UL 94-V0
- Selection of plastic and metal shafts
- ▶ Linear, log (audio) and antilog (reverse) tapers
- ► Solder lugs or PC pins

#### On request

- Stereo matching
- Rotary switch
- Nut & washer
- Bushless & shaftless models
- Assemblies with wires and connectors
- Metallic support (mounting brackets)

	<b>~~</b>	IP54	
Flame	Switch	$\bigcirc$	Single &
retardant	version		Tandem

ELECT	DICVI	SDECI	FICATI	NNC
LLLUI	NICAL		IUAII	0115

Taper	Lin, Log, Alog
Range of values*	
(Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)	
Lin	100Ω ≤ Rn ≤ 5MΩ
Log, Alog	$1K\Omega \le Rn \le 5M\Omega$
Tolerance*	
$100\Omega \le Rn \le 1M\Omega$	±20%
$1M\Omega < Rn \le 5M\Omega$	±30%
Max. Voltage Lin Log, Alog	250 VDC 125 VDC
Nominal power 50°C (122°F) Lin Log, Alog	0.2 W 0.1 W
Residual resistance	≤ 5% Rn (5Ω min.)
Equivalent noise resistance	≤ 3% Rn (3Ω min.)
Operating temperature**	-25°C to +70°C (-13°F to + 158°F)

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

#### **APPLICATIONS**

- Appliance program selection
- Thermostat adjustment
- HVACR control
- Consumer electronics
- Industrial controls
- ▶ Healthcare / laboratory devices
- ▶ Home and building automation

### 16-mm carbon panel mount potentiometer

#### MECHANICAL SPECIFICATIONS

Mechanical rotation angle	300° ±5°
Electrical rotation angle Only Potentiometer Potentiometer with rotary switch	280° ±20° 240° ±20°
Rotational torque <sup>1</sup>	0.5 to 1.5 Ncm (0.7 to 2.1 in-oz)
Stop torque	> 40 Ncm (>56 in-oz)
Max. torque nut (binding out)	< 80 Ncm (<112 in-oz)
Push and pull in the shaft	> 25 N
Life	
Potentiometer	25.000 cycles <sup>2</sup>
Switch	10.000 cycles

For single models. Tandem versions have a higher torque.
 One cycle covers forth and back the mechanical angle travel.

#### **ENVIRONMENTAL TESTING**

	Test method (CEI 393-1)	ΔR(%)- Piher typical test results
Electrical life	1.000h at 50°C; 0.15W	±5%
Mechanical life Potentiometer* Switch	25.000 cycles at 10 to 15 cpm 10.000 cycles at 1A and 50 VAC	±3% (Rn < 1MΩ)
Temperature coefficient	-25°C; +70°C	±300 ppm/°C (Rn < 100KΩ)
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 $\pm 2^{\circ}\text{C}$ and 50% RH	±2.5%

\* Only applicable to values 1KΩ. For lower values please contact us. Out of range values may not comply with these results. Standard test conditions: temperature:23°C ±2°C and 45% to 70% RH

#### **RECOMMENDED CONNECTIONS**

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



#### **POWER RATING CURVE**



## Amphenol Sensors

#### PIHER sensing systems

### 16-mm carbon panel mount potentiometer

#### **HOW TO ORDER**



- 1. Mounting style: Type "V" is only available in model "S" potentiometer and with printed circuit terminals.
- 2. Bushings: Type "10" has two parallel flat surfaces to avoid rotation. Bushless option only available for single model
- 3. --- = no shaft. The material for plastic shafts has "HB" rating UL94 classification.
- 4.  $\Omega$  Value: <u>XX</u>X First two digits of  $\Omega$ -value
  - XX<u>X</u> Number of zeros
  - If you need tandem "D" models with several resistive values in each module, please contact Piher before ordering
- 5. Taper: switch option not available with Alog (reverse) taper. Log and Alog tapers available for Rn  $-1K\Omega$
- 6. Tolerance: ±5% tolerance available for values 1KΩ Rn 1MΩ. Custom tolerances available. Please contact Piher for more information
- 7. Custom shaft length (in mm): maximum recommended: 45mm.
- 8. Mounting brackets: only applicable for horizontal single models without switch
- 9. Stereo matching: not applicable to single models. Maximum spec.: 3dB

10. Not available for bushless type

#### check inventory

#### **ORDER CODE EXAMPLES**

#### PC16SV-10IP16-105A2020-I-TA

Single body vertical adjust potentiometer with M10 bushing, PCB pin leads, "P16" shaft, 1MΩ resistive value, 20% resistive tolerance, switch with PCB pin leads and loose nut and washer.

#### PC16DH-07CP06-103A1010-15,0-MTA

Double body horizontal adjust potentiometer with M07 bushing, solder lug leads, "P06" shaft type, 10KΩ resistive value, 10% resistive tolerance, shaft cut to L=15mm and factory-assembled nut and washer.

#### **CUSTOMIZATION POSSIBILITIES**

#### Potentiometer + wires + connector

Piher can deliver bespoke product design and adaptations to meet any form, fit and function, including leads, wire harness and interface connector.



### 16-mm carbon panel mount potentiometer

STANDARD CONFIGURATION		
Shaft length	Standard length according to shaft's drawing	
Mounting brackets	None	
Stereo matching	Only on request	
Switch	None	
Nut and washer	None	

#### MODELS



3 D Download STEP files here: www.piher.net

#### **METALLIC SUPPORT (MOUNTING BRACKETS)**



## Amphenol Sensors

### 16-mm carbon panel mount potentiometer



#### TERMINALS



#### **NUTS & WASHERS**



#### TAPERS



For more information on custom tapers contact Piher Sensing Systems.

### 16-mm carbon panel mount potentiometerr



A = Initial S = Wiper E = Final. PCI, PCF and other configurations available upon request. Check the ordering code with Piher.

#### PACKAGING

Bulk



Box dimensions (mm): 250x160x95

Units per box: 100 pcs

#### SWITCH



#### SWITCH SPECIFICATIONS

Nominal current	1A, 250 VAC
Contact resistance (initial)	10 mΩ
Operating torque	1 to 3 Ncm (1.4 to 4.2 in-oz)
Operating angle	30°±5°
Test voltage	500 V

#### 360° CONTINUOUS ROTATION

**STM-15** 



Check available models at www.piher.net

#### . 490 0 01 / **Amphenol Sensors**

### 16-mm carbon panel mount potentiometer

#### METALIC SHAFTS





Code	А	L
M04	4	45
M06	6	45

Code	А	В	С	L
M11	2	5	7	15
M12	2	10	11	20



#### PLASTIC SHAFTS Ø3.1

P09





## Amphenol Sensors

#### PIHER sensing systems

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#### PLASTIC SHAFTS Ø4

#### P21



#### PLASTIC SHAFTS Ø6



Shaft position shown full CCW. Any other position for plastic shafts has to be shiftted n times 24°. Other positions upon request.

Ø6

### PIHER sensing systems

25<sup>±0.5</sup>

00

30°

19<sup>±0.5</sup>

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## **PC-16** 16-mm carbon panel mount potentiometer



#### **OUR ADVANTAGE**

- ▶ Leading-edge innovative position sensing solutions
  - ▷ Contactless (Hall-effect and Inductive Technology)
  - ▷ Contacting (Potentiometers, Printed Electronics)
- ▶ Engineering design-in support
- All our products can be customized to fit target application and customer requirement
- Capability to move seamlessly from development to true high-volume production
- A global footprint with global engineering and commercial support
- One-stop shop not limited to position sensors (temperature, pressure, gas,...) through group collaboration
- ▶ Flexibility and entrepreneurship of a medium-sized company with the backing of Amphenol Corporation



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

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#### CONTACT

Piher Sensing Systems Polígono Industrial Municipal Vial T2, Nº22

31500 Tudela, Spain

sales@piher.net



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### **Mouser Electronics**

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

#### Amphenol:

PC16SV-10IP18-104A2020-I-TA PC16SH-10IP06-104A2020-TA PC16SH07IP21104A1010-TA PC16SH10I-02504 PC16SH07C-12788 PC16SH10C-19541 PC16SH07C-02675 PC16SV10I-13417 PC16SH10I-02509 PC16SH10I-02497 PC16SV10I-13424 PC16SH-10IP06-105A2020-I-TA PC16DH-07CP04-103A2020-TA PC16DH-07CP04-103B2020-TA PC16DH-07CP04-104A2020-TA PC16DH-10IP06-103A2020-TA PC16DH-10IP06-103B2020-TA PC16DH-10IP06-104A2020-TA PC16DH-10IP06-104B2020-TA PC16DH-10IP06-105A2020-TA PC16DH-10IP06-472A2020-TA PC16DH-10IP06-472B2020-TA PC16DH-10IP06-473A2020-TA PC16DH-10IP06-503A2020-TA PC16DH-10IP06-503B2020-TA PC16SH-07CM04-222A2020-15,0-TA PC16SH-07CM04-471A2020-15,0-TA PC16SH-07CP04-103A2020-TA PC16SH-07CP04-103B2020-TA PC16SH-07CP04-222A2020-TA PC16SH-07CP04-224A2020-TA PC16SH-07CP04-471A2020-TA PC16SH-07CP04-473B2020-TA PC16SH-07IP04-103A2020-TA PC16SH-07IP04-104A2020-TA PC16SH-07IP04-223A2020-TA PC16SH-07IP04-472A2020-TA PC16SH-07IP10-222A2020-I-TA PC16SH-10CP06-102A2020-C-TA PC16SH-10CP06-102A2020-TA PC16SH-10CP06-103A2020-C-TA PC16SH-10CP06-103B2020-C-TA PC16SH-10CP06-103B2020-TA PC16SH-10CP06-104A2020-C-TA PC16SH-10CP06-104A2020-TA PC16SH-10CP06-104B2020-TA PC16SH-10CP06-105A2020-TA PC16SH-10CP06-105B2020-TA PC16SH-10CP06-222A2020-C-TA PC16SH-10CP06-222A2020-TA PC16SH-10CP06-223A2020-C-TA PC16SH-10CP06-223A2020-TA PC16SH-10CP06-223B2020-TA PC16SH-10CP06-224A2020-C-TA PC16SH-10CP06-224A2020-TA PC16SH-10CP06-224B2020-TA PC16SH-10CP06-472A2020-C-TA PC16SH-10CP06-472A2020-TA PC16SH-10CP06-472B2020-TA PC16SH-10CP06-473A2020-C-TA PC16SH-10CP06-473A2020-TA PC16SH-10CP06-473B2020-TA PC16SH-10CP06-474A2020-TA PC16SH-10CP06-474B2020-TA PC16SH-10CP22-503A2020-MTA PC16SH-10IM06-103A2020-14,0-TA PC16SH-10IM06-103A2020-22,0-TA PC16SH-10IP06-101A2020-TA PC16SH-10IP06-102A2020-I-TA PC16SH-10IP06-103A2020-I-TA PC16SH-10IP06-103B2020-TA PC16SH-10IP06-104A2020-I-TA PC16SH-10IP06-104B2020-TA PC16SH-10IP06-105A2020-TA PC16SH-10IP06-105B2020-TA PC16SH-10IP06-221A2020-TA PC16SH-10IP06-222A2020-MTA PC16SH-10IP06-222A2020-TA PC16SH-10IP06-223A2020-TA PC16SH-10IP06-223B2020-TA PC16SH-10IP06-224A2020-TA PC16SH-10IP06-251A2020-TA PC16SH-10IP06-252A2020-TA PC16SH-10IP06-253A2020-TA PC16SH-10IP06-254A2020-I-TA PC16SH-10IP06-254A2020-TA PC16SH-10IP06-255A2020-TA PC16SH-10IP06-471A2020-TA PC16SH-10IP06-472A2020-I-TA PC16SH-10IP06-472B2020-TA PC16SH-10IP06-473A2020-MTA PC16SH-10IP06-473B2020-TA PC16SH-10IP06
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