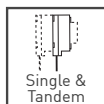
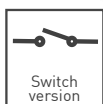


# PC-16

## 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.



### KEY FEATURES

- ▶ IP54 protection according to IEC 60529
- ▶ Single and tandem models
- ▶ Housing and bushing made of self-extinguishing 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)

### ELECTRICAL SPECIFICATIONS

| Taper                                                           | Linear, Logarithmic (Audio), Reverse Log. |
|-----------------------------------------------------------------|-------------------------------------------|
| Range of values*<br>(Decades 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0) |                                           |
| Lin                                                             | $100\Omega \leq R_n \leq 5M\Omega$        |
| Log, Alog                                                       | $1K\Omega \leq R_n \leq 5M\Omega$         |
| Tolerance*                                                      |                                           |
| $100\Omega \leq R_n \leq 1M\Omega$                              | $\pm 20\%$                                |
| $1M\Omega < R_n \leq 5M\Omega$                                  | $\pm 30\%$                                |
| Max. Voltage                                                    |                                           |
| Lin                                                             | 250 VDC                                   |
| Log, Alog                                                       | 125 VDC                                   |
| Nominal power 50°C (122°F)                                      |                                           |
| Lin                                                             | 0.2 W                                     |
| Log, Alog                                                       | 0.1 W                                     |
| Residual resistance                                             | $\leq 5\% R_n$ (5Ω min.)                  |
| Equivalent noise resistance                                     | $\leq 3\% R_n$ (3Ω min.)                  |
| Operating temperature**                                         | -25°C to +70°C (-13°F to +158°F)          |

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

### POTENTIAL APPLICATIONS

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

# PC-16

## 16-mm carbon panel mount potentiometer

### MECHANICAL SPECIFICATIONS

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Mechanical rotation angle        | 300° ±5°                          |
| Electrical rotation angle        |                                   |
| Only Potentiometer               | 280° ±20°                         |
| Potentiometer with rotary switch | 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                     |

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

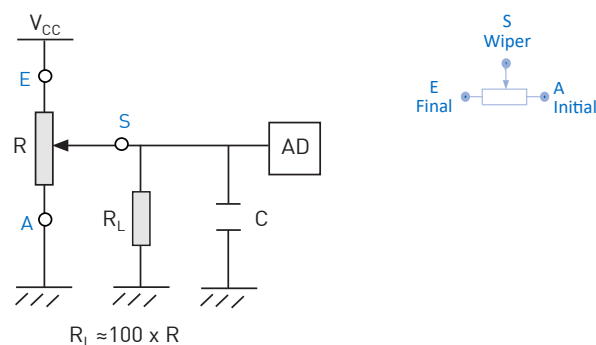
### ENVIRONMENTAL TESTING

|                         | Test method (CEI 393-1)                     | ΔR(%)- Piher typical test results    |
|-------------------------|---------------------------------------------|--------------------------------------|
| Electrical life         | 1,000h at 50°C; 0.15W                       | ±5%                                  |
| Mechanical life         |                                             |                                      |
| Potentiometer*          | 25,000 cycles at 10 to 15 cpm               | ±3% (R <sub>n</sub> < 1MΩ)           |
| Switch                  | 10,000 cycles at 1A and 50 VAC              |                                      |
| Temperature coefficient | -25°C; +70°C                                | ±300 ppm/°C (R <sub>n</sub> < 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 months at 23°C ±2°C and 50% RH            | ±2.5%                                |

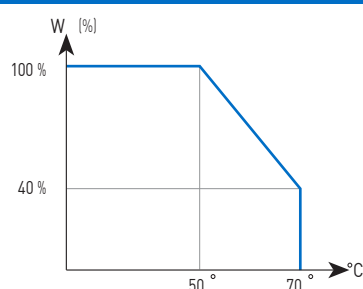
\* Only applicable to values ≥ 1KΩ. For lower values please contact us.  
Out of range values may not comply with these results. Standard test conditions: temperature:23°C ±2°C and 45% to 70% RH

### RECOMMENDED CONNECTIONS

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



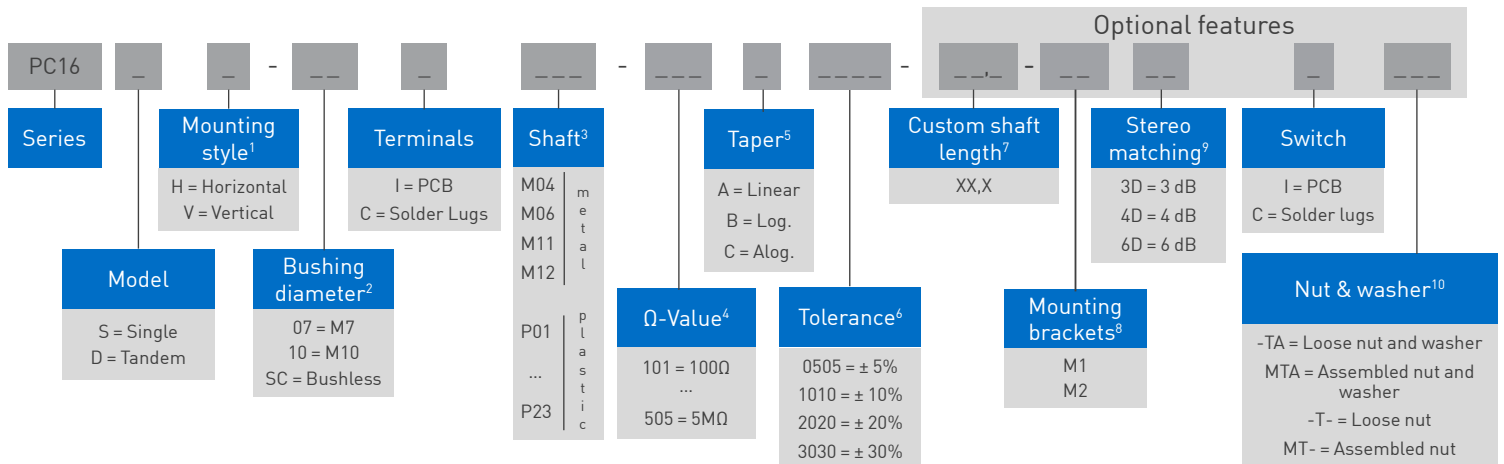
### POWER RATING CURVE



# PC-16

## 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. Ω- Value: XXX - First two digits of Ω-value  
XXX - 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  $R_n \geq 1k\Omega$
6. Tolerance: ±5% tolerance available for values  $1k\Omega \leq R_n \leq 1M\Omega$ . Custom tolerances available. Please contact Piher for more information
7. Custom shaft length (in mm): maximum recommended: 45 mm.
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, linear taper, 20% resistive tolerance, switch with PCB pin leads and loose nut and washer.

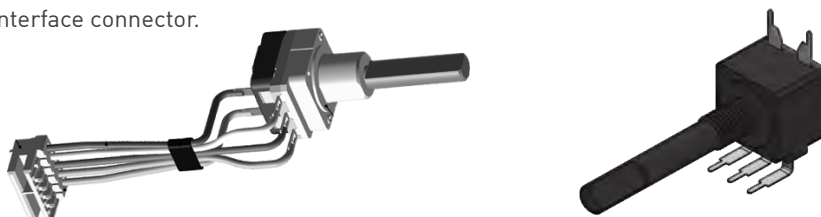
PC16DH-07CP06-103A1010-15,0-MTA

Double body horizontal adjust potentiometer with M07 bushing, solder lug leads, "P06" shaft type, 10KΩ resistive value, linear taper, 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

PC-16 S/D ...H...

PC-16 SV ....

Technical drawings showing dimensions and mounting details for the PC-16 S/D and PC-16 SV components.

Dimensions for PC-16 S/D S/D and PC-16 S/D SV (Left Column):

- Side View Dimensions: 6.5, 7.5, 9, 8, 15.5, 1.1<sup>+0.1</sup>, 4, 12.5, 8, 8.8, 16.
- Front View Dimensions: 6.5, 7.5, 5, 5, 15.5, 1.1<sup>+0.1</sup>, 4, 12.5, 8, 8.8, 16.

Dimensions for PC-16 SV S/D and PC-16 SV SV (Right Column):

- Side View Dimensions: 18, 9, 8, 5, 15, 4.6, 16.
- Front View Dimensions: 18, 9, 8, 5, 15, 4.6, 16.

Common Detail View (Bottom):

- Mounting surface with a hole of diameter  $\varnothing 1.3^{+0.1}$ .
- Dimensions: 5, 5, 15, 10.
- Labels: S Wiper, E Final, A Initial.



Download the 3D model at [www.piher.net](http://www.piher.net)

## METALLIC SUPPORT (MOUNTING BRACKETS)

PC-16 SH.....M1

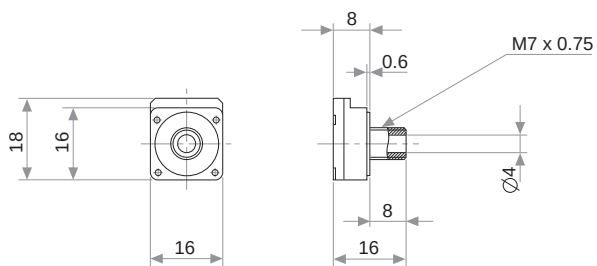
PC-16 SH.....M2

# PC-16

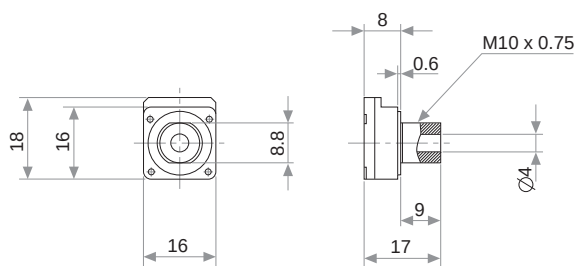
## 16-mm carbon panel mount potentiometer

### BUSHINGS

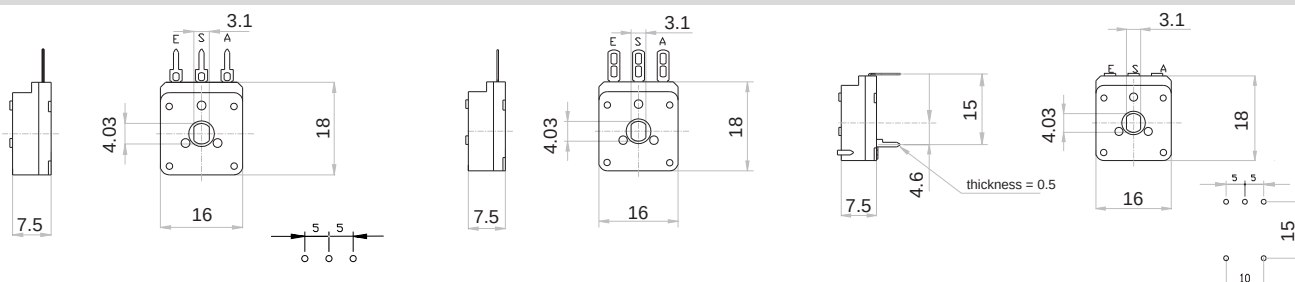
07



10

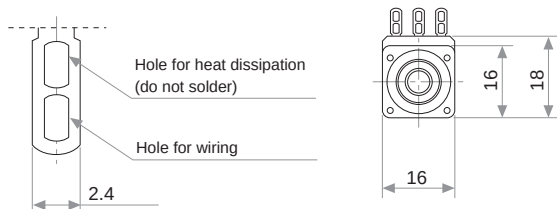


### SC (BUSHLESS)

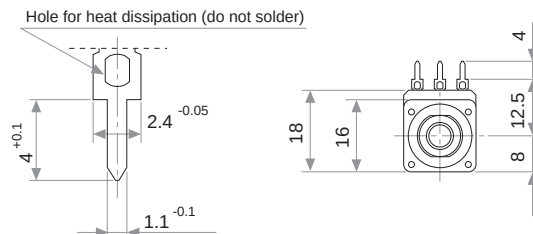


### TERMINALS

C = Solder Lugs

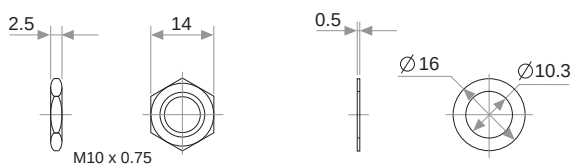


I = PCB

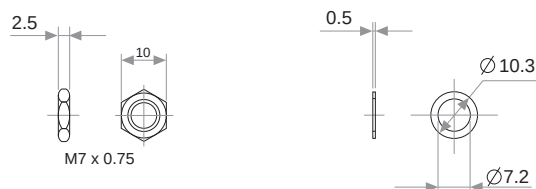


### NUTS & WASHERS

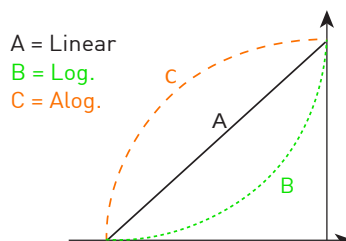
BUSHING 10



BUSHING 07



### TAPERS

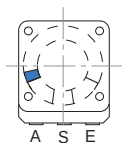


For more information on custom tapers contact Piher Sensing Systems.

# PC-16

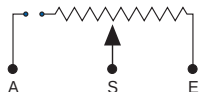
## 16-mm carbon panel mount potentiometer

### OPEN CIRCUIT FEATURE

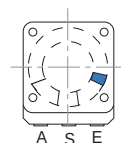
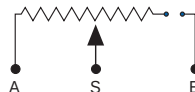


CCW on-off (A)

PCI  
Cut track at the beginning  
of the travel.



PCF  
Cut track at the end  
of the travel



CW on-off (E)

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

### PACKAGING

Bulk

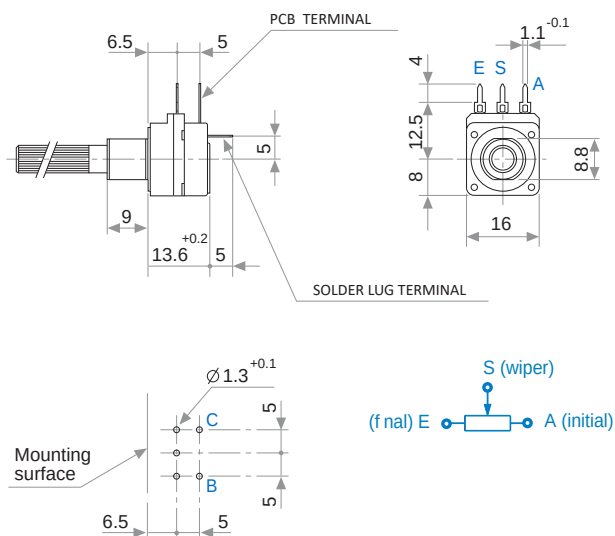


Box dimensions: 250 x 160 x 95 mm.

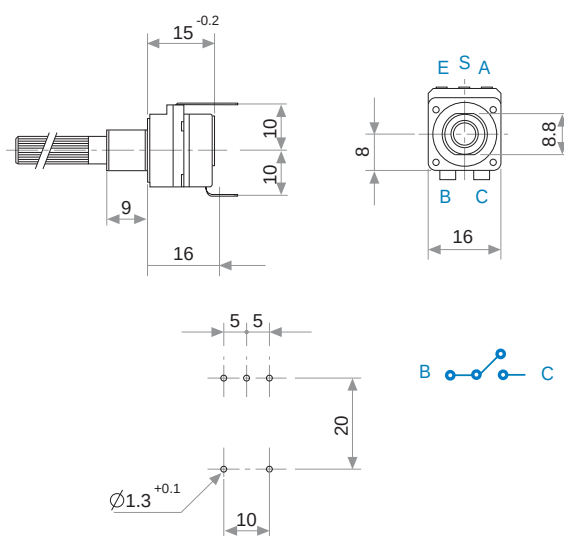
Units per box: 100 pcs

### SWITCH

PC-16S ... H I / C



PC-16SV ... I



### 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

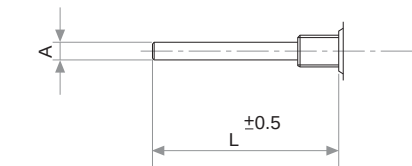


Check available models at [www.piher.net](http://www.piher.net)

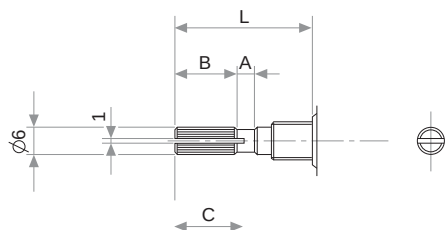
# PC-16

## 16-mm carbon panel mount potentiometer

### METALLIC SHAFTS

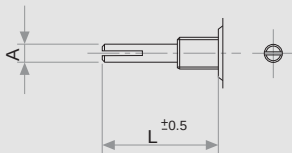
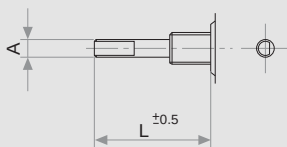


| Code | A | L  |
|------|---|----|
| M04  | 4 | 45 |
| M06  | 6 | 45 |



| Code | A | B  | C  | L  |
|------|---|----|----|----|
| M11  | 2 | 5  | 7  | 15 |
| M12  | 2 | 10 | 11 | 20 |

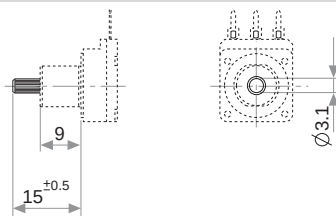
### Special models (Check availability)



| A   |
|-----|
| Ø 4 |
| Ø 6 |

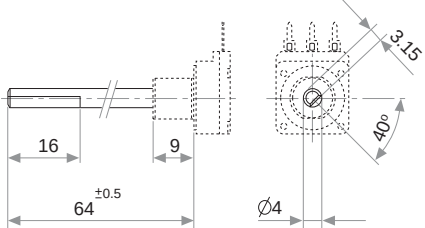
### PLASTIC SHAFTS Ø3.1

P09

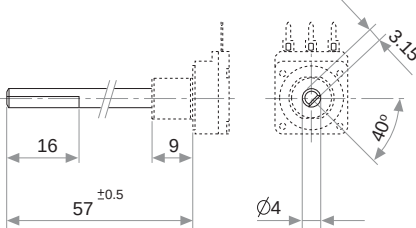


### PLASTIC SHAFTS Ø4

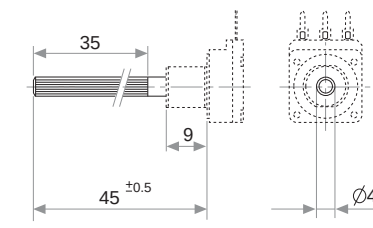
P01



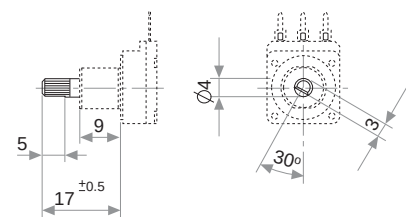
P02



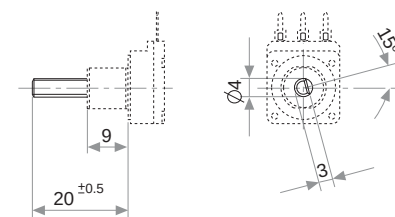
P04



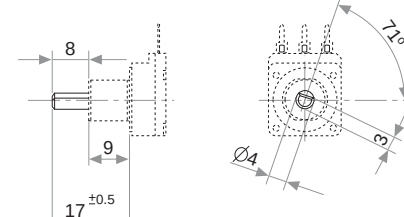
P07



P08



P10

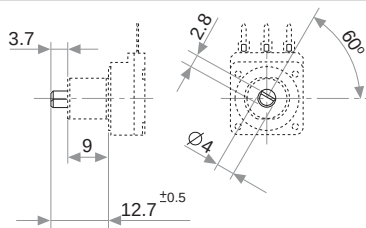


# PC-16

## 16-mm carbon panel mount potentiometer

### PLASTIC SHAFTS Ø4

P21



### PLASTIC SHAFTS Ø6

|            |            |                                              |
|------------|------------|----------------------------------------------|
| <p>P05</p> | <p>P06</p> | <p>P11</p>                                   |
| <p>P12</p> | <p>P13</p> | <p>P14</p>                                   |
| <p>P15</p> | <p>P16</p> | <p>P17</p>                                   |
| <p>P18</p> | <p>P19</p> | <p>P20</p>                                   |
| <p>P22</p> | <p>P23</p> | <p>18 teeth knurl with arrow shape shaft</p> |

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



# PC-16

## 16-mm carbon panel mount potentiometer

### One Stop Shop

#### Multiple Advantages



Engineering  
design-in  
support



Output  
customization



Cable harness and  
connector assembly



One-stop solution provider for  
different sensing  
technologies

Hall-effect

TMR

Resistive

Inductive

Printed electronics



Global  
footprint



Manufacturing  
capabilities for high  
and low volume  
programs



Diverse portfolio of standard and customized  
sensors: Tilt, Position, Speed and Current.

#### 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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+34 948 820 450



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