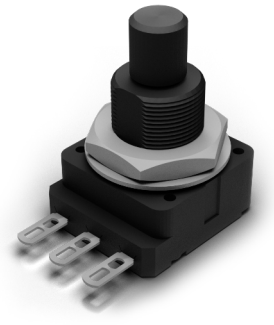
Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® 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 ganging up to four modules, different shaft types and tapers, make the PC-16 suitable for numerous applications in the home appliance, industrial and automotive markets.



KEY FEATURES

- IP54 protection according to IEC 60529
- Modular gang type (up to 4)
- 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)

ELECTRICAL SPECIFICATIONS

Taper	Lin, Log, Alog
Range of values* (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0) Lin Log, Alog	 100Ω ≤ Rn ≤ 5MΩ 1KΩ ≤ Rn ≤ 5MΩ
Tolerance* 100Ω ≤ Rn ≤ 1MΩ 1MΩ < Rn ≤ 5MΩ	 ±20% ±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
- HVAC control
- Consumer electronics
- Industrial controls
- Automotive control
- Home and building automation

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MECHANICAL SPECIFICATIONS

Mechanical rotation angle	300° ±5º
Electrical rotation angle	280° ±20º
Rotational torque[1]	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)
Thrust and pull in the shaft	› 25 N
Life Potentiometer Switch	 25.000 cycles[2] 10.000 cycles

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

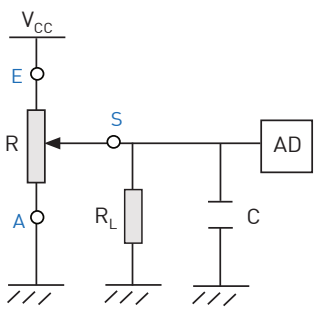
ENVIRONMENTAL TESTING

	Test method (CEI 393-1)	ΔR(%)- Piher typical test results
Electrical life	1.000h at 50°C; 0.15W	±5%
Mechanical life Potentiometer* 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 ±2°C and 50% RH	±2.5%

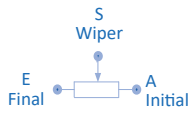
* Only applicable to values ≥ 1KΩ. For lower values please contact us.
Out of range values may not comply with these results. Standard test conditions: temperature:23°C ±2°C and 45% to 70% RH

RECOMMENDED CONNECTIONS

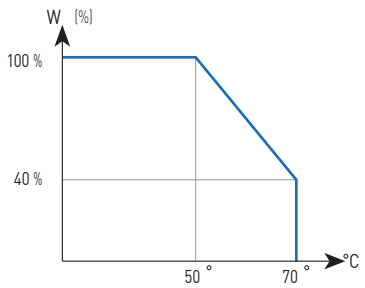
Recommended connection circuit for a position sensor or control application (voltage divider circuit electronic design).



$R_L \approx 100 \times R$



POWER RATING CURVE



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16-mm carbon panel mount potentiometer

HOW TO ORDER

Vertical adjust (Example: PC16SV-10IP12-472A2020-TA)

PC16 S V - __ I ___ - ___ _ ____ - __-_ - _ ___

Series

Model
S = Single

Mounting style
V = Vertical

Bushing diameter[1]
07 = M7
10 = M10
SC = Bushless

Terminals
I = PCB leads

Shaft[2]
M04 … M17 (metal)
P01 … P23 (plastic)

Ω-Value[3]
101 = 100Ω
…
505 = 5MΩ

Taper[4]
A = Linear
B = Log.
C = Alog.

Tolerance[5]
0505 = ± 5%
1010 = ± 10%
2020 = ± 20%
3030 = ± 30%

Optional features

Custom shaft length[6]
XX,X

Switch
I = PCB leads switch

Nut & washer[9]
-TA = Loose nut and washer
MTA = Assembled nut and washer
-T- = Loose nut
MT- = Assembled nut

Horizontal adjust (Example: PC16SH-10CP22-105A2020-C-TA)

PC16 _ H - __ _ ___ - ___ _ ____ - __-_ - __ __ _ ___

Series

Model
S = Single
D = Tandem
T = Triple
C = Quadruple

Mounting style
H = Horizontal

Bushing diameter[1]
07 = M7
10 = M10
SC = Bush-less

Terminals
I = PCB leads
C = Solder Lugs

Shaft[2]
M04 … M17 (metal)
P01 … P23 (plastic)

Ω-Value[3]
101 = 100Ω
…
505 = 5MΩ

Taper[4]
A = Linear
B = Log.
C = Alog.

Tolerance[5]
0505 = ± 5%
1010 = ± 10%
2020 = ± 20%
3030 = ± 30%

Optional features

Custom shaft length[6]
XX,X

Mounting brackets[7]
M1
M2

Stereo matching[8]
3D = 3dB
4D = 4dB
6D = 6dB

Switch
I = PCB leads
C = Solder lugs

Nut & washer[9]
-TA = Loose nut and washer
MTA = Assembled nut and washer
-T- = Loose nut
MT- = Assembled nut

1. Bushings: Type "10" has two parallel flat surfaces to avoid rotation. Bushless option only available for single model
2. Shafts: M07 shaft is only available with M10 bushing. --- = no shaft
3. Ω- Value: XXX - First two digits of Ω-value
   XXX - Number of zeros
   If you need "D", "T", "C" models with several resistive values in each module, please contact Piher before ordering
4. Taper: switch option not available with antilog (reverse) taper. Log and Alog tapers available for Rn ≥ 1KΩ
5. Tolerance: custom tolerances available. Please contact Piher for more information
6. Custom shaft length (in mm): recommended maximum: 45mm.
7. Mounting brackets: only applicable for single models "S" without switch
8. Stereo matching: not applicable to single models. Maximum spec.: 3dB for model "D", 4dB for model "T", 6dB for model "C".
9. Not available for bushless type

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.

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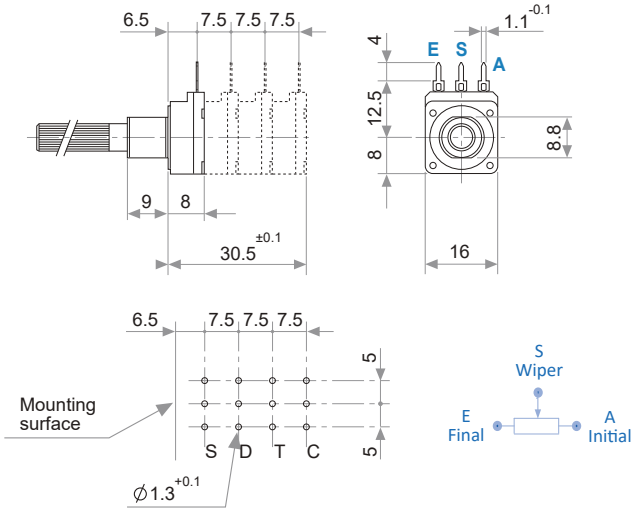
STANDARD CONFIGURATION

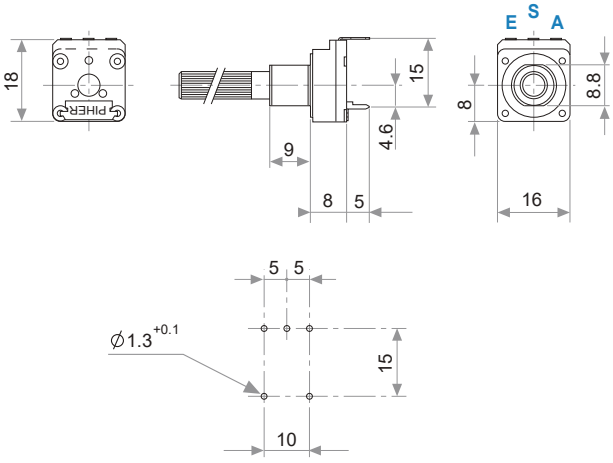
Shaft length	Standard length according to shaft's drawing
Mounting brackets	None
Stereo matching	Only on request
Switch	None
Nut and washer	None

MODELS

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



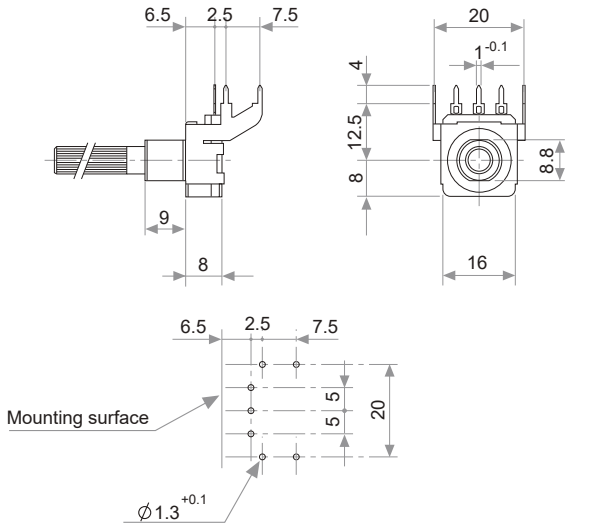
PC-16 SV .....



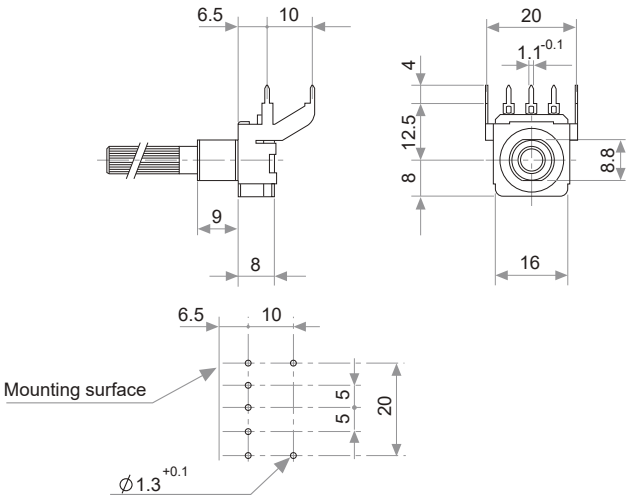
Download STEP files here: https://piher.net/piher/?p=938

METALLIC SUPPORT (MOUNTING BRACKETS)

PC-16 SH.....M1



PC-16 SH.....M2



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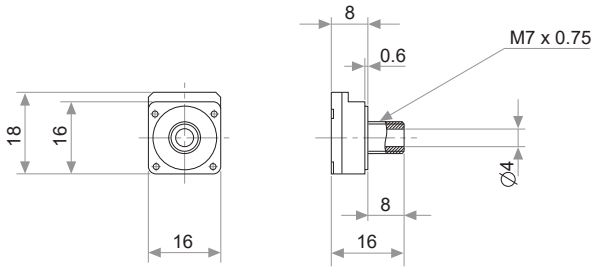
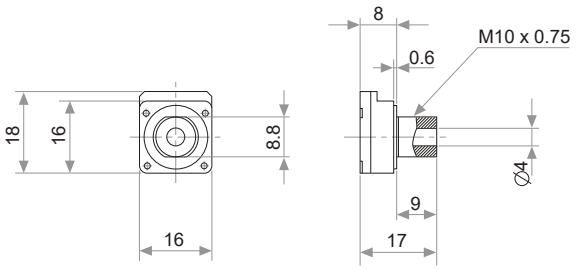
BUSHINGS

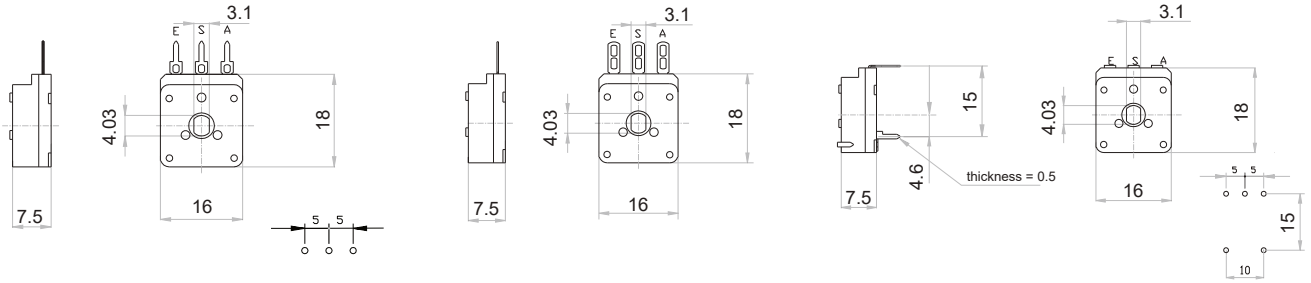
07



10

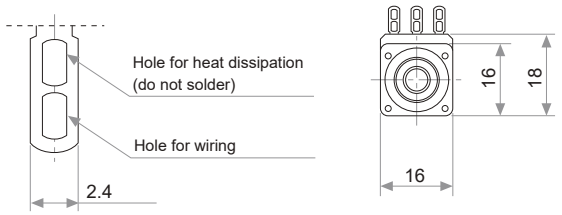


SC (BUSHLESS)

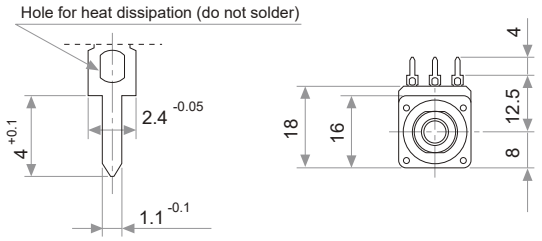


TERMINALS

C - Solder Lugs

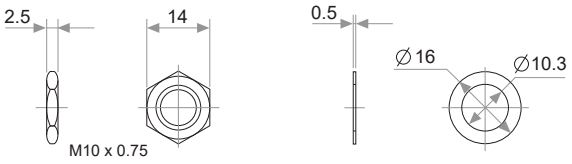


I = PCB

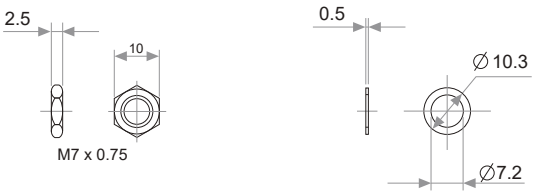


NUTS & WASHERS

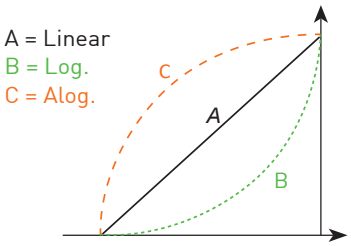
BUSHING 10



BUSHING 07



TAPERS

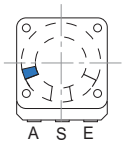


For more information on custom tapers contact Piher Sensing Systems.

PC-16

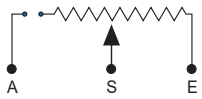
16-mm carbon panel mount potentiometerr

OPEN CIRCUIT FEATURE

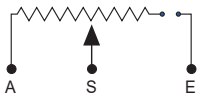


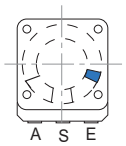
CCW on-off (A)

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

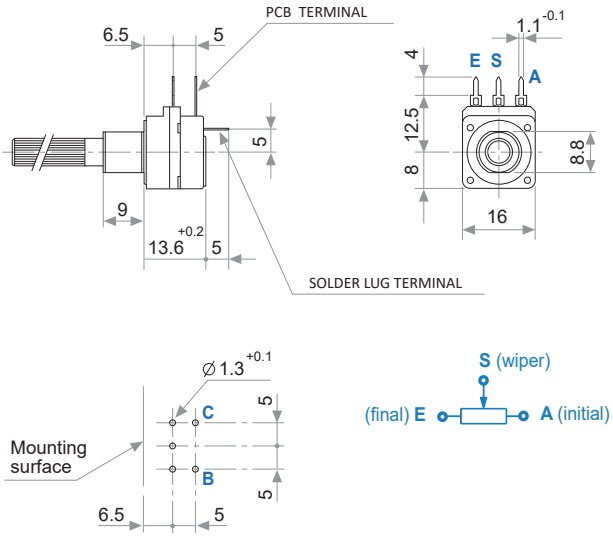
Box dimensions (mm): 250x160x95

Units per box: 100 pcs

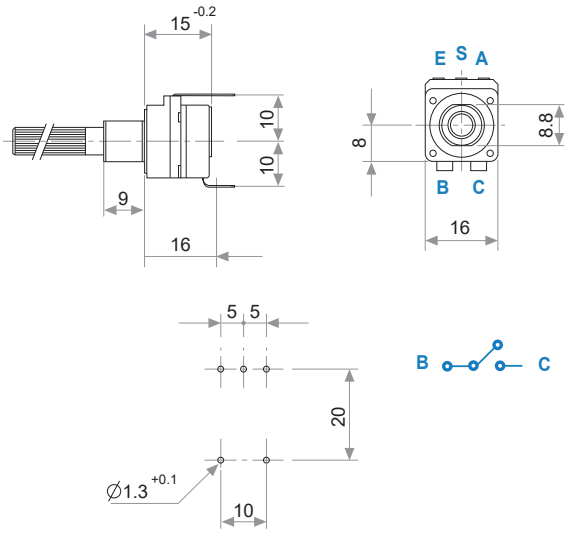
(Triple and cuadruple models with switch: 50pcs)

SWITCH

PC-16S ... H I / C



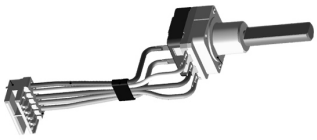
PC-16SV. . . I



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	30º±5º
Test voltage	500 V

360º CONTINUOUS ROTATION	METAL HOUSING + STOP POSITIONS	CUSTOMIZATION POSSIBILITIES
STM-15	T-16	Potentiometer + wires + connector

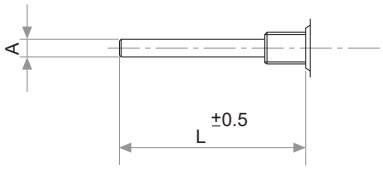


Check available models at www.piher.net

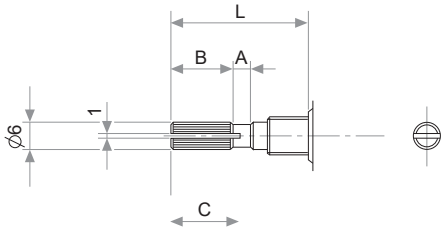
PC-16

16-mm carbon panel mount potentiometer

METALIC SHAFTS

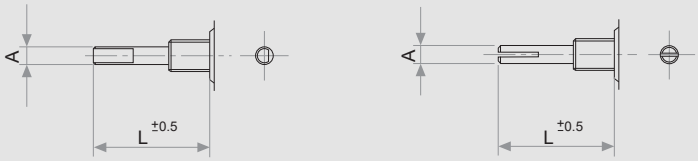


Code	A	L
M04	4	45
M06	6	45
M07	6.35	45



Code	A	B	C	L
M11	2	5	7	15
M12	2	10	11	20
M13	4	12	14	25
M14	4	12	14	30
M15	4	12	14	35
M16	4	12	14	40
M17	4	12	14	45

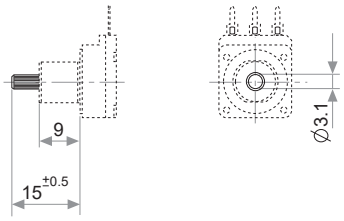
Models upon request



A
Ø 4
Ø 6
Ø 6.35

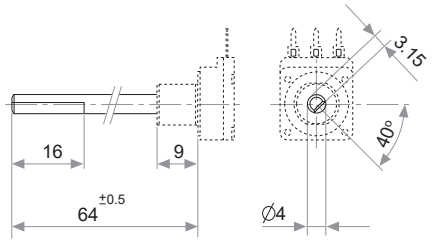
PLASTIC SHAFTS Ø3.1

P09

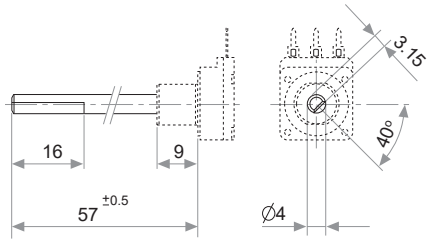


PLASTIC SHAFTS Ø4

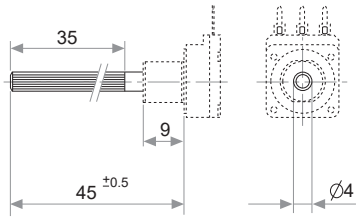
P01



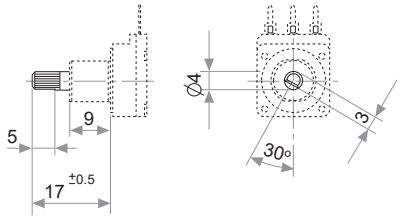
P02



P04



P07



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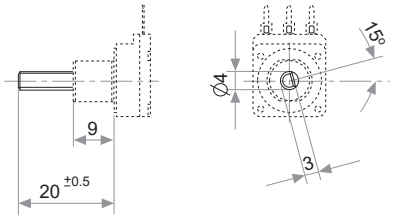

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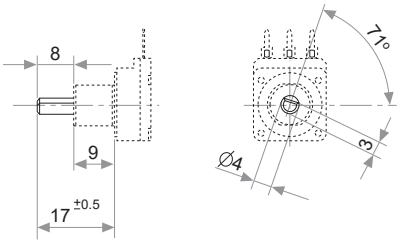

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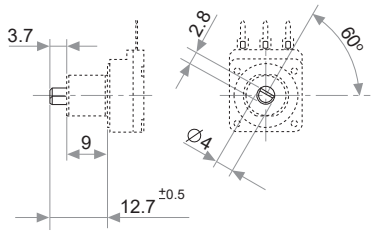
16-mm carbon panel mount potentiometer

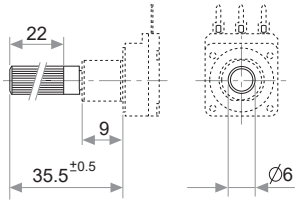
PLASTIC SHAFTS Ø4

P21



PLASTIC SHAFTS Ø6

P05



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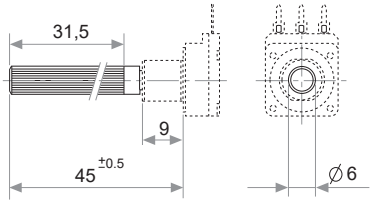
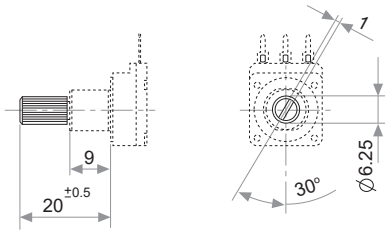


P11



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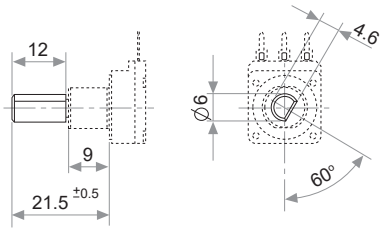

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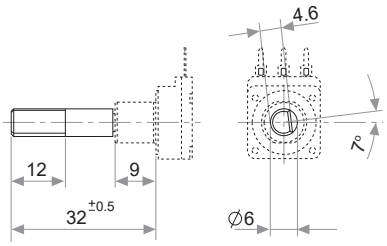

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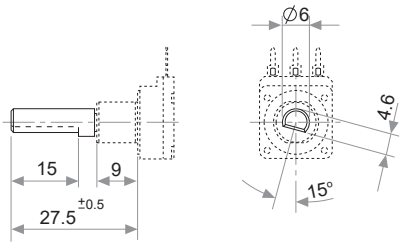

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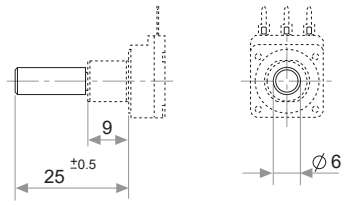

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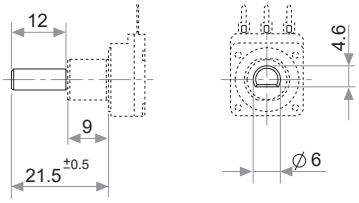

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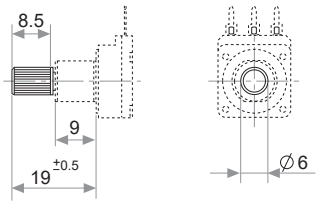

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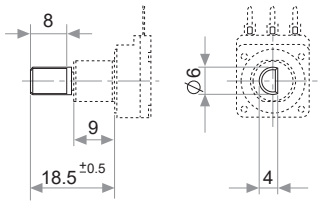

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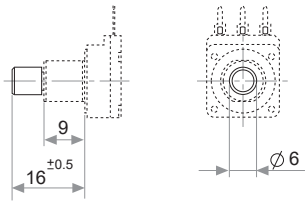

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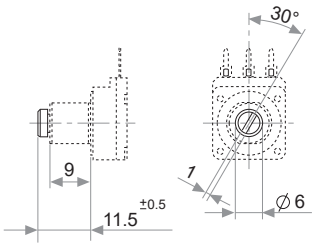

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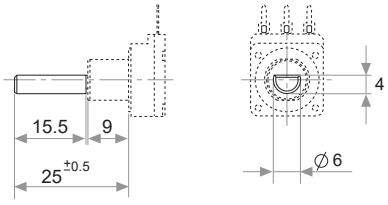

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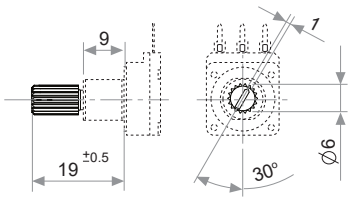
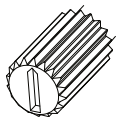


18 teeth knurl with arrow shape shaft



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

PC-16

16-mm carbon panel mount potentiometer

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- 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

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bsi ISO 9001 Quality Management Systems CERTIFIED

ISO 14001 BUREAU VERITAS Certification

RoHS REACH compliant

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