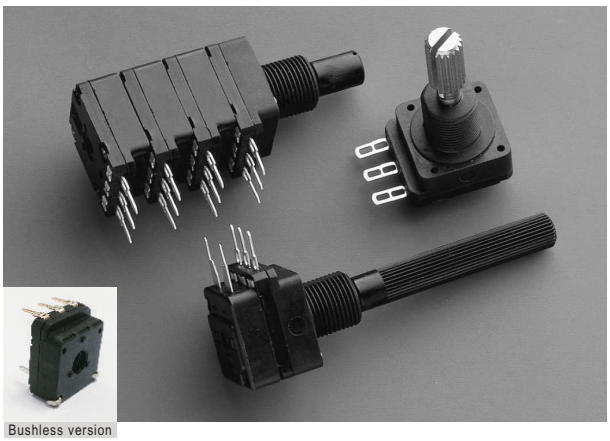
PIHER

# PC-16 16 mm Carbon Potentiometer


Bushless version

## FEATURES

- Carbon resistive element
- IP54 protection according to IEC 60529
- Polyester substrate
- Modular gang type (up to 4)
- Self extinguishable material UL 94-V0
- Upon request:
  - Metalic support
  - Stereo matching
  - Switch
  - Nut & washer
  - Bushless option available

## MECHANICAL SPECIFICATIONS

| | |
|---|---|
| – Mechanical rotation angle: | 300° ± 5° |
| – Electrical rotation angle: | 280° ± 20° |
| – Torque: | 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 |

## ELECTRICAL SPECIFICATIONS

– Range of values (*)
100Ω ≤ Rn ≤ 5 M (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)

– Tolerance (*): 100Ω ≤ Rn ≤ 1M Ω ------ ± 20%
1MΩ < Rn ≤ 5M Ω ------ ± 30%

– Max. Voltage: 250 VDC (lin) 125 VDC (no lin)

– Nominal Power 50°C (122°F) (see power rating curve)
0.2 W (lin) 0.1 W (no lin)

– Taper (*) (Log. & Alog. only Rn > 1K) Lin ; Log; Alog.

– Residual resistance(*): ≤ 0.5% Rn (5 Ω min.)

– Equivalent Noise Resistance: ≤ 3% Rn (3 Ω min.)

– Operating temperature**: –25°C + 70°C (–13°F + 158°F)

* Others upon request

** Up to 85°C depending on application

## HOW TO ORDER

STANDARD

| PC-16 | D | H | 10 | I | M06 | 203 | A | 2020 |
|---|---|---|---|---|---|---|---|---|

OPTIONAL EXTRAS

| 0 | | | | |
|---|---|---|---|---|

**Serie**
PC-16

**Model**
S =Single
D =Tandem
T =Triple
C =Quad.

**Mounting style**
H= Horizontal
V = Vertical
(See note 1)

**Bushing diameter**
07 = M7
10 = M10
SC = Bushless
(See note 2)

**Terminals**
I = PCB
C = Solder Lugs

**Shafts**
M04
M06
M07
M11
M17
P01
P22
---
(See note 3)

**Value**
101 = 100 Ω
203 = 20 K
504 = 500 K
505 = 5M
(See note 4)

**Taper**
A = Linear
B = Log.
C = Alog.
(See note 10)
Others tapers on request

**Tolerance**
2020 = +/- 20%
3030 = +/- 30%
(See note 5)

**Shafts spec. leng.**
XX.X
(See notes 6,9)

**Mounting brackets**
M1
M2
(See note 7)

**Stereo matching**
3D = 3dB
4D = 4dB
6D = 6dB
(See note 8)

**Switch**
I = PCB
C = Solder lugs
(See note 9)

**Nuts & Washers**
-TA = loose nut & washer
MTA=assembled nut & washer
-T- = loose nut
MT- = assembled nut
(See note 9)

NOTES:

(1) Mounting style: Type "V" is only available in model "S" potentiometer and with printed circuit terminals.
(2) Bushings: Type "10" has two paralell flat surfaces for avoiding rotation. Bushless option only available for single model.
(3) M07 shaft is only available with M10 bushing. --- = no shaft
(4) Value: • Code: 10 1 100 Ω
10 → 2 first digits of the value.
1 → Number of zeros
• In models "D", "T", "C", with different values, they will be asked by drawings.
(5) Tolerance (non standard), upon request. Example: +7% -5% Code: 07 05
07 → positive tolerance
05 → negative tolerance
(6) Shaft special length:
• Only for special length and plain shafts (not knurled). Example: Shaft Ø6.35 L= 24.5 M07 ..... 24.5
M07 → shafts
24.5 → special length
• NOTE: Maximun length recommended: L = 45
(7) Mounting brackets: Only applicable for model "S", mounting "H" and without switch.
(8) Stereo matching: not available for single models. Maximun will be: •3dB for model "D" •4dB for model "T" •6dB for model "C"
(9) Not available for Bushless version.
(10) Switch option not available with antilog taper.

NOTE: The information contained here should be used for reference purposes only.

## HOW TO ORDER CUSTOM DRAWING

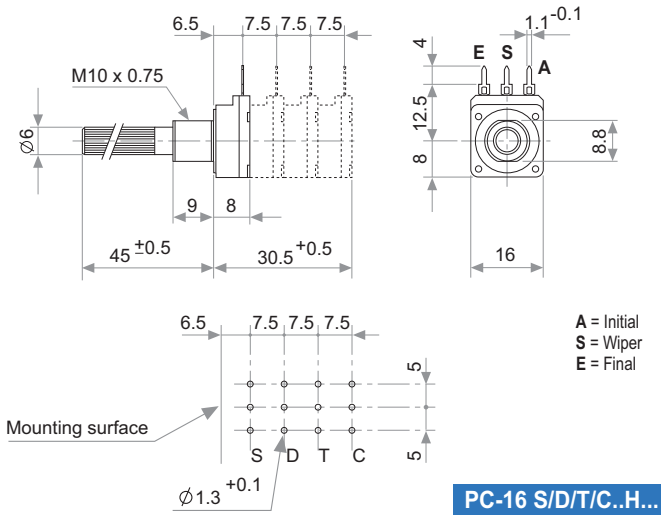
PC-16 S V + DRAWING NUMBER (Max. 16 digits)

This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

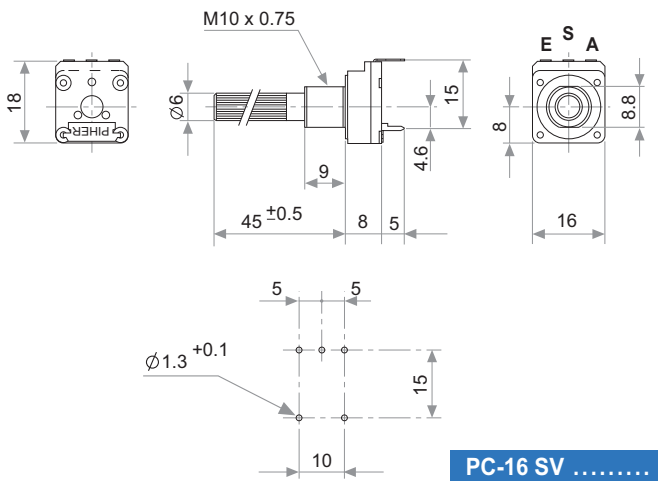
## STANDARD OPTIONS

Shaft length ..... 0 Standard Length
Mounting brackets ..... Without mounting brackets
Stereo matching ..... Only on request (see note 8)
Switch ..... No switch
Nut & washer ..... Without nut and washer

## MODELS

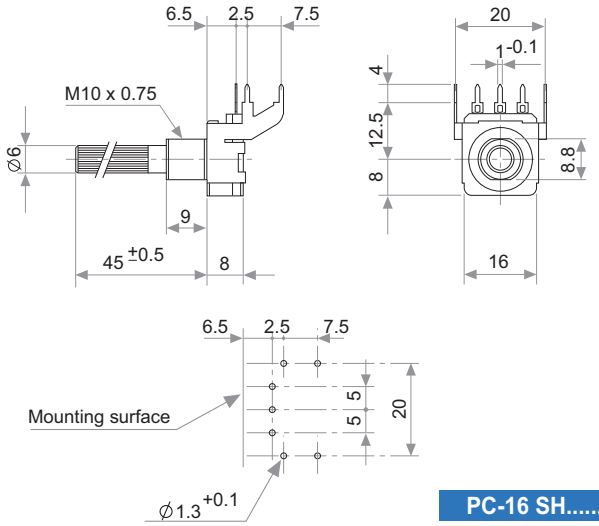



PC-16 S/D/T/C..H...

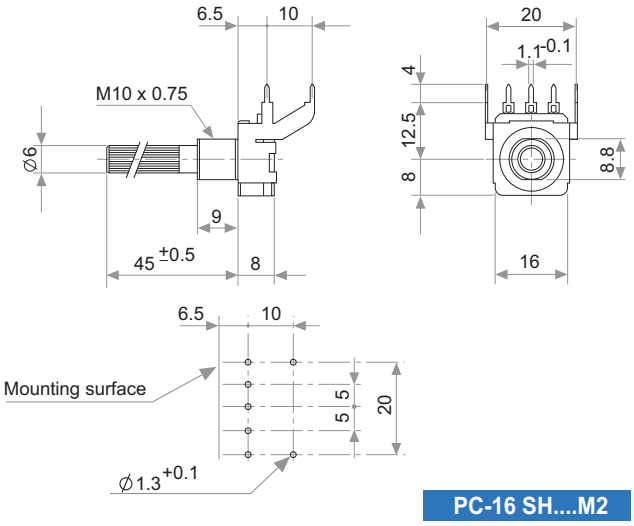



PC-16 SV .....

## METALLIC SUPPORT

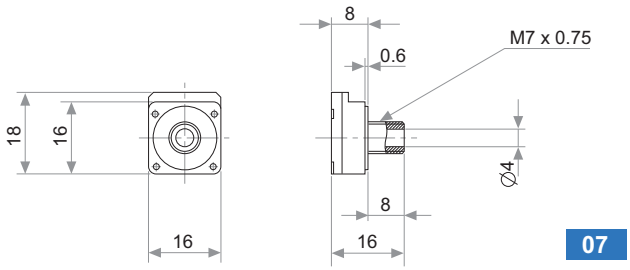



PC-16 SH.....M1

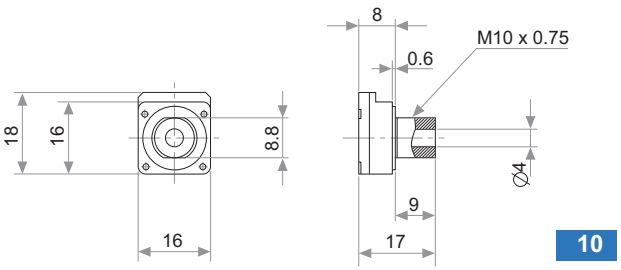



PC-16 SH....M2

## BUSHINGS




07

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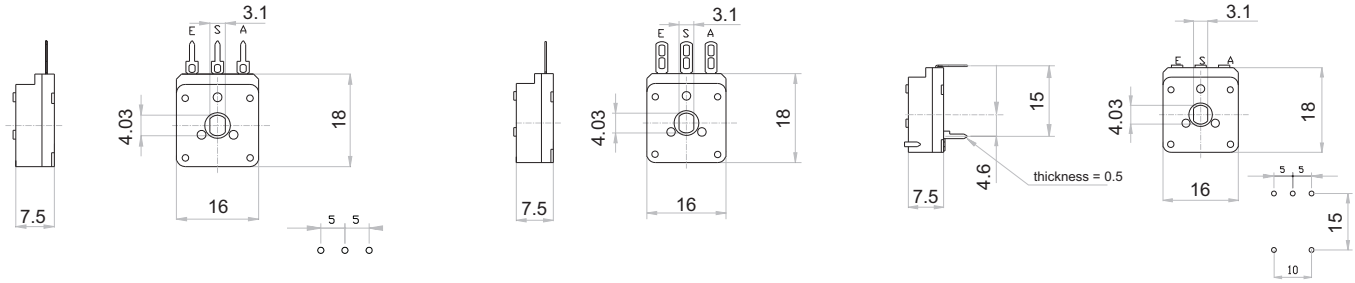
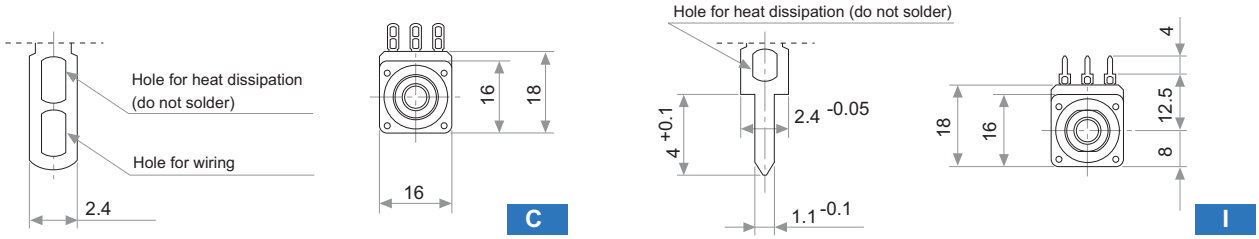
## EXAMPLES OF BUSHLESS VERSION



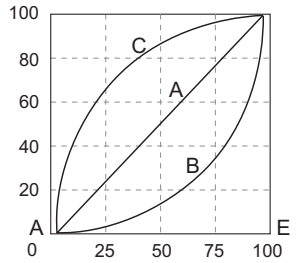
## TERMINALS



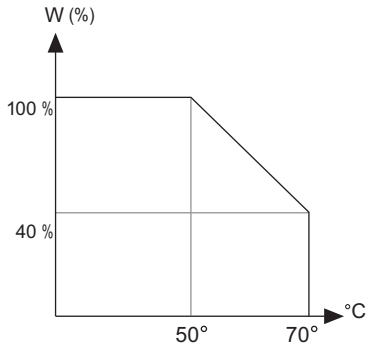

## TAPERS

Standard

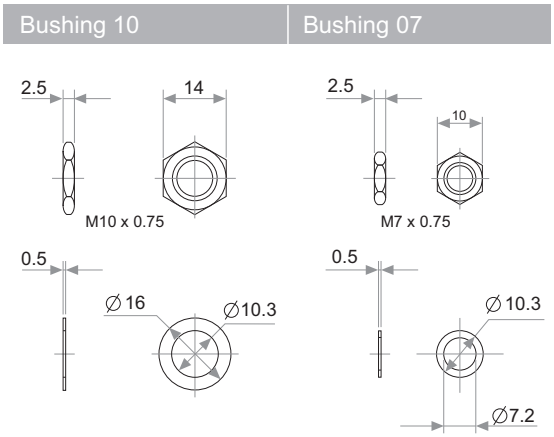
A = Linear
B = Log.
C = Alog.




## POWER RATING CURVE




## NUTS & WASHERS

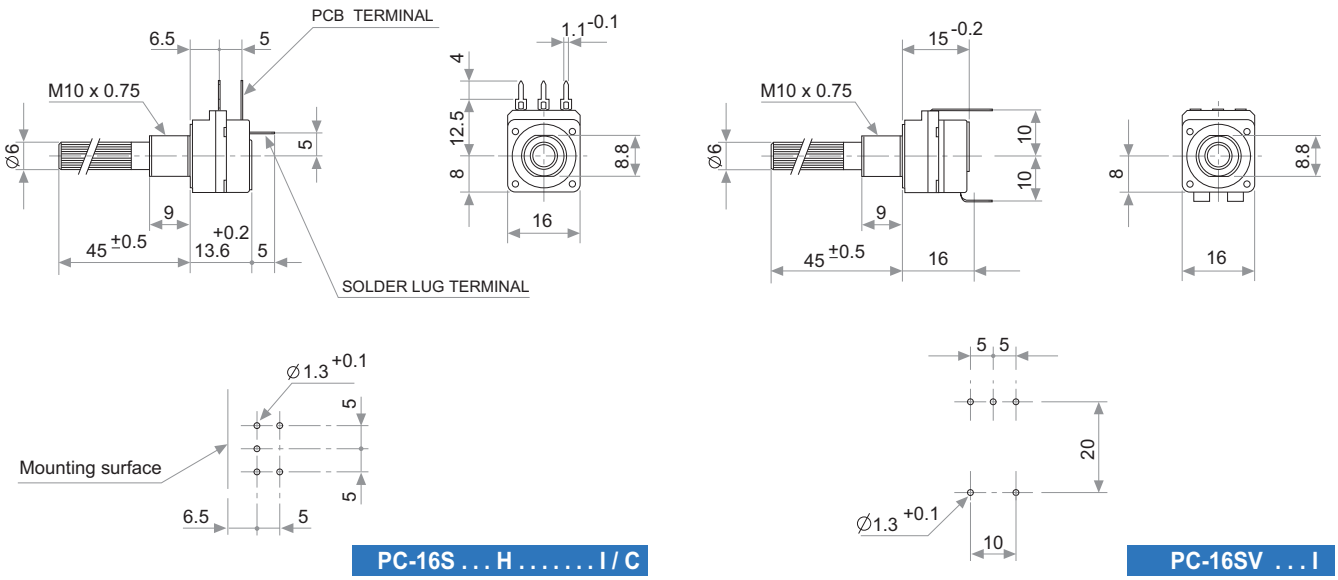



NOTE = Please note relative terminal positions when ordering non linear tapers.

| TESTS | | TYPICAL VARIATIONS |
|---|---|---|
| ELECTRICAL LIFE | 1.000 h. @ 50°C; 0.2 W | ±5 % |
| MECHANICAL LIFE : POT.*<br>SWITCH | 25.000 (10-15 CPM)<br>10.000 (1 A, 50 VAC) | ±3 % (Rn < 1 MΩ) |
| TEMPERATURE COEFFICIENT | –25°C; +70°C | ±300 ppm/°C (Rn < 100 KΩ) |
| THERMAL CYCLING | 16 h. @ 85°C; 2h. @ –25°C | ±2.5 % |
| DAMP HEAT | 500 h. @ 40°C @ 95% HR | ±5 % |
| VIBRATION (for each plane X,Y,Z) | 2 h. @ 10 Hz. ... 55 Hz. | ±2 % |

(*) only applicable to values ≥1K. For lower values please consult.

## SWITCH



## SWITCH SPECIFICATIONS

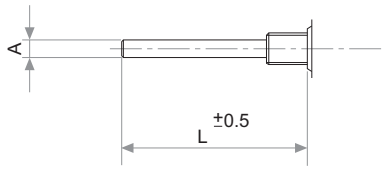
| | |
|---|---|
| NOMINAL CURRENT | 1A, 250 VAC |
| CONTACT RESISTANCE (initial) | 10 m Ω |
| OPERATING TORQUE | 1 to 3 Ncm (1.4 to 4.2 in oz) |
| OPERATING ANGLE | 30° ± 5° |
| TEST VOLTAGE | 500 V |

## PACKAGING

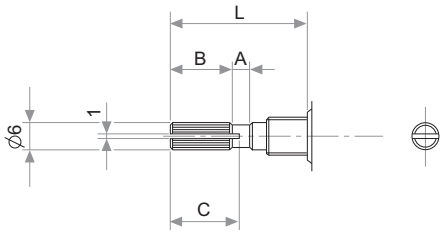
Boxes of 100 pieces (single body model): Inner dimensions 250 x 160 x 95 mm

## METALIC SHAFTS

STANDARD

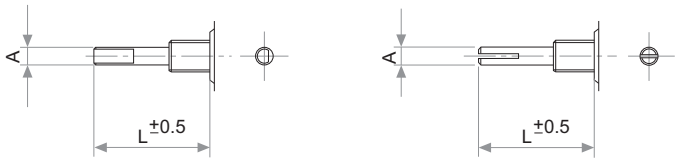



| A | L | CODE |
|---|---|---|
| 4 | 45 | M04 |
| 6 | 45 | M06 |
| 6.35 | 45 | M07 |



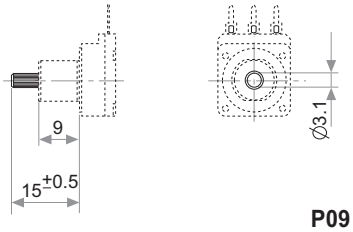

| A | B | C | L | CODE |
|---|---|---|---|---|
| 2 | 5 | 7 | 15 | M11 |
| 2 | 10 | 11 | 20 | M12 |
| 4 | 12 | 14 | 25 | M13 |
| 4 | 12 | 14 | 30 | M14 |
| 4 | 12 | 14 | 35 | M15 |
| 4 | 12 | 14 | 40 | M16 |
| 4 | 12 | 14 | 45 | M17 |

SPECIAL



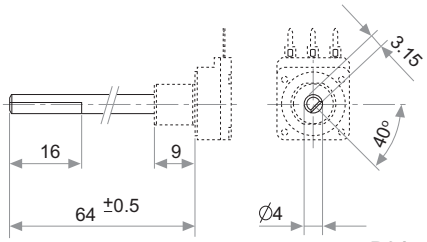

| A |
|---|
| Ø 4 |
| Ø 6 |
| Ø 6.35 |

## PLASTIC SHAFTS Ø 3.1




P09

## PLASTIC SHAFTS Ø 4

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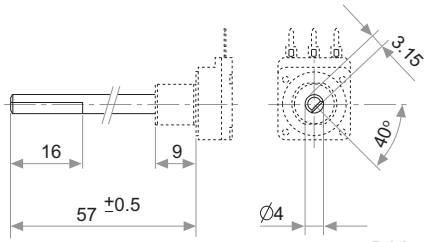
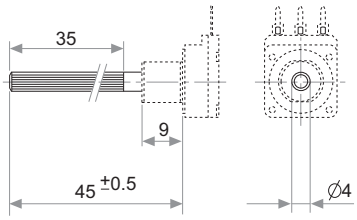



P02

## PLASTIC SHAFTS Ø4

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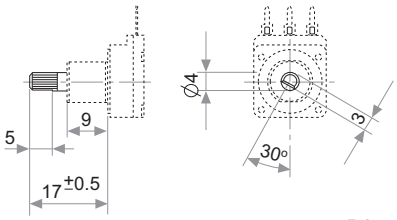


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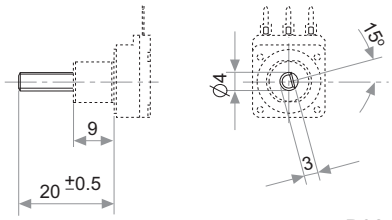


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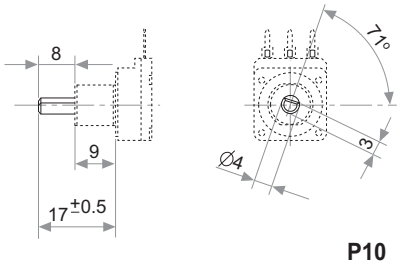


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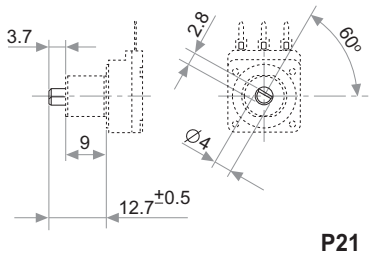
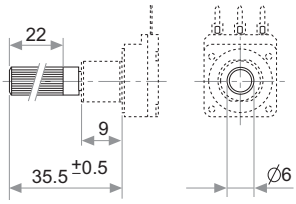



P21

## PLASTIC SHAFTS Ø6

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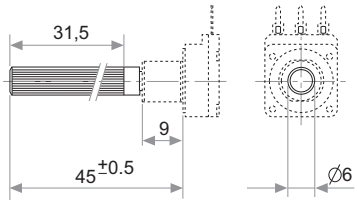


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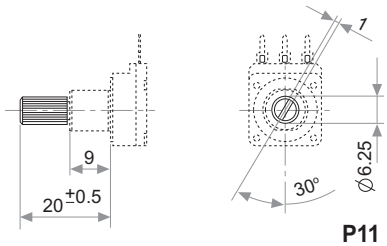


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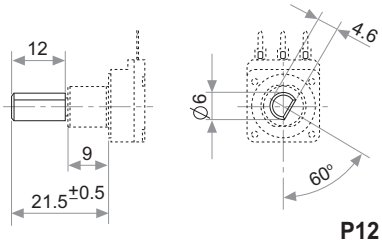


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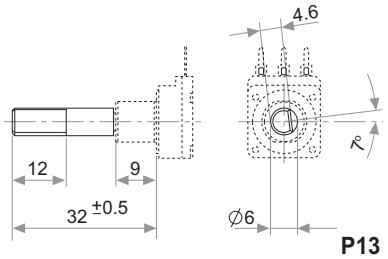


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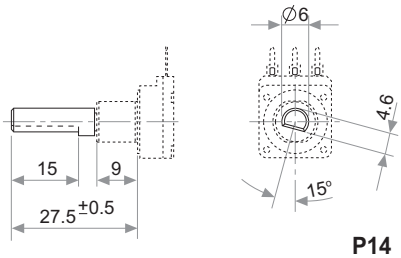


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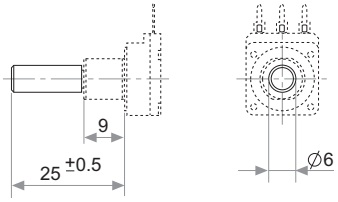


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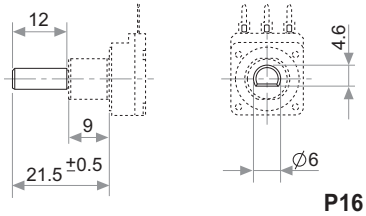


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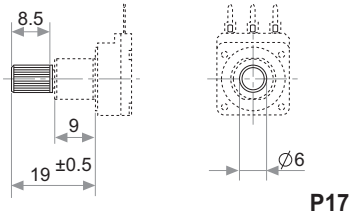


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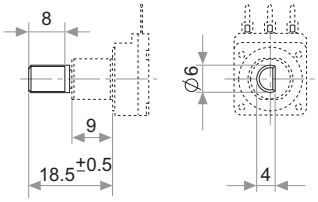


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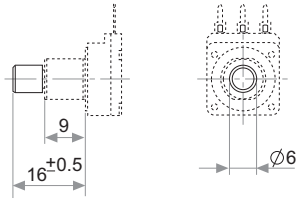


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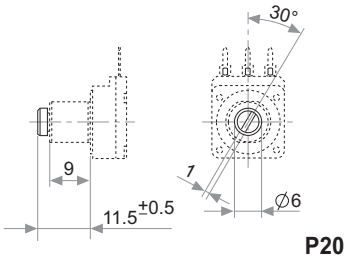
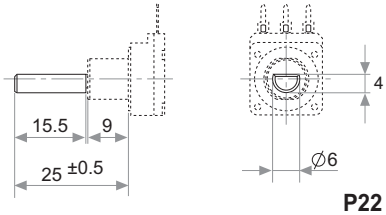



P20

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

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