



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:
 - Metallic support.
 - Stereo matching.
 - Switch.
 - Nut & washer.
 - Bushless & shaftless models.
 - Assemblies with wires and connectors.

MECHANICAL SPECIFICATIONS

- Mechanical rotation angle: $300^\circ \pm 5^\circ$
- Electrical rotation angle: $280^\circ \pm 20^\circ$
- 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

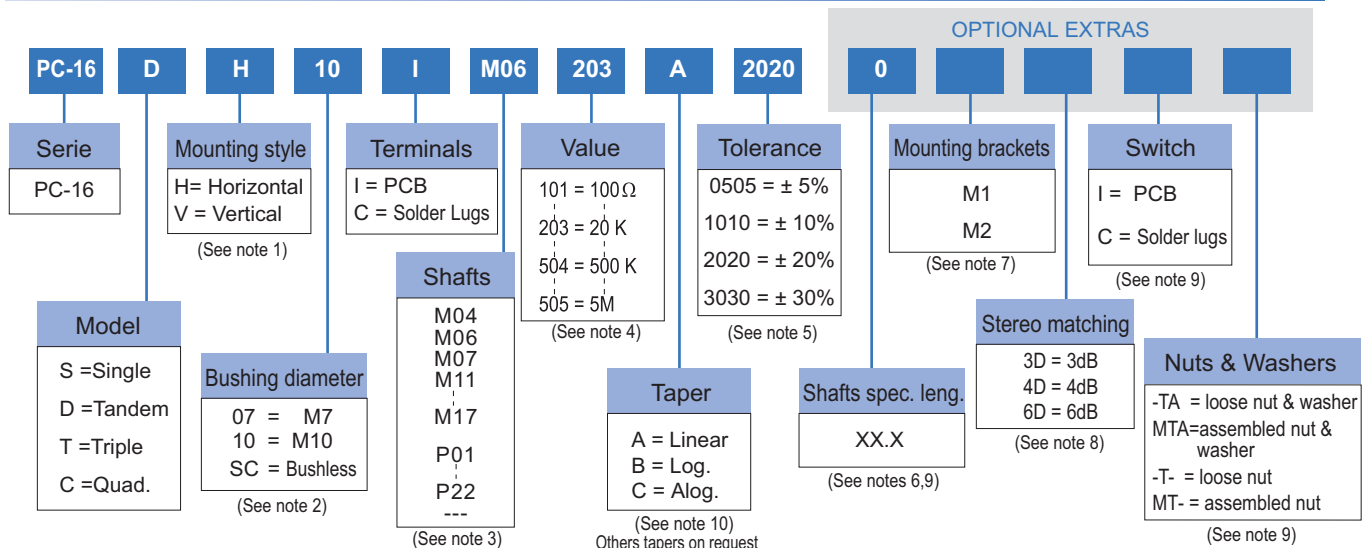
* Others check availability.

** Up to 85°C depending on application.

ELECTRICAL SPECIFICATIONS

- Range of values*
 $100\Omega \leq R_n \leq 5\text{ M}$ (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Standard tolerance*: $100\Omega \leq R_n \leq 1\text{M}\Omega$ $\pm 20\%$
 $1\text{M}\Omega < R_n \leq 5\text{M}\Omega$ $\pm 30\%$
- 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* Lin ; Log; Alog (Log. & Alog. only $R_n \geq 1\text{K}$).
- Residual resistance*: $\leq 0.5\% R_n$ (5 Ω min.)
- Equivalent Noise Resistance: $\leq 3\% R_n$ (3 Ω min.)
- Operating temperature**: $-25^\circ\text{C} + 70^\circ\text{C}$ ($-13^\circ\text{F} + 158^\circ\text{F}$)

HOW TO ORDER



NOTES:

- (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 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 → 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% Code: 07 05 → negative tolerance
 -5% → positive tolerance
- (6) Shaft special length:
 - Only for special length and plain shafts (not knurled). Example: Shaft $\varnothing 6.35$ L = 24.5 M07 24.5 → special length shafts
 - NOTE: Maximum 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. Maximum 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.

HOW TO ORDER CUSTOM DRAWING

STANDARD OPTIONS

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.

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



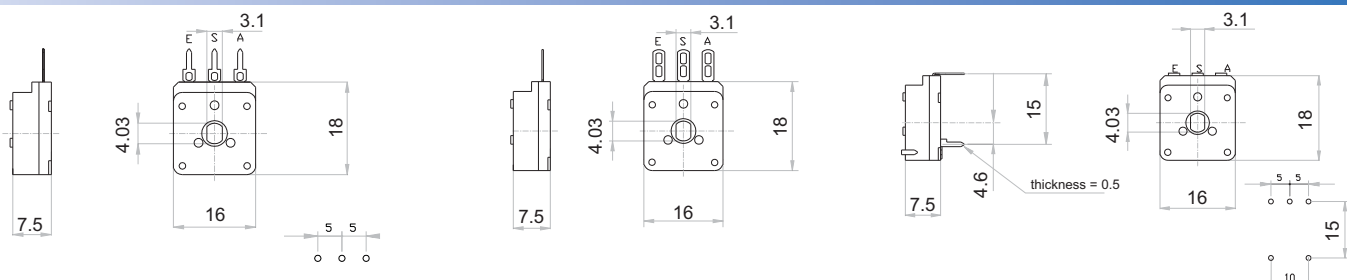
METALLIC SUPPORT



BUSHINGS

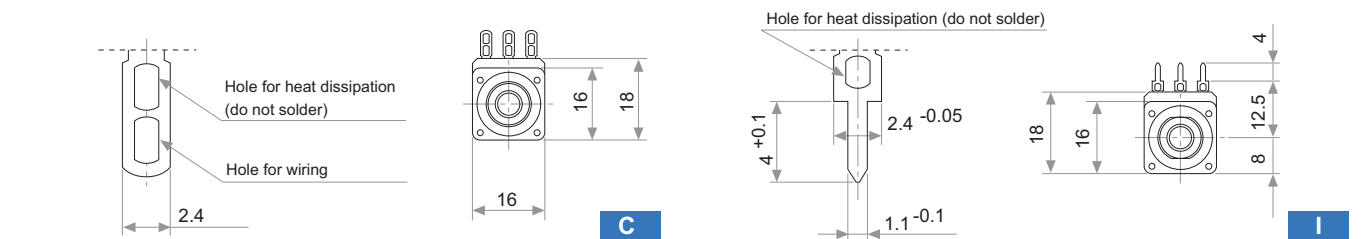


EXAMPLES OF BUSHLESS VERSION



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

TERMINALS



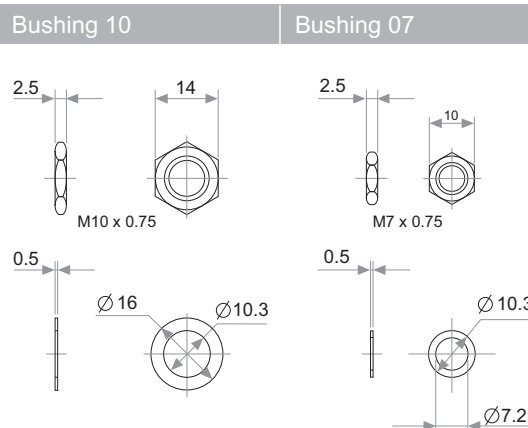
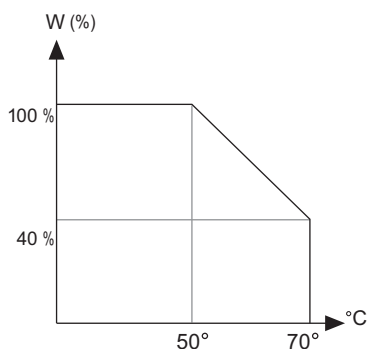
TAPERS

POWER RATING CURVE

NUTS & WASHERS

Standard

A = Linear
B = Log.
C = Alog.



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

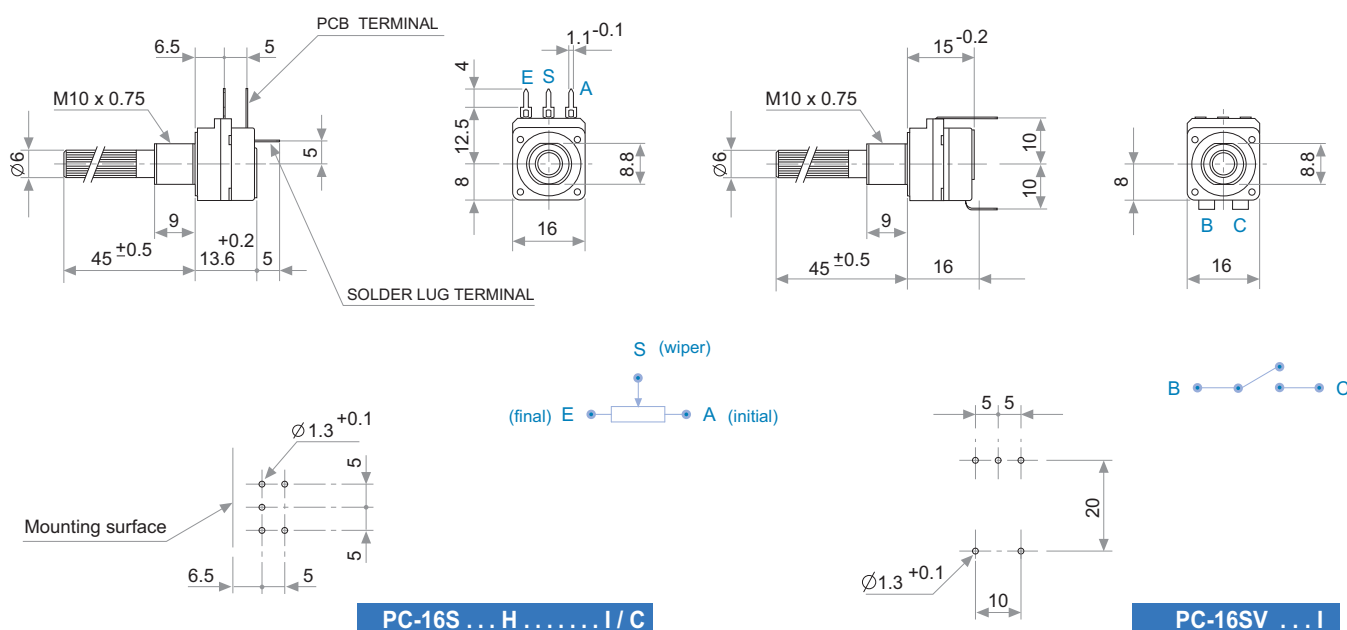
TESTS	TYPICAL VARIATIONS
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TYPICAL VARIATIONS

ELECTRICAL LIFE	1.000 h. @ 50°C; 0.2 W	±5 %
MECHANICAL LIFE : POT.* SWITCH	25.000 (10-15 CPM) 10.000 (1 A, 50 VAC)	±3 % (Rn < 1 M Ω)
TEMPERATURE COEFFICIENT	−25°C; +70°C	±300 ppm/°C (Rn < 100 K Ω)
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 $\geq 1K$. For lower values please consult.

SWITCH



SWITCH SPECIFICATIONS

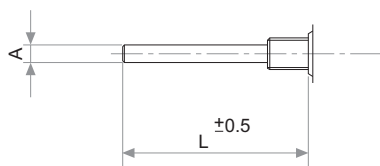
NOMINAL CURRENT	1A, 250 VAC
CONTACT RESISTANCE (initial)	10 m Ω
OPERATING TORQUE	1 to 3 Ncm (1.4 to 4.2 in oz)
OPERATING ANGLE	30° $\pm$ 5°
TEST VOLTAGE	500 V

PACKAGING

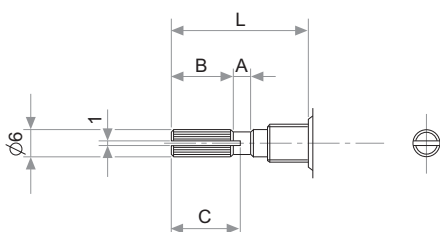
Boxes of 100 pieces (single body model): Inner dimensions 250 x 160 x 95 mm

METALIC SHAFTS

STANDARD

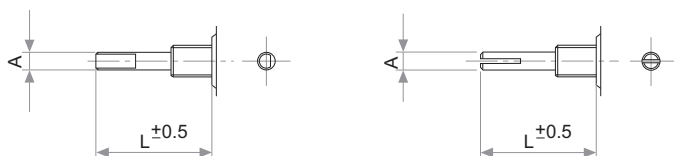


A	L	CODE
4	45	M04
6	45	M06
6.35	45	M07



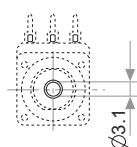
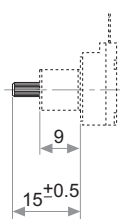
A	B	C	L	CODE
2	5	7	15	M11
2	10	11	20	M12
4	12	14	25	M13
4	12	14	30	M14
4	12	14	35	M15
4	12	14	40	M16
4	12	14	45	M17

SPECIAL



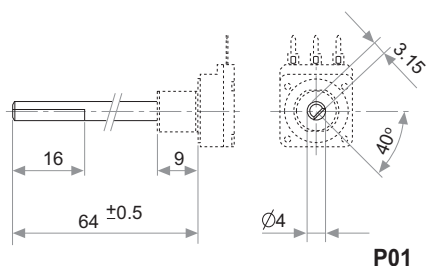
A
Ø 4
Ø 6
Ø 6.35

PLASTIC SHAFTS Ø3.1

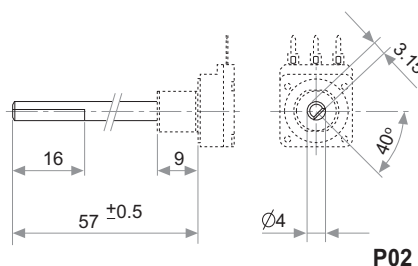


P09

PLASTIC SHAFTS Ø4

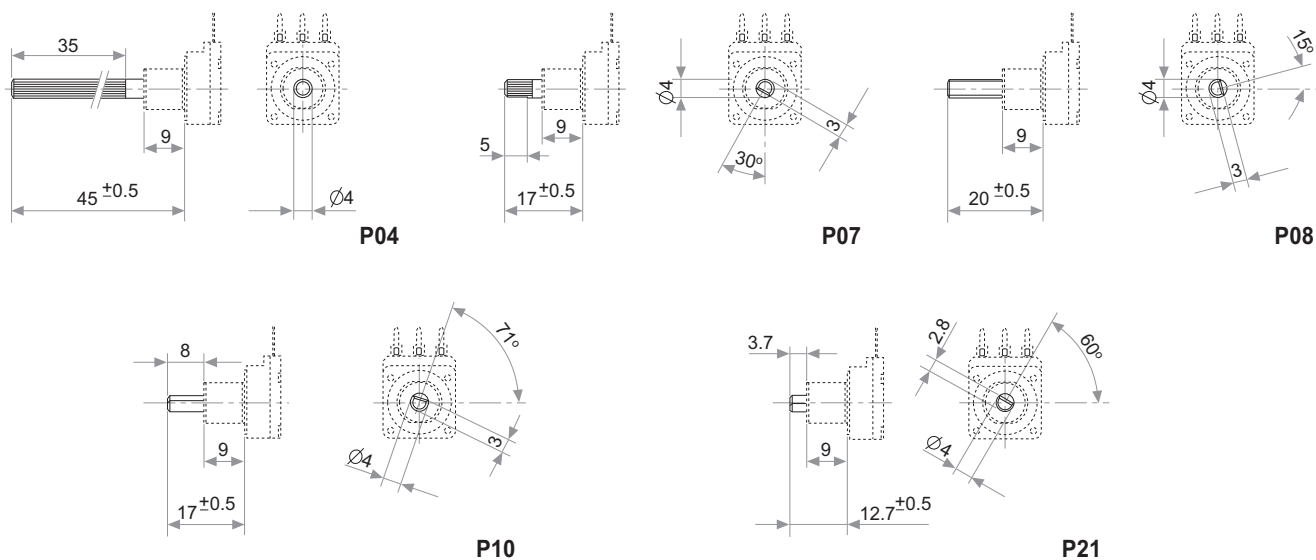


P01



P02

PLASTIC SHAFTS Ø4



PLASTIC SHAFTS Ø6

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



Special shaft example (18 teeth knurl & arrow. Check availability.).

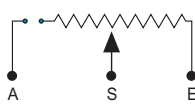


OPEN CIRCUIT FEATURE (CUT TRACK)

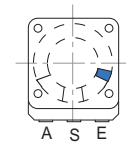
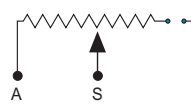


CCW on-off (A)

PCI
Cut track at the beginning of the travel.



PCF
Cut track at the end of the travel



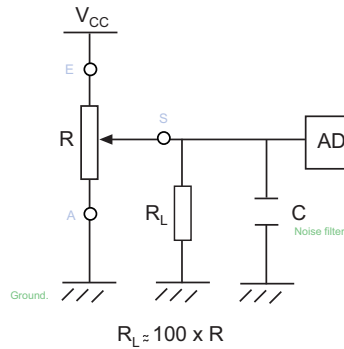
CW on-off (E)

A = Initial S = Wiper E = Final.

PCI, PCF and other configurations available upon request. Check the ordering code with Piher.

RECOMMENDED CONNECTIONS

Piher potentiometer's recommended connection circuit for a position sensor or control application. (voltage divider circuit electronic design).



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