## PIHER



## 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 $2.1 \mathrm{in}-\mathrm{oz})$ |
| - Stop torque: | $>40 \mathrm{Ncm} .(>56 \mathrm{in}-\mathrm{oz})$ |
| - Max. torque nut (binding out): | $<80 \mathrm{Ncm} .(112 \mathrm{in}-\mathrm{oz})$ |
| - Thrust and pull in the shaft: | $>25 \mathrm{~N}$ |

* Others check availability.
** Up to $85^{\circ} \mathrm{C}$ depending on application. Potentiometer


## 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 \& shaftless models.
- Assemblies with wires and connectors.


## ELECTRICAL SPECIFICATIONS

- Range of values*
$100 \Omega \leq \mathrm{Rn} \leq 5 \mathrm{M}$ (Decad. 1.0-2.0-2.2-2.5-4.7-5.0)
-Standard tolerance*: $100 \Omega \leq \mathrm{Rn} \leq 1 \mathrm{M} \Omega \ldots-\ldots \pm 20 \%$
$1 \mathrm{M} \Omega<\mathrm{Rn} \leq 5 \mathrm{M} \Omega \ldots-\ldots \pm 30 \%$
- Max. Voltage: 250 VDC (lin) 125 VDC (no lin)
- Nominal Power $50^{\circ} \mathrm{C}\left(122^{\circ} \mathrm{F}\right)$ (see power rating curve) 0.2 W (lin) 0.1 W (no lin)
- Taper* Lin ; Log; Alog (Log. \& Alog. only Rn $\geq 1 \mathrm{~K}$ ).
- Residual resistance*: $\leq 0.5 \% \operatorname{Rn}(5 \Omega \mathrm{~min}$.)
- Equivalent Noise Resistance: $\leq 3 \% \operatorname{Rn}$ ( $3 \Omega \mathrm{~min}$.)
- Operating temperature ${ }^{* *}:-25^{\circ} \mathrm{C}+70^{\circ} \mathrm{C}\left(-13^{\circ} \mathrm{F}+158^{\circ} \mathrm{F}\right)$


## 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 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: $\bullet$ Code: $\frac{10}{T} \xrightarrow{\underline{L}} 100 \Omega$ Number of zeros 2 first digits of the value.

- In models "D", "T", "C", with different values, they will be asked by drawings.
(5) Tolerance (non standard), upon request. $\begin{gathered}\text { Example: }+7 \% \\ -5 \%\end{gathered}$
(6) Shaft special length:

- Only for special length and plain shafts (not knurled). Example: Shaft $\varnothing 6.35 \mathrm{~L}=24.5$ M07 ..... 24.5 $\rightarrow$ special length
(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" $\bullet 4 \mathrm{~dB}$ for model "T" •6dB for model "C"
(9) Not available for Bushless version.
(10) Switch option not available with antilog taper.

PC-16SV + 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
Without nut and washer

## MODELS



PC-16 SV ..........

## METALLIC SUPPORT



PC-16 SH......M1


PC-16 SH....M2
BUSHINGS


## EXAMPLES OF BUSHLESS VERSION


7.5

16



$\stackrel{\sim}{\sim}$



Hole for heat dissipation (do not solder)


I


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

## TESTS

| ELECTRICAL LIFE | $1.000 \mathrm{~h} . @ 50^{\circ} \mathrm{C} ; 0.2 \mathrm{~W}$ | $\pm 5 \%$ |
| :--- | :--- | :--- |
| MECHANICAL LIFE : POT.* |  |  |
| SWITCH | $25.000(10-15 \mathrm{CPM})$ |  |
| TEMPERATURE COEFFICIENT | $10.000(1 \mathrm{~A}, 50 \mathrm{VAC})$ | $\pm 3 \%(\mathrm{Rn}<1 \mathrm{M} \Omega)$ |
| THERMAL CYCLING | $-25^{\circ} \mathrm{C} ;+70^{\circ} \mathrm{C}$ | $\pm 300 \mathrm{ppm} /{ }^{\circ} \mathrm{C}(\mathrm{Rn}<100 \mathrm{~K} \Omega)$ |
| DAMP HEAT | $16 \mathrm{~h} . @ 85^{\circ} \mathrm{C} ; 2 \mathrm{~h} . @-25^{\circ} \mathrm{C}$ | $\pm 2.5 \%$ |
| VIBRATION (for each plane $X, Y, Z)$ | $500 \mathrm{~h} . @ 40^{\circ} \mathrm{C} @ 95 \% \mathrm{HR}$ | $\pm 5 \%$ |

${ }^{(*)}$ ) only applicable to values $\geq 1 \mathrm{~K}$. For lower values please consult.

## SWITCH





| NOMINAL CURRENT | $1 \mathrm{~A}, 250 \mathrm{VAC}$ |
| :--- | :--- |
| CONTACT RESISTANCE (initial) | $10 \mathrm{~m} \Omega$ |
| OPERATING TORQUE | 1 to $3 \mathrm{Ncm} \mathrm{(1.4} \mathrm{to} 4.2$ in oz $)$ |
| OPERATING ANGLE | $30^{\circ} \pm 5^{\circ}$ |
| TEST VOLTAGE | 500 V |

## PACKAGING

Boxes of 100 pieces (single body model): Inner dimensions $250 \times 160 \times 95 \mathrm{~mm}$

## METALIC SHAFTS

```
STANDARD
```



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



SPECIAL


## PLASTIC SHAFTS Ø 3.1



## PLASTIC SHAFTS Ø4



## PLASTIC SHAFTS Ø4




P04


P07


P21

## PLASTIC SHAFTS Ø6

Shaft position shown full CCW. Any other position for plastic shafts has to be shifted $n$ times $24^{\circ}$. Other positions upon request.



P14



P16

P17


P18


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



PCl
Cut track at the beginning of the travel.


CCW on-off (A)

PCF
Cut track at the end of the travel



CW on-off (E)
$A=\operatorname{lnitial} \quad S=$ Wiper $\quad E=$ 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).

$\mathrm{R}_{\mathrm{L}} \approx 100 \times \mathrm{R}$

## Disclaimer

The product information in this catalogue is for reference purposes. Please consult for the most up to date and accurate design information.

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(P)


Note: Piher products can be adapted to meet customer's requirements.
Due to continuous process improvement, specifications are subject to change without notice.

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