

FEATURES

- Excellent low price control potentiometer.
- Available in Carbon (SM-10) and Cermet (SMC-10).
- Based on the PT-10 / PTC-10 series.
- Enclosed in plastic housing.
- IP54 protection according to IEC 60529.

MECHANICAL SPECIFICATIONS

- Mechanical angle: $235^\circ \pm 5^\circ$
- Electrical angle: $220^\circ \pm 20^\circ$
- Torque: 0.5 to 2.5 Ncm.
(0.71 to 3.5 in-oz)
- Stop torque: > 25 Ncm. (> 35.5 in-oz)
- Nut Torque: > 80 Ncm. (113.6 in-oz)
- Mechanical life***: $\geq 10K$ cycles

ELECTRICAL SPECIFICATIONS

- Range of values*
 $100\Omega \leq R_n \leq 5 M$ (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Tolerance*: $100\Omega \leq R_n \leq 1M \Omega$ $\pm 20\%$
 $1M\Omega < R_n \leq 5M \Omega$ $\pm 30\%$
- Max. Voltage: 200 VDC (lin) 100 VDC (no lin)
- Nominal Power :
 - Carbon SM-10 (50°C-122°F): 0.15W (lin), 0.07W (no lin)
 - Cermet SMC-10 (70°C-158°F): 0.33W(lin), 0.17 W (no lin)
- Taper* (Log. & Alog. only $R_n > 1K$) Lin ; Log; Alog.
- Residual resistance*: $\leq 0.5\% R_n$ (5 Ω min.)
- Equivalent noise resistance: $\leq 3\% R_n$ (3 Ω min.)
- Operating temperature:
 - Carbon SM-10 : $-25^\circ C + 70^\circ C^{**}$ ($-13^\circ F + 158^\circ F$)
 - Cermet SMC-10 : $-40^\circ C + 90^\circ C$ ($-40^\circ F + 194^\circ F$)

* Others check availability.

** Up to 85°C depending on application.

*** For Ohmic values $\geq 1 K \Omega$. Lower values check availability.

HOW TO ORDER

SM-10	H04	102	A	2020	OPTIONAL EXTRA	S																																							
Series	Code	Value	Taper	Tolerance	Nut and Washer	(See note 4)																																							
SM-10 SMC-10	<table border="1" style="width: 100%; border-collapse: collapse; text-align: left;"> <thead> <tr> <th>Code</th> <th>Mounting Method</th> </tr> </thead> <tbody> <tr><td>H04</td><td>H 2.5A</td></tr> <tr><td>H14</td><td>H 5A</td></tr> <tr><td>H12</td><td>H 2.5PA</td></tr> <tr><td>H20</td><td>H 5PA</td></tr> <tr><td>V10</td><td>V</td></tr> <tr><td>V11</td><td>V P</td></tr> <tr><td>H03</td><td>H 2.5B</td></tr> <tr><td>H13</td><td>H 5B</td></tr> <tr><td>H22</td><td>H 2.5PB</td></tr> <tr><td>H30</td><td>H 5PB</td></tr> </tbody> </table> (See note 1)	Code	Mounting Method	H04	H 2.5A	H14	H 5A	H12	H 2.5PA	H20	H 5PA	V10	V	V11	V P	H03	H 2.5B	H13	H 5B	H22	H 2.5PB	H30	H 5PB	<table border="1" style="width: 100%; border-collapse: collapse; text-align: left;"> <tbody> <tr><td>101 = 100Ω</td></tr> <tr><td>102 = 1 K</td></tr> <tr><td>504 = 500 K</td></tr> <tr><td>505 = 5 M</td></tr> <tr><td>000 = C M</td></tr> </tbody> </table> (See note 2)	101 = 100 Ω	102 = 1 K	504 = 500 K	505 = 5 M	000 = C M	<table border="1" style="width: 100%; border-collapse: collapse; text-align: left;"> <tbody> <tr><td>A = Linear</td></tr> <tr><td>B = Log.</td></tr> <tr><td>C = Alog.</td></tr> </tbody> </table> (Other tapers on request)	A = Linear	B = Log.	C = Alog.	<table border="1" style="width: 100%; border-collapse: collapse; text-align: left;"> <tbody> <tr><td>0505 = $\pm 5\%$</td></tr> <tr><td>0707 = $\pm 7\%$</td></tr> <tr><td>1010 = $\pm 10\%$</td></tr> <tr><td>2020 = $\pm 20\%$</td></tr> <tr><td>3030 = $\pm 30\%$</td></tr> </tbody> </table> (See note 3)	0505 = $\pm 5\%$	0707 = $\pm 7\%$	1010 = $\pm 10\%$	2020 = $\pm 20\%$	3030 = $\pm 30\%$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: left;"> <tbody> <tr><td>-TA = Loose nut and washer</td></tr> <tr><td>MTA = Assembled nut and washer</td></tr> <tr><td>-T = Loose nut</td></tr> <tr><td>MT = Assembled nut</td></tr> </tbody> </table>	-TA = Loose nut and washer	MTA = Assembled nut and washer	-T = Loose nut	MT = Assembled nut	
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NOTES:

- (1) Mount. Method: • Position with "P" will be with crimped terminals.
• Denominations (a), (b) (see Mounting Methods)
- (2) Value: Code: $\begin{matrix} 10 & 1 & 100 \Omega \\ \swarrow & \downarrow & \nearrow \\ & \text{Number of zeros} & \\ & \text{2 first digits of the value.} & \end{matrix}$
 - Standard values: Decades of 10, 20, 22, 25, 47, 50. Other values as specials.
 - 000 = CM = Switch 45° (only SMC-10)
- (3) Tolerance (non standard). check availability.. Code eg.: $\begin{matrix} +7 & 07 & 05 \\ -5 & \swarrow & \searrow \\ & \text{negative tolerance} & \text{positive tolerance} \end{matrix}$
- (4) Leave blank for SMC-10

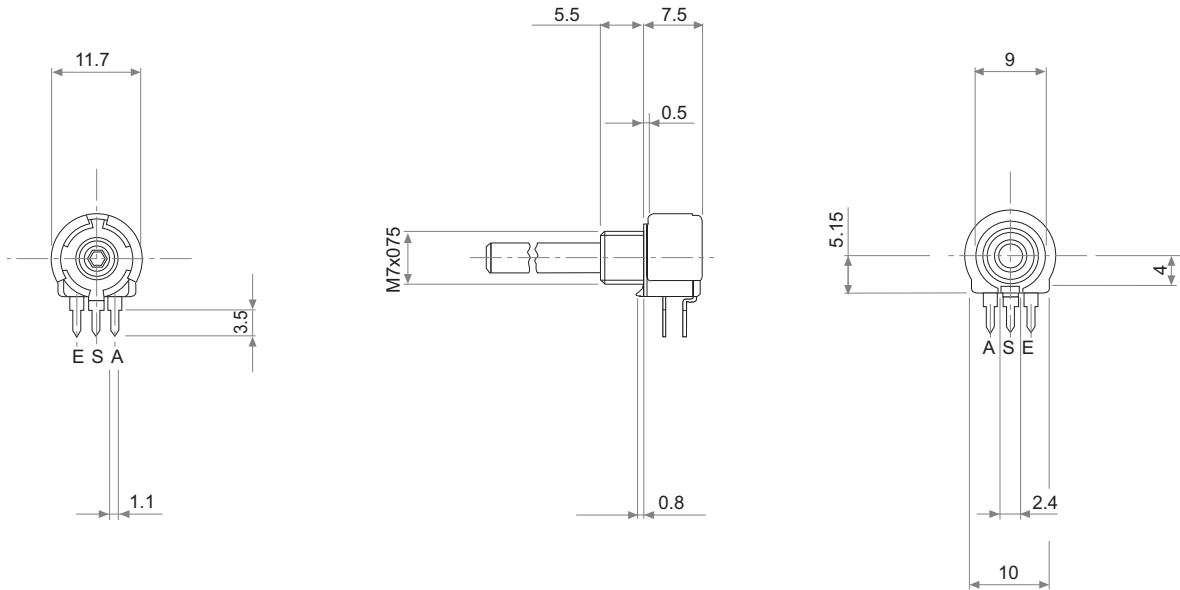
NOTE: The information contained here should be used for reference purposes only.

SM-10 H04 + DRAWING NUMBER (Max. 16 digits)

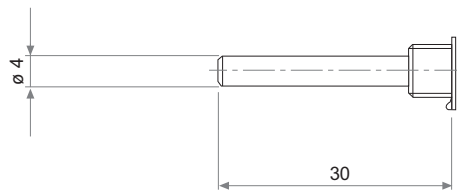
NUT AND WASHER = Without nut and washer

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

COMMON DIMENSIONS



STANDARD SHAFT



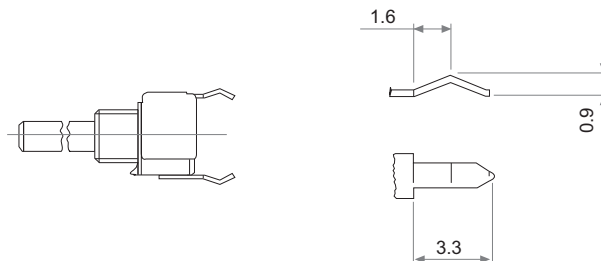
Shaft: The standard option is E4 L30 black colour.

TERMINALS

NOT CRIMPED



CRIMPED



PACKAGING

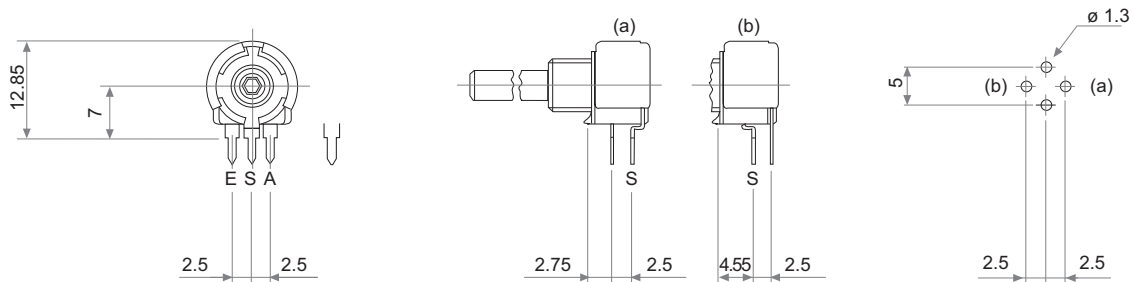
TESTS

QUANTITY: 200 units

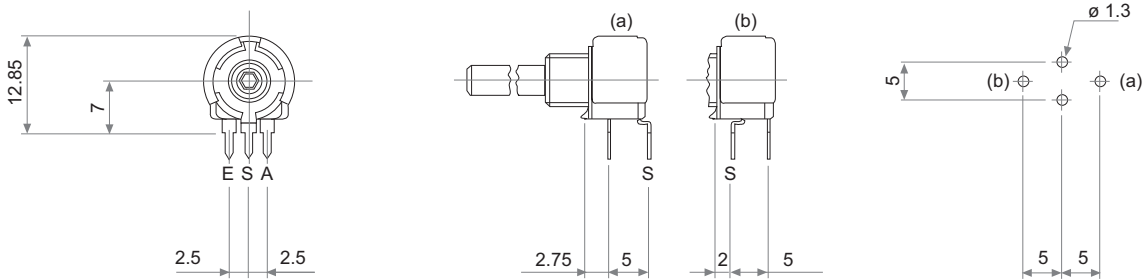
See PT-10 or PTC-10 data sheets.

MOUNTING METHOD

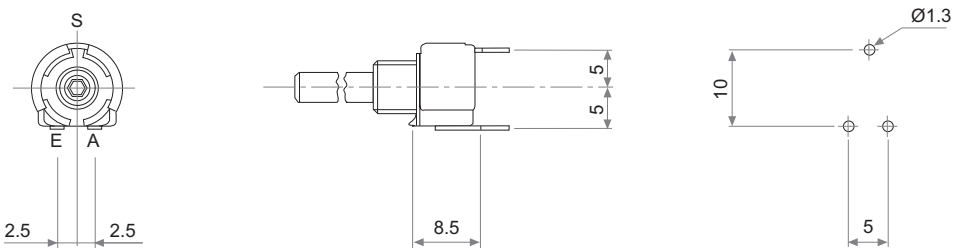
h 2.5



h 5

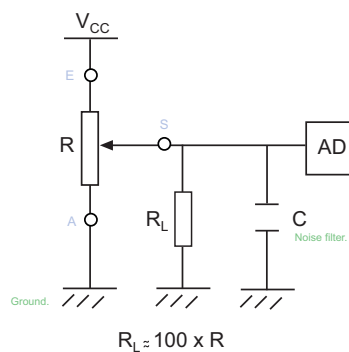


v 10



RECOMMENDED CONNECTIONS

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



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