

Data Sheet for Precision Potentiometer

Conductive Plastic Potentiometer

Series MCP30



Housing colour change from black to silver from April 2025

The MCP30 potentiometers with precision ball bearings and servo flange are suitable for applications where a very long life with high linearity and precisely mountable sensor is important.

- Very long life
- Very precise sensor
- Servo flange for precise mounting
- 2 precision ball bearings
- Robust metal housing

The MCP30 range of precision potentiometers is designed to meet the most demanding accuracy and reliability requirements. They have good linearity and excellent life. The potentiometer is fitted with a servo flange for precise mounting and adjustment of the operating range. Conductive plastic potentiometers are particularly suitable for use in controlled systems, as they are passive components with no dead times due to signal propagation and the signal is available without steps.

Electrical Data

Effective electrical angle of rotation 1.)	340° ±5°
Total resistance 1.)	0.5 kOhm up to 100 kOhm
Resistance tolerance	±10%
Independent linearity (best straight line) 1.)	±0.25%
Theoretical resolution 1.)	Nearly infinite
Backlash (Hysteresis) 1.)	≤ 0.5°
Max. / recommended wiper current 1.)	10 µA / 2 µA
Power rating @ 70°C (0W @ 105°C)	1.5 W
Insulation Voltage 1.)	1000 VAC, 1min
Insulation Resistance 1.)	1000 MOhm @ 1000 VDC

Mechanical Data, Environmental Conditions, Miscellaneous

Mechanical angle of rotation 1.)	360° without stop
Lifetime (90% el. eff. angle half sine) 2.)	50 Mio. rotations
Max. operational speed	400 rev. / min.
Bearing	2 x ball bearing
Operational torque @ ambient temperature 1.) 2.)	2 Nmm
Operating temperature range	-55 °C up to +125 °C
Storage temperature range	-55 °C up to +125 °C
Protection grade (IEC 60529)	IP40
Vibration (IEC 68-2-6, Test Fc)	15g 10Hz up to 2000Hz x 12h
Shock (IEC 68-2-27, Test Ea)	49g @ 11 ms x 18
Housing diameter	27 mm
Housing depth	15 mm
Shaft diameter	3 mm
Shaft type	Solid shaft

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Max. radial load	≤1 N
Max. axial load	≤1 N
Connection type	Gold plated soldering pins
Connection position	Radial
Sensor mounting	Servo flange
Mass	25 g
Fastening parts included in delivery	3 servo clamps SFN2 with screw M3 x 7.5
Material shaft	Stainless steel
Material housing	Metal

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Please note: Max. permissible supply voltage <75 VDC respectively <50 VAC in addition the max. power rating must be observed

Order code

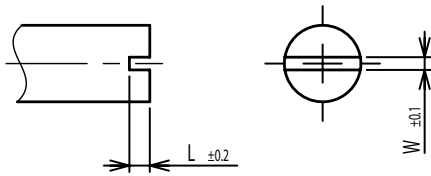
Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>							
Series:	MCP30							
Resistance value /Option Tandem:			<i>Tandem</i>					
Option 500 Ohm		<i>R500</i>	<i>/500</i>					
1 kOhm		R1k	/1K					
Option 2 kOhm		<i>R2k</i>	<i>/2K</i>					
5 kOhm		R5k	/5K					
10 kOhm		R10k	/10k					
Option 20 kOhm		<i>R20K</i>	<i>/20k</i>					
Option 50 kOhm		<i>R50K</i>	<i>/50k</i>					
Option 100 kOhm		<i>R100K</i>	<i>/100k</i>					
Option rear shaft: Standard Ø3.00 x 10 mm Shaft length in mm Shaft diameter in mm (≤3.00 mm)					<i>RA</i> <i>RAxx,xx</i> <i>RADMx,xx</i>			
Resistance tolerance: ±10%						W10%		
Independent linearity: ±0.25%							L0,25%	
Option center tap:							<i>CT</i>	
Option front shaft: Standard Ø3.00 x 11.5 mm Option Ø3.175 x 11.5 mm Option shaft length in mm Option shaft diameter in mm (≤3.00 mm)								<i>-</i> <i>DM3,175</i> <i>Ax,xx</i> <i>DMx,xx</i>
Option screwdriver slot:								<i>B</i>

For higher quantities or on-going demand, additional options are available as described below on request

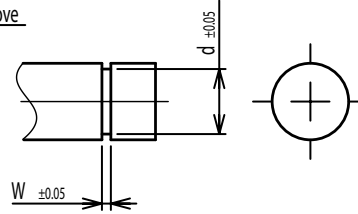
For Example: Multi ganged potentiometers (max. 5), with mech. end stop 320° @ 30 Ncm, special electrical and mechanical angles of rotation, and special resistance and linearity tolerances. Furthermore we can mount gear wheels or attach cable assemblies with or without connectors and much more.

On Request: Special machining on shaft

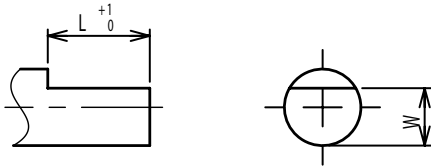
Slot



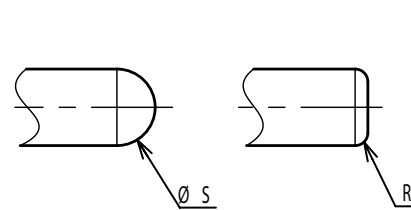
Groove



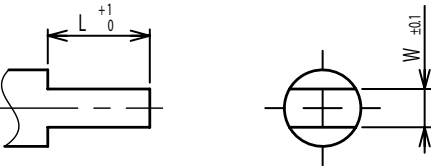
Flat



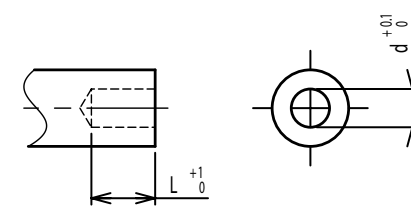
Round top



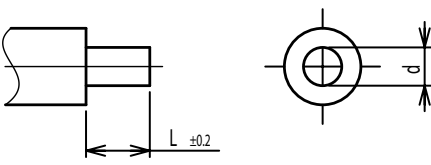
Double side flat



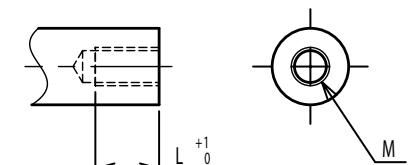
Counterbore hole



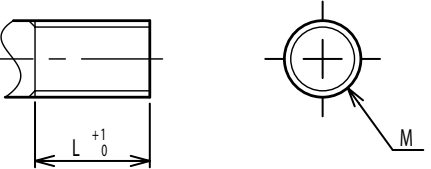
Step



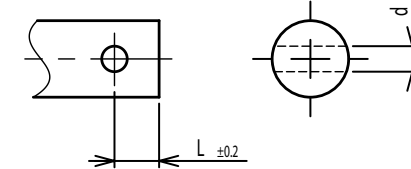
Counterbore screw hole



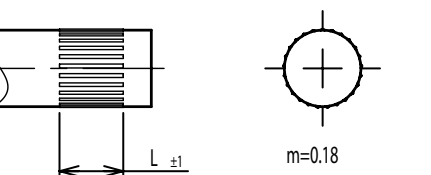
Screw Thread



Pin hole



Knurled(Parallel)



Screw thread inside hole

