

# Data Sheet for Precision Potentiometer

Conductive Plastic Potentiometer

Series MPAS20



The MPAS20 potentiometers in 22 mm housing with precision ball bearings and servo flange are suitable for applications where a long life and precisely mountable sensor is important.

- Long lifespan and high accuracy
- Servo flange for precise mounting
- 2 Precision ball bearings

The precision potentiometer series MPAS20 with ball bearings and conductive plastic technology are particularly convenient to use in closed-loop control systems because, as passive components, they do not cause any dead times due to signal propagation times and the signal is continuously available immediately after switching on. The main area of application is actual value detection in position control circuits.

## Electrical Data

Effective electrical angle of rotation 1.)	340° ±5°
Total resistance 1.)	0.5 kOhm up to 100 kOhm
Resistance tolerance	±15% (±10%)
Independent linearity (best straight line) 1.)	±1%
Theoretical resolution 1.)	Nearly infinite
Backlash (Hysteresis) 1.)	≤ 0,5°
Max. / recommended wiper current 1.)	10 / 2 µA
Power rating @ 70°C (0W @ 105°C)	1 W
Insulation Voltage 1.)	500 VAC, 1min
Insulation Resistance 1.)	1000 MOhm @ 500 VDC

## Mechanical Data, Environmental Conditions, Miscellaneous

Mechanical angle of rotation	360° without stop
Lifetime (90% el. eff. angle half sine) 2.)	10 Mio. rotations
Max. operational speed	400 rev. / min.
Bearing	2 x ball bearing
Operational torque @ ambient temperature 1.) 2.)	5 Nmm
Operating temperature range	-55 °C up to +105 °C
Storage temperature range	-55 °C up to +105 °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	22 mm
Housing depth	14.6 mm
Shaft diameter	3.17 mm
Shaft type	Solid shaft

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## Mechanical Data, Environmental Conditions, Miscellaneous

Max. radial load	≤1 N
Max. axial load	≤1 N
Connection type	Soldering lugs
Connection position	Axial
Sensor mounting	Servo flange
Mass	20 g
Fastening parts included in delivery	3 servo clamps with screw 3 x M3x0,5
Material shaft	Stainless steel
Material housing	Reinforced fibreglass PA66 / aluminium

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: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>				
<b>Series:</b>	<b>MPAS20</b>				
<b>Resistance value:</b>					
<i>Option 500 Ohm</i>		<i>R500</i>			
<b>1 kOhm</b>		<b>R1k</b>			
<i>Option 2 kOhm</i>		<i>R2k</i>			
<b>5 kOhm</b>		<b>R5k</b>			
<b>10 kOhm</b>		<b>R10k</b>			
<i>Option 20 kOhm</i>		<i>R20K</i>			
<i>Option 50 kOhm</i>		<i>R50K</i>			
<i>Option 100 kOhm</i>		<i>R100K</i>			
<b>Resistance tolerance:</b>					
<b>±15%</b>			<b>W15%</b>		
<i>Option ±10%</i>			<i>W10%</i>		
<b>Independent linearity: ±1%</b>				<b>L1%</b>	
<b>Option front shaft:</b>					
<b>Standard Ø3,175 x 19,05 mm</b>					-
<i>Option shaft length in mm</i>					<i>Ax,xx</i>
<i>Option shaft diameter in mm (≤3,175 mm)</i>					<i>DMx,xx</i>

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

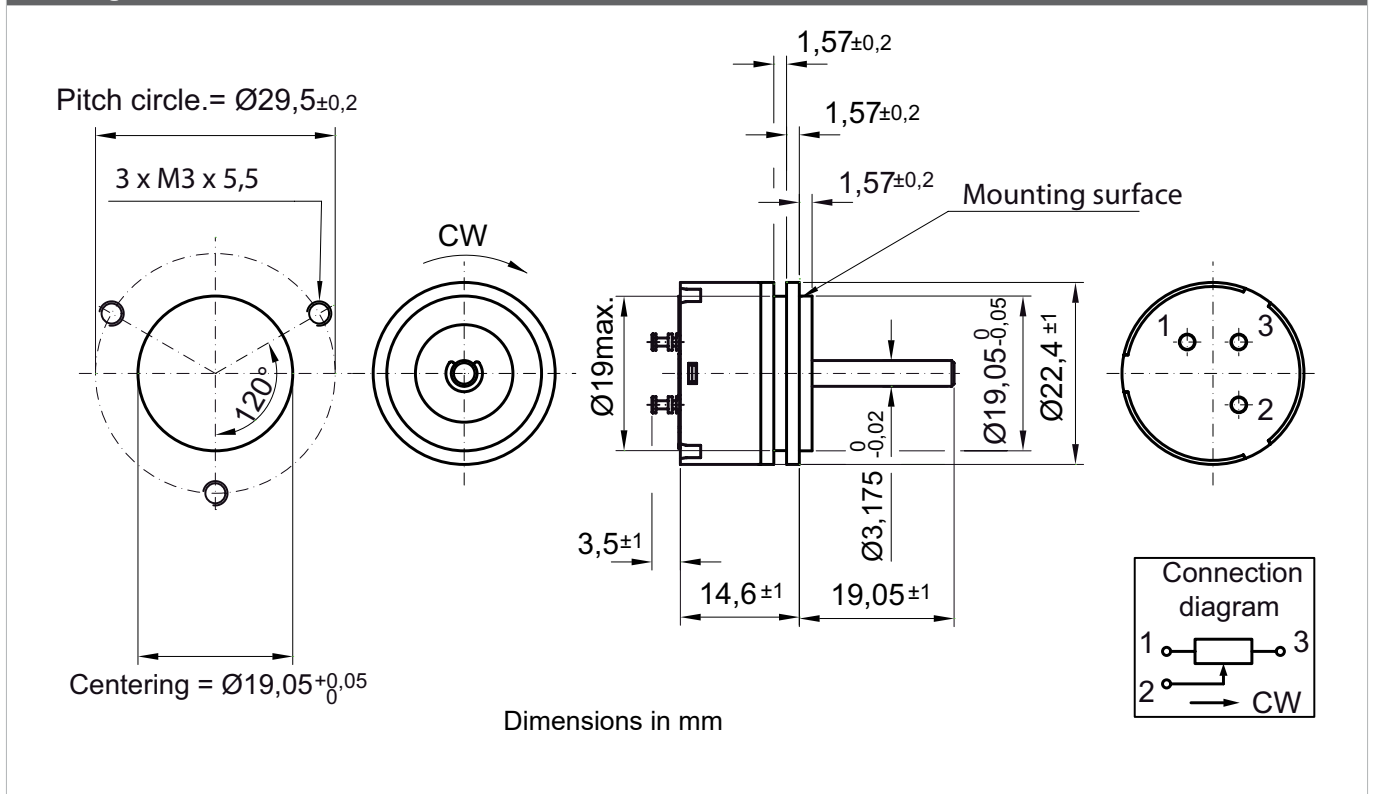
For Example: Sealed housing case, mech. stop, special electrical and mechanical angles of rotation, and special resistance and linearity tolerances. Furthermore we can mount gear wheels or attach cable assemblies with or without connectors and much more.

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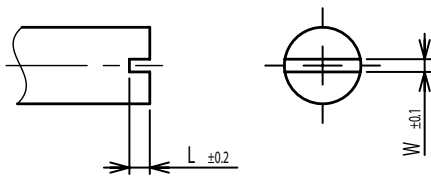
Series MPAS20

## Drawing

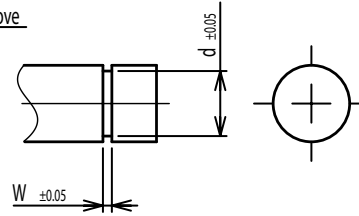


### On Request: Special machining on shaft

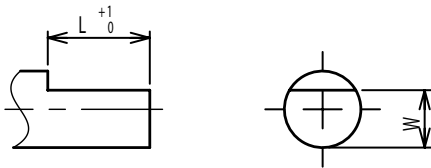
Slot



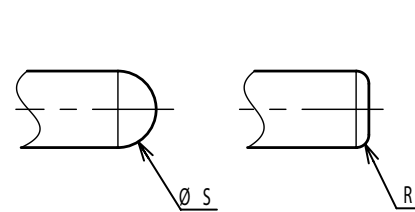
Groove



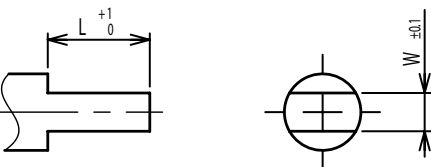
Flat



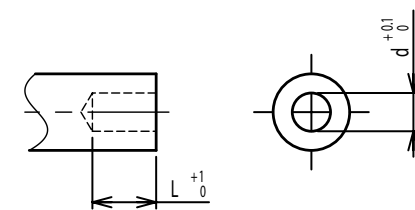
Round top



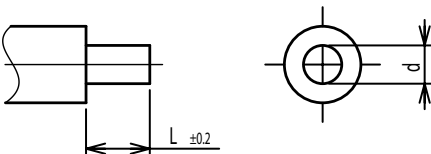
Double side flat



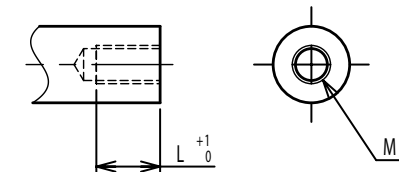
Counterbore hole



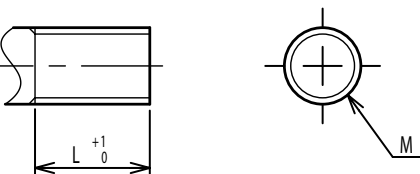
Step



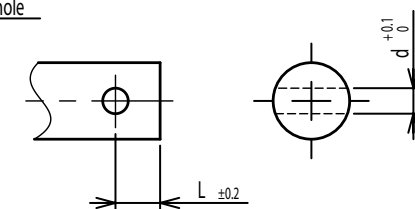
Counterbore screw hole



Screw Thread



Pin hole



Knurled(Parallel)



Screw thread inside hole

