Data Sheet for Precision Potentiometer

Conductive Plastic Potentiometer — Series MPAS20/21

The MPAS20/21 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 life and high accuracy
- Servo flange for precise mounting
- 2 Precision ball bearings
- With or without mechanical end stop (320° / 360°)

The precision potentiometer series MPAS20/21 (MPAS21 with mechanical end stop) with ball bearings and conductive plastic technology can be used particularly comfortably in controlled systems. They do not cause dead times due to signal propagation times as passive components. The signal is instantly available after switching on. The main application is the actual value measuring in control circuits.

Electrical Data	MPAS20	MPAS21
Effective electrical angle of rotation 1.)	340° ±5°	320° ±5°
Total resistance 1.)	0,5..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	MPAS20	MPAS21
Mechanical angle of rotation	360° without stop	320° +10° with 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	
End stop torque 1.) 2.)	-	60 Ncm
Operating temperature range	-55..+105°C	
Storage temperature range	-55..+105°C	
Protection grade (IEC 60529)	IP40	
Vibration (IEC 68-2-6, Test Fc)	15g 10..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	MPAS20	MPAS21
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: standard=black/bold, possible options=grey/cursive					
Series	**MPAS**					
Angle of rotation with / without mecha. stop: **Without stop** **With stop**		**20** **21**				
Resistance value: *Option 500 Ohm* **1 kOhm** *Option 2 kOhm* **5 kOhm** **10 kOhm** *Option 20 kOhm* *Option 50 kOhm* *Option 100 kOhm*			*R500* **R1k** *R2k* **R5k** **R10k** *R20K* *R50K* *R100K*			
Resistance tolerance: **±15%** *Option ±10%*				**W15%** *W10%*		
Independent linearity: ±1%					**L1%**	
Option front shaft: **Standard Ø3,175 x 19,05 mm** *Option shaft length in mm* *Option shaft diameter in mm* (≤3,175 mm)						- *Ax,xx* *DMx,xx*

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

For Example: Sealed housing case, 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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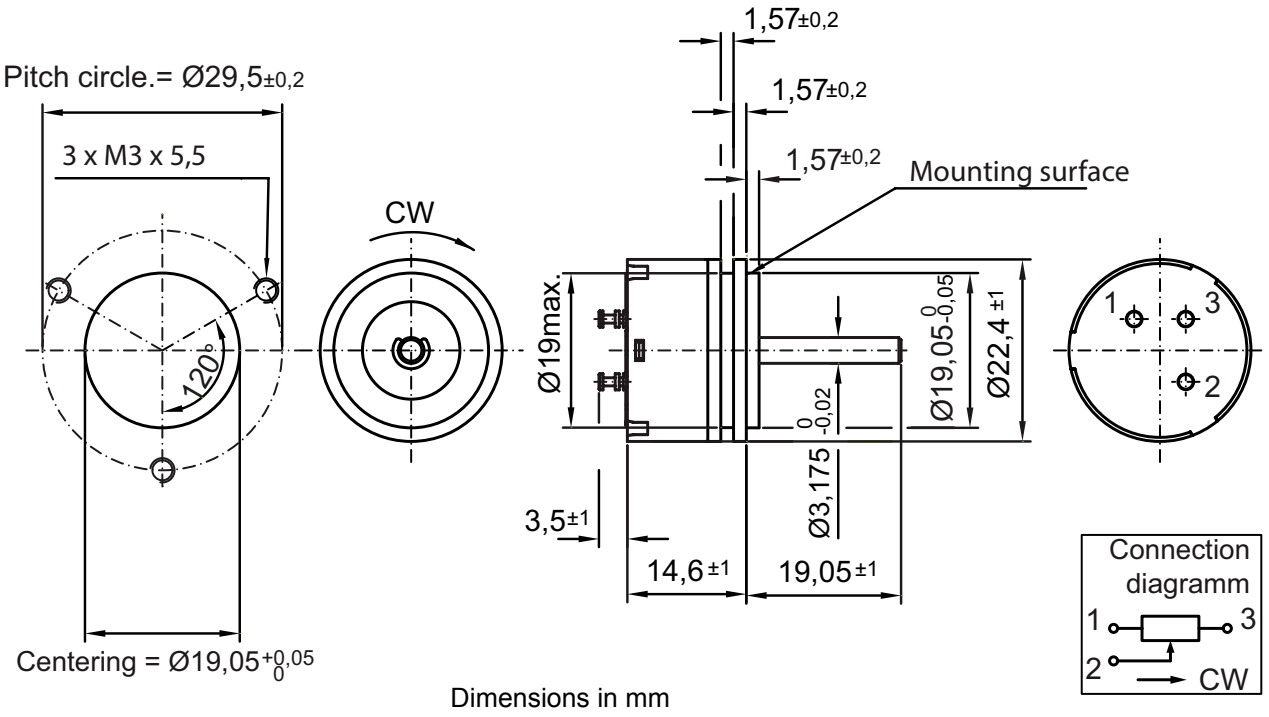
Drawing



Dimensions in mm

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