

Data Sheet for Precision Potentiometer

Singleturn Wirewound Potentiometer

Series RP19/20



The RP19/20 potentiometers in 22 mm housing are suitable for applications where an accurate and compact sensor with high electrically effective rotation angle is required.

- Accurate wirewound potentiometer
- With or without mechanical end stop (320° / 360°)
- Very high electrically effective angle of rotation 355° ±5°
- Compact sensor with 12 mm installation depth
- With many options

The RP19/20 potentiometer series (RP19 with mechanical end stop) is a multitalent which is adaptable for a wide range of applications and is often used as a feedback sensor in valve control systems. In addition, the sensor convinces by its good accuracy. The radial gold-plated connection pins are suitable for flat connectors (2.8 mm according to DIN 46247 part 3).

Electrical Data	RP19	RP20
Effective electrical angle of rotation 1.)	320° ±5°	355° ±5°
Total resistance 1.)	10 Ohm..20 kOhm	
Resistance tolerance	±3% (±1%)	
Independent linearity (best straight line) 1.)	±0,5% (±0,35% R ≤ 1kOhm / ±0,25% R > 1kOhm)	
Theoretical resolution 1.)	Depends on resistance value (see table below)	
Backlash (Hysteresis) 1.)	≤ 0,5°	
Rotational noise (ENR) 1.) (Method C)	100 Ohm	
Max. / recommended wiper current 1.)	35 mA / 2 µA	
Power rating @ 70°C (0W @ 105°C)	0,5 W	
Insulation Voltage 1.)	1000 VAC, 1min	
Insulation Resistance 1.)	1000 MOhm @ 1000 VDC	

Mechanical Data, Environmental Conditions, Miscellaneous	RP19	RP20
Mechanical angle of rotation	320° +10° with stop	360° without stop
Lifetime (90% el. eff. angle half sine) 2.)	1 Mio. rotations	
Max. operational speed	40 rev. / min.	
Bearing	Sleeve bearing	
Operational torque @ ambient temperature 1.) 2.)	5 Nmm	
End stop torque 1.) 2.)	60 Ncm	-
Operating temperature range	-20..+105°C	
Storage temperature range	-55..+105°C	
Protection grade (IEC 60529)	IP40	
Protection option D shaft sealing (IEC 60529)	IP65 optional	
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	12 mm	
Shaft diameter	6 mm (optional 6,35 mm)	
Shaft type	Solid shaft	

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Mechanical Data, Environmental Conditions, Miscellaneous	RP19	RP20
Max. radial load	≤1 N	
Max. axial load	≤1 N	
Connection type	Gold plated soldering lugs	
Connection position	Radial	
Sensor mounting	Bushing	
Mass	20 g	
Fastening parts included in delivery	Nut, toothed washer	
Fastening torque mounting nut	150 Ncm	
Material shaft	Stainless steel	
Material housing	Reinforced fibreglass PA66	

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

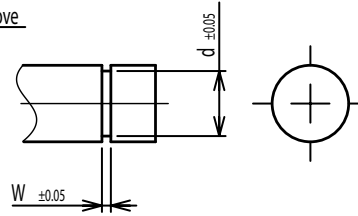
Number of wire turns / resolution										
Resistance value Ohm	50	100	200	500	1k	2k	5k	10k	20k	
Number of wire turns	300	370	470	450	570	740	1000	1270	1670	
Resolution in % (100% / number of turns)	0,333	0,27	0,213	0,222	0,1754	0,135	0,1	0,079	0,599	

On Request: Special machining on shaft

Slot



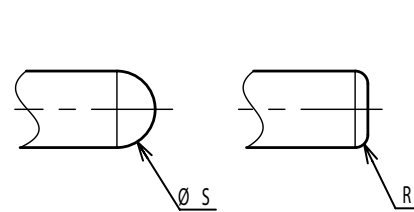
Groove



Flat



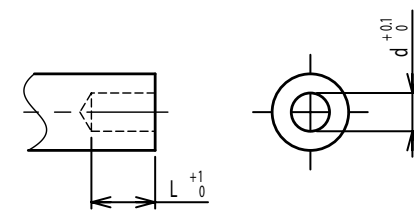
Round top



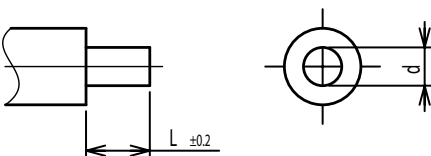
Double side flat



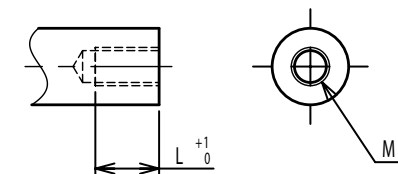
Counterbore hole



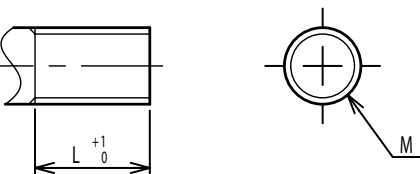
Step



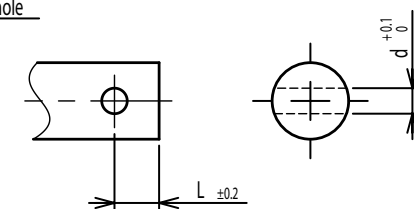
Counterbore screw hole



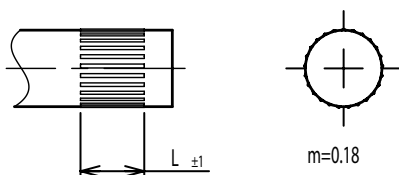
Screw Thread



Pin hole



Knurled(Parallel)



Screw thread inside hole

