

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% $R \leq 1kOhm$ / ±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

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Order code									
Description		Selection: standard=black/bold, possible options=grey/cursive							
Series	RP								
Angle of rotation mecha.:									
Without stop		20							
With stop		19							
Resistance value / Option Tandem:					Tandem				
Option 10 Ohm			R10	/10					
Option 20 Ohm			R20	/20					
Option 50 Ohm			R50	/50					
Option 100 Ohm			R100	/100					
Option 200 Ohm			R200	/200					
Option 500 Ohm			R500	/500					
1 kOhm			R1k	/1K					
Option 2 kOhm			R2k	/2K					
5 kOhm			R5k	/5K					
10 kOhm			R10k	/10k					
Option 20 kOhm			R20K	/20k					
Option rear shaft:									
Standard Ø6,00 x 20 mm					RA				
Shaft length in mm					RAxx,xx				
Shaft diameter in mm (≤6,35 mm)					RADMx,xx				
Resistance tolerance:									
±3%						W3%			
Option ±1%						W1%			
Independent linearity:									
±0,50%							L0,5%		
Option ±0,35% R ≤ 1kOhm							L0,35%		
Option ±0,25% R > 1kOhm							L0,25%		
Front shaft:									
Standard Ø6,00 x 22 mm								-	
Option front shaft diameter Ø6,35 mm								DM6,35	
Option shaft length in mm								Ax,xx	
Option shaft diameter in mm (≤6,35 mm)								DMx,xx	
Option center tap:									CT
Option screwdriver slot:									B
Shaft sealing:									
Standard is without sealing									-
Option D with shaft sealing									D

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

For Example: Multi ganged potentiometers, 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.

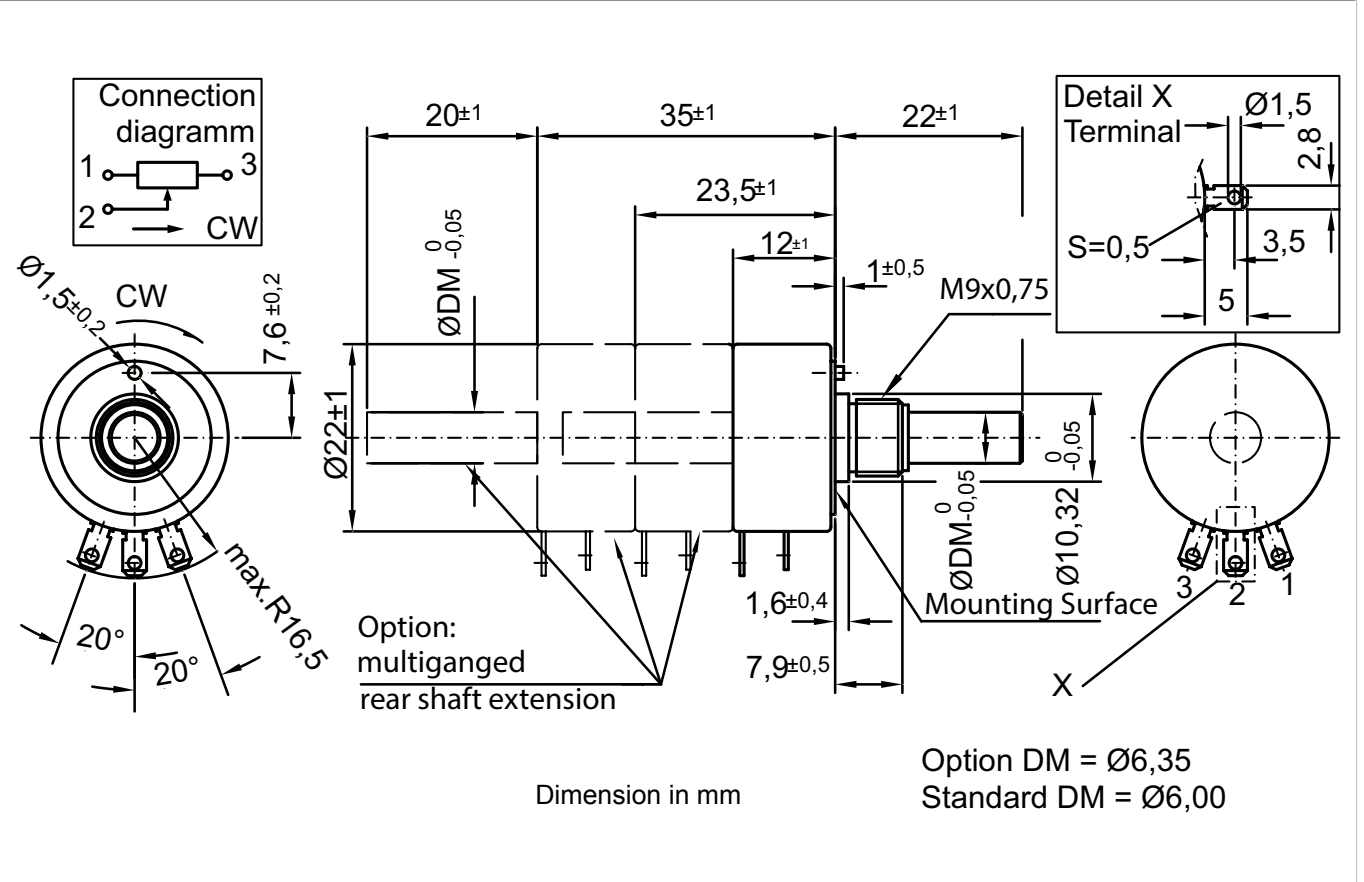
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Drawing



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