

#### **Singleturn Wirewound Potentiometer**

Series RP19/20



The RP19/20 potentiometers in 22 mm housing are suitable for applications where a 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 Ohm20 kOhm					
Resistance tolerance	±3% (±1%)					
Independent linearity (best straight line) 1.)	$\pm 0.5\% \ (\pm 0.35\% \ R \le 1 kOhm / \pm 0.25\% \ R > 1 kOhm)$					
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. r	otations				
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 102000Hz 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	Bush	ning				
Mass	20	g				
Fastening parts included in delivery	Nut, toothe	ed washer				
Fastening torque mounting nut	150 1	Ncm				
Material shaft	Stainles	s steel				
Material housing	Reinforced fib	reglass PA66				

<sup>1.)</sup> According IEC 60393

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





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

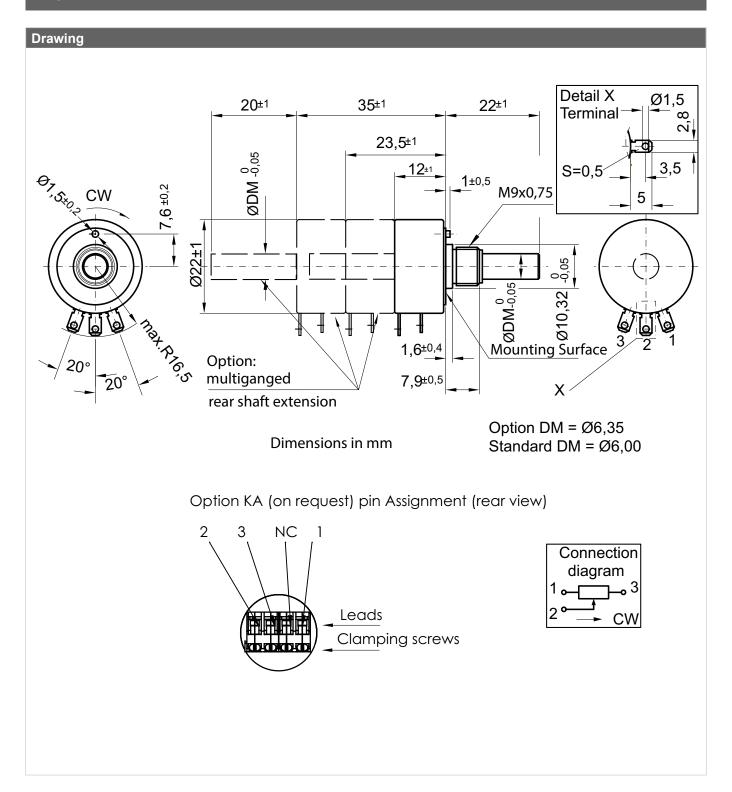
# For higher quantities or on-going demand, additional options are available as described below on request

For Example: Multi ganged potentiometers (max. 10), 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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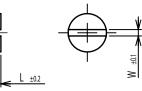


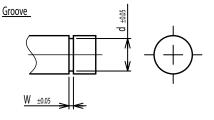
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### On Request: Special machining on shaft







<u>Flat</u>





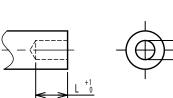
Double side flat





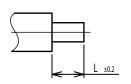


Round top



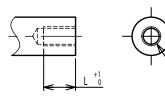
Ø <u>S</u>

Step





Counterbore screw hole

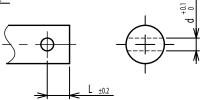


Screw Thread

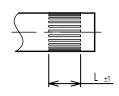




Pin hole

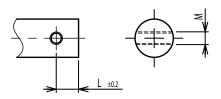


Knurled(Parallel)





Screw thread inside hole



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