

Data Sheet for Precision Potentiometer

Multiturn Wirewound Potentiometer

Series HS17



The HS17 potentiometers in 22 mm housing are suitable for applications where a precise and economical multiturn potentiometer with servo flange is important.

- Optional version HS17xxR with integrated slipping clutch
- With many options

Electrical Data	3-turn	5-turn	10-turn
Effective electrical angle of rotation 1.)	1080° ±5°	1800° ±5°	3600° ±5°
Total resistance 1.)	100 Ohm..10 kOhm	100 Ohm..50 kOhm	100 Ohm..100 kOhm
Resistance tolerance	±3% (±1%)		
Independent linearity (best straight line) 1.)	±0,25%		±0,25% (±0,1%)
Theoretical resolution	Depends on resistance value (see table below)		
Backlash (Hysteresis) 1.)	≤ 2°		
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	1 W	2 W
Insulation Voltage 1.)	1000 VAC, 1min		
Insulation Resistance 1.)	1000 MOhm @ 500 VDC		

Mechanical Data, Environmental Conditions, Miscellaneous	3-turn	5-turn	10-turn
Mechanical angle of rotation	1080° +10°	1800° +10°	3600° +10°
Lifetime (90% el. eff. angle half sine) 2.)	300.000 rotations	500.000 rotations	1 Mio. rotations
Max. operational speed	40 rev. / min.		
Bearing	Ball bearing front, sintered bearing rear side		
Operational torque @ ambient temperature 1.) 2.)	5 Nmm		
End stop torque 1.) 2.)	35 Ncm		
Operating temperature range	-20..+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 bei 11 ms x 18		
Housing diameter	22 mm		
Housing depth	22 mm		
Shaft diameter	3,175 mm		
Shaft type	Solid shaft		

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Mechanical Data, Environmental Conditions, Miscellaneous	3-turn	5-turn	10-turn
Max. radial load		≤1 N	
Max. axial load		≤1 N	
Connection type	Gold plated soldering lugs		
Connection position	Radial		
Sensor mounting	Servo flange		
Mass	30 g		
Fastening parts included in delivery	3 x servo clamps SFN2 with screw M3 x 7,5		
Material shaft	Stainless steel		
Material housing	Plastic		

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	100	200	500	1k	2k	5k	10k	20k	50k	100k
Number of wire turns (HS1703)	820	920	1270	1350	1270	1990	2570	-	-	-
Number of wire turns (HS1705)	1240	1560	2000	2510	2400	3200	3900	4800	5500	-
Number of wire turns (HS1710)	2100	2480	3300	4000	5020	5000	6400	7800	10100	11000

Resolution in degree E.g. R5k 5-turn = $1800^\circ / 3200 = 0,563^\circ$ per winding resistive wire

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Order code

Description		Selection: standard=black/bold, possible options=grey/cursive							
Series	HS17								
Revolutions with stop:									
Option 3-turn		03							
Option 5-turn		05							
10-turn		10							
Slipping clutch:									
Without additional mechanics				-					
Option with integrated slipping clutch				R					
Resistance value / Option tandem:						Tandem			
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 (only 5 + 10 Turn)				R20K	/20K				
Option 50 kOhm (only 5 + 10 Turn)				R50K	/50k				
Option 100 kOhm (only 10 Turn)				R100K	/100k				
Resistance tolerance:									
±3%						W3%			
Option ±1%						W1%			
Independent linearity:									
±0,25% (3 to 10-turn)							L0,25%		
Option ±0,10% (10-turn) R ≥ 5kOhm							L0,1%		
Option center tap only 10 turn:									CT
Front shaft:									
Standard Ø3,175 x 9,6 mm									-
Option shaft length in mm									Ax,xx
Option shaft diameter in mm (≤6,35 mm)									DMx,xx

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

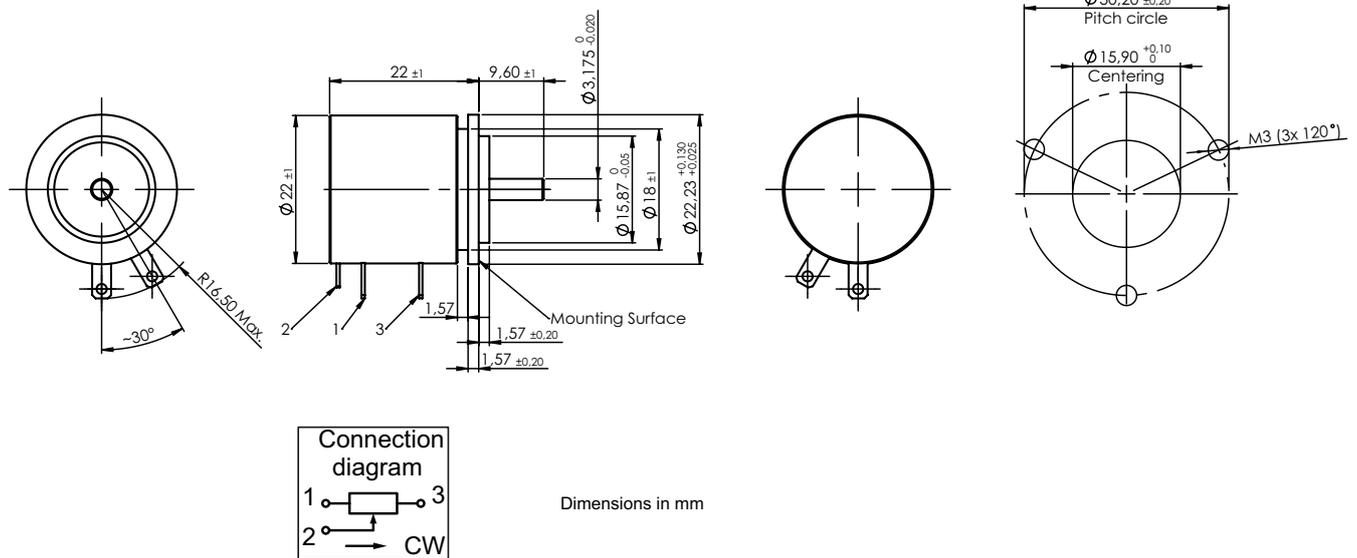
For Example: Special electrical and mechanical angles of rotation, and special resistance and linearity tolerances. Furthermore we can mount gear wheels or attach cable assemblies with or without connectors and much more.

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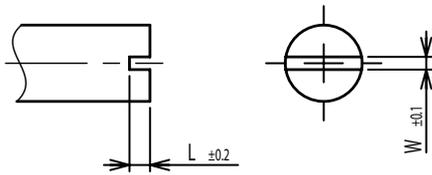
Series HS17

Drawing

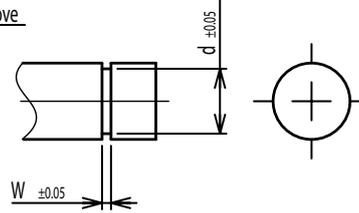


On Request: Special machining on shaft

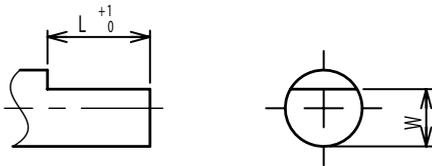
Slot



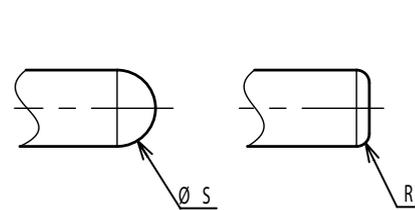
Groove



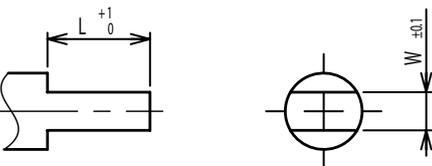
Flat



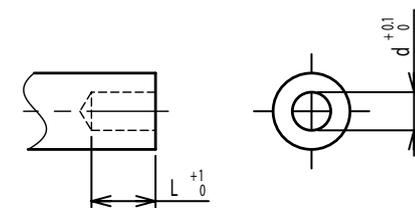
Round top



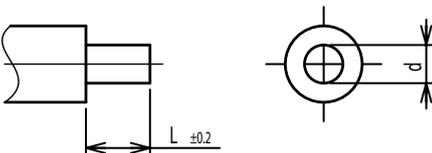
Double side flat



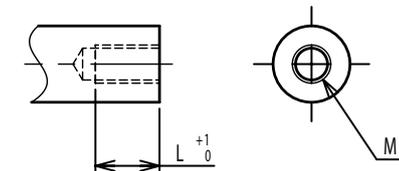
Counterbore hole



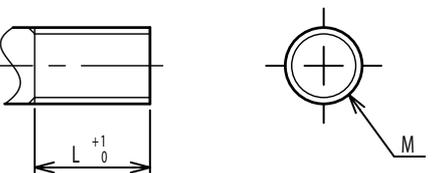
Step



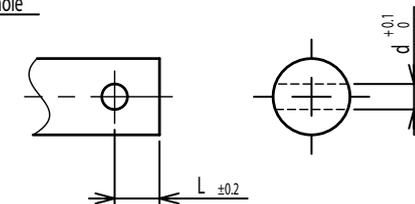
Counterbore screw hole



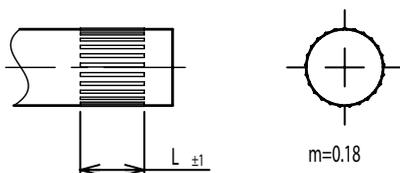
Screw Thread



Pin hole



Knurled(Parallel)



Screw thread inside hole

