

Rotary Sensor Potentiometer

Series SP2800



The SP2800 potentiometer converts angular position into a proportional analog voltage. They utilize Novotechnik's highly robust conductive plastic technology.

The housing is special high-grade temperature-resistant plastic material. The precious metal wipers are elastomer-damped for reliable contact under severe working conditions.

The SP2800 is sealed to as high as IP65, making it insensitive to dirt and moisture.

Electrical connections are via independent wires, which are sealed into the housing.

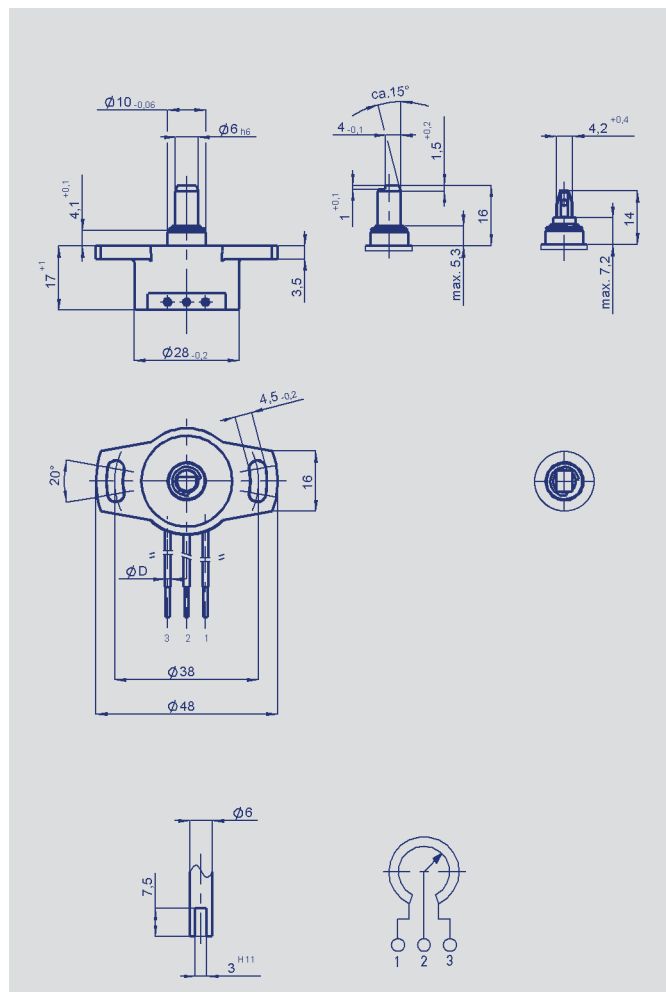
The sensor is mounted via slots which allow easy mounting and mechanical adjustment.

An optional backlash-free „push-on“ shaft coupling provides fast and easy installation.

Special models with different electrical travels and shaft dimensions are available.

Special features

- highly robust potentiometer for demanding industrial and mobile applications
- excellent lifetime - in excess of 50 million movements
- single channel or fully electrically redundant
- sealed to IP 65 or IP54
- easy mounting and mechanical adjustment
- two shaft styles, including easy „push-on“ coupling
- excellent price/performance ratio



Description

Housing and bearing	high-grade, temperature-resistant plastic
Shaft	stainless steel
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Mounting position	any orientation
Electrical connections (standard)	conductors, TPE-PEE-insulation, l = 300 mm 1-channel: 3 conductors, diameter = 2.1 mm 1 = brown, 2 = red, 3 = orange 2-channel: 6 conductors, diameter = 1.6 mm 1 = brown, 2 = red, 3 = orange 4 = brown, 5 = red, 6 = orange

Novotechnik U.S., Inc.
155 Northboro Road
Southborough, MA 01772

Phone 508 485 2244
Fax 508 485 2430
info@novotechnik.com
www.novotechnik.com

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Mechanical Data				
Dimensions	see drawing			
Mounting	2 fillister head screws M4 with washers			
Maximum torque for mounting screws (with washer)	180			Ncm
Mechanical angles	360, continuous			°
Maximum shaft loading (axial and radial) static or dynamic force	20			N
Torque	0.2 (IP54), 0.5 (IP65)			Ncm
Maximum operational speed	120			RPM
Weight	30			g
Electrical Data				
Defined electrical angle	100	08	345	° ± 2°
Nominal resistance	3	5	5	kΩ
Resistance tolerance	±20			%
Repeatability (dependent on mounting tolerances)	with 6 mm round shaft (shabe B) ≤ 0.03 wit push-on coupling (shape D) ≤ 0.06			° °
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5			ppm/K
Independent linearity	1.0	0.3	0.3	±%
Max. permissible applied voltage	42			V
Recommended operating wiper current	≤ 1			μA
Max. allowed wiper current (in case of malfunction)	10			mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10			MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤ 100			μA
Conductor length	approx. 300			mm
Conductor diameter	approx. 1			mm ²
Environmental Data				
Temperature range	-40 ... +120 (temporary 150°C, max. 1 h)			°C
Vibration	5...2000 Amax = 0.75 amax = 20			Hz mm g
Life	50 x 10 ⁶			movements
Protection class	IP 54 or IP 65 (DIN 400 50 / IEC 529)			
Order designations				
Type	Art. No.			
SP2801 308 000 001	019520	↗ 308°, 6 mm shaft, IP 54		
SP2821 308 000 001	019540	↗ 308°, push-on coupling, IP 54		
SP2831 308 000 001	019521	↗ 308°, 6 mm shaft, IP 65		
SP2841 308 000 001	019541	↗ 308°, push-on coupling, IP 65		
SP2801 100 002 001	019522	↗ 100°, 6 mm shaft, IP 54,		
SP2831 100 002 001	019527	↗ 100°, 6 mm shaft, IP 65,		
SP2841 100 002 001	019542	↗ 100°, push-on coupling, IP 65		
SP2841 345 065 001	019564	↗ 345°, push-on coupling, IP 65		
SP2841 100 067 006	019565	2 channel (electrically redundant, drawing on request), push-on coupling, IP65 per track: ↗ 100° ±2°, 3 kΩ ±20 %, indepen. linearity ±1.0 %		

Important

All values given for linearity, lifetime and temperature coefficient are derived with no electrical load on the wiper (I ≤ 1μA).

Recommended accessories

MAP - processor control indicator, with display MUP / MUK - signal conditioners.