

Angle Sensor Potentiometer

Series SP1600



Special features

- highly robust potentiometer for demanding applications
- long lifetime - to 4 million movements
- easy mounting
- protection class IP67 (when mounted with O-ring)
- internal sealing
- return spring in ccw direction
- good price/performance ratio

The SP1600 potentiometer converts angular position into a proportional analog voltage. It utilizes Novotechnik's highly robust conductive plastic technology.

The use of a precious metal multifinger wiper ensures reliable contact even under most severe working conditions.

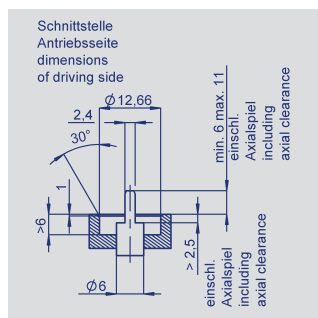
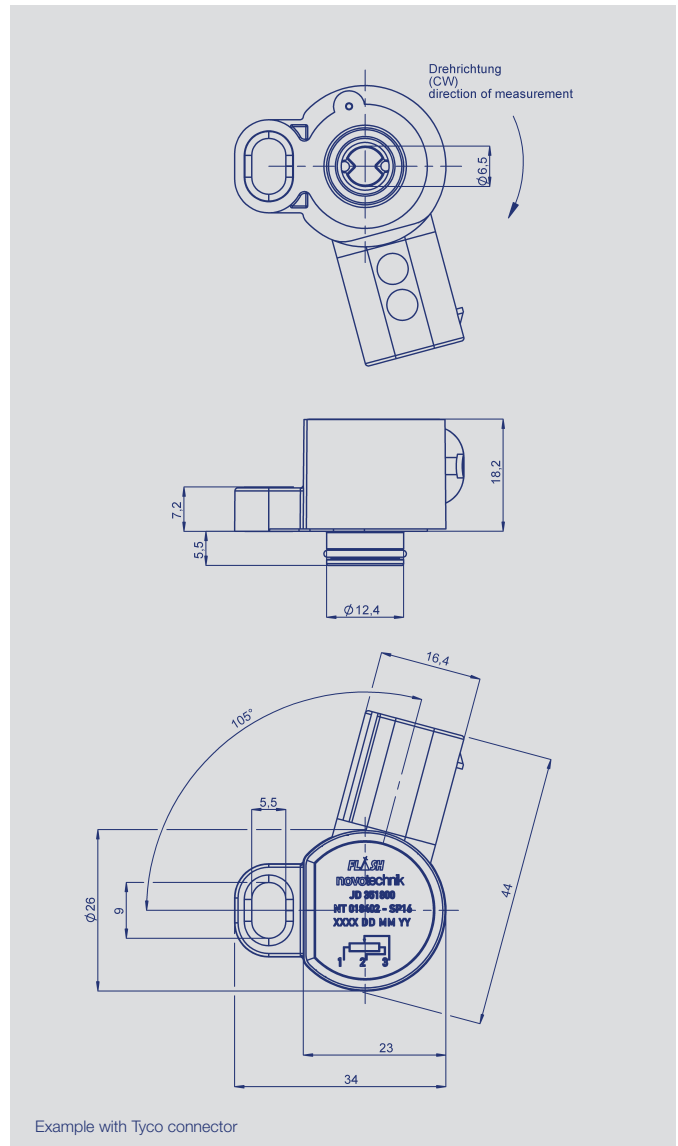
The housing is made of special high-grade temperature-resistant plastic. The oval mounting hole with brass insert allows easy mounting and physical calibration.

The design makes use of the customer-side bearing on the driving shaft. This allows for fast and easy mounting.

The SP1600 is sealed to IP67, making it insensitive to dirt and moisture. It is suitable for use in difficult environments, such as automotive under-hood applications.

The 3-pin AMP Tyco-connector offers a popular and reliable plug connection.

Special models with different electrical angles and contact versions are available upon request.



Description

Housing	high-grade, temperature-resistant plastic
Integrated shaft coupling	high-grade temperature-resistant plastic
Resistance element	conductive plastic
Wiper	precious metal multi-finger wiper
Electrical connections	connector (male) with 3 pins, AMP Tyco Micro Quadlock System, document No. 114-18063-123 code A
Sealing	O-ring, X-ring (internal)

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Printed in Germany.

Important

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

Necessary accessories

Socket plug (female)
AMP TYCO Micro Quadlock
System Connector-Order-No.
1-967642-1 Coding A.

Recommended accessories

MAP process control indicators with display,
MUW / MUK signal conditioners for standardized output signals.

Mechanical Data		
Dimensions	see drawing	
Mounting	with 1 cylinder head screw M5	
Mounting torque of clamp at housing flange	5 ±0.5	Nm
Max. permissible torque at end stops	0.6	Nm
Mechanical angle	approx. 125	°
Operating torque	0.8 ... 12	Ncm
Weight	approx. 15	g
Electrical Data		
Defined electrical angle	120 ±3	°
Nominal resistance	5	kΩ
Resistance tolerance	±20	%
Hysteresis	≤ ±1.0	%
Absolute linearity	< ±2	% VDD
Protective wiper resistor	0.8	kΩ
Temperature coefficient of the output-to-applied voltage ratio	typical 15	ppm/K
Max. permissible applied voltage	24	VDC
Recommended operating wiper current	≤ 1	µA
Max. allowed wiper current in case of malfunction	< 37.5	mA
Insulation resistance (500 VDC)	≥ 10	MΩ
Dielectric strength (500 VAC, 50 Hz)	≤ 100	µA
Environmental Data		
Temperature range	-30...+120	°C
Vibration	5...500 A _{max} = 0.75 a _{max} = 20 8 h per RR	Hz mm g
Life	4 x 10 ⁶	movements
Functional safety	When using our products in safety-related systems, please contact us	
Operating speed	100	RPM
Protection class (IEC 60529)	IP67 (when mounted with O-ring)	

Order designations

Type	P/N	Electr. angle	Output on	Resistance
SP 1601 105 001 001	018402	105°	Pin 3	5 kΩ

Other versions on request.