

**Sensor
Potentiometers**

Series SP5000



Special features

- easy mounting
- protection class up to IP 67 (mounted with o-ring), IP 40 shaft side
- long life
- good price/performance ratio

Designed to convert rotary movement into a proportional voltage signal, these rotary sensors utilize proven conductive plastic technology.

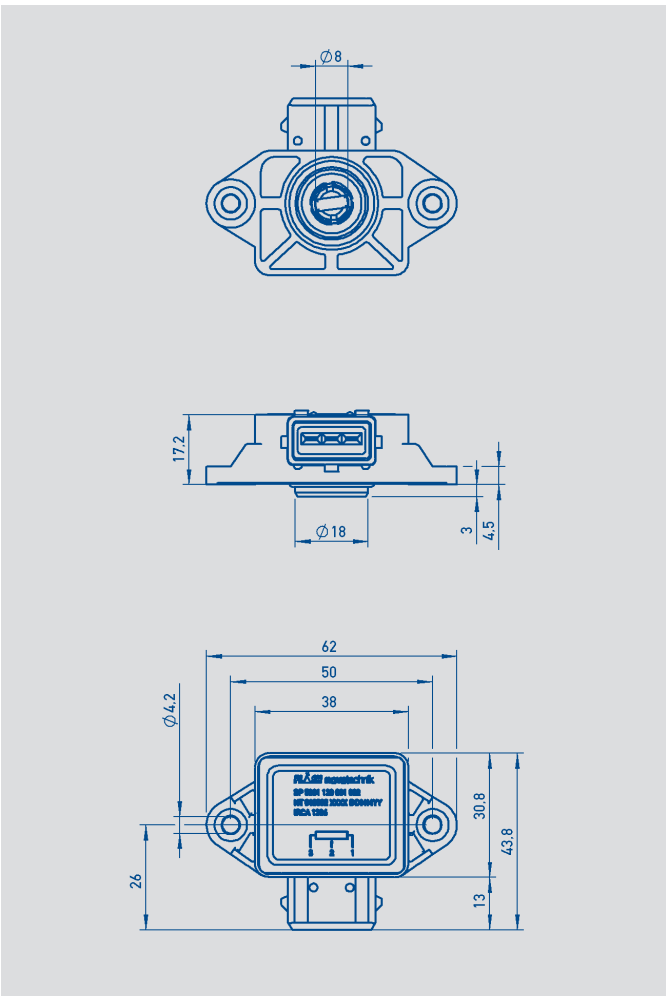
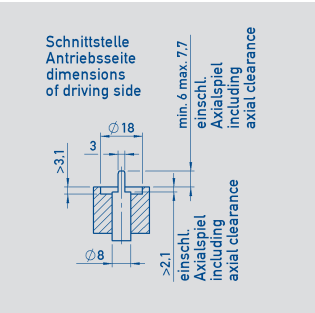
The housing and bearings are made of a special high-grade temperature-resistant plastic material. Fixings with brass bushings allow simplicity of mounting.

Due to the hollow shaft a fast and easy mounting is permitted. Despite of its compact and wear-free design the sensors are very robust against environmental influences like vibrations, temperature variations, dirt and humidity.

These sensors are suitable for use in all kinds of rough environment for example close to engines in automotive applications. The 3-pin AMP Junior-Timer connector offers a popular and reliable interface.

The use of an elastomer-damped precious metal multi-finger wiper ensures reliable contact even under most severe working conditions.

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



Description	
Housing	high-grade, temperature-resistant plastic
Shaft coupling	high-grade plastic
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	connector with 3 pins
Sealing	o-ring

Mechanical Data				
Dimensions	see drawing			
Mounting	with 2 cylinder head screws M4 and washer			
Mechanical angle	ca. 132			°
Weight	ca. 25			g
Electrical Data				
Actual electrical angle	120	105	120	° max.
Nominal resistance	2	2	4	kΩ
Resistance tolerance	± 20			%
Repeatability	1,0			°
Protective wiper resistor	1,05			kΩ
Effective temperature coefficient of the output-to-applied voltage ratio	typical 15			ppm/K
Independent linearity, standard	≤ ±2			%
Max. permissible applied voltage	42			V
Recommended operating wiper current	≤ ±1			μA
Max. wiper current in case of malfunction	10			mA

Environmental Data		
Temperature range	-40 ... +125 (max. 150 °C (1/2 h), max. 12 times over lifetime)	°C
Vibration	5...2000 A _{max} = 0,75 a _{max} = 20 10	Hz mm g cycles
Life	4 x 10 ⁶	move- ments
Operating speed	100	min ⁻¹
Protection class	up to IP 67 (mounted with o-ring) IP 40 (shaft side)	

Order designations				
Type	Art.no.	Electr. angle	Connector type	Resistance
SP5001 120 001 001	018500	120°	AMP Junior Power Timer C-282191 Signal pin 2	2 kΩ
SP5001 105 002 001	018501	105°	AMP Junior Power Timer C-282191 Signal pin 3	2 kΩ
SP5001 120 001 002	018502	120°	AMP Junior Power Timer C-282191 Signal pin 2	4 kΩ

Important

All the values given in this data sheet for linearity, lifetime and temperature coefficient in the voltage dividing mode are quoted for the device operating with the wiper voltage driving on operational amplifier working as a voltage follower, where virtually no load is applied to the wiper ($I_e \leq 1 \text{ }\mu\text{A}$).