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novotechnik
Siedle Gruppe

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.

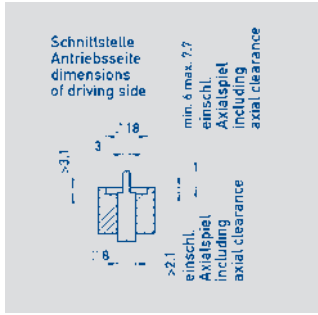
The housing is made of a special high-grade temperature-resistant plastic material. Fixings with brass bushings allow simplicity of mounting. Effective design by use of the customer-sided bearing of the plugging shaft.

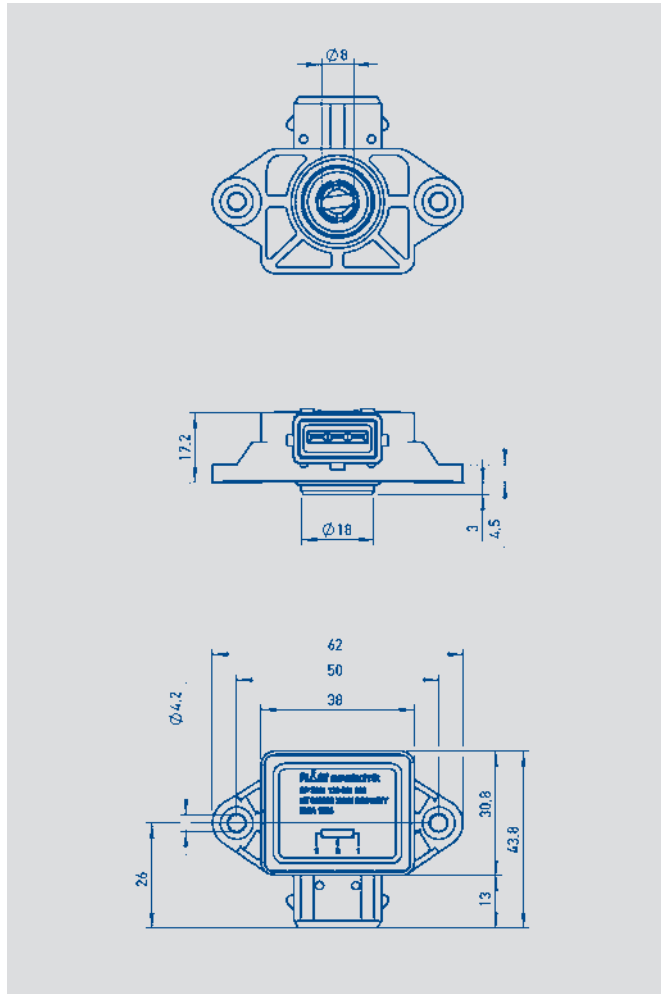
Due to the plugging shaft a fast and easy mounting is permitted. Despite of its compact and wear-free design the sensors are very robust against environmental influences like vibrations, temperature variations, dirt and humidity.

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 plug connection.

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 (male) with 3 pins AMP Junior Power Timer C-282191
Sealing	o-ring

Mechanical Data					
Dimensions	see drawing				
Mounting	with 2 cylinder head screws M4				
Mechanical angle	ca. 132				°
Max. permissible torque at end stops	0.25				Nm
Weight	ca. 25				g
Connector	AMP Junior Power Timer C-282191				
Electrical Data					
Actual electrical angle	120	104	120	117	° ±2°
Nominal resistance	2	2	4	4	kΩ
Resistance tolereance	± 20				%
Independent linearity	≤ ±2				%
Repeatability	1,0				°
Protective wiper resistor	1,05				kΩ
Effective temperature coefficient of the output-to-applied voltage ratio	typical 15				ppm/K
Max. permissible applied voltage	18	18	23	23	V
Recommended operating wiper current	≤ 1				µA
Max. 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
Environmental Data					
Temperature range	-40 ... +125 (max. 12 times over lifetime 150°C, 0.5 h))				°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	Output on	Resistance
SP5001 120 001 001	018500	120°	pin 2	2 kΩ
SP5001 104 002 002	018501	104°	pin 3	2 kΩ
SP5001 120 003 001	018502	120°	pin 2	4 kΩ
SP5001 117 004 001	018503	117°	pin 2	4 kΩ
SP5001 114 005 001	018504	114 °	pin 2	4 kΩ

other versions on request

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 ($I_e \leq 1$ µA).

Necessary accessories

Delivery via Tyco-Electronics:
Socket plug (female) AMP Junior Power Timer
Art.No. 282191-1;
Single conductor sealing
Art.No. 828904-1 for cable external diameter 1,2 ... 2,1 mm;
Contacts for cable diameter 0,5 ... 1,0 mm^2;
Art.No. 929940-1;

Recommended accessories

Process-controlled indicators MAP... with display Signal conditioner MUW.../MUK... for standardized output signals.