



Electronic Speed Sensor HSS 220

Description:

The contact-free speed sensors of the HSS 220 series detect the movement of ferromagnetic structures, such as gear wheels, gear rims or perforated discs, using the changes in magnetic flux.

So each sensor has two Hall elements and the differential between the two signals is detected, evaluated and then converted into an output signal suitable for processing.

For integration into standard controls, standard output signals are available.

Due to their extremely compact design, the robust housing and protection class IP 68, the instruments can be used in almost any application and any mounting position.

The main fields of application are detection of speed and rotation direction on gear wheels with a small module and high resolution, especially in rail vehicles and mobile machines.

Special features:

- 2-channel Hall differential sensor
- Wide frequency range
- Alignment required when installing
- Large air gap
- Simple installation

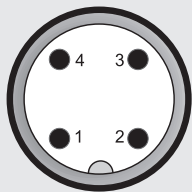
Technical data:

Input data	
Frequency range	0.1 .. 20,000 Hz
Installation depth	0 .. 46 mm adjustable
Max. pressure on sensing surface	10 bar, static
Air gap / installation distance	Module 1: 0.2 .. 1.3 mm Module 1.25: 0.2 .. 1.8 mm Module 1.5: 0.2 .. 2.0 mm Module 2: 0.2 .. 2.5 mm Module 2.5: 0.2 .. 3.5 mm
Mechanical connection	
Mechanical connection	Screw-in thread M18x1
Type of installation	Dependent on direction
Torque value	12 Nm
Housing material	X12CrNiS18 8
Output data	
Variants	2-channel speed (90° phase shift) or 2-channel speed / direction of rotation
Types	2 NPN frequency outputs or 1 NPN frequency output + 1 NPN direction of rotation output
Switching capacity	≤ 50 mA (36 V, 125 °C, 50 % duty cycle) ≤ 500 mA (24 V, 25 °C, 50 % duty cycle)
Direction of rotation	Marking on housing at 90° to rotational direction, gear rotation to right: channel A leading, channel B lagging or direction of rotation signal (right: HIGH / left: LOW)
Signal level	LOW: ≤ 2 V HIGH: ≥ +U _B - 2 V
Environmental conditions	
Operating temperature range	-40 .. +125 °C
Media resistance of housing	Saltwater, various hydraulic oils
CE mark	DIN EN 60947-5-2
Vibration resistance to EN 60068-2-6	15 g / 1 .. 2000 Hz
Shock resistance to EN 60068-2-27	30 g, 11 ms
Protection class to IEC 60529	IP 68 (when female connector is fitted)
Other data	
Electrical connection	Male M12x1, 4 pole
Supply voltage	8 .. 32 V DC
Residual ripple of supply voltage	≤ 5 %
Current consumption	< 33 mA at 24 V, both outputs LOW < 23 mA at 24 V, both outputs HIGH
Average life expectancy	200,000 h (MTTF)
Weight	~ 80 g

Note: Reverse polarity protection of the supply voltage and short circuit protection are provided.

Pin connections:

M12x1, 4 pole



Pin	HSS 220-2	HSS 220-3
1	+U _B	+U _B
2	Frequency 2	Direction of rotation
3	0 V	0 V
4	Frequency 1	Frequency

Adjustment angle for other modules:

It is possible to achieve a 90° phase shift of the two frequency signals by turning the sensor through the angle indicated in the table below.

Adjustment angle	Module	Adjustment angle
-12°	Module 1	
- 9°	Module 1.25	
- 7°	Module 1.5	
- 3°	Module 1.75	
± 0°	Module 2	± 0°
	Module 2.25	+ 4°
	Module 2.5	+ 8°
	Module 2.75	+13°
	Module 3	+17°

Model code:

HSS 2 2 0 - X - 046 - 000

Signal technology

- 2 = Outputs 1 and 2: Frequency (90° phase shift)
- 3 = Output 1: Frequency
Output 2: Direction of rotation

Installation depth

046 = 46 mm max.

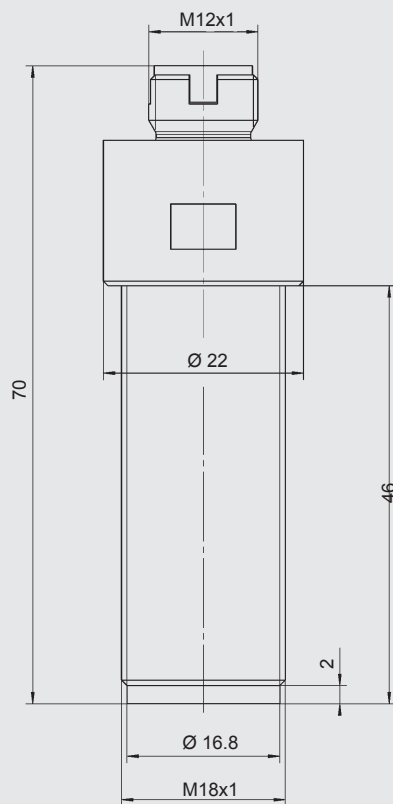
Modification number

000 = Standard

Notes:

On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

Dimensions:



Note:

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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