



## Electronic Speed Sensor HSS 110

### Description:

The contact-free speed sensors of the HSS 110 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 6K9K, the devices 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 small module and high resolution, especially in vehicles and mobile machines with electrical and hydraulic drives.

### Special features:

- 1-channel Hall differential sensor
- Different signal outputs available
- Extremely compact design
- Wide frequency range
- Alignment required on installation
- Large air gap

### Technical data:

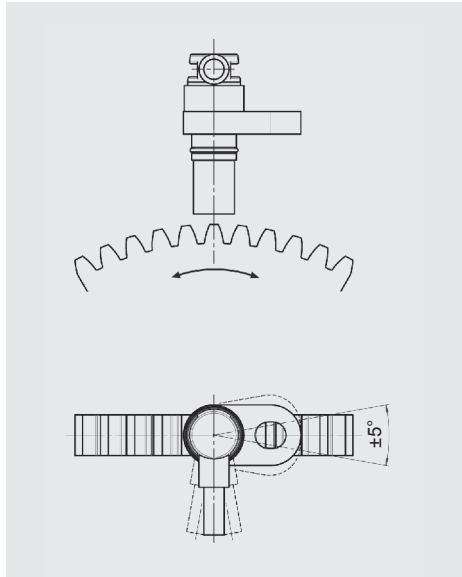
Input data	
Frequency range	NPN: 0.1 .. 20,000 Hz PWM: 1.0 .. 5,000 Hz
Probe length	18.4 mm
Probe diameter	10.2 / 9.4 mm
Max. pressure on sensing surface	25 bar, static
Air gap / installation distance	Module 1: 0.2 .. 0.8 mm Module 1.25: 0.2 .. 1.4 mm Module 1.5: 0.2 .. 1.8 mm Module 2: 0.2 .. 2.4 mm Module 3: 0.2 .. 2.9 mm
Mechanical connection	Flange, single, asymmetrical, cable outlet 90°
Type of installation	Dependent on direction (with asymmetrical flange)
Torque value	max. 8 Nm
Housing material	Brass
Seal	FPM
Output data	
Variants	1-channel frequency or 1-channel frequency / direction of rotation (PWM)
Types	1 NPN frequency output or 1 PWM output, 4 .. 20 mA
Switching capacity / current rating	NPN: ≤ 40 mA PWM: ≤ 200 mA
Direction of rotation	Flange on left, gear turns to right, for duration of PWM signal pulse
Signal level	LOW: ≤ 0.6 V / 4 .. 9 mA PWM HIGH: +U <sub>B</sub> / 12 .. 17 mA PWM
Environmental conditions	
Operating temperature range	-40 .. +140 °C
Media resistance of housing	Salt water; various hydraulic oils; diesel oils; cleaning agent; salt spray
CE mark	DIN EN 60947-5-2
Vibration resistance to EN 60068-2-64	0.05 g <sup>2</sup> / Hz, 20 .. 2,000 Hz
Shock resistance to EN 60068-2-27	100 g, 6 ms, 3x in each direction
Protection class to IEC 60529 to ISO 20653	IP 67 IP 6K9K
Other data	
Electrical connection	Flying leads, 3-core, cable length 1 m
Supply voltage	NPN: 12.5 .. 32 V DC PWM: 4.5 .. 20 V DC
Residual ripple of supply voltage	≤ 5 %
Current consumption	< 30 mA at 30 V DC
Average life expectancy	200,000 h (MTTF)
Weight	~ 50 g

Note: Reverse polarity protection of the supply voltage and short circuit protection (max. 50 mA) are provided.

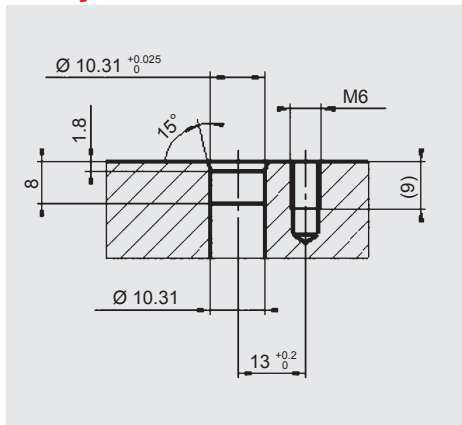
## Pin connections:

Core	HSS 110-1	HSS 110-4
red	+U <sub>B</sub>	+U <sub>B</sub>
black	0 V	PWM
blue	Frequency	

## Mounting position tolerance:



## Specification for installation cavity:



## Model code:

**HSS 1 1 0 - X - 018 - 000**

### Signal type

- 1 = Output 1: Frequency
- 4 = Output 1: Frequency and direction of rotation PWM

### Probe length

018 = 18.4 mm

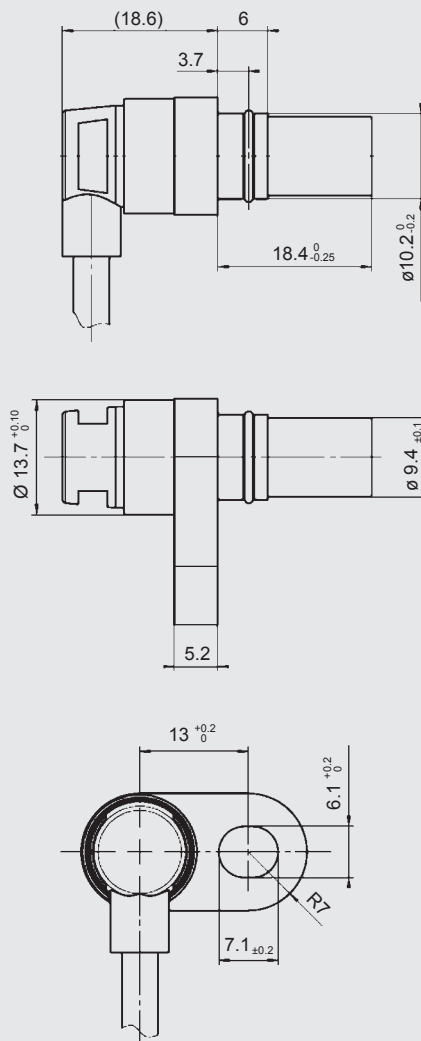
### Modification number

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 or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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