



## Speed Sensor HSS 110

1 channel

Flange housing

### 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.

### Optional PWM

### Technical data:

Input data	
Frequency range	NPN frequency output: 0,1 .. 20,000 Hz PWM output: 0.1 .. 12,000 Hz
Probe length	18.4 mm
Probe diameter	10.2 mm
Max. pressure on sensing surface	25 bar, static
Mechanical connection	Flange, single, asymmetrical, cable outlet 90°
Tightening torque, recommended	Max. 8 Nm
Type of installation	Dependent on direction (with asymmetrical flange)
Housing material	Brass
Seal	FKM
Output data	
Output signal	NPN frequency output Signal level: HIGH: +U <sub>B</sub> / LOW: ≤ 0.6 V Max. switching current: ≤ 40 mA PWM output, 4 .. 20 mA Signal level: HIGH: 12 .. 17 mA / LOW: 4 .. 9 mA Max. switching current: ≤ 200 mA
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	EN 61000-4-2/3/4/6/8
Vibration resistance acc. to EN 60068-2-6	0.05 g <sup>2</sup> / Hz, 20 .. 2,000 Hz
Shock resistance acc. to EN 60068-2-27	100 g, 6 ms, 3x in each direction
Protection class acc. to IEC 60529	IP 67; IP 6K9K
Other data	
Electrical connection	Jacketed cable, 3-core, 1 m cable length
Supply voltage	NPN frequency output: 12.5 .. 32 V DC PWM output: 4.5 .. 24 V DC
Residual ripple of supply voltage	≤ 5 %
Current consumption	< 30 mA at 30 V DC
Life expectancy	875,000 h (MTTF) / 1,750,000 h (MTTF <sub>a</sub> )
Weight	~ 50 g

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

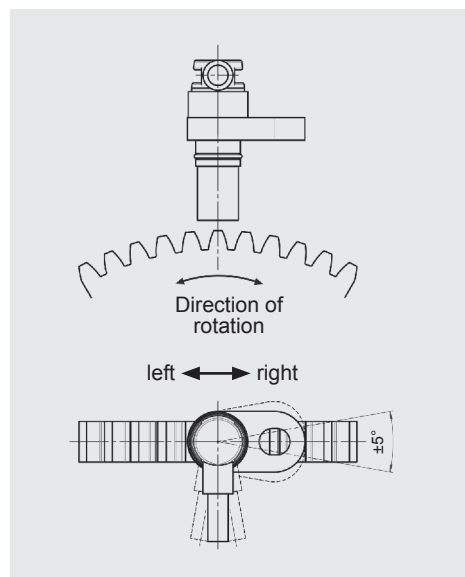
## Switching/installation distance:

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

## Pin connections:

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

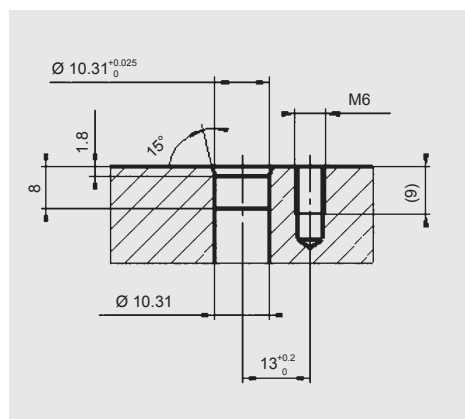
## Mounting position tolerance:



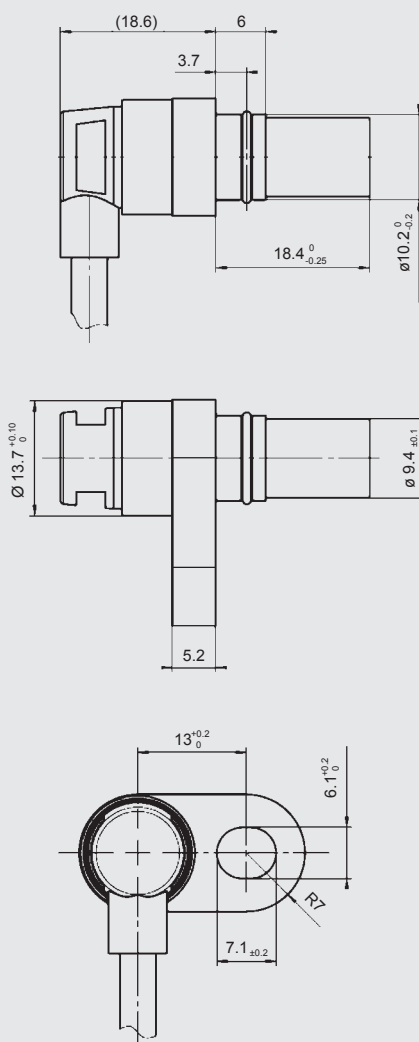
## Direction of rotation (only PWM):

Flange left, gear wheel rotating clockwise, impulse duration defines PWM signal

## Specification for installation cavity:



## Dimensions:



## Model code:

**HSS 110 - X - 018 - 000**

### Signal technology

- 1 = output 1: frequency
- 4 = output 1: PWM (frequency and direction of rotation)

### Probe length

018 = 18.4 mm

### Modification number

000 = standard

## 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.

**HYDAC ELECTRONIC GMBH**  
Hauptstr. 27, 66128 Saarbrücken  
Germany  
Telephone +49 (0)6897 509-01  
Fax +49 (0)6897 509-1726  
e-mail: [electronic@hydac.com](mailto:electronic@hydac.com)  
Internet: [www.hydac.com](http://www.hydac.com)