



## Speed Sensor HSS 120

2 channel

Flange housing

### Description:

The contact-free speed sensors of the HSS 120 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.

The instruments are available in different immersion depths. 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 a small module and high resolution, especially in vehicles and mobile machines with hydraulic drives.

### Technical data:

Input data	
Frequency range	0.1 .. 20,000 Hz
Probe length	30; 35; 45 mm
Probe diameter	15 mm
Max. pressure on sensing surface	15 bar (dynamic and static)
Mechanical connection	Flange, single, asymmetrical, cable outlet 90° (30 mm) / axial (35, 45 mm)
Tightening torque, recommended	10 Nm
Type of installation	Dependent on direction (with asymmetrical flange)
Housing material	Brass
Seal	FKM
Output data	
Output signal	2 NPN frequency outputs Signal level: HIGH: +U <sub>B</sub> / LOW: ≤ 0.6 V Max. switching current: ≤ 50 mA
Environmental conditions	
Operating temperature range	-40 .. +140 °C (-40 .. +160 °C for max. 500 operating hours)
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	30 g, 10 .. 500 Hz, 100 min in each direction
Shock resistance acc. to EN 60068-2-27 / -29	50 g, 11 ms, 3x in each direction 100 g, 6 ms, 3x in each direction
Protection class acc. to IEC 60529	IP 67; IP 6K9K
Other data	
Electrical connection	Jacketed cable, 4-core, 1 m cable length
Supply voltage	7 .. 30 V DC
Residual ripple of supply voltage	≤ 5 %
Current consumption	< 30 mA at 30 V DC
Life expectancy	195,000 h (MTTF) / 390,000 h (MTTF <sub>d</sub> )
Weight	~ 80 g

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

## Switching/installation distance:

	Probe length: 30 mm	35 / 45 mm
Module 1	0.2 .. 1.0 mm	0.2 .. 1.3 mm
Module 1.25	0.2 .. 1.5 mm	0.2 .. 1.8 mm
Module 1.5	0.2 .. 1.7 mm	0.2 .. 2.0 mm
Module 2	0.2 .. 2.2 mm	0.2 .. 2.5 mm
Module 2.5	0.2 .. 3.2 mm	0.2 .. 3.5 mm

## Pin connections:

Lead	HSS 120-2
brown	+U <sub>B</sub>
blue	Frequency 1 (A)
black	0 V
white	Frequency 2 (B)

## Adjustment angle for other modules:

It is possible to achieve a 90° phase shift of the two frequency signals by turning the sensor accordingly.

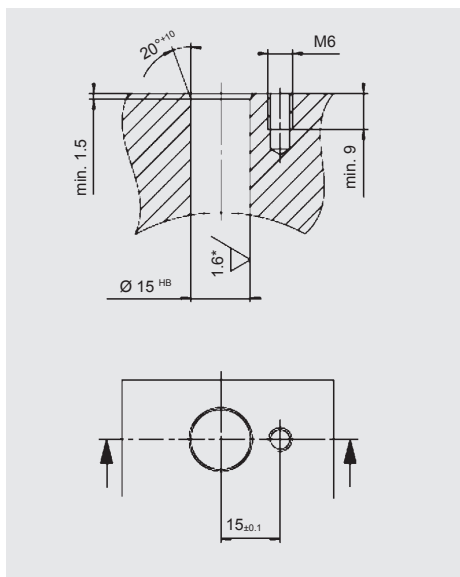


-20°	Module 1	
-15°	Module 1.25	
-10°	Module 1.5	
± 0°	Module 2	± 0°
	Module 2.5	+15°

## Direction of rotation:

Flange left, gear turns clockwise:  
channel A following; channel B leading

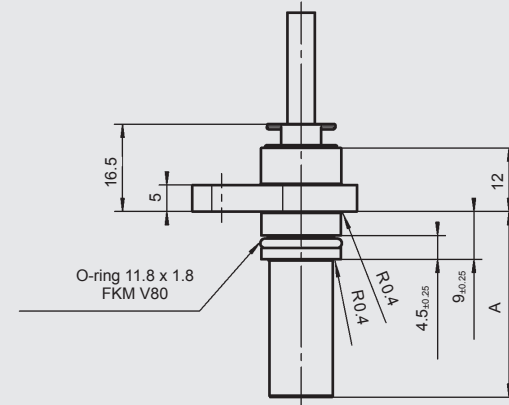
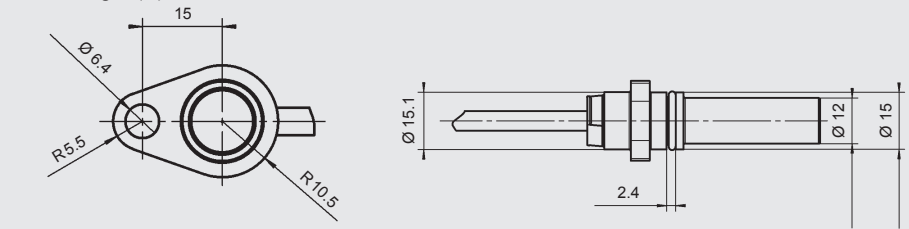
## Specification for installation cavity:



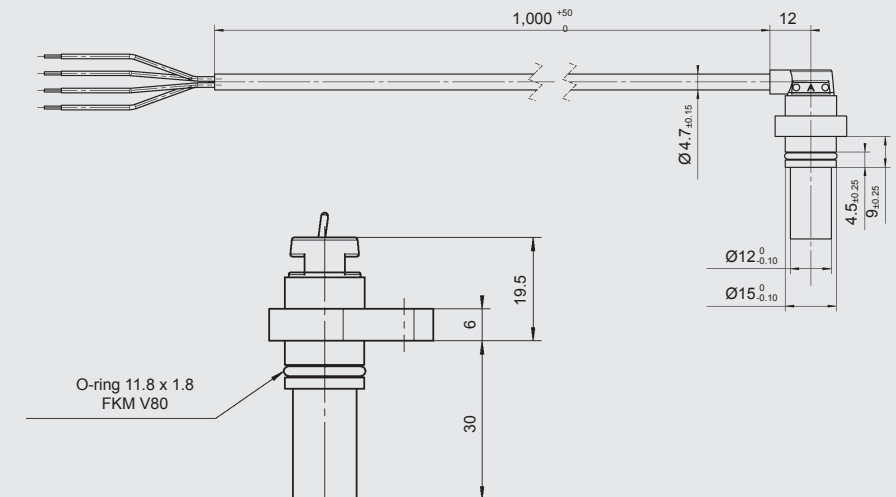
\* For sealing function RA 1.6, otherwise 3.2

## Dimensions:

Probe length (A): 35 mm, 45 mm



Probe length: 30 mm



## Model code:

**HSS 1 2 0 - 2 - XXX - 000**

### Signal technology

2 = outputs 1 and 2: frequency (90° / 270° phase shift for module "2")

### Probe length

030 = 30 mm

035 = 35 mm

045 = 45 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.

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