Speed Sensor
HSS 130

2 channel | **Flange housing**

Direct detection of direction of rotation

Description:

The contact-free speed sensors of the HSS 130 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.

These devices are mainly used for detection of speed and rotation direction on rotary sensors, even under extreme environmental conditions.

Technical data:

Input data	
Frequency range	0.1 .. 20,000 Hz
Probe length Probe diameter	16; 32 mm 18 mm
Max. pressure on sensing surface	10 bar (dynamic and static)
Mechanical connection	Double flange, asymmetrical, cable outlet at 90°
Tightening torque, recommended	10 Nm
Type of installation	Dependent on direction (with asymmetrical flange)
Housing material Seal	Brass/plastic (PA6 GF30) FKM
Output data	
Output signal	2 NPN frequency outputs Signal level: HIGH: ≥ 5 V / LOW: ≤ 2 V Max. switching current: ≤ 500 mA 1 NPN frequency output + 1 NPN dir. of rotation output Signal level: HIGH: ≥ 5 V / LOW: ≤ 2 V Max. switching current: ≤ 500 mA
Environmental conditions	
Operating temperature range	-40 .. +125 °C
Media resistance of housing	Saltwater and various hydraulic oils
CE mark	EN 61000-4-2/3/4/6/8
Vibration resistance acc. to EN 60068-2-36	5 .. 57 Hz (1.5 mm p-p), sine 57 .. 2000 Hz (10 g), sine
Shock resistance acc. to EN 60068-2-27	15 g, 11 ms, 3x in each direction 25 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, 43 cm cable length
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
Life expectancy	120,000 h (MTTF) / 240,000 h ($MTTF_d$)
Weight	~ 110 g

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

Switching/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

Pin connections:

Lead	HSS 130-2	HSS 130-3
brown	$+U_B$	$+U_B$
blue	0 V	0 V
black	Frequency 1	Frequency
white	Frequency 2	Direction of rotation

Adjustment angle for other modules:

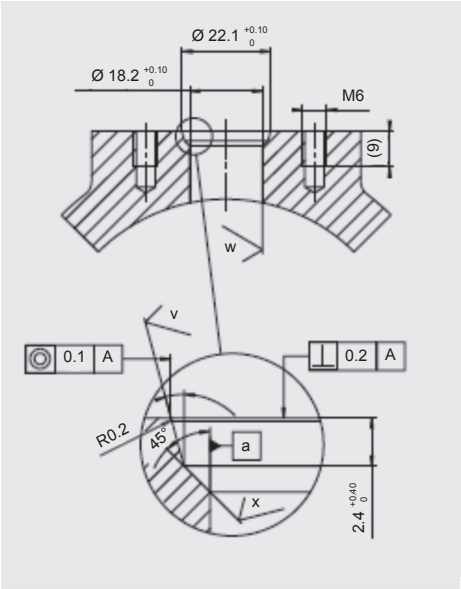
It is possible to achieve a 90° phase shift of the two frequency signals by turning the sensor accordingly.


-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°

Direction of rotation:

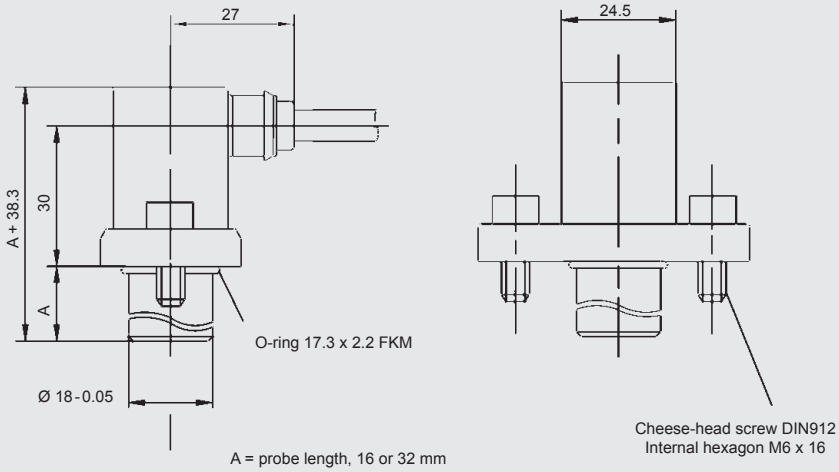
Cable outlet at 90°, gear rotation clockwise: channel A leading; channel B following or rotational direction signal (right HIGH / left LOW)

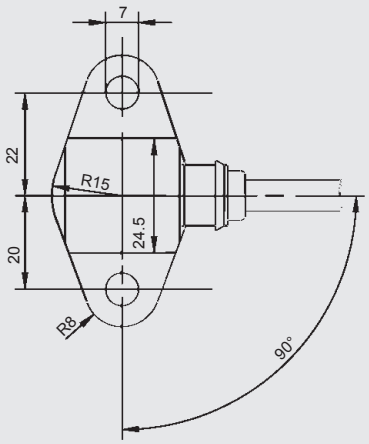
Specification for installation cavity:



- General tolerances for chipping processes: ISO 2768-mH
- Tolerance: ISO 8015
- Surface quality: ISO 1302

Dimensions:





Model code:

HSS 1 3 0 – X – XXX – 000

Signal technology
2 = outputs 1 and 2: frequency (90° / 270° phase shift for module "2")
3 = output 1: frequency, output 2: direction of rotation

Probe length
016 = 16 mm
032 = 32 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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