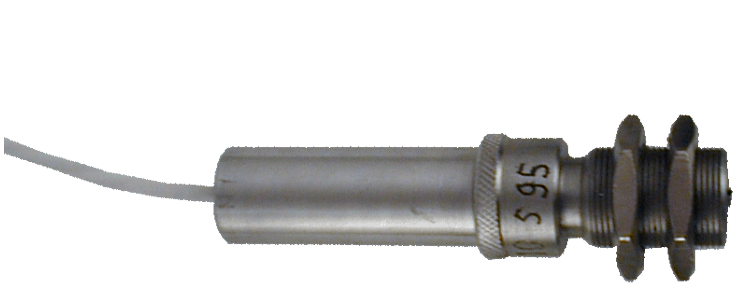
Speed Pressure Flow Rate Temperature

Incremental Speed Impulse Sensor



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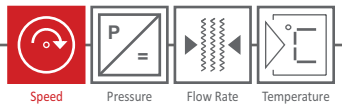

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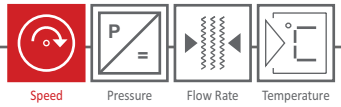

Incremental Speed Impuls Sensor for multiquadrant operation - control

Incremental Field Plate Impulse Sensor FDG 818 for pole wheel scanning

In connection with a pole wheel (module 1) the impulse sensor triggers 2 rectangular signals 90° phase delayed with complementary signal. It is especially suitable as actual value transmitter for control tasks as well as for detection of rotation direction. It replaces 2 impulse sensors which have to be mounted mechanically at the pole wheel 90° displaced (e.g. FG 612).

The outputs are short circuit proof. The sensor meets highest demands regarding important surrounding conditions as dirt, pressure, temperature, oil and EMC.

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Technical data FDG 818

Material	1.4571
Potection class	IP 68 (head) / IP 67 (connection)
Frequency range	0 ... 100 kHz
Power Supply	9 ... 24 V DC ±5%
Power consumption	0,7 W (without load)
Reverse polarity protection	installed
Output	2 rectangular signals 90° phase delayed, phase displacement 90° ± 30° at adjustment acc. to installation instructions
Output Hi	U_B - 2 V
Output Lo	<0,5 V
Output impedance	0 Ohm
Max. load current	0 mA, vircuit proof
Pole wheel	ferromagnetic material module 1, tooth height > 0,5 mm tooth width > 10 mm distance pole wheel -> sensor 0,3 mm ± 0,1 mm
Pressure resistance (measuring side)	20 bar
EMC acc. to IEC 801-4	Ssverity level 2
Ambient temperature	-20 ... 85°C
Storage temperature	-20 ... 85°C
Vibration resistance acc. to IEC 68-T2-6	200 m/s2
Shock resistance acc. to IEC 68-T2-27	200 m/s2
Electrical connection	5 m PVC cable, 4-wire, screened, screening isolated from housing

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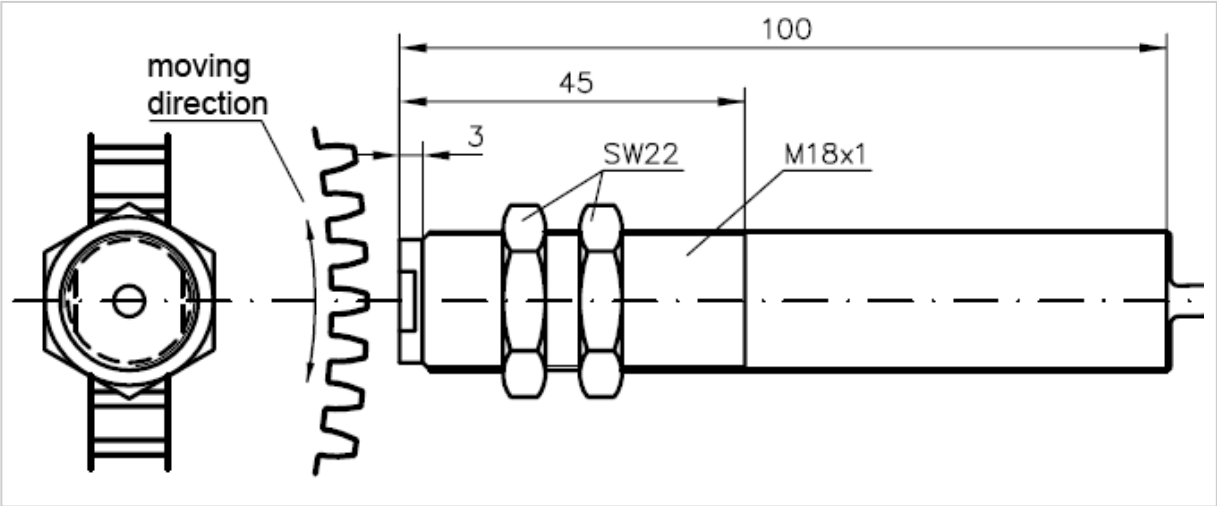
Dimension drawing FDG 818



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Speed Impulse Sensors for measuring and controlling

Speed sensors for measuring and controlling are impulse transmitters for physical input quantity rotational speed, velocity and distance in connection with a pole wheel or pole piece of ferromagnetic material which has been mounted on the shaft (pole wheels see datasheet DS 107 E).

Electromagnetic Impulse Sensors for pole wheel scanning

The electromagnetic sensor is an active transmitter and consists of an iron core with induction coil and a permanent magnet (bicycle dynamo principle) placed behind. The output voltage is dependent upon the distance sensor -> pole wheel and the circumferential velocity (pole wheels see datasheet DS 107 E). The coil has no connection to the housing (floated).

Technical data EG 512 A, EG 512 B, EG 518 A, EG 518 B, EG 522 A, EG 522 B

Material	1.4571
Protection class	IP 67
Distance pole wheel - sensor	
Module 1	< 0,5 mm
Module 2 - 4 or larger	0,5 ... 2 mm
Core diameter	2,7 mm
Frequency range	10 Hz - 20 kHz
Coil resistance	850 Ohm
Inductance	135 mH
temperature range	-40 ... +120°C
Electrical connection	
EG 512 A	threat M 12 x 1 connector, IP 67
EG 518 A	threat M 18 x 1 connector, IP 67
EG 522 A	threat M 22 x 1 connector, IP 67
EG 512 B	threat M 12 x 1 with firmly moulded 10 m PVC cable, screened, IP 67
EG 518 B	threat M 18 x 1 with firmly moulded 10 m PVC cable, screened, IP 67
EG 522 B	threat M 22 x 1 with firmly moulded 10 m PVC cable, screened, IP 67

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Hall Effect Impulse Sensors, 3-wire technique for pole wheel scanning

In connection with a pole wheel (gear wheel made of ferromagnetic material) these sensors are designed for generating speed proportional impulse frequencies (pole wheel see datasheet DS 107 E).

They have a static behaviour, therefore the pulse generation up to 0 Hz is assured. The output of the sensors is a NPN output. The sensors are rotationally symmetric, therefore no adjustment is required.

Technical data FG 612 A, FG 612 B, FG 618 A, FG 618 B, FG 622 A, FG 622B

Material	1.4571
Protection class	IP 67 (sensor head and electrical connection)
Distance pole wheel - sensor	
Module 1	0,1 ... 0,5 mm
Module 2 - 4	0,1 ... 2 mm
Module 4 or larger	0,1 ... 5 mm
	lateral offset at minimal width of magnet wheel 0,2 mm
Signal output	squarewave signal from NPN transistor switching step Hi = supply voltage Lo = < 0,5 V at I = 25 mA
Frequency range	0 Hz - 15 kHz
Ambient temperature	-20 ... +100°C
Power supply	10 - 26 V DC, max. 10 mA without load
Test voltage	housing / shielding 500 V / 50 Hz / 1 min shielding / electronics 500 V / 50 Hz / 1 min
Shock resistance	50 g during 20 ms, hall sinus pulse
Wiring resistance	30 g in range of 5 - 2000 Hz
Electrical connection	
FG 612 A	threat M 12 x 1 connector, IP 67
FG 618 A	threat M 18 x 1 connector, IP 67
FG 622 A	threat M 22 x 1 connector, IP 67
FG 612 B	threat M 12 x 1 with firmly moulded 10 m PVC cable, screened, IP 67
FG 618 B	threat M 18 x 1 with firmly moulded 10 m PVC cable, screened, IP 67
FG 622 B	threat M 22 x 1 with firmly moulded 10 m PVC cable, screened, IP 67

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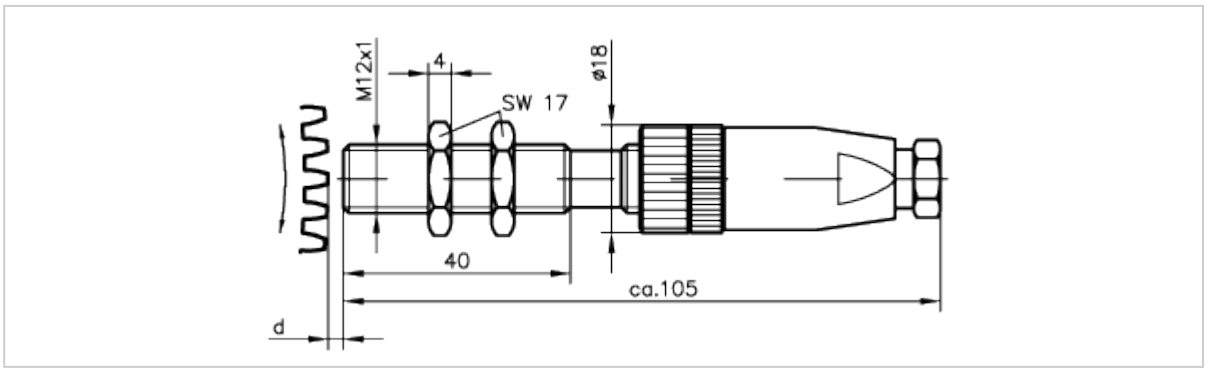
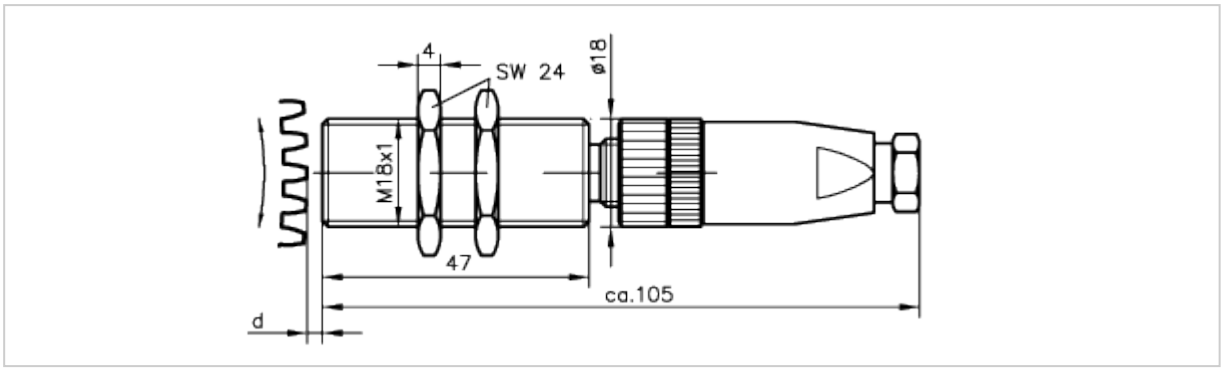
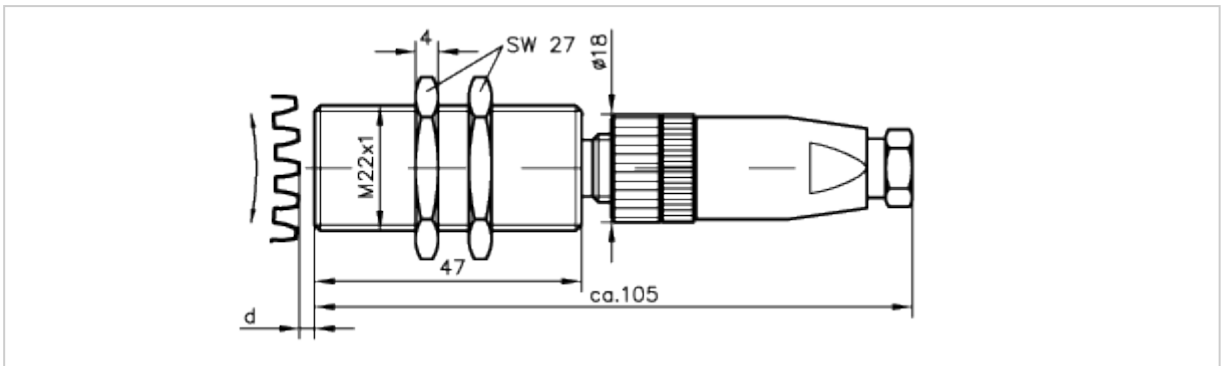
Dimension drawing EG 512 A, FG 612 A



Dimension drawing EG 518 A, FG 618 A



Dimension drawing EG 522 A, FG 622 A



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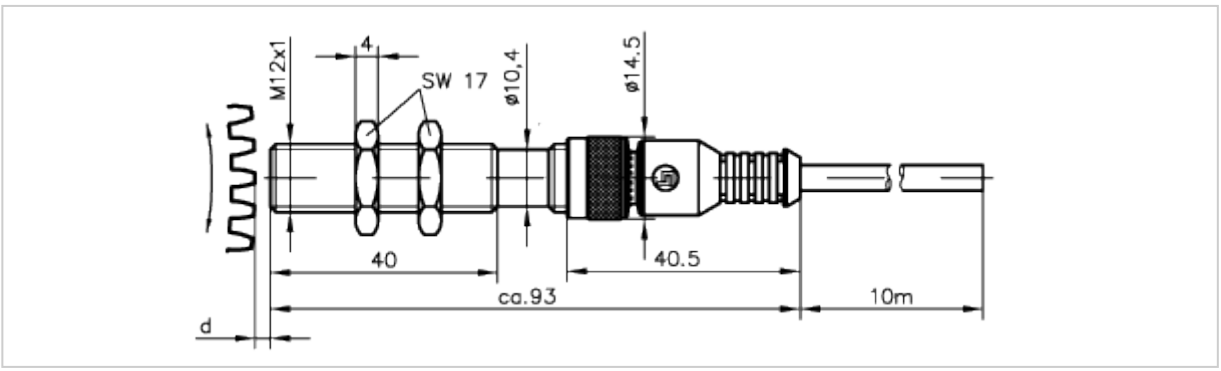
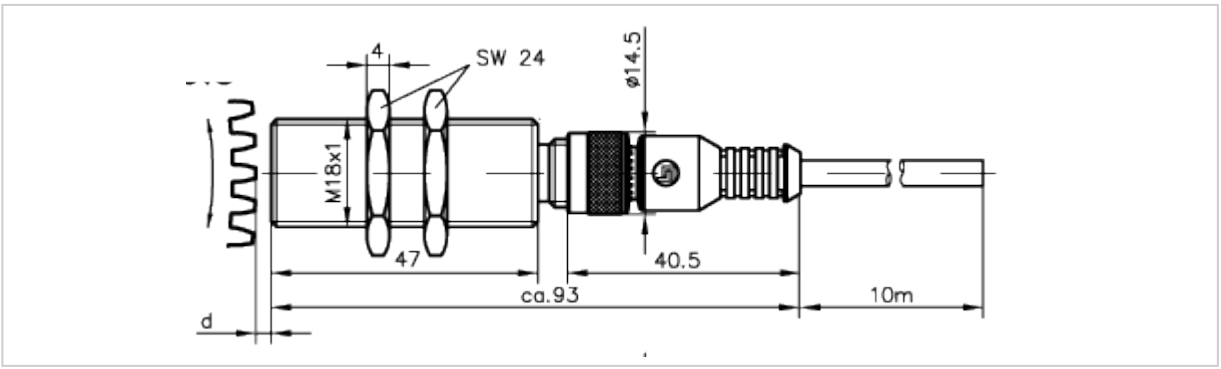
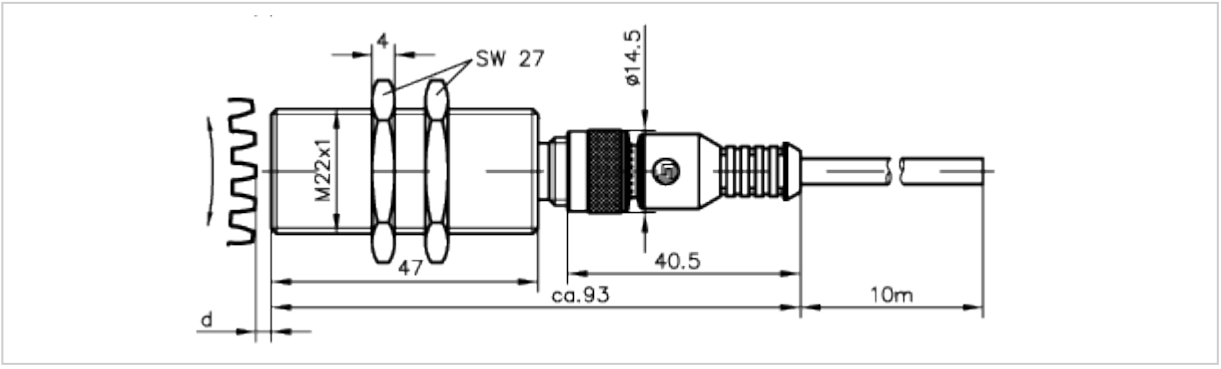
Dimension drawing EG 512 B, FG 612 B



Dimension drawing EG 518 B, FG 618 B



Dimension drawing EG 522 B, FG 622 B



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HF 2-wire Namur Sensors acc. to DIN 19234

The impulse sensor contains a high-frequency oscillator. Its moving coil is placed at the sensor head. The pole piece with gap effectuates a differing damping of the oscillator circuit and therefore a higher and lower supply current. HF-sensors thus are two-pole, the impedance is non-reactively calculated by the position of the pole. The signal amplitude is dependent on the distance between pole piece and sensor and the dimensions of the poles but independent concerning circumferental speed respectively speed of the shaft.

HF-sensors are especially designed for the operation in plants with high electromagnetic low frequency interferences with sensor-frequencies starting at 1Hz.

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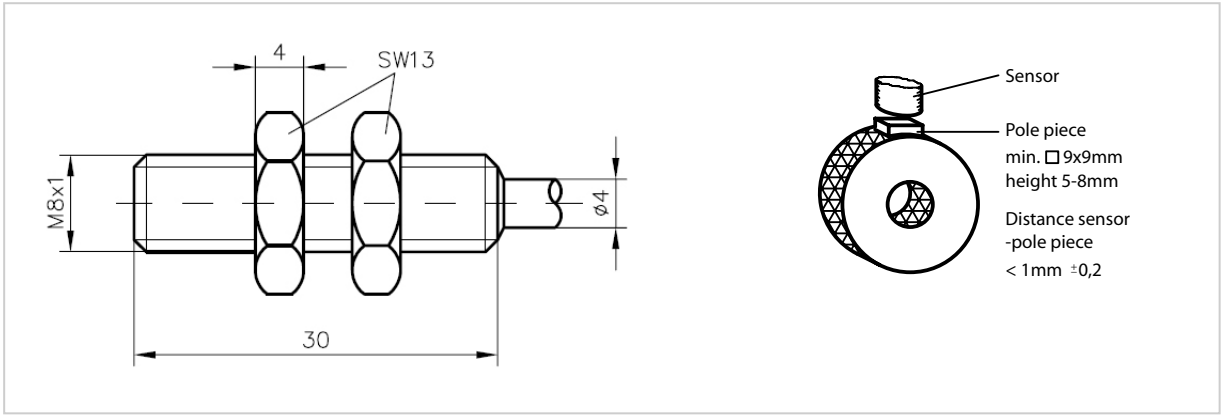
Technical data HFG 720

Material	1.4571
Protection class	IP 67 (head)
Distance pole wheel - sensor	< 1,5 mm
Frequency range	0 - 5 kHz
Ambient temperature	-25 ... +100°C
Permissible shock	b <= 30 g; T <= 11 ms
Dynamic load	f <= 55 Hz; a <= 1 ms
Electrical connection	20 m PVC cable, 2-wire, screened

Dimension drawing HFG 720 and pole piece



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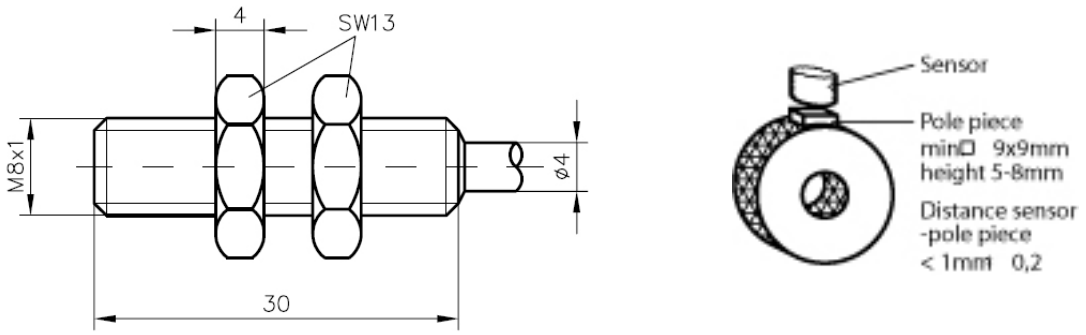
Technical data HFG 721

Material	1.4571
Protection class	IP 67 (head)
Distance pole wheel - sensor	< 1,5 mm
Frequency range	0 - 5 kHz
Ambient temperature	-25 ... +100°C
Permissible shock	b <= 30 g; T <= 11 ms
Dynamic load	f <= 55 Hz; a <= 1 ms
Electrical connection	2 m PVC cable, 2-wire, screened

Dimension drawing HFG 721 and pole piece



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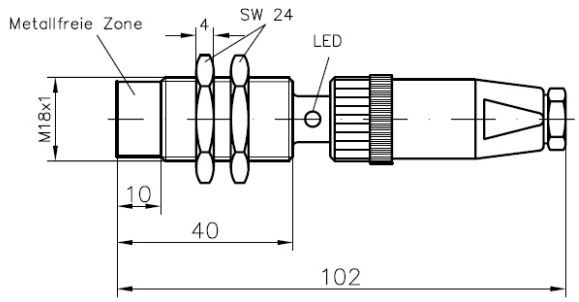
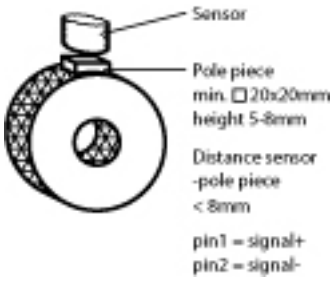
Technical data HFG 718 A

Material	nickel plated brass
Protection class	IP 67
Distance pole wheel - sensor	< 8 mm
Frequency range	0 - 500 Hz
Ambient temperature	-25 ... +70°C
Electrical connection	plug connector, protection class IP 65, max. Temp. -25...+85°C

Dimension drawing HFG 718 and pole piece





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Pole wheels

Pole wheels with and without boss

For further information see datasheet DS 107 E.

Frequency Transducer FMP 1836

for limit value monitoring or detection of speed direction.

For further information see datasheet DS 109 E.

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