Operating Instructions No. 14593e **Issue: 19.10.2017**

Hall Effect Impulse Sensor **FG 612 A, FG 618 A, FG 622 A,**

FG 612 B, FG 618 B, FG 622 B

General

The transmitter, in combination with a pole wheel (steel gear wheel) is designed to generate pulse re-currence frequencies which are proportional to the rotary speed. It has static characteristics so the pulse generation up to 0 Hz is warranted. The sensor is rotationally symmetric and needn't be adjusted.
Attention: output NPN, no push-pull output.

Technical data

Power supply	8…26 V= max. 10 mA (without load)
Frequency range	0…15 kHz
Signal output	Square wave signal from NPN transistor stage with built in pull-up of 2,7 kOhm, DC-coupled with power source (negative pole = reference voltage), load current max. 25 mA Output voltage HI: power supply Output voltage LO: < 0,5 V at I= 25 mA
Ambient temperature	-20…+100°C
Housing	Stainless steel, hermetically sealed heading, transmitter components encapsulated in chemical and age-resistant synthetic resin
Connection	FG 612 A, FG 618 A, FG 622 A with M12 plug, IP67 FG 612 B, FG 618 B, FG 622 B with M12 plug firm molded with 10 m PVC cable, screened, IP67
Protection	IP 67 (sensor head) IP 67 (connection)
Test voltage	Housing/shield 500 V/50 Hz/ 1min Shield/circuit 500 V/50 Hz/1 min
Voltage proof breakdown	Housing, cable shield and electronics are galvanically separated (500 V'/50 Hz/1 min.)
Shock proof	50 g during 20 ms, half sinodial shock

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Vibration resistance	30 g in the range of 5…2000 Hz
Weight	FG 612 A: 40 g, FG 618 A: 88 g, FG 622 A: 136 g FG 612 B:382 g, FG 618 B: 430 g, FG 622 B: 478 g
Pole wheel	ferromagnetic gear wheel i.e. Ust37-2, gear width min. 6 mm, module 1 or more, recommended distance between pole wheel and radial mounted sensor module 1 0,1…0,5 mm module 2 0,1…2,0 mm module 4 or greater 0,1…5,0 mm Lateral displacement at smallest width 0,2 mm

Assembly

The sensor is mounted with the center of its head over the pole center. At pole wheels with gearing or grooves and radial sensor assembly, the sensorr usually is mounted over the wheel center. A certain axial displacement of the pole wheel then is permissible, depending on the wheel width. The sensor center should, however, be positioned at least 3 mm away from the wheel end under all operating conditions.
A rigid, vibration-free mounting of the sensor is important. Vibrations of the sensor with respect to the pole wheel induce additional voltage pulses. The sensors are non-sensitive to oil, lubricants etc. and may be used under rough operating conditions. The pole wheel/sensor distance has no influence on the calibration of the overall system.

Connection

The sensor wires are sensitive towards interference voltage. For this reason, the following two points should be considered:

- A screened, three-wire cable must be used for the sensor conduction. The shielding of the cable is to be connected at the correct terminal of the connected device.
- The sensor cables should be placed as far away as possible from large electrical machines and on no account close and parallel to high-voltage power lines.

The maximum permissible length of the sensor conduction depends on the sensor voltage, cable routing and the capacity- and inductance characteristics of the cable. In general, however, it is advisable to keep the distance between sensor and associated instruments as short as possible. The cable may be extended by an interposing junction box with IP 20 terminals (conforming to DIN 40050).

Electrical connections			**Dimensions**			
1	=	+V	FG 612 A	M12 x 1	thread length	40 mm
2	=	⎍	FG 618 A	M18 x 1	thread length	47 mm
3	=	0 V	FG 622 A	M22 x 1	thread length	47 mm
4	=	NC				
brown	=	+V	FG 612 B	M12x1	thread length	40 mm
black	=	⎍	FG 618 B	M18x1	thread length	47 mm
blue	=	0 V	FG 622 B	M22x1	thread length	47 mm
transparent	=	shield				

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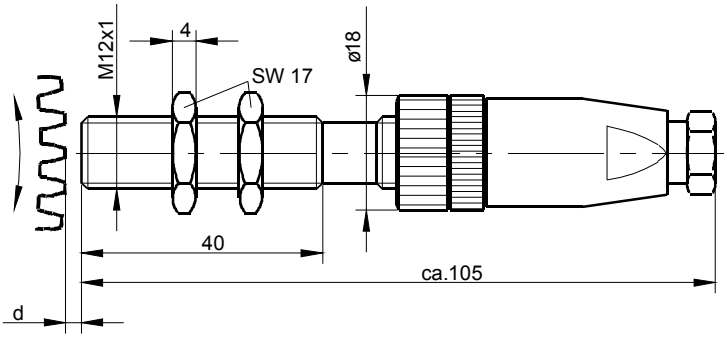
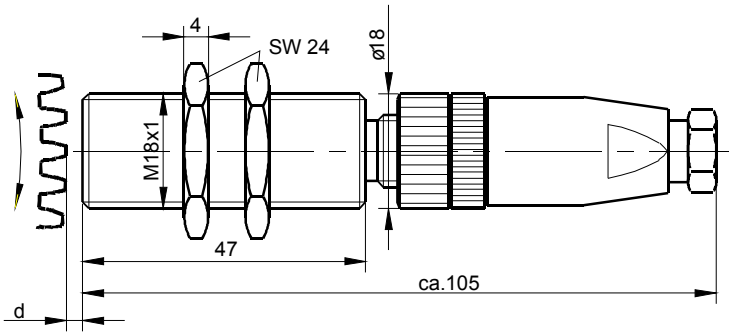
Dimension diagram

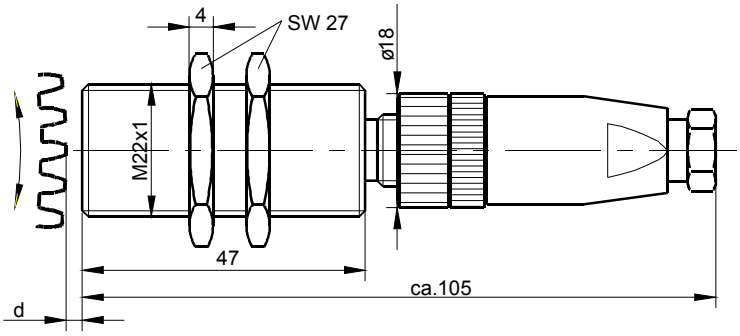
FG 612 A

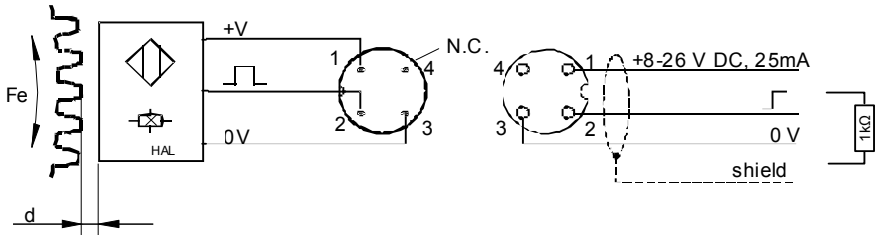


FG 618 A



FG 622 A





Shield is only placed on transducer.
NPN output
Terminal resistance 1 kOhm from pin 2 to pin 23 at connection to SPS

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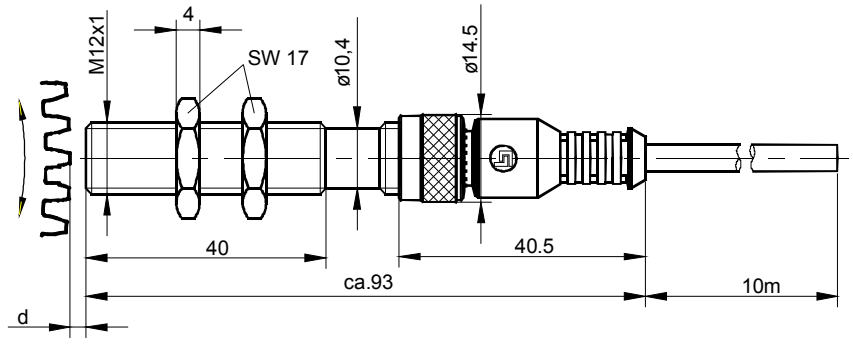
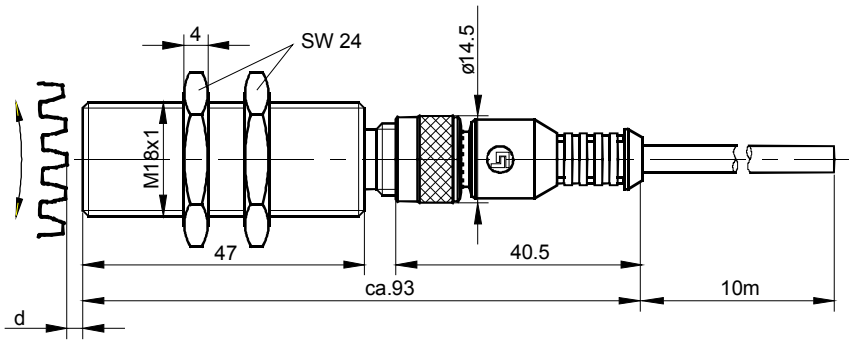
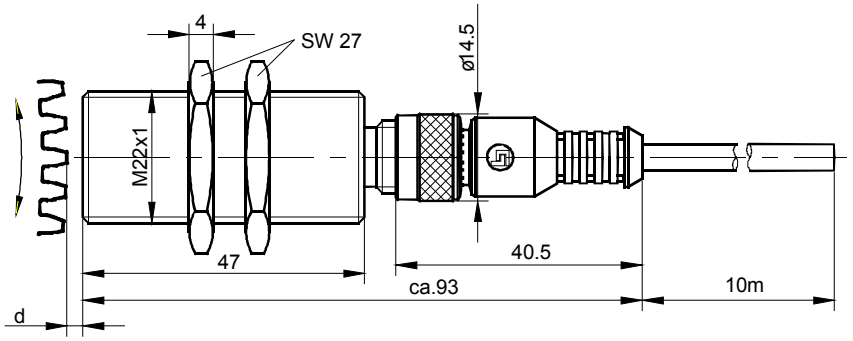
FG 612 B

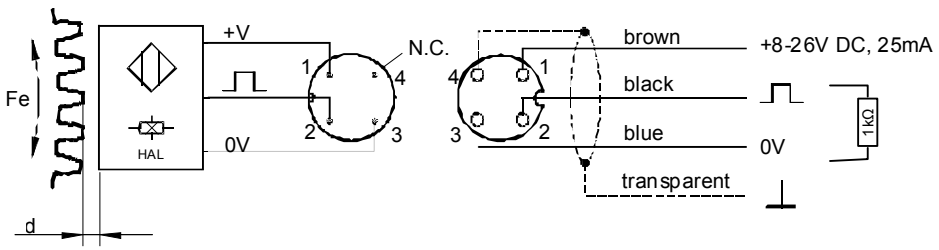


FG 618 B



FG 622 B





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