

MX5xxx / 00 07 / 2015



ifm electronic

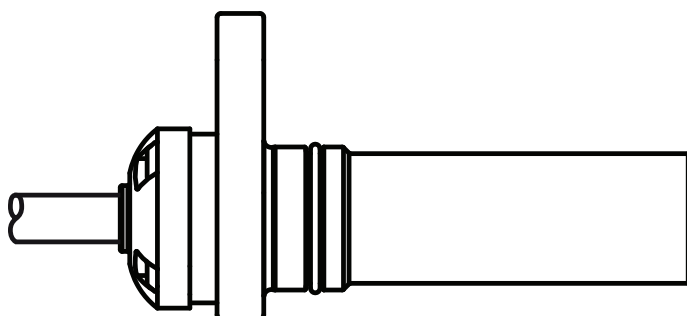


Installation instructions
Speed sensor

efector120[®]

MX5xxx

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1 Preliminary note

1.1 Symbols used

► Instruction

→ Cross-reference



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note.

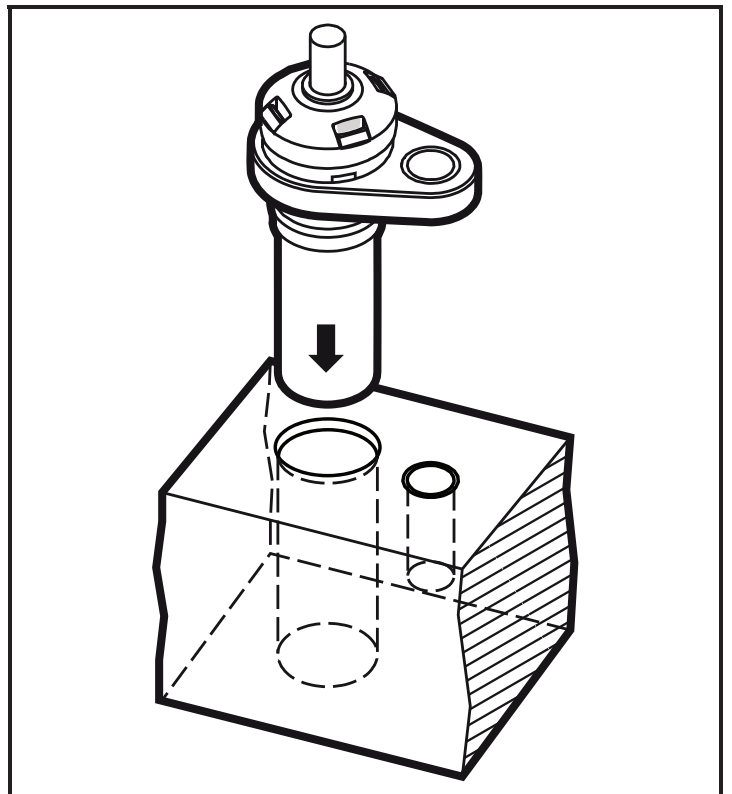
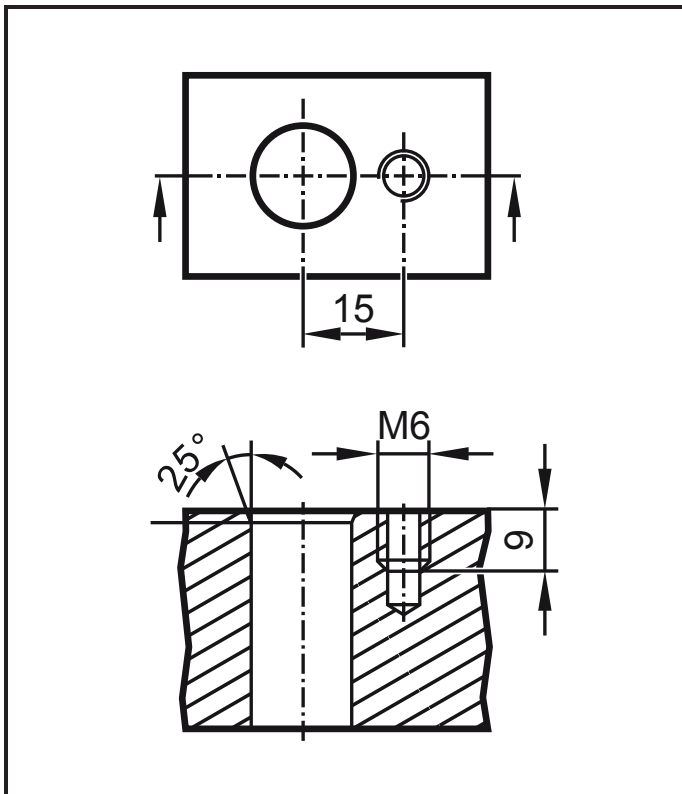
2 Functions and features

The sensor detects without contact the rotational speed and the direction of rotation of a toothed wheel made of ferromagnetic metal (e.g. mild steel) and signals this with the switching signals A and B (24 V pulse). The pulse outputs enable the external evaluation of rotational speed and direction of rotation.

► See data sheet for sensing range and operating voltage.

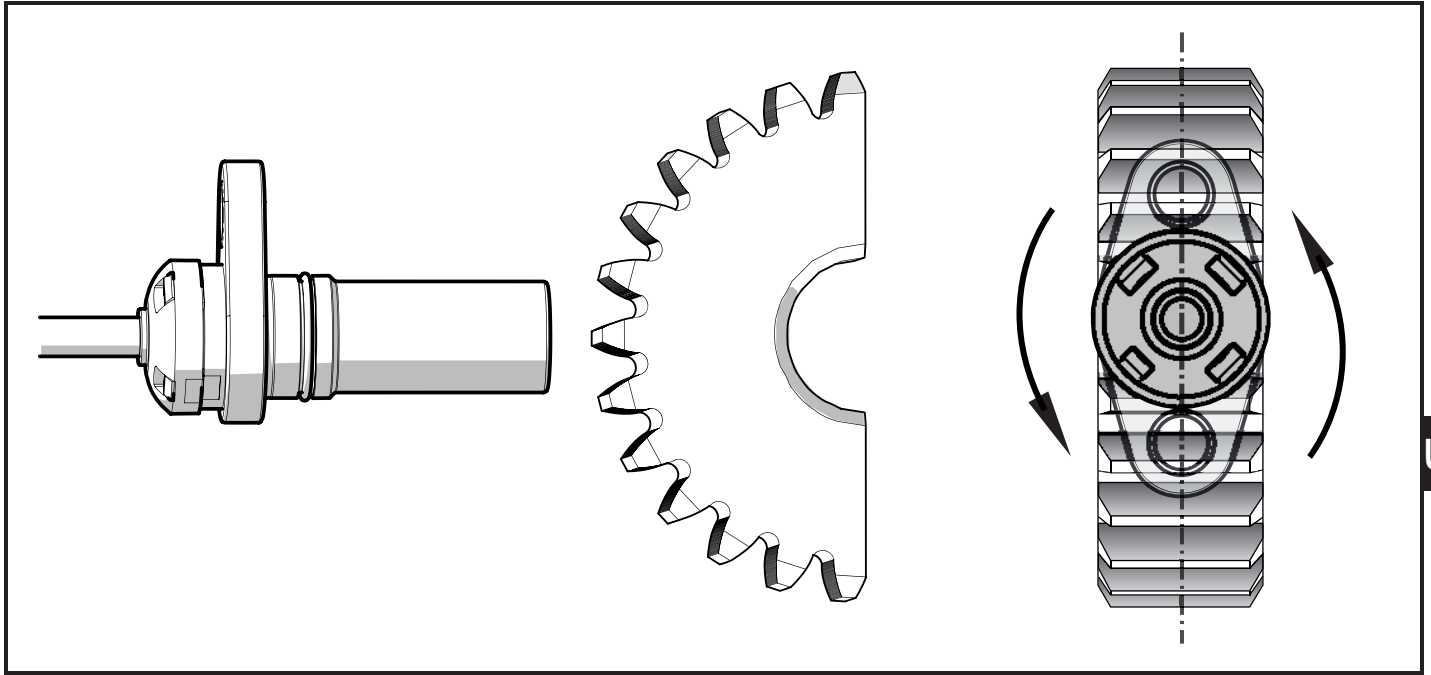
3 Installation

3.1 Fixation



► Secure the unit against loosening by means of an M6 screw (not included).

3.2 Alignment



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- Align the mounting lug parallel to the toothed wheel.
Other positions generate faulty or missing switching signals.

A surface characteristic of 15H7 is required for compliance with the protection rating IP 69K.

4 Electrical connection



- The sensor must be connected by a qualified electrician.
Observe the national and international regulations for the installation of electrical equipment.

- Disconnect power.
- Connect the unit as specified in the data sheet.

5 Operation

The operation is maintenance-free. Ensure the following for a correct function:

- Keep the sensing face and the open space free of metal deposits and foreign bodies.

5.1 Rotational speed detection

Rotational speed detection allows the detection of all types of ferromagnetic metal.

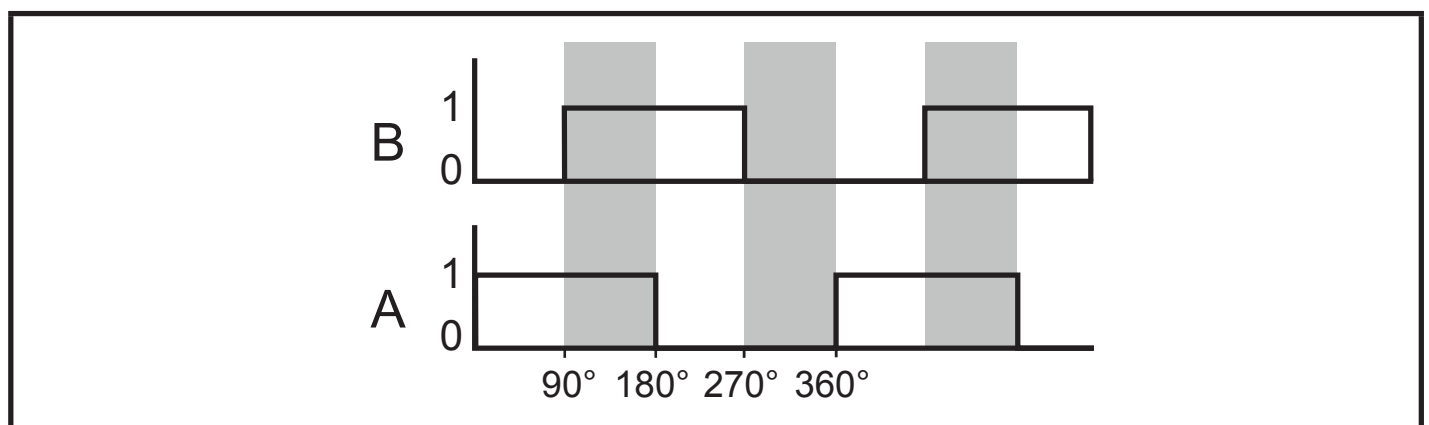
The shape of the target affects the length of the switching signal.


- The pulse width depends on the target shape.
- The pulse spacing depends on the distance between the different targets.

5.2 Detection of the direction of rotation

The sensor provides two signals (A and B) and is adjusted to a 1.25 toothed wheel module.

In case of a tooth width and tooth space of 2 mm respectively, a phase shift of 90° occurs (in case of specified alignment → 3.2).



 Toothed wheel module: dimension for the size of the teeth of gear wheels. This is defined as the quotient of the circular pitch p and the circle constant

π .

For example:

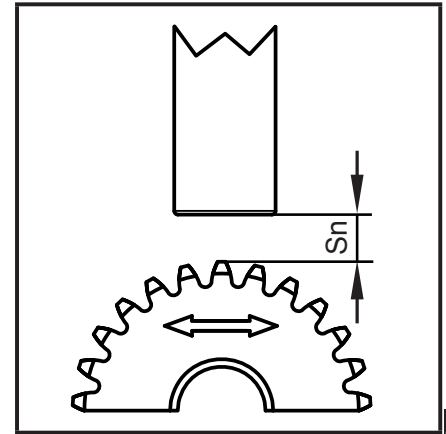
Module 1.25 has a pitch of 4 mm.

$$m = \frac{p}{\pi}$$

5.3 Sensing range

The nominal sensing range (S_n) is 1.7 mm.

An operating sensing range (S_a) of 1 mm is recommended for a smooth detection of the direction of rotation at high rotational speeds.



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More information at www.ifm.com