ifm electronic

7415 x

Made in Germany

2010

fluid sensors and diagnostic systems

position sensors and object recognition

bus, identification and control systems

ifm electronic – close to you!

- **Detection also through non-magnetisable metals.**
- **Small designs with very long sensing ranges.**
- **Cylinder and rectangular designs for demanding applications.**
- **Wide temperature range for universal use.**
- **Can be used either flush or non-flush mounted in metal.**

Magnetic sensors

Magnetic sensors are used for the detection of positions without contact or wear and tear in control technology. They are used where inductive sensors reach their limits. The advantage: compared to inductive sensors magnetic sensors have a considerably higher sensing range and smaller housings.

Since magnetic fields penetrate all non-magnetisable materials, the sensors can detect magnets through walls made of non-ferrous metal, stainless steel, aluminium, plastic or wood.

In gate systems, for example, the magnet sensor only detects the magnet which is to be detected. Any possible influences by aluminium in the environment do not impact the sensor.

In the food industry the magnetic sensor is often used in connection with pigs (cleaning devices which pass through the inside of pipes). By means of magnetic sensors their exact position can be detected from the outside through the wall of the stainless steel pipe.

Operating principle

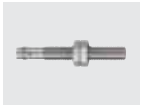
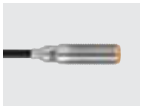
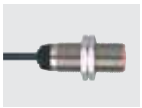
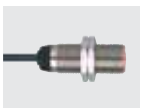
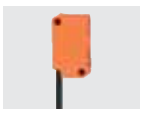
Magnetic sensors from ifm electronic use state-of-the-art GMR (Giant Magneto Resistive effect) technology. The measuring cell consists of resistors with several extremely fine, ferromagnetic and non-magnetic layers. Whereas in a conventional Wheatstone bridge circuit two screened and two unscreened GMR resistors are combined, a large signal proportional to the magnetic field is produced if a magnetic field is present. As from a defined threshold value an output signal is switched via a comparator.

Installation

Magnetic sensors can be mounted flush with all materials (even metals) without reduction in the sensing range. Depending on the orientation of the magnetic field the sensor can be damped from the front or from the side.

The sensor switches as soon as the magnet has reached the switch-on point. The direction of movement is not important.

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M8 / L = 50	60	V4A (316S12)	10...30	IP67	5000	200	1	**ME5011**
	M12 / L = 50	60	stainless steel	10...30	IP67	5000	200	2	**MFS201**
M8 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2									
	M8 / L = 60	60	V4A (316S12)	10...30	IP67	5000	200	3	**ME5010**
Cable 2 m · Output function ⎍ · DC NPN · Wiring diagram no. 3									
	M12 / L = 50	60	stainless steel	10...30	IP67	5000	200	2	**MFS202**
M12 connector · Output function ⎍ · DC NPN · Wiring diagram no. 4									
	M12 / L = 60	60	stainless steel	10...30	IP67	5000	200	4	**MFS203**
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2									
	M12 / L = 60	60	stainless steel	10...30	IP67	5000	200	4	**MFS200**
	M18 / L = 60	70	stainless steel	10...30	IP67	5000	200	5	**MGS200**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	M18 / L = 50	70	stainless steel	10...30	IP67	5000	200	6	**MGS201**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 5									
	M18 / L = 50	70	stainless steel	10...30	IP67	5000	200	6	**MGS202**
Cable 2 m · Output function ⎍ · DC PNP · Wiring diagram no. 1									
	28 x 10 x 16	60	PBT	10...30	IP67	5000	200	7	**MS5011**
M8 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2									
	28 x 10 x 16	60	PBT	10...30	IP67	5000	200	8	**MS5010**
Cable with connector 0.15 m · Output function ⎍ · DC PNP · Wiring diagram no. 2									
	40 x 12 x 26	60	PBT	10...30	IP67	–	200	9	**MN5200**

Sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Drawing no.	Order no.
M12 connector · Output function ⎍ · DC PNP · Wiring diagram no. 2									
	M12 / L = 60	60	V4A (316S12)	10...30	IP68 / IP69K	5000	200	4	**MFT200**
	Ø 12 / L = 70	60	V4A (316S12)	10...30	IP68 / IP69K	5000	200	10	**MFT201**
	M18 / L = 60	70	V4A (316S12)	10...30	IP68 / IP69K	5000	200	5	**MGT200**
	M18 / L = 60	100	V4A (316S12)	10...30	IP68 / IP69K	–	200	5	**MGT201**

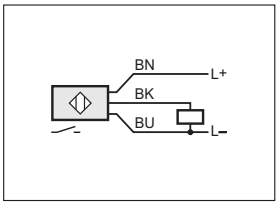
Accessories

Type	Description	Order no.
	Angle bracket · for type M8 · Housing materials: stainless steel	**E10734**
	Angle bracket · for type M12 · Housing materials: stainless steel	**E10735**
	Angle bracket · for type M18 · Housing materials: stainless steel	**E10736**
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	**E10221**
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	**E11047**
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	**E11048**
	Damping magnet · M 1.0 · Housing materials: Samarium cobalt	**E10749**
	Damping magnet · M 2.0 · Housing materials: AlNiCo	**E10750**
	Damping magnet · M 3.0 · Housing materials: Barium ferrite	**E10751**
	Damping magnet · M 4.0 · Housing materials: Barium ferrite	**E10752**

Type	Description	Order no.
	Damping magnet · M 4.1 · Housing materials: Barium ferrite / stainless steel	**E11803**
	Damping magnet · M 5.0 · Housing materials: Barium ferrite	**E10753**
	Damping magnet · M 5.1 · Housing materials: Barium ferrite with plastic coating ABS	**E10754**
	Mounting set · Ø 18.5 mm · Clamp mounting · free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20718**
	Mounting set · Ø 18.5 mm · Clamp mounting · free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	**E20719**
	Mounting set · Ø 18.5 mm · Clamp mounting · free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20869**
	Mounting set · Ø 18.5 mm · Clamp mounting · free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	**E20870**
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20866**
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	**E20867**

Wiring diagrams

1



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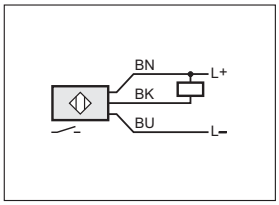

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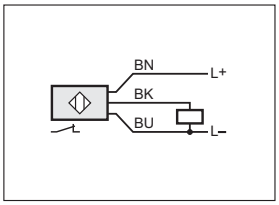

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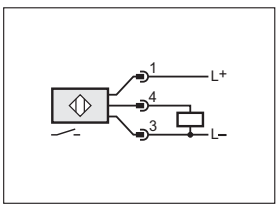

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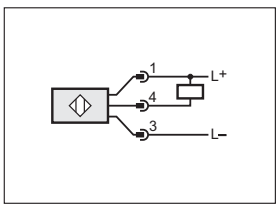
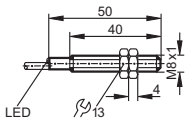


Scale drawings

1



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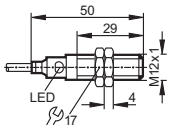

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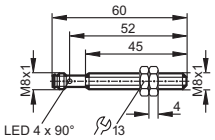

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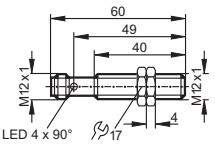

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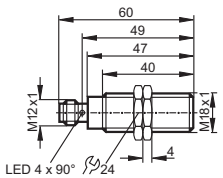

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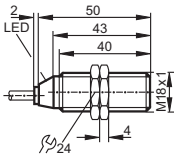

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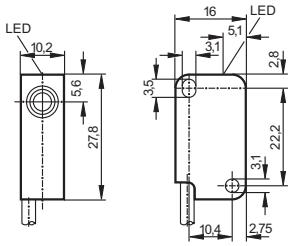

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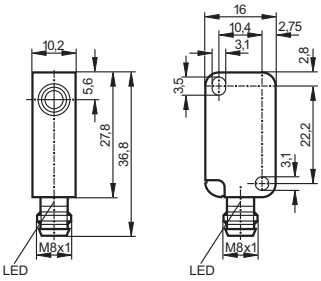

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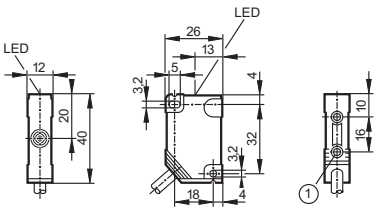
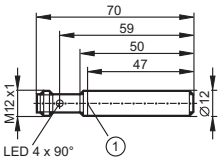


1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

10



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