

Magnetic and cylinder sensors

Magnetic proximity sensors

- Reliable and wear-free object detection
- Large sensing distances up to 60 mm
- Cylindrical and rectangular versions



	MFFM 08	MFRM 08	MFVM 08
features	<ul style="list-style-type: none"> ■ Acquisition of magnet location ■ Large sensing range ■ Object detection through container walls possible 	<ul style="list-style-type: none"> ■ Acquisition of magnet location ■ Large sensing range ■ Object detection through container walls possible 	<ul style="list-style-type: none"> ■ Full metall sensor ■ Sensing distance to 60 mm
dimensions	8 × 30 × 8 mm	M8	8 × 12 × 30 mm
nominal switching distance Sn typ.	to 60 mm	60 mm	60 mm
switching frequency	5 kHz	5 kHz	5 kHz
voltage supply range +Vs	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
output circuit	PNP NPN	PNP NPN	PNP NPN
connection types	cable 2 m	cable 2 m	cable 2 m
housing material	brass nickel plated	stainless steel	aluminum
operating temperature	-25 ... +75 °C	-25 ... +75 °C	-25 ... +75 °C
protection class	IP 67	IP 67	IP 67

Cylinder sensors

- Detecting stop positions of pistons in every standard cylinder with C- or T-slots
- Different versions and versatile installation accessories for maximum flexibility
- Non-contact sensing and absolutely wear-free



	MZCK 03x1011 MZCK 03x1012	MZTK 06x1011 MZTK 06x1012 MZTK 06x1013
features	<ul style="list-style-type: none"> ■ For C slot cylinders ■ Oil- and salt water climate resistant 	<ul style="list-style-type: none"> ■ For T slot cylinders ■ Oil- and salt water climate resistant
dimensions	3,7 × 23 × 4,6 mm 3,7 × 11 × 19,5 mm	6,2 × 31 × 4,3 mm 6,5 × 21 × 9,4 mm 6,2 × 31,5 × 4,5 mm
nominal operation point / assured sensing distance Sa max.	4 mT	4 mT 2 mT (MZTK 06x1012)
switching frequency	200 kHz	200 kHz
voltage supply range +Vs	6 ... 30 VDC	6 ... 30 VDC
output circuit	PNP NPN	PNP NPN
connection types	cable 2,5 m flylead connector M8	cable 2,5 m flylead connector M8
housing material	PA 66	PA 66
operating temperature	-40 ... +70 °C	-40 ... +70 °C
protection class	IP 67	IP 67

Magnetic and cylinder sensors

Cylindrical and rectangular design.
Angular range 270...360°.

- Linearized analog output signals
- Resolution 0.09°
- Absolute sensing



	MDRM 18	MDRM 18	MDFM 20	MDFM 20
features	<ul style="list-style-type: none"> ■ Linear angular range 270° ■ Output signal 4...20 mA 	<ul style="list-style-type: none"> ■ Linear angular range 360° ■ Output signal 0...4.3 VDC 	<ul style="list-style-type: none"> ■ Linear angular range 270° ■ Output signal 4...20 mA ■ Resolution 0.09° 	<ul style="list-style-type: none"> ■ Linear angular range 360° ■ Output signal 0...4.3 VDC ■ Resolution 0.09°
dimensions (sensor head)	M18 x 1 (cylindrical threaded)		20 x 30 x 8 mm (rectangular)	
angular range	270° linear	360° linear	270° linear	360° linear
resolution	0,09°			
working distance max.	5 mm (with magnet rotor MSFS)			
output circuit	current output	voltage output	current output	voltage output
output signal	4...20 mA	0...4,3 VDC	4...20 mA	0...4,3 VDC
response time	<4 ms			
connection	cable 2 m mating connector M12		cable 2 m mating connector M8	
voltage supply	15...30 VDC	4,7...7,5 VDC	15...30 VDC	4,7...7,5 VDC
operating temperature	-40...+85 °C			
protection	IP 67			

Functional principle

The heart of a magnetic angle sensor is the integrated dual differential Hall element which builds an electrical parameter related to the flux direction of an exterior magnetic field. This magnetic field rotating about the element's center axis generates two sinusoids shifted by 90° which are utilized to detect the rotation angle for output as an absolute value. The integrated electronics evaluates the sinusoids into a linear voltage or current signal. The absolute detection principle ensures output of the correct rotation angle even after power failure.