

MIR10

Sensor head with magnetic wheel

Max. 4096 pulses per revolution

Overview

- Sensor head with magnetic wheel
- Robust magnetic sensing method
- Max. 4096 pulses per revolution
- Output signals A 90° B with zero pulse
- Output circuits: HTL/push-pull and TTL/RS422
- Non-contact, wear-free sensing system
- High resistance to dirt and vibrations
- Magnetic rotor not included in delivery



Technical data

Technical data - electrical ratings

Short-circuit proof	Yes
Initializing time	≤ 50 ms after power on (see general informations)
Pulses per revolution	320 ... 4096
Interpolation	10-fold 20-fold 32-fold 64-fold
Output signals	A+, B+, R+, A-, B-, R-
Output stages	HTL/push-pull TTL/RS422
Reference signal	Zero pulse, width 90° (zero pulse only with magnet rotor incl. reference magnet)
Output frequency	≤40 kHz (10-fold interpolation) ≤80 kHz (20-fold interpolation) ≤350 kHz (32-/64-fold interpolation)
System accuracy	Typ. ±0.7° (+20 °C)
Sensing method	Magnetic
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-4
Approval	CE UL

Technical data - electrical ratings (HTL)

Voltage supply	10...30 VDC
Reverse polarity protection	Yes

Technical data - electrical ratings (HTL)

Consumption typ.	20 mA (w/o load)
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Technical data - electrical ratings (TTL)

Voltage supply	5 VDC ±5 %
Consumption typ.	30 mA (w/o load)
Recommended cable termination	On control side each channel pair 120 Ohm

Technical data - mechanical design

Shaft type	ø6...43.5 mm (through hollow shaft)
Dimensions (sensor head)	10 x 15 x 45.5 mm
Protection EN 60529	IP 66 IP 67
Operating speed	≤10000 rpm (50 and 64 poles) ≤20000 rpm (32 poles)
Working distance	0.1 ... 0.6 mm (axial/radial)
Material	Housing: zinc diecast, plated
Operating temperature	-40...+85 °C
Relative humidity	EN 60068-2-78:2010 EN 60068-2-30:2005 93 % condensation permitted
Resistance	EN 60068-2-6 Vibration 30 g, 10-2000 Hz EN 60068-2-27 Shock 500 g, 6 ms
Weight approx.	130 g
Connection	Cable 2 m Cable 0.3 m with connector M12

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General information

The initializing time of the sensor is 50 ms. Output signals may not be processed during this time.

Terminal assignment

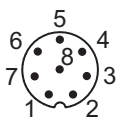
Cable

Core colour	Signals
white	0 V
brown	+Vs
green	A+
yellow	A-
grey	B+
pink	B-
blue	R+ (reference sinal)
red	R- (reference signal inv.)

Cable screen: Screen is connected to sensor housing
Cable data: PUR 4 x 2 x 0.14 mm², shielded
Bending radius: >50 mm (fix) / >100 mm (cable chain)
Outer diameter: 6.3 mm

Cable 0.3 m with connector M12

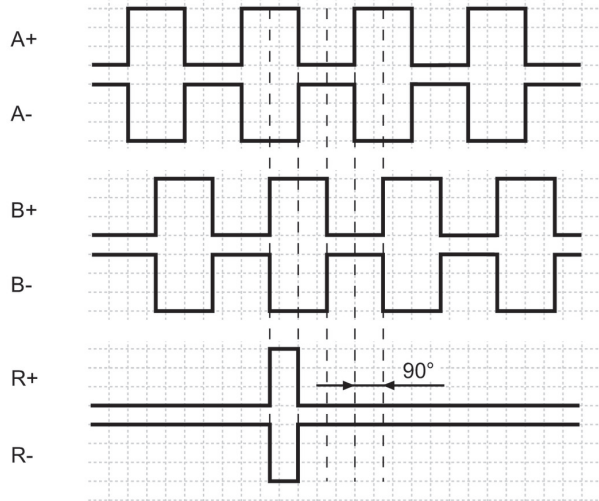
Pin	Core colour	Signals
1	white	0 V
2	brown	+Vs
3	green	A+
4	yellow	A-
5	grey	B+
6	pink	B-
7	blue	R+ (reference sinal)
8	red	R- (reference signal inv.)



Cable screen: Screen is connected to connector M12 and sensor housing
Cable data: PUR 4 x 2 x 0.14 mm², shielded
Bending radius: >50 mm (fix) / >100 mm (cable chain)
Outer diameter: 6.3 mm

Output signals

With clockwise rotation shown below.

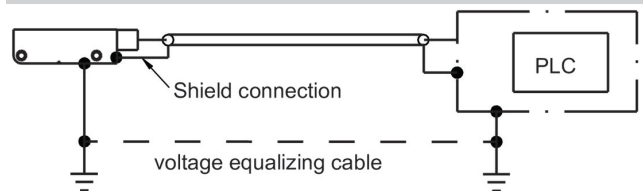


Trigger level

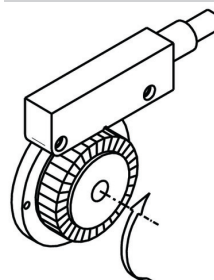
Outputs	HTL/push-pull
Output level High	>+Vs -2.2 V
Output level Low	<0.7 V
Load	≤20 mA

Outputs	TTL/RS422
Output level High	>2.4 V
Output level Low	<0.7 V
Load	≤20 mA

Recommended grounding concept



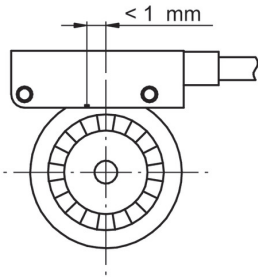
Rotational or linear direction



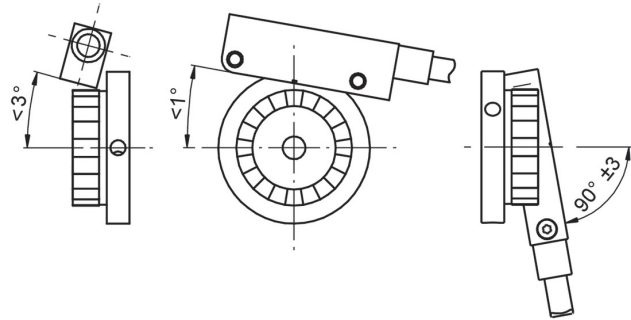
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Axial misalignment

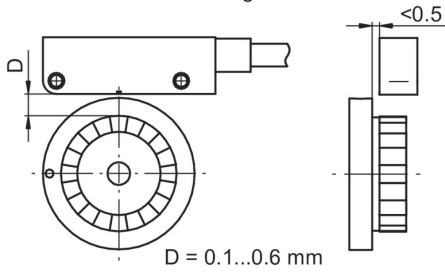


Angular misalignment

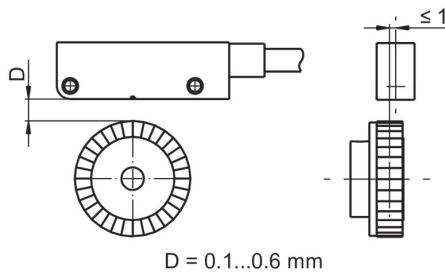


Working distance

MIR10 with reference magnet



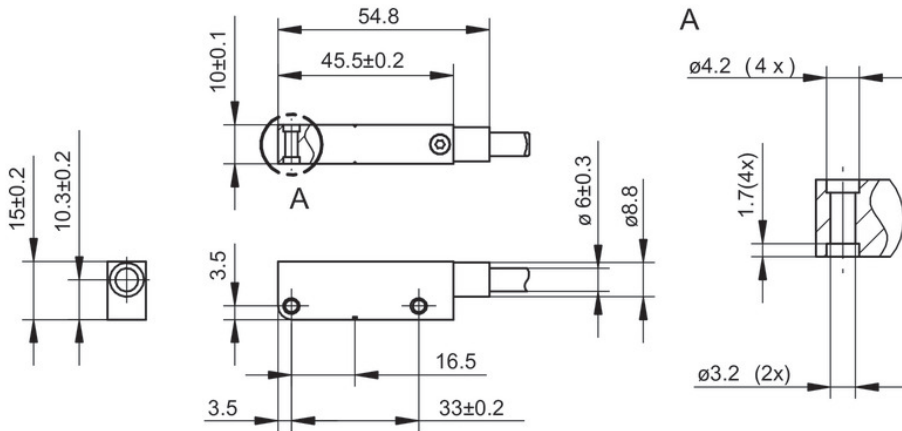
MIR10 without reference magnet



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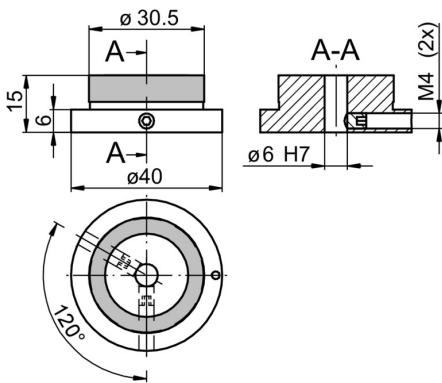
Sensor head with magnetic wheel
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Dimensions



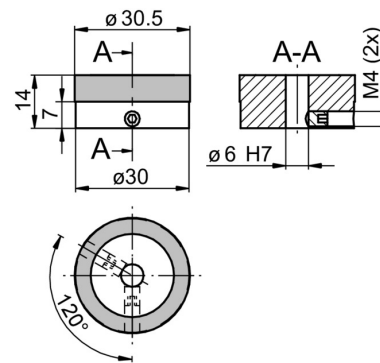
Magnetic wheel with reference magnet

MIR10-P with 32 poles

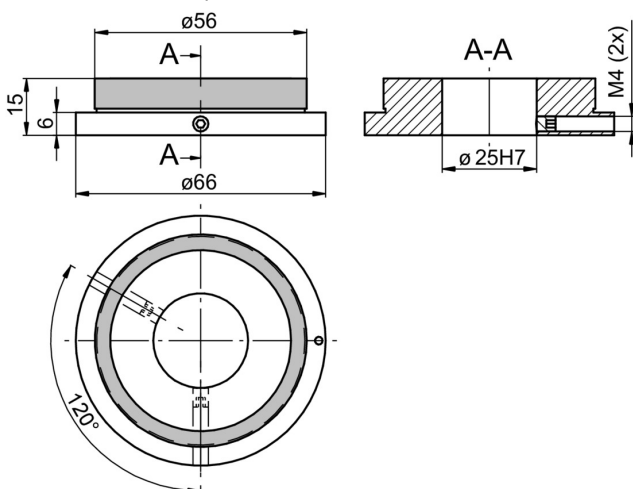


Magnetic wheel without reference magnet

MIR10-P with 32 poles



MIR10-P with 50, 64 poles



MIR10-P with 50, 64 poles

