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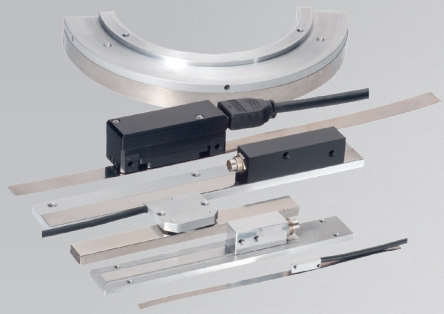
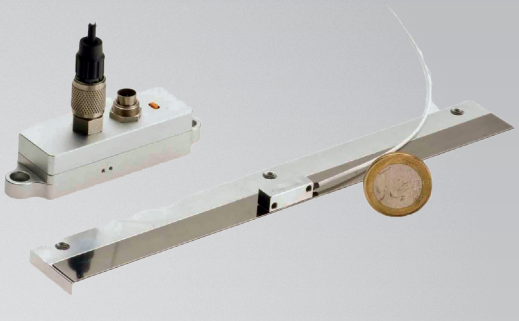
Positioning Systems made to measure.

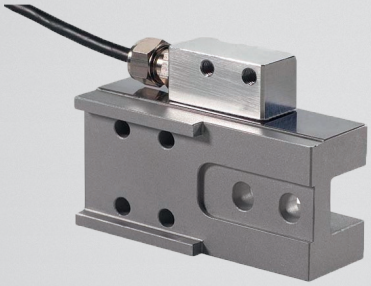
OEM Machines | Positioning Systems | Modules | **Components**



Scales, MR sensors and OptoMag signal processing electronics



Scale carrier with magnetically coded scale, MR sensor MiniStar and OptoMag signal processing electronics



MR-Sensor MiniStar with magnetic scale attached to customer component

OptoMag – Magnetic Length-Measurement System

OptoMag is a length measuring system based on a magnetoresistive (MR) sensor. It consists of three components: the magnetically coded scale, the MR sensor and the signal processing electronics. In contrast to optical measuring systems, the MR measuring technology used has the advantage, among other things, that it is insensitive to contamination. Our MR measuring systems deliver the typical values of an optical signal (1 Vpp/20 µm). OptoMag is available in three variants and offers very high resolutions and repeatabilities.

Key Features.

- IP 67 protection class: robust and insensitive to dirt
- No light penetration required
- Very compact dimensions
- Very high travel speed compared to optical systems
- Very high amplitude stability and quality of the electrical output signal
- All scale lengths realisable
- Non-contact MR measurement method
- High measuring precision
- Flexible mounting of the scale (sticking on existing mounting surface or pre-mounted on scale carrier)
- Signal processing electronics and sensor available separately (in case of space problems) or integrated.
- Suitable for vacuum

Your Advantages.

- No maintenance work, thus no additional costs
- High availability in practice
- High image with your customers
- New areas of application – also in environments with a high degree of contamination
- Free choice of the area of application
- Plug & Play – ready for immediate use
- High throughput
- No error sources in the subsequent electronics
- No restriction of your application
- Wear-free scanning - high availability and no follow-up costs
- Reproducible and very accurate results
- Simple, fast and flexible assembly

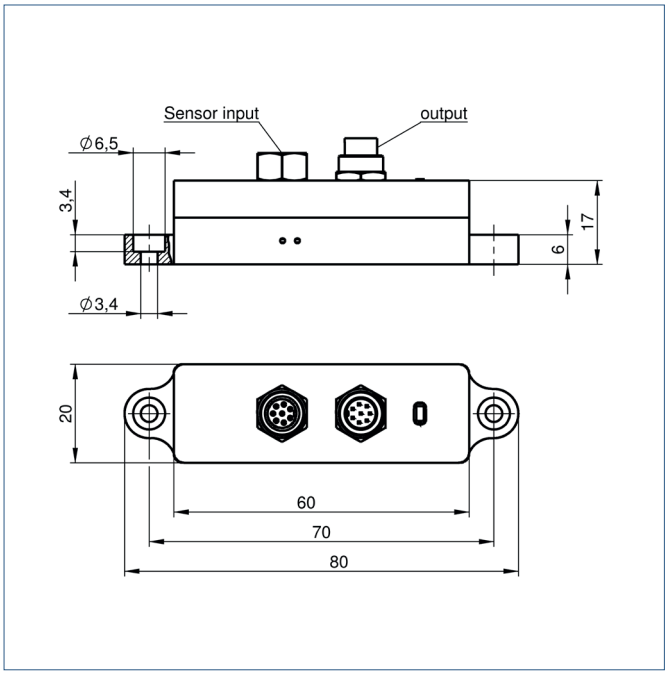
Highlights.

OptoMag electronics in three variants - Your alternative to optical measuring systems.

The OptoMag electronics convert the input signals of the sensors, which are in the mV range, into a sine/cosine signal with the period length of 20 µm and an amplitude of 1 Vpp. This signal corresponds to the signals of optical systems. The OptoMag measuring system is available in three different versions and thus enables a wide range of applications. Installation conditions with limited space are also taken into account.

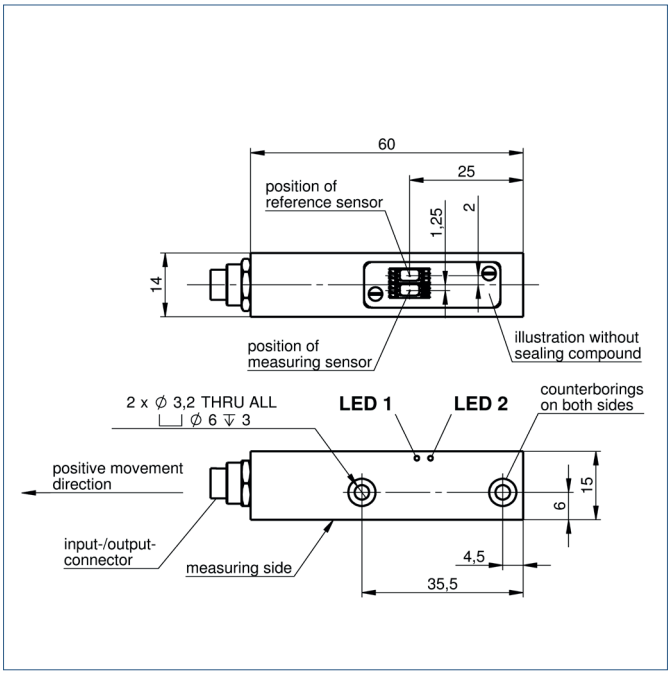
OptoMag-C.

OptoMag-C: Signal processing electronics for external sensor –ideally suited for applications with a lack of space.



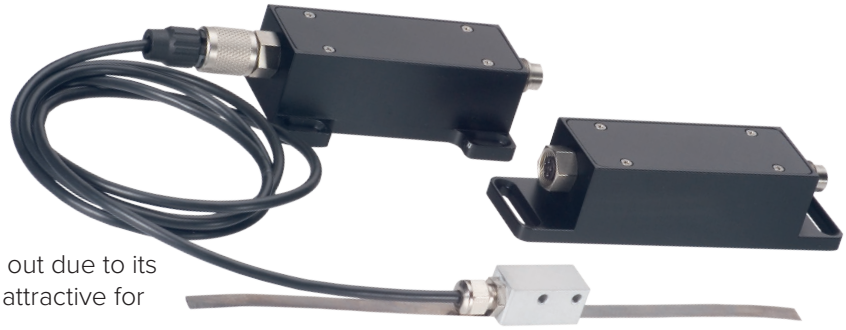
OptoMag-S, -R.

OptoMag-S, -R: Evaluation electronics with integrated sensor (-S) and reference mark (-R) – ideally suited for system integration.



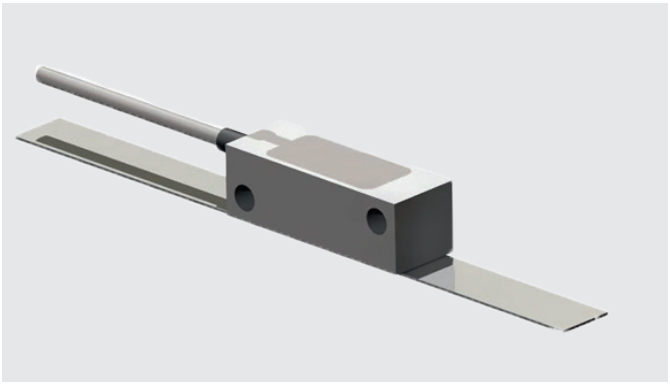
Position measurement with MR technology.

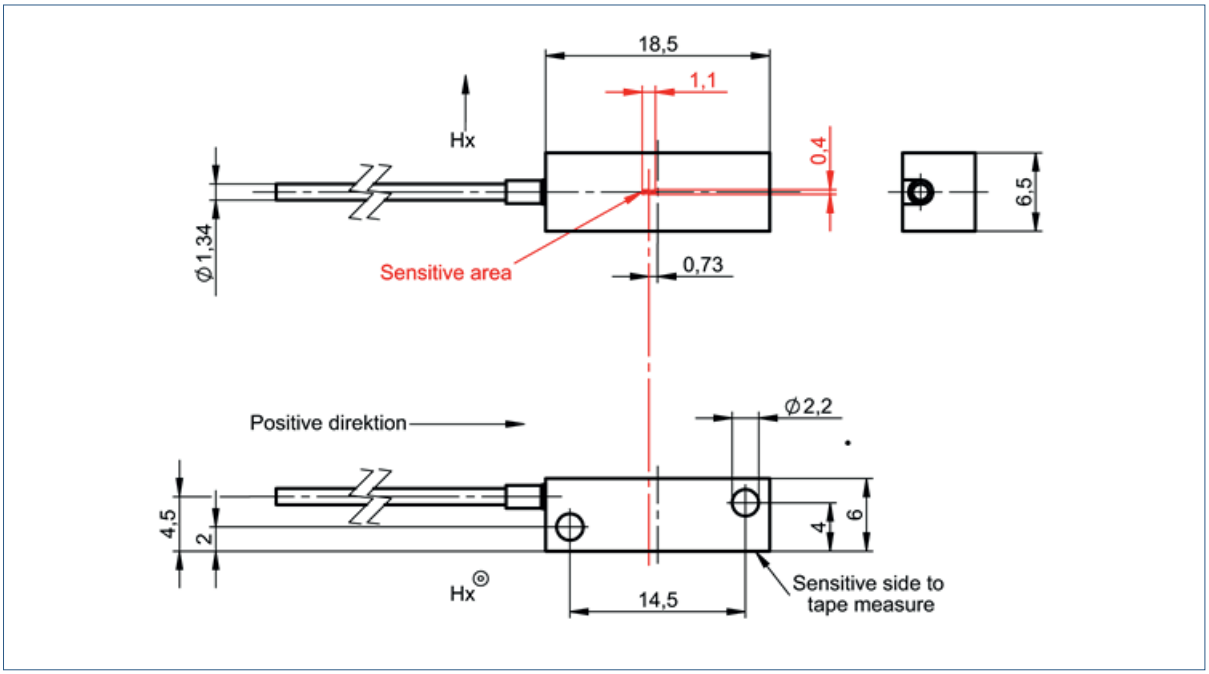
Magnetic sensors from the MiniStar family measure position by moving an AMR sensor (anisotropic magnetoresistive effect) over a magnetically encoded scale. OptoMag electronics convert the sensors‘ input signals into electronic signals. MR sensor technology offers the advantage of being highly precise, dynamic and robust.



Sensor: MiniStar.

MiniStar position sensor: This variant stands out due to its extremely compact dimensions (particularly attractive for applications with limited installation space).





Technical Data.

Parameter	Value	Unit
Position resolution	≤ 0,1	µm
Output signal period	20/40	µm
Output signal amplitude	1,2	1 Vss
Ambient temperature range (concerning electronics)	0 - 50	°C
Travel velocity	max. 2/4	m/s
Acceleration	max. 100	m/s^2
Signall delay	< 30	µs
Cable length	max. 150	m
Weight OptoMag R, S (sensor extern)	27	g
Weight OptoMag C (controller plus sensor)	60	g

Product	Description	Order Code
OptoMag-C	Controller and conncector for external sensor (MiniStar)	100-0310-011
OptoMag-S	Controller with sensor on-board (MiniStar)	100-0310-010
OptoMag-R	Controller with sensor (MiniStar) and reference mark on-board	100-0310-008
MiniStar-Sensor	High resolution positioning sensor with cable length 300 mm (oher cable length on request)	100-0310-007
Measurement scale	magnetically coded tape 12 mm width. Length on request	-
Measurement scale	magnetically coded tape 5 mm width and variable length	-

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Subject to technical changes.

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