



## MAS

Economic and non-contact angle measurement and position detection

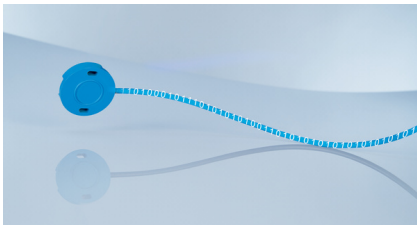
**SICK**  
Sensor Intelligence.

## Advantages

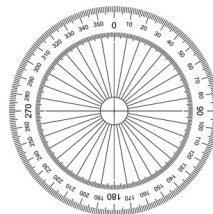


### High cost efficiency without compromising performance

The quick and simple installation of the MAS alone reduces costs in everyday work processes. Thanks to IO-Link, sensor configuration is particularly efficient. Settings of existing sensors can also be transmitted to a new device in seconds via IO-Link. Thanks to the non-contact principle of operation, the MAS is wear-free, which significantly reduces maintenance costs. High installation tolerances also ensure particularly easy sensor handling and smooth operation. This ensures consistently high performance, even under demanding conditions.



IO-Link enables quick and convenient parameterization as well as the use of process and diagnostic data from the sensor



Up to 32 definable angle windows also allow more extensive applications to be run



The zero point can be easily adjusted using IO-Link or a cable

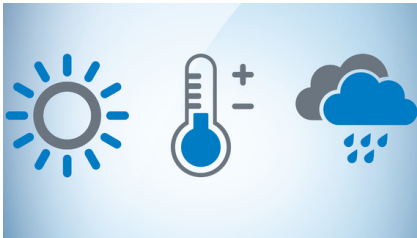


**Economy meets performance: Intelligent IO-Link functions, convenient handling and a resilient measurement principle make the MAS a particularly cost-effective solution for precise angle measurement and position detection.**



## Long service life thanks to wear-free principle

The MAS consists of two main components: Sensor and magnet. The sensor features a completely sealed housing and is thus protected from harsh ambient conditions. Since the measurement principle is based on the magnetic Hall effect, the MAS works permanently and reliably without making contact at a working distance of up to 4 mm. This means that the sensor has no parts that wear out during use and have to be replaced regularly. This reduces downtime and extends the service life of the entire sensor technology. Thanks to the integrated diagnostic functions, abnormalities can be detected, monitored and proactively eliminated in real time.



Sealed housing protects against harsh ambient conditions



Non-contact and wear-free



Integrated diagnostic functions



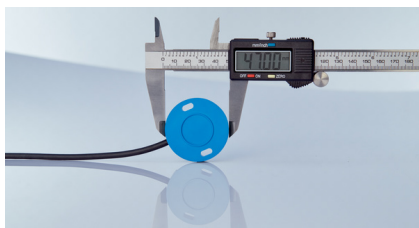
**For very high availability and long service life: The MAS scores points with its non-contact and wear-free principle of operation, especially in terms of reliability and fault resistance**



## High flexibility in application and customized solutions

The MAS is designed for use in numerous applications. For example, in the machine tool industry for controlling CAM shafts in tool changers. In input control for replacing mechanical limit switches that can wear out. Or in industrial automation and robotics, where precisely monitoring rotational movements is required. The rugged design of the sensor, combined with its high offset tolerance, means it can be used in a wide range of demanding industrial environments. The sensor can be adapted to the specific requirements of the application via IO-Link.

Customized device variants can be easily created on request.



Large range of applications thanks to compact size, two-part structure and rugged design



The wide temperature spectrum from -40 °C ... +85 °C enables use in many different environments



The MAS is also well-suited as a foundation for customized solutions



**The MAS is suitable for a wide range of challenging applications and delivers consistently reliable data, even under harsh ambient conditions.**



## Technical data overview

<b>Connection type</b>	Cable, with male connector, M12, 5-pin
<b>Communication interface</b>	IO-Link
<b>Number of steps per revolution (max. resolution)</b>	4,096 (12 bit)
<b>Max. resolution (number of steps per revolution x number of revolutions)</b>	
<b>Programmable/configurable</b>	Over PLC-Engineering-Tool Over SOPAS
<b>Operating temperature range</b>	-40 °C ... +80 °C
<b>Enclosure rating</b>	IP67 (EN 60529) <sup>1)</sup> IP68 (EN 60529) <sup>1)</sup>

<sup>1)</sup> IPx8 = 168h, 1m.

## Product description

The MAS magnetic angle sensor is an especially economical solution for angle measurement and position detection. Its space-saving, two-part design consisting of magnet and sensor ensures high flexibility in use. The MAS measurement principle is based on the so-called Hall effect and enables non-contact and thus wear-free angle detection. This prevents faults and minimizes service work. Thanks to IO-Link, the sensor is easy to configure and can be monitored proactively via diagnostic data.

## At a glance

- Angle measuring range 0° ... 360°
- 12-bit resolution (corresponds to 0.09°)
- Up to 32 angle windows can be defined
- Enclosure rating IP67, IP68
- Operating temperature -40 °C ... +80 °C
- IO-Link 1.1 and up to 3 digital outputs
- Zero point setting via IO-Link or cable
- Comprehensive process data and intelligent diagnostic functions

## Your benefits

- Wide range of applications thanks to two-part structure and a particularly flat and space-saving design
- Fault-free operation thanks to large alignment tolerance and a magnet positioning aid
- Low maintenance requirements thanks to wear-free principle of operation and rugged sensor design
- High cost efficiency thanks to long service life and minimal service requirements
- Convenient handling and very easy integration via IO-Link 1.1

## Fields of application

- Machine tools: Detecting the position of the camshaft on the tool changer
- Checking the position of the dancer arm in web processing
- Detection of the position of parking barriers and barriers on Autobahn toll stations

Ordering information

Other models and accessories → [www.sick.com/MAS](http://www.sick.com/MAS)

- **Communication interface:** IO-Link
- **Communication Interface detail:** IO-Link V1.1 / COM3 (230,4 kBaud)
- **Connection:** cable with male connector

Dimensions (W x H x D)	Measuring range	Resolution	Electrical wiring	Type	Part no.
47 mm x 47 mm x 10 mm	0° ... 360°	12 bit	DC 5-wire	MASQ47- 36PEKU1SA10	1113979

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)