

# MSSH

REDUNDANT 2-AXIS **HYBRID SENSOR**



The MSS hybrid sensor provides precise and reliable slope measurements to increase the safety and availability of your machine.

# Challenges for the crane and lifters industry

Safe cranes and work platforms are essential for the smooth running of construction sites and other working environments. A slope sensor is a crucial safety feature that not only reduces the risk of accidents caused by tipping or overturning, but also actively helps to prevent accidents and thus protect human lives. These sensors play a key role in ensuring safety and reliability by providing precise tilt data and therefore early warning of potential hazards.



## VIBRATIONS

The angle measurement can be affected by vibrations on the machine or a slip-stick effect. This can limit the availability of the machine.



## TEMPERATURE DRIFT

The physical drift of mems elements is often compensated for by bringing the sensor to a fixed temperature. During the heating phase, the sensor does not indicate a correct angle value.



## COMMON CAUSE ERROR

In redundant systems in which the same sensor technology is used for each channel, there is a risk that an error may occur on both channels simultaneously and not be detected.

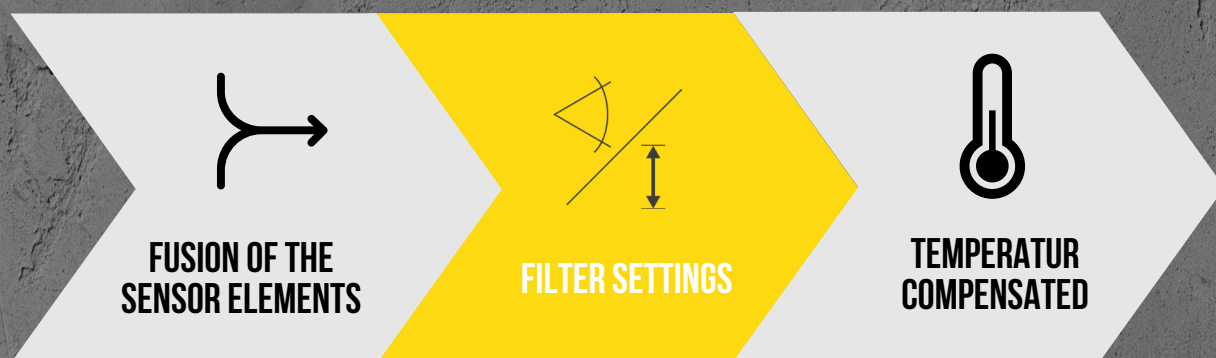


# Your solution for precise slope measurement!

## The new MSSH slope sensor: accuracy and safety in perfection!

The MSSH slope sensor has a diverse structure and has 2 different sensor elements per channel.

The sensor data is merged internally and is output via a single CANopen message, enabling simple system integration.



- » **Redundancy:** Developed in accordance with DIN EN ISO 13849-1 2015, KAT 3 PLd
- » **Self-learning:** independently learns its temperature drift in the climate chamber
- » **Fusion of sensor elements:** only one node ID thanks to internal consolidation of measured values.
- » **Proven filter settings:** reliable and accurate angle measurement.
- » **Axis measurement:** 1-axis and 2-axis variants available
- » **Temperature range:** from -40°C to +85°C.
- » **E1 approval:** fulfils the strict requirements for use in vehicles.
- » **Patented technology**



# Use cases

Wherever sensors ensure safety and efficiency at work, MOBA supplies specialised technical solutions.

A redundant version is available for safety-relevant applications. Single-channel versions are available for non-safety-related applications.

## 1-axis sensor:

- » Measuring range:  $\pm 30^\circ$
- » Detection of the slope of the vehicle chassis
- » Detection of the horizontal slope of the work platform

## 2-axis sensor:

- » Measuring range:  $\pm 180^\circ$
- » Detection of the slope of the telescope

With MOBA systems and sensors, you can be sure that your equipment works optimally under all conditions.

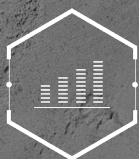
- » Mobile cranes
- » Drilling & Piling
- » Truck mounted aerial work platforms
- » Turntable ladder
- » Teleforklifts
- » Spider lifts
- » Telescopic platforms





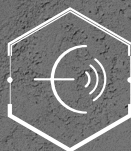
Your benefits

# MSSH slope sensor



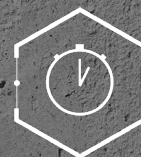
## Availability

Increased availability of the machine



## High performance

Vibration resistance, extreme accuracy due to filter settings



## Immediately ready for use

No warming up of the sensor



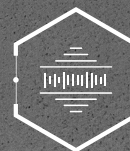
## Safety and security

Diverse structure per channel



## Wiring concept

CAN IN/OUT or 2x CAN wiring



## Certified

E1 & DIN EN ISO 13849-1 2015,  
KAT 3 PLd





## Your worldwide partner

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MOBA is your global partner for safety-relevant automation technology with a clear focus on OEMs. We offer specialised know-how and worldwide support, paired with customised individualisation and localisation in cooperation with our OEM partners. Our mission is to deliver locally customised, highly secure solutions that meet the global requirements of our customers.

## MOBA GRUPPE

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The MOBA Group has been a major player in mobile automation for more than 50 years. Our know-how and experience make us a globally recognized expert.

We develop and produce innovative machine control systems, identification and mobile weighing technologies, as well as flexible software solutions. MOBA components and systems are also used in areas where robust and reliable sensors, controllers and control units are needed.

**First Choice in Mobile Automation** - this is what the MOBA GROUP stands for since more than 50 years.