

# Industrial Components **PRODUCT CATALOG**



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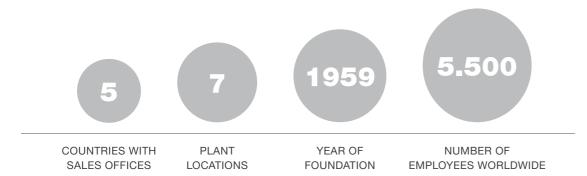


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#### WE CREATE THE MOBILITY OF TOMORROW

Since more than 60 years, Hirschmann Automotive drives progress in the automotive sector on a daily basis. Its specialty: contacting- and connectorsystems, high-voltage applications, special cable assemblies, plastic overmolding technology, as well as sensor systems and stamping technology. Be it standard parts or individual customer solutions, the objective is to be the leading company in the development and production of innovative products in the automotive industry. With the Industrial Components business unit, we are applying this expertise to a large number of other industrial sectors. Customers benefit from decades of experience and the combination of core technologies from the industrial and automotive sectors.



#### MOTION AND RELIABILITY: THAT IS OUR DEFINITION OF PROGRESS

#### A competent partner in every regard

We regard it as our duty to constantly develop and to offer the automotive and other industries and especially our customers cutting-edge technologies. With professional tool and special machine construction, we create the best conditions for the efficient implementation of new products and special parts.

#### Quality comes first

The central measuring and testing laboratory is the guarantor for fully tested components, from the design and construction phase through to series production. With vibration tests, metallography, microscopy, X-rays, tightness, infrared thermal analysis or environmental impact analyses, you can be sure that mature and flawless products leave our premises. Laboratory tests complete the extensive and indispensable quality process.

#### Good connections start with people

While we are an entirely technology-driven company, our true core is people and the passion behind their work. We believe that good employees and a good working atmosphere are the most important success factors of our time. This corporate culture links our sites across the oceans. The facts speak for themselves: a distinctive corporate culture, outstandingly trained and motivated employees, and a strong network that connects us to customers and suppliers.

#### Sustainability and environmental awareness

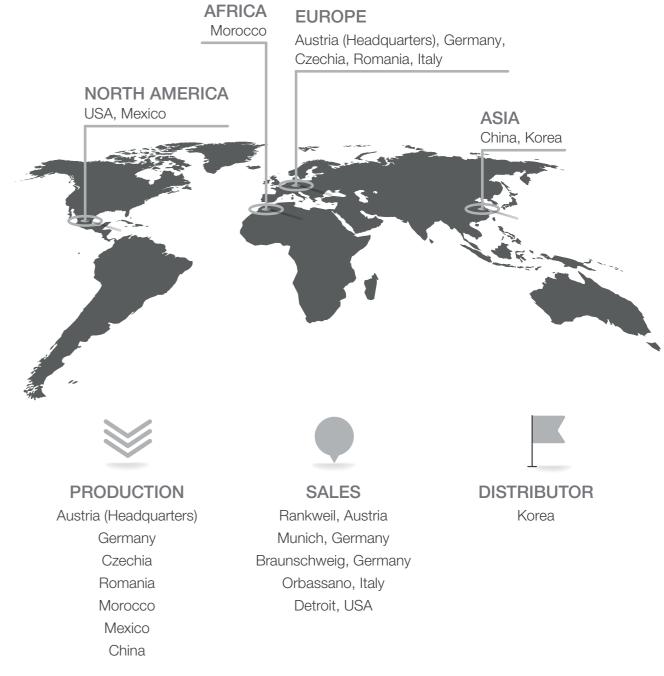
For the Hirschmann Automotive Group the same standard applies worldwide that follows our own Environmental, Health & Safety policy. It describes our goals in environmental and energy management as well as health and safety at work.







### Global presence. We are represented in all economic markets.



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# Portfolio



## CONNECTORS

Our connector families guarantee a robust and compact design, water tightness as well as resistance to vibration. The flexibly designed connector housing resists high thermal and dynamic loads with maximum performance. It is thanks to these properties that the high requirements on automotive plug connectors for sensors and actuators can also be ensured in the engine compartment.

### STAMPING **TECHNOLOGY**

We develop and produce precise stamping, stamping-bending, drawing and insert parts as well as construction components for different industries in our own core competence centre for stamping processes. In addition to classic progressive die-cutting, we also cover the field of die-cutting packetizing and our state-of-the-art machinery enables us to manufacture products for electric motors and hybrid technology.

## SPECIAL CABLE ASSEMBLIES

Our special cables cover a wide variety of applications. At the interface between the dry and wet areas, in many situations where space is critical and in areas subject to impact and stress. Fundamentally, with our design, we assist in the simplification and/or optimisation of assembly procedures at the OEM's plant and the system/module supplier.

E-JOYN

Hirschmann Automotive has created the brand E-JOYN which offers a comprehensive product portfolio for the new market of all kind of electric vehicles, covering all data interfaces and electrical interfaces. These include batteries, motors, sensors, displays, lighting and brakes. Bluetooth communication modules are currently particularly popular and can be integrated directly into the interfaces.

### SENSOR SYSTEMS

Wherever linear position, rotary, and rotational speed information is required, it has to be registered contactlessly and visualized reliably. Highly accurate, reproducible, and robust measurements can be technically implemented on the basis of the physical Hall effect. Here, our engineers take the mechanical and the electrical interface into account and develop the sensor into the application environment.

## **HIGH VOLTAGE APPLICATIONS**

Trends such as the electrification of vehicles and other alternative drive technologies are presenting new challenges for high-voltage applications. The technical excellence of the components is just as important as that of affordable, flexible processing technology. In cooperation with well-known OEMs, we have developed pioneering systems. Our product portfolio covers all applications in the high-voltage vehicle electrical system.

# Industrial Components

# Take a closer look



# **Sensor Systems**



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The wear-free, magnetic Hall sensors are used for rotation direction detection. The magnetic field which is produced by a permanent magnet is output as a signal according to the direction of rotation. The sensors are available with a connection cable (200 or 1,000 mm), with or without the M8 connector and as 5V or 36V variant.

### **Rotation Angle Sensors**

The wear-free, programmable, magnetic Hall sensors are used for rotation angle measurements. The magnetic field, which is produced by a permanent magnet, is outputed in a linear output voltage according to the rotation. The sensors are available with a connection cable (200 or 1,000 mm), with or without the M8 connector and as 5V or 36V variants.

### **Rotation Speed Sensors**

Our contactless and wear-free sensors for rotation speed detection from 0 to 600000 rpm are used in a wide range of applications. Magnetic pole wheels, 2- or 3-wire interface, a size-optimized design, sealed housing, various connection options characterize these sensors. They can also be used in harsh environments and combined with direction of rotation detection.

### **Position Sensors**

The wear-free, programmable, magnetic Hall sensors are used for length measurements. The magnetic field, which is produced by a permanent magnet, is outputed in a linear output voltage according to the longitudinal movement. The sensors are available with a connection cable (200 or 1,000 mm), with or without the M8 connector and as 5V or 36V variants.

### **Slant Sensors**

The contactless and wear-free high-resolution sensors for inclination detection from -180 ° to 180 ° are characterized by high temperature stability, variable and programmable output characteristics, size-optimized design, sealed housing and various connection options. They are suitable for use in harsh environments and have a wide range of applications.

### **Switches**

The magnetic cylinder sensors are used mainly to monitor the piston position in cylinders and gripper units. The sensors detect the piston magnet through the actuator wall. Due to the contactless design the cylinder sensors are reliably and free of wear. The sensors guarantee reliable signals even at high processing.

#### HISO

HISD

HISA

HISR

HISL

#### HISS



# Rotation Angle Sensors HISA

#### PRODUCT DRAWINGS

# HISA

#### **GENERAL CHARACTERISTICS**

Wear-free, programmable, magnetic Hall sensors for measuring angles. A magnetic field generated by a permanent magnet is outputted according to the rotation in a linear output voltage. Available with connecting cable with or without M8 Connector.

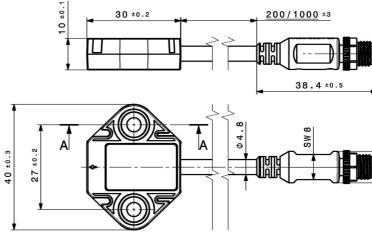
ELECTRICAL CHARACTERIS	rics	5V variants	36V variants
min. operating voltage		4,5V	9V
max. operating voltage <85°C		5,5V	36V
max. operating voltage <125°C		5,5V	25V
max. current draw	at operating voltage	VDD=5V	V+=24V
max. current draw	not burdened output	10mA	10mA
output signal	ratiometric, analog voltage-signal		
min. output signal	10 kΩ load resistor (PULL- Down)	10%VDD	0,5V
max. output signal	10 kΩ load resistor (PULL- Down)	90%VDD	4,5V
max. signal deviation	measuring range 360°/eccentricity sensor – magnet ± 1mm/HIS – ring magnet/-40°C 85°C	± 2%VDD	± 2,5%5V
fullfilled EMC-standards		EN13309:2010	EN13309:2010 EN60947-5-2:2007

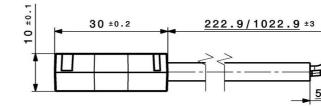
MECHANICAL CHARACTERISTICS	: SENSOR
cable diameter D max.	4,8 mm
cable length with M8 connector	200 or 1000 mm
cable length without M8 connector	1022,9 or 3022,9 mm
type of connector	M8x1
housing material	PA-6 GF30
cable jacket material	TPE, PUR
protection class with M8 connector	IP66 / IP67 / IPx9k
protection class without M8 connector	IP66 / IPx9k
vibration resistance	DIN EN 60947-5-2
min. ambient temperature	-40 °C
max. ambient temperature	125°C

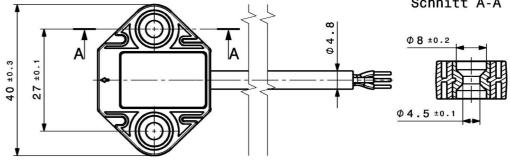
MECHANICAL CHARACTERISTICS: MAGNET		
housing material PA-66 GF25		
magnet material	N42SH	
min. ambient temperature	-40 °C	
max. ambient temperature	125 °C	

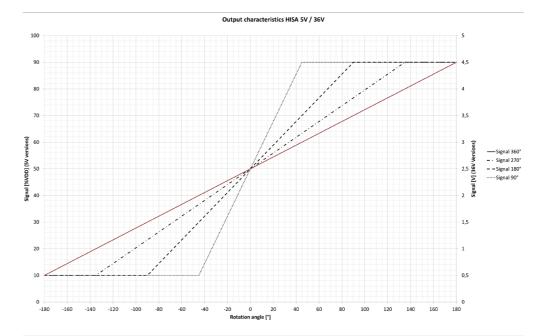
No direct impact on the magnet is allowed.





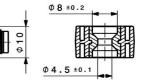








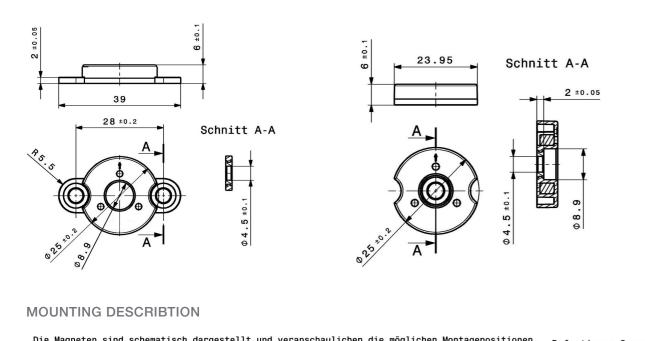
Schnitt A-A

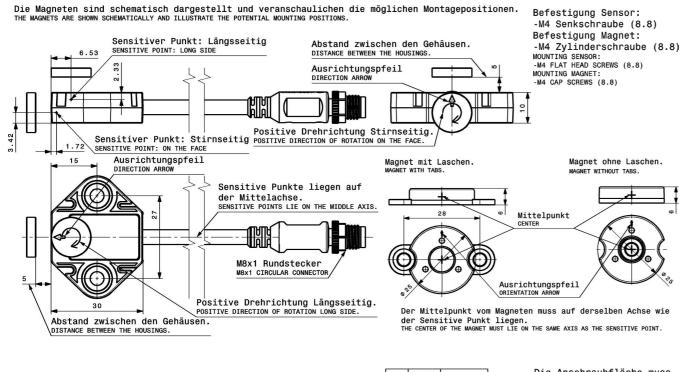




Schnitt A-A

#### **AVAILABLE MAGNETS**





4 Gelb YELLOW Mit M8x1 Rundstecker Ohne M8x1 Rundstecker WITHOUT M8x1 CIRCULAR CONNECTOR WITH M8x1 CIRCULAR CONNECTOR 3 Braun BROWN Pin 4 1 Gruen GREEN K02 PIN Farbe Pin 1

Die Anschraubfläche muss Eben sein. THE MOUNTING SURFACE MUST BE FLAT. Die Buchse muss vollflächig aufliegen. THE SOCKET MUST REST COMPLETELY OVER THE ENTIRE SURFACE.

OUT

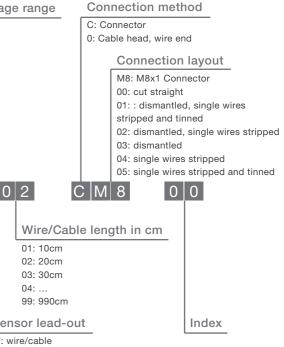
GND

VDD

Belegung

Detection type Signal type R: Rotation V: Analog voltage signal A: Angle Signal form D: Direction ratiometric 10-90% VDD for supply voltage range 1; L: Linear O: Obligueness 0,5V - 4,5V for supply voltage range 2 S: Switch Supply voltage range P: Pressure 1: 4,5 – 5,5V 2:9-36V HISA 0 1 0 1 V 1 1 W 0 2 C M 8 01: 10cm 02: 20cm 03: 30cm 04: ... Measurement range 99: 990cm 1: 360° Angle Sensor lead-out 2: 270° Angle 3: 180° Angle W: wire/cable 4: 90° Angle 5: 40mm Length Detection direction 0: Rotation 1: Linear measurement parallel to mounting axis 2: Linear measurement transversely to mounting axis Detection side 1: Face side 2: Longitudinal side Supplied Magnet 0: No Magnet 1: Ring Magnet with central bush 2: Ring magnet with lateral mounting bushes (tabs) 3: Linear Magnet

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#### PRODUCT OVERVIEW – MOUNTING POSITION FACE SIDE

Article Number	Magnet and Dection Side	Cable End	Meas. Range
HISA-1104-V11-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	90°
HISA-1104-V11-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	90°
HISA-1104-V11-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	90°
HISA-1104-V11-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	90°
HISA-1104-V12-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	90°
HISA-1104-V12-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	90°
HISA-1104-V12-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	90°
HISA-1104-V12-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	90°
HISA-1103-V11-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	180°
HISA-1103-V11-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	180°
HISA-1103-V11-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	180°
HISA-1103-V11-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	180°
HISA-1103-V12-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	180°
HISA-1103-V12-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	180°
HISA-1103-V12-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	180°
HISA-1103-V12-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	180°
HISA-1102-V11-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	270°
HISA-1102-V11-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	270°
HISA-1102-V11-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	270°
HISA-1102-V11-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	270°
HISA-1102-V12-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	270°
HISA-1102-V12-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	270°
HISA-1102-V12-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	270°
HISA-1102-V12-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	270°
HISA-1101-V11-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	360°
HISA-1101-V11-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	360°
HISA-1101-V11-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	360°
HISA-1101-V11-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	360°
HISA-1101-V12-W02-CM8-00	ring magnet without flaps / face side detection	with connector 200 mm	360°
HISA-1101-V12-W10-CM8-00	ring magnet without flaps / face side detection	with connector 1000 mm	360°
HISA-1101-V12-W30-001-00	ring magnet without flaps / face side detection	without connector 3022,9 mm	360°
HISA-1101-V12-W10-001-00	ring magnet without flaps / face side detection	without connector 1022,9 mm	360°

#### PRODUCT OVERVIEW – MOUNTING POSITION FACE SIDE

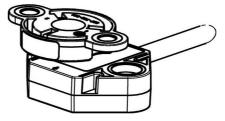


Article Number	Magnet and Dection Side	Cable End	Meas. Range
HISA-2104-V11-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	90°
HISA-2104-V11-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	90°
HISA-2104-V11-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	90°
HISA-2104-V11-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	90°
HISA-2104-V12-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	90°
HISA-2104-V12-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	90°
HISA-2104-V12-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	90°
HISA-2104-V12-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	90°
HISA-2103-V11-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	180°
HISA-2103-V11-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	180°
HISA-2103-V11-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	180°
HISA-2103-V11-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	180°
HISA-2103-V12-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	180°
HISA-2103-V12-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	180°
HISA-2103-V12-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	180°
HISA-2103-V12-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	180°
HISA-2102-V11-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	270°
HISA-2102-V11-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	270°
HISA-2102-V11-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	270°
HISA-2102-V11-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	270°
HISA-2102-V12-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	270°
HISA-2102-V12-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	270°
HISA-2102-V12-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	270°
HISA-2102-V12-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	270°
HISA-2101-V11-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	360°
HISA-2101-V11-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	360°
HISA-2101-V11-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	360°
HISA-2101-V11-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	360°
HISA-2101-V12-W02-CM8-00	ring magnet with flaps / face side detection	with connector 200 mm	360°
HISA-2101-V12-W10-CM8-00	ring magnet with flaps / face side detection	with connector 1000 mm	360°
HISA-2101-V12-W30-001-00	ring magnet with flaps / face side detection	without connector 3022,9 mm	360°
HISA-2101-V12-W10-001-00	ring magnet with flaps / face side detection	without connector 1022,9 mm	360°

#### PRODUCT OVERVIEW – MOUNTING POSITION LENGTH SIDE

Article Number	Magnet and Dection Side	Cable End	Meas. Range
HISA-1204-V11-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	90°
HISA-1204-V11-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	90°
HISA-1204-V11-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	90°
HISA-1204-V11-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	90°
HISA-1204-V12-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	90°
HISA-1204-V12-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	90°
HISA-1204-V12-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	90°
HISA-1204-V12-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	90°
HISA-1203-V11-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	180°
HISA-1203-V11-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	180°
HISA-1203-V11-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	180°
HISA-1203-V11-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	180°
HISA-1203-V12-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	180°
HISA-1203-V12-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	180°
HISA-1203-V12-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	180°
HISA-1203-V12-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	180°
HISA-1202-V11-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	270°
HISA-1202-V11-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	270°
HISA-1202-V11-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	270°
HISA-1202-V11-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	270°
HISA-1202-V12-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	270°
HISA-1202-V12-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	270°
HISA-1202-V12-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	270°
HISA-1202-V12-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	270°
HISA-1201-V11-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	360°
HISA-1201-V11-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	360°
HISA-1201-V11-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	360°
HISA-1201-V11-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	360°
HISA-1201-V12-W02-CM8-00	ring magnet without flaps / length side detection	with connector 200 mm	360°
HISA-1201-V12-W10-CM8-00	ring magnet without flaps / length side detection	with connector 1000 mm	360°
HISA-1201-V12-W30-001-00	ring magnet without flaps / length side detection	without connector 3022,9 mm	360°
HISA-1201-V12-W10-001-00	ring magnet without flaps / length side detection	without connector 1022,9 mm	360°

#### PRODUCT OVERVIEW – MOUNTING POSITION LENGTH SIDE



Article Number	Magnet and Dection Side	Cable End	Meas. Range
HISA-2204-V11-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	90°
HISA-2204-V11-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	90°
HISA-2204-V11-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	90°
HISA-2204-V11-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	90°
HISA-2204-V12-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	90°
HISA-2204-V12-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	90°
HISA-2204-V12-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	90°
HISA-2204-V12-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	90°
HISA-2203-V11-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	180°
HISA-2203-V11-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	180°
HISA-2203-V11-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	180°
HISA-2203-V11-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	180°
HISA-2203-V12-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	180°
HISA-2203-V12-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	180°
HISA-2203-V12-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	180°
HISA-2203-V12-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	180°
HISA-2202-V11-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	270°
HISA-2202-V11-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	270°
HISA-2202-V11-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	270°
HISA-2202-V11-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	270°
HISA-2202-V12-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	270°
HISA-2202-V12-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	270°
HISA-2202-V12-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	270°
HISA-2202-V12-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	270°
HISA-2201-V11-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	360°
HISA-2201-V11-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	360°
HISA-2201-V11-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	360°
HISA-2201-V11-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	360°
HISA-2201-V12-W02-CM8-00	ring magnet with flaps / length side detection	with connector 200 mm	360°
HISA-2201-V12-W10-CM8-00	ring magnet with flaps / length side detection	with connector 1000 mm	360°
HISA-2201-V12-W30-001-00	ring magnet with flaps / length side detection	without connector 3022,9 mm	360°
HISA-2201-V12-W10-001-00	ring magnet with flaps / length side detection	without connector 1022,9 mm	360°

# HISA

#### GENERAL CHARACTERISTICS

Wear-free, programmable, magnetic Hall sensors for measuring angles. A magnetic field generated by a permanent magnet is outputted according to the rotation in a linear output voltage. Available with connecting cable with or without M8 Connector.

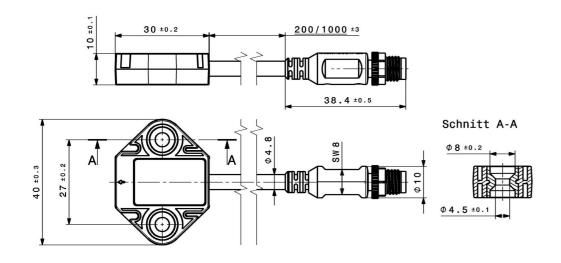
ELECTRICAL CHARACTERIS	TICS	5V variants	36V variants
min. operating voltage		4,5V	9V
max. operating voltage <85°C		5,5V	36V
max. operating voltage <125°C		5,5V	25V
max. current draw	at operating voltage	VDD=5V	V+=24V
max. current draw	not burdened output	10mA	10mA
output signal	ratiometric, analog voltage-signal		
min. output signal	10 kΩ load resistor (PULL- Down)	10%VDD	0,5V
max. output signal	10 kΩ load resistor (PULL- Down)	90%VDD	4,5V
	measuring range 360°/eccentricity	depending on	depending on the
max. signal deviation	sensor - magnet ± 1mm/HIS - ring	the magnet; typ.	magnet; typ. ±
	magnet/-40°C 85°C	±7,5%VDD	8%5V
fullfilled FMC standards		EN12200-2010	EN13309:2010
fullfilled EMC-standards		EN13309:2010	EN60947-5-2:2007

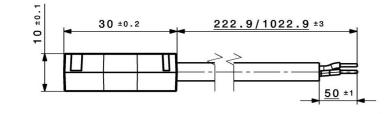
MECHANICAL CHARACTERISTICS: SENSOR			
cable diameter D max.	4,8 mm		
cable length with M8 connector	200 or 1000 mm		
cable length without M8 connector	1022,9 or 3022,9 mm		
type of connector	M8x1		
housing material	PA-6 GF30		
cable jacket material	TPE, PUR		
protection class with M8 connector	IP66 / IP67 / IPx9k		
protection class without M8 connector	IP66 / IPx9k		
vibration resistance	DIN EN 60947-5-2		
min. ambient temperature	-40 °C		
max. ambient temperature	125°C		



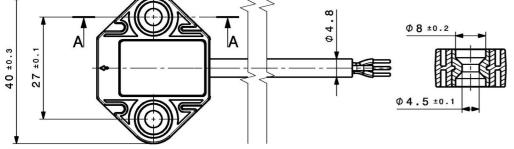
On request custom connectors, output signal programming, shielding and custom magnet designs are possible. The sensor is programmed before delivery with a master magnet. The magnetic flux density in the sensitive area of the sensor is approx. 25 mT. This flux density can be achieved, for example, by installing a ring magnet with the dimensions Da = 17mm, Di = 11mm, h = 4mm out of the material N42SH. The magnet used, determines the accuracy of the sensor signal.

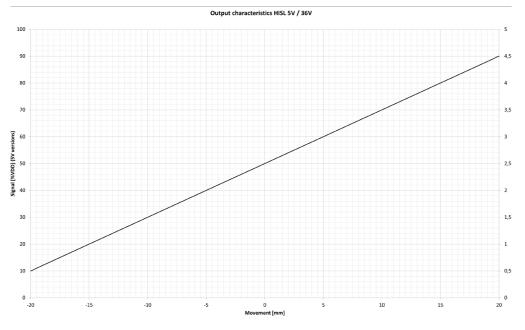
#### **PRODUCT DRAWINGS**



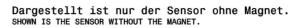


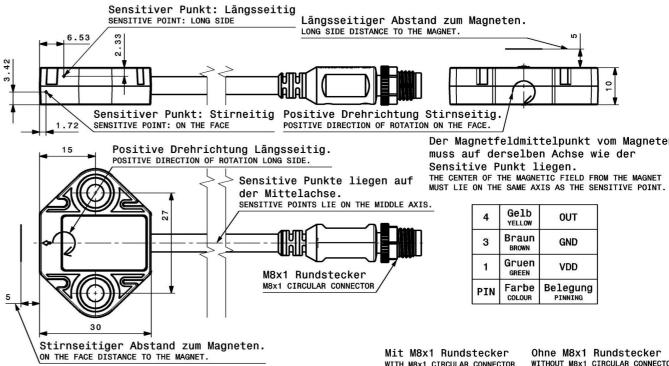






#### MOUNTING DESCRIBTION





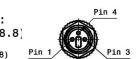
Die Buchse muss vollflächig aufliegen und die Anschraubfläche muss Eben sein. -M4 Senkschraube (8.8) THE SOCKET MUST REST COMPLETELY OVER THE ENTIRE SURFACE AND THE MOUNTING SURFACE MUST BE FLAT. -M4 FLAT HEAD SCREWS (8.8)

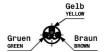
Der Magnetfeldmittelpunkt vom Magneten muss auf derselben Achse wie der

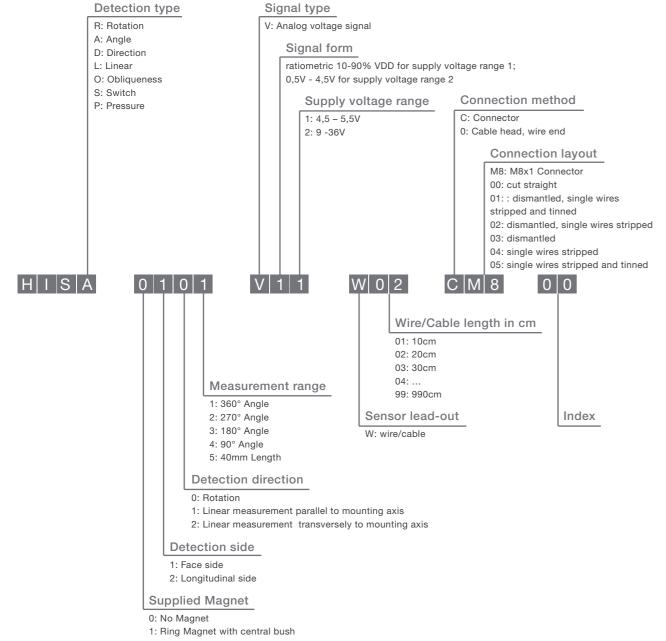
4	Gelb YELLOW	OUT
3	Braun BROWN	GND
1	Gruen GREEN	VDD
PIN	Farbe COLOUR	Belegung PINNING

WITH M8x1 CIRCULAR CONNECTOR

Ohne M8x1 Rundstecker WITHOUT M8x1 CIRCULAR CONNECTOR

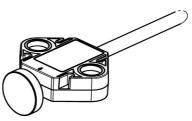






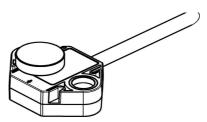
- 2: Ring magnet with lateral mounting bushes (tabs)
- 3: Linear Magnet

#### PRODUCT OVERVIEW - MAGNET POSITION FACE SIDE



Article Number	Dection Side	Cable End	Meas. Range
HISA-0101-V11-W02-CM8-00	face side	with connector 200 mm	360°
HISA-0101-V11-W10-CM8-00	face side	with connector 1000 mm	360°
HISA-0101-V11-W30-001-00	face side	without connector 3022,9 mm	360°
HISA-0101-V11-W10-001-00	face side	without connector 1022,9 mm	360°
HISA-0101-V12-W02-CM8-00	face side	with connector 200 mm	360°
HISA-0101-V12-W10-CM8-00	face side	with connector 1000 mm	360°
HISA-0101-V12-W30-001-00	face side	without connector 3022,9 mm	360°
HISA-0101-V12-W10-001-00	face side	without connector 1022,9 mm	360°

#### PRODUCT OVERVIEW - MAGNET POSITION LENGTH SIDE



Article Number	Dection Side	Cable End	Meas. Range
HISA-0201-V11-W02-CM8-00	length side	with connector 200 mm	360°
HISA-0201-V11-W10-CM8-00	length side	with connector 1000 mm	360°
HISA-0201-V11-W30-001-00	length side	without connector 3022,9 mm	360°
HISA-0201-V11-W10-001-00	length side	without connector 1022,9 mm	360°
HISA-0201-V12-W02-CM8-00	length side	with connector 200 mm	360°
HISA-0201-V12-W10-CM8-00	length side	with connector 1000 mm	360°
HISA-0201-V12-W30-001-00	length side	without connector 3022,9 mm	360°
HISA-0201-V12-W10-001-00	length side	without connector 1022,9 mm	360°



# Position Sensors HISL

#### PRODUCT DRAWINGS

# HISL

#### **GENERAL CHARACTERISTICS**

Wear-free, programmable, magnetic Hall sensors for length measurement. A magnetic field generated by a permanent magnet is outputted according to a longditudinal motion in a linear output voltage. Available with connecting cable with or without M8 Connector.

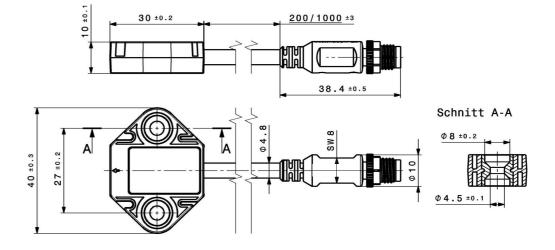
ELECTRICAL CHARACTERIST	rics	5V variants	36V variants
min. operating voltage		4,5V	9V
max. operating voltage <85°C		5,5V	36V
max. operating voltage <125°C		5,5V	25V
output signal	ratiometric, analog voltage-signal		
min. output signal	10 kΩ load resistor (PULL- Down)	10%VDD	0,5V
max. output signal	10 kΩ load resistor (PULL- Down)	90%VDD	4,5V
max. signal deviation	measuring range 40mm/mech. positioning accuracy ± 0,1mm/HIS - magnet/-40°C 85°C	± 2%VDD	± 2,5%5V
fullfilled EMC-standards		EN13309:2010	EN13309:2010 EN60947-5-2:2007

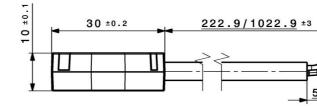
MECHANICAL CHARACTERISTICS	: SENSOR
cable length with M8 connector	200 oder 1000 mm
cable length without M8 connector	1022,9 oder 3022,9 mm
type of connector	M8x1
housing material	PA-6 GF30
cable jacket material	TPE, PUR
protection calss with M8 connector	IP66 / IP67 / IPx9k
protection class without M8 connector	IP66 / IPx9k
vibration resistance	DIN EN 60947-5-2
min. ambient temperature	-40 °C
max. ambient temperature	125 °C

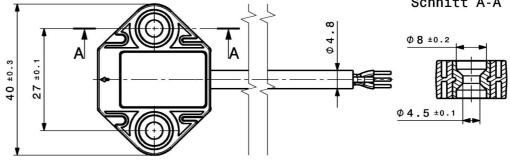
L	MECHANICAL CHARACTERISTICS: MAGNET			
	housing material	PA-66 GF25		
	magnet material	N42SH		
_	min. ambient temperature	-40 °C		
_	max. ambient temperature	125 °C		

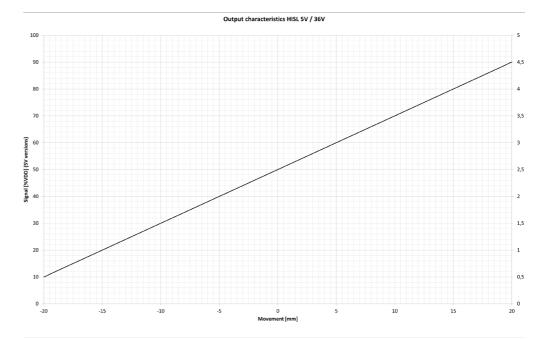
No direct impact on the magnet is allowed.

i On request custom connectors, output signal programming, shielding and custom magnet designs are possible.  $\downarrow$ 





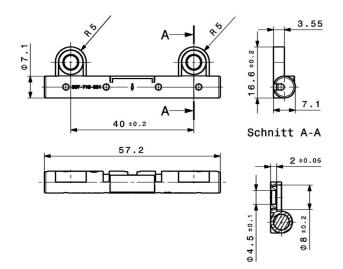






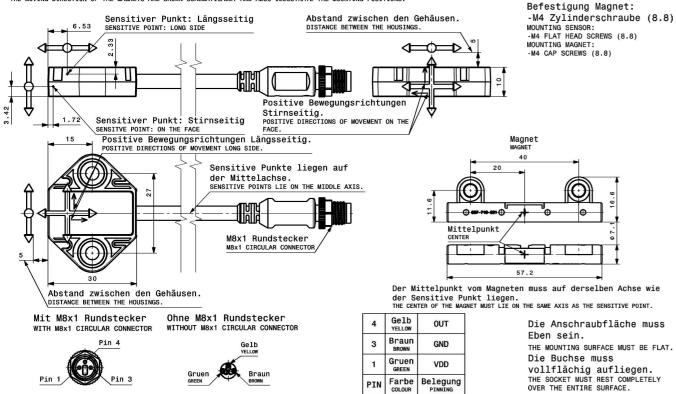
Schnitt A-A

#### MAGNET DRAWING



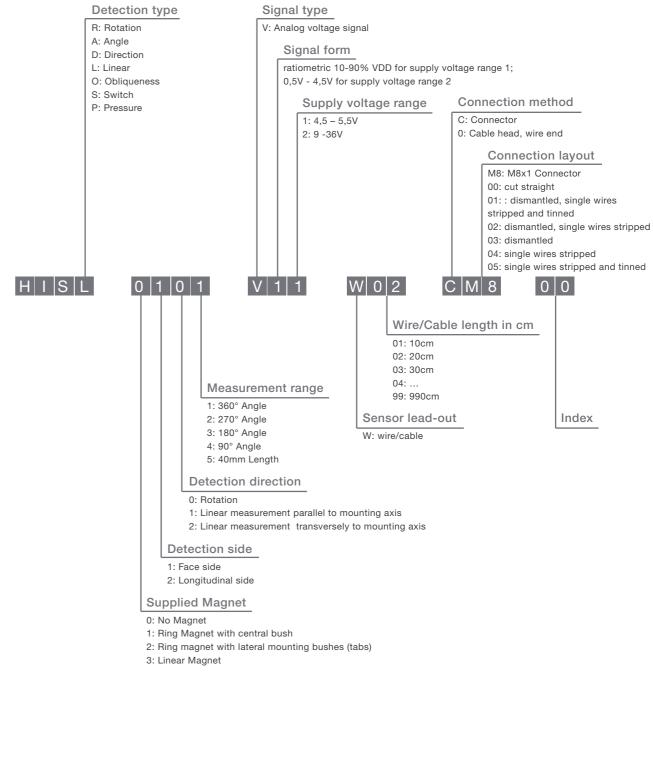
#### MOUNTING DESCRIBTION

Die Bewegungsrichtungen vom Magneten sind schematisch dargestellt und veranschaulichen ebenfalls die Montagepositionen. THE MOVING DIRECTION OF THE MAGNETS ARE SHOWN SCHEMATICALLY AND ALSO ILLUSTRATE THE MOUNTING POSITIONS.



Befestigung Sensor:

-M4 Senkschraube (8.8)



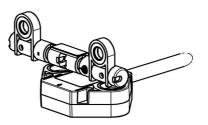
#### PRODUCT OVERVIEW – MOUNTING POSITION FACE SIDE

Article Number	Magnet Orientation	Detection Side	Cable End
HISL-3115-V11-W02-CM8-00	parallel to mounting axis	face side	with connector 200mm
HISL-3115-V11-W10-CM8-00	parallel to mounting axis	face side	with connector 1000mm
HISL-3115-V11-W30-001-00	parallel to mounting axis	face side	without 3022,9mm
HISL-3115-V11-W10-001-00	parallel to mounting axis	face side	without 1022,9mm
HISL-3115-V12-W02-CM8-00	parallel to mounting axis	face side	with connector 200mm
HISL-3115-V12-W10-CM8-00	parallel to mounting axis	face side	with connector 1000mm
HISL-3115-V12-W30-001-00	parallel to mounting axis	face side	without 3022,9mm
HISL-3115-V12-W10-001-00	parallel to mounting axis	face side	without 1022,9mm

PRODUCT OVERVIEW – MOUNTING POSITION FACE SIDE

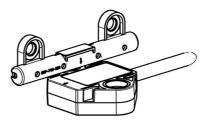
Article Number	Magnet Orientation	Detection Side	Cable End
HISL-3125-V11-W02-CM8-00	transversely to mounting axis	face side	with connector 200mm
HISL-3125-V11-W10-CM8-00	transversely to mounting axis	face side	with connector 1000mm
HISL-3125-V11-W30-001-00	transversely to mounting axis	face side	without 3022,9mm
HISL-3125-V11-W10-001-00	transversely to mounting axis	face side	without 1022,9mm
HISL-3125-V12-W02-CM8-00	transversely to mounting axis	face side	with connector 200mm
HISL-3125-V12-W10-CM8-00	transversely to mounting axis	face side	with connector 1000mm
HISL-3125-V12-W30-001-00	transversely to mounting axis	face side	without 3022,9mm
HISL-3125-V12-W10-001-00	transversely to mounting axis	face side	without 1022,9mm

#### PRODUCT OVERVIEW – MOUNTING POSITION LENGTH SIDE

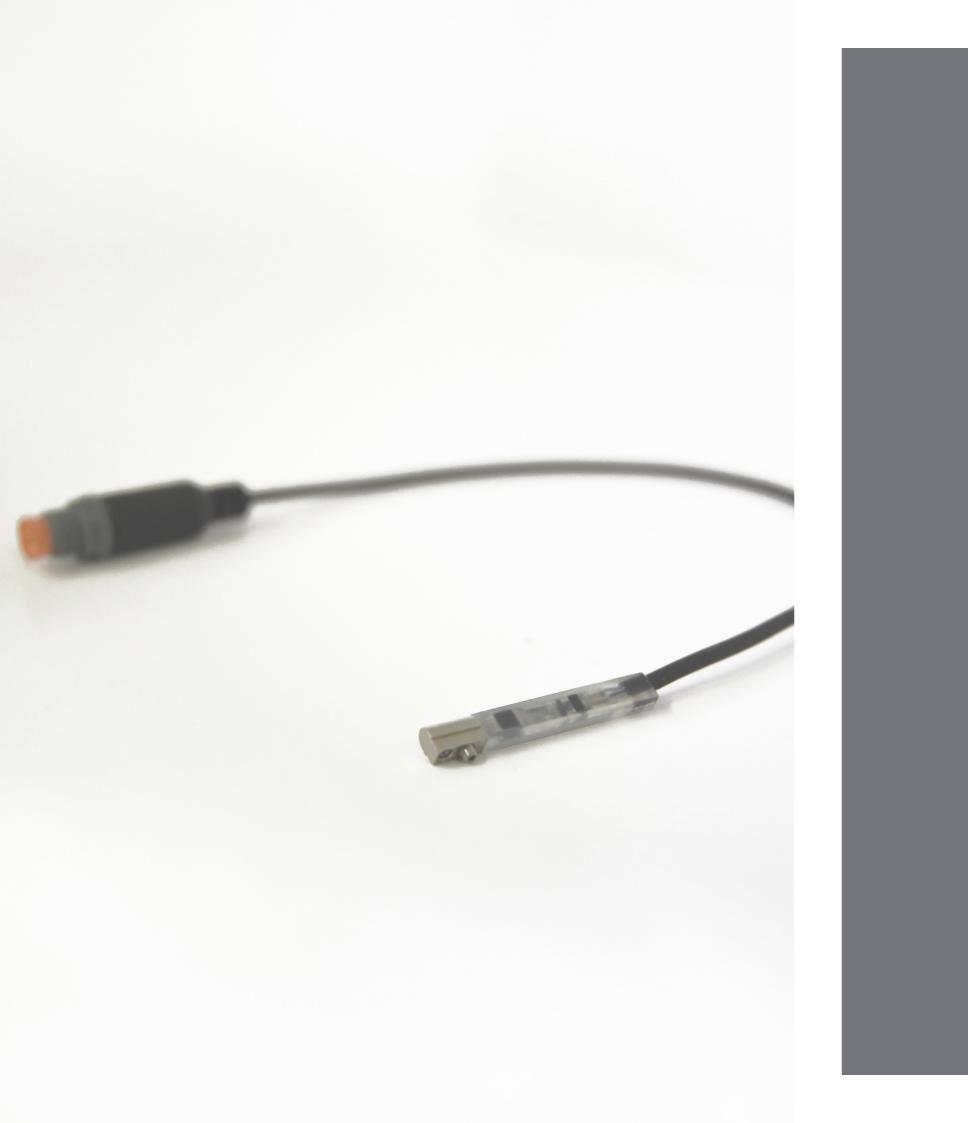


Article Number	Magnet Orientation	Detection Side	Cable End
HISL-3215-V11-W02-CM8-00	parallel to mounting axis	length side	with connector 200mm
HISL-3215-V11-W10-CM8-00	parallel to mounting axis	length side	with connector 1000mm
HISL-3215-V11-W30-001-00	parallel to mounting axis	length side	without 3022,9mm
HISL-3215-V11-W10-001-00	parallel to mounting axis	length side	without 1022,9mm
HISL-3215-V12-W02-CM8-00	parallel to mounting axis	length side	with connector 200mm
HISL-3215-V12-W10-CM8-00	parallel to mounting axis	length side	with connector 1000mm
HISL-3215-V12-W30-001-00	parallel to mounting axis	length side	without 3022,9mm
HISL-3215-V12-W10-001-00	parallel to mounting axis	length side	without 1022,9mm

#### PRODUCT OVERVIEW – MOUNTING POSITION LENGTH SIDE



Article Number	Magnet Orientation	Detection Side	Cable End
HISL-3225-V11-W02-CM8-00	transversely to mounting axis	length side	with connector 200mm
HISL-3225-V11-W10-CM8-00	transversely to mounting axis	length side	with connector 1000mm
HISL-3225-V11-W30-001-00	transversely to mounting axis	length side	without 3022,9mm
HISL-3225-V11-W10-001-00	transversely to mounting axis	length side	without 1022,9mm
HISL-3225-V12-W02-CM8-00	transversely to mounting axis	length side	with connector 200mm
HISL-3225-V12-W10-CM8-00	transversely to mounting axis	length side	with connector 1000mm
HISL-3225-V12-W30-001-00	transversely to mounting axis	length side	without 3022,9mm
HISL-3225-V12-W10-001-00	transversely to mounting axis	length side	without 1022,9mm



# Switch

# HISS

GENERAL CHARACTERISTICS		
product description	Magnetic cylinder sensors are mainly used to monitor the piston position on cylinders and grippers. The sensor detects the field of the magnet integrated in the piston through the actuator wall. Thanks to the non-contact position detection, our magnetic cylinder sensors work reliably and wear-free. Even at high process speeds, the piston position is detected reliably.	
norm	IEC 60947-5-2	
protection class IEC 60529	IP 66	

### ELECTRICAL CHARACTERISTICS

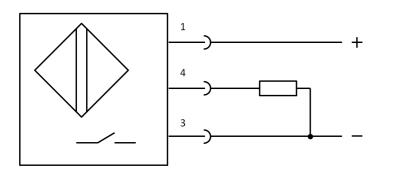
min. operating voltage	10 V
max. operating voltage	30 V
uotput	Open- Collector pnp- logic
switching status via LED	Yes
fullfilled EMC-standards	The surge voltage resistance is given only with external TVS diodes. EN60947-5-2:2007 Teil 5-2

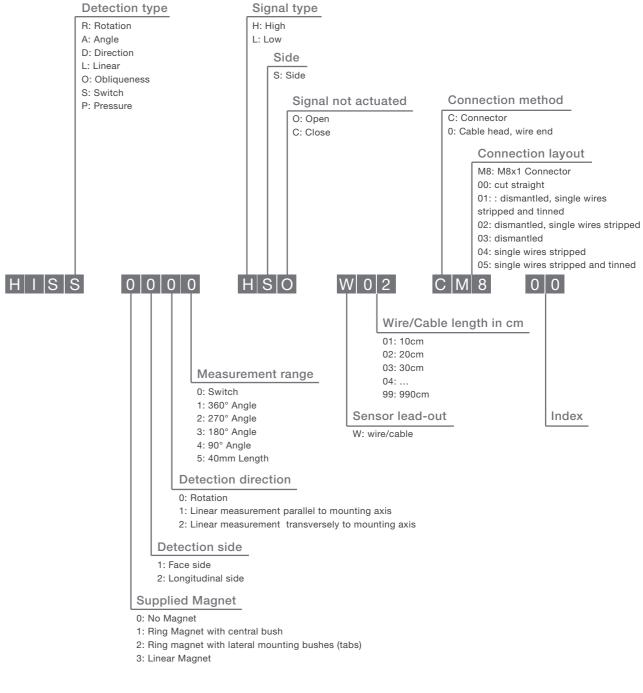
MECHANICAL CHARACTERISTICS		
available cable lengths L	0,2 / 0,3 / 0,6 m	
connector	M8x1	
housing material	PA-66	
cable material	PUR	
min. ambient temperature	-30 °C	
max. ambient temperature	85 °C	
alive at we all an ideal increases any the weaking		

direct mechanical impacts on the magnetic cylinder sensor are not permitted!

#### PRODUCT OVERVIEW

HISS-0001-HSO-W02-CM8-00	cable length 20cm	high sensitivity of the switching element
HISS-0001-HSO-W03-CM8-00	cable length 30cm	high sensitivity of the switching element
HISS-0001-HSO-W06-CM8-00	cable length 60cm	high sensitivity of the switching element
HISS-0002-HSO-W02-CM8-00	cable length 20cm	lower sensitivity of the switching element
HISS-0002-HSO-W03-CM8-00	cable length 30cm	lower sensitivity of the switching element
HISS-0002-HSO-W06-CM8-00	cable length 60cm	lower sensitivity of the switching element





# M8 St. 0° / M8 Bu. 0°

GENERAL CHARACTERISTICS			
product describtion	connecting harness (e.g. sen		
Grundnorm	IEC 61076-2-104		
Schutzart nach IEC 60529	connected / screwed IP66K /		

TECHNICAL DATA		
max. operating voltage	60 V	
max. load per contact	4 A	
material	PA-66	
contact surface	gold plated	
available length	0,3/0,6/1/1,5/2/3,5/5 m	



#### nsor - actor) with M8 connectors male-female, 3-way

### ( / IP 67

CABLE		
square	3x0,25 mm <sup>2</sup>	
cable material	PUR	
diameter ø	ca. 4,3 mm	
min. ambient temperature	-30 °C	
max. ambient temperature	85 °C	

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