

# Inclinometers

**Inclinometer  
MEMS / capacitive**

**IS60, 2-dimensional**

**CANopen**



The inclinometer IS60 permits 2-dimensional inclinations to be measured. Versions are available for the measuring ranges  $\pm 10^\circ$ ,  $\pm 45^\circ$  or  $\pm 60^\circ$ .

The sensor has a standardized CANopen interface, which enables easy configuration and start-up. All the parameters are stored in the internal permanent memory.

Can be supplied with customer-specific parametrization.



**CANopen**



High protection level



Shock / vibration resistant



Reverse polarity protection

## Robust and reliable

- Protection rating IP68 / IP69k.
- Robust plastic housing.
- High shock resistance.

## User-friendly and accurate

- High resolution and accuracy.
- Programmable vibration suppression.
- High sampling rate and bandwidth.

## Order code Inclinometer IS60

**8.IS60 . 2X523**  
Type

**a** Measuring direction  
2 = 2-dimensional x/y

**b** Measuring range  
1 =  $\pm 10^\circ$   
2 =  $\pm 45^\circ$   
3 =  $\pm 60^\circ$

**c** Interface  
5 = CANopen

**d** Power supply  
2 = 10 ... 30 V DC

**e** Type of connection  
3 = 2 x M12 connector

## Connection technology

Order no.

### Cordset, pre-assembled

M12 female connector with coupling nut for Bus in, 5-pin  
5 m [16.40'] PUR cable

**05.00.6021.2211.005M**

M12 male connector with external thread for Bus out, 5-pin  
5 m [16.40'] PUR cable

**05.00.6021.2411.005M**

### Connector, self-assembly (straight)

M12 female connector with coupling nut for Bus in, 5-pin

**05.B-8151-0/9**

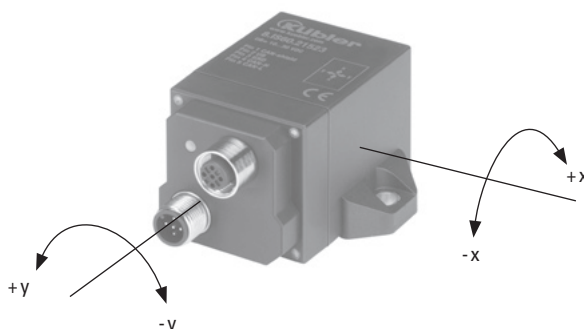
M12 male connector with external thread for Bus out, 5-pin

**05.BS-8151-0/9**

Further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories)

Additional connectors can be found in the connection technology section or in the connection technology area of our website at: [www.kuebler.com/connection\\_technology](http://www.kuebler.com/connection_technology)

## Direction of inclination



# Inclinometers

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## Technical data

Mechanical characteristics	
<b>Connection CAN</b>	M12 connector, 5-pin
<b>Weight</b>	approx. 0.2 kg [7.06 oz]
<b>Protection acc. to EN 60529</b>	IP68 / IP69k
<b>Working temperature range</b>	-40°C ... +80°C [-40°F ... +176°F]
<b>Material</b>	plastic PA12-GF30
<b>Shock resistance</b>	300 m/s <sup>2</sup> , 11 ms
<b>Vibration resistance</b>	100 m/s <sup>2</sup> , 10 ... 2000 Hz
<b>Dimensions</b>	68 x 42.5 x 42.5 mm [2.68 x 1.67 x 1.67"]

Electrical characteristics	
<b>Power supply</b>	10 ... 30 V DC
<b>Power consumption (no load)</b>	40 ... 105 mA
<b>Reverse polarity protection</b>	yes
<b>Measuring axes</b>	2 (x/y)
<b>Measuring range</b>	±10°, ±45°, ±60°
<b>Resolution</b>	0.1°
<b>Linearity deviation</b>	max. ±0.4°
<b>Calibration accuracy – at 25°C [77°F]</b>	±0.1° (Zero point and final values)
<b>Temperature drift (Zero point)</b>	typ. ±0.008°/K
<b>Sampling rate</b>	100 Hz
<b>CE compliant acc. to</b>	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

Interface characteristics CANopen	
<b>Interface</b>	CANopen according to CiA DS-301, Profile to CiA DSP-410
<b>Data rates</b>	10 kbit/s, 20 kbit/s, 50 kbit/s, 125 kbit/s, 250 kbit/s, 500 kbit/s, 800 kbit/s, 1 Mbit/s
<b>Functions</b>	TPDO (RTR, cyclic, event-driven, synchronized), parameterization per SDO and object register, digital filter (Butterworth Low pass, 8th order), SYNC Consumer, EMCY Producer, output and control of internal device temperature (±2.0 K accuracy), failure control with the help of Heartbeat or Nodeguarding / Lifeguarding
<b>Note ID</b>	1 ... 127

A full description of the technical data can be found in the relevant product manual at [www.kuebler.com](http://www.kuebler.com).

### Terminal assignment

PIN	Signal	Assignment
1	CAN_SHLD	Shield
2	CAN V+	Power supply (+24 V DC)
3	CAN_GND	0 V
4	CAN_H	CAN_H Bus cable
5	CAN_L	CAN_L Bus cable



### Dimensions

Dimensions in mm [inch]

