

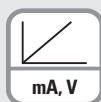
# Inclinometers

<b>Inclinometer MEMS / capacitive</b>	<b>IS40, 1-dimensional</b>	<b>Analog</b>
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With the IS40 inclinometer 1-dimensional inclinations in the measuring range 0 - 360° can be measured.

The compact robust construction makes this sensor the ideal device for measuring angles in harsh environments.



Output



High protection level



Shock / vibration resistant



Reverse polarity protection

## Innovative

- Rugged construction – high shock resistance.
- High resolution and accuracy.
- Current or voltage interface.
- Adjusting of the measuring range via teach adapter.

## Compact / Many applications

- Small design – minimal space requirement.
- For use in vehicle technology, solar installations, cranes and hoists or in commercial vehicles.

## Order code Inclinometer IS40

**8.IS40 . 14X21**  
Type      a b c d e

**a** Measuring direction  
1 = 1-dimensional

**b** Measuring range  
4 = 0 ... 360°

**c** Interface  
1 = 4 ... 20 mA  
3 = 0.1 ... 4.9 V DC

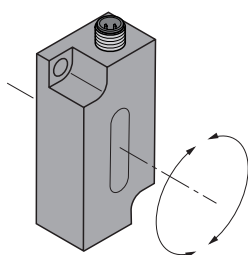
**d** Power supply  
2 = 10 ... 30 V DC

**e** Type of connection  
1 = M12 connector

Accessories		Order no.
<b>Teach adapter</b>	for inductive encoders, linear position, angle and ultrasonic sensors	<b>05.TX40.1</b>
Connection technology		Order no.
<b>Cordset, pre-assembled</b>	M12 female connector with coupling nut, 5-pin 2 m [6.56'] PVC cable	<b>05.00.6081.2211.002M</b>
<b>Connector, self-assembly (straight)</b>	M12 female connector with coupling nut, 5-pin	<b>8.0000.5116.0000</b>

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



## Adjusting the measuring range via 05.TX40.1 teach adapter

- Setting the angular range in CW direction:
  - Move sensor to start position
  - Press and hold Teach-GND until the output is set to < 4 mA / 0.1 V (approx. 1 s)
  - Move sensor to end position
  - Press and hold Teach-GND until the output is set to 20 mA / 4.9 V (approx. 3 s)
- Resetting the angular range:
  - Press and hold Teach-GND until the output is set to 12 mA (approx. 6 s)
  - The angular range is reset to 360°



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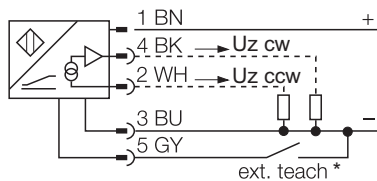
## Technical data

Mechanical characteristics	
<b>Connection</b>	M12 connector
<b>Weight</b>	50 g [1.76 oz]
<b>Protection acc. to EN 60529</b>	IP68 / IP69k
<b>Working temperature range</b>	-30°C ... +70°C [-22°F ... +158°F]
<b>Material</b>	plastic PBT-GF20-V0
<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>	60 x 30 x 20 mm [2.36 x 1.18 x 0.79"]

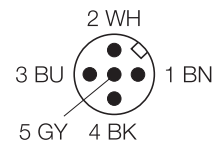
Interface characteristics	
<b>Voltage output</b>	0.1 ... 4.9 V DC short-circuit protected to +V
<b>Load resistance voltage output</b>	≥ 40 kΩ
<b>Output impedance voltage output</b>	99 ... 105 Ω
<b>Current output</b>	4 ... 20 mA
<b>Load resistance current output</b>	≤ 200 Ω

Electrical characteristics	
<b>Power supply</b>	10 ... 30 V DC
<b>Power consumption</b>	50 ... 105 mA (depending on voltage)
<b>Reverse polarity protection</b>	yes
<b>Measuring axes</b>	1
<b>Measuring range</b>	0 ... 360°
<b>Resolution</b>	≤ 0.14°
<b>Repeat accuracy</b>	≤ 0.2 % of measuring range ≤ 0.1 % after a warm-up period of 30 min
<b>Temperature drift</b>	0.03°/K
<b>Reaction time</b>	0.1 s – Time that the output signal requires to reach 90 % full scale
<b>CE compliant acc. to</b>	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

### Connections



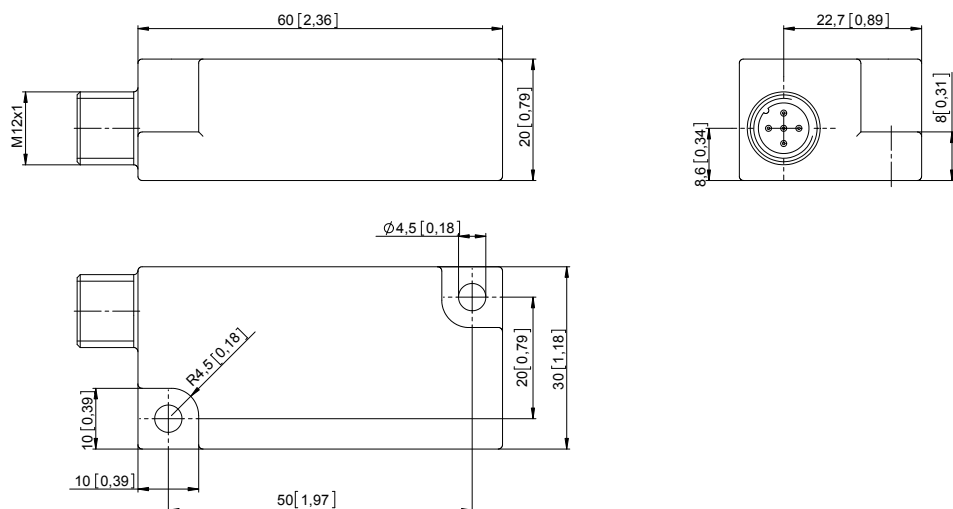
### Terminal assignment



\*) Teach adapter, accessory (Order no. 05.TX40.1)

### Dimensions

Dimensions in mm [inch]



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