

# Inclinometers

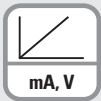
**Inclinometer  
MEMS / capacitive**

**IS40, 1-dimensional**

**Analogue**



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

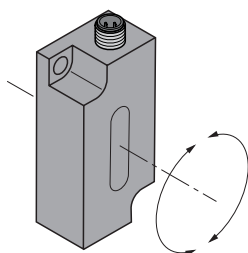
**d** Power supply  
2 = 10 ... 30 V DC

**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		
<b>Connector, self-assembly (straight)</b>	M12 female connector with coupling	<b>8.0000.5116.0000</b>
<b>Cordset, pre-assembled</b>	M12 female connector with coupling, 2 m [6.56'] PVC cable	<b>05.00.6081.2211.002M</b>

Further accessories can be found in the accessories section or in the accessories area of our website.  
Additional connectors can be found in the connection technology section or in the connection technology area of our website.

## 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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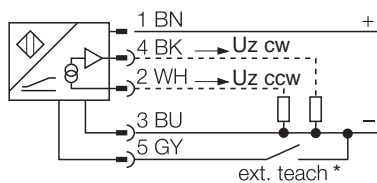
## Technical data

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>	30 g, 11 ms
<b>Vibration resistance</b>	55 Hz, 1 mm [0.04]
<b>Dimensions</b>	60 x 30 x 20 mm [2.36 x 1.18 x 0.79"]

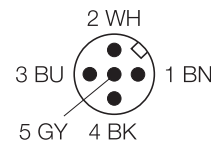
Interface characteristics	
<b>Voltage output</b>	0.1 ... 4.9 V DC short-circuit protected to +V
<b>Load resistance voltage output</b>	≥ 40 kΩ
<b>Output impedance voltage output</b>	99 ... 105 Ω
<b>Current output</b>	4 ... 20 mA
<b>Load resistance current output</b>	≤ 200 Ω

Electrical characteristics	
<b>Power supply</b>	10 ... 30 V DC
<b>Power consumption</b>	50 ... 105 mA (depending on voltage)
<b>Reverse polarity protection (+V)</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>	EN 61362-2-3 EMC requirements for transducers

### Connections



### Terminal assignment



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

### Dimensions

Dimensions in mm [inch]

