## **Inclinometers**



Inclinometer **MEMS / capacitive** 

IS40, 2-dimensional

**Analog** 



The inclinometer IS40 permits 2-dimensional inclinations to be

Versions are available for the measuring ranges ±10°, ±45° or ±60°. The compact robust construction makes this sensor the ideal device for measuring angles in harsh environments.









High protection

Shock / vibration

Reverse polarity

#### **Innovative**

- · Rugged construction.
- · High resolution and accuracy.
- Current or voltage interface.
- · High shock resistance.
- · Zero point adjustment.

## **Compact / Many applications**

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

## Order code **Inclinometer IS40**

8.1\$40



a Measuring direction 2 = 2-dimensional x/y

**b** Measuring range  $1 = \pm 10^{\circ}$ 

 $2 = \pm 45^{\circ}$ 

 $3 = \pm 60^{\circ}$ 

© Interface  $1 = 4 \dots 20 \text{ mA}^{-1}$ 

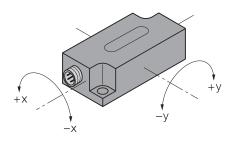
 $3 = 0.1 \dots 4.9 \text{ V DC}^{1)}$ 4 = ratiometric 2 % ... 98 %  $^{2)}$  Power supply 1 = 5 V DC 2 = 10 ... 30 V DC

e Type of connection 1 = M12 connector

Cables and connectors		Order no.	
Preassembled cables	M12 female connector with coupling nut, 5-pin, straight 2 m [6.56'] PVC cable	05.00.6081.2211.002M	
Connectors	M12 female connector with coupling nut, 5-pin, straight	8.0000.5116.0000	

Further Kübler accessories can be found at: kuebler.com/accessories Further Kübler cables and connectors can be found at: kuebler.com/connection-technology

### **Direction of inclination**



- 1) Available only in combination with power supply 10 ... 30 V DC
  2) In relation to the power supply 5 V DC (available only in combination with power supply 5 V DC)



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## Technical data

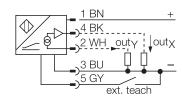
Mechanical characteristics	
Connection	M12 connector
Weight	50 g [1.76 oz]
Protection acc. to EN 60529	IP68 / IP69k
Working temperature range	-30 °C +70 °C [-22 °F +158 °F]
Material	plastic PBT-GF20-V0
Shock resistance	300 m/s <sup>2</sup> , 11 ms
Vibration resistance	100 m/s², 10 2000 Hz
Dimensions	60 x 30 x 20 mm [2.36 x 1.18 x 0.79"]

Electrical chara	ecteristics	
Power supply		5 V DC $\pm 0.25$ V or 10 30 V DC (depending on version)
Power consumption	n (no load)	≤ 20 mA
Reverse polarity protection		yes
Measuring axes		2 (x/y)
Measuring range		±10°, ±45°, ±60°
Resolution	for version ±10° for version ±45° for version ±60°	≤ 0.05° ≤ 0.1° ≤ 0.15°
Repeat accuracy		≤ 0.2 % of measuring range ≤ 0.1 % after a warm-up period of 30 min
Absolute accuracy		
	for version ±10°	0.3°
for v	rersion ±45° and ±60°	0.5°
Cross sensitivity		3 %
Temperature drift		
	for version ±10°	typ. 0.01°/K
for v	rersion ±45° and ±60°	0.03°/K
Reaction time		0.1 s – time that the output signal requires to reach 90 % full scale, if the angle is changed from -60° to +60°
Zero point adjustm	ent	
	for version ±10°	±5°
for v	rersion ±45° and ±60°	±15°

Interface characteristics				
Voltage output				
at +V 10 30 V DC	0.1 4.9 V			
	short-circuit protected to +V			
at +V 5 V DC	** /*			
	ratiometric (in relation to +V)			
Load resistance				
voltage output	≥ 40 kΩ			
Output impedance				
voltage output	99 105 Ω			
Current output	4 20 mA			
Load resistance current output	≤ 200 Ω			

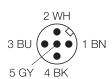
Approvals		
CE compliant in accordance with EMC Directive	2014/30/EU	

#### **Connections**



ext. teach: if this input is connected to 0 V, then the output of the inclinometer is reset to 0°.

## **Terminal assignment**





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## **Dimensions**

Dimensions in mm [inch]

