

Inclinometers

**For static applications
1- and 2-axis, compact design**

IS40

Analog



The inclination sensors in the IS40 series can be used to measure 2-axis inclinations in the measuring range of $\pm 10^\circ$, $\pm 45^\circ$ or $\pm 60^\circ$ as well as 1-axis inclinations of up to 360° .

The compact and robust design makes the sensor a suitable angle measuring device in harsh environments.



— Analog Output

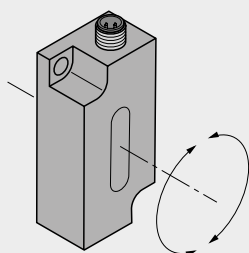
Features and benefits

- **Analog sensor for precise measurement**
 - Stable accuracy over the entire temperature range
 - Analog interface for current and voltage ranges
- **Individual "Easy-Teach" settings via Teach Adapter**
 - Define preset (zero point / midpoint position)
 - Scaling of the analog measuring range (start/end position)
 - Resetting to factory settings
- **Robust, compact design**
 - Also suitable for the smallest installation spaces
 - Robust design with high shock resistance
- **Versatile use**
in vehicle technology, solar installations, cranes and hoists or in commercial vehicles.

Order code 1-axis

8.IS40 . 1 4 X 2 1
Type a b c d

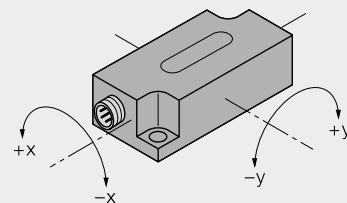
- a Measuring range**
4 = $0 \dots 360^\circ$ ($\pm 180^\circ$)
- b Interface**
1 = 4 ... 20 mA
3 = 0.1 ... 4.9 V DC
- c Power supply**
2 = 10 ... 30 V DC
- d Type of connection**
1 = M12 connector, 5-pin



Order code 2-axis

8.IS40 . 2 X X X 1
Type a b c d

- a Measuring range**
1 = $\pm 10^\circ$
2 = $\pm 45^\circ$
3 = $\pm 60^\circ$
- b Interface**
1 = 4 ... 20 mA ¹⁾
3 = 0.1 ... 4.9 V DC ¹⁾
4 = ratiometric 2 % ... 98 % ²⁾
- c Power supply**
1 = 5 V DC
2 = 10 ... 30 V DC
- d Type of connection**
1 = M12 connector, 5-pin



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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Accessories		Order no.
Teach-Adapter 	for activating the control inputs for the following functions: - Reset to factory setting - Center point of the measurement - Start and end point for 1-axis measurement	05.TX40.1
Cables and connectors		Order no.
Preassembled cables	M12 female connector with coupling nut, 5-pin, A coded, straight single ended 2 m [6.56'] PVC cable	05.00.6081.2211.002M
Connectors	M12 female connector with coupling nut, 5-pin, A coded, straight (metal)	8.0000.5116.0000
	M12 female connector with coupling nut, 5-pin, A coded, straight (stainless steel V4A)	8.0000.5116.0000.V4A

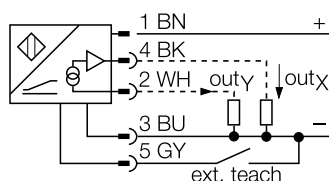
Further Kübler accessories can be found at: [kuebler.com/accessories](https://www.kuebler.com/accessories)

Further Kübler cables and connectors can be found at: [kuebler.com/connection-technology](https://www.kuebler.com/connection-technology)

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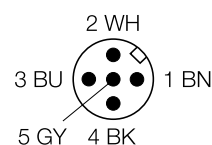
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Technical data			
General data 1-axis measurement		Electrical characteristics	
Measuring range	0 ... 360°	Power supply	10 ... 30 V DC
Resolution	≤ 0.14°	Power consumption	1-axis 50 ... 105 mA (depending on voltage) 2-axis 50 mA
Repeat accuracy	≤ 0.2 % of measuring range	Isolation test voltage	≤ 0.5 kV
Linearity deviation	≤ 0.6 %	Short-circuit protection	yes
Temperature coefficient	≤ ± 0.05 %/K	Wire breakage	1-axis yes 2-axis no
Reaction time	0.1 s – Time for the output signal to reach 90% of the adjusted measuring range	Overvoltage protection	2-axis -48 ... 48 VDC
		Reverse polarity protection	yes
General data 2-axis measurement		Mechanical characteristics	
Measuring range	±10°, ±45°, ±60°	Connection	M12 connector
Resolution	for version ±10° ≤ 0.04° for version ±45° ≤ 0.1° for version ±60° ≤ 0.14°	Weight	50 g
Repeat accuracy	≤ 0.2 % of measuring range	Protection acc. to EN 60529	IP68 / IP69k
Linearity deviation	for version ±10° ≤ 1 % for version ±45° and ±60° ≤ 0.5 %	Working temperature range	-30 °C ... +70 °C [-22 °F ... +158 °F]
Temperature coefficient	for version ±10° ≤ ± 0.05 %/K for version ±45° ≤ ± 0.04 %/K for version ±60° ≤ ± 0.025 %/K	Material	housing plastic, PC
Reaction time	0.1 s – Time for the output signal to reach 90% of the adjusted measuring range, if the angle is changed over the whole measuring range	Shock resistance	30 g (11 ms)
		Vibration resistance	55 Hz (1 mm)
Zero point adjustment	for version ±10° ±5° for version ±45° and ±60° ±15°	MTTF	203 years acc. to SN 29500 (Ed. 99) 40 °C
		Dimensions	60 x 30 x 20 mm [2.36 x 1.18 x 0.79"]
Approvals		Characteristic voltage output	
CE compliant in accordance with EMC Directive 2014/30/EU		Voltage output	0.1 ... 4.9 V DC for 1-axis: 1x each for cw and ccw
		Load resistance	≥ 40 kΩ
		Characteristic current output	
		Current output	4 ... 20 mA for 1-axis: 1x each for cw and ccw
		Load resistance	≤ 0.2 kΩ

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]

