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Sensorik. Messtechnik. ASIC-Design.

Redundant 2D-inclination sensor with current interface

ISR2A XX SYY

Characteristics:

Redundant inclination sensor

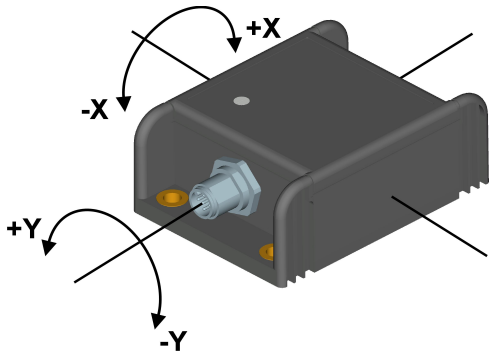
- 2-dimensional, 4-channel inclination sensor with measurement range ± 10° / ± 45° / ± 60° (depending on type of sensor)
- High resolution and accuracy
- current interface with 4 mA ... 20 mA and 21 mA … 5 mA respectively
- Robust, simply mountable plastic housing
- Suitable for industrial use:
  - Temperature range: - 40 °C … + 80 °C
  - Degree of Protection: IP67
  - Functional safety: SIL3, performance level e according to DIN EN 61508, EN 13849
  - Structure: redundant (two-channel) structure
  - Output signals: two antivalent signals each measurement axis

The inclination sensor ISR2A XX SYY is suitable for two-channel measurement of the inclination of 2 measurement axis (total of 4 output signals) in the measurement ranges ± 10°, ± 45° oder ± 60°. Due to its redundant structure it can be used in safety related systems up to performance level e (SIL3).

The compact and robust structure makes this sensor a suitable angle measurement device for rough surroundings and for different applications in industrial and automotive technology.

Applications:

- **Safety related systems**
- **Cranes and hoisting technology**
- **Agricultural and forestry machines**
- **Utility vehicles**
- **Industrial automation**



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Technical Data:

General Parameters: Ta = 25 °C			
Measurement axes	2 axis with 2 channels each (4 output signals)		
Measurement range	±10°	±45°	±60°
Resolution (at zero point)	0.01°	0.05°	0.05°
Angle tolerances, max (in measurement range)	±0.20°	±0.30°	±0.40°
Temperature coefficient (zero point)	max. ±0.009 °/K (reference @ 25 °C)		
Cut-off frequency	typically 18 Hz		
Operating temperature	- 40 °C ... + 80 °C		
Characteristics			
Interface	Current loop 4 mA … 20 mA and 21 mA … 5 mA respectively max permitted burden-resistor: 250 Ohm		
Electrical Parameters			
Supply Voltage	11 V DC to 36 V DC		
Current consumption	< 80 mA		
Functional Safety (DIN EN ISO 13849 PIe / DIN EN 61508 SIL3 / ISO 26262 ASIL D)			
PFH [1/h]	$2*10^{-8}$ = 20 FIT		
SFF [%]	93		
DC [%]	95		
HFT	1		
Mechanical Parameters			
Connector	2x sensor connectors, M12, 5-pole, IEC 61076-2-101, IEC 60947-2		
Degree of Protection	IP67 min locking torque of the sensor connector: 0.9 Nm		
Shock Survival	max 3 500 g		
Dimensions	65 mm x 90 mm x 35 mm		
Weight	approx. 200 g		

Ordering information:

Product type	Description	Product number
ISR2A XX SYY	2D-PLe (SIL3) – inclination sensor	EM-24040-00