



# SERIE IN360A

## INCLINOMETER

- Robust metal case protects from shocks and vibrations
- Filling resin protects against thermal shocks, moisture and harsh environments
- 1D and 2D inclination measurement
- Protection class IP67
- Analog output (4-20 mA or 0.5-4.5 V)
- Protected against reverse bias



Inclinometer



1 axis



2 axes



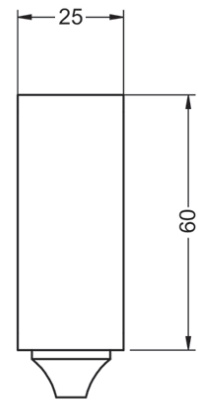
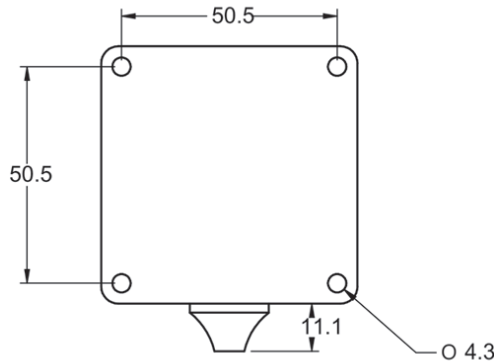
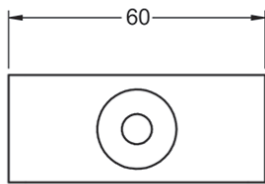
IP 67



Temperature range  
-40°C



Express Delivery



### REFERENCE

Reference example: IN360A-114

Serie	Interface	Number of axis / Measuring range	Connection	Output Signal	Special customer
IN360	<b>A</b> -	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	A. Analog output	1. 1 axis / 0...360° 2. 2 axes / ± 30°	1. Cable (0,5m)	4. 4...20 mA 5. 0,5...4,5 V	



# SERIE IN360A

## INCLINOMETER

### MECHANICAL SPECIFICATIONS

Materials	Housing: Anodized aluminium
Protection according to DIN EN 60529	IP67
Weight	200 g
Storage temperature range	-40° to +85°C
Operating temperature range	-40° to +85°C
Connection	0,5m open lead cable

### ELECTRICAL SPECIFICATIONS

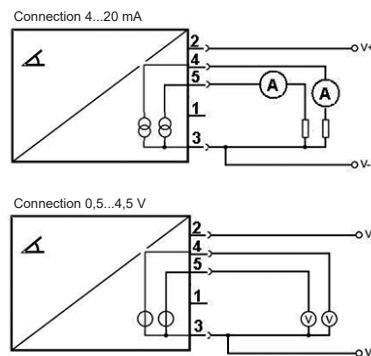
Range of measurement	0...360° (1 axis) ±30° (2 axes)
Resolution	7.33 µA (4...20 mA) 1.67 mV (0,5...4,5 V)
Supply voltage	12/24 V (7...30 V)
Current consumption*	40 mA
Accuracy	±0.20° (max ±0.50°)
Temperature drift	±0.008°/°C
Load resistor	250 Ω; max 500 Ω (4...20 mA) 10 kΩ (0,5...4,5 V)

(\*) Sensor current consumption is 40mA. At X and Y full scale (20mA+20mA), the total current consumption is 80mA.

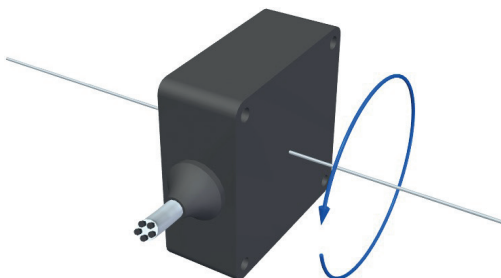
### CONNECTION

	Open lead cable
IU - Internal use only (leave it open if present)	1
VCC - Power supply	2
GND - Ground	3
OUTX - Analog output (x-axis in 2-axes mode and 1-axis mode)	4
OUTY* - Analog output (y-axis in 2-axes mode)	5

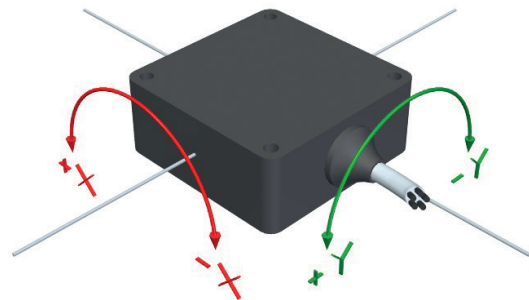
(\*) OUTY - Not connected in 1-axis mode



### 1 AXIS



### 2 AXES



Zero degrees on the single-axis model (vertical operation position) are obtained by keeping the connector to the left.

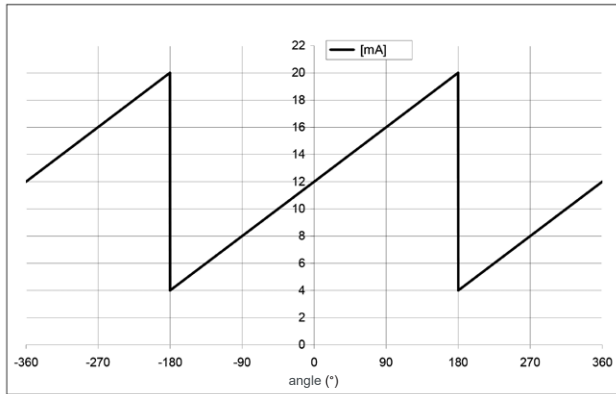
In order to get the high accuracy performances, we suggest to fix the inclinometer with 4 countersunk screws, placed at the edges of the 4 slot-holes.

# SERIE IN360A

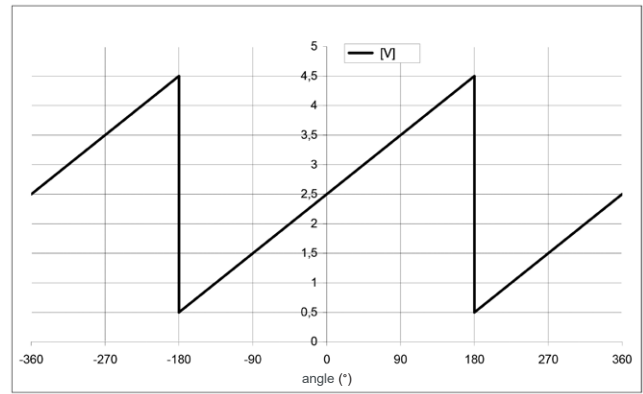
## INCLINOMETER

### OUTPUT CHARACTERISTICS

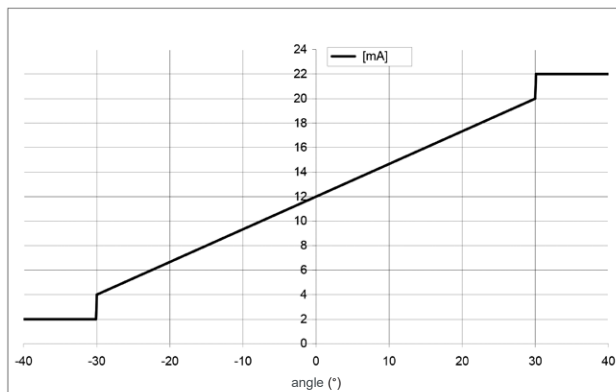
1 AXIS - 4...20 mA



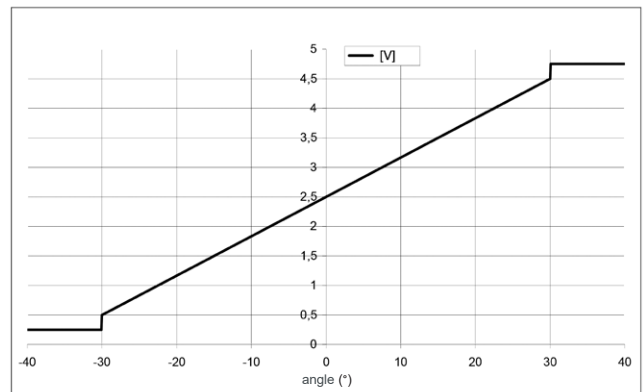
1 AXIS - 0,5...4,5 V



2 AXES - 4...20 mA



2 AXES - 0,5...4,5 V





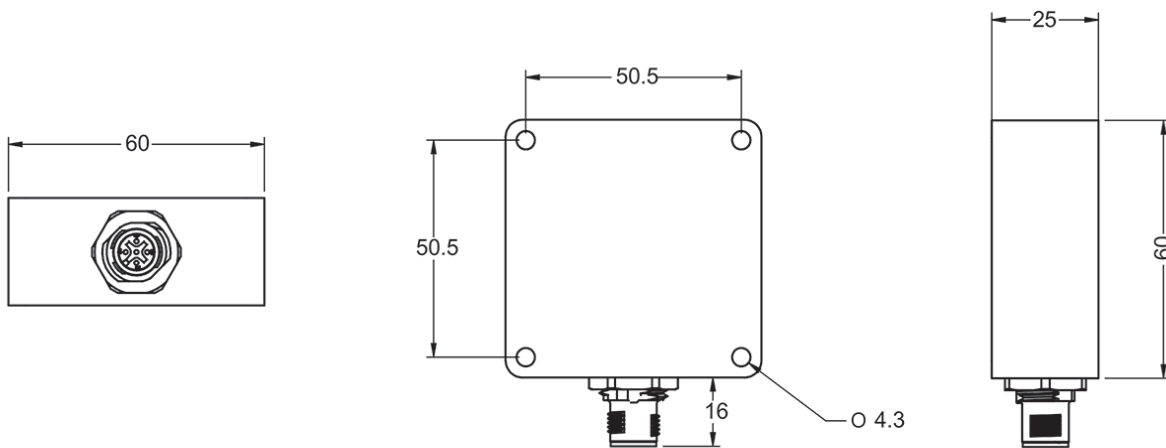
# SERIE IN360C

## INCLINOMETER



- High resolution (up to 0.001°)
- High accuracy (up to ±0.05°)
- Internal software diagnostic checks
- 1D and 2D inclination measurement
- Anti-Vibration programmable filter
- CANopen interface (DS301 DSP-410)
- Protection class IP67
- Very easy programming via CAN frames without additional tools

Inclinometer	1 axis	2 axes	IP 67	Temperature range -40°C	Express Delivery



### REFERENCE Reference example: IN360C-C2

Serie	Interface	Number of axis / Measuring range	Connection	Special customer
<b>IN360/IN360T</b>	<b>C</b> -	<input type="checkbox"/>	<input type="checkbox"/>	. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
IN360. Standard IN360T. Temperature compensated	C. CANopen	C. Configurable: 1 axis (0...360°) or 2 axes (± 60°) (* )	2. Male M12 connector	

(\* ) Programmable settings instructions in IN360C reference manual, section 3.



# SERIE IN360C

## INCLINOMETER



### MECHANICAL SPECIFICATIONS

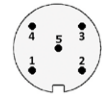
Materials	Housing: Anodized aluminium
Protection according to DIN EN 60529	IP67
Weight	180 g (150...220 g)
Storage temperature range	-40° to +85°C
Operating temperature range	-40° to +85°C
Vibration according to DIN EN 60068-2-6	40 m/s <sup>2</sup> (8,2Hz...500Hz), 5 cycles, on 3 axes
Shock according to DIN EN 60068-2-27	3000 m/s <sup>2</sup> (11ms)
Connection	5-pole M12 male

### ELECTRICAL SPECIFICATIONS

Range of measurement	0 ... 360° or ±180° (1 axis) ±5 ... ±60° (2 axes)
Resolution* (user programmable)	0.01° (1...0.001°)
Supply Voltage Range	12/24 V (7...40 V)
Current consumption	30 mA (max. 45 mA)
High accuracy	±0.05 ... ±0.10° (0 ... 360°) ±0.05 ... ±0.15° (±60°)
Sample Rate	550 S/s
Baud Rate (user programmable)	500 Kbit/s (10...1000 Kbit/s)
Temperature drift	±0.008°/°C (IN360C) ±0.002°/°C (IN360TC)

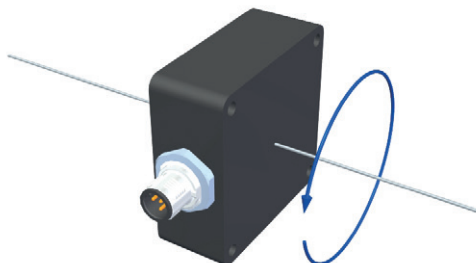
(\*) 0.001° only if range is below ±30° in 2-axes mode.

### CONNECTION

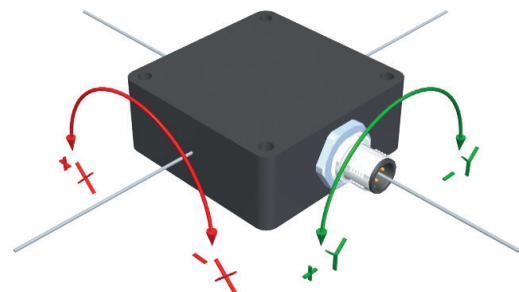


	M12 5p male CCW
SHIELD - Optional CAN shield	1
VCC - Power supply	2
GND - Ground	3
Data AH - CAN_H bus line (dominant high)	4
Data BL - CAN_L bus line (dominant low)	5

### 1 AXIS



### 2 AXES



Zero degrees on the single-axis model (vertical operation position) are obtained by keeping the connector to the left.

In order to get the high accuracy performances, we suggest to fix the inclinometer with 4 countersunk screws, placed at the edges of the 4 slot-holes.