



GENERAL FEATURES

- Two axis measurement
- Angle and inclination measurement from 0 to 360°
- Programmable measurement ranges
- 0-10VDC or 4-20mA analog output options
- Programmable Switching output (≤ 300 mA)
- PNP Open Collector output
- High Sensitivity: $\pm 0.15^\circ$
- Easy installation
- IP67 protection class
- Small and robust housing
- Compact structure

INS 130 series angle and inclination sensors are the sensors that show the inclination and angle of rotation of objects standing perpendicular to the earth. Measurement information can be obtained from these sensors between 0-360°. The measurement limits can be set according to the user request. These sensors which can offer both analog output and open collector output, can take measurement with $\pm 0.15^\circ$ accuracy.

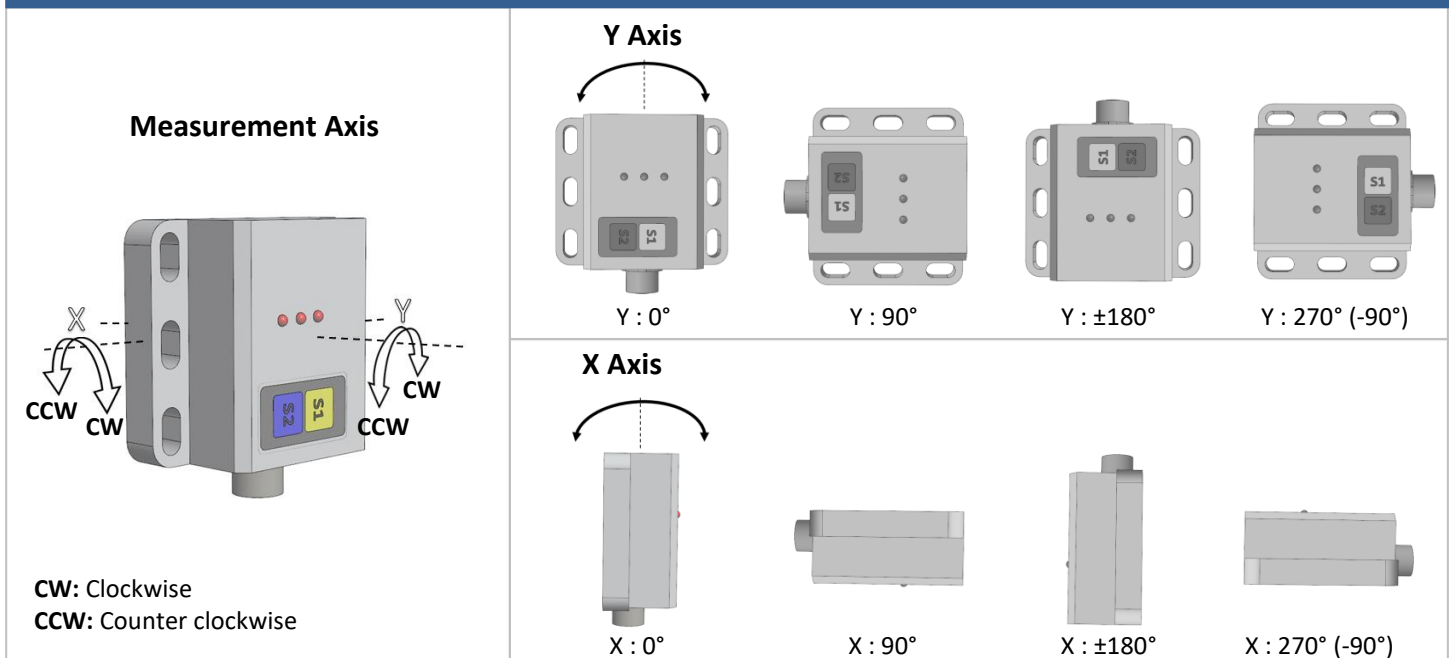
INS 130 series sensors with high precision, compact design and durable construction offers suitable solutions for angle measurement in industrial areas like crane and lifting systems, construction machinery and special purpose vehicles, solar energy and photovoltaic systems, wind farms and so on. Thanks to their high IP protection class, they can work easily in outdoor environments.

TECHNICAL SPECIFICATIONS

Supply Voltage (V)	12 ... 24 VDC	Resolution	$\pm 0,05^\circ$	
*Measurement Range	0...360°	Accuracy	$\pm 0,15^\circ$	
Measurement Axis	XY	Protection Class	IP67	
*Output Type	PNP Open Collector or Analog Signal Output	Operating Temp.	- 30°C...+70 °C	
		Relative Humidity	%10...%90	
Open Collector Specifications	Output Voltage	$\sim (V-1)$ Volt	Weight	~ 200 gr
	Current Consumption	≤ 300 mA	Body Material	Aluminum
Analog Outputs	0-10 VDC or 4-20 mA	*Electrical Connection	8x0,14 mm ² shielded cable or M12 / 8 pin male socket	
Response Time	10 Hz			

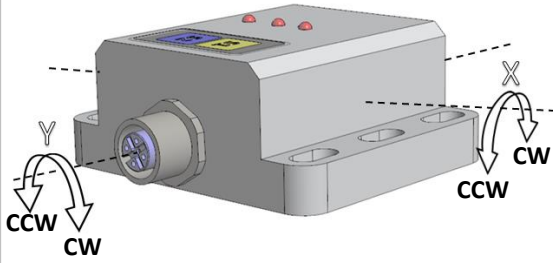
Note: The specifications specified by (*) vary depending on the model selected. The detailed code table for product selection is shown on page 3.

ANGLE MEASUREMENT AXIS



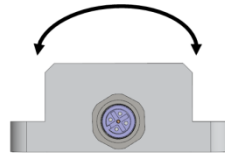
INCLINATION MEASUREMENT AXIS

Measurement Axis



CW: Clockwise
CCW: Counter clockwise

Y Axis



Y : 0°



Y : 90°

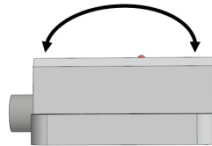


Y : ±180°



Y : 270° (-90°)

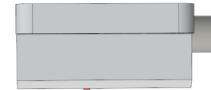
X Axis



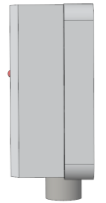
X : 0°



X : 90°



X : ±180°

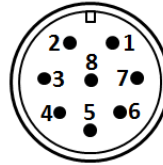


X : 270° (-90°)

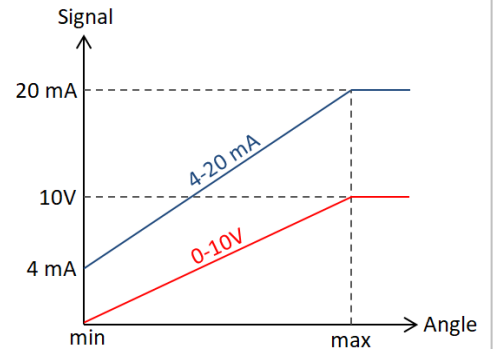
ELECTRICAL CONNECTION

Signal	M12-8 Pin Male Socket	Cable
V+ (12...24VDC)	Pin 1	Red
Transistor Output X	Pin 2	Yellow
GND (0V)	Pin 3	Black
Transistor Output Y	Pin 4	Green
-	Pin 5	Blue
Analog Output X	Pin 6	Pink
Analog Output Y	Pin 7	White
-	Pin 8	Grey

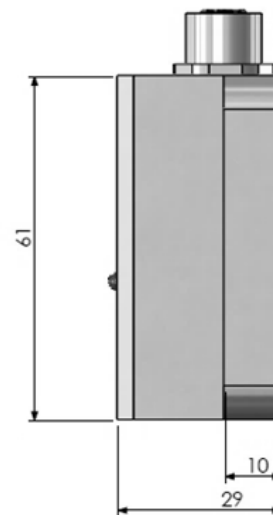
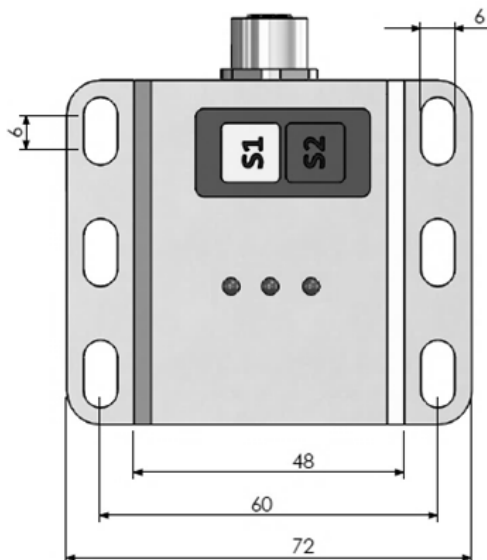
M12 - 8 PIN MALE SOCKET



Analog Signal Output

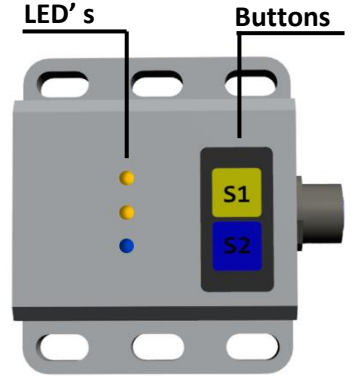


MECHANICAL DIMENSIONS (mm)



LED AND BUTTON FUNCTIONS

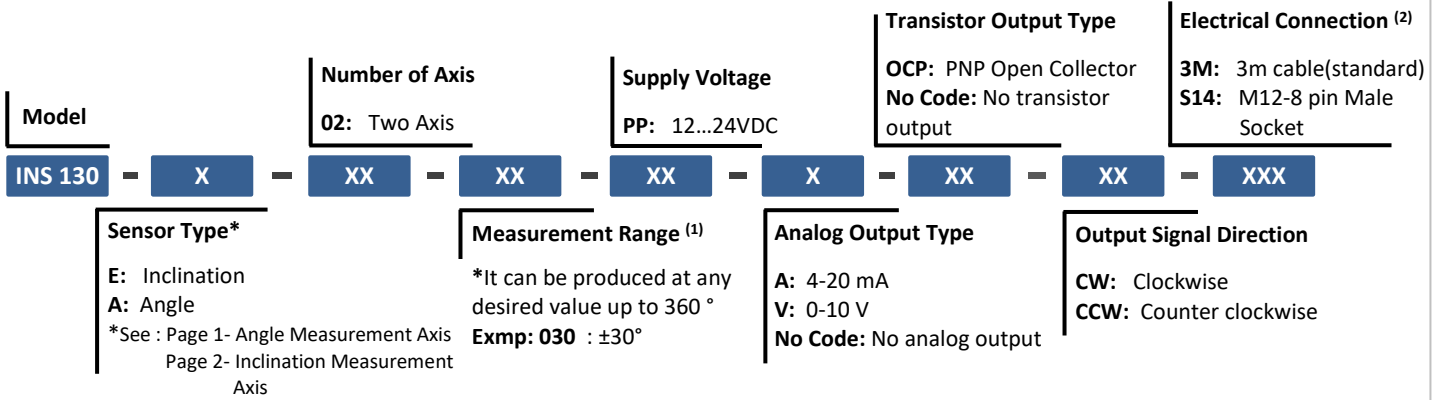
Working Status	BLUE LED Status	Yellow LED Out X	Yellow LED Out Y
During setting of switching output for X Axis	Light goes OFF	Starts blinking	Light goes OFF
During setting of switching output for Y Axis	Light goes OFF	Light goes OFF	Starts blinking
While switching to analogue setting mode	Light goes OFF	Starts blinking	Starts blinking
During setting of switching output for X Axis	Light goes OFF	Starts blinking	Light goes OFF
During setting of switching output for Y Axis	Light goes OFF	Light goes OFF	Starts blinking
During normal operation	Intermittent blinking	switching mode Status	switching mode Status
Reset to Factory settings : Between 5 seconds- 10 seconds	Light goes OFF	Starts blinking	Starts blinking
>10 seconds the end of the process of returning to factory setting, its continue is normal operating mode	Starts blinking	Light goes OFF	Light goes OFF



Button	Color	Function
S1	Yellow	Used to change the set range for switching and analog outputs of X axis. Please refer to the user manual for detailed information.
S2	Blue	Used to change the set range for switching and analog outputs of Y axis. Please refer to the user manual for detailed information.

- Agricultural and forestry machinery
- Construction machinery and special-purpose vehicles
- Solar thermal energy and photovoltaics
- Automated guided systems
- Crane and lifting technology
- Wind power plant

PRODUCT CODE



- (1) The angle and inclination measurement range can be selected differently for transistor output and analog output. For example, the measuring range can be selected 0-360° for the analog output and 0-50° for the transistor output. You need to specify your different measurement range requirements at the order stage
- (2) Different cable lengths can be requested upon user request.

Sample Code 1: INS 130-E-02-030-PP-A-OCP-CW-S14

INS 130 series, inclination, two axis, ±30°, PP supply, 4-20 mA analog output, PNP open collector output, output signal direction clockwise, M12-8 pin male socket

Örnek Kod 2: INS 130-A-02-030-PP-A-OCP-CW-S14

INS 130 series, angle, two axis, ±30°, PP supply, 4-20 mA analog output, PNP open collector output, output signal direction clockwise, M12-8 pin male socket

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