Atek Alfa

ANGLE AND INCLINATION SENSOR
"Transistor and Analog Output"

INS 130



GENERAL FEATURES

- Two axis measurement
- Angle and inclination measurement from 0 to 360°
- Programmable measurement ranges
- Analog output options : 0…5VDC, 0…10VDC or 4…20mA
- Programmable Switching output
- PNP Open Collector output
- High Sensitivity: ±0.15°
- Easy installation
- IP64 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 ±0.15° 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 onThanks to their high IP protection class, they can work easily in outdoor environments.

TECHNICAL SPECIFICATIONS

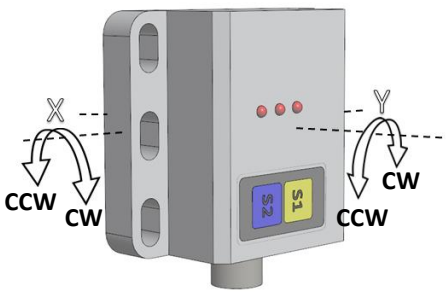
Supply Voltage (V)	4-20 mA & Transistor: 12…24 VDC 0-10 VDC & 0-5 VDC: 15…24 VDC	
***Measurement Range**	0…360°	
Measurement Axis	XY	
***Output Type**	2xPNP Open Collector or Analog Signal Output	
Open Collector Specifications	**Output Voltage**	~(V-1) Volt
	Switching Function	NO
	Current Consumption	<200 mA
Analog Ouputs	0-5 VDC, 0-10 VDC or 4-20 mA	
Response Time	10 Hz	

Resolution	0,05°
Accuracy	±0,15°
Protection Class	IP64
Operating Temp.	- 30°C…+70 °C
Relative Humudity	%10…%90
Weight	~200 gr
Body Material	Aluminum
***Electrical Connection**	8x0,14 mm² shielded cable or M12 / 8 pin male socket

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

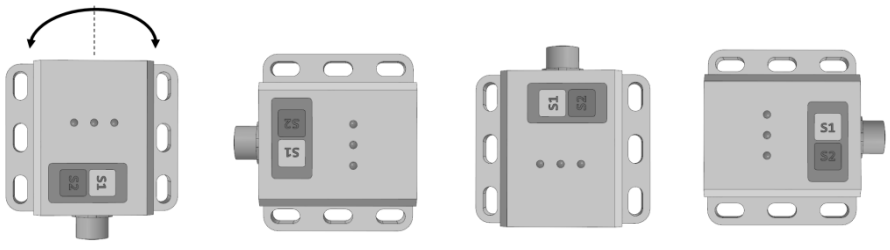
ANGLE MEASUREMENT AXİS

Measurement Axis



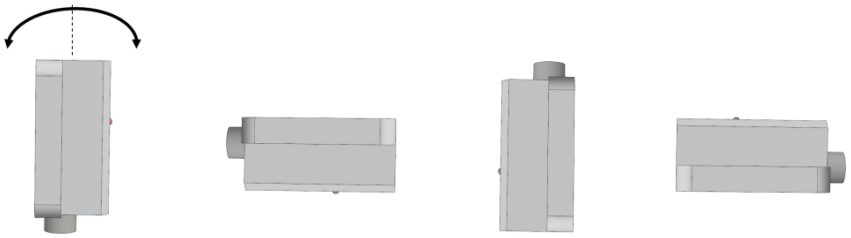
CW: Clockwise
CCW: Counter clockwise

Y Axis



Y : 0° | Y : 90° | Y : ±180° | Y : 270° (-90°)

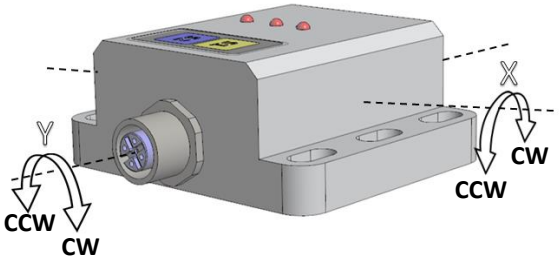
X Axis



X : 0° | X : 90° | X : ±180° | X : 270° (-90°)

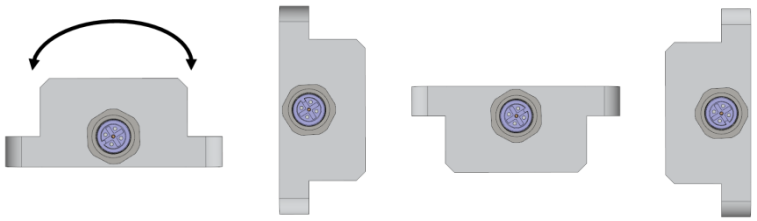
INCLINATION MEASUREMENT AXİS

Measurement Axis



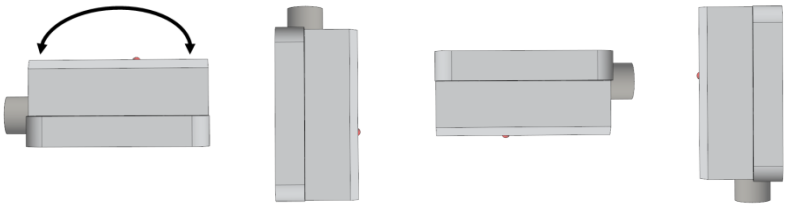
CW: Clockwise
CCW: Counter clockwise

Y Axis



Y : 0° | Y : 90° | Y : ±180° | Y : 270° (-90°)

X Axis

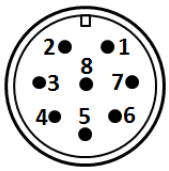


X : 0° | X : 90° | X : ±180° | X : 270° (-90°)

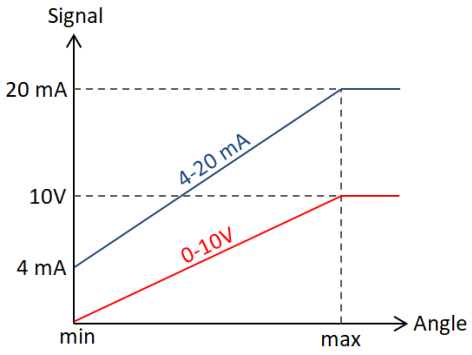
ELECTRICAL CONNECTION

Signal	M12-8 Pin Male Socket	Cable
V+	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

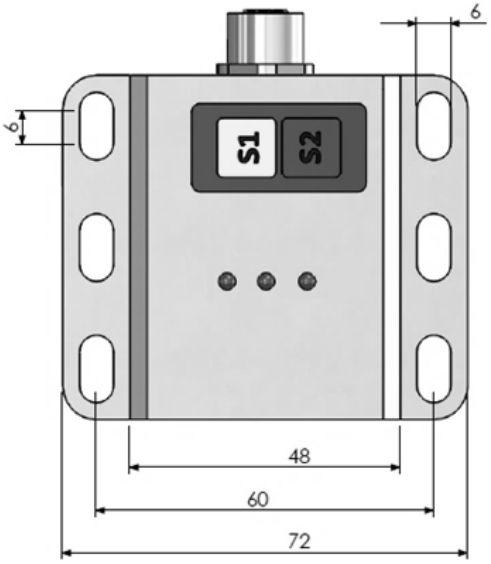
M12 - 8 PIN MALE SOCKET

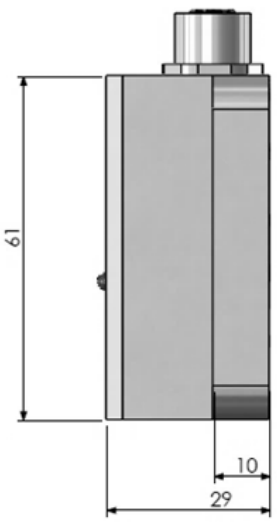


Analog Signal Output



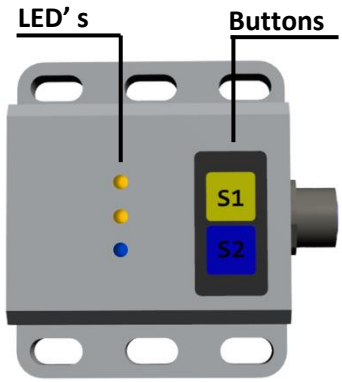
MECHANICAL DIMENSIONS (mm)





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



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

Model

Number of Axis
02: Two Axis

Supply Voltage[2]
PP: 12…24VDC / 15…24VDC

Transistor Output Type
OCP: PNP Open Collector
No Code: No transistor output

Electrical Connection [3]
3M: 3m cable(standard)
S14M: M12-8 pin Male Socket

INS 130	-	X	-	XX	-	XX	-	XX	-	X	-	XX	-	XX	-	XXX

Sensor Type*
E: Inclination
A: Angle
*See : Page 1- Angle Measurement Axis
Page 2- Inclination Measurement Axis

Measurement Range [1]
*It can be produced at any desired value up to 360 °
Exmp: 030 : 0…30°

Analog Output Type
A: 4-20 mA
V: 0-10 V
V1: 0-5 VDC
No Code: No analog output

Output Signal Direction
CW: Clockwise
CCW: Counter clockwise

(1) The angle and inclination measurement range can be selected differently for transistor output and analog output. You need to specify your different measurement range requirements at the order stage.
(2) The supply voltage is 12…24VDC for 4-20 mA & transistor output models, and 15…24VDC for 0-10VDC and 0-5VDC output models.
(3) Different cable lengths can be requested upon user request.

Sample Code 1: INS 130 E 02 -30…+30 PP A OCP CW S14M
INS 130 series, inclination, two axis, -30°…+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 S14M
INS 130 series, angle, two axis, 0…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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OPTIONAL PRODUCTS

Product	Code	Description
	CB8 5M / S14F	5 meters 8x0,14 mm^2 extension cable + M12/8 pin female connector

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021 5200 3942
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