INS 120 SERIES ANGLE SENSOR
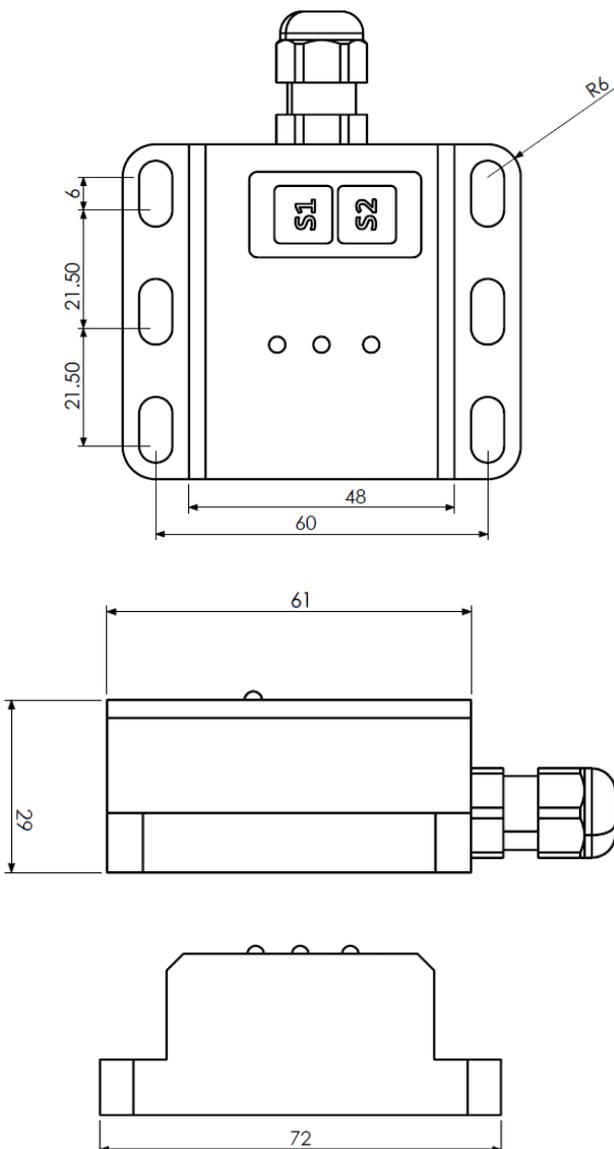
- Single axis 360º angle meter
- Programmable measurement limits
- Analog output options 0,1…10VDC or 4…20mA
- Programmable Switching Output (≤ 300 mA)
- PNP Open Collector output type
- High precision ±0.15º
- Easy Setup
- IP67 High protection class
- Small and strong metal body
- Compact structure

---

MECHANICAL MEASUREMENTS

TECHNICAL SPECIFICATIONS

Supply voltage(U)	12..24VDC
Measurement Range	Programmable at 360º interval
Measuring Axes	X
Switching Output Type	PNP Open collector
Switching Output Voltage	~(U-1) Volt
Switching Output Current	≤ 300 mA
Analogue Output	0,1…10VDC or 4…20mA (Programmable at 360º interval)
Angle Resolution	±0,05º
Accuracy	±0,15º
Protection Class	IP67
Operation Class	Between (- 30) --(+70) °C
Relative Humidity	Between (%10) –(%90)
Weight	200 gram
Electrıcal Connection	3 Meter cable or M12 8 pin (male)

AXIS
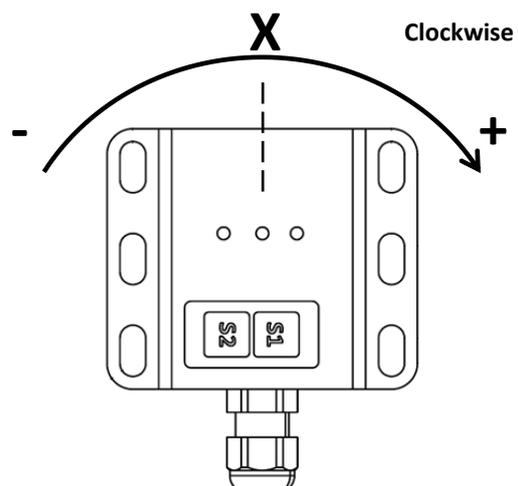
Connector End	M12 – 8 pin	M12 - 5 pin	Cable
+U (12..24VDC)	Pin 1	Pin 1	Red
Output 1	Pin 2	Pin 2	Yellow
GND (0V)	Pin 3	Pin 3	Black
Output 2	Pin 4	Pin 4	Green
Empty	Pin 5	-	Blue
Analogue Output 1	Pin 6	Pin 5	Pink
Analogue Output 2	Pin 7	-	White
Empty	Pin 8	-	Grey

M12 - 8 pin **M12 - 5 pin**
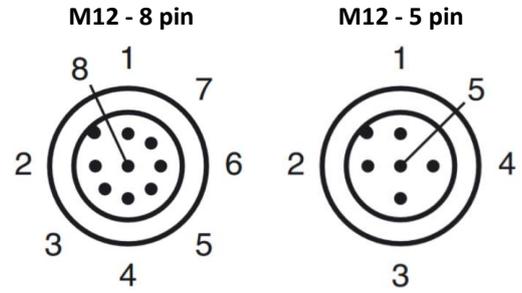
SETUP

Working Principle : If the sensor angle is within the selected range, switching output goes up to " Supply Voltage" level. Otherwise the output is 0 volts. The sensor has two switching outputs as well as two analog outputs. Analog outputs can be be selected from 0,1…10V or 4…20mA. Switching and analogue are akk programmable(adjustable).

For example; *In case of the angle range for output 1 is set to "+30º" with "+45;*

Output1 = "Supply Voltage" (+U)becomes and its LED is constanly ON

Otherwise, the output is 0 volts and "Out 1" LED goes OFF

Analog outputs and switching outputs can be independently programmed(adjustable). For example, if the switching output is operating in this range for the above example, the analog outputs can be programmed to work between different angle values (adjustable).

Setting Out 1 :

S1

1) S1 button is hold as pressed ,when the "Out 1" LED starts blinking, the buton is being left free.
2) The sensor is brought to limit position 1.
3) S1 button is pressed again. The "Out 1" LED will light continuously 2 seconds and then start flashing again so 1st position is set.
4) The sensor is brought to 2nd limit position.
5) S1 button is pressed again, so 2nd position is being set.
6) Sensor returns to its normal operation

The output is always in the active state between the 1st limit position and 2nd limit position.

Example :

In case of position 1 is +30 and the position 2is +45, the output is active between +30° and + 45 °.

Setting Out 2 :

S2

1) S2 button is hold as pressed ,when the "Out 2" LED starts blinking, the buton is being left free.
2) The sensor is brought to limit position 1.
3) S2 button is pressed again. The "Out 2" LED will light continuously 2 seconds and then start flashing again so 1st position is set.
4) The sensor is brought to 2nd limit position.
5) 2 button is pressed again, so 2nd position is being set.
6) Sensor returns to its normal operation

The output is always in the active state between the 1st limit position and 2nd limit position.

Örnek :

In case of position 1 is +30 and the position 2is +45, the output is active between +30° and + 45 °.

Setting Analogue Output 1:

1) At the same time S1 and S2 buttons are hold as pressed. When the "Out 1 and Out 2" LEDs start blinking the buttons are being left free.
2) The sensor is brought to the position to receive the minimum analog signal output.
3) S1 button is pressed again, The "Out 1" LED will light continuously 2 seonds and then start flashing again , so that the minimum values point is being set.
4) The sensor is brought to the position to receive the maximum analog signal output.
5) S1 button is pressed again, The "Out 1" LED will light continuously 2 seonds and then start flashing again , so that the minimum values point is being set.
6) Sensor returns to its normal operation

If the sensor crosses the maxımum point the analog output keeps its final value.

Setting Analogue Output 2 :

➡️ 1) At the same time S1 and S2 buttons are hold as pressed. When the "Out 1 and Out 2" LEDs start blinking the buttons are being left free.
2) The sensor is brought to the position to receive the minimum analog signal output.
3) S2 button is pressed again, The "Out 2" LED will light continuously 2 seonds and then start flashing again , so that the minimum values point is being set.
4) The sensor is brought to the position to receive the maximum analog signal output.
5) S2 button is pressed again, The "Out 2" LED will light continuously 2 seonds and then start flashing again , so that the minimum values point is being set.
6) Sensor returns to its normal operation

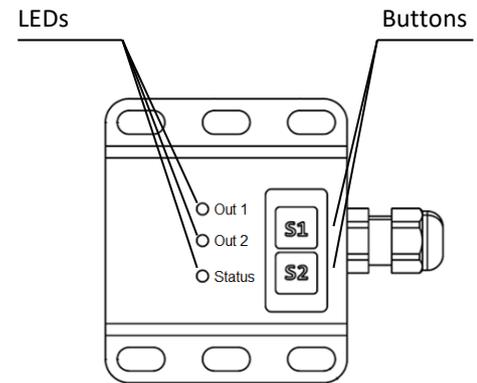➡️ If the sensor crosses the maximum point the analog output keeps its final value.

Reset to Factory Settings :

➡️ 1) At the same time S1 and S2 buttons are hold as pressed, When the "Status" LED starts blinking, the buttons are being left free.
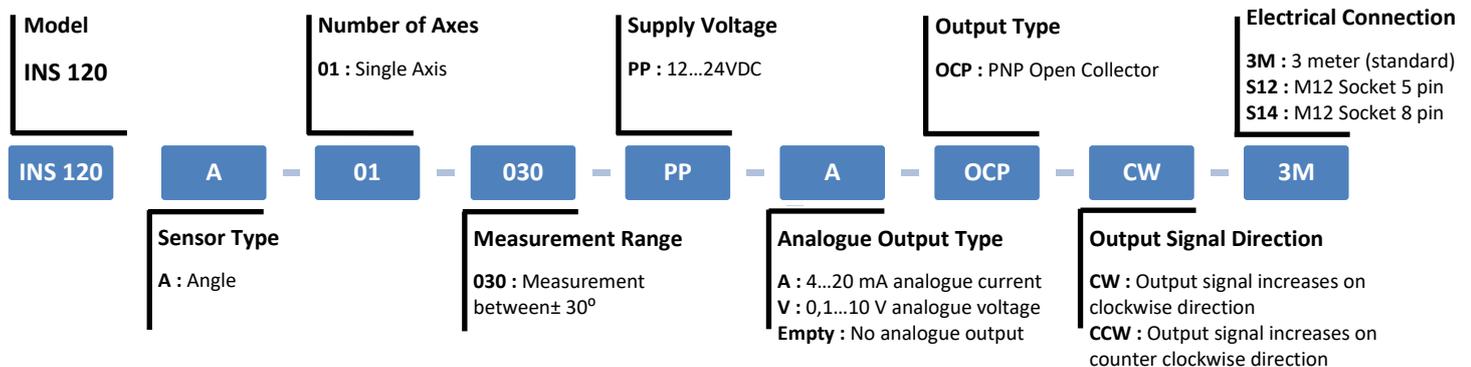2) The "Status" LED stops blinking after 10 seconds, so the sensor returns to factory settings.

Note: During all adjustments, the output drops to 0 volts.

LED FUNCTIONS

Working status:	Blue LED: Status	Yellow LED: Out 1	Yellow RED: Out 2
During setting of switching output for OUT 1	Light goes OFF	Starts blinking	Light goes OFF
During setting of switching output for OUT 2	Light goes OFF	Light goes OFF	Starts blinking
While switching to analogue setting mode	Light goes OFF	Starts blinking	Starts blinking
During setting of analogue output for OUT 1	Light goes OFF	Starts blinking	Light goes OFF
During setting of analogue output for OUT 2	Light goes OFF	Light goes OFF	Starts blinking
During normal operation	Intermıttent blinking	switching mod durumu	switching mod durumu
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 settings its continue is normal operation mode	Starts blinking	Light goes OFF	Light goes OFF

LEDs   Buttons

- Out 1
- Out 2
- Status
S1
S2

ORDER ENCODING

| **Model** INS 120 | | **Number of Axes** 01 : Single Axis | | **Supply Voltage** PP : 12...24VDC | | **Output Type** OCP : PNP Open Collector | | **Electrical Connection** 3M : 3 meter (standard) S12 : M12 Socket 5 pin S14 : M12 Socket 8 pin |

| INS 120 | A | 01 | 030 | PP | A | OCP | CW | 3M |

Sensor Type
A : Angle

Measurement Range
030 : Measurement between± 30°

Analogue Output Type
A : 4...20 mA analogue current
V : 0,1...10 V analogue voltage
Empty : No analogue output

Output Signal Direction
CW : Output signal increases on clockwise direction
CCW : Output signal increases on counter clockwise direction

ATEK SENSÖR TEKNOLOJİLERİ A.Ş.

🕮 Tuzla KOSB Organize Sanayi Bölgesi Melek Aras Bulvarı No:67
PK: 34956 Tuzla / İstanbul - TÜRKİYE
☎ Tel: +90 (216) 399 44 04
🖷 Faks : +90 (216) 399 44 02
🌐 Web: www.ateksensor.com
✉ E-Posta: info@ateksensor.com