

1D- / 2D-Inclination Sensor with Current Loop or Voltage Interface

IS1A xx Pyy / IS2A xx Pyy

Characteristics:

- 1- / 2-dimensional inclination sensor $\pm 10^\circ$, $\pm 45^\circ$, $\pm 30^\circ$, $\pm 60^\circ$
- Current loop interface: 4mA ... 20mA (yy: 58)
- Voltage interface: 0V ... 10V (yy: 60)
- M12 Sensor-Actor connector, 5-pole
- Robust, UV and impact resistant plastic housing
- Suitable for industrial and mobile use:
 - Temperature range: -40°C ... $+80^\circ\text{C}$
 - Degree of protection: IP65/67

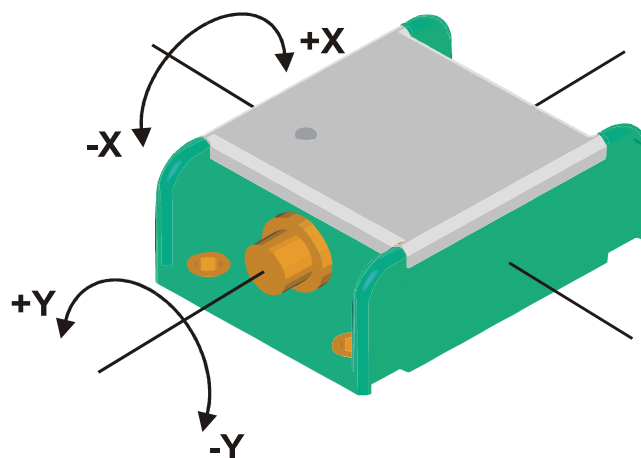


The inclination sensors IS1A xx Pyy / IS2A xx Pyy are available with a current loop or voltage interface. They enable one- or two-channel measurements of inclinations in the angle range (xx) of $\pm 10^\circ$, $\pm 30^\circ$ or $\pm 45^\circ$ and $\pm 60^\circ$. The full-scale readings are calibrated factory-made at 25°C .

The compact and robust design makes these sensors suitable angle measurement devices in rough surroundings for different applications in industry and automotive technology.

Fields of Application:

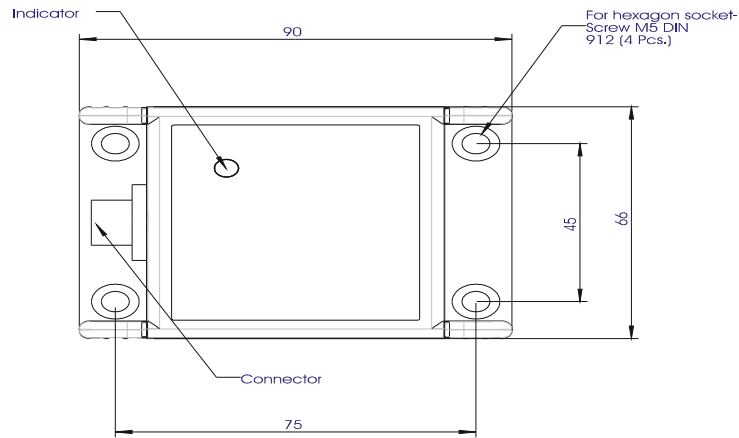
- Agricultural and forestry machines
- Solar tracking systems
- Utility vehicles
- Crane and hoisting technology
- Industrial automation



Technical Data:

General Parameters Ta = 25°C			
	Current loop interface		Voltage interface
Measurement axes	1 axis / 2 axes		
Measurement range	±10°	±30°	±45° ±60°
Resolution (at zero point)	0.01°	0.03°	0.05° 0.06°
Accuracy (@ 25°C)	±0.10°	±0.20°	±0.25° ±0.60°
Temperature coefficient (zero point)	max. ±0.009°/K (reference @ 25°C)		
Cut-off frequency	typ. 18Hz (other values upon request)		
Operating temperature	-40°C ... +80°C		
Characteristics			
Interface	4mA ... 20mA; max. permitted burden-resistor @ 11V = 250Ohm		0V ... 10V
Calculation formula Angle value [°]	$\arcsin \left[\left(\frac{I_{\text{meas}} - 12\text{mA}}{8\text{mA}} \right) * \sin \text{range value} \right]$		$\arcsin \left[\left(\frac{U_{\text{meas}} - 5\text{V}}{5\text{V}} \right) * \sin \text{range value} \right]$
Electrical Parameters			
Supply voltage	11VDC ... 30VDC		
Current consumption	60mA		60mA
Mechanical Parameters			
Connector	5-pole M12 sensor-actor male connector, IEC 61076-2-101, IEC 60947-2		
Mounting	Use 4 x hexagon socket screw M5 DIN 912; mandatory use 4 x conical spring washer M5 DIN 6796 A2		
Degree of protection	IP65/67 min. locking torque 0.9Nm		
Shock survival	max. 3 500g		
Dimensions	66mm x 90mm x 36mm		
Weight	about 200g		

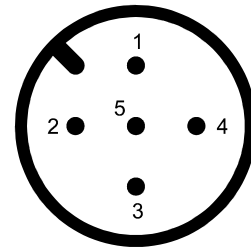
Dimensioned Drawing:



Dimensions in mm

Plug Connector Allocation:

Pin	Allocation
1	Supply voltage
2	Sensor signal Y-axis (Y-OUT)
3	GND-supply (V- / GND)
4	Sensor signal X-axis (X-OUT)
5	Signal-GND (GND-SENS)



(View from the outside)

Ordering Information:

Product Type	Description	Article Number
Current loop interface		
IS1A 10 P58	1-dimensional, $\pm 10^\circ$, 4mA ... 20mA	PR-24041-00
IS1A 45 P58	1-dimensional, $\pm 45^\circ$, 4mA ... 20mA	PR-24042-00
IS1A 60 P58	1-dimensional, $\pm 60^\circ$, 4mA ... 20mA	PR-24043-00
IS2A 10 P58	2-dimensional, $\pm 10^\circ$, 4mA ... 20mA	PR-24241-00
IS2A 45 P58	2-dimensional, $\pm 45^\circ$, 4mA ... 20mA	PR-24242-00
IS2A 60 P58	2-dimensional, $\pm 60^\circ$, 4mA ... 20mA	PR-24243-00
Voltage interface		
IS1A 10 P60	1-dimensional, $\pm 10^\circ$, 0V ... 10V	PR-24141-00
IS1A 45 P60	1-dimensional, $\pm 45^\circ$, 0V ... 10V	PR-24142-00
IS1A 60 P60	1-dimensional, $\pm 60^\circ$, 0V ... 10V	PR-24143-00
IS2A 10 P60	2-dimensional, $\pm 10^\circ$, 0V ... 10V	PR-24341-00
IS2A 30 P60	2-dimensional, $\pm 30^\circ$, 0V ... 10V	PR-24349-00
IS2A 45 P60	2-dimensional, $\pm 45^\circ$, 0V ... 10V	PR-24342-00
IS2A 60 P60	2-dimensional, $\pm 60^\circ$, 0V ... 10V	PR-24343-00