

1D- / 2D- Inclination Sensor with Current Loop or Voltage interface (small plastic housing)

IS1A xx P yy / IS2A xx P yy

Characteristics:

- 1- / 2- dimensional inclination sensor with measurement range: $\pm 10^\circ$, $\pm 45^\circ$, $\pm 60^\circ$, $\pm 90^\circ$
- Current loop interface: 4 mA ... 20 mA (yy: 28; 38)
- Voltage interface: 0 V ... 10 V (yy: 40; 41)
- Robust, simply mountable ABS-housing
- Suitable for industrial use:
 - Temperature range: -40°C ... $+80^\circ\text{C}$
 - Degree of protection: IP65/67

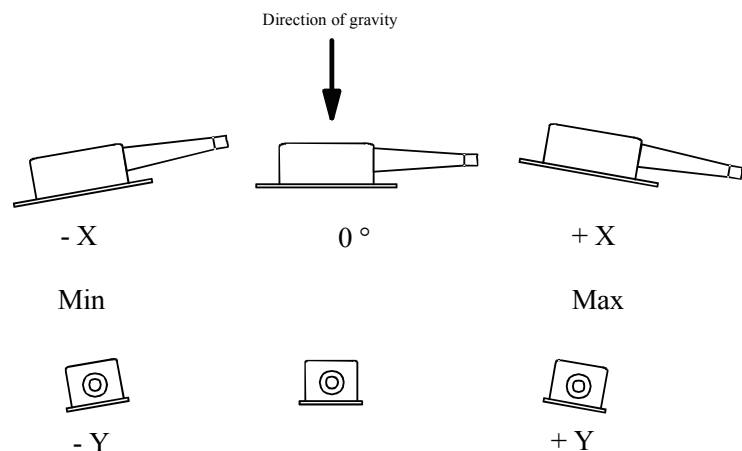


The inclination sensor IS1A xx Pyy / IS2A xx Pyy is available with a current loop or voltage interface. It enables the two-channel measurement of inclinations in the angle range (xx) of $\pm 10^\circ$, $\pm 45^\circ$ or $\pm 60^\circ$ and $\pm 90^\circ$. The full-scale readings are calibrated factory-made at 25°C .

The compact and robust design makes the sensor a suitable angle measurement device in rough surroundings for different applications in industry and automotive technology.

Applications:

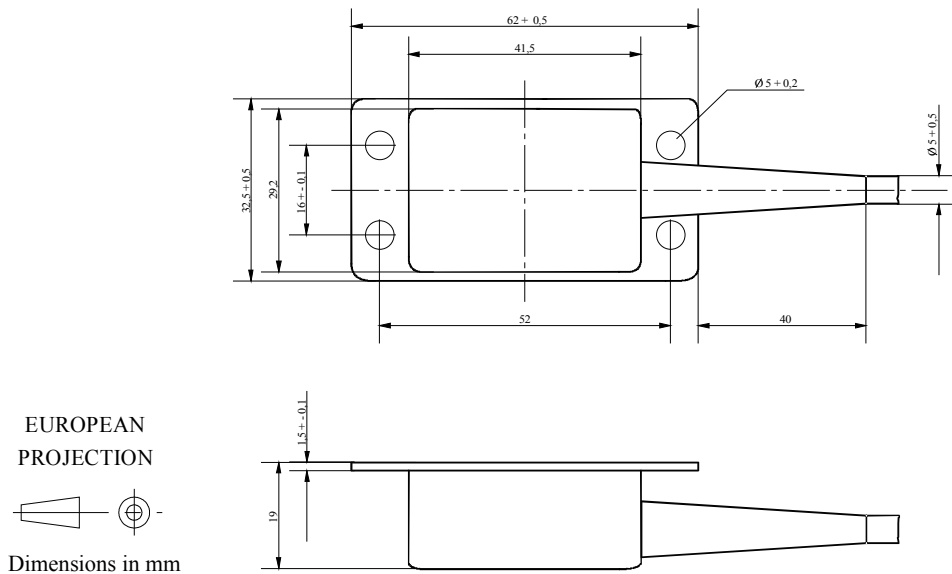
- Agricultural and forestry machines
- Solar tracking systems
- Utility vehicles
- Crane and hoisting technology
- Industrial automation



Technical Data:

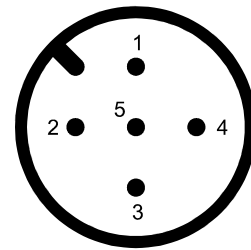
General Parameters Ta = 25 °C			
	Current loop interface		Voltage interface
Measurement axes	1 axis / 2 axes		
Measurement range	±10°	±45°	±60° ±90°
Resolution (at zero point)	0.01°	0.05°	0.06° 0.09°
Angle Tolerances, max. (in measurement range)	±0.15°	±0.30°	±0.65° < 80°: ±0.80° > 80°: >0.80°
Temperature coefficient (zero point)	max. ±0.009 °/K (reference @ 25 °C)		
Cut-off frequency	typ. 18 Hz (other values on request)		
Operating temperature	-40 °C ... +80 °C		
Characteristics			
Interface	4 mA ... 20 mA ; max. permitted burden-resistor @ 11 V = 250 Ohm		0 V ... 10 V on request 0.5 V ... 4.5 V
Calculation formula Angle value [°]	$\arcsin\left[\left(\frac{I_{\text{meas}} - 12\text{mA}}{8\text{mA}}\right) * \sin\text{rangevalue}\right]$		$\arcsin\left[\left(\frac{U_{\text{meas}} - 5\text{V}}{5\text{V}}\right) * \sin\text{rangevalue}\right]$
Electrical Parameters			
Supply voltage	11 V DC ... 30 V DC		
Current consumption	15 mA ... 45 mA		15 mA ... 25 mA
Mechanical Parameters			
Connector	0.2 m PUR-cable 5 x 0.34 mm ² with 5-pole M12 sensor- actor- male connector, IEC 61076-2-101, IEC 60947-2 or 1.0 m PUR-cable, 4-pole, free conductor end or 0.2 m PUR-cable, 5-pole, free conductor end		
Degree of protection	IP65/67 min. locking torque 0.9 Nm		
Shock survival	max. 20 000 g		
Dimensions	65 mm x 35 mm x 20 mm		
Mass	about 55 g incl. cable		

Dimensioned Drawing:



Plug Connector Allocation:

Pin	Wire colors	Allocation
1	brown	Supply voltage
2	white	Sensor signal Y-Axis (Y-OUT)
3	blue	GND-supply (V- / GND)
4	black	Sensor signal X-Axis (X-OUT)
5	green/yellow	Signal-GND (GND-SENS)



(View from the outside)

Ordering Information:

Product	Parameters	Connection / Cable	Article Number
Current loop interface			
IS2A 10 P28	2-dimensional, $\pm 10^\circ$, 4 mA ... 20 mA	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24231-00
IS2A 45 P28	2-dimensional, $\pm 45^\circ$, 4 mA ... 20 mA	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24232-00
IS2A 60 P28	2-dimensional, $\pm 60^\circ$, 4 mA ... 20 mA	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24233-00
IS1A 60 P38	1-dimensional, $\pm 60^\circ$, 4 mA ... 20 mA	1.0 m PUR-cable, 4-pole, free conductor end	PR-24033-00
IS2A 90 P28	2-dimensional, $\pm 90^\circ$, 4 mA ... 20 mA	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24234-00
Voltage interface			
IS2A 10 P40	2-dimensional, $\pm 10^\circ$, 0 V ... 10 V	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24331-00
IS2A 10 P41	2-dimensional, $\pm 10^\circ$, 0 V ... 10 V	0.2 m PUR-cable, 5-pole, free conductor end	PR-24331-10
IS2A 45 P40	2-dimensional, $\pm 45^\circ$, 0 V ... 10 V	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24332-00
IS2A 60 P40	2-dimensional, $\pm 60^\circ$, 0 V ... 10 V	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24333-00
IS2A 90 P40	2-dimensional, $\pm 90^\circ$, 0 V ... 10 V	0.2 m PUR-cable, 5 x 0.34 sensor- actor- male connector	PR-24334-00