

Inclination Sensor with CAN/CANopen Interface

1-dimensional 360° - 2-dimensional ±90°

Characteristics:

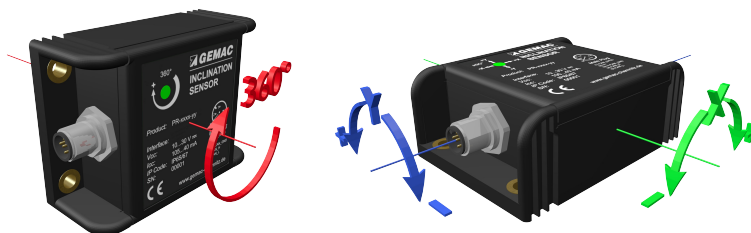
- Inclination sensor with measurement range: 360°/±90°
- High sampling rate and bandwidth
- High resolution (0.01°) and accuracy (±0.1° typ.)
- Compensated cross sensitivity
- Programmable vibration suppression (digital filter)
- Comfortable CAN interface
 - Free adjustable IDs
- Comfortable CANopen interface
 - Meets the CiA DS-301, device profile CiA DSP-410
 - Setting Node ID and baud rate via LSS Service
- Functions:
 - Angle request, cyclical output, synchronized output, output on angle change
 - Configurable cut-off frequency (digital filter)
- Robust, UV resistant, impact strength plastic housing
- Temperature range: -40 °C to +80 °C
- Degree of protection: IP65/67



Figure similar

The inclination sensors IS1BP360-C-BL and IS1BP360-O-BL are suitable to measure the inclination in the measurement range of 360°. The 2-dimensional inclination sensors IS2BP090-C-BL and IS2BP090-O-BL are suitable to measure the inclination in 2 dimensions (X/Y) in the measurement range of 90°. To ensure a high accuracy, the sensors are calibrated at the factory.

The compact and robust design makes the sensor a suitable angle measurement device in rough surroundings for different applications in industry and automotive technology. A simple setting of all parameters which are stored in the internal permanent memory is possible via CAN or CANopen interface.



Applications:

- Solar thermal and photo-voltaic systems
- Agricultural and forestry machinery
- Construction machinery
- Crane and hoisting technology

Technical Data:

General Parameters*	IS1BP360-C-BL / IS1BP360-O-BL	IS2BP090-C-BL / IS2BP090-O-BL
Measurement range	360°	±90°
Resolution	0.01°	0.01°
Accuracy	Range typical maximum 0 ... 360° ±0.15° ±0.25°	Range typical maximum bis ±60° ±0.10° ±0.20° bis ±80° ±0.20° ±0.30°
Cross Sensitivity (compensated)	-	typ. ±0.09° (±0.10 %FS) max. ±0.45° (±0.50 %FS)
Temperature coefficient (zero point)	typ. ±0.01 °/K	
Sampling rate	80 Hz	
Cut-off frequency	typ. 20 Hz, 2 nd order (without digital filter) / 0.1 ... 25Hz, 8 th order (with digital filter)	
Interface		
CAN	CAN 2.0 A and B (11- and 29-Bit-ID) according to ISO 11898-2 Angle request, cyclical and synchronized outputs, parametrization, digital filter	
CANopen	CANopen according CiA DS-301, profile according to CiA DSP-410 TPDO dynamically mappable (RTR, cyclic, event-controlled, synchronized) SYNC Consumer, EMCY Producer, Heartbeat or Nodeguarding / Lifeguarding	
Electrical Parameters		
Supply voltage	8 ... 48 VDC	
Current consumption	< 16 mA @ 24 V	
Mechanical Parameters		
Connector CAN/CANopen	2x sensor connector 5-pole M12 (male and female, loop through connection)	
Degree of protection, Operating temp.	IP65/67, -40 °C ... +80 °C	
Dimensions / Weight	60 mm x 90 mm x 36 mm / ca. 200 g	
CE conformity to EC Directive 2006/42/EC		
EC Directives		
RL 2004/108/EC	EMC Directive	
RL 2006/95/EC	Low Voltage Directive (LVD)	
Harmonized standards		
DIN EN 50498:2010	EMC - Product family standard for aftermarket electronic equipment in vehicles	
EN 60950-1:2006/A1:2010	Information technology equipment. Safety. General requirements	
EN ISO 14982:2009	Agricultural and forestry machinery - EMC. Test methods and acceptance criteria	
DIN EN 13309:2010	Construction machinery - EMC of machines with internal power supply	

* All indicated angle accuracies are valid after a running time of 10 minutes at 25 °C, Cut-off frequency 0.3 Hz

Ordering Information:

Article Number	Product Type	Description/Distinction
PR-25050-30	IS1BP360-C-BL	CAN 1-dimensional, 360°
PR-25054-30	IS2BP090-C-BL	CAN 2-dimensional, ±90°
PR-25150-30	IS1BP360-O-BL	CANopen 1-dimensional, 360°
PR-25154-30	IS2BP090-O-BL	CANopen 2-dimensional, ±90°
PR-23999-02	ISPA1	Starter kit including programming adapter, cables and PC software