

3D- Inclination sensor BWG 101_00

Applications

- Measuring angle on moving objects in harsh environments
- Excavators, mining vehicles, skid-steers, mobile cranes
- Control- and monitoring units
- Factory automation
- Civil engineering

Key specification

- High accuracy while moving
- High accuracy over wide temperature range
- Case aligned and orthogonalized (not applying for engineering sample)

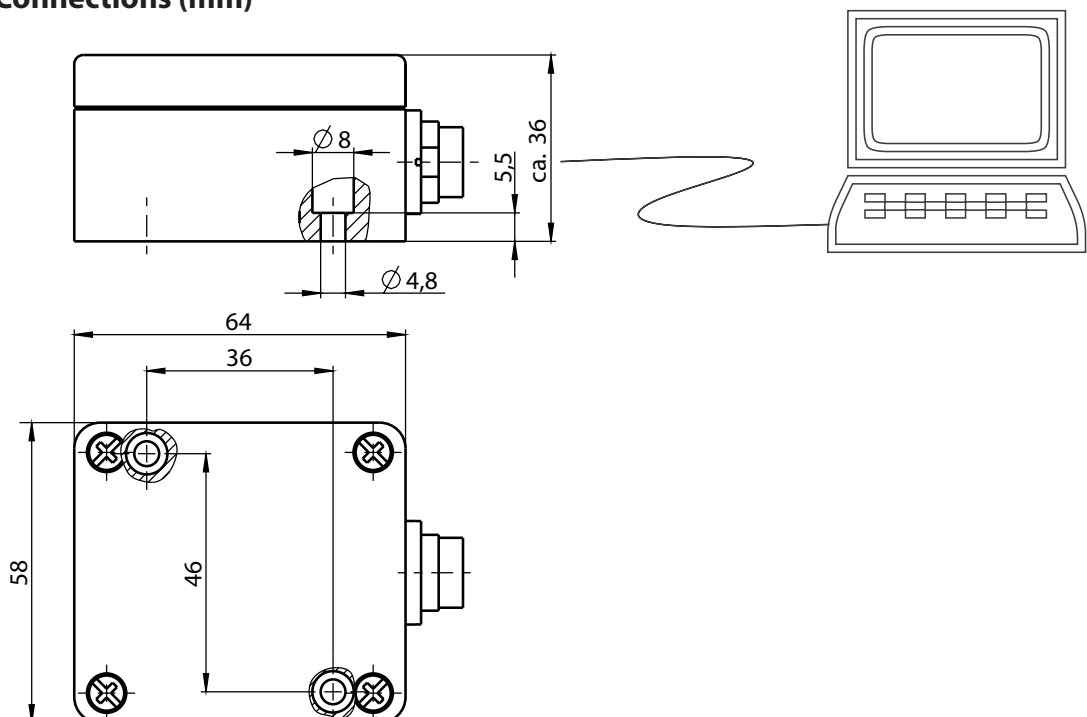
Description

The 3D- Inclination sensor is made for tilt measurement in three axes that provides true, clean angle even in presence of high shock, acceleration and vibration.

The sensor provides high stability, temperature compensated ceramic packaged MEMS (micro-electro-mechanical-system) accelerometers and gyroscopes to assure a long term performance and excellent reliability.

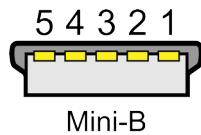
The complexity of multi-axis internal calibration, quaternion angles, Kalman filters, and dynamic adaptive sensor fusion is handled by the sensor itself.

Dimensions / Connections (mm)



Connector USB

Mini-USB 2.0 or 3.0



Product specifications

Parameter	Unit	Specification
Axes		three (yaw, pitch and roll)
Data range	°	Yaw: -180 to 0 to +180 (relative) pitch and roll: -90 to 0 to +90 (absolute)
Static tilt accuracy	°	0.5
Dynamic tilt accuracy	°	0.5 (RMS error)
Shock resistance	g (gravity force)	100
Acceleration range	g (gravity force)	2 (standard) 4, 8, 16 (on customer request)
Angle velocity range	°/sec	2000 (standard) 1000, 500, 250 (on customer request)
Output rate	Hz	approx. 100
Temperature range	°C	-40 to +80
Voltage range	V	4.75 - 5.50 (USB 2.0 or 3.0)
Power	W	max. 2
Environment protection		IP65 (EN 60529)

ESD, Emissions and Immunity Ratings

- ICE 61000-4-2 level 4 compliant
- EN 61000-6-2, ESD
- EN 61000-4-4, FET
- EN 61000-4-5, Surge
- EN 61000-4-6, Conducted Immunity
- EN 61000-4-11, Voltage Dips and Interrupts

Hardware options

- Sturdy case (IP65) as shown above
- Internal USB-Interface
- OEM (Case only)

Output options

- USB serial 115200 baud (standard)
- CANopen, RS485, analogue 0-10V, 4-20mA on customer request

Order Example

Type code	Description
BWG 101_00	3D- Acceleration sensor