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Sensor-Technik Wiedemann GmbH  
Mobile Controllers and Measurement Technologies

# Technical data

Inclinometer and Gyroscope Sensor **NGS2**



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## 3-axis Inclinometer and Gyroscope Sensor

Combined sensor for measurement of angular velocity and inclination in 3 axes. The acceleration in each axis is also available. The measured values are available on the CAN bus and optionally on three analog outputs, current or voltage.

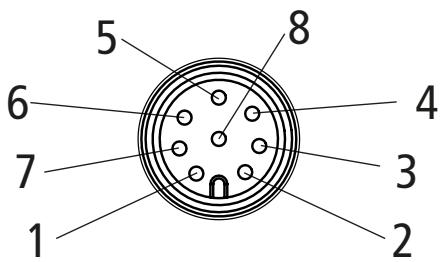
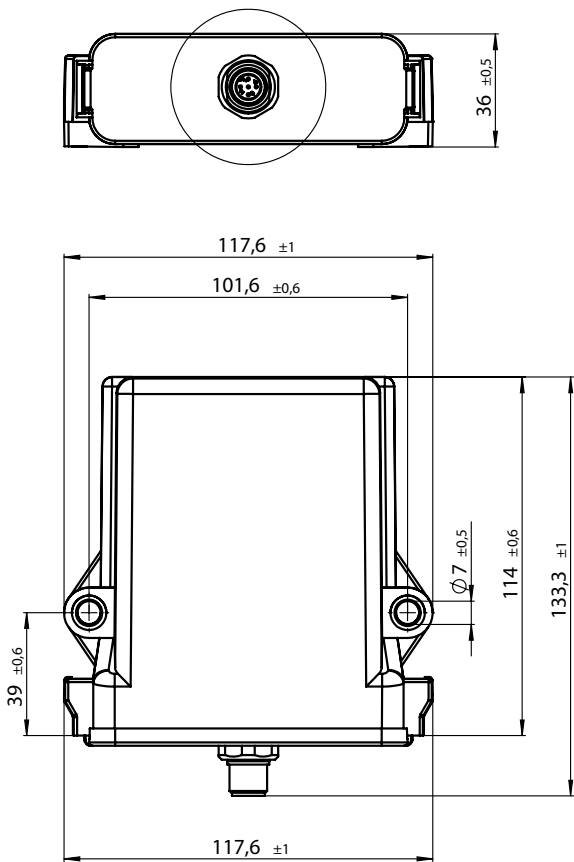
### Technical data

| Gyroscope Sensor                                                |                            |
|-----------------------------------------------------------------|----------------------------|
| Measuring range                                                 | $\pm 50^\circ/\text{s}$    |
| Band width (3 dB)                                               | 40 Hz                      |
| Resolution                                                      | $0,25^\circ/\text{s}$      |
| Accuracy Offset ( $-40^\circ\text{C} \dots +85^\circ\text{C}$ ) | $\pm 0,5^\circ/\text{s}^*$ |
| Accuracy Span ( $-40^\circ\text{C} \dots +85^\circ\text{C}$ )   | $\pm 0,5\% \text{ FS}^*$   |
| Non linearity                                                   | 0,1 % FS                   |
| Influence acceleration                                          | (0,1 $^\circ/\text{s}$ )/g |

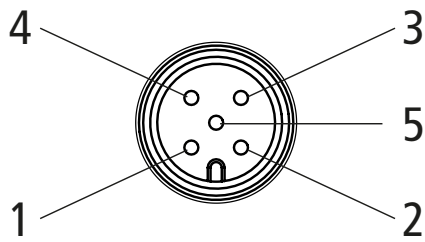
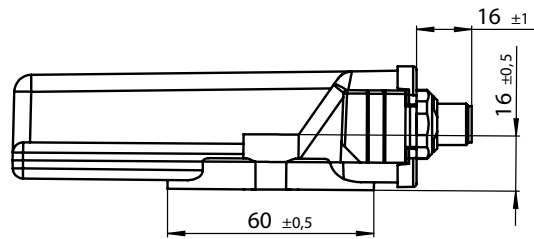
| Inclinometer                                             |                                            |
|----------------------------------------------------------|--------------------------------------------|
| Measuring range                                          | $\pm 180^\circ$ (analogue $\pm 90^\circ$ ) |
| Band width (3dB)                                         | 15 Hz                                      |
| Resolution                                               | 0,01 $^\circ$                              |
| Accuracy ( $-40^\circ\text{C} \dots +85^\circ\text{C}$ ) | $\pm 1,5^\circ$ (typ. $\pm 0,5^\circ$ )*   |

| Collective data                           |                                                                                                                          |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Output signal digital                     | CAN, baudrate 50 to 1000 kBit/s                                                                                          |
| Output signal analogue                    | 0 ... 20 mA or 0 ... 10 V <span style="float: right;">*referred to CANopen-Interface, analogue outputs can differ</span> |
| CAN-Interface                             | CANopen                                                                                                                  |
| Temperature range                         | $-40^\circ\text{C} \dots +85^\circ\text{C}$                                                                              |
| Excitation voltage                        | 9 ... 36 VDC resp. 14 ... 36 VDC (0 ... 10 V voltage output)                                                             |
| Current consumption                       | 120 mA @ 12 V / 60 mA @ 24 V                                                                                             |
| Connector                                 | 5-pole M12-plug (CANopen), 8-pole (CANopen and analogue output)                                                          |
| Protection class                          | IP67 / IP69k                                                                                                             |
| EMV, mechanical and climatic requirements | According to automotive, agricultural and construction industry standards, CE-conformity                                 |
| Chassis                                   | PBT-GF30                                                                                                                 |
| Weight                                    | approx. 250 g                                                                                                            |

3-axis Inclinometer and Gyroscope Sensor



| Pin assignment for 8-pole connector |             |
|-------------------------------------|-------------|
| Pin                                 | Signal      |
| 1                                   | CAN_H, CAN+ |
| 2                                   | V+, Supply  |
| 3                                   | ANALOG_OUT1 |
| 4                                   | ANALOG_OUT2 |
| 5                                   | ANALOG_OUT3 |
| 6                                   | ANALOG_GND  |
| 7                                   | CAN_L, CAN- |
| 8                                   | GND, Ground |



| Pin assignment for 5-pole connector |                 |
|-------------------------------------|-----------------|
| Pin                                 | Signal          |
| 1                                   | n.c.            |
| 2                                   | CAN_V+, Supply  |
| 3                                   | CAN_GND, Ground |
| 4                                   | CAN_H, CAN+     |
| 5                                   | CAN_L, CAN-     |



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