



IMU62-100 with 6 DOF

The **IMU62-100** is a flexible inertial sensor platform, which leaves nothing to be desired. It is equipped with nine MEMS-sensors, which provide the accelerations and angular velocities for all three dimensions (X, Y, Z). The applications for the sensor platform are versatile. The platform finds its use in demanding stabilization tasks and the accurate measurements of kinematic motion sequences.



Properties

- ▶ Measurement of circular motion in three axis
- ▶ Measurement of acceleration in three axis
- ▶ Data output on two freely configurable CAN buses
- ▶ CAN termination switchable via jumper
- ▶ Two acceleration sensitivity due to two sensors
- ▶ Flexibility by the use of an exchangeable sensor module
- ▶ Integrated bubble leveler for accurate horizontal alignment

Possible Field of Application

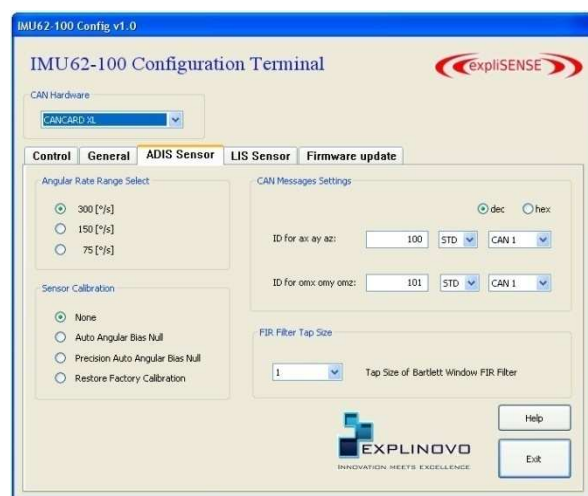
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| <ul style="list-style-type: none"> ▶ Car navigation ▶ Driverless transportation system ▶ Antenna stabilization ▶ Construction machine controllers ▶ Crane controllers | <ul style="list-style-type: none"> ▶ Pipeline measurements ▶ Camera stabilization ▶ Machine alignment ▶ Artificial horizon ▶ Platform stabilization |
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Description

The characteristics of the **IMU62-100** platform are a compact and robust enclosure, two independently configurable CAN interfaces, complete control over the sensor settings and the data output over a user-friendly application. The settings can also be adjusted during runtime. A bubble leveler allows a precise horizontal alignment during installation. The innovative hardware design allows exchanging the main-sensor-module (ADIS). This enables the user to always work with the most recent sensor technology or to choose the optimal sensor for his application.

A 16 bit DSP processor is responsible for the data capture. The sensor signals are available in multiple resolutions. The output is provided via the CAN bus. The termination of the CAN bus is switchable via a jumper. Due to the Strap-Down-Technology, the IMU62-100 is very robust and impervious.

The easy configuration of the parameters is especially user-friendly, for example the FIR filter size, the resolution of the angular velocity or the cycle time. All data packages, which are sent from the sensor platform, have a pre-defined CAN-ID, which can be individually customized using the graphical user interface.



Specifications

Interfaces

- ▶ 2 x CAN 2.0B buses (up to 1 Mbps and 2 ms cycle time)
- ▶ 1 x RS-232 (for firmware upgrade)

Sensors

- ▶ Angular rate sensor (x,y,z)
- ▶ Accelerometer (x,y,z)

ADIS16365 [configurable range 75, 150, 300 °/s]
 ADIS16365 [Range ± 18 g]
 LIS3LV02DQ [configurable range ± 2 g / 6 g]

Electrical Characteristics

- ▶ Operating voltage 7 V – 36 V
- ▶ Fuse 0,8 A
- ▶ Inverse-polarity protection 40 V
- ▶ Power dissipation 1,5 W
- ▶ CAN ESD Protection HBM (Human Body Model) 16 kV
- ▶ UART ESD Protection HBM (Human Body Model) 15 kV

Area of Application

- ▶ Temperature range -40°C – +85°C

Mechanical Characteristics

Enclosure

- ▶ Length x Width x Height 74 x 69 x 40 mm
- ▶ Bubble leveler 5' resolution

Sensors

	ADIS16365 Angular Rate Sensor	ADIS16365 Accelerometer	LIS3LV02DQ Accelerometer
Range	±75, ±150, ±300 °/s	±18 g	±2 g, ±6 g
Resolution	0.0125, 0.025, 0.05 °/s/LSB	3.33 mg/LSB	1.0, 3.0 mg /LSB
Offset	±0.007 °/s	±0.2 mg	±20, ±40 mg
Bandwidth	350 Hz	350 Hz	640 Hz