



V23-1

 **7 YEAR WARRANTY**

DS-GYRO3

INTRODUCTION

DS-GYRO is a high-performance MEMS-based inertial measurement unit (IMU). With its rugged housing and industry-standard communication protocols it is designed to meet the needs of various navigational applications.

The device outputs and logs standard inertial measurement data (Pitch, Roll, Yaw) together with device diagnostic information. The device is bundled with award-winning DewesoftX data acquisition software for acquiring, storing, visualization, and real-time data processing.

FUNCTIONALITY

The unit by itself sends standard inertial measurement data (Pitch, Roll, and Yaw), an additional magnetometer, and diagnostic information.

The device provides two data interfaces:

- USB 3.0 type C for PC connection running DewesoftX data acquisition software.
- CAN interface for 3rd-party integrations.
- The DS-GYRO3 device is powered by the same USB cable.

By connecting the unit to a USB port of a PC running DewesoftX data acquisition software, the data can be displayed, processed, and stored in real-time. Additionally, the DewesoftX software calculates the unit orientation from built-in inertial sensors with an extended Kalman filter (EKF) algorithm.

DS-GYRO3 provides an update rate of 1800 Hz and is in general more accurate than the DS-GYRO1 device.

APPLICATIONS

DS-GYRO inertial measurement units can be used in many testing applications.

Maritime

- The behavior and orientation of the vessel on the water's surface.

Automotive

- Pitch, roll, yaw of the air and ground vehicles
- Measuring the movement of the suspension of aircraft

Industrial

- Monitoring of robotic arms
- Monitoring of cranes



KEY FEATURES

USB 3.0 INTERFACE

DS-GYRO3 is a USB 3 type C device. USB connector provides locking bolts for a fast and reliable data transfer to the bundled DewesoftX software. The DS-GYRO3 device is powered from the same USB 3.0 port.

ROBUST, COMPACT DESIGN

The DS-GYRO devices are very small and compact and they are built in rugged chassis with IP68 environmental protection.

HIGH SAMPLING RATE

The DS-GYRO3 provides data of up to 1800 samples per second. The data is streamed straight to the connected computer running DewesoftX software or an external CAN bus device.

CAN BUS OUTPUT

DS-GYRO3 can be configured to output the data via the CAN bus output port. Once configured and initialized the unit can operate autonomously without connection to DewesoftX software. Ready for third-party integration.

HIGH-PERFORMANCE SENSORS

DS-GYRO3 has a built-in non-ITAR, micro-electro-mechanical system (MEMS) IMU that includes MEMS gyroscopes, accelerometers, and magnetometers, making it a small 9 degrees of freedom (DOF) IMU device.

SOFTWARE INCLUDED

Every Dewesoft data acquisition system is bundled with award-winning DewesoftX data acquisition software. The software is easy to use but very rich and deep in functionality. All software updates are free forever with no hidden licensing or yearly maintenance fees..

DEWESOFT QUALITY AND 7-YEAR WARRANTY

Enjoy our industry-leading 7-year warranty. Our data acquisition systems are made in Europe, utilizing only the highest build quality standards. We offer free and customer-focused technical support. Your investment into the Dewesoft solutions is protected for years ahead.





DS-GYRO TECHNICAL SPECIFICATIONS

	DS-GYRO1	DS-GYRO3
Orientation	0.6 °	0.03 °
Heading accuracy (Yaw)	1.0 °	0.08 °
Range	2000 °/s; ±16 g	± 490 °/s; ±16 g
Hot start time	0.5 s	< 1 s
Output data rate	up to 500 Hz	up to 1800 Hz
Additional features		
PPS output	✓	X
HARDWARE		
Interface	USB	USB + CAN output
Operating voltage	4 to 36 V *USB powered	4 to 36 V *USB powered
Power consumption	65 mA @ 5 V	100 mA @ 5 V
Operating temperatures	-40 °C to 85 °C	-40 °C to 85 °C
Environmental protection	IP 68	IP 68
Input protection	±40 V	±40 V
Shock limit	2000 g - MIL-STD 810G	40g, 11ms per MIL-STD-810G
Dimensions	30 x 40,6 x 24 mm	60 x 45 x 27 mm
Weight	25 g	55 g
INERTIAL SENSORS		
Accelerometer	✓	✓
Gyroscope	✓	✓
Magnetometer	✓	X
APPLICATIONS		
Synchronisation and timing with DEWESoft DAQ	✓	X
Orientation of different object	✓	✓

INERTIAL SENSORS SPECIFICATIONS

	Accelerometer	Gyroscope
Range (dynamic)	16g in all axes	490 deg/s in all axes
Noise density	0.02 m/s/√hr	0.15 °/√hr
Bias repeatability	1 mg (1σ)	65 °/h (1σ)
Bias stability	20 µg (1σ)	3 °/hr (1σ)
Scale Factor Repeatability	2501 ppm (1σ)	1400 ppm (1σ)
Cross-axis alignment error	< 0.05 °	< 0.05 °
Bandwidth	200Hz at 90° phase, 400Hz at -3dB (Output frequency dependent)	200Hz at 90° phase, 400Hz at -3dB (Output frequency dependent)

SCOPE OF SUPPLY

- DS-GYRO3
- BAG-XS



LEARN MORE:

<https://dewesoft.com/products/ds-gyro>

HEADQUARTERS

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