DYN-G-6000 MEMS Gyroscopes Dynalabs Instruction Manual

DynaLabs

Contents

DYN-G-6000 MEMS Gyroscopes Dynalabs Instruction Manual

Model: DYN-G-6000
75°/s / 150°/s / 300°/s / 900°/s
Product Manual

Product Support

If at any time you have questions or problems with the DYN-G-6000 sensors, please contact a Dynalabs engineer at:

Phone: +90 312 266 33 34 (9 a.m. to 5 p.m., UTC +3)
E-mail: **info@dynalabs.com.tr**

Warranty
Our products are warranted against defective materials and workmanship for one year. Defects arising from user errors are not covered by the warranty.

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This publication may contain inaccuracies or typographical errors. Dynalabs Ltd. will periodically update the material for inclusion in new editions. Changes and improvements to the product described in this manual may be made at any time.

1) Introduction

Dynalabs MEMS based gyroscopes are designed by micro-mechanical silicon structures. Thus, gyroscopes are insensitive to external impacts and vibrations. For harsh environmental conditions Dynalabs gyroscopes are preferred. 6000 Series Uniaxial Gyroscopes feature a lightweight, reliable aluminum housing and they have an integrated cable with configurable length and connectors.

DYN-G-6000 sensors offer the following options;

- Custom Cable Length (5m standard cable)
- Custom Housing Material
- Custom Connector
- Base plate

2) General Information

2.1) Unpacking and Inspection

Dynalabs products provide adequate protection for undamaged products to be transported. Document the damages that occur indirectly during the transport and contact the customer representative.

2.2) System Components

The DYN-G-6000 has the following components:

- MEMS Sensor
- Calibration Certificate
- Product Manual

2.3) Specifications

Table 1: Specifications datasheet

Full scale angular velocity	(°/s)	**DYN-G-6075** ±75	**DYN-G-6150** ±150	**DYN-G-6300** ±300	**DYN-G-6900** ±900
Frequency range	(Hz)	0-150	0-150	0-150	0-150
Non-linearity (full scale)	(%)	0.06	0.06	0.06	0.06
Noise (in band)	(°/s/√Hz)	0.0075	0.0075	0.0075	0.0075
Scale Factor (nominal)	(V/°/s)	0.012	0.006	0.003	0.001
Scale factor var. overtemp.	(%)	0.5	0.5	0.5	0.5
Bias variation with temp.	(°/s)	±1	±2	±3	±4
Shock survivability	(g)	10,000	10,000	10,000	10,000

Environmental

Table 2 Environmental specifications datasheet

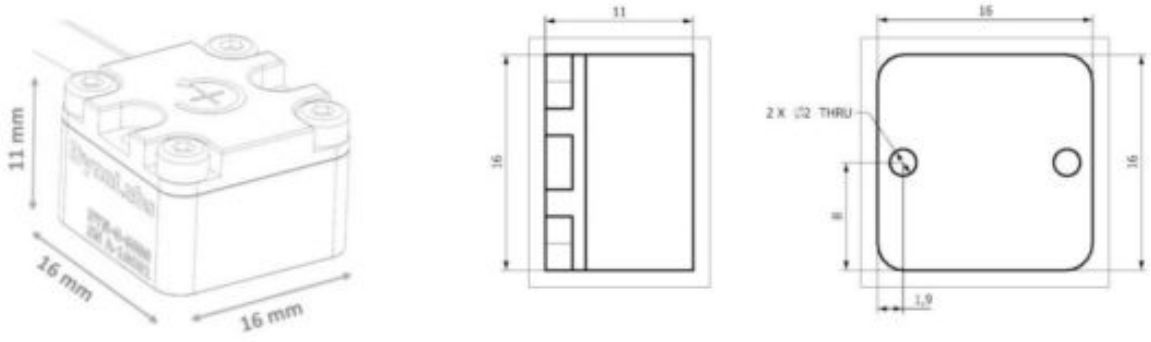
Protection Level	IP 68
Operating Voltage	5V – 20 V
Operating Temperature	-40 °C to +100 °C
Operating Current Consumption mA	7 mA
Isolation	Case isolated

Physical

Table 3 Physical specifications datasheet

Sensing Element	MEMS Gyroscopes
Housing Material	Aluminum or steel
Connector (Optional)	D-Sub 9 or 15 pin, Lemo, Binder
Mounting	Adhesive or screw mount
Base plate (Optional)	Aluminum
Weight (without cable)	7g (aluminum) 17 g (steel)

2.4) Outline Drawing
The dimensional properties of DYN-G-6000 sensors are given below.



3) Operation and Installation

3.1) General
The general sensor connector configuration is given below;
Cable Code/Pin Configuration:

• Red	: V +	Power supply voltage +5 V to +20 VDC.
• Black	: Ground	Power GND
• RX : Yellow	: Gyro Signal	Single-ended analog output voltage signal

WARNING
Never connect the power supply and/or the power ground to yellow cables.

Never connect the power supply to the power ground. Always use a clean power source and check the voltage range.

5) Declaration of Conformity

DynaLabs CE

This declaration of conformity is issued under the sole responsibility of the manufacturer. The product(s) are developed, produced and tested according to following EC- directives:

- 2014/35/EU – Low Voltage Directive (LVD)
- 2006/42/EU – Machinery Safety Directive
- 2015/863/EU – RoHS Directive

Applied standards:

- EN 61010-1:2010
- EN ISO 12100:2010
- MIL-STD-810-H-2019 (Test Methods: 501.7 – High Temperature, 502.7 – Low Temperature, 514.8 – Vibration, 516.8 – Shock)

DYNALABS MÜHENDİSLİK SANAYİ TİCARET LİMİTED ŞİRKETİ declares that above mentioned products meet all the requirements of the above mentioned standards and regulations.

Murat Aykan, Technical Manager
Ankara, 15.07.2021

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