DynaLabs

Model DYN-C-1000-SE

Range [g]: 2, 4, 8, 10, 20, 40, 50, 100, 200, 500

Product Manual

Product Support

If at any time you have questions or problems with the DYN-C-1000-SE sensors, please contact a Dynalabs engineer at**:**

Phone: +90 312 386 21 89 (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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1) Introduction

Capacitive accelerometers are based on proven micro-electro-mechanical systems (MEMS) technology. These capacitive accelerometers are reliable and long-term stable. These sensors are Single Ended type DC response sensors. The advantage of these sensors is their outstanding temperature stability, low noise- high resolution features, and their low cost. These sensors have a reliable aluminum housing with an IP68 protection class.

Dynalabs 1000SE series uniaxial accelerometers provide an outstanding noise performance from 25 to 1,200 µg/√Hz. These accelerometers provide a wide frequency range (±3dB) from 1,500 Hz to 3,000 Hz.

DYN-C-1000-SE sensors offer the following options;

• Custom Cable Length

• 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-C-1000-SE has the following components:

-MEMS Sensor

- Calibration Certificate

- Product Manual

2.3) Specifications

Table 1: Specifications datasheet

Full scale acceleration	**(g)**	**1002SE ±2**	**1004SE ±4**	**1008SE ±8**	**1010SE ±10**	**1020SE ±20**	**1040SE ±40**	**1050SE ±50**	**1100SE ±100**	**1200SE ±200**	**1500SE ±500**
Frequency range (±3dB)	(Hz)	1,500	1,500	1,500	1,500	1,500	1,500	3,000	3,000	3,000	3,000
Non-linearity (full scale)	(%)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Noise (in band)	(µg/ √Hz)	25	25	25	80	80	110	130	220	550	1,200
Scale factor (nominal)	(mV/g)	400	200	100	80	40	20	40	20	10	4
Shock survivability	(g)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000

Environmental

Table 2: Environmental specifications datasheet

Protection Level	IP 68
Operating Voltage	6 V – 40 V (±2g to ±40g) 6 V – 35 V (±50g to ±500g)
Operating Temperature	-40 °C to +100 °C
Operating Current Consumption mA	7 mA
Isolation	Case isolated

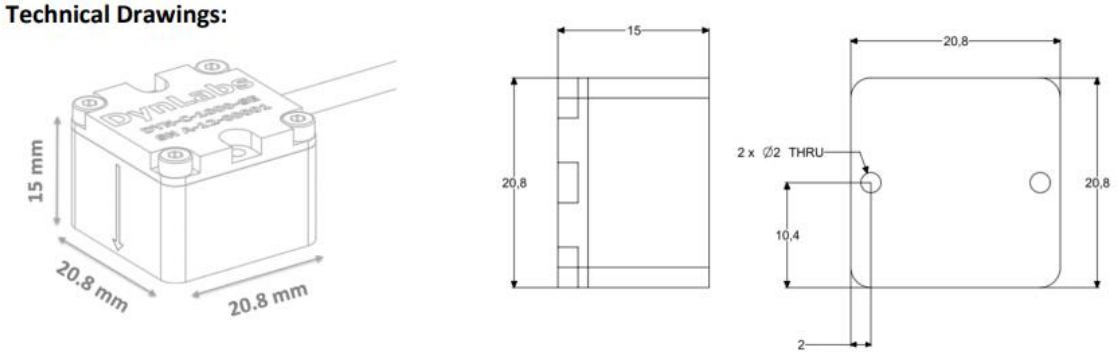
Physical

Table 3: Physical specifications datasheet

Sensing Element	MEMS Capacitive
Housing Material	Aluminum or Steel
Connector (Optional)	D-Sub 9 or 15 pin, Lemo, Binder
Mounting	Adhesive or screw mount
Base plate (Optional)	Aluminum or Steel
Weight (without cable)	9 g (aluminum) 19 g (steel)

2.4) Outline Drawing

The dimensional properties of DYN-C-1000-SE 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 6 V – 40 V (±2g to ±40g), 6V – 35V (±50g to ±500g)

• Black: Ground Power GND

• White / Yellow: Signal Out

• Blue: nc Not Connect

WARNING

Never connect the power supply and the power ground to white or yellow.

Never connect the power supply to the power ground.

4) Sensor Static Calibration Verification

Using gravity, voltage values are measured in the + and - directions, providing a value of 1 g. The measurement should be made as follows;

When the sensitivity value of 1000SE series sensors are entered to the data acquisition system, the sensor shows +1 g with the effect of gravity in the direction of the arrow sign.

When the sensor is in the opposite direction of the arrow, it shows -1 g with the effect of gravity.

Using gravity, the voltage values that provide 1 g in the + and - directions are measured and compared with the catalog value. The calibration value should be close to the catalog value with a 10% tolerance. Sensor catalog sensitivity values are given in Table 1.

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 the 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.

Canan Karadeniz, General Manager

Ankara, 15.07.2021