

# General Specifications

## LN01 Piezoelectric Accelerometer (for FN series)

GS 01W03H01-01EN

### ■ GENERAL

This General Specification (GS) describes the specifications for Piezoelectric Accelerometer. This product is used in combination with "Field Wireless Multi-Function Module FN510".

Refer to General Specifications of "Field Wireless Multi-Function Module FN510" for an overview and detailed information.

### ■ STANDARD SPECIFICATIONS

#### □ MEASUREMENT RANGE

**Frequency Range(Refer to 100 Hz):**

10 Hz to 3000 Hz ( $\pm 1$  dB)

5 Hz to 10000 Hz ( $\pm 3$  dB)

**Operation Acceleration Range:**

$\pm 300$  m/s<sup>2</sup> (Peak)

#### □ PERFORMANCE SPECIFICATIONS

**Sensitivity:**

2.0 mV/m/s<sup>2</sup>  $\pm 10\%$  (at 100 Hz)

**Temperature Characteristics:**

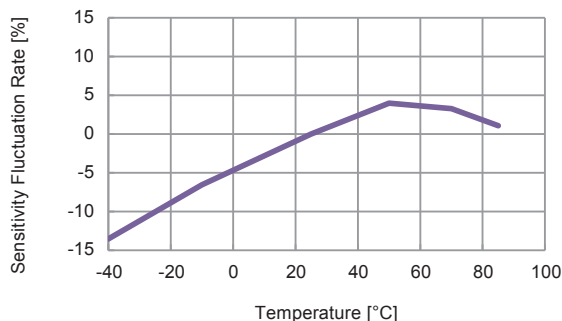


Figure 1 Sensitivity Fluctuation Rate (typical) v.s. Temperature

**Transverse Sensitivity:**

$\leq 5\%$

**Mounted Resonance Frequency:**

$\geq 30000$  Hz

**Power supply Voltage:**

3.4 V

**Current Consumption:**

1.2 mA



#### □ NORMAL OPERATING CONDITION

**Ambient Temperature Range:**

- 40 to 85°C (altitude up to 3000 m)

**Ambient Humidity Range:**

0 to 100%RH (non-condensation, excluding the end of cable)

**Shock Resistance:** > 10000 m/s<sup>2</sup>

#### □ REGULATORY COMPLIANCE STATEMENTS

**CE Conformity:**

EMC: EN61326-1 Class A Table 2

\* The instrument continues to operate at a measurement accuracy of within  $\pm 20\%$  of the range during testing.

Safety: EN61010-1 (Indoor/Outdoor use)

Environment: EN50581

**Canadian Safety Standards:**

CAN/CSA-C22.2 No. 61010-1,

CAN/CSA-C22.2 No. 94.2, IEC60529

**Degrees of Protection:**

IP66, IP67 and Type 4X apply when the end of cable properly protected from ingress of water and dust

#### □ PHYSICAL SPECIFICATIONS

**Housing Material:**

SCS14 stainless steel

**Weight:**

73 g

(without the integral cable and the mounting stud)

**Integral Cable:**

Length: 10 m, Outer diameter:  $4.3 \pm 0.2$  mm

**Mounting:**

M20 female screw for the mounting stud

**MODEL AND SUFFIX CODES**

| Model                 | Suffix Code   | Descriptions                                |                 |
|-----------------------|---------------|---|-----------------|
| <b>LN01</b>           | .....         | Piezoelectric Accelerometer (for FN series) |                 |
| General Specification | Mounting stud | -A.....                                     | M6 male         |
|                       |               | -B.....                                     | 1/4-28 UNF male |
|                       | -             | 0 .....                                     | Always 0        |
| Optional Codes        |               | /□ Optional specification                   |                 |

**OPTIONAL SPECIFICATIONS (For Explosion Protected Types)**

| Item                | Description   | Code        |
|---------------------|---|-------------|
| Factory Mutual (FM) | United States<br>FM Intrinsically safe Approval (United States)<br>Applicable Standards: Class 3600:2011, Class 3610:2015, Class 3810:2005, ANSI/ISA-60079-0:2013, ANSI/ISA-60079-11:2014, NEMA 250-2014, ANSI/IEC 60529-2004(R2011)<br>Intrinsically safe for Class I, II, III, Division 1, Groups A, B, C, D, E, F and G, Class I; Zone 0, in Hazardous Locations, AEx ia IIC<br>Enclosure: IP66/IP67 and Type 4X, Temperature Class: T4,<br>Amb.Temp. : -40 to 100°C (-40 to 212°F) *1<br>Electrical Parameters: U <sub>i</sub> = 5.88 V, I <sub>i</sub> = 150 mA, P <sub>i</sub> = 221 mW (linear source), C <sub>i</sub> = 11.2 μF, L <sub>i</sub> = 38.3 μH<br>Dielectric strength: ≥ 500 V a.c. r.m.s., 1 minute | <b>FS17</b> |
|                     | Canada<br>FM Intrinsically safe Approval (Canada)<br>Applicable Standards: CAN/CSA-C22.2 No. 60079-0:15<br>CAN/CSA-C22.2 No. 60079-11:14<br>CAN/CSA-C22.2 No. 61010-1-12<br>CAN/CSA-C22.2 No. 94-M91 (R2011)<br>CAN/CSA-C22.2 No. 60529-05 (R2015)<br>Ex ia IIC T4 Ga<br>Intrinsically safe for Class I, II, III, Division 1; Groups A, B, C, D, E, F and G;<br>Enclosure: IP66/IP67 and Type 4X, Temperature Class: T4,<br>Amb.Temp. : -40 to 100°C (-40 to 212°F) *1<br>Electrical Parameters: U <sub>i</sub> = 5.88 V, I <sub>i</sub> = 150 mA, P <sub>i</sub> = 221 mW (linear source), C <sub>i</sub> = 11.2 μF, L <sub>i</sub> = 38.3 μH<br>Dielectric strength: ≥ 500 V a.c. r.m.s., 1 minute                    | <b>CS17</b> |
| ATEX                | ATEX Intrinsically safe Approval<br>Applicable Standards: EN 60079-0:2012+A11:2013, EN 60079-11:2012<br>Certificate: FM16ATEX0066X<br>II 1 G Ex ia IIC T4 Ga<br>Degrees of Protection: IP66/IP67 according to EN 60529:<br>1991+A1: 2000+A2: 2013<br>Amb.Temp.(Tamb): -40 to 100°C (-40 to 212°F) *1<br>Electrical Parameters: U <sub>i</sub> = 5.88 V, I <sub>i</sub> = 150 mA, P <sub>i</sub> = 221 mW (linear source), C <sub>i</sub> = 11.2 μF, L <sub>i</sub> = 38.3 μH<br>Dielectric strength: ≥ 500 V a.c. r.m.s., 1 minute  | <b>KS27</b> |
| IECEX               | IECEX Intrinsically Safe Approval<br>Applicable Standards: IEC 60079-0:2011, IEC 60079-11:2011<br>Certificate: IECEX FMG 16.0027X<br>Ex ia IIC T4 Ga<br>Degrees of Protection: IP66/IP67 according to IEC 60529:2013<br>Amb.Temp.(Tamb): -40 to 100°C (-40 to 212°F) *1<br>Electrical Parameters: U <sub>i</sub> =5.88 V, I <sub>i</sub> =150 mA, P <sub>i</sub> =221 mW (linear source), C <sub>i</sub> =11.2 μF, L <sub>i</sub> =38.3 μH<br>Dielectric strength: ≥ 500 V a.c. r.m.s., 1 minute  | <b>SS27</b> |

\*1: This ambient temperature range is for intrinsic safety certification. Regarding the actual operational temperature, refer to "NORMAL OPERATING CONDITION" section.

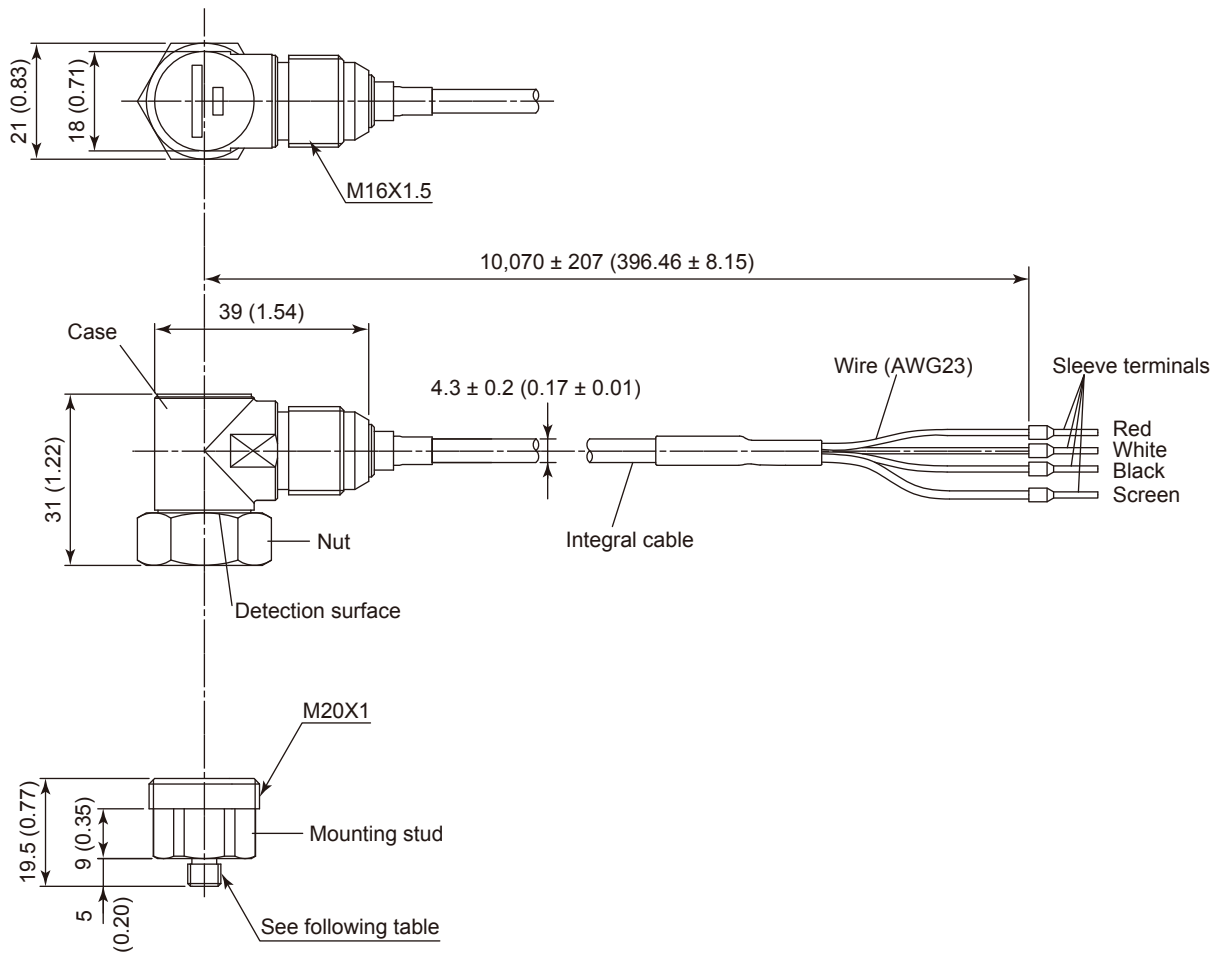
## OPTIONAL ACCESSORIES

| Item          | Parts Number | Description     |
|---------------|--------------|-----------------|
| Mounting stud | F9091RB      | M6 male         |
|               | F9091RC      | 1/4-28 UNF male |

## DIMENSIONS

### Accelerometer and Mounting stud

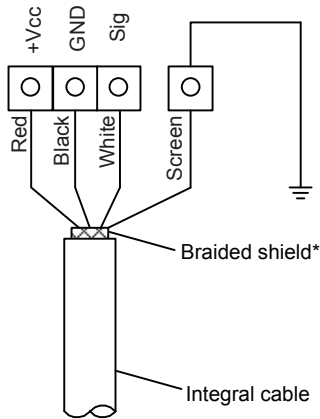
Unit: mm (approx. inch)



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| Mounting stud Code | Thread Type | Parts No. |
|--------------------|-------------|-----------|
| -A                 | M6X1        | F9091RB   |
| -B                 | 1/4-28 UNF  | F9091RC   |

□ **Wiring**



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\* Screen line is connected to the braided shield.

**< Ordering Information >**

Specify the following when ordering.

- 1. Model, suffix codes, and option codes.

**< Related Products General Specifications >**

Field Wireless Multi-Function Module FN510:  
Refer to GS 01W03E01-01EN

**< Trademark >**

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**< Information on WEEE Directive >**

EU WEEE (Waste Electrical and Electronic Equipment) Directive is only valid in the EU.

This instrument is intended to be sold and used only as a part of equipment which is excluded from WEEE Directive, such as large-scale stationary industrial tools, a large-scale fixed installation and so on, and, therefore, subjected to the exclusion from the scope of the WEEE Directive. The instrument should be disposed of in accordance with local and national legislation/regulations.