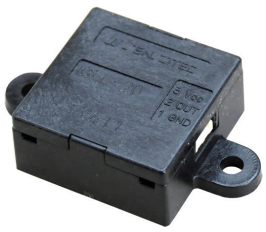
# Model GLL-20 Analog Output Shock Sensor



| Model List | Detection Sensitivity |
|---|---|
| GLL-20 | 0 to 20 G |

## Application

- Vibration control for industrial machinery
- Monitoring of impact on the game console
- Security of structures
- Vibration monitoring for electronic devices
- Security of mechanical instruments

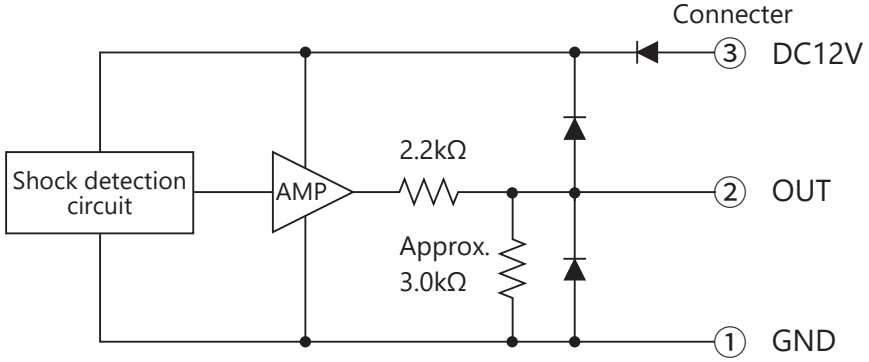
## Features

- Measurement of impact and output as linear analog values.
- Output a direct current of 0 V to 3 V proportional to the impact (g) generated by an impact frequency of 30 Hz to 1kHz.
- By taking the sensor output to an external comparator IC and adjusting the voltage level of the other input of the comparator IC, it is possible to use the sensor so that the shock sensitivity to be detected can be freely adjusted.

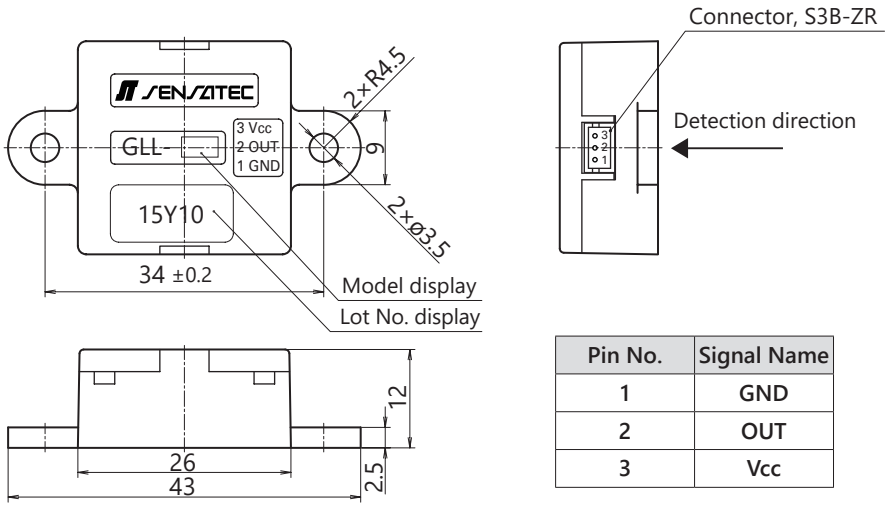
## Rating/Performance

| Model | **GLL-20** |
|---|---|
| Detection Sensitivity | 0 to 20 G |
| Power Voltage | 12 V DC (Operating voltage range: 10.2 V to 13.8 V DC) |
| Power Consumption | 10 mA DC or less (At 12 V DC) |
| Output Voltage | 0 V to 3 V DC (Max output 3.3 V DC) |
| Output Impedance | 2.2 kΩ |
| Detection and Smoothing Delay | Approx. 0.3 seconds |
| Frequency Characteristics | 10 % FS or less within 300 Hz ± 200 Hz |
| Linearity | 6 % FS or less within 300 Hz |
| Detection Frequency | 30 Hz to 1 kHz |
| Temperature Range | - 5 to 50 °C (-15 to 65 °C during storage)(Without dew condensation or freezing) |
| Humidity Range | 85 % RH or less (85 % RH or less during storage) (Without dew condensation) |
| Breakdown Voltage | 500 V AC, 50/60 Hz for 1 min (Between live parts and the case) |
| Insulation Resistance | 20 MΩ or more, at 500 V DC megger (Between live parts and the case) |
| Vibration Resistance | Durability : 10 to 55 Hz, Double amplitude: 1.5 mm in X-, Y-, and Z-direction, each 2 hours (Device not powered) |
| Shock Resistance | Durability : 200 m/s$^2$ (Approx. 20 G) in X-, Y-, and Z-direction, each 3 times (Device not powered) |
| Ingress Protection | IP50 |
| Case Material | ABS reinforced with glass-fiber |
| Connector | Connector : S3B-ZR-SM2-TF (3-pin), (from J.S.T. Mfg. Co., Ltd.)<br>[Connections] Housing: ZHR-3, Contact: SZH-002T-P0.5 (from J.S.T. Mfg. Co., Ltd.) |
| Weight | Approx. 7 g |
| Options (Sold Separately) | Connector harness: SZH-3-300 |

## Output Circuit

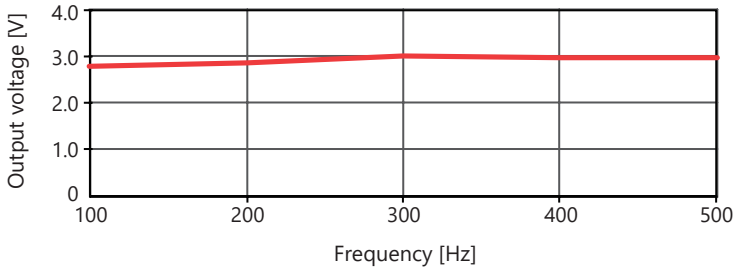


## Dimensions

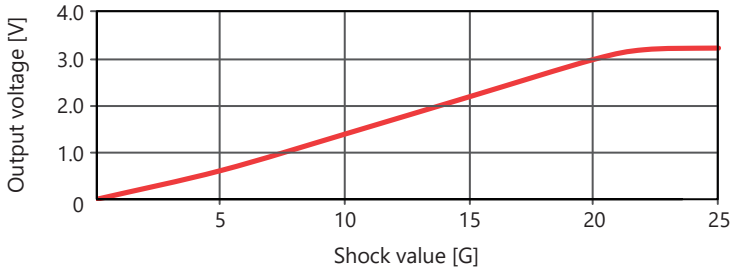



| Pin No. | Signal Name |
|---|---|
| 1 | GND |
| 2 | OUT |
| 3 | Vcc |

## Reference Frequency Characteristics (Typical Example)




## Reference Linearity Characteristics (Typical Example)




## Precautions During Use

1. The product can resist during 2000 hours to vibrations of 10 Hz (0.3 g) to 55 Hz (9 g) with a peak-to-peak amplitude of 1.5 mm in the impact detection direction. However, check sufficiently the vibration resistance of the sensor if complex frequencies or large vibrations should be constantly applied to the sensor.
2. If the sensor is subject to thermal shocks, its detection sensitivity will vary as long as it is subject to the sudden temperature change. Check the environment before using the sensor.
3. Do not use the sensor when stress is applied on the harness connected to the connector, or when the harness is subject to impacts and oscillates.
   Otherwise, the wires may break or the sensor may malfunction. Secure the harness connected part so that it does not oscillate and no stress is applied on it.
4. For other precautions, refer to “General Precautions” for shock sensors.