Model GAC-S Compact Security Shock Sensor (Analog output type)

PATENTED

Model List	Detection Sensitivity
GAC-S3	0 to 3 G

Application

- Shock monitoring of machines
- Shock switches
- Crime prevention sensors (crime prevention, intrusion detection)

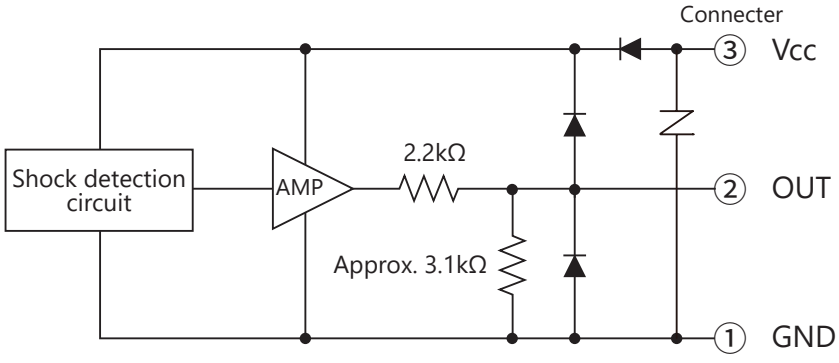
Features

- The impact is measured and output as a linear analog value.
- Outputs a DC voltage of 0 to 3 VDC proportional to the shock (G).
- Sensitivity is reduced for high-frequency vibrations generated by the machine, preventing false detection due to these vibrations.
- Suitable for monitoring acceleration, for crime prevention scenarios such as striking, breaking and displacement of objects.
- By installing a lock type connector, you can prevent the connector from being pulled out due to wire routing or vibration. A clear click feeling when mating prevents incomplete insertion.

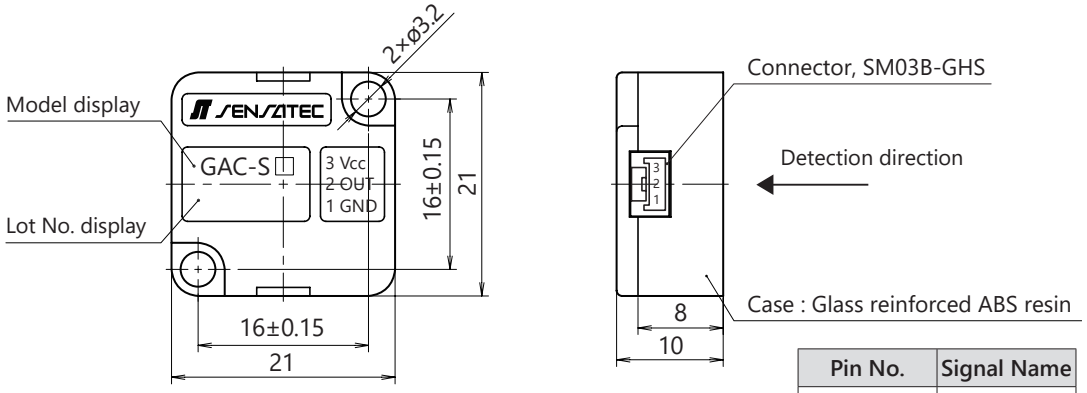
Rating/Performance

Model	GAC-S3
Detection Sensitivity	0 to 3 G (At 30Hz)
Power Voltage	12 V DC (Operating voltage range : 10.2 V to 13.8 V DC)
Power Consumption	15 mA DC or less (At power voltage of 12 V DC)
Output Voltage	0 V to 3 V DC (Max output 3.3 V DC)
Output Impedance	2.2 kΩ
Output Stabilization Time	Approx. 10 seconds (Time from power on to output 0V)
Standard Output Accuracy	± 20% (At 30Hz)
Output Ripple Rate	Approx. -10% (At 30Hz)
Response Time	3ms or less
Detection Frequency	10 Hz to 1 kHz
Temperature Range	-10 to 60 °C (-15 to 65 °C at during storage) (Without dew condensation or freezing)
Humidity Range	85 % RH or less (85% RH or less at during storage) (Without dew condensation)
Breakdown Voltage	500 V AC, 50/60 Hz for 1 min (Between live parts and mountings)
Insulation Resistance	20 MΩ or more, at 500 V DC megger (Between live parts and mountings)
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 : 500 m/s^2 (Approx. 50 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 : SM03B-GHS (3-pin) (from J.S.T. Mfg. Co., Ltd.) [Connections] Housing : GHR-03V, Contact : SSHL-002T-P0.2 (from J.S.T. Mfg. Co., Ltd.)
Weight	Approx. 4 g
Options (Sold Separately)	Connector harness : CNH-GHR03S28-300

Output Circuit

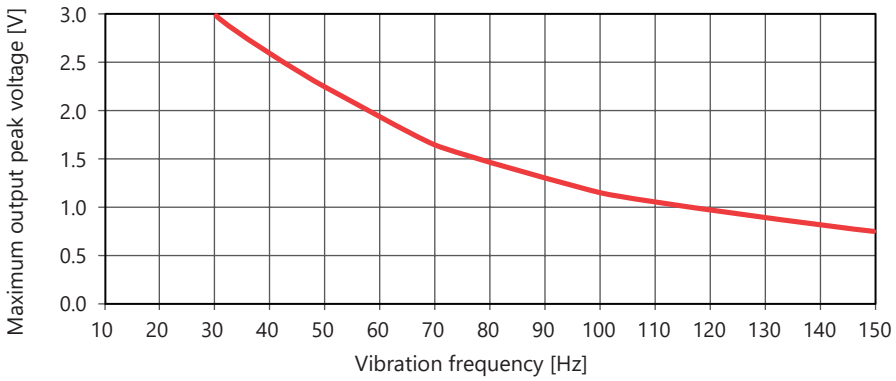


Dimensions

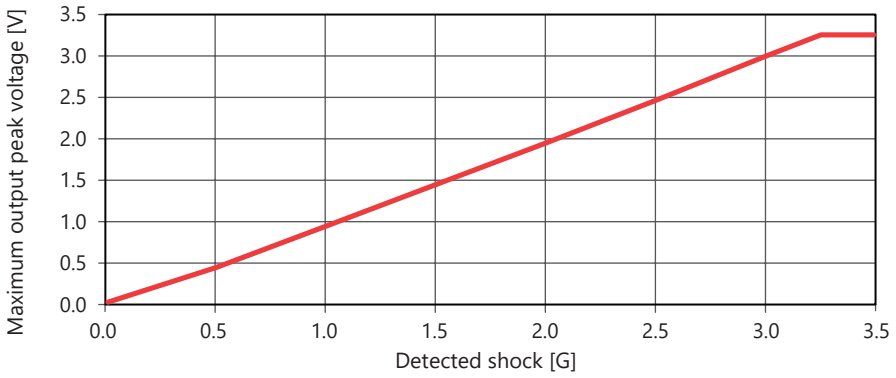


Pin No.	Signal Name
1	GND
2	OUT
3	Vcc

Reference Frequency Characteristics (When 3G is applied)



Reference Linearity Characteristics (With vibration frequency of 30 Hz)



Precautions During Use

1. The case fastening should be at a torque of 0.32 N·m or less.
2. If the sensor is subject to thermal shocks, its detection sensitivity will differ for the duration of the sudden temperature change. Check the environment before using the sensor.
3. Do not use the sensor when stress is applied to the harness attached to its connector, or where the harness itself is subject to shocks causing it to oscillate.
   Otherwise, the wires may break or the sensor may malfunction.
4. Secure the harness lead out so that it does not oscillate and no stress is applied on it.
5. If the vibration frequency of the impact is low, the smoothing time will be insufficient, resulting in pulsating wave output.
6. For other precautions, refer to “General Precautions” for shock sensors.
   *For other detailed specifications, refer to the specification sheet of the corresponding model.