Model GIS-1 Compact Security Shock Sensor (Power Supply Voltage: 10 to 30 V DC)

PATENTED

Model List	Detection Sensitivity	Operation Mode
GIS-1	1 G	Normally open
GIS-1H	1.5 G	
GIS-2	2 G	
GIS-3	3 G	
GIS-5	5 G	
GIS-7	7 G	
GIS-X3	10 G	
GIS-20	20 G	

Model List	Detection Sensitivity	Operation Mode
GIS-11	1 G	Normally closed
GIS-1H1	1.5 G	
GIS-21	2 G	
GIS-31	3 G	
GIS-51	5 G	
GIS-71	7 G	
GIS-X31	10 G	
GIS-201	20 G	

Application

- Vibration monitoring for electronic devices
- Vibration monitoring for game machines and similar equipment
- Security for machinery and equipment
- Building security

Features

- Detects impacts such as hitting or striking. Reduced sensitivity to high frequencies helps prevent false operation caused by high-frequency vibration generated by machinery and similar equipment.
- Ideal for security applications such as monitoring impacts on glass windows, as well as detecting unauthorized actions such as hitting game machines.
- The locking connector prevents disconnection due to wire routing or vibration. A clear click during mating helps prevent incomplete insertion.
- Can detect momentary impacts and provides an output duration of 200 ms or more.

Rating / Performance

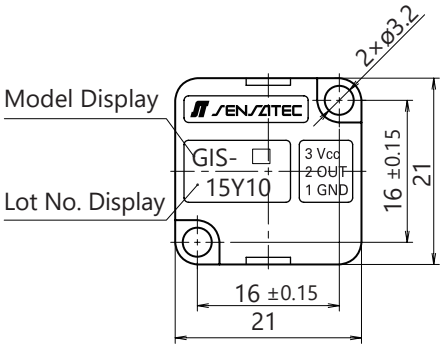
Model		GIS-*	GIS-*1
Power Supply Voltage		10 to 30 V DC	
Current Consumption		8 mA or less	
Output		Nch MOSFET open drain	NPN bipolar transistor open collector
		30 V DC, 50 mA or less (output available 700 ms after power-on)	
Residual Output Voltage		1 V DC or less (at a load current of 50 mA)	
Operation Mode		Normally open (output ON when shock is detected)	Normally closed (output OFF when shock is detected)
Output Hold Time	Momentary shock input	ON for 200 ms or more (when input time is 3 ms or more) ON for less than 200 ms (when input time is less than 3 ms)	OFF for 200 ms or more (when input time is 3 ms or more) OFF for less than 200 ms (when input time is less than 3 ms)
	Continuous shock input	Continuously ON	Continuously OFF
Detection Frequency		10 Hz to 1 kHz	
Response Time		4 ms or less	
Circuit Protection		Power supply reverse-connection protection diode and output surge absorption diode	
Temperature Range		-10 to 60°C (Storage: -15 to 65°C), no condensation or icing	
Humidity Range		85% RH or less (Storage: 85% RH or less), no condensation	
Dielectric Strength		500 V AC for 1 minute (between all live parts and the mounting section)	
Insulation Resistance		20 MΩ or more at 500 V DC megger (between all live parts and the mounting section)	
Vibration Resistance		10 to 55 Hz, 1.5 mm double amplitude in X, Y, and Z directions for 2 hours each (with power off)	
Shock Resistance		500 m/s^2 (approx. 50 G) in X, Y, and Z directions, 3 times each (with power off)	
Protection		IP50	
Case Material		Glass-filled ABS resin	
Connector		Connector: SM03B-GHS (3-pin) [Connection] Housing: GHR-03V-S; Contact: SSHL-002T-P0.2 (J.S.T. Mfg. Co., Ltd.)	
Weight		Approx. 4 g	
Options(Sold separately)		Connector harness: CNH-GHR03S28-300	

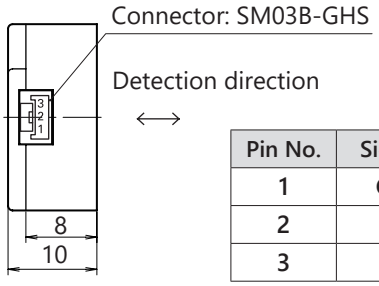
Detection Sensitivity

Model	GIS-1 / GIS-11	GIS-1H / GIS-1H1	GIS-2 / GIS-21	GIS-3 / GIS-31	GIS-5 / GIS-51	GIS-7 / GIS-71	GIS-X3 / GIS-X31	GIS-20 / GIS-201
30Hz	1 G ± 25%	1.5 G ± 20 %	2 G ± 20 %	3 G ± 20 %	5 G ± 20 %	7 G ± 20 %	10 G ± 20 %	20 G ± 20 %
100Hz (Reference)	1.9 G ± 25%	3.0 G ± 25 %	4.1 G ± 25 %	6.4 G ± 25 %	10.9 G ± 25 %	14.9 G ± 25 %	21.0 G ± 25 % (70 Hz)	27.2 G ± 25 % (50 Hz)

Note: Please feel free to contact us for requirements other than those listed above, including detection sensitivity, power supply voltage, output hold time, and response time.

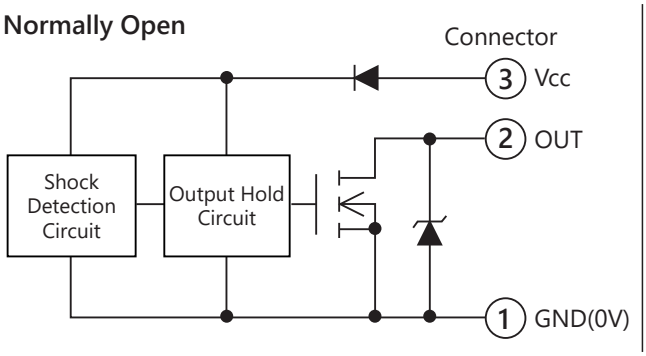
Outline Dimensions

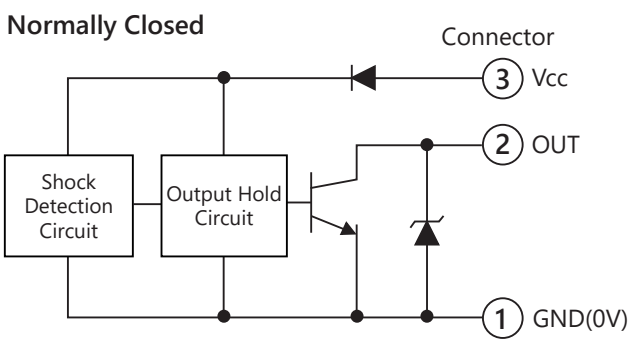




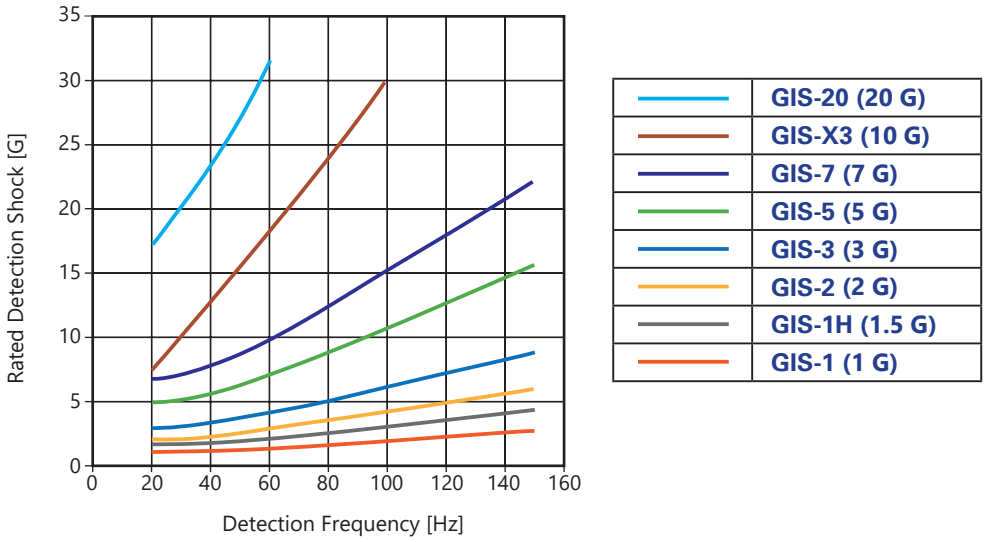
Pin No.	Signal Name
1	GND(0V)
2	OUT
3	Vcc

Output Circuit





Reference Frequency Characteristics (Typical Example)



Precautions During Use

1. When mounting the sensor, tighten the case to a torque of 0.32 N·m or less.
2. For the normally closed output type, it may take up to 300 ms after power-on for the output to turn ON.
3. If thermal shock is applied to the sensor, detection sensitivity may change during rapid temperature changes. Use the sensor only after sufficient verification.
4. When using the sensor in locations where sudden air pressure changes may occur, verify operation sufficiently under those conditions before use.
5. Using the sensor while stress is applied to the harness connected to the connector, or using it in a way that allows the harness to vibrate due to impact, may cause wire breakage or malfunction. Support the harness lead-out so that it is not subjected to excessive stress or vibration.
6. Secure the harness lead-out so that stress or vibration is not applied to it.
7. For other precautions, please refer to the Precautions During Use for Shock Sensors.