Model GIS-1 Security Compact Shock Sensor, Power Voltage 10 V to 30 V DC

PATENTED

Model List	Detection Sensitivity	Operation Status
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 Status
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
- Security of mechanical instruments
- Monitoring of vibration to the game machine
- Building security

Features

- Monitors simple impacts caused intentionally. Avoid incorrect detection remove in high frequencies.
- Uses connector with lock for prevent the missing connector according to routing of the wire or vibration.
- Perfect installed on glass windows to monitor impacts for security or on game machines to detect inappropriate actions such as a hit.
- Can detect instant impacts and output them for more than 200 ms using a multivibrator circuit.

Rating / Performance

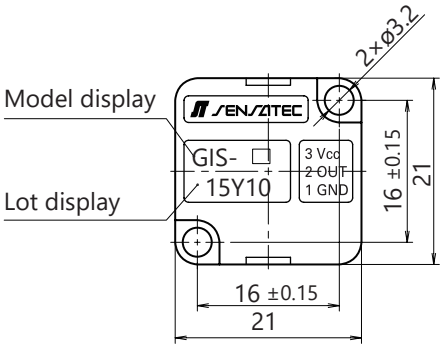
Model		GIS-*	GIS-*1
Power Supply Voltage		10 V to 30 V DC	
Current Consumption		8 mA DC or less	
Output		Nch MOSFET Open drain	NPN bipolar transistor, Open collector
		30 V DC, 50 mA DC or less, (Output is available 700 ms from power ON)	
Output Residual Voltage		1 V DC or less (Load current 50 mA DC)	
Operation Status		Normally open (Output ON when shock is detected)	Normally Closed (Output OFF when shock is detected)
Output Hold Time	Momentary Shock Input	ON for at least 200 ms (When input time is 3 ms or more) ON for less than 200 ms (When input time is less than 3 ms)	OFF for at least 200 ms (When input time is 3 ms or more) OFF for less than 200 ms (When input time is less than 3 ms)
	At Continuous Shock Input	Continuous ON	Continuous OFF
Detection Frequency		10 Hz to 1 kHz	
Response Time		4 ms or less	
Circuit Protection		Back-flow protection diode and output surge absorption diode	
Temperature Range		-10 to 60 °C (-15 to 65 °C storage temperature range)(Without dew condensation or icing)	
Humidity Range		85 % RH or less (85 % RH or less storage humidity range)(Without dew condensation)	
Dielectric Strength		500 V AC for 1 minute (Between live parts and the mounting part)	
Insulation Resistance		20 MΩ or more at 500 V DC megger (Between live parts and the mounting part)	
Vibration Resistance		10 to 55 Hz, 1.5 mm double amplitude in X, Y and Z directions for 2 hours each (at power off)	
Shock Resistance		500 m/s^2 (Approx. 50 G) in X, Y and Z directions 3 times each (at power off)	
Protection		IP50	
Case Material		ABS resin with glass	
Connector		Connector : SM03B-GHS(3-pin)(from J.S.T. Mfg. Co., Ltd.) [Connections]Housing : GHR-03V-S, Contact : SSHL-002T-P0.2(from J.S.T. Mfg. Co., Ltd.)	
Weight		Approx. 4 g	
Options (Sold separately)		Connector harness: CNH-GHR03S28-300	

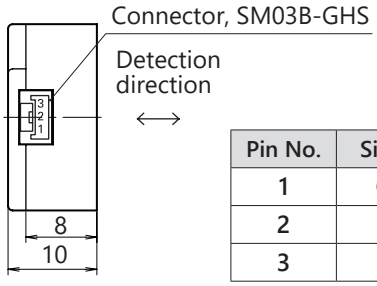
Detection Sensitivity

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 consult us regarding any different requirements you may have to those specified above, for detection sensitivity, Power supply voltage, output retention time.

Outline Dimensions

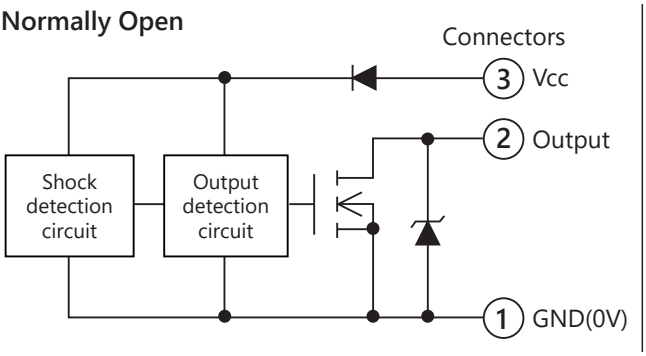




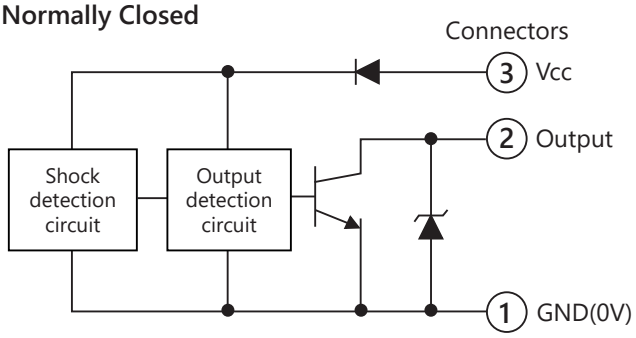
Pin No.	Signal Name
1	GND(0V)
2	Output
3	Vcc

Output Circuit

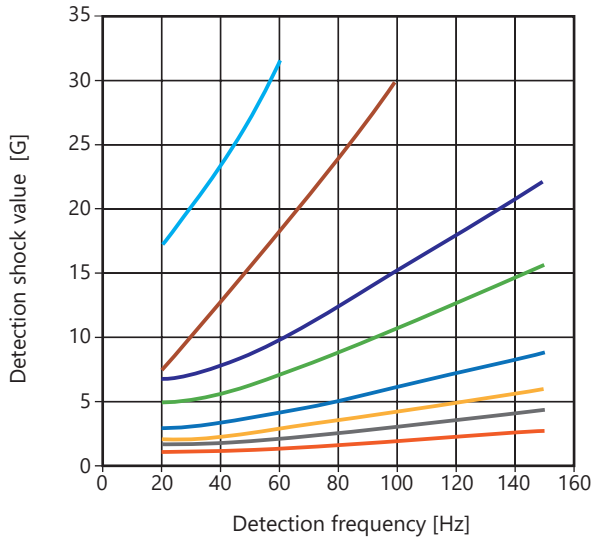
Normally Open



Normally Closed



Reference Frequency Characteristics (Typical Example)



	GIS-20 (20 G)
	GIS-X3 (10 G)
	GIS-7 (7 G)
	GIS-5 (5 G)
	GIS-3 (3 G)
	GIS-2 (2 G)
	GIS-1H (1.5 G)
	GIS-1 (1 G)

Precautions During Use

1. The case fastening should be at a torque of 0.32 N·m or less.
2. The normal closed output type takes 300 ms maximum from power ON to output turn-ON.
3. Thermal shock applied to the sensor during an abrupt temperature change can change the detection sensitivity. Ensure proper handling of the sensor.
4. When using in a location where a sudden change of air pressure is likely, confirm that operation in that situation is satisfactory.
5. Avoid subjecting the sensor wire harness to mechanical stress while connecting to the connector or allowing vibration to transferred from impact, otherwise disconnection or malfunction may result. Support the harness lead-out so that it is not subjected to excessive stress or vibration.
6. Fix the harness pull-out part so that no stress or vibration from the harness is reaches the sensor.
7. For other precautions, refer to "General Precautions" for shock sensors.

* For other detailed specifications, refer to the specification sheet of the corresponding model.