Model GIS-15 Security Compact Shock Sensor, Power Voltage 5 V DC

PATENTED

Model List	Detection Sensitivity	Operation Status
GIS-15	1 G	Normally open
GIS-1H5	1.5 G	
GIS-25	2 G	
GIS-35	3 G	
GIS-55	5 G	
GIS-75	7 G	
GIS-X35	10 G	
GIS-205	20 G	

Model List	Detection Sensitivity	Operation Status
GIS-115	1 G	Normally closed
GIS-1H15	1.5 G	
GIS-215	2 G	
GIS-315	3 G	
GIS-515	5 G	
GIS-715	7 G	
GIS-X315	10 G	
GIS-2015	20 G	

Application

- Vibration monitoring of electrical appliances
- Vibration monitoring of arcade game
- Security of equipment/machines
- Building security

Features

- Detects shocks by impacts/collisions. Avoids possible malfunctions caused by machine-generated high-frequency oscillations by lowering the sensitivity to high frequency waves.
- Will find use in crime prevention, such as monitoring shock to glass windows or unauthorized operations such as bumping or knocking games machines.
- A locking connector securely prevents disconnection of connectors caused by running wires or vibration. A clear click touch when plugging together ensures a secure insertion.
- Momentary shocks can be detected. The output time is 200ms or more.

Rating / Performance

Model		GIS-*5	GIS-*15
Power Supply Voltage		5V DC ± 5% (Absolute maximum rating: 30 V DC)*1	
Current Consumption		6 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		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	

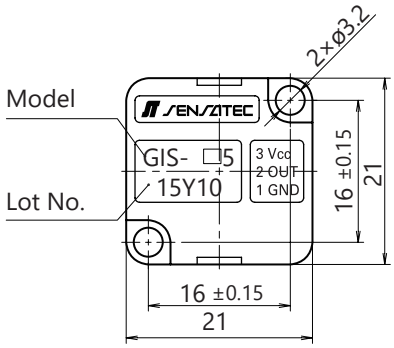
*1 : It is a limit value with which the product is free from breakage. It does not guarantee the above-mentioned rating/performance.

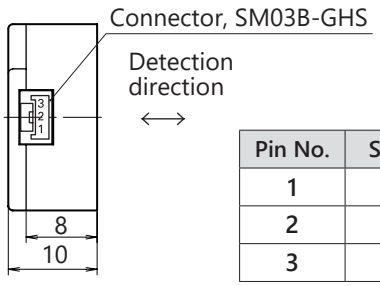
Detection Sensitivity

Model	GIS-15 GIS-115	GIS-1H5 GIS-1H15	GIS-25 GIS-215	GIS-35 GIS-315	GIS-55 GIS-515	GIS-75 GIS-715	GIS-X35 GIS-X315	GIS-205 GIS-2015
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)	2.0 G ± 30%	3.1 G ± 25 %	4.1 G ± 25 %	6.3 G ± 25 %	10.6 G ± 25 %	15.4 G ± 25 %	21.3 G ± 25 % (70 Hz)	26.7 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.

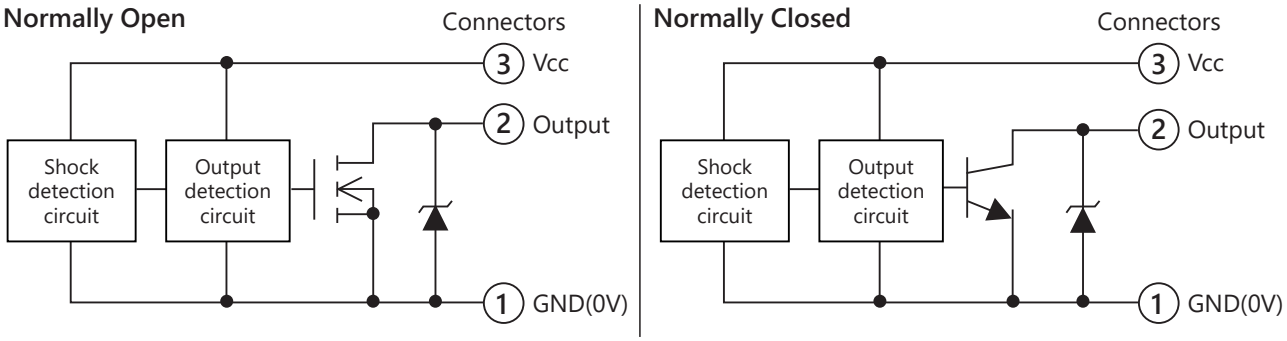
Outline Dimensions





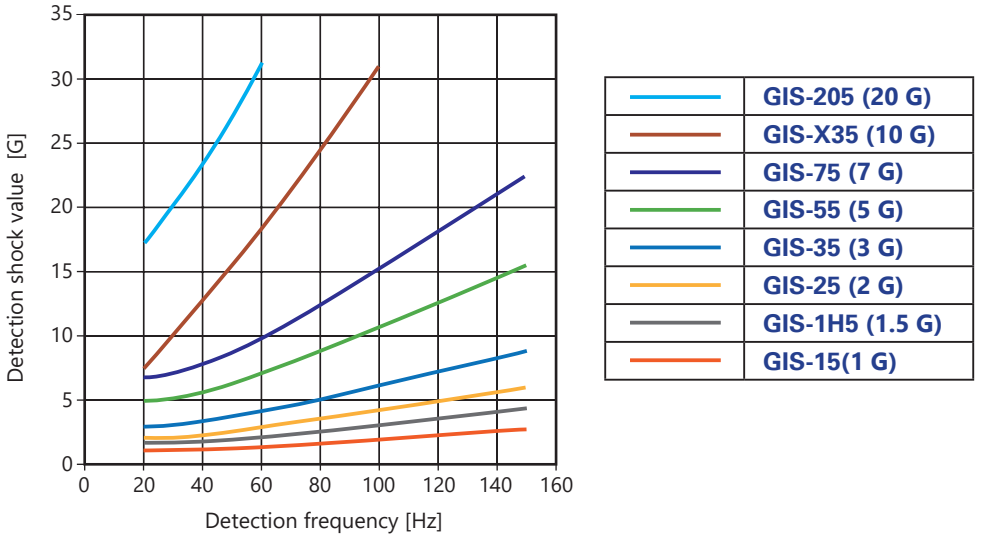
Pin No.	Signal Name
1	GND(0V)
2	Output
3	Vcc

Output Circuit



*Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.

Reference Frequency Characteristics (Typical Example)



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. Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.
8. For other precautions, refer to “General Precautions” for shock sensors.

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