Model GIW Security Shock Sensor, Power Voltage 5 V DC

PATENTED

Model List	Detection Sensitivity	Operation Configuration
GIW-1-5	1 G	Normally open
GIW-1H-5	1.5 G	
GIW-2-5	2 G	
GIW-3-5	3 G	
GIW-5-5	5 G	
GIW-7-5	7 G	
GIW-X3-5	10 G	
GIW-15-5	15 G	
GIW-20-5	20 G	

Model List	Detection Sensitivity	Operation Configuration
GIW-11-5	1 G	Normally closed
GIW-1H1-5	1.5 G	
GIW-21-5	2 G	
GIW-31-5	3 G	
GIW-51-5	5 G	
GIW-71-5	7 G	
GIW-X31-5	10 G	
GIW-151-5	15 G	
GIW-201-5	20 G	

Application

- Equipment impact monitoring
- Shock detection switches
- Security sensors (theft prevention, intrusion detection, etc.)

Features

- Excellent environmental protection. The sensor section is built to the IP67 standard and can be used in environments where dust or water is present. Waterproof connectors can also be used.
- Single-axis impact sensor.
- Vibration sensing frequency range from 10Hz to 1kHz.
- Ideal for crime prevention, acceleration monitoring, such as caused by impact shock, breakage and object movement.
- Sensitivity is reduced for high-frequency vibration generated from the machine, preventing false detection due to high-frequency vibration.
- Even momentary impacts can be detected.

Rating/Performance

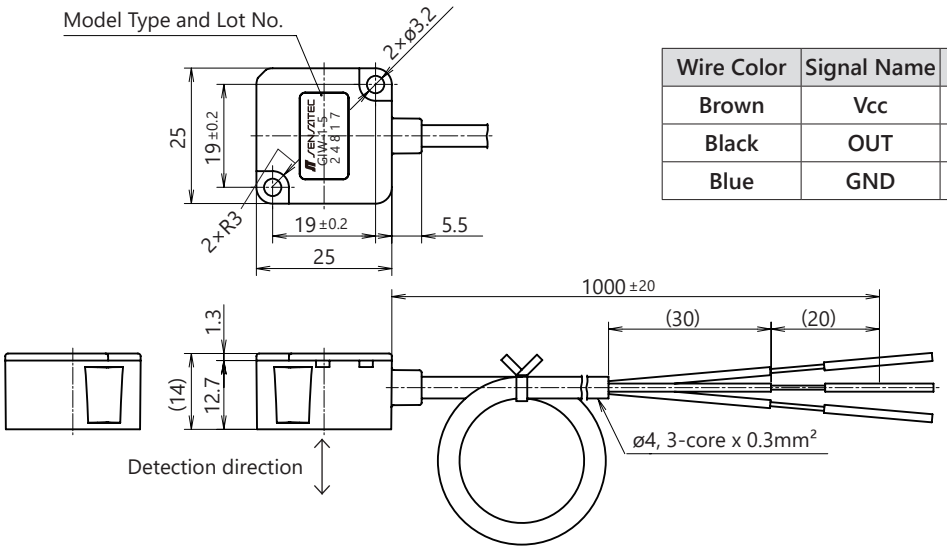
Model		GIW-*-5	GIW-*1-5
Power Voltage		5 V DC ± 5 %	
Power Consumption		5 mA DC or less	
Output		N-channel MOSFET Open drain 30 V DC, 100 mA DC or less, (Output is available 800 ms from power ON)	
Output Residual Voltage		1 V DC or less (Load current 100 mA DC)	
Operation Status		Normally open (Output ON when shock is detected)	Normally Closed (Output OFF when shock is detected)
Output Hold Time	Omentary Shock Input	ON for at least 80 ms (When input time is 3 ms or more) ON for less than 80 ms (When input time is less than 3 ms)	OFF for at least 80 ms (When input time is 3 ms or more) OFF for less than 80 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 during storage)(Without dew condensation or freezing)	
Humidity Range		95 % RH or less (95 % RH or less during storage)(Without dew condensation)	
Breakdown Voltage		500 V AC, 50/60 Hz for 1 min (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		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		IP67	
Case Material		ABS reinforced with glass-fiber	
Cable		ø4, 3-core round cord of 0.3 mm^2 and insulation 1.5 mm and 1 m in length (Oil and heat resistant)	
Weight		Approx. 30 g	

Detection Sensitivity

Model	GIW-1-5 GIW-11-5	GIW-1H-5 GIW-1H1-5	GIW-2-5 GIW-21-5	GIW-3-5 GIW-31-5	GIW-5-5 GIW-51-5	GIW-7-5 GIW-71-5	GIW-X3-5 GIW-X31-5	GIW-15-5 GIW-151-5	GIW-20-5 GIW-201-5
30Hz	1 G ± 25%	1.5 G ± 20 %	2 G ± 20 %	3 G ± 20 %	5 G ± 20 %	7 G ± 20 %	10 G ± 20 %	15 G ± 20 %	20 G ± 20 %
100Hz (Reference)	2.0 G ± 30%	2.9 G ± 25 %	4.0 G ± 25 %	6.3 G ± 25 %	10.5 G ± 25 %	16.4 G ± 25 %	20.7 G ± 25 % (70 Hz)	24.4 G ± 25 % (60 Hz)	25.5 G ± 25 % (50 Hz)

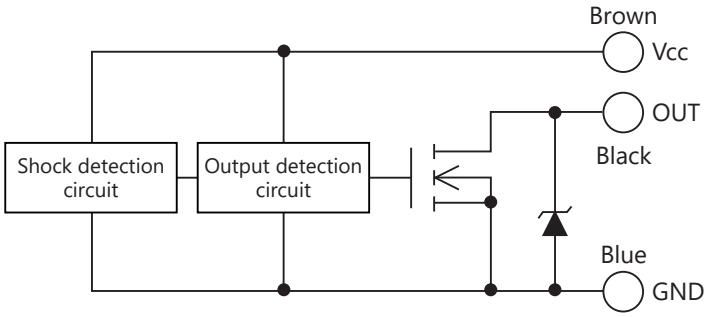
Note : Please feel free to consult us regarding any different requirements you may have to those specified above, for detection sensitivity, power voltage, output retention time.

Dimensions

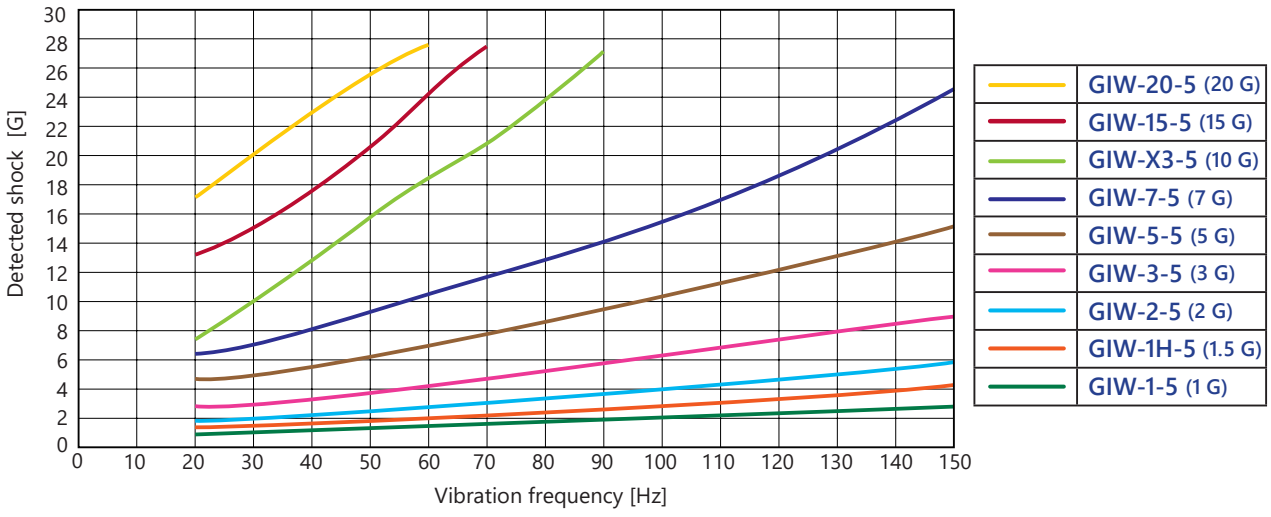


Wire Color	Signal Name	Function
Brown	Vcc	Power voltage
Black	OUT	Output signal
Blue	GND	GND

Output Circuit



Reference Frequency Characteristics (Typical Example)



Precautions During Use

1. Tighten the case with a torque of 0.32 N·m or less.
2. The normal closed output type takes 100 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. Usage when the cable is subjected to stress or vibration due to impacts may cause disconnection or malfunction. Secure the cable lead-out so that no stress or vibration can be applied.
5. Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.
6. For other precautions, refer to “General Precautions” for shock sensors.

* Please consult us regarding changes to cable lengths, or changes to oil-resistant, chemical-resistant, weather-resistant enclosures and cable materials.

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