

# Model GIW Security Shock Sensor, Power Voltage 5 V DC

**PATENTED**



Model List	Detection Sensitivity	Operation Configuration	Model List	Detection Sensitivity	Operation Configuration
GIW-1-5	1 G	Normally open	GIW-11-5	1 G	Normally closed
GIW-1H-5	1.5 G		GIW-1H1-5	1.5 G	
GIW-2-5	2 G		GIW-21-5	2 G	
GIW-3-5	3 G		GIW-31-5	3 G	
GIW-5-5	5 G		GIW-51-5	5 G	
GIW-7-5	7 G		GIW-71-5	7 G	
GIW-X3-5	10 G		GIW-X31-5	10 G	
GIW-15-5	15 G		GIW-151-5	15 G	
GIW-20-5	20 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

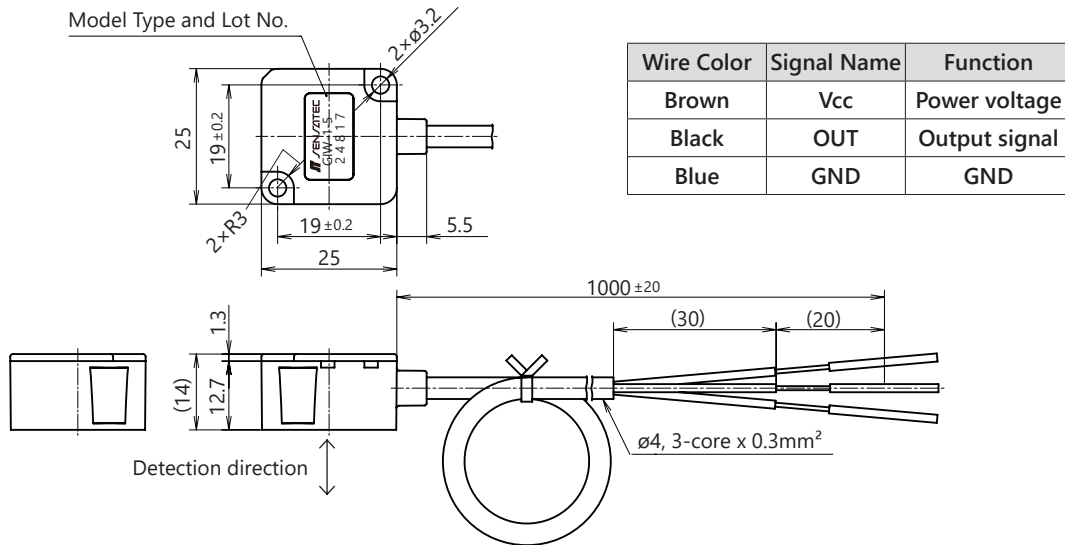
Model	GIW-*-5	GIW-*1-5
Power Voltage	5 V DC $\pm$ 5 %	
Power Consumption	5 mA DC or less	
Output	N-channel MOSFET Open drain 30 V DC, 100 mA DC or less, (Output is available 800 ms from power ON)	
Output Residual Voltage	1 V DC or less (Load current 100 mA DC)	
Operation Status	Normally open (Output ON when shock is detected)	Normally Closed (Output OFF when shock is detected)
Output Hold Time	Momentary 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)
	At Continuous Shock Input	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)
	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 M $\Omega$ 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 <sup>2</sup> (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 (*It is possible to change to a case made of m-PPE material, which has excellent oil resistance and chemical resistance.)	
Cable	$\varnothing$ 4, 3-core round cord of 0.3 mm <sup>2</sup> and insulation 1.5 mm and 1 m in length (Oil and heat resistant)	
Weight	Approx. 30 g	

## Detection Sensitivity

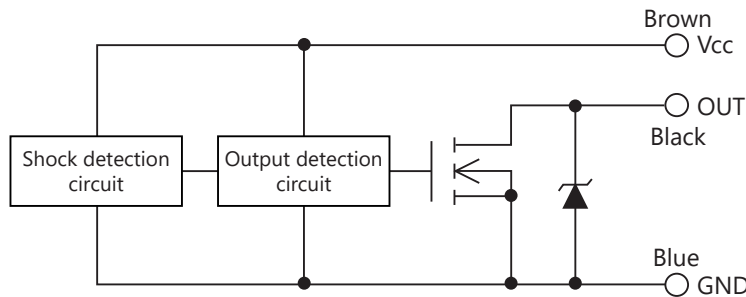
Model	GIW-1-5	GIW-1H-5	GIW-2-5	GIW-3-5	GIW-5-5	GIW-7-5	GIW-X3-5	GIW-15-5	GIW-20-5
	GIW-11-5	GIW-1H1-5	GIW-21-5	GIW-31-5	GIW-51-5	GIW-71-5	GIW-X31-5	GIW-151-5	GIW-201-5
30Hz	1 G $\pm$ 25 %	1.5 G $\pm$ 20 %	2 G $\pm$ 20 %	3 G $\pm$ 20 %	5 G $\pm$ 20 %	7 G $\pm$ 20 %	10 G $\pm$ 20 %	15 G $\pm$ 20 %	20 G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

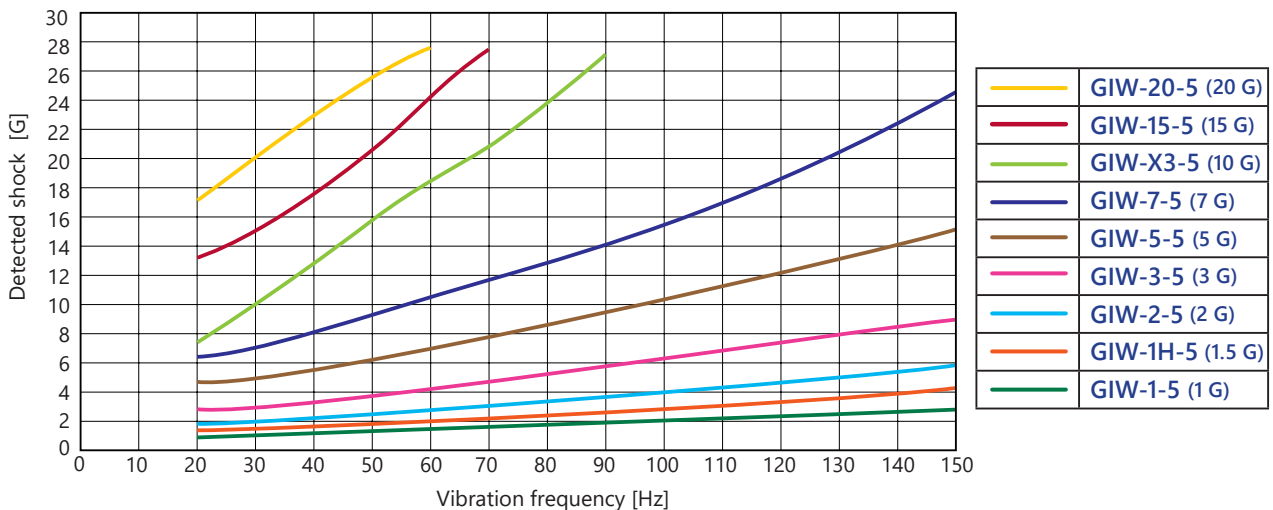


## Output Circuit



\*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. Always use plain washers to tighten the case and use 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.

\* It is possible to change to a case made of m-PPE material, which has excellent oil resistance and chemical resistance. We also accept changes to cable length, weatherproof case, and cable material. Please contact us.

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