

# Model GIW-F Shock (Acceleration) Sensor, Power Voltage 10 V to 30 V DC



Model List	Detection Sensitivity	Operation Configuration	Model List	Detection Sensitivity	Operation Configuration
GIW-F1	1 G	Normally open	GIW-F11	1 G	Normally closed
GIW-F2	2 G		GIW-F21	2 G	
GIW-F3	3 G		GIW-F31	3 G	
GIW-F5	5 G		GIW-F51	5 G	
GIW-F7	7 G		GIW-F71	7 G	
GIW-F10	10 G		GIW-F101	10 G	
GIW-F15	15 G		GIW-F151	15 G	
GIW-F20	20 G		GIW-F201	20 G	

## Application

- Device vibration monitoring
- Security sensors
- Vibration switches

## Features

- Excellent environmental resistance. The sensor unit is built to IP67 and can be used in an environment where it is exposed to dust or water. Waterproof connectors can be used.
- Single-axis impact sensor.
- Vibration frequency ranges from 10Hz to 1kHz.
- Detection is possible with consistent sensitivity at vibration frequencies from 50Hz to 1kHz.
- Even momentary impact can be detected.

## Rating/Performance

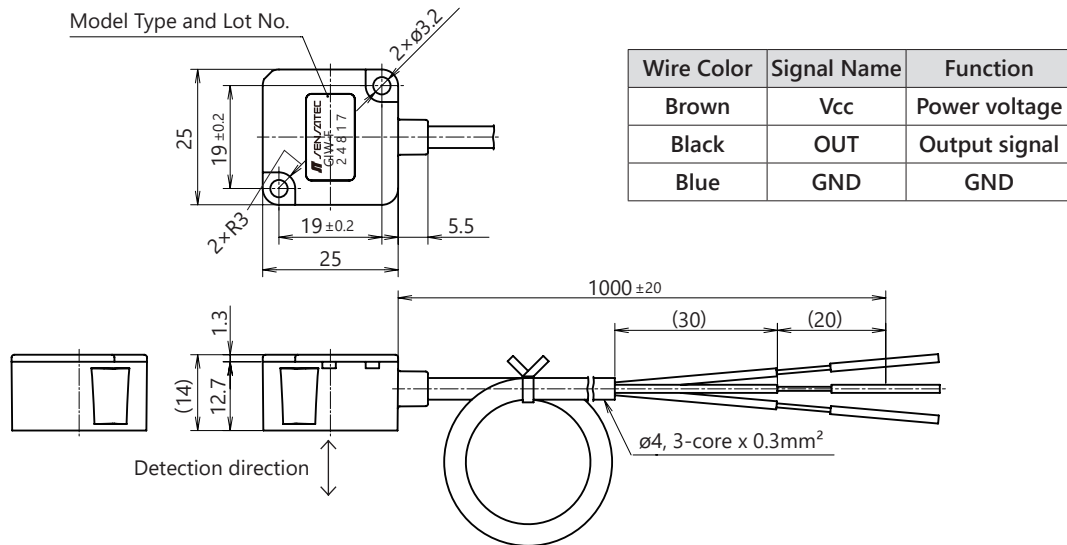
Model		GIW-F*	GIW-F*1
Power Voltage		10 V to 30 V DC	
Power Consumption		7 mA DC or less	
Output		N-channel MOSFET Open drain 30 V DC, 100 mA DC or less, (Output is available 800 ms from power ON)	
Output Residual Voltage		1 V DC or less (Load current 100 mA DC)	
Operation Status		Normally open (Output 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)	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		Back-flow protection diode and 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 <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		ø4, 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

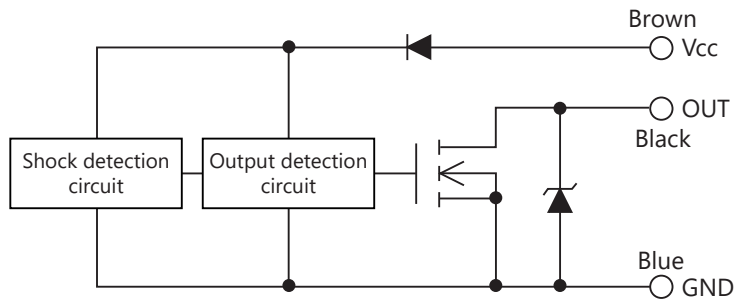
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	GIW-F11	GIW-F21	GIW-F31	GIW-F51	GIW-F71	GIW-F101	GIW-F151	GIW-F201
500Hz	1 G ± 20 %	2 G ± 20 %	3 G ± 20 %	5 G ± 20 %	7 G ± 20 %	10 G ± 20 %	15 G ± 20 %	20 G ± 20 %

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.

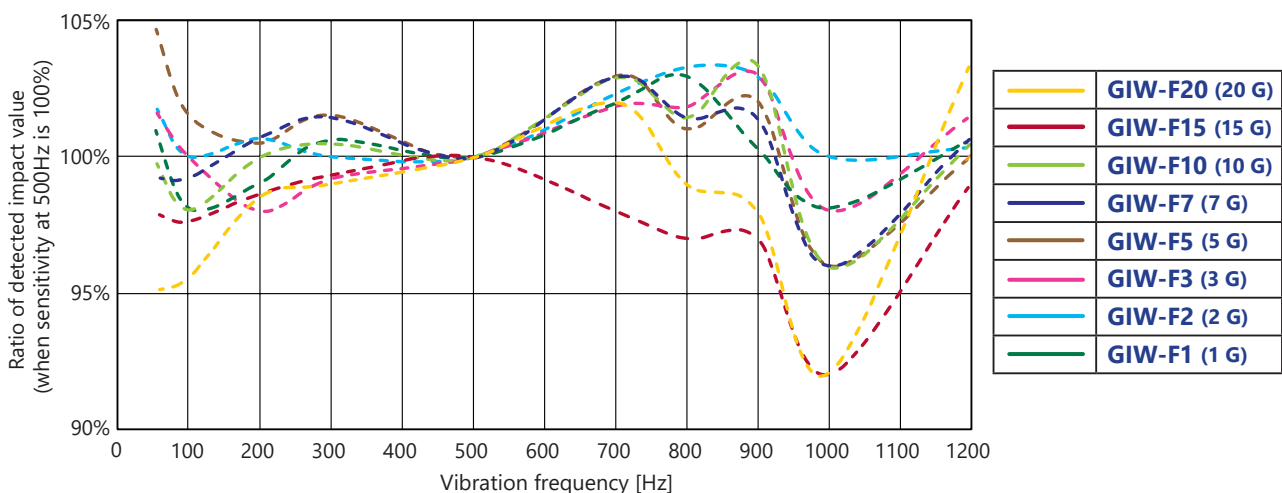
## Dimensions



## Output Circuit



## 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. 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.