Model MGS-4011V/4011M

Small Ultra-high Sensitivity Magnetic Sensor

Model List	Output Residual Voltage
MGS-4011V	5.6 V DC
MGS-4011M	1 V DC or less

Application

- Magnetic monitoring on magnetic recording media
- Monitoring of fraudulent operation using magnets in game devices

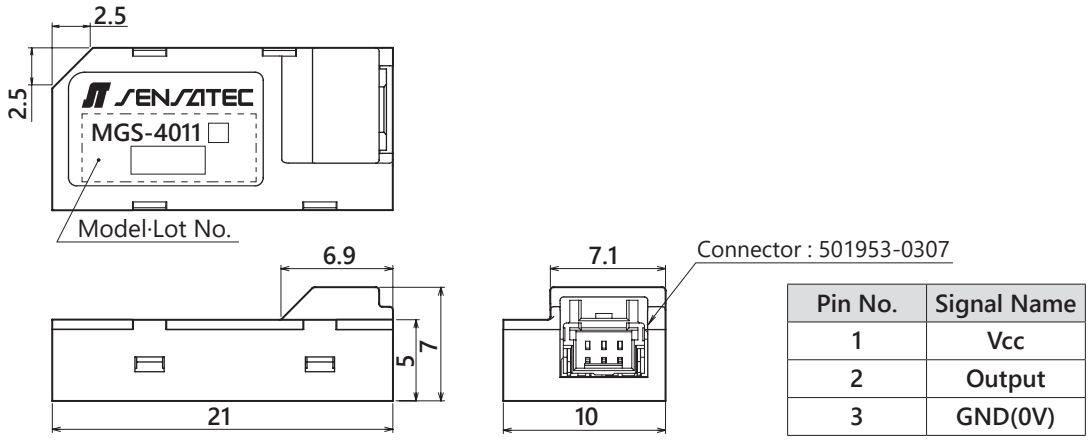
Features

- Small high-sensitivity sensor that can detect accurately weak magnetism thanks to its magnetism focusing mechanism.
- A locking connector securely prevents disconnection of connectors caused
- No poor contact or incorrect detection problems.
- Open collector normally closed type that makes it easy to monitor harness disconnection or poor contacts.
- The MGS-4011V has an output residual voltage of 5.6 V DC making it possible to monitor also inappropriations caused by short circuits or wiring disconnection.
- Both N-pole and S-pole can be detected.
- Tip detection and side detection possible.

Rating / Performance

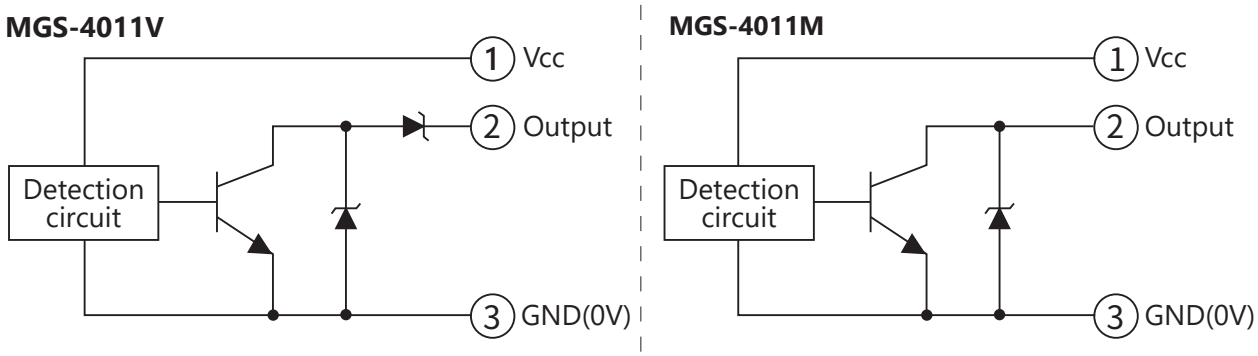
Model	MGS-4011V	MGS-4011M
Detection Sensitivity	400 μT (Average value with a neodymium magnet of 20 x 20 x t10)	
Detection Distance	Approx. 125 mm (Average value of tip detection, at 25ºC, with neodymium magnet of 20 x 20 x t10)	
Response Time	100 ms or less	
Power Supply Voltage	12 V DC (Operating voltage range: 10.8 V to 13.2 V DC)	
Current Consumption	At 12 V DC : 6 mA or less	
Output	NPN transistor open collector 30 V DC, 20 mA DC or less	NPN transistor open collector 30 V DC, 30 mA DC or less
Output Residual Voltage	Approx.5.6 V DC (at load current 2.5 mA)	1 V DC or less (at load current 30 mA)
Operation Status	Normally closed (Output OFF with magnetic field)	
Hysteresis	10% or less of the detection distance	
Circuit Protection	With output surge absorption Zener diode	
Temperature Range	-10 to 60 °C (-20 to 70 °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 the live part and case)	
Insulation Resistance	100 MΩ or more at 500 V DC megger (Between the live part and case)	
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	100 m/s^2 (Approx. 10 G) in X, Y and Z directions 10 times each (at power off)	
Protection	IP50	
Case Material	ABS resin	
Connector	Connector : 501953-0307 (3-pin) (from Molex Incorporated) [Connections] Housing : 501939-0330, Contact: 501334-0000 (from Molex Incorporated)	
Weight	Approx. 0.9g	

Outline Dimensions

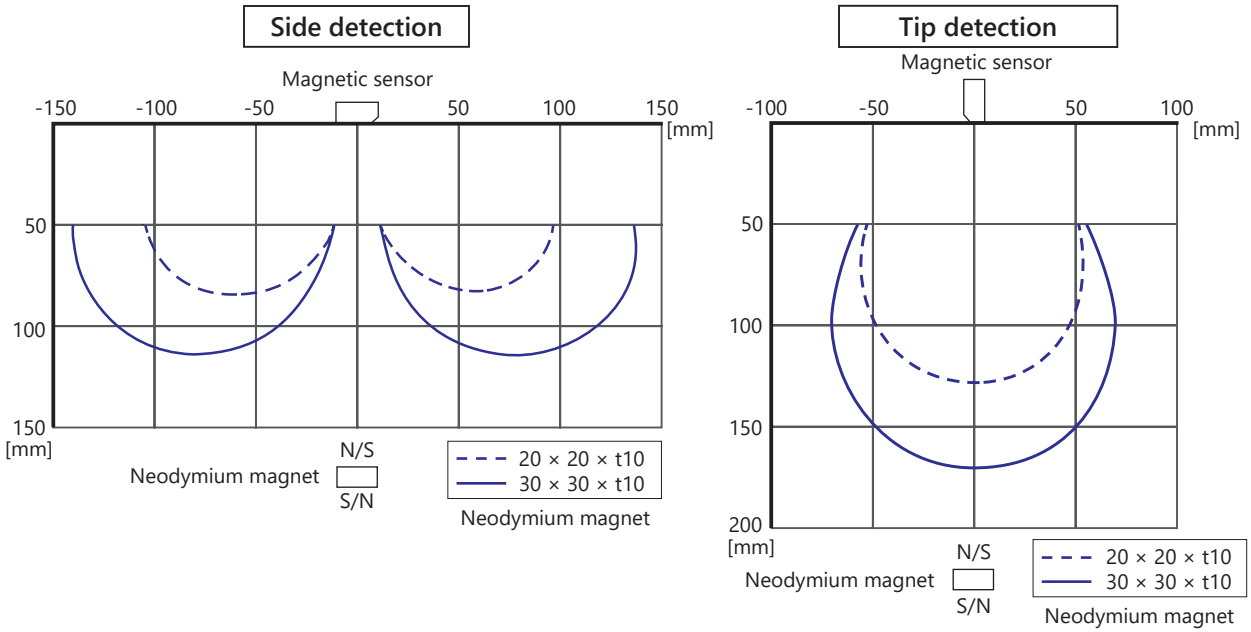


Pin No.	Signal Name
1	Vcc
2	Output
3	GND(0V)

Output Circuit



Reference Area Detection Diagram (Typical Example)



Precautions During Use

1. High-sensitivity detection thanks to its magnetism focusing mechanism.
2. Magnetic detection capacity is the same on the mounting side and the opposite side.
3. Extremely high-sensitivity sensor. Carefully check the generated and residual magnetism near the mounting location before using it.
4. The detection sensitivity varies depending on the magnet shape and magnetization level. Check also carefully the detection characteristics before using the sensor.
5. For other precautions, refer to “General Precautions” for magnetic sensors.