

Model **MGD-QW5013/QW2023** Both poles Detection High-sensitivity Magnetic Sensor



Model List	Detection Sensitivity
MGD-QW5013	500 μ T
MGD-QW2023	2,000 μ T

Application

- Magnet detection
- Automatic guided vehicles guidance, stop

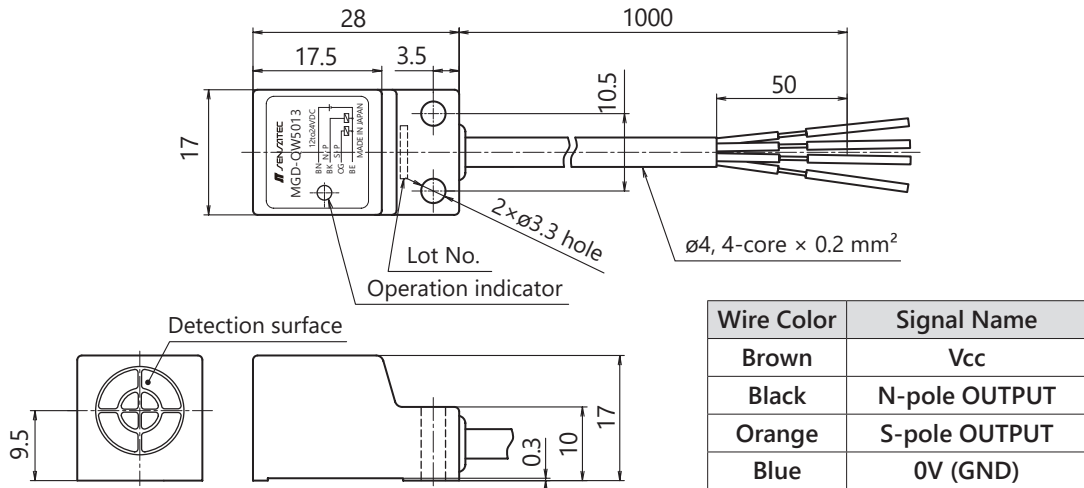
Features

- Uses a magnetism focusing mechanism that makes it particularly strong against ambient temperatures.
- The magnetism focusing mechanism is very useful as the sensor can detect at a long distance targets with a wide surface but a weak magnetic flux, like magnet tape.
- The detected poles (N-pole and S-pole) are output separately.
- Equipped with diodes to protect the sensor from reverse power polarity and output surges.
- The LEDs indicating the operation (red for N-pole detection and green for S-pole detection) make it easy to grasp the operation condition.

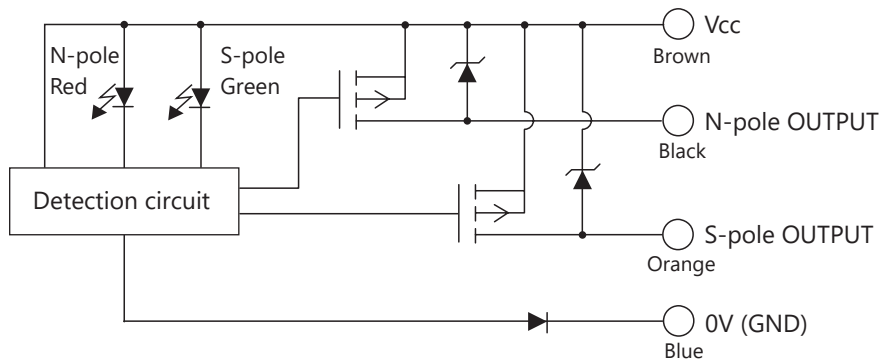
Rating / Performance

Model	MGD-QW5013	MGD-QW2023
Detection Surface	Front side detection	
Detection Sensitivity	500 μ T \pm 150 μ T (With a magnet tape of 30×30×t1.5mm)	2,000 μ T \pm 400 μ T (With a magnet tape of 30×30×t1.5mm)
Power Supply Voltage	12 V to 24 V DC (Operating voltage range: 10 V to 30 V DC), Ripple 1% or less	
Current Consumption	20 mA DC or less	
Output	Pch MOSFET Open drain 30 V DC, 50 mA DC or less	
Output Residual Voltage	1 V DC or less (Load current 50 mA DC)	
Operation Status	Normally open (Output ON with magnetic field)	
Operation Indicator	LED : Red with N-pole detection, Green with S-pole detection	
Response Time	300 μ s or less	
Hysteresis	75 μ T or less (With a magnet tape of 30 × 30 × t1.5 mm)	350 μ T or less (With a magnet tape of 30 × 30 × t1.5 mm)
Detection Polarity	N-pole and S-pole	
Reference Detection Distances	47 mm (*With MG50-1 series)	24 mm (*With MG40-1R5 series)
Operating Set Distance	5 to 33 mm (*With MG50-1 series)	5 to 17 mm (*With MG40-1R5 series)
Temperature Range	-10 to 60 °C (-20 to 65 °C storage temperature range)(Without dew condensation or icing)	
Humidity Range	95 % RH or less (95%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 M Ω or more at 500 V DC megger (Between the live part and case)	
Vibration Resistance	10 to 55 Hz, 1.5mm 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	IP67	
Case Material	ABS resin	
Cable	ϕ 4, 4-core round cord of 0.2 mm ² and 1 m in length (Oil and heat resistant vinyl)	
Weight	Approx. 32g	

Outline Dimensions

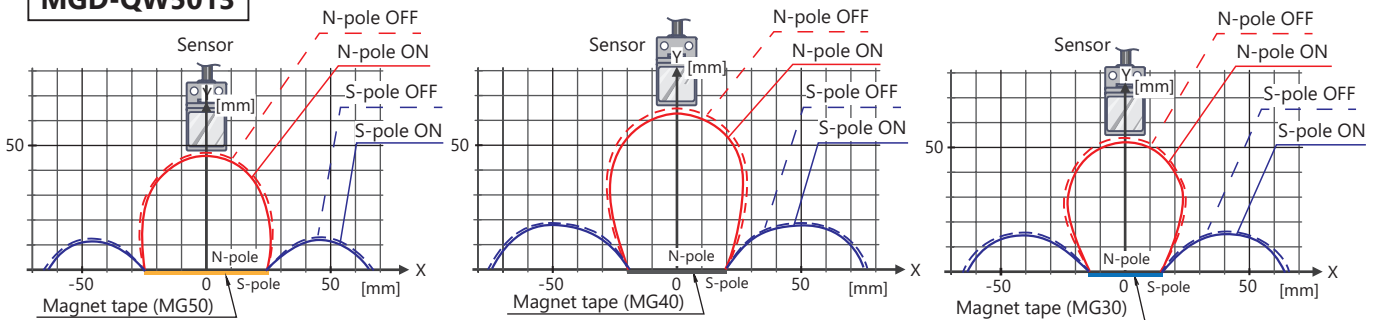


Output Circuit

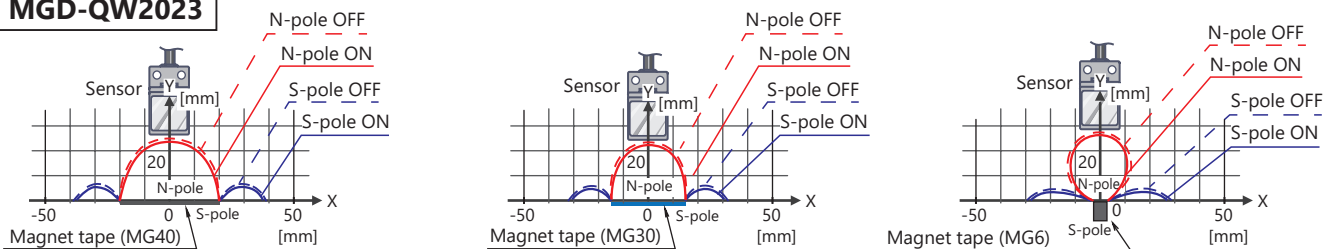


Precautions with Detection Area Diagram and Reverse Polarity Flux (Typical Example)

MGD-QW5013



MGD-QW2023



Precautions During Use

- Any magnetic object near the mounting position of this sensor could affect the magnetic flux density. Leave the sensor 40 mm or more away from the magnetic object.
- If there are magnetic objects with residual magnetism in the surroundings of this sensor, the detection distance will vary. Pay attention to the mounting position and orientation of the sensor.
- For other precautions, refer to "General Precautions" for magnetic sensors.