Model MS-Q53/Q54 Inductive Sensor

Normally open

Normally closed

Model List	Operation Status	Frequency
MS-Q53	Normally open	Standard
MS-Q53B		Different
MS-Q54	Normally closed	Standard
MS-Q54B		Different

Application

- Positioning of the processing machines
- Position detection of the the metal pallets and moving table

Features

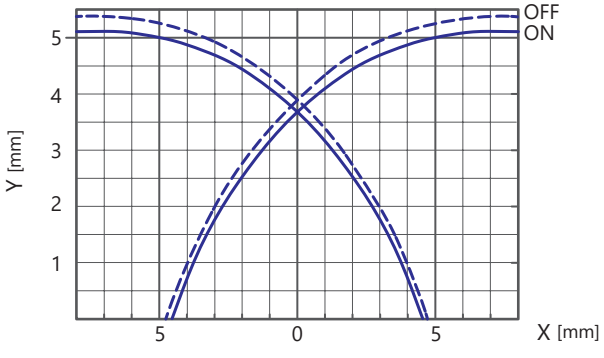
- Easy mounting: square and can be installed directly on metal surfaces.
- Molded type that can be used safely even in places where water may splash.
- Pch MOS FET open-drain output type small inductive sensor with a detection surface of 17 x 17 mm and a detection distance of 5 mm.

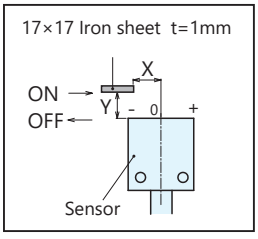
Rating / Performance

Model	MS-Q53	MS-Q54
Detection Surface	Front side detection	
Detection Distance	5 mm ± 10 %	
Hysteresis	20 % or less of the detection distance	
Set Distance	0 to 4 mm	
Standard Detection Target	Iron sheet of 17 × 17 mm and 1 mm in thickness	
Power Supply Voltage	12 V to 24 V DC (Operating voltage range : 10 V to 30 V DC)	
Current Consumption	5 mA DC or less	
Output	Pch MOSFET Open drain 30 V DC 200 mA DC or less	
Output Residual Voltage	1.5 V DC (Load current 200 mA DC and a 1-meter cord)	
Operation Status	Normally open (ON output when detecting)	Normally closed (OFF output when detecting)
Operation Indicator	Orange LED (Lit when the output is ON)	
Response Frequency	500 Hz or more	
Temperature Range	-25 to 80 °C (-25 to 80 °C storage temperature range)(Without dew condensation or icing)	
Humidity Range	35 to 95 % RH (35 to 95 % RH storage humidity range)(Without dew condensation)	
Dielectric Strength	1000 V AC for 1 minute (Between the live part and case)	
Insulation Resistance	50 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	500 m/s² (Approx. 50 G) in X, Y and Z directions 3 times each (at power off)	
Protection	IP67	
Case Material	ABS resin	
Cable	ø4, 3-core round cord of 0.3 mm² and insulation 1.5 mm and 1 m in length (Oil and heat resistant vinyl)	
Weight	Approx. 30 g	

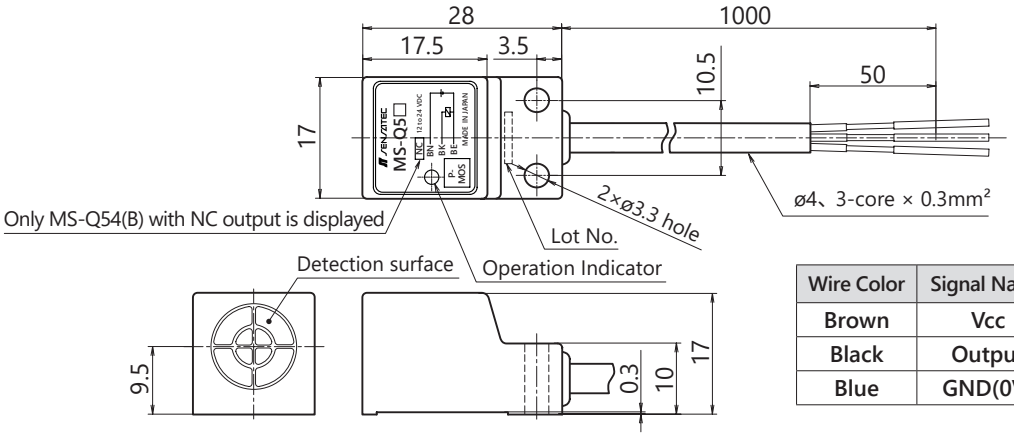
Characteristics Graph (Typical Example)

Detection range



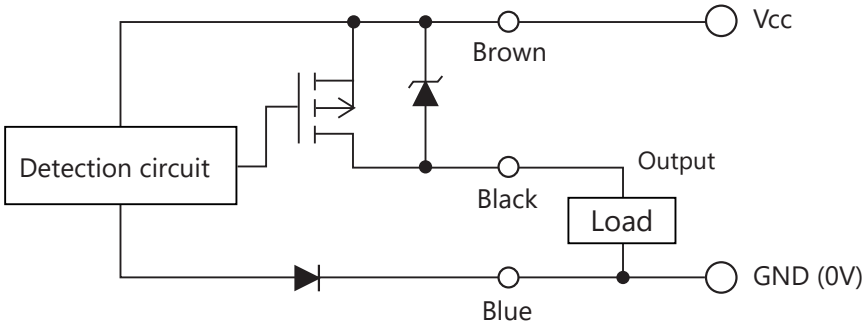


Outline Dimensions



Wire Color	Signal Name
Brown	Vcc
Black	Output
Blue	GND(0V)

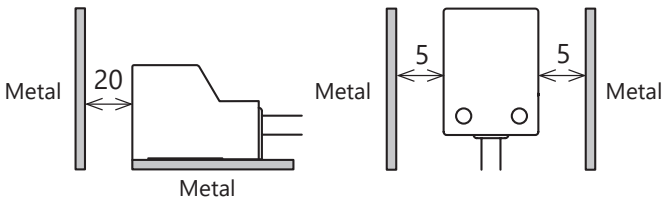
Output Circuit



Precautions During Use

Influence of surrounding metal

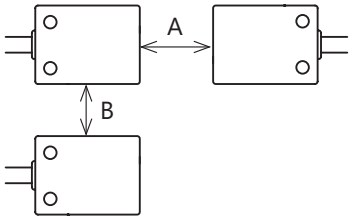
- When there is a metal around the sensor, use the sensor with the clearance in the distance shown below.



Unit : mm

Mutual interference

-When using multiple sensors side by side, separate them at least by the distances shown in the figure below to prevent reciprocal interference. (The different frequency model type has "B" at the end of its model designation)



	Same frequency	Different frequency
A	120	60
B	60	0

Unit : mm

Mounting

- Always use plain washers to tighten the case and use a torque of 0.59 N·cm (6 kgf·cm) or less.

* For other precautions, refer to "General Precautions" for inductive sensors.