

Model MDE-Q5 Inductive Detection Sensor for All Metals



Model List	Operation Status	Frequency
MDE-Q5	Normally open	Standard
MDE-Q5B		Different
MDE-Q51	Normally closed	Standard
MDE-Q51B		Different

Application

- Non-magnetic metals such as aluminum, copper, etc. can be detected at a long distance as well as magnetic metals such as steel.

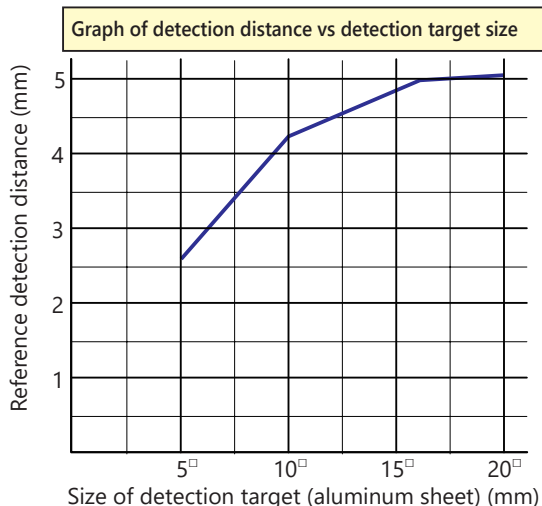
Features

- Mounting is easy due to the square form factor. can be installed directly on metal surfaces.
- Safely available even in the place where water may splash thanks to its molded type.
- Small inductive sensor with a detection surface of 17 × 17 mm and a detection distance of 5 mm (Front side detection type)

Rating/Performance

Model	MDE-Q5	MDE-Q51
Detection Surface	Front side detection	
Detection Distance	5 mm ± 10 %	
Hysteresis	15 % or less of the detection distance	
Set Distance	0 to 4 mm	
Standard Detection Object	Aluminum of 17 × 17 mm, sheet thickness : 1 mm	
Power Supply Voltage	12 V to 24 V DC (Operating voltage range : 10.8 V to 26.4 V DC)	
Current Consumption	15 mA DC or less	
Output	Nch MOS FET open drain 30 V DC, 100 mA DC or less	
Output Residual Voltage	0.5 V DC or less (Load current 100 mA DC and a 1-meter cord)	
Operation Status	Normally open (ON output when detecting)	Normally closed (OFF output when detecting)
Operation Indicator	Red LED (Lit when the output is ON)	
Response Frequency	500 Hz or more	
Temperature Range	-10 to 60 °C (-10 to 60 °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/s ² (Approx. 50 G) in X, Y and Z directions 3 times each (at power off)	
Protection	IP67	
Case Material	ABS resin (Blue)	
Cable	ø4, 3-core round cord of 0.3 mm ² and insulation 1.1 mm and 1 m in length (Oil and heat resistant vinyl)	
Weight	Approx. 30 g	

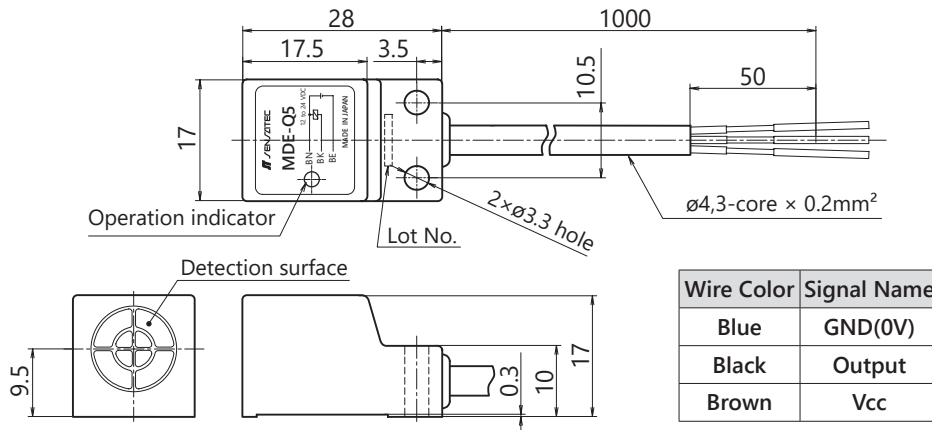
Change in Detection Distance Depending (Typical)



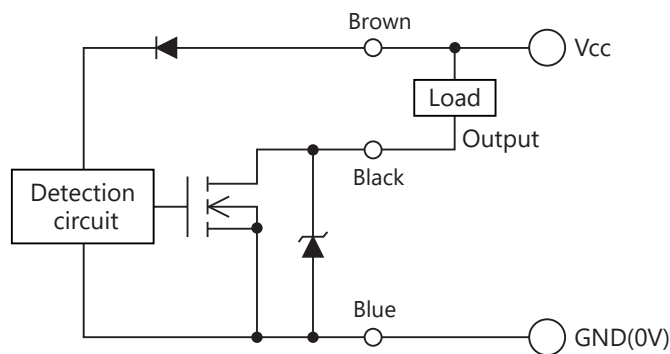
Change in detection distance depending on the detection object material

Material	Sensitivity ratio (%)
Aluminum	100
Iron	93
Copper	100
Brass	100
SUS304	99
SUS430	88

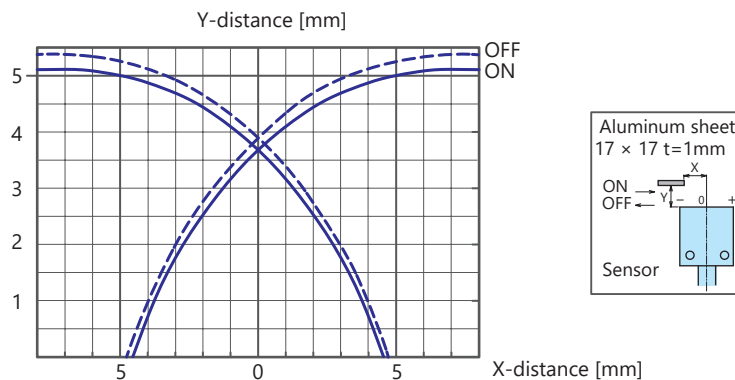
Outline Dimensions



Output Circuit



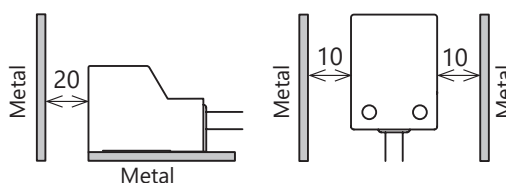
Characteristics Graph (Typical Example)



Precautions During Use

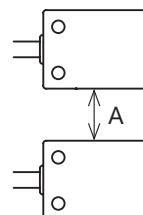
Influence of surrounding metal

If there are metals present near the inductive sensor, keep them away from and beneath the plane of the sensor detection surface at a minimum of the values specified in the figure below.



Mutual interference

When a number identical sensors are used, observe the minimum values shown in the figure below to prevent mutual interference. (The different frequency model type has "B" at the end of its model designation.)



	Same Frequency	Different Frequency
A	60 mm	10 mm

Mounting

- Always use plain washers to tighten the case and use a torque of 0.59 N·m (6kgf·cm) or less.
* For other precautions, refer to "General Precautions" for inductive sensors.