

Model MDS-F4-5V/F4U-5V Inductive Sensor



Model List

Model	Operation Status	Detection Surface	Frequency
MDS-F4-5V	Normally open	Front side	Standard
MDS-F4B-5V			Different
MDS-F4U-5V		Upper side	Standard
MDS-F4UB-5V	Different		
MDS-F4I-5V	Normally closed	Front side	Standard
MDS-F4IB-5V			Different
MDS-F4U1-5V		Upper side	Standard
MDS-F4U1B-5V			Different

Application

- Positioning of the processing machines
- Position detection of the moving table and metal pallets
- Metal detection in a narrow space

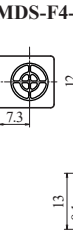
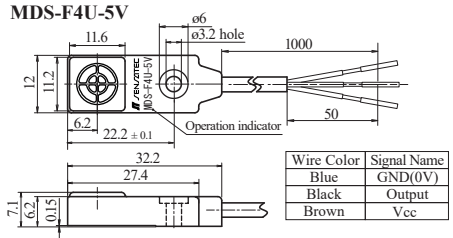
Features

- Small inductive sensor with a detection surface of 12 mm and a detection distance of 4 mm.
- Simple mounting with a single M3 screw or the mounting bracket that saves space (Sold separately).
- Molded type that can be used safely even in places where water may splash.

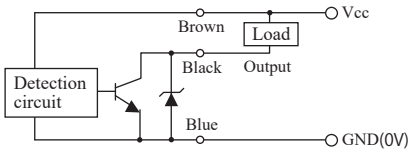
Rating / Performance

Model	MDS-F4-5V	MDS-F4I-5V	MDS-F4U-5V	MDS-F4U1-5V
Detection Surface	Front side detection		Upper side detection	
Detection Distance	4 mm ± 0.5 mm			
Hysteresis	20 % or less of the detection distance			
Set Distance	0 to 3.0 mm			
Standard Detection Target	Iron sheet of 20 × 20 mm and 1 mm in thickness			
Power Supply Voltage	5 V DC (Operating voltage range : 4.5 V to 5.5 V DC)			
Current Consumption	10 mA DC or less			
Output	NPN transistor open collector 30 V DC, 100 mA DC or less			
Output Residual Voltage	1 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)	Normally open (ON output when detecting)	Normally closed (OFF output when detecting)
Operation Indicator	Red LED (Lit when the output is ON)			
Response Frequency	800 Hz or more			
Temperature Range	-25 to 70 °C (-25 to 70 °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	1000m/s ² (Approx. 100 G) in X, Y and Z directions 10 times each (at power off)			
Protection	IP67			
Case Material	Polyarylate			
Cable	ø3, 3-core round cord of 0.15 mm ² and insulation 0.8 mm and 1 m in length (Oil and heat resistant vinyl)			
Weight	Approx. 18 g			
Options (Sold Separately)	Mounting bracket : PMS-F4S			

Outline Dimensions

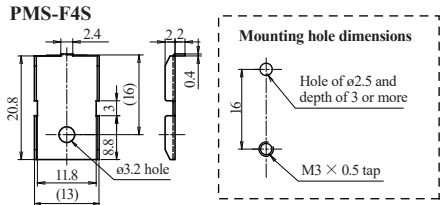


Output Circuit



*Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.

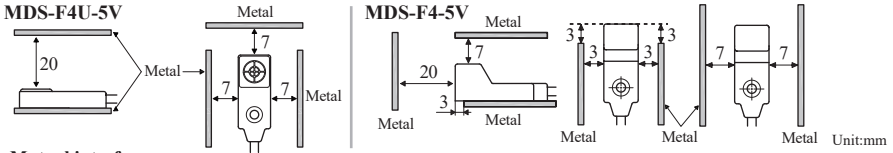
Mounting Bracket (Sold Separately)



Precautions During Use

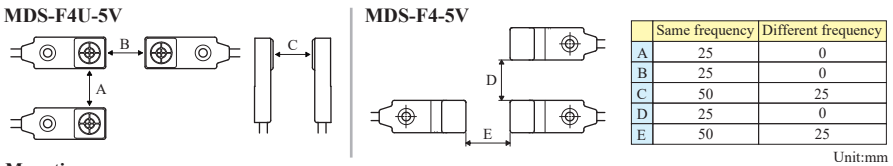
- Influence of surrounding metal

If there are metal objects around the inductive sensor, leave at least the space indicated in the figure below between them and the sensor.



- Mutual interference

If you use a number of the same product, separate them at least by the distances shown in the figure below to prevent reciprocal interference. (Sensors with a different frequency are indicated with a B after the model name.)

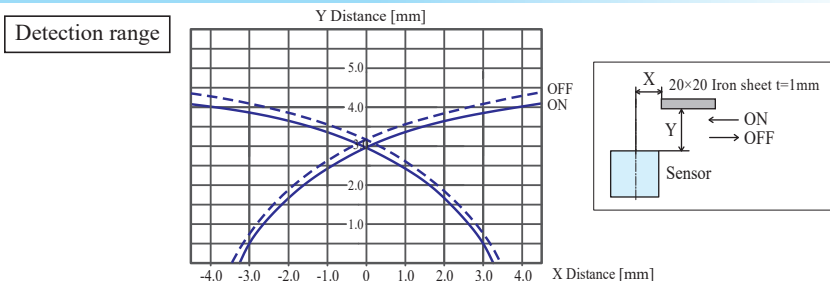


-Mounting

Always use plain washers to tighten the case and use a torque of 0.5 N·m or less.

- For other precautions during use, refer to the General Precautions for inductive sensors.

Characteristics Graph (Typical Example)



*For a detailed specification of the other, please refer to specifications.