

Model MDS-F5U-5V Inductive Sensor



Model List

Model	Operation status	Frequency
MDS-F5U-5V	Normally open	Standard
MDS-F5UB-5V		Different
MDS-F5U1-5V	Normally closed	Standard
MDS-F5U1B-5V		Different

Application

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

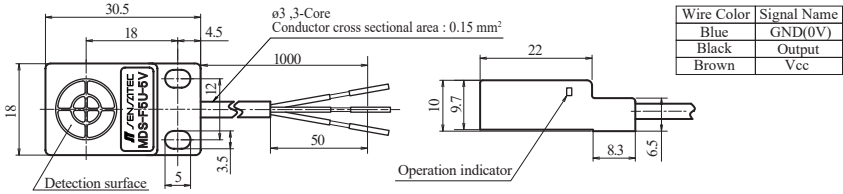
Features

- Small flat inductive sensor with a detection surface of 18 mm and a detection distance of 5 mm (Upper surface detection type).
- Molded type that can be used safely even in places where water may splash.

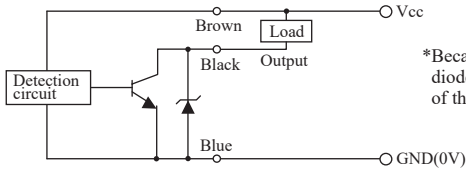
Rating / Performance

Model	MDS-F5U-5V	MDS-F5U1-5V
Detection Surface	Upper side detection	
Detection Distance	5 mm ± 10 %	
Hysteresis	20 % or less of the detection distance	
Set Distance	0 to 4.0 mm	
Standard Detection Target	Iron sheet of 18 × 18 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	1V 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	-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	500 m/s ² (Approx. 50 G) in X, Y and Z directions 3 times each (at power off)	
Protection	IP67	
Case Material	Polyarylate	
Cable	ø3, 3-core round cord of 0.15 mm ² and insulation 0.9 mm and 1 m in length (Oil and heat resistant vinyl)	
Weight	Approx. 20 g	

Outline Dimensions



Output Circuit

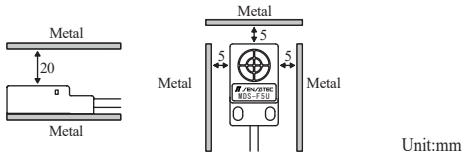


*Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.

Precautions During Use

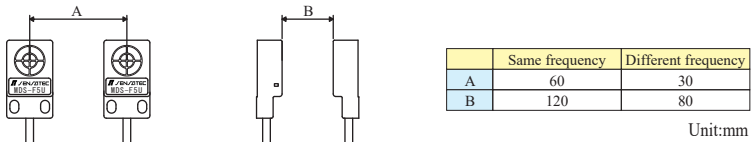
- About The Influence of Surrounding Metal

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



- Reciprocal 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.)



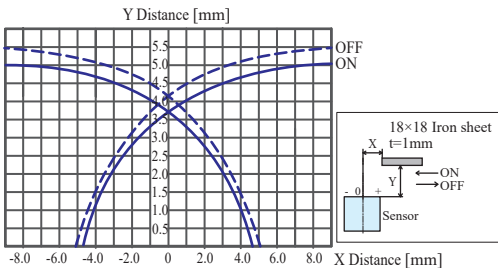
- Mounting

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

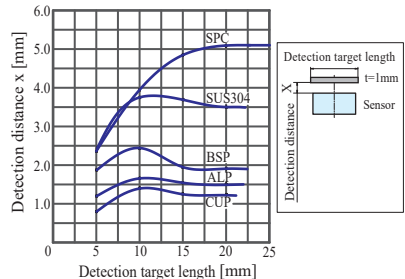
- For other precautions during use, refer to the General Precautions for inductive sensors.

Characteristics Graph (Typical Example)

Detection range



Material and size - Detection distance characteristics



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