

Model MDS-F2R5/MDS-F2R5U Small Proximity Sensor



MDS-F2R5

MDS-F2R5U

Model List	Operation Configuration	Detection Surface	Frequency
MDS-F2R5	Normally open	Front side	Standard
MDS-F2R5B			Different
MDS-F2R5U		Upper side	Standard
MDS-F2R5UB			Different
MDS-F2R51	Normally closed	Front side	Standard
MDS-F2R51B			Different
MDS-F2R5U1		Upper side	Standard
MDS-F2R5U1B			Different

Application

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

Features

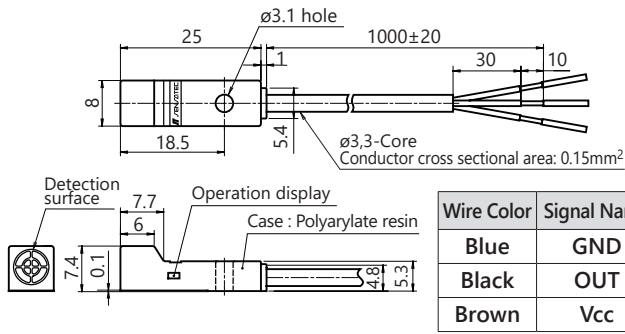
- Small proximity sensor with a detection surface of 8 mm and a detection distance of 2.5 mm.
- Simple installation with a single M3 screw or the mounting bracket that saves space (sold separately).
- Safely available even in the place where water may splash thanks to its molded type.

Rating/Performance

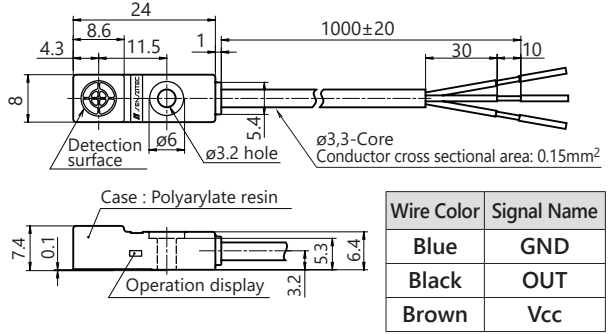
Model	MDS-F2R5	MDS-F2R51	MDS-F2R5U	MDS-F2R5U1
Detection Surface	Front side detection		Upper side detection	
Detection Distance	2.5 mm ± 20 %			
Standard Detection Target	Iron plate of 15 x 15 mm and 1 mm in thickness			
Hysteresis	20 % or less of the detection distance			
Measurement Distance	0 to 1.8 mm			
Power Voltage	12 V to 24 V DC (Operating voltage range: 10 V to 30 V DC)			
Power 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 with detection target)	Normally closed (Off output with detection target)	Normally open (On output with detection target)	Normally closed (Off output with detection target)
Operation Indication	Red LED (lit when On output)			
Response Frequency	1 kHz or more			
Temperature Range	-25 to 70 °C (-25 to 70 °C during storage)(Without dew condensation or freezing)			
Humidity Range	35 to 95 % RH (35 to 95 % RH during storage)(Without dew condensation)			
Breakdown Voltage	1000 V AC, 50/60 Hz for 1 min (Between live parts and the case)			
Insulation Resistance	50 MΩ or more, at 500 V DC megger (Between live parts and the case)			
Vibration Resistance	Durability: 10 to 55 Hz, Double amplitude: 1.5 mm in X-, Y-, and Z-direction, each 2 hours (Device not powered)			
Shock Resistance	Durability: 1000 m/s ² (Approx. 100 G) in X-, Y-, and Z-direction, each 10 times (Device not powered)			
Ingress Protection	IP67			
Case Material	Polyarylate			
Cable	ø3, 3-core round cord of 0.15 mm ² and 1 m in length (oil and heat resistant)			
Weight	Approx. 15 g			
Options (Sold Separately)	Mounting bracket : PMS-F2R5S			

Dimensions

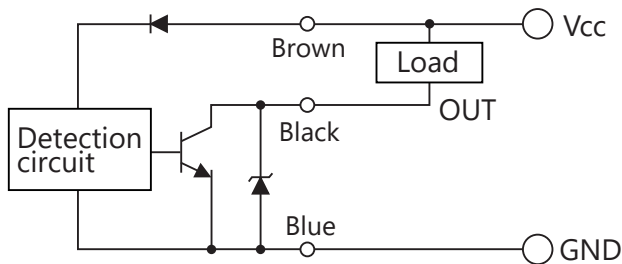
MDS-F2R5



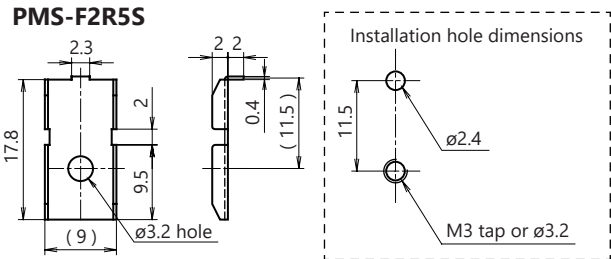
MDS-F2R5U



Output Circuit

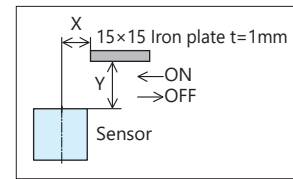
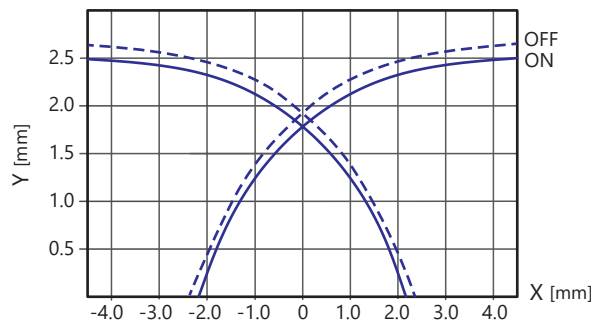


Mounting bracket (sold separately)



Characteristics graph (typical example)

Detection range

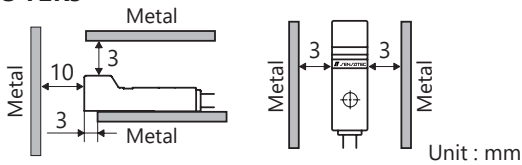


Precautions During Use

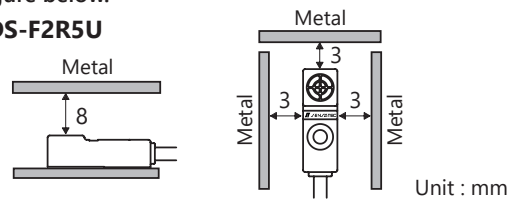
Influence of surrounding metal

- If there are metals present near the proximity 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.

MDS-F2R5



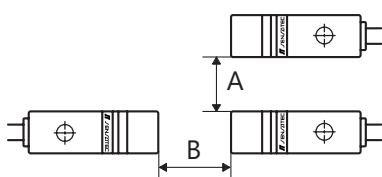
MDS-F2R5U



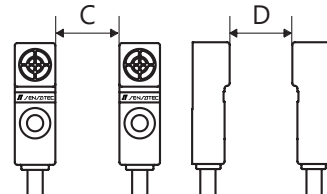
Mutual interference

- If you use two or more of the same product, separate them at least by the distances shown in the figure below to prevent reciprocal interference.

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MDS-F2R5U



	Same frequency	Different frequency
A	15 mm	*0 mm
B	40 mm	25 mm
C	20 mm	*0 mm
D	40 mm	15 mm

*Mark values possible for up to two devices.

Installation

- Tighten the case with a torque of 0.5 N·m or less.

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