

Model MDA-F2R5U Proximity Displacement Sensor



□Model List

Standard frequency	MDA-F2R5U
Different frequency	MDA-F2R5UB

Application

- Displacement measurement
- Pressure, the pressure measurement
- Amplitude measurement
- Detects the number of layers or the thickness difference of 2 bills or pieces of paper

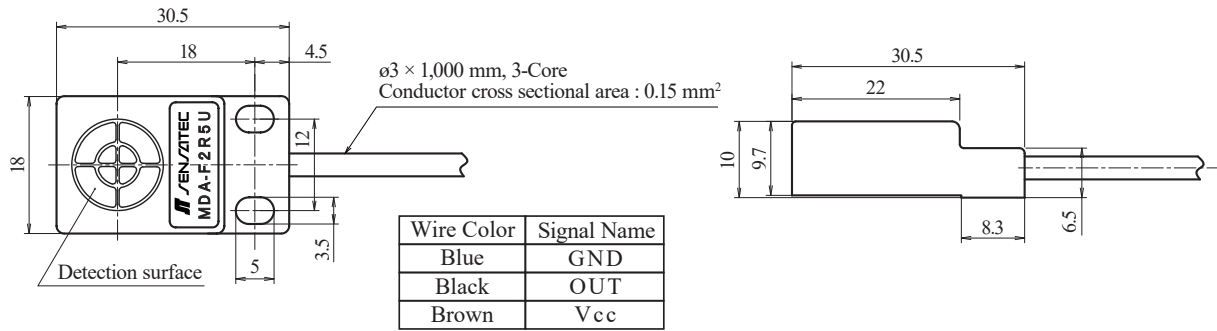
Characteristics

- Small, flat, and economical linear-output proximity displacement sensor.
- Molded type that can be used safely even in places where water or oil may splash.
- No mechanical parts to increase the lifespan.
- Small flat type for an easy installation even in shallow and narrow places.
- Amplifier unit, etc. is not required.

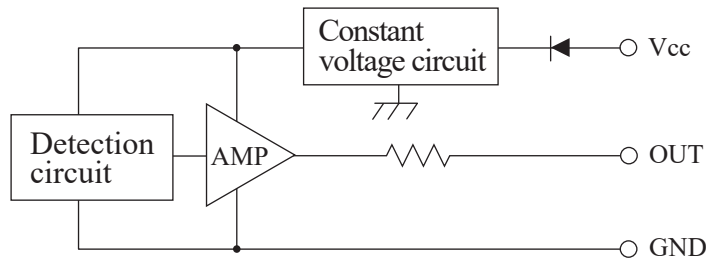
Rating / Performance

Model	MDA-F2R5U
Detection Surface	Upper side detection
Detection Distance	0.5 to 2.5 mm
Standard Detection Target	Steel plate of 18 × 18 mm and 1 mm in thickness
Power Supply Voltage	12 V to 24 V DC (Operating voltage range : 10.2 V to 27.6 V DC)
Power Consumption	10 mA DC or less
Output	Output resistance 1 kΩ, linear output 1 V with standard point 0.5 mm ±0.2 mm 4 V ±0.1 V with standard point +2 mm output with no detection target, max output voltage 7.4 V
Linearity	±2% FS or less (At 25 °C)
Response Time	3 ms or less
Operating Temperature Range	-10 to 60 °C (-20 to 60 °C during storage)(Without dew condensation or freezing)
Operating Humidity Range	35 to 85% RH (35 to 95% RH during storage)(Without dew condensation)
Withstand Voltage	1 min at 500 V AC 50/60 Hz (Between the live part and case)
Insulation Resistance	50 MΩ or more measured with an ohmmeter at 500 V DC (Between the live part and case)
Vibration Resistance	Durability : 2 hours in each X, Y, Z direction at 10 to 55 Hz and with peak-to-peak amplitude of 1.5 mm (At power off)
Shock Resistance	Durability : 3 times at 200 m/s ² (approx. 20 G) in each X, Y, Z direction (At power off)
Protection Rating	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)
Weight	Approx. 20 g

External Dimensions Diagram



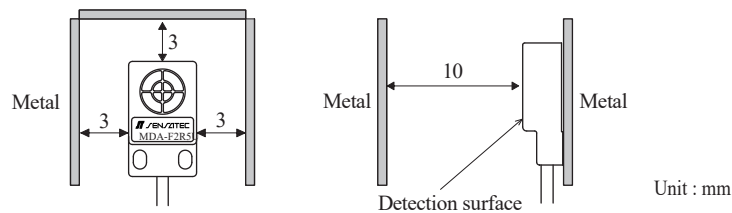
Output Circuit



Usage Precautions

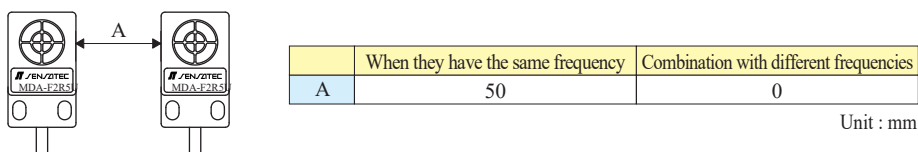
- Influence of surrounding metal

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



- 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. (Sensors with a different frequency are indicated with a B after the model name.)



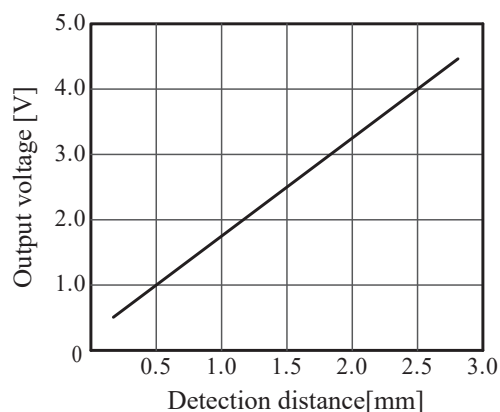
- Installation

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

- See proximity sensor general usage precautions for other precautions.

Characteristics Graph (Typical Example)

Detection distance - Output voltage characteristics



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