



### □Model list

	Standard frequency	Different frequency
Normally open	MDS-F5U	MDS-F5UB
Normally closed	MDS-F5U1	MDS-F5U1B

### Application

- Positioning of the processing machines
- Position detection of the moving table and metal pallets
- There is no space, the magnetic detection of a narrow place

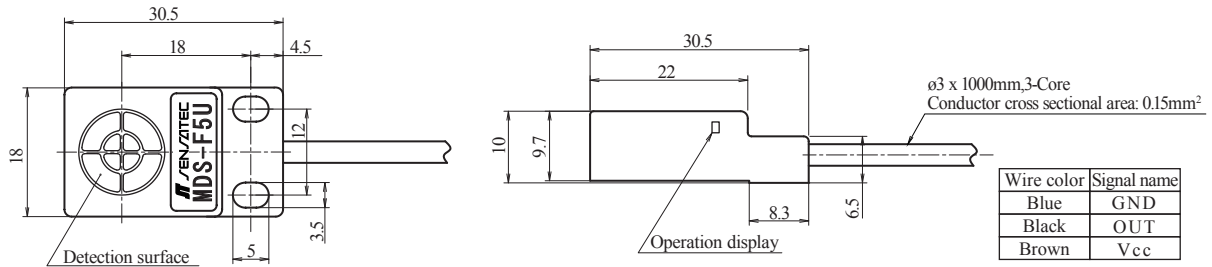
### Characteristics

- Small flat proximity 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.

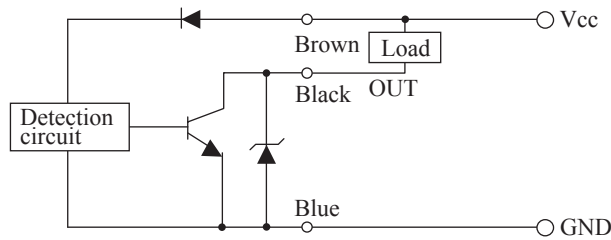
### Rating and performance

Model name	MDS-F5U	MDS-F5U1
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 plate of 18 × 18 mm and 1 mm in thickness	
Power supply voltage	12 V to 24 V DC (Operating voltage range: 10 V to 30 V DC)	
Power consumption	DC 10 mA or less	
Output	DC 30 V DC 100 mA or less NPN transistor open collector	
Output residual voltage	DC 1 V or less (when load current is DC 100 mA and a 1-meter cord)	
Operation configuration	Normally open (On output with detection target)	Normally closed (Off output with detection target)
Operation display	Red LED (lit when On output)	
Response frequency	500 Hz or more	
Operating temperature range	-25 to 70 °C (-25 to 70 °C during storage)	
Operating humidity range	35 to 95% RH (35 to 95% RH during storage)	
Withstand voltage	1 min at AC 1000 V 50/60 Hz (between the live part and case)	
Insulation resistance	50 MΩ or more measured with an ohmmeter at DC 500 V (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 500 m/s <sup>2</sup> (approx. 50 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 <sup>2</sup> and 1 m in length (oil and heat resistant)	
Weight	Approx. 20 g	

## External dimensions diagram



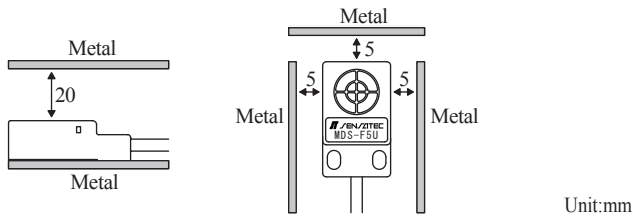
## Output circuit



## Usage precautions

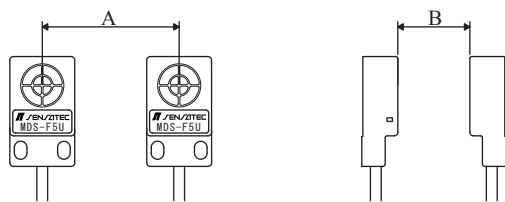
### - Influence of surrounding metal

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.)



	When they have the same frequency	Combination with different frequencies
A	60	30
B	120	80

Unit:mm

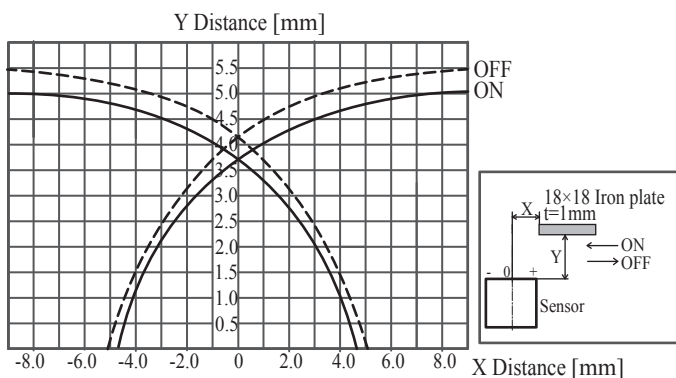
### - Installation

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

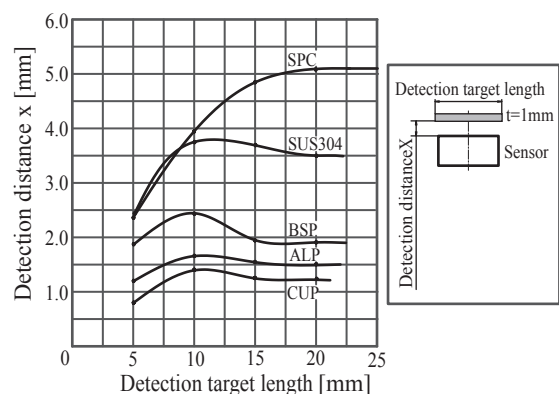
- See proximity sensor general usage precautions for other precautions.

## Characteristics graph (typical example)

Detection area diagram



Material and size - Detection distance characteristics



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