



□Model list

	Standard frequency	Different frequency
Normally open	MDS-HQ5	MDS-HQ5B
Normally closed	MDS-HQ51	MDS-HQ51B

**Application**

- Positioning of the processing machines
- Position detection of the moving table and metal pallets
- As it can be used to drive voltage DC 48 V (or less) following electric forklift, refrigeration car, freezer car, etc

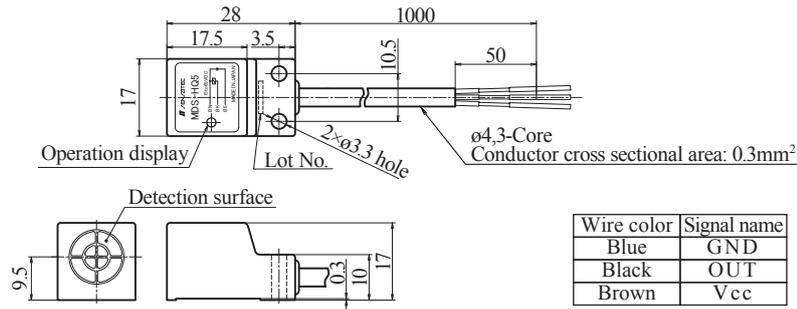
**Characteristics**

- Easy installation: square and can be installed directly on metal surfaces.
- It can be used in a wide range of supply voltage DC 15 V to 65 V.
- Molded type that can be used safely even in places where water may splash.
- Small proximity sensor with a detection surface of 17 × 17 mm and a detection distance of 5 mm (front side detection type)
- Because of the high power supply voltage specification, it can also be used in the battery voltage DC 48 V.

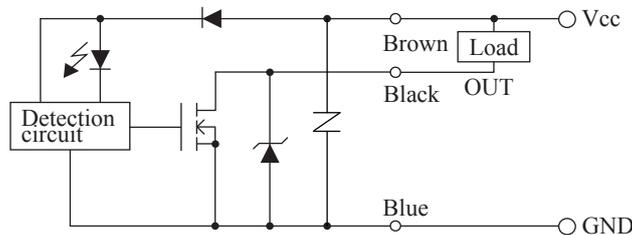
**Rating and performance**

Model name	MDS-HQ5	MDS-HQ51
Detection surface	Front 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 17 × 17 mm and 1 mm in thickness	
Power supply voltage	24 V to 48 V DC (Operating voltage range: 15 V to 65 V DC)	
Power consumption	DC 10 mA or less	
Output	DC 65 V DC 200 mA or less Nch MOSFET open drain	
Output residual voltage	DC 0.5 V or less (when load current is DC 200 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	ABS	
Cable	ø4, 3-core round cord of 0.3 mm <sup>2</sup> and 1 m in length (oil and heat resistant)	
Weight	Approx. 30 g	

## External dimensions diagram



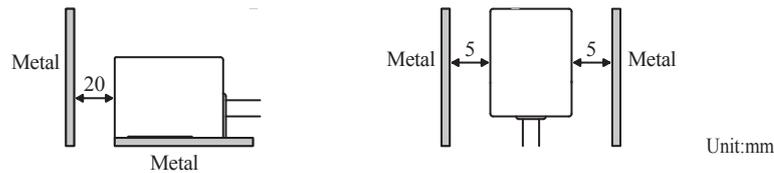
## Output circuit



## Usage precautions

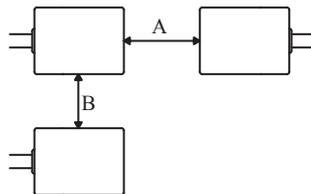
### - Influence of surrounding metal

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	120	60
B	60	0

Unit:mm

### - Installation

Tighten the case with a torque of 0.59 N·cm (6 kgf·cm) or less.

- See proximity sensor general usage precautions for other precautions.

## Characteristics graph (typical example)

Detection area diagram

