

# Model MDS-G4/G4C High Speed Response Groove(U) Type Proximity Sensor



**MDS-G4**  
(Cable type)



**MDS-G4C**  
(Connector type)

Model List	Connection
<b>MDS-G4</b>	Cable
<b>MDS-G4C</b>	Connector

## Application

- Detection of coins for ATM and vending machines
- Detection of tokens of amusement equipment
- Rotational speed detection using a metal plate gear

## Features

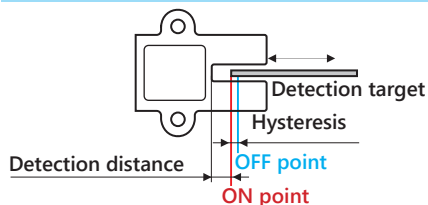
- The proximity sensor has an open collector output for simple operation.
- Detects the passage of all types of metals, medals and coins.
- Perfect to detect the number of rotations of metal sheet slitters or gears.
- Supports high-speed detection.
- The unit is equipped with a LED display for clear indication of operation status.

## Rating/Performance

Model	MDS-G4	MDS-G4C
Detection Groove Width	4 mm	
Detection Distance	* 6 mm ± 10 % (Distance between the proximity target and the bottom of the sensor groove)	
Standard Detection Target	Steel plate of 15 × 15 mm and 1 mm in thickness	
Hysteresis	*0.8 mm or less	
Power Voltage	12 V to 24 V DC (Operating voltage range : 10 V to 30 V DC)	
Power Consumption	6 mA DC or less	
Output	NPN transistor open collector 30 V DC, 50 mA DC or less	
Output Residual Voltage	1 V DC or less (Load current 50 mA DC)	
Operation Status	Normally open (On output with detection target)	
Operation Indication	Red LED (Lit when On output)	
Response Frequency	5 kHz or more (Detector width : 5 mm or more, Width of tooth space : 5 mm or more, Thickness : 1 mm)	
Temperature Range	-10 to 60 °C (-20 to 65 °C during storage)(Without dew condensation or freezing)	
Humidity Range	85 % RH or less (85 % RH or less during storage)(without dew condensation)	
Breakdown Voltage	500 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 : 500 m/s <sup>2</sup> (Approx. 50 G) in X-, Y-, and Z-direction, each 10 times (Device not powered)	
Ingress Protection	IP67	IP50
Case Material	Polyarylate	
Cable	Cable : ø4, 3-core round cord of 0.15 mm <sup>2</sup> and insulation 1.1 mm and 1 m in length (Oil and heat resistant)	
Connector		Connector : S3B-ZR-SM2-TF (3-pin) (from J.S.T. Mfg. Co., Ltd.), [Connections] Housing: ZHR-3, Contact : SZH-002T-P0.5 (from J.S.T. Mfg. Co., Ltd.)
Weight	Approx. 32 g	Approx. 9 g
Options (Sold Separately)		SZH-3-300

\*Detection distance: See Detection distance conditions on the next item.

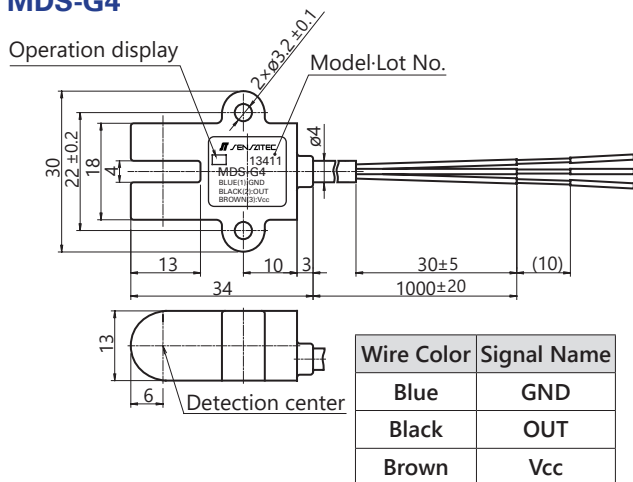
## Detection Distance Conditions



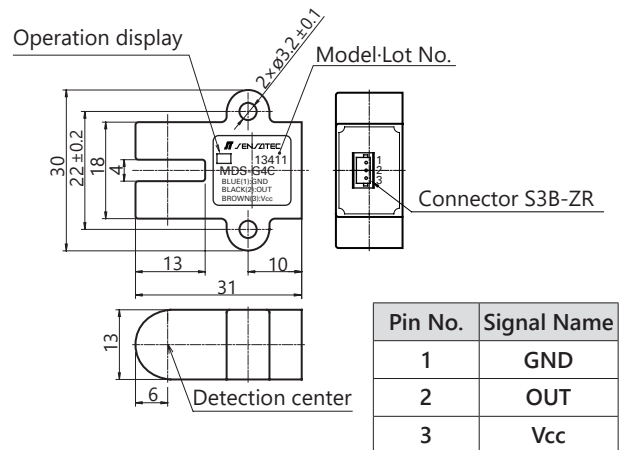
- Insert the standard detection target at the center of the detection sensor groove to measure.
- Standard detection target : Steel plate of 15 × 15 mm and 1 mm in thickness
- Detection distance: Distance from the sensor ON point to the groove bottom surface
- Hysteresis: Distance between the ON point and the OFF point

## Dimensions

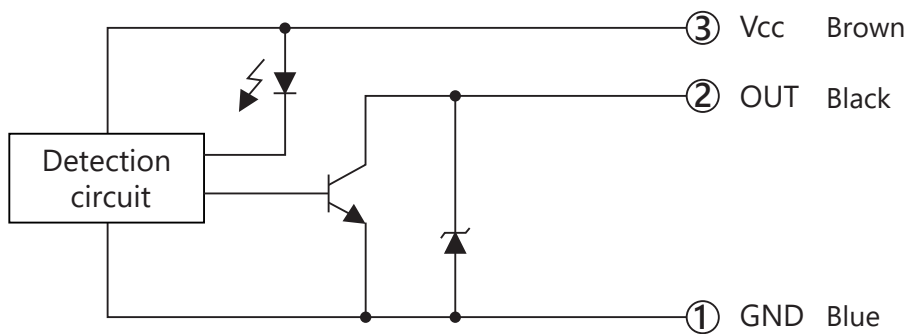
### MDS-G4



### MDS-G4C



## Output Circuit

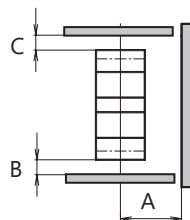


\*Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.

## Precautions During Use

### Influence of surrounding metal

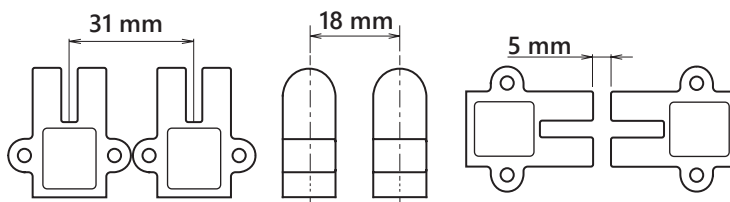
- If there are metal objects around the proximity sensor, leave at least the space indicated in the figure below between them and the sensor.



Distance from Surrounding Metal Objects	
A	6.5 mm or more
B	Can enter into contact
C	Can enter into contact

### 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.



## Installation

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

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