



□Model List

Normally open	CCS-HF10
Normally closed	CCS-HF101

Application

- Detection of grain
- Detection of the liquid in the paper pack
- Detection of insulating materials
- As it can be used to drive voltage 48 V DC (or less) following electric forklift, refrigeration car, freezer car, etc

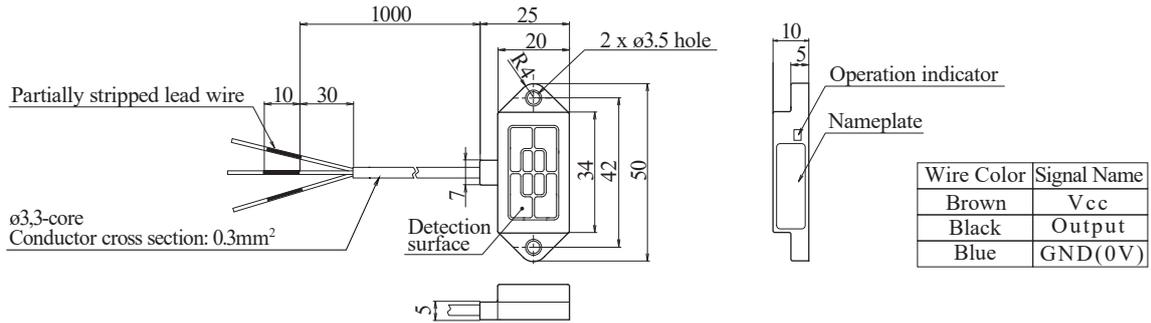
Characteristics

- High-sensitivity small electrostatic-capacity proximity sensor that can detect almost any target regardless of the material. (Can detect metal, wood, paper, plastic, water, powder, rice, etc.)
- Non-shielded type, perfect to detect liquids inside containers with low inductance. Shielded types (CDS series) that are not affected by metal or other objects approaching from the side are also available. Select the sensor according to your needs.
- It can be used in a wide range of supply voltage 15 V to 65 V DC.
- Because of the high power supply voltage specification, it can also be used in the battery voltage 48 V DC.

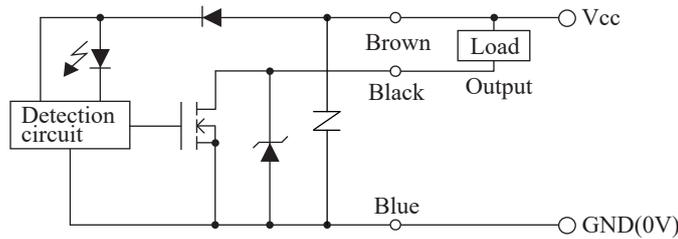
Rating / Performance

Model	CCS-HF10	CCS-HF101
Detection Surface	Upper side detection	
Detection Distance	10 mm ±10 %	
Hysteresis	15% or less of the detection distance	
Set Distance	0 to 7.5 mm	
Standard Detection Target	Grounded metal of 50 × 50 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	10 mA DC or less	
Output	65 V DC 200 mA DC or less Nch MOSFET open drain	
Output Residual Voltage	0.5 V DC or less (when load current is 200 mA DC and a 1-meter cord)	
Operation Configuration	Normally open (On output with detection target)	Normally closed (Off output with detection target)
Operation Indicator	Red LED (Lit when On output)	
Response Frequency	100 Hz or more	
Operating Temperature Range	-10 to 55 °C (-15 to 60 °C during storage)(Without dew condensation or freezing)	
Operating Humidity Range	35 to 95% RH (35 to 95% RH during storage)(Without dew condensation)	
Withstand Voltage	1 min at 500 VAC 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 500 m/s ² (approx. 50 G) in each X, Y, Z direction (At power off)	
Protection Rating	IP66	
Case Material	Polyarylate	
Cable	ø3, 3-core round cord of 0.3mm ² and insulation ø1.0 mm and 1 m in length (Oil and heat resistant vinyl)	
Weight	Approx. 21 g	

External Dimensions Diagram



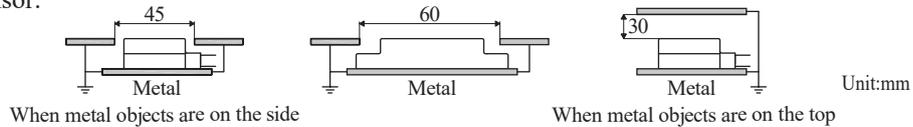
Output Circuit



Usage Precautions

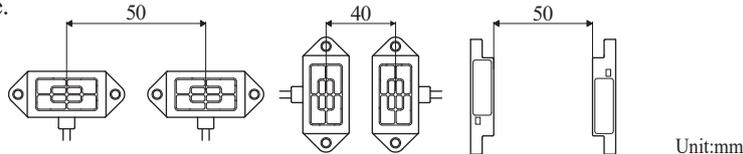
-Influence of surrounding metal

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.

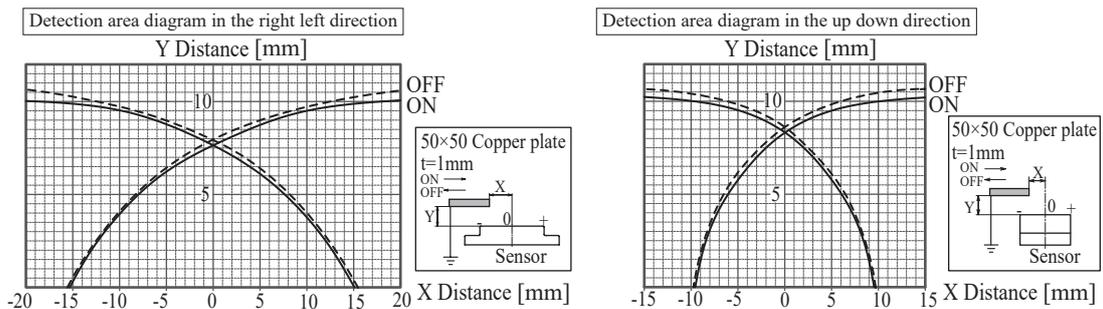


- Installation

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)



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