

Model CCS-F10/CCS-F15 Electrostatic-capacity Proximity Sensor



Model list

Model	Detection Distance	Operation configuration
CCS-F10	10 mm	Normally open
CCS-F101		Normal close
CCS-F15	15 mm	Normally open
CCS-F151		Normal close

Application

- Detection of grain
- Detection of the liquid in the paper pack
- Detection of insulating materials

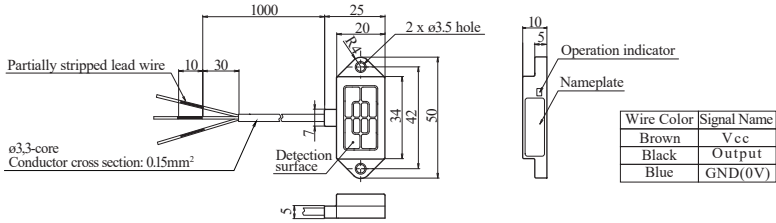
Features

- 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.

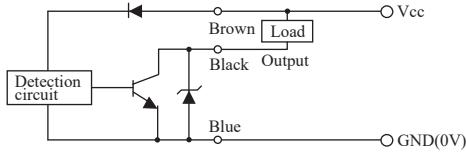
Rating/Performance

Model	CCS-F10	CCS-F101	CCS-F15	CCS-F151
Detection Surface	Upper side detection			
Detection Distance	10 mm \pm 10 %		15 mm \pm 10 %	
Hysteresis	15 % or less of the detection distance			
Set Distance	0 to 7.5 mm		0 to 12.0 mm	
Standard Detection Target	Grounded metal of 50 x 50 mm and 1 mm in thickness			
Power Voltage	12 V to 24 V DC (Operating voltage range: 10 V to 30 V DC)			
Power Consumption	10 mA DC or less (With 24 V DC)			
Output	NPN transistor open collector 30 V DC, 100 mA DC or less			
Output Residual Voltage	1 V DC or less (Load current 100 mA DC and a 1-meter cord)			
Operation Status	Normally open (On output with detection target)	Normally closed (Off output with detection target)	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			
Temperature Range	-10 to 60 °C (-15 to 60 °C during storage)(Without dew condensation or freezing)			
Humidity Range	35 to 95 % RH (35 to 95 % RH 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 M Ω 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 ² (Approx. 50 G) in X-, Y-, and Z-direction, each 3 times (Device not powered)			
Ingress Protection	IP66			
Case Material	Polyarylate			
Cable	ϕ 3, 3-core round cord of 0.15 mm ² and insulation ϕ 1.0 mm and 1 m in length (Oil and heat resistant vinyl)			
Weight	Approx. 21 g			

Dimensions



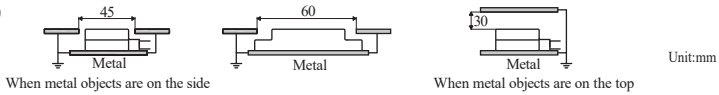
Output Circuit



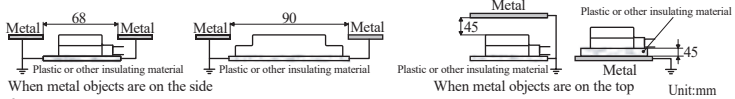
Precautions during use

- About the 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.

CCS-F10

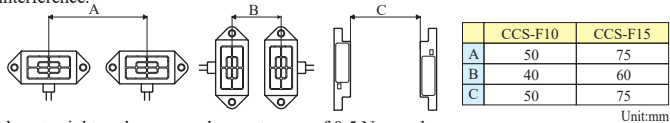


CCS-F15



- 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.



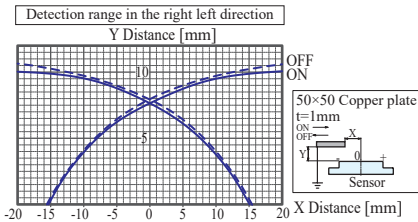
- Installation

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

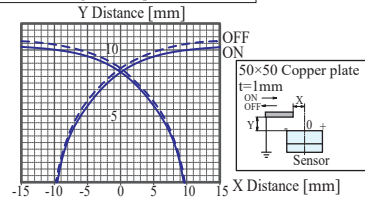
- For other precautions during use, refer to the General Precautions for proximity sensors.

Characteristics graph (typical example)

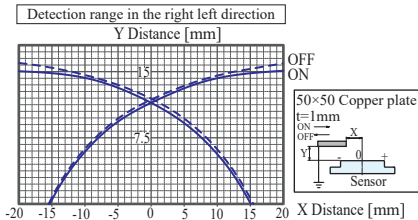
CCS-F10



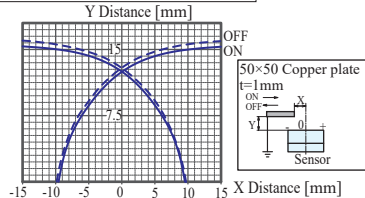
Detection range in the up down direction



CCS-F15



Detection range in the up down direction



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