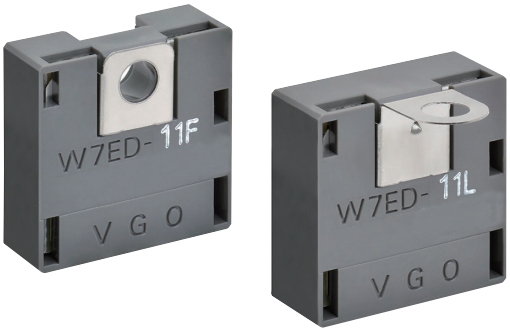
New Product

OMRON

Touch Sensor
W7ED

Reliable operation that requires only a light touch. Models equipped with anti-static FG terminals are also available.



- Suitable for embedding in equipment
- Enables touch sensor configurations to be created that suit your application. Touch electrodes and touch sensor electrodes can be fastened just using screws.
- Body-to-electrode static electricity transfers can easily be prevented using FG terminal models.
- Supports 5 to 15 VDC, with open-collector output.

Refer to *Safety Precautions* on page 6.

Features

No design required No need to perform sensitivity adjustments or design circuits! Minimizes development man-hours.

Reliable operation Achieves reliable operation using a touch electrode that changes capacitance depending on the level of touch.

Connects easily Touch electrodes and touch sensors can be fastened just using screws.
No PCBs, facilitating touch sensor configurations.

[Line-Up]

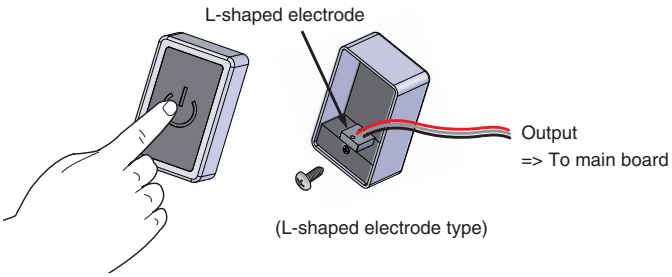
L-shaped electrode type



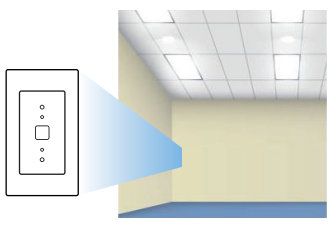
I-shaped electrode type



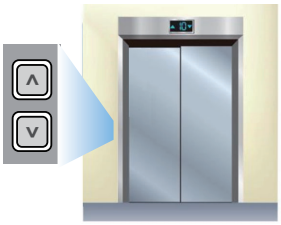
[Mounting example]
Touch electrode (conductive material)



Application Examples



Lights



Elevators



Vending Machines



Faucets

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W7ED

Model Number Legend

W7ED-□ □ □
(1) (2) (3)

(1) Detected capacitance
1: 25 pF

(2) FG terminal
1: Without
2: With

(3) Electrode shape
F: I-shaped
L: L-shaped

Specifications

Electrode shape	Appearance	FG terminal	Model
I-shaped		Without	W7ED-11F
		With	W7ED-12F
L-shaped		Without	W7ED-11L
		With	W7ED-12L

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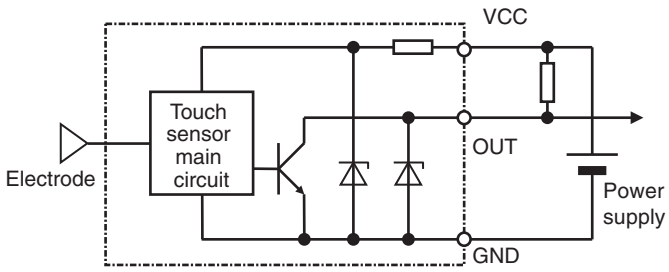
Ratings and Specifications

Detected capacitance ✻	25 ± 5 pF
Power supply voltage	5 VDC (-10%) to 15 VDC (+10%)
Output	Open collector (max. output current: 10 mA)
Residual output voltage	0.4 V max.
Operation mode	When detecting capacitance (human touch detected): Output transistor ON When not detecting capacitance (no human touch detected): Output transistor OFF
Current consumption	10 mA max.
Voltage influence	With rated supply voltage within a range of ±10% and a rate of change for detected capacitance within ±10% when powered using the rated supply voltage
Temperature influence	Within an ambient temperature range when operating and a rate of change for detected capacitance within ±10% at +23°C
Ambient temperature	When in use: -10 to 60°C (no icing or condensation) When in storage: -20 to 70°C (no icing or condensation)
Ambient humidity	25 to 85%RH

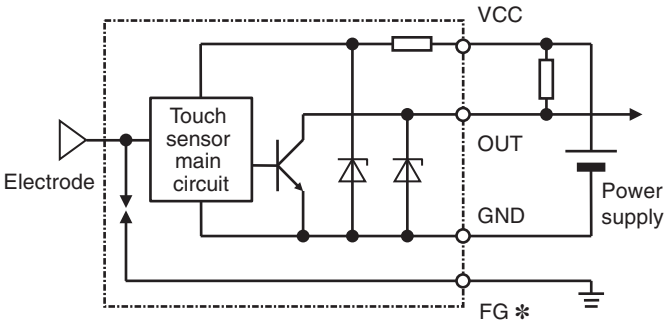
✻"Detected capacitance" refers to the detected capacitance value when capacitance is applied between the electrode and the ground terminal of the touch sensor circuit.

Output Circuit Diagram

FG terminal not provided
(W7ED-11F, W7ED-11L)



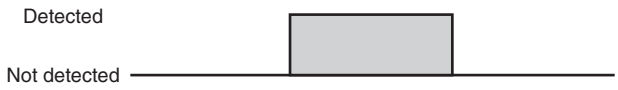
FG terminal provided
(W7ED-12F, W7ED-12L)



✻We recommend connecting the FG terminal to a stable potential on the device's frame ground.

Operation Chart

Capacitance detection



Output transistor



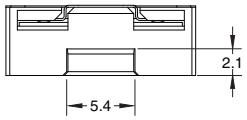
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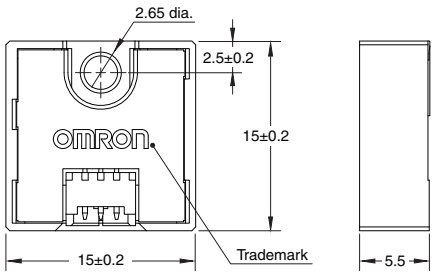
W7ED

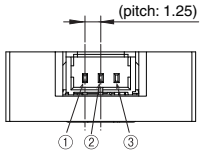
Dimensions

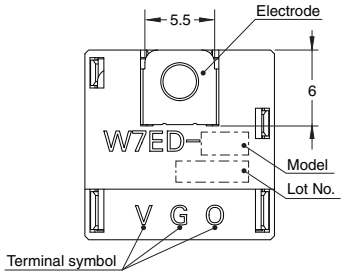
(Unit: mm)

W7ED-11F









Note: 1. Details of connector terminal symbols are shown below.

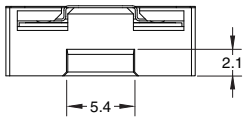
Connector terminal No.	Terminal symbol	Name
1	O	Output (OUT)
2	G	Ground (GND)
3	V	Power supply (VCC)

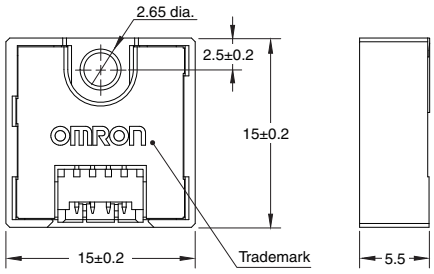
2. Compatible housings for connector include 51021-03□□ series models from Molex.

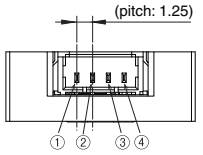
3. The Lot No. is 4-digit number located at the position indicated in the figure.

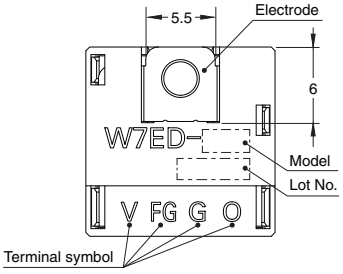
✻ Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

W7ED-12F









Note: 1. Details of connector terminal symbols are shown below.

Connector terminal No.	Terminal symbol	Name
1	O	Output (OUT)
2	G	Ground (GND)
3	FG	Frame ground (FG)
4	V	Power supply (VCC)

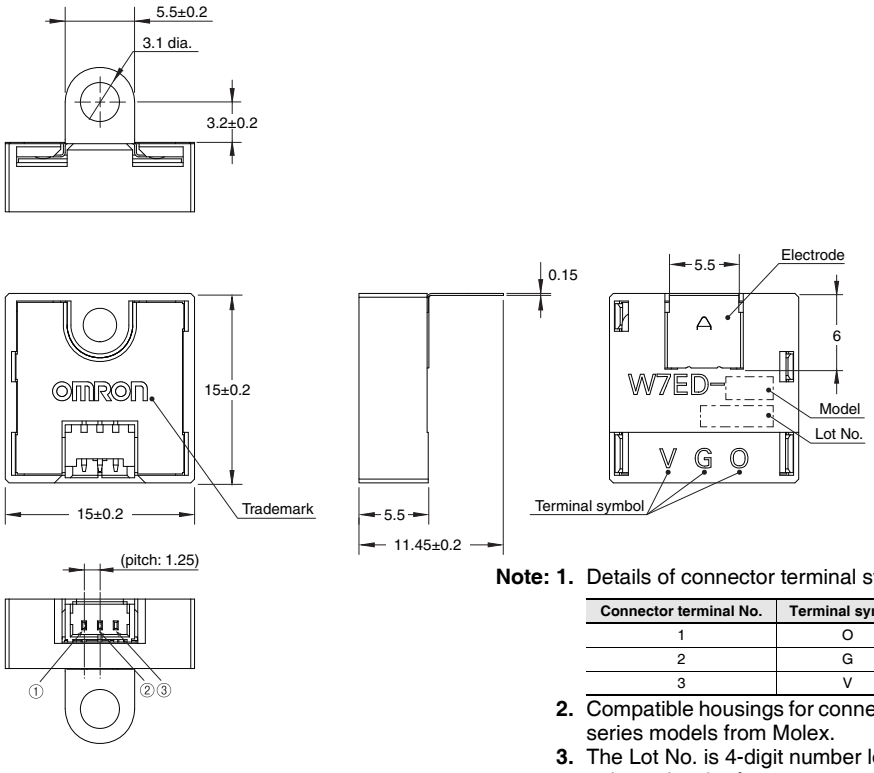
2. Compatible housings for connector include 51021-04□□ series models from Molex.

3. The Lot No. is 4-digit number located at the position indicated in the figure.

✻ Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

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W7ED-11L



Note: 1. Details of connector terminal symbols are shown below.

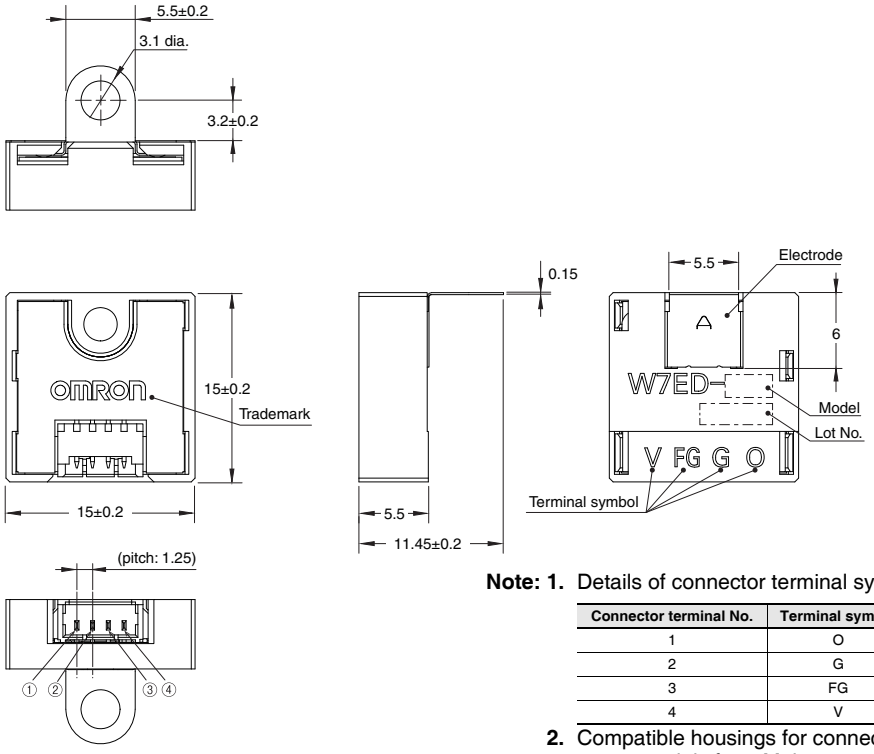
Connector terminal No.	Terminal symbol	Name
1	O	Output (OUT)
2	G	Ground (GND)
3	V	Power supply (VCC)

2. Compatible housings for connector include 51021-03□□ series models from Molex.

3. The Lot No. is 4-digit number located at the position indicated in the figure.

✻Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

W7ED-12L



Note: 1. Details of connector terminal symbols are shown below.

Connector terminal No.	Terminal symbol	Name
1	O	Output (OUT)
2	G	Ground (GND)
3	FG	Frame ground (FG)
4	V	Power supply (VCC)

2. Compatible housings for connector include 51021-04□□ series models from Molex.

3. The Lot No. is 4-digit number located at the position indicated in the figure.

✻Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

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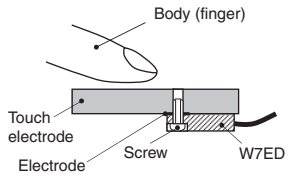
Safety Precautions

Please read the matters of agreement when ordering

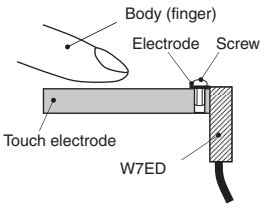
How to Use

1. How to use
   By connecting and fastening this electrode to a touch electrode (conductive material made from metal or with a metallic plating), a touch sensor configuration can be created with specifications that suit your application. The electrode features a hole that enables it to be fastened with a screw, etc.
2. FG terminals
   Static electricity from the human body, etc., is capable of entering the touch sensor via its electrode. When anti-static measures are required, select a model (W7ED-12F or W7ED-12L) with an FG terminal, which acts as a discharge circuit for static electricity. To enhance the anti-static effects of the FG terminal, we recommend connecting the FG terminal to a stable potential on the device's frame ground using a thick, short wire.

I-shaped electrode (W7ED-11F, W7ED-12F)



L-shaped electrode (W7ED-11L, W7ED-12L)



Precautions for Correct Use

1. Use a touch electrode made of conductive metal or metal-plated material.
2. Make sure to insulate touch electrode and electrode of this product from external grounds.
3. The level of capacitance normally applied will depend on conditions such as the size of the touch electrode or the existence of metal around the touch electrode. Make sure to confirm that the touch sensor operates by applying human touch to the touch electrode with the touch electrode secured in place while in contact with the electrode of this product.
4. Avoid use in locations subject to direct contact with liquids such as water. Failure to do so will result in malfunction.

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