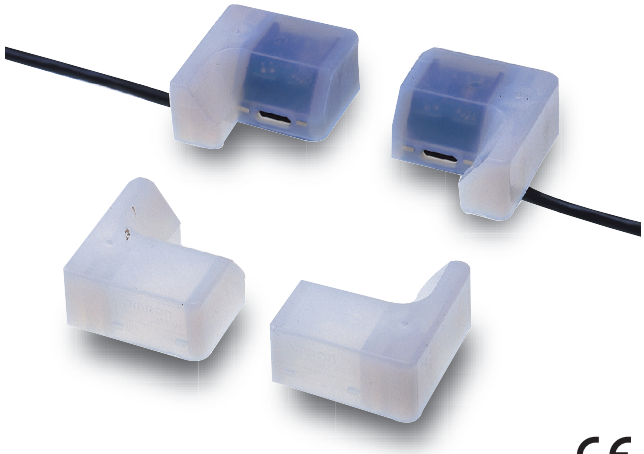
Wafer-carrier Mounting Photomicrosensors

EE-SPY801/802

CSM_EE-SPY801_802_DS_E_3_1

Photomicrosensors for detecting wafer-carrier mounting.

- The mounting position is set with a pedestal.
- The contact surface with the wafer carrier uses a special chemical-resistant fluororesin.
- The unique optical system enables stable detection of almost all wafer-carriers.
- Light modulation effectively reduces external light interference.
- Utilizes talc-free clean cables.



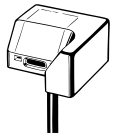
⚠ Be sure to read *Safety Precautions* on page 3.

CE

Ordering Information

Sensors

Infrared light

Appearance	Sensing method	Sensing distance	Output configuration	Cable length	Model
	Reflective type	0 to 3 mm	Turns ON when wafer carrier is present.	2 m	**EE-SPY801 2M**
					**EE-SPY802 2M**

Accessories (Order Separately)

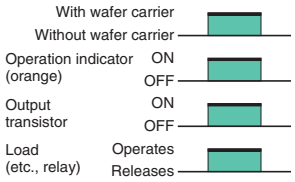
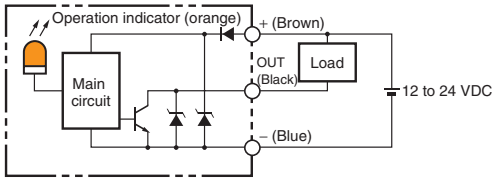
Item	Model
Pedestal	**EE9-C01**
	EE9-C02

Note: There are no sensor functions provided.

Ratings and Specifications

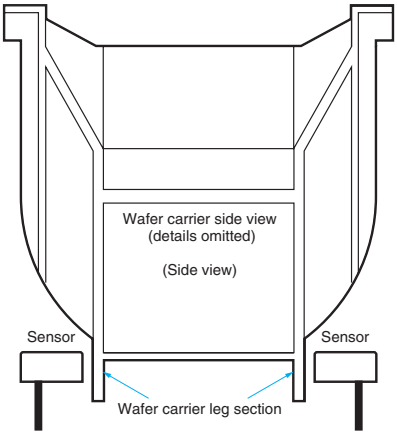
Item	Models	EE- SPY801/802
Sensing distance (Standard sensing object)		0 to 5 mm (White paper: 15 × 15 mm², reflection factor: 90%) 0 to 3 mm (Black paper: 15 × 15 mm², reflection factor: 10%)
Sensing object		Transparent or opaque wafer carriers
Operation indicator		Lit orange when object is detected.
Light source		GaAs infrared LED with a peak wavelength of 940 nm
Supply voltage		12 to 24 VDC ±10%, ripple (p-p): 5% max.
Current consumption		30 mA max.
Control output		NPN open collector: Load power supply voltage: 5 to 24 VDC Load current: 100 mA max. OFF current: 0.5 mA max. 100 mA load current with a residual voltage of 0.8 V max. 40 mA load current with a residual voltage of 0.4 V max.
Response time		5 ms max.
Ambient illumination		3,000 lx max. with incandescent light or sunlight on the surface of the receiver
Ambient temperature range		Operating: −10 to +55°C Storage: −25 to +65°C (with no icing)
Ambient humidity range		Operating: 5% to 85% Storage: 5% to 95% (with no condensation)
Vibration resistance		Destruction: 1 to 500 Hz, 1.0-mm single amplitude or 150 m/s² each in X, Y, and Z directions 3 times and for 11 min. each
Shock resistance		Destruction: 500 m/s² for 3 times each in X, Y, and Z directions
Degree of protection		IEC IP30
Connecting method		Pre-wired (Standard length: 2 m)
Weight (packaged)		Sensor: Approx. 43 g; Accessory (Pedestal): Approx. 9 g
Material	Case	Ethylene tetrafluoro ethylene (ETFE)
	Base plate	Polybutylene phthalate (PBT)
Accessories		Instruction Manual

I/O Circuit Diagrams

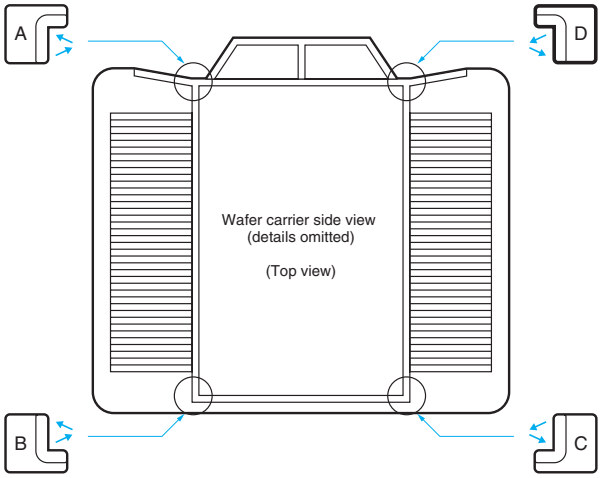
Model	Output configuration	Timing charts	Output circuit
EE-SPY801 EE-SPY802	Turns ON when wafer carrier is present.		

Standard Usage

This sensor is designed to detect wafer-carrier mountings. The bottom of the wafer carrier has a ribbed construction for the leg section, as shown in the following diagram. The EE-SPY801/802 detects the wafer-carrier mounting using a reflective optical sensor that detects the leg section of the wafer-carrier.



Install a Sensor (or Pedestal) at each of the four corners indicated by a circle in the following diagram.



A and C	EE-SPY801 or EE9-C01
B and D	EE-SPY802 or EE9-C02

Safety Precautions

Refer to *Warranty and Limitations of Liability*.

⚠ WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.

Precautions for Correct Use

Make sure that this product is used within the rated ambient environment conditions.

● Wiring

When extending the cable, use an extension cable with conductors having a total cross-section area of 0.15 mm^2 (AWG26 equivalent). The total cable length must be 5 m maximum.
To use a cable length longer than 5 m, attach a capacitor with a capacitance of approximately 10 μF to the wires as shown below. The distance between the terminal and the capacitor must be within 5 m.

● Mounting

Mount the Photomicrosensors securely on a flat surface, and tighten the mounting screws using a tightening force of 0.30 N·m max. (Using a spring washer is recommended to prevent the screws from becoming loose.)

● Adjustment

The EE-SPY801/802 requires 10 ms to be in stable operation after power is supplied.
If separate power supplies are used for the EE-SPY801/802 and load, be sure to supply power to the EE-SPY801/802 before supplying power to the load.

● Operating Environment

Do not use the EE-SPY801/802 in locations subject to salty air or corrosive gases, such as hydrogen chloride gas.

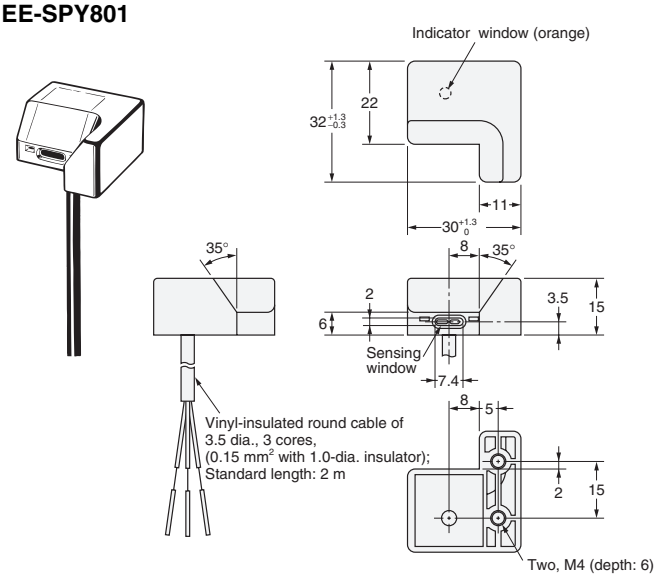
(Unit: mm)

Dimensions

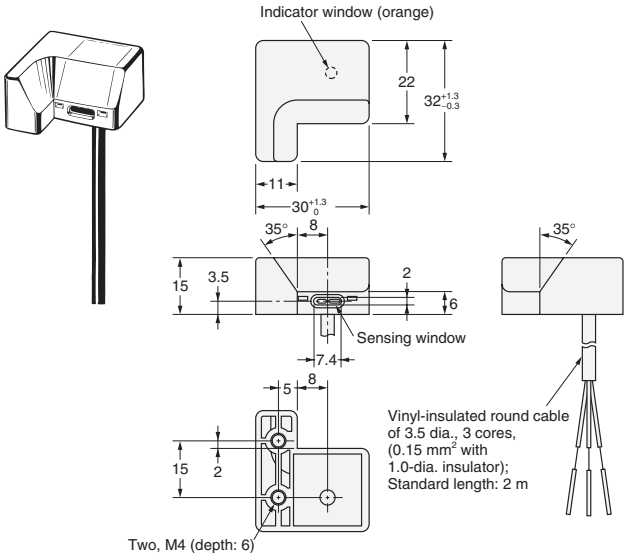
Tolerance class IT16 applies to dimensions in this datasheet unless otherwise specified.

Sensors

EE-SPY801



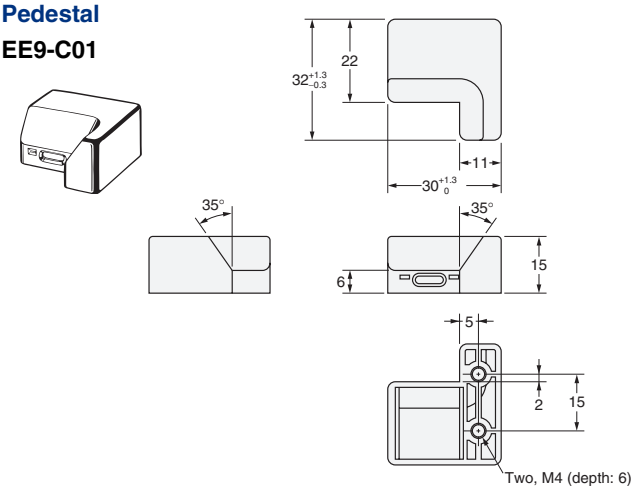
EE-SPY802



Accessories (Order Separately)

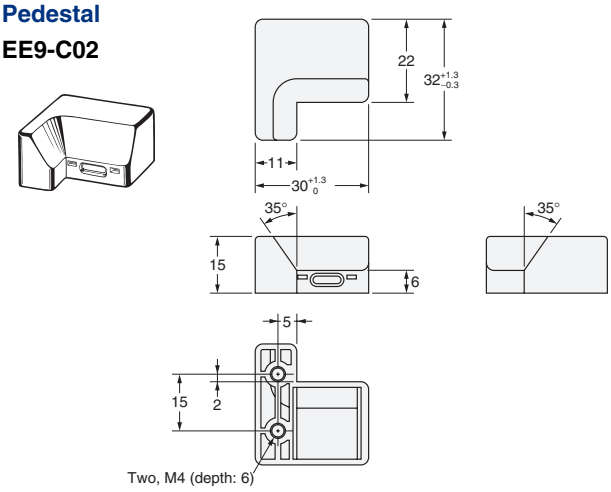
Pedestal

EE9-C01



Pedestal

EE9-C02



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- Systems, machines, and equipment that could present a risk to life or property.

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2008.11

In the interest of product improvement, specifications are subject to change without notice.

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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А