

Single-Point Optical Through-Beam Sensor

E3C-T1

Compact, Narrow-View Sensor Is Ideal for Sensing Wafers — Using OMRON's Unique "Pin-point" LED


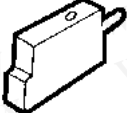
- 0.1-ms ultra-high-speed response
- Safer and more cost-effective than comparable laser products
- Use the E3C-T1 amplifier's turbo feature combined with the sensor's "pin-point" red LED, to achieve a visible 1.2-mm-diameter spot at a sensing distance of 12 cm
- The flexible robotics cable makes E3C-T1 ideal for applications requiring remote sensor placement on moving parts



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



Ordering Information

Description	Appearance	Sensing distance	Output	Part number
Through-beam sensor and amplifier	<div>Sensing head</div>  <div>Amplifier</div> 	50 cm	NPN	E3C-T1 (Sensor and Amplifier)

Specifications

RATINGS/CHARACTERISTICS

Part number	E3C-T1
Method of detection	Through-beam
Light source for emitter	Red LED (670 nm)
Sensing distance	50 cm (1.64 ft)
Direction angle	1° max.
Minimum sensing object	0.5-mm dia. (opaque object)
Power supply voltage	12 to 24 VDC ±10%, ripple (p-p): 1 V max.
Current consumption	50 mA max. (70 mA max. with turbo switch turned ON)
Response time	0.1 ms max. for both operating and release
Indicators	Light incident (red LED), stability (green LED)
Control output	Load current: 100 mA max., NPN open collector with a maximum residual voltage of 1 V
Operation mode	Light-ON and Dark-ON switch selectable
Connection method	Sensor: Preleaded (standard cable length: 1 m) Amplifier: Terminal block, preleaded (standard cable length: 2 m)

(This table continues on the next page.)

Specifications Table - continued from previous page

Part number		E3C-T1
Ambient illumination		Incandescent lamp: 3,000 lx max. Sunlight: 10,000 lx max.
Ambient temperature	Operating	- 10°C to 40°C (14°F to 104°F) with no icing or condensation
Relative humidity		35% to 85%
Vibration resistance		10 to 55 Hz, 1.5-mm double amplitude for 2 hrs each in X, Y, and Z axes
Shock resistance		500 m/s ² (approx. 50G) for Sensing head: and 300 m/s ² (approx. 30G) for Amplifier for 3 times each in X, Y, and Z axes
Enclosure ratings		IEC IP64 for Sensing head: and IP20 for Amplifier
Material	Case	ABS
	Cover	Polycarbonate
	Lens	Acrylic
Weight		Sensing head: Approx. 50 g with 1-m cable Amplifier: Approx. 80 g with 2-m cable

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Operation

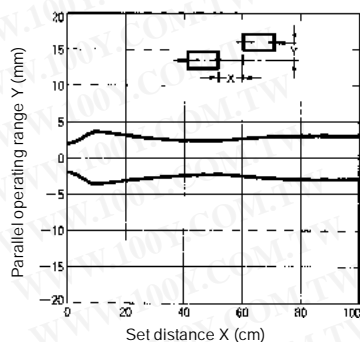
■ OUTPUT CIRCUIT

Operation mode selector	LIGHT ON	DARK ON
Output transistor	ON when light is received	ON when light is interrupted
Output circuit		
Timing chart	<p>Light received Light not received</p> <p>Light indicator (red) ON OFF</p> <p>Output transistor ON OFF</p> <p>Load (relay) Operate Release</p> <p>(Between brown and black)</p>	<p>Light received Light not received</p> <p>Light indicator (red) ON OFF</p> <p>Output transistor ON OFF</p> <p>Load (relay) Operate Release</p> <p>(Between brown and black)</p>

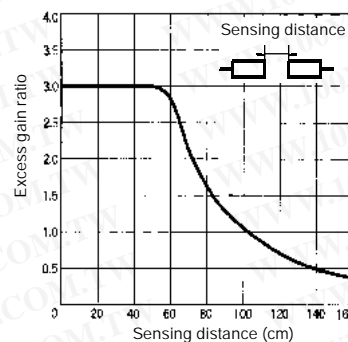
Engineering Data

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■ PARALLEL OPERATING RANGE (TYPICAL)



■ EXCESS GAIN RATIO (TYPICAL)

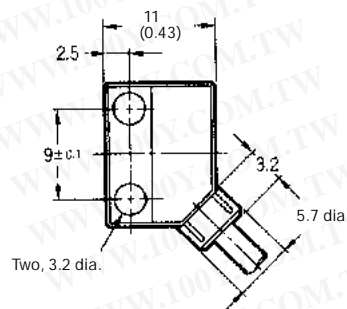
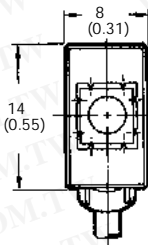
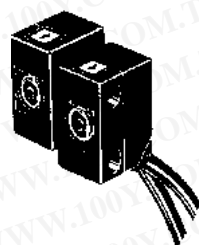


Dimensions

Unit: mm (inch)

■ SENSING HEAD

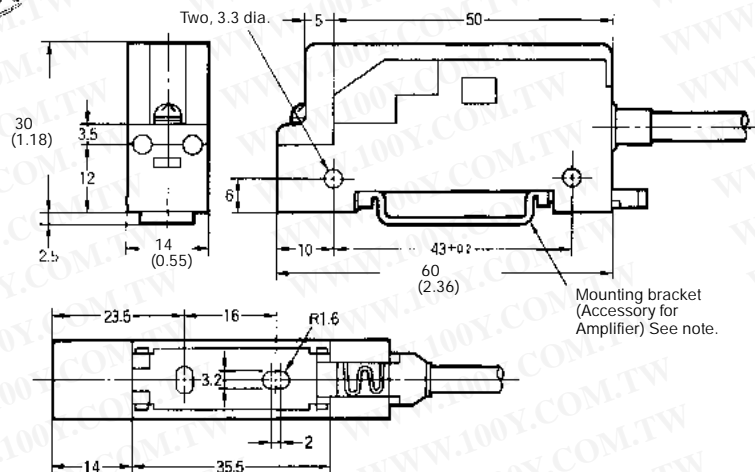
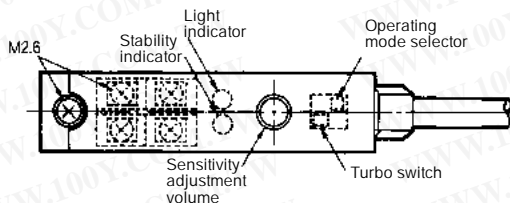
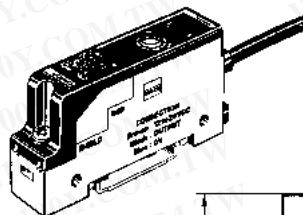
E3C-T1L (Emitter)
 E3C-T1D (Receiver)



Cable: Robotics cable
 2.4-mm dia. (60/0.08 dia.)
 Standard length: 1 m
 Weight: Approx. 50 g

AMPLIFIER

E3C-T1A



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Cable: Polyvinyl chloride-covered cable
 4-mm dia. (18/0.12 dia.), 3 cores
 Standard length: 2 m

Weight: Approx. 80 g

Note: The mounting bracket is not required for DIN-rail mounting.

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NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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