



- Ultimate simplicity
- Smallest of all AC/DC power supply models (18 x 55 x 35 mm)
  - Longest-in-class detecting distance for accurate detection
  - Polarization reflector type allows stable detection of mirror-like objects
  - Red LED for easy adjustment (through-beam type, polarization reflector type)
  - Dramatically improved stability with original photo IC
  - Capable of adjacent installation with polarization filter (optional) (through-beam type)

### Type

Type	Detecting distance	Model		Output mode	Remarks
		Dark-ON mode	Light-ON mode		
Through-beam type	10m	NE-T10RD	NE-T10R	Relay output 1c  (Sensors with high-speed, long-life photo-MOS relay are available on request. Contact Takex for details.)	“-J” indicates models with permanently attached cord with connector.
		NE-T10RD-J	NE-T10R-J		
	30m	NE-T30D	NE-T30		
		NE-T30D-J	NE-T30-J		
Polarization reflector type	0.03-5m	NE-M5RD	NE-M5R		
		NE-M5RD-J	NE-M5R-J		
Diffuse-reflector type	1m	NE-R10D	NE-R10		
		NE-R10D-J	NE-R10-J		

### Optional Parts

Type	Model	Applicable model	Description		
Pinhole plate	NE-P3	NE-T10R (D) NE-T30 (D)	Hole diameter $\phi 3$	For detecting distance with plate attached, see p. 394.	
	NE-P5		Hole diameter $\phi 5$		
	NE-P5 x 1		Hole diameter 5 x 1mm		
Reflector	K-71	NE-M5R (D)	Detecting distance: 0.03-2m	Two plates required for attaching to both transmitter and receiver.	
	S-510G		Detecting distance : 0.1-3m		
Anti interference filter	NE-PFA	NE-T10R (D)	Longitudinal polarization filter		
	NE-PFB		Horizontal polarization filter		
Mounting bracket	NE-B1	All models	Vertical mounting		
	NE-B2		Back-to-back mounting		
Cord with connector	FAC-A2R2	NE-TL10R	Cord for sensor with permanently attached cord	For transmitter of through-beam type	2m
	FAC-A2R5	NE-TL30			5m
	FAC-A4R2	NE-TR10R (D)	Cord for receiver of through-beam type, polarization reflector type, diffuse-reflective type (-J)		2m
	FAC-A4R5	NE-TR30 (D) NE-M5R (D) NE-R10			5m

## Rating/Performance/Specification

Model	NE-T10RD	NE-T30D	NE-M5RD	NE-R10
Detection method	Through-beam type		Polarization reflector type	Diffuse-reflector type
Detecting distance	10m max.	30m max.	0.03-5m max.	1m max.
Detection object	Opaque object of $\phi$ 20 min.		Mirror-like objects, opaque objects	Opaque objects, translucent objects
Power supply	AC/DC24-240V $\pm$ 10% 50/60Hz			
Power consumption	Transmitter: 1.5 W max. Receiver: 2 W max.	Transmitter: 1.8 W max. Receiver: 2 W max.	2 W max.	
Output mode	Relay output 1a / Rating: 1 A (250 VAC max. resistance load 30 VDC max. resistance load) (*2) (*5)			
Operation mode	Dark-ON (*3)			Light-ON (*4)
Response time	5ms max.			
Hysteresis	—			10% max.
Operating angle	3% (at receiver)	5% (at receiver)	30° (reflector)	—
Light source (wavelength)	Red LED (700 nm)	Infrared LED (880 nm)	Red LED (700 nm)	Infrared LED (880 nm)
Indicator	—	(Transmitter) Power indicator (red LED)	Operation indicator (red LED)	
	(Receiver) Operation indicator (red LED) / Stability indicator: green LED		Stability indicator: green LED	
Volume (VR)	—			Sensitivity adjustment provided
Material	Lens: acrylic / Case: heat-resistant ABS			
Connection (*5)	Permanently attached cord (Outer dimension: dia.6) Transmitter: 0.3 mm <sup>2</sup> x 2 cores, 2 m, gray Receiver: 0.3 mm <sup>2</sup> x 5cores, 2 m, black		Permanently attached cord (Outer dimension: dia.6) 0.3 mm <sup>2</sup> x 5 cores, 2 m, black	
Mass	Transmitter: 150 g max. / Receiver: 150 g max.		150g max.	
Notes	<ul style="list-style-type: none"> <li>• Sensors with sensitivity adjustment provided for receivers are available on request.</li> </ul> <p>(*1) When used with K-7 reflector provided                      (*2) Sensors with high-speed, long-life photo-MOS relay (1a) are available on request (Contact Takex for details).                      (*3) Light-ON type separately available.                      (*4) Dark-ON type separately available.                      (*5) The cable length for a sensor with permanently attached wiring including connector (-J type) is 300 mm. The cable with connector is optional.                      The output of a sensor with permanently attached cable with connector (-J type) is 1a.                      Sensors of this series are not provided with mounting brackets. Brackets for vertical or back-to-back mounting are optionally available</p>			

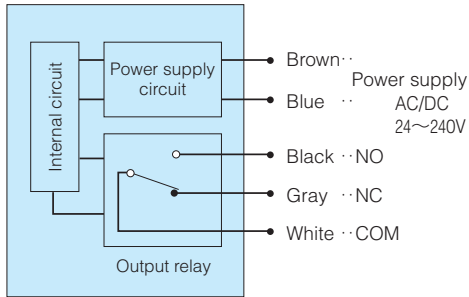
## Environmental Specification

Environment	Specification
Ambient light	10,000 lx max.
Ambient temperature	-25 ~ +55 °C (non-freezing)
Ambient humidity	35-85%RH (non-condensing)
Protective structure	IP66
Vibration	10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 directions
Shock	100 m/s <sup>2</sup> / 3 times each in 3 directions
Dielectric withstanding	1,500 VAC for 1 minute
Insulation resistance	500 VDC, 100 M $\Omega$ or higher

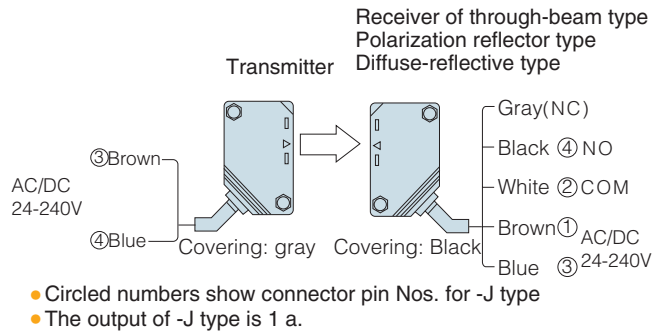


(Mounting bracket optional)

## Input/Output Circuit and Connection



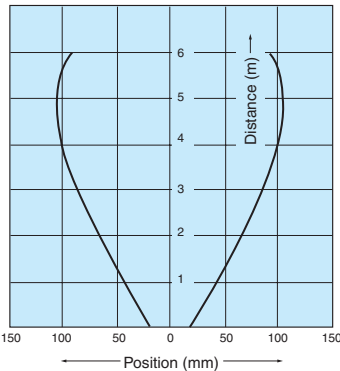
Transmitter of the through-beam type only has power supply lines.



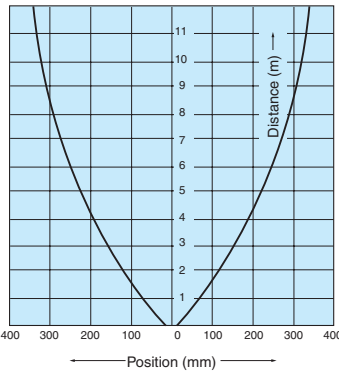
- Circled numbers show connector pin Nos. for -J type
- The output of -J type is 1 a.

## Directional Characteristics (Typical Example)

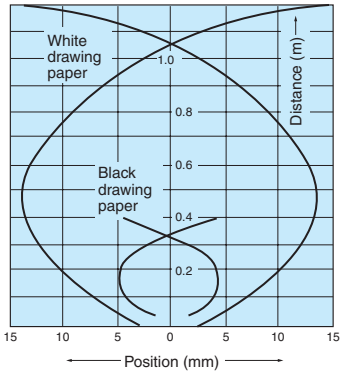
NE-M5RD



NE-T10RD

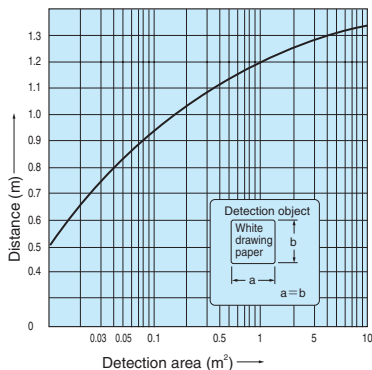


NE-R10



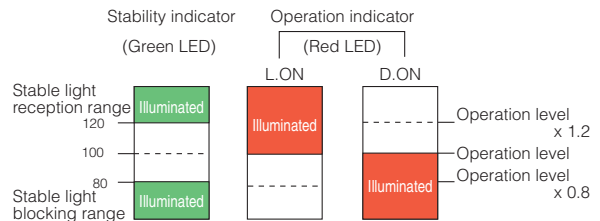
## Distance-Area Characteristics (Typical Example)

NE-R10



## Indicators

- Indicators allow easy light axis alignment and sensitivity adjustment. Setting the sensitivity in a range allowing stable operation achieves a higher degree of reliability against changes in the operating environment that may be generated after the sensitivity is set.
- The operation indicator (red LED) and stability indicator (green LED) respectively show different received light intensity levels as described in the figure below.



## Pinhole Plate (Optional)

Pinhole plates as described below are available for through-beam type models. Use of pinhole plates reduces the smallest allowable detected object diameter and activation area.

Sensor model	Pinhole plate model		
	NE-P3	NE-P5	NE-P5×1
NE-T10R (D)	1m	3m	0.7m
NE-T30 (D)	3m	7m	2m

## Detecting Distances for Different Reflectors (for model NE-M5RD)

The detecting distance depends on the reflector used.

Reflector model	Detecting distance
K-7	0.03~5m
K-71	0.03~2m
S-510G	0.1 ~3m

## Dimensions (in mm)

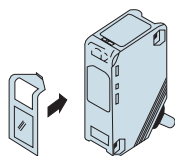
<p><b>Body</b></p> <p><b>CAD</b></p>	<p><b>Permanently attached cord with connector (-J) type</b></p>	
<p><b>With mounting bracket NE-B1 (vertical) attached</b></p> <p><b>CAD</b></p>	<p><b>With mounting bracket NE-B2 (back-to-back) attached</b></p>	<p><b>Reflector K-7</b></p> <p>Effective reflecting surface: 56 x 36 mm          Mounting: secured with M3 screws (alternatively adhesive may be used)          Protective structure: IP 67</p>

The NE Series sensors are not provided with mounting brackets however two types of brackets are optionally available. The tightening torque for the sensor body and mounting bracket should be 0.8 N·m max.

## Attachment of Anti Interference filter (optional)

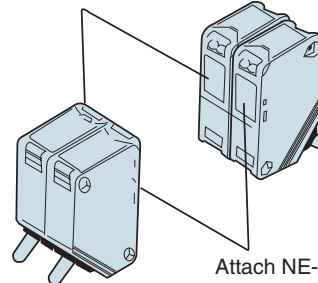
Model  
 NE-PFA (longitudinal polarization)  
 NE-PFB (horizontal polarization)

Use of filters allows adjacent mounting of through-beam type sensors. For adjacent mounting of two sensors, use the longitudinal type for one pair and horizontal type for the other.



Insert into grooves at the top and bottom of the lens side of the transmitter and receiver.

Attach NE-PFA



Attach NE-PFB

May be attached to model NE-T10R (D). The detecting distance with the filters attached is up to 5 m.



- Do not use the sensor for protection of human body.
- For safety applications, ensure safe operation of the detection and control system as a whole.
- This product is not explosion proof.