

## Product Discontinuation Notices

Photoelectric Sensors

Issue Date  
May 7, 2014

No. 2012119E(4)

### Discontinuation Notice of Built-in amplifier Photoelectric sensor E3S-2/-5/-DS/-R2 series.

#### << REQUEST >>

There was modification in portion of Product Discontinuation notices of Product News No. 2012119E(3) of March 2014 issue. What we have changed is as follows; Addition of Recommended Replacement.  
Please abolish old edition, replace the latest No. 2012119E(4).

#### Product Discontinuation

Built-in amplifier Photoelectric Sensor



**Model E3S-2 series**  
**Model E3S-5 series**  
**Model E3S-DS series**  
**Model E3S-R2 series**



#### Recommended Replacement

Built-in amplifier Photoelectric Sensor

**Model E3Z-T/E3S-AT series**  
**Model E3Z-T/E3S-CT series**  
**Model E3Z-D/E3S-AD/E3S-CD series**  
**Model E3Z-R/E3S-CR series**

#### [ Discontinuation date ]

The end of March, 2014

#### [ Caution on recommended replacement ]

- 1) The output type changes.  
The specification of the connection destination cannot use the voltage current type.  
Please confirm it beforehand
- 2) Please switch the floodlight projector and the photoreceiver to the penetration type by the set.

#### [ Difference from discontinued product ]

Recommended replacement Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
E3Z-T series	--	--	*	--	*	*	*
E3S-AT series	--	--	*	*	*	*	*
E3S-CT series	--	--	*	*	*	*	*
E3Z-D series	--	--	*	--	*	*	*
E3S-AD series	--	--	*	*	*	*	*
E3S-CD series	--	--	*	*	*	*	*
E3Z-R series	--	--	*	--	*	*	*
E3S-CR series	--	--	*	*	*	*	*

\*\* : Compatible

\* : The change is a little/Almost compatible

-- : Not compatible

- : No corresponding specification

**[ Product Discontinuation and recommended replacement ]**

Product discontinuation	Recommended replacement
E3S-2B41 2M	E3Z-T81 2M E3S-AT81 2M
E3S-2DE4 2M	E3Z-T61 2M E3S-AT11 2M
E3S-2DE41 2M	E3Z-T61 2M E3S-AT61 2M
E3S-2E4 2M	E3Z-T61 2M E3S-AT11 2M
E3S-2E41 2M	E3Z-T61 2M E3S-AT61 2M
E3S-2LE4 2M	E3Z-T61 2M E3S-AT11 2M
E3S-2LE41 2M	E3Z-T61 2M E3S-AT61 2M
E3S-5B41 2M	E3Z-T81 2M E3S-CT61 2M
E3S-5DE4 2M	E3Z-T61 2M E3S-CT11 2M
E3S-5DE41 2M	E3Z-T61 2M E3S-CT61 2M
E3S-5E4 2M	E3Z-T61 2M E3S-CT11 2M
E3S-5E41 2M	E3Z-T61 2M E3S-CT61 2M
E3S-5E41-43-M1J 0.2M	E3Z-T61-M1J 0.3M E3S-CT61-M1J 0.3M
E3S-5E4S-45 2M *1	No recommended replacement
E3S-5LE4 2M	E3Z-T61 2M E3S-CT11 2M
E3S-5LE41 2M	E3Z-T61 2M E3S-CT61 2M
E3S-DS10B4 2M	E3Z-D81 2M E3S-AD33 2M
E3S-DS10B41 2M	E3Z-D81 2M E3S-AD83 2M
E3S-DS10E4 2M	E3Z-D61 2M E3S-AD13 2M
E3S-DS10E41 2M	E3Z-D61 2M E3S-AD63 2M

\*1. The one side model of Emitter: Model (E3S-5LE4S-45) and Receiver: Model (E3S-5DE4S-45) does the production end in March, 2012.

**[ Product Discontinuation and recommended replacement ]**

<b>Product discontinuation</b>	<b>Recommended replacement</b>
E3S-DS30B4 2M	E3Z-D82 2M E3S-CD11 2M
E3S-DS30B41 2M	E3Z-D82 2M E3S-CD61 2M
E3S-DS30E4 2M	E3Z-D62 2M E3S-CD11 2M
E3S-DS30E41 2M	E3Z-D62 2M E3S-CD61 2M
E3S-R2B4 2M	E3Z-R81 2M E3S-CR11 2M
E3S-R2B41 2M	E3Z-R81 2M E3S-CR61 2M
E3S-R2E4 2M	E3Z-R61 2M E3S-CR11 2M
E3S-R2E4 5M	E3Z-R61 5M E3S-CR11 5M
E3S-R2E41 2M	E3Z-R61 2M E3S-CR61 2M
E3S-R2E43 2M	E3Z-R61 2M E3S-CR61 2M

[ Body color ]

<p align="center"><b>Product discontinuation</b>  <b>Model E3S-2 series/E3S-DS10 series</b></p>	<p align="center"><b>Recommendable replacement</b>  <b>Model E3Z-T/-D series</b>  <b>Model E3S-AT/-AD series</b></p>
<p>Color: Black                      Material (Case): Polybutylene terephthalate                      Material (Lens): Polycarbonate</p>	<p><b>E3Z-T/-D series</b>                      Color: Black                      Material (Case): Polybutylene terephthalate                      Material (Lens): Modified polyarylate</p> <p><b>E3S-AT/-AD series</b>                      Color: Black                      Material (Case): Polybutylene terephthalate                      Material (Lens): Denaturated polyarylate</p>

[ Body color ]

<p align="center"><b>Product discontinuation</b>  <b>Model E3S-5 series/E3S-DS30 series</b></p>	<p align="center"><b>Recommendable replacement</b>  <b>Model E3Z-T/-D series</b>  <b>Model E3S-CT/-CD series</b></p>
<p>Color: Black/Yellow                      Material (Case): Zinc die-cast                      Material (Lens): Polycarbonate</p>	<p><b>E3Z-T/-D series</b>                      Color: Black                      Material (Case): Polybutylene terephthalate                      Material (Lens): Modified polyarylate</p> <p><b>E3S-CT/-CD series</b>                      Color: Gray                      Material (Case): Zinc die-case                      Material (Lens): Acrylic</p>

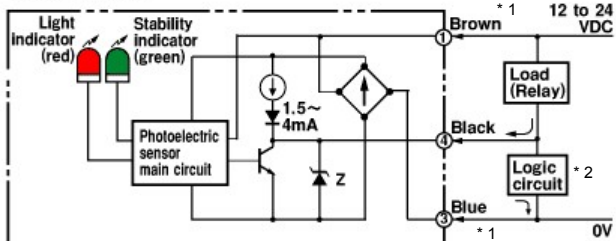
[ Body color ]

<p align="center"><b>Product discontinuation</b>  <b>Model E3S-R2 series</b></p>	<p align="center"><b>Recommendable replacement</b>  <b>Model E3Z-R series</b>  <b>Model E3S-CR series</b></p>
<p>Color: Black/Yellow                      Material (Case): Zinc die-cast                      Material (Lens): Polycarbonate</p>	<p><b>E3Z-R series</b>                      Color: Black                      Material (Case): Polybutylene terephthalate                      Material (Lens): Modified polyarylate</p> <p><b>E3S-CR series</b>                      Color: Gray                      Material (Case): Zinc die-case                      Material (Lens): Acrylic</p>

[ Wire connection ]

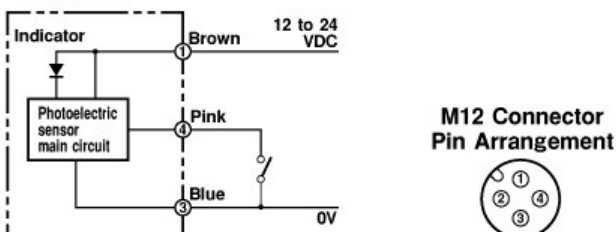
**Product discontinuation**  
**Model E3S-2E4/E3S-5E4 series**  
**Model E3S-DS10E4/E3S-DS30E4 series**  
**Model E3S-R2E4 series**

**< Receiver >**



\* 1: Reverse the polarity of the power supply to switch the operating mode.  
 \* 2: Voltage output (when connecting transistor circuit).

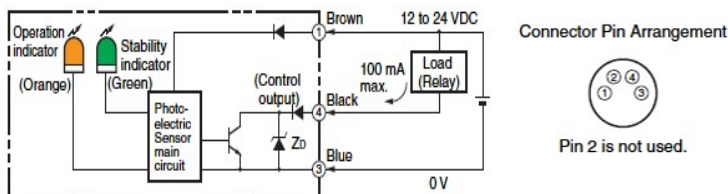
**< Emitter >**



Note. Receiver/Emitter: Pin 2 is not used.  
 It becomes Power indicator, if the pink cord of the emitter connects with the 0V of the emitter.  
 It becomes Light indicator, if the pink cord of the emitter connects with the output of the receiver.

**Recommendable replacement**  
**Model E3Z-T6/-D6/-R6 series**  
**Model E3S-AT/-AD series**  
**Model E3S-CR series**

**Model E3Z-T6/-D6/-R6 series**  
**< Reflective Type and Receiver >**

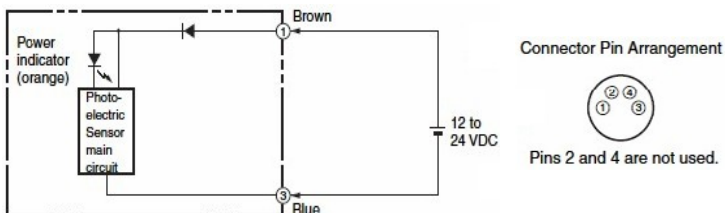


Connector Pin Arrangement



Pin 2 is not used.

**< Emitter >**

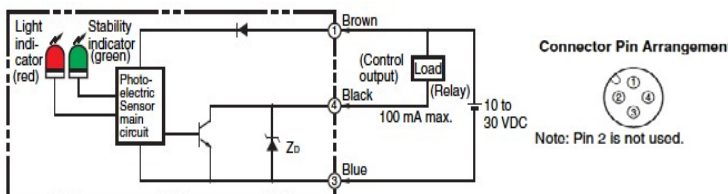


Connector Pin Arrangement



Pins 2 and 4 are not used.

**Model E3S-AT11/-AT61/-AD13/-AD63**  
**< Reflective Type and Receiver >**

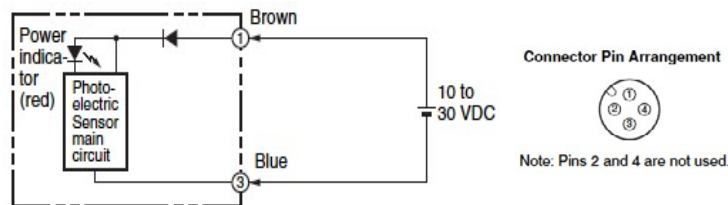


Connector Pin Arrangement



Note: Pin 2 is not used.

**< Emitter >**

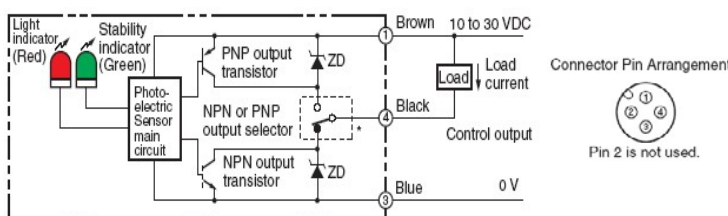


Connector Pin Arrangement



Note: Pins 2 and 4 are not used.

**Model E3S-CR11/-CR61**  
**< Reflective Type >**



Connector Pin Arrangement



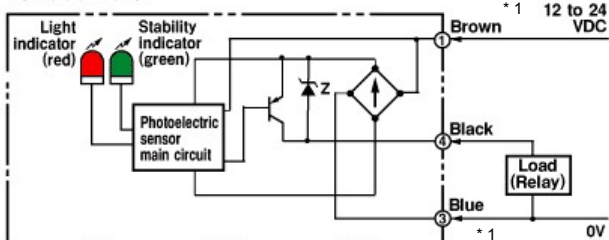
Pin 2 is not used.

\* Set the NPN or PNP selector to NPN.

[ Wire connection ]

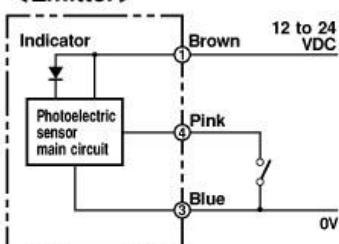
**Product discontinuation**  
**Model E3S-2B4/E3S-5B4 series**  
**Model E3S-DS10B4/E3S-DS30B4 series**  
**Model E3S-R2B4 series**

**< Receiver >**



\* 1: Reverse the polarity of the power supply to switch the operating mode.

**< Emitter >**

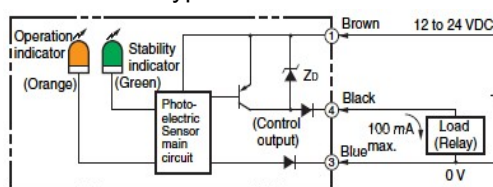


It becomes **Power indicator**,  
 if the pink cord of the emitter connects with the brown cord of the emitter.  
 It becomes **Light indicator**,  
 if the pink cord of the emitter connects with the output of the receiver.

**Recommendable replacement**  
**Model E3Z-T8/-D8/-R8 series**  
**Model E3S-AT/-AD series**  
**Model E3S-CT/-CD/-CR series**

**Model E3Z-T8/-D8/-R8 series**

**< Reflective Type and Receiver >**

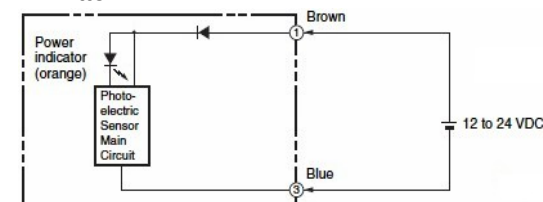


Connector Pin Arrangement



Pin 2 is not used.

**< Emitter >**



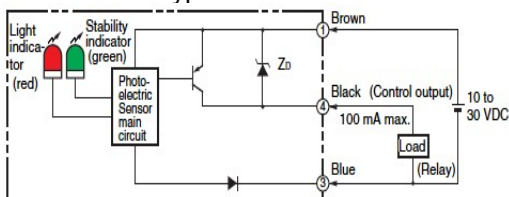
Connector Pin Arrangement



Pins 2 and 4 are not used.

**Model E3S-AT81/-AD33/-AD83**

**< Reflective Type and Receiver >**

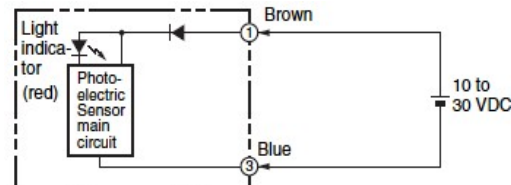


Connector Pin Arrangement



Note: Pin 2 is not used.

**< Emitter >**



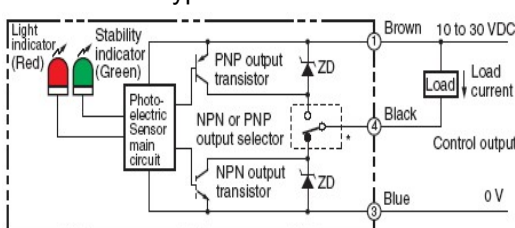
Connector Pin Arrangement



Note: Pins 2 and 4 are not used.

**Model E3S-CT11/-CT61/-CD61/-CR11/-CR61**

**< Reflective Type and Receiver >**



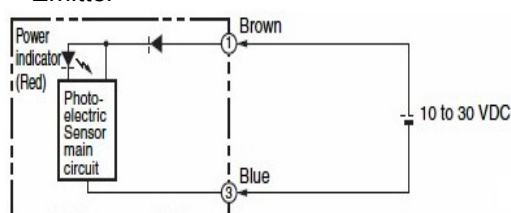
Connector Pin Arrangement



Pin 2 is not used.

\* Set the NPN or PNP selector to NPN.

**< Emitter >**

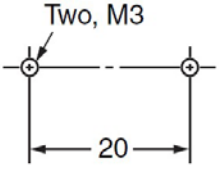
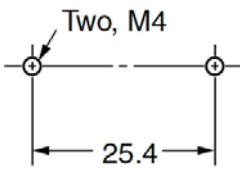
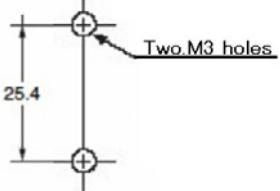
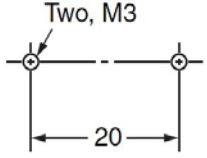
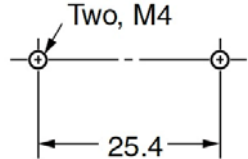


Connector Pin Arrangement



Note: Pins 2 and 4 are not used.

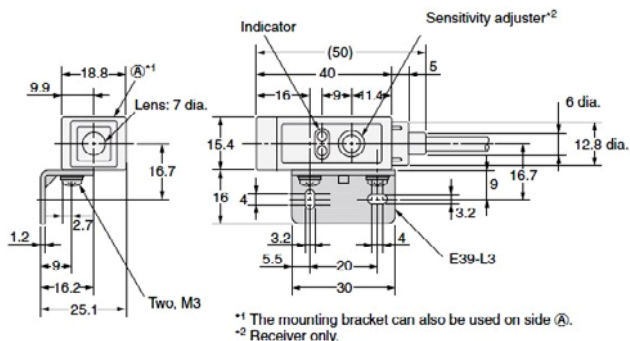
[ Mounting Dimensions ]

<p><b>Product discontinuation</b>  <b>Model E3S-2, -5, -DS, -R2 series</b></p>		<p><b>Recommendable replacement</b>  <b>Model E3Z-T, -D, -R series</b>  <b>Model E3S-AT, -AD series</b>  <b>Model E3S-CT, -CD, -CR series</b></p>	
<p><b>Model E3S-2, E3S-DS10 series</b>  <b>Mounting Holes</b></p>  <p>Two, M3 20</p>	<p><b>Model E3S-5, -DS30, -R2 series</b>  <b>Mounting Holes</b></p>  <p>Two, M4 25.4</p>	<p><b>Model E3Z-T, -D, -R series</b>  <b>Mounting Holes</b></p>  <p>Two, M3 holes 25.4</p>	<p><b>Model E3S-AT, -AD series</b>  <b>Mounting Holes</b></p>  <p>Two, M3 20</p>
		<p><b>Model E3S-CT, -CD, -CR series</b>  <b>Mounting Holes</b></p>  <p>Two, M4 25.4</p>	

[ Dimensions ]

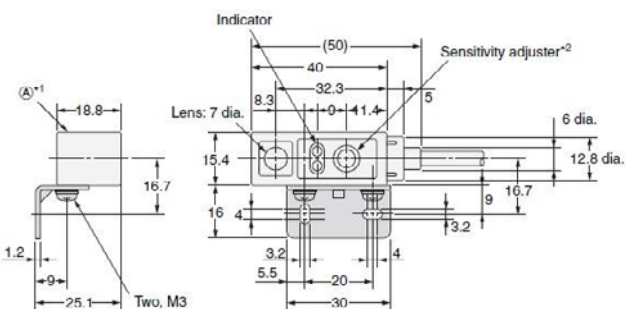
**Product discontinuation**  
**Model E3S-2 series/E3S-5 series**

**E3S-2E4**



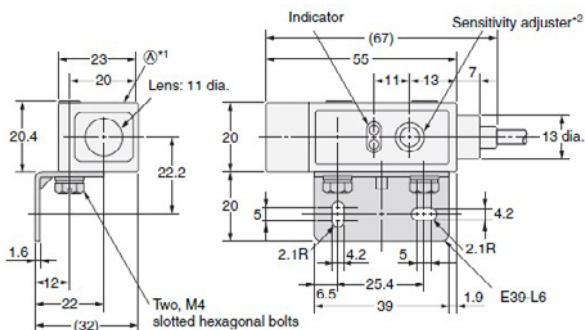
\*1 The mounting bracket can also be used on side (A).  
 \*2 Receiver only.

**E3S-2E41/-2B41**



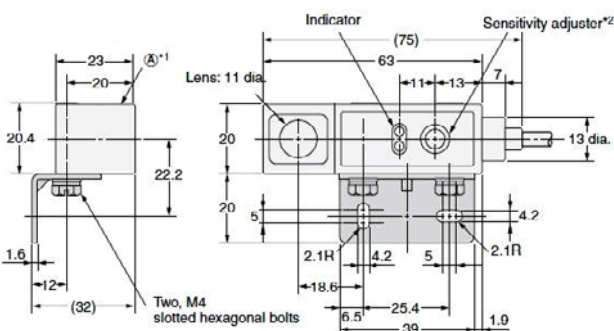
\*1 The mounting bracket can also be used on side (A).  
 \*2 Receiver only.

**E3S-5E4**



\*1 The mounting bracket can also be used on side (A).  
 \*2 Receiver only.

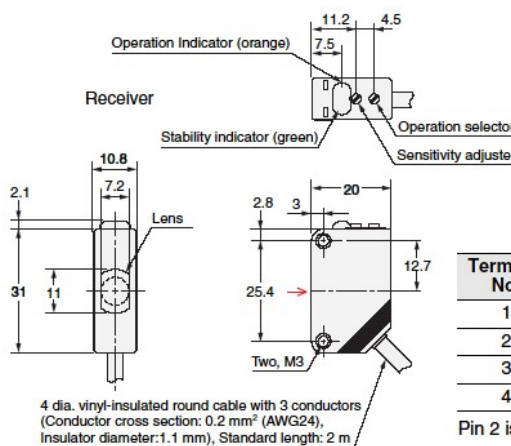
**E3S-5E41/-5B41**



\*1 The mounting bracket can also be used on side (A).  
 \*2 Receiver only.

**Recommendable replacement**  
**Model E3Z-T series**

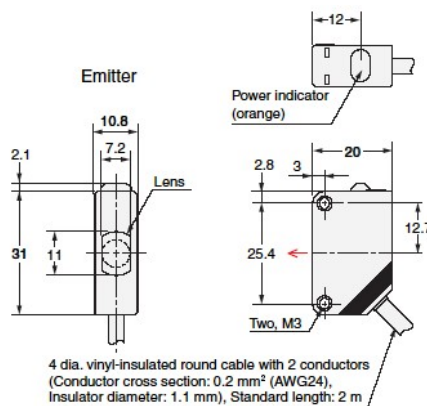
**E3Z-T61/-T81**  
 < Receiver >



Terminal No.	Specifications
1	+V
2	—
3	0V
4	Output

Pin 2 is not used.

< Emitter >



Terminal No.	Specifications
1	+V
2	—
3	0V
4	—

Pins 2 and 4 are not used.



[ Dimensions ]

<p>Product discontinuation Model E3S-2 series</p>	<p>Recommendable replacement Model E3S-AT series</p>
<p><b>E3S-2E4</b></p> <p>Indicator</p> <p>Sensitivity adjuster*2</p> <p>Indicator</p> <p>(50)</p> <p>40</p> <p>5</p> <p>6 dia.</p> <p>12.8 dia.</p> <p>16.7</p> <p>9</p> <p>3.2</p> <p>4</p> <p>5.5</p> <p>20</p> <p>4</p> <p>30</p> <p>E39-L3</p> <p>Lens: 7 dia.</p> <p>Two, M3</p> <p>*1 The mounting bracket can also be used on side (A).</p> <p>*2 Receiver only.</p>	<p><b>E3S-AT11/-AT31</b> &lt; Receiver &gt;</p> <p>Sensitivity adjuster (white)</p> <p>Light indicator (red)</p> <p>Timer adjuster (black) *1</p> <p>Stability indicator (green)</p> <p>4-dia. vinyl-insulated round cable with 4 conductors (Conductor cross section: 0.2 mm<sup>2</sup>, Insulator diameter: 1.1 mm), Standard length: 2 m *2</p> <p>8.8 dia.</p> <p>(4)</p> <p>40</p> <p>5.5</p> <p>7</p> <p>12.9</p> <p>12.4</p> <p>12</p> <p>*1. Not applicable to Sensors with timer adjusters (E3S-AT11 and E3S-AT31).</p> <p>*2. The E3S-AT11 or E3S-AT31 has three conductors.</p> <p>&lt; Emitter &gt;</p> <p>Lens (7 x 7)</p> <p>Optical axis</p> <p>Operation mode selector switch</p> <p>Power indicator (red)</p> <p>4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.2 mm<sup>2</sup>, Insulator diameter: 1.1 mm), Standard length: 2 m</p> <p>8.8 dia.</p> <p>(4)</p> <p>40</p> <p>17.8</p> <p>12.4</p> <p>12</p> <p>21</p> <p>8</p> <p>1.3</p> <p>10.5</p> <p>20</p> <p>Two, M3 x 12 screws</p>

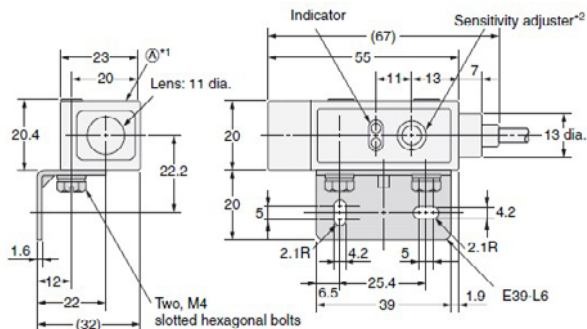
[ Dimensions ]

<p>Product discontinuation Model E3S-2 series/E3S-5 series</p>	<p>Recommendable replacement Model E3S-AT series</p>
<p><b>E3S-2E41/-2B41</b></p> <p>*1 The mounting bracket can also be used on side (A). *2 Receiver only.</p>	<p><b>E3S-AT61/-AT81</b> &lt; Receiver &gt;</p> <p>4-dia. vinyl-insulated round cable with 4 conductors (Conductor cross section: 0.2 mm<sup>2</sup>, Insulator diameter: 1.1 mm), Standard length: 2 m *1</p> <p>*1. The E3S-AT61 or E3S-AT81 has three conductors. *2. Not applicable to timer adjuster models E3S-AT61 and E3S-AT81.</p> <p>&lt; Emitter &gt;</p> <p>4-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.2 mm<sup>2</sup>, Insulator diameter: 1.1 mm), Standard length: 2 m *</p>

[ Dimensions ]

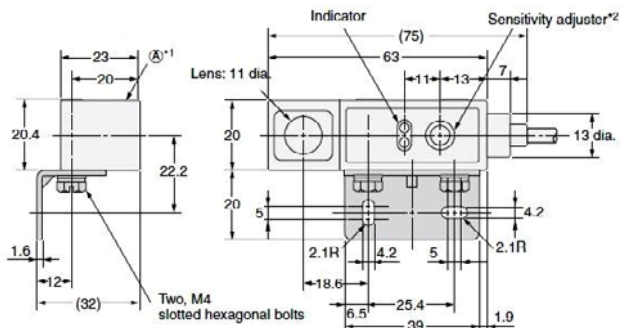
**Product discontinuation**  
**Model E3S-5 series**

**E3S-5E4**



\*1 The mounting bracket can also be used on side A.  
\*2 Receiver only.

**E3S-5E41/-5B41**

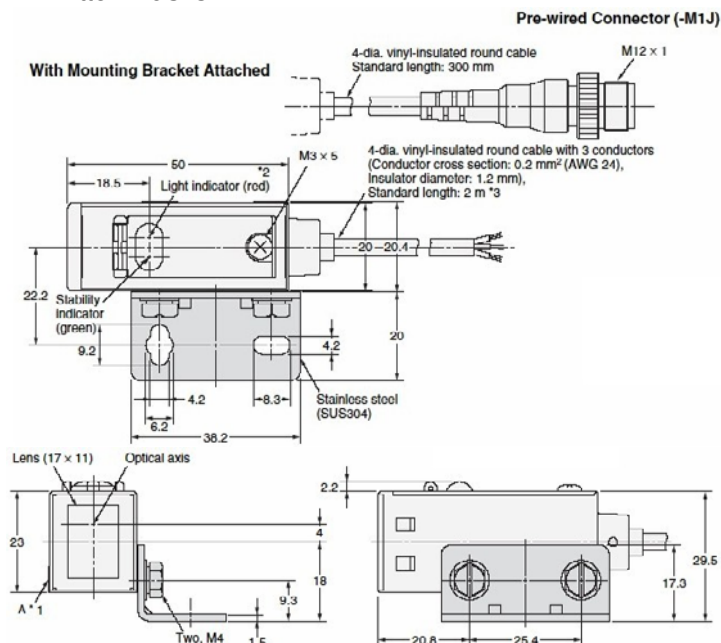


\*1 The mounting bracket can also be used on side A.  
\*2 Receiver only.

**Recommendable replacement**  
**Model E3S-CT series**

**E3S-CT11**

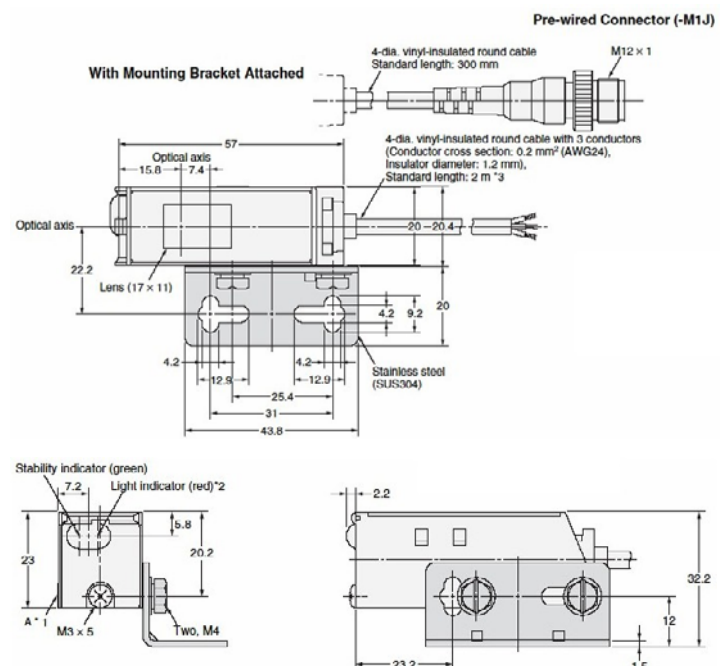
< Receiver: E3S-CT11-D >  
< Emitter: E3S-CT11-L >



\*1. The Mounting Bracket can be attached to side A.  
\*2. The Emitters for Through-beam Sensors only have the power indicator (red).  
\*3. The Emitter cable is 4-dia.vinyl-insulated round cable with 2 conductors (conductor cross section: 0.3 mm<sup>2</sup>, insulator diameter: 1.3 mm) and a standard length of 2 m.

**E3S-CT61**

< Receiver: E3S-CT61-D >  
< Emitter: E3S-CT61-L >



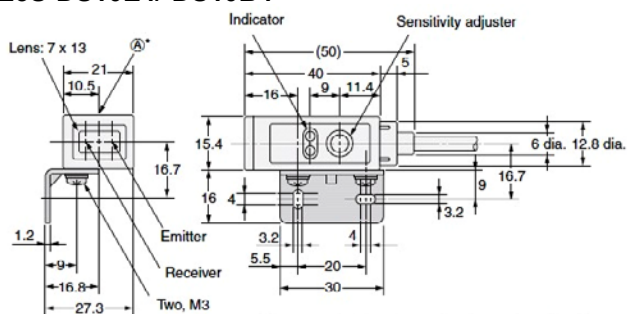
\*1. The Mounting Bracket can be attached to side A.  
\*2. The Emitters for Through-beam Sensors only have the power indicator (red).  
\*3. The Emitter cable is 4-dia.vinyl-insulated round cable with 2 conductors (conductor cross section: 0.3 mm<sup>2</sup>, insulator diameter: 1.3 mm) and a standard length of 2 m.

[ Dimensions ]

**Product discontinuation**  
**Model E3S-DS10 series**  
**Model E3S-DS30 series**

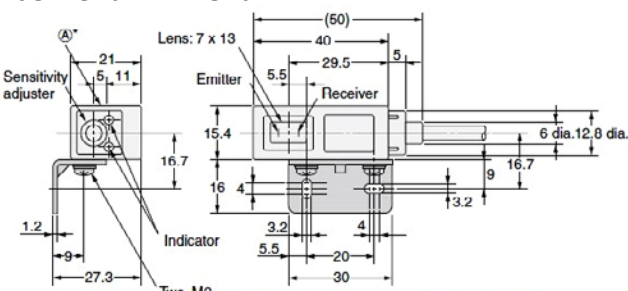
**Recommendable replacement**  
**Model E3Z-D series**

**E3S-DS10E4/-DS10B4**



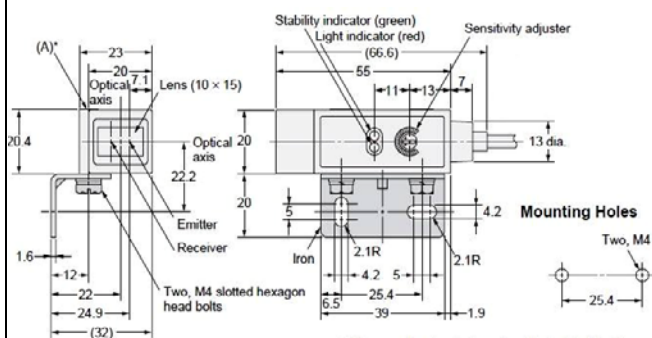
\* The mounting bracket can also be used on side (A).

**E3S-DS10E41/-DS10B41**



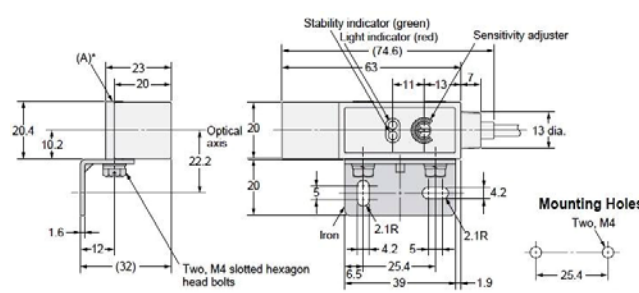
\* The mounting bracket can also be used on side (A).

**E3S-DS30E4/-DS30B4**



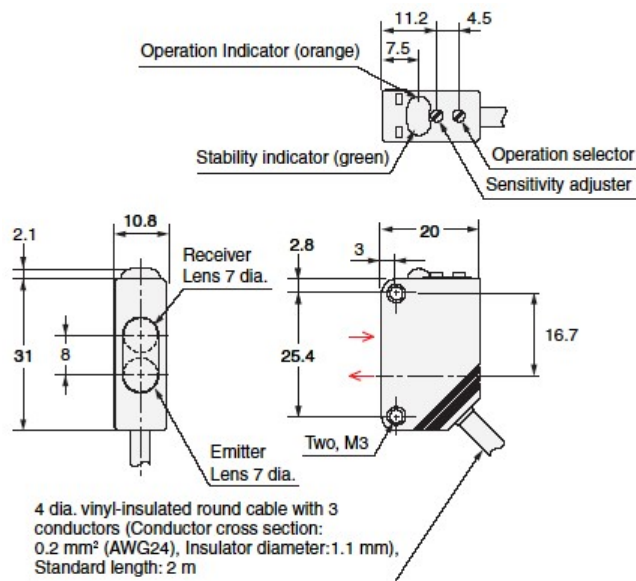
\* The mounting bracket can be attached to this side.

**E3S-DS30E41/-DS30B41**



\* The mounting bracket can be attached to this side.

**E3Z-D61/-D81**

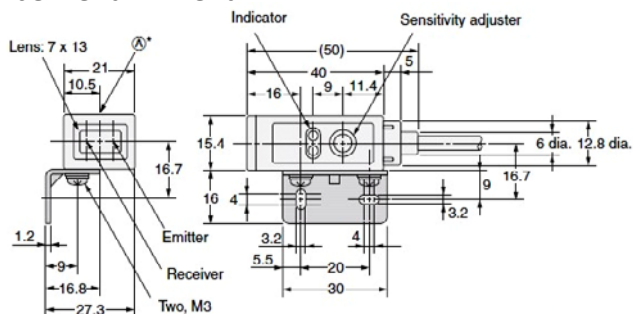


Terminal No.	Specifications
1	+V
2	---
3	0V
4	Output

[ Dimensions ]

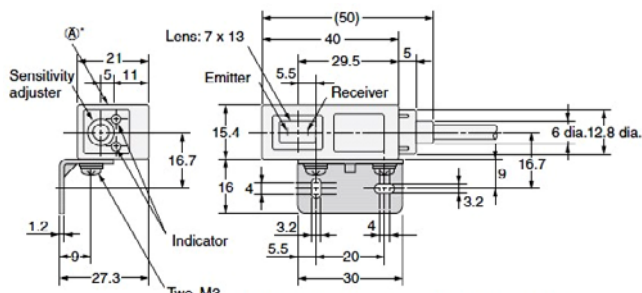
**Product discontinuation**  
**Model E3S-DS10 series**

**E3S-DS10E4/-DS10B4**



\* The mounting bracket can also be used on side A.

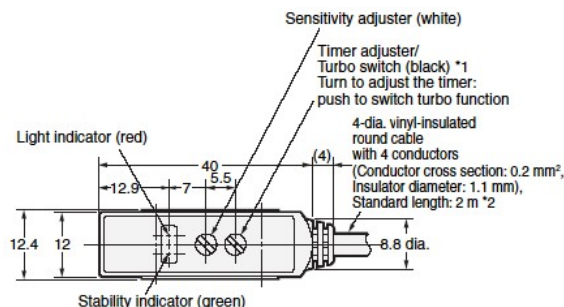
**E3S-DS10E41/-DS10B41**



\* The mounting bracket can also be used on side A.

**Recommendable replacement**  
**Model E3S-AD series**

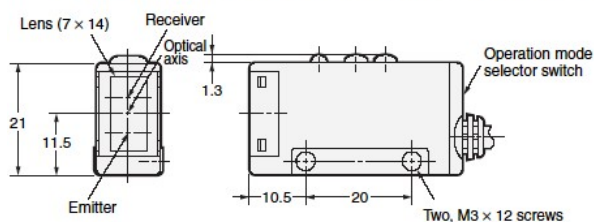
**E3S-AD13/-AD33**



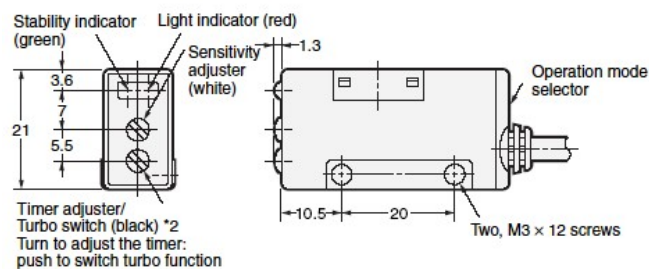
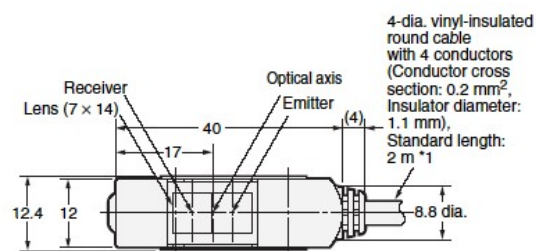
\*1. Timer adjuster: Not available on E3S-AD11, E3S-AD12, E3S-AD13, E3S-AD31, E3S-AD32 and E3S-AD33.

Turbo switch: Available on E3S-AD21 and E3S-AD41 only.

\*2. The E3S-AD11, E3S-AD12, E3S-AD13, E3S-AD31, E3S-AD32, or E3S-AD33 has three conductors.



**E3S-AD63/-AD83**



\*1. E3S-AD61, E3S-AD62, E3S-AD63, E3S-AD81, E3S-AD82, and E3S-AD83 have three conductors.

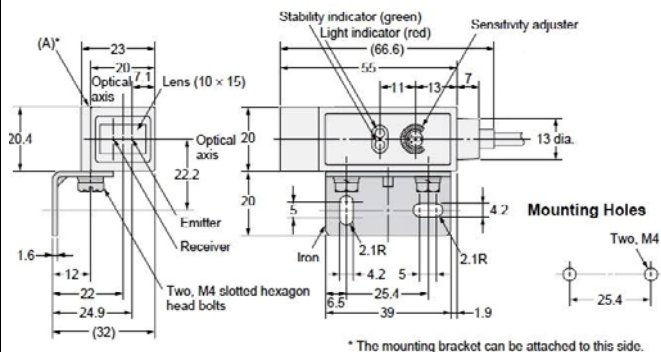
\*2. Timer adjuster: Not available on E3S-AD61, E3S-AD62, E3S-AD63, E3S-AD81, E3S-AD82 and E3S-AD83.

Turbo switch: Available on E3S-AD71 and E3S-AD91 only.

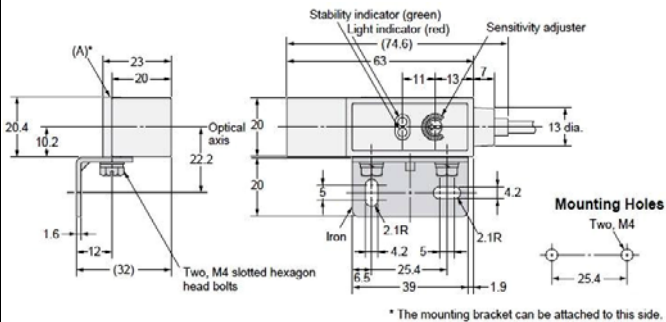
[ Dimensions ]

**Product discontinuation**  
**Model E3S-DS30/E3S-R2 series**

**E3S-DS30E4/-DS30B4**  
**E3S-R2E4/-R2B4**

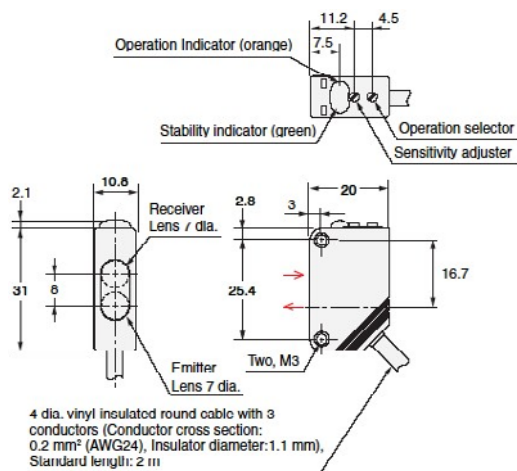


**E3S-DS30E41/-DS30B41**  
**E3S-R2E41/-R2B41**



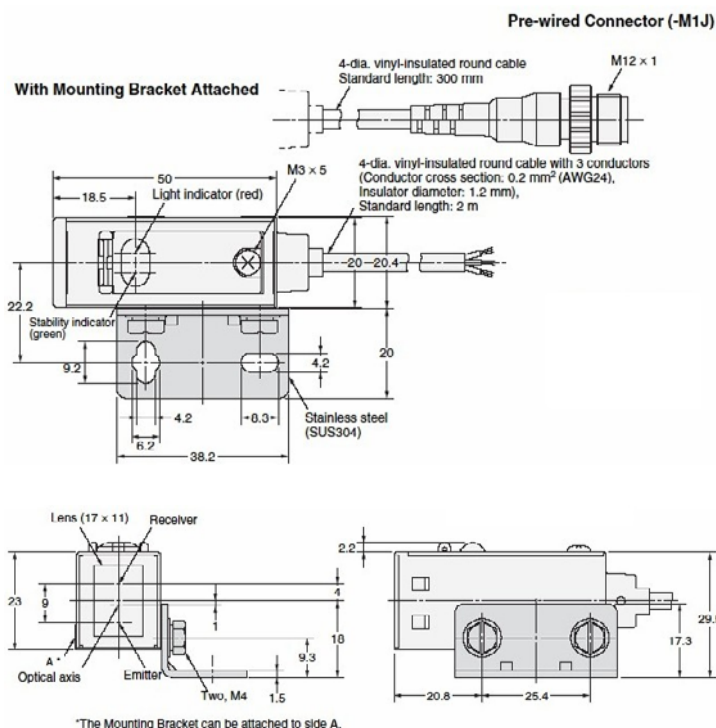
**Recommendable replacement**  
**Model E3Z-D/-R series**  
**Model E3S-CD/-CR series**

**E3Z-D62/-D82/-R61/-R81**



Terminal No.	Specifications
1	+V
2	---
3	0V
4	Output

**E3S-CD11/-CR11**



[ Dimensions ]

<p align="center"><b>Product discontinuation</b>  <b>Model E3S-DS30/E3S-R2 series</b></p>	<p align="center"><b>Recommendable replacement</b>  <b>Model E3S-CD/-CR series</b></p>
<p><b>E3S-DS30E4/-DS30B4</b>  <b>E3S-R2E4/-R2B4</b></p> <p><b>E3S-DS30E41/-DS30B41</b>  <b>E3S-R2E41/-R2B41</b></p>	<p><b>E3S-CD61/-CR61</b></p>

[ Characteristics ]

Item	Product discontinuation Model E3S-2 series	Product discontinuation Model E3S-5 series	Recommendable replacement Model E3Z-T series
<b>Sensing distance</b>	2 m	5 m	15 m
<b>Standard sensing object</b>	Opaque: 7-mm dia. min.	Opaque: 11-mm dia. min.	Opaque: 12 mm dia. min.
<b>Directional angle</b>	Both emitter and receiver: 3° to 10°		Both emitter and receiver: 3° to 15°
<b>Light source</b>	Infrared LED (950 nm)		Infrared LED (870 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)		12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)
<b>Current consumption</b>	50 mA max. (Emitter: 25 mA max., Receiver: 25 mA max.)		35 mA max. (Emitter: 15 mA max., Receiver: 20 mA max.)
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.		Open collector output. E3Z-T61: NPN open collector output. E3Z-T81: PNP open collector output. Load current: 100 mA max. Residual voltage: Load current of less than 10 mA: 1 V max. Load current of 10 to 100 mA: 2 V max.
<b>Response time</b>	Operate or reset 3 ms max.		Operate or reset: 1 ms max.
<b>Degree of protection</b>	IEC60529: IP65	IEC60529: IP67	IEC60529: IP67
<b>Indicators</b>	Light indicator (red). Stability indicator (green).		Receiver: Operation indicator (orange). Stability indicator (green). Emitter: Power indicator (orange).

[ Characteristics ]

Item	Product discontinuation Model E3S-2 series	Recommendable replacement Model E3S-AT11/-AT31/-AT81 series
<b>Sensing distance</b>	2 m	7 m
<b>Standard sensing object</b>	Opaque: 7-mm dia. min.	Opaque: 10 mm dia. min.
<b>Directional angle</b>	Both emitter and receiver: 3° to 10°	
<b>Light source</b>	Infrared LED (950 nm)	Red LED (700 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	12 to 30 VDC, ripple: 10% max.
<b>Current consumption</b>	50 mA max. (Emitter: 25 mA max., Receiver: 25 mA max.)	40 mA max. (Emitter: 20 mA max., Receiver: 20 mA max.) Plus approx. 15 mA with turbo function.
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.	Open collector current output. (NPN or PNP) E3S-AT11/-AT61: NPN open collector output. E3S-AT81: PNP open collector output. Load power supply voltage 30 VDC max., Load current 100 mA max. (residual voltage 1 V max.) Open collector output type (depends on the NPN/PNP output format) Light-ON/Dark-ON Switch selectable.
<b>Response time</b>	Operate or reset 3 ms max.	
<b>Degree of protection</b>	IEC60529: IP65	IEC60529: IP67 NEMA: 4X
<b>Indicators</b>	Light indicator (red). Stability indicator (green).	Receiver: Emission indicator (red). Stability indicator (green). Emitter: Operating indicator (red).



[ Characteristics ]

Item	Product discontinuation Model E3S-5 series	Recommendable replacement Model E3S-CT11/-CT61 series
<b>Sensing distance</b>	5 m	30 m
<b>Standard sensing object</b>	Opaque: 11-mm dia. min.	Opaque: 15 mm dia. min.
<b>Directional angle</b>	Both emitter and receiver: 3° to 10°	Both emitter and receiver: 3° to 15°
<b>Light source</b>	Infrared LED (950 nm)	Infrared LED (880 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	12 to 30 VDC, ripple: 10% max.
<b>Current consumption</b>	50 mA max. (Emitter: 25 mA max., Receiver: 25 mA max.)	50 mA max. (Emitter: 25 mA max., Receiver: 25 mA max.)
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.	NPN or PNP (selectable), open collector current output. Load power supply voltage 30 VDC max., Load current 100 mA max. (residual voltage NPN output 1.2 V max., PNP output 2.0 V max.) Open collector output type (NPN/PNP output switch selectable). Light-ON/Dark-ON switch selectable.
<b>Response time</b>	Operate or reset 3 ms max.	1 ms max. for both operation and release.
<b>Degree of protection</b>	IEC60529: IP67	IEC60529: IP67 (company standard: oil proof) NEMA: 6P (restricts to indoor use.)
<b>Indicators</b>	Light indicator (red). Stability indicator (green).	Receiver: Light indicator (red). Stability indicator (green). Emitter: Power ON (red).

[ Characteristics ]

Item	Product discontinuation Model E3S-DS10 series	Product discontinuation Model E3S-DS30 series	Recommendable replacement Model E3Z-D□1 series	Recommendable replacement Model E3Z-D□2 series
<b>Sensing distance</b>	100 mm (White paper 50 × 50 mm)	300 mm (White paper 100 × 100 mm)	100 mm (White paper 100 × 100 mm)	1 m (White paper 300 × 300 mm)
<b>Differential distance</b>	20% max. of sensing distance		20% max. of sensing distance	
<b>Light source</b>	Infrared LED (950 nm)		Infrared LED (860 nm)	
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)		12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	
<b>Current consumption</b>	40 mA max.		30 mA max.	
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.		Open collector output. E3Z-D6□: NPN open collector output. E3Z-D8□: PNP open collector output. Load power supply voltage 30 VDC max., Load current 100 mA max. (residual voltage 1 V max.) Open collector output type (depends on the NPN/PNP output format) Light-ON/Dark-ON Switch selectable.	
<b>Response time</b>	Operate or reset: 1 ms max.		Operate or reset: 1 ms max.	
<b>Degree of protection</b>	IEC60529: IP65	IEC60529: IP67	IEC60529: IP67	
<b>Indicators</b>	Light indicator (red) Stability indicator (green)		Operation indicator (orange) Stability indicator (green)	

[ Characteristics ]

Item	Product discontinuation Model E3S-DS10series	Recommendable replacement Model E3S-AD13/-AD63/-AD33/-AD83 series
<b>Sensing distance</b>	100 mm (White paper 50 × 50 mm)	100 mm (White paper 100 × 100 mm)
<b>Differential distance</b>	20% max. of sensing distance	20% max. of sensing distance
<b>Light source</b>	Infrared LED (950 nm)	Infrared LED (880 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	12 to 30 VDC, ripple: 10% max.
<b>Current consumption</b>	40 mA max.	35 mA max.
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.	Open collector output. E3S-AD13/-AD63: NPN open collector output. E3S-AD33/-AD83: PNP open collector output. Load power supply voltage 30 VDC max., Load current 100 mA max. (residual voltage 1 V max.) Open collector output type (depends on the NPN/PNP output format) Light-ON/Dark-ON Switch selectable.
<b>Response time</b>	Operate or reset: 1 ms max.	0.5 ms max. for both operation and release.
<b>Degree of protection</b>	IEC60529: IP65	IEC60529: IP67 NEMA: 4X (restricts to indoor use.)
<b>Indicators</b>	Light indicator (red) Stability indicator (green)	Light indicator (red) Stability indicator (green)

[ Characteristics ]

Item	Product discontinuation Model E3S-DS30 series	Recommendable replacement Model E3S-CD11/-CD61 series
<b>Sensing distance</b>	300 mm (White paper 100 × 100 mm)	700 mm (White paper 100 × 100 mm)
<b>Differential distance</b>	20% max. of sensing distance	20% max. of sensing distance
<b>Light source</b>	Infrared LED (950 nm)	Infrared LED (880 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	12 to 30 VDC, ripple: 10% max.
<b>Current consumption</b>	40 mA max.	40 mA max.
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.	NPN or PNP (selectable), open collector current output. Load power supply voltage 30 VDC max., Load current 100 mA max. (residual voltage NPN output 1.2 V max., PNP output 2.0 V max.) Open collector output type (NPN/PNP output switch selectable). Light-ON/Dark-ON switch selectable.
<b>Response time</b>	Operate or reset: 1 ms max.	1.0 ms max. for both operation and release.
<b>Degree of protection</b>	IEC60529: IP67	IEC60529: IP67 (company standard: oil proof) NEMA: 6P (restricts to indoor use.)
<b>Indicators</b>	Light indicator (red) Stability indicator (green)	Light indicator (red) Stability indicator (green)

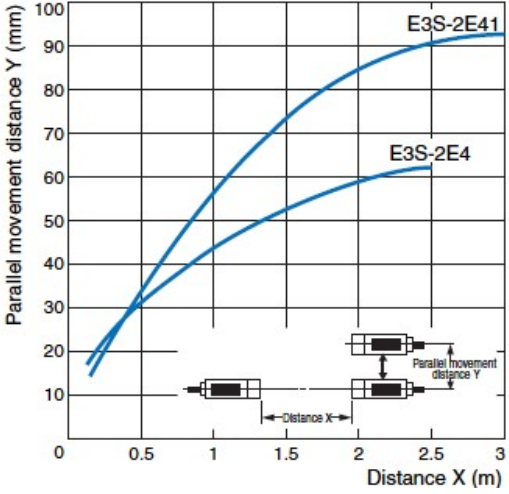
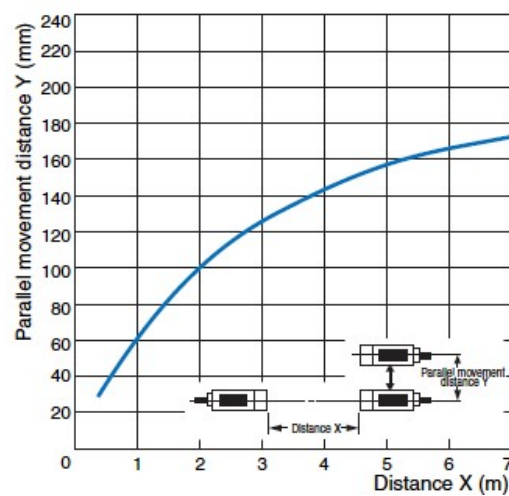
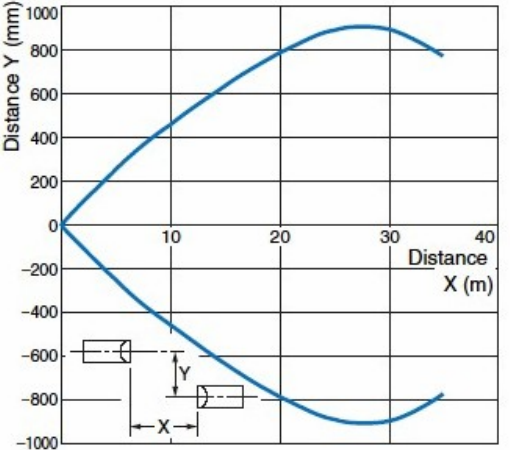
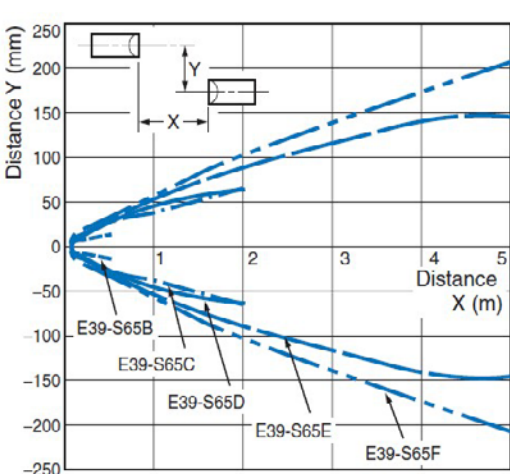
[ Characteristics ]

Item	Product discontinuation Model E3S-R2 series	Recommendable replacement Model E3Z-R series
<b>Sensing distance</b>	0.1 to 2 m (When using the E39-R1)	4 m (When using the E39-R1S)
<b>Standard sensing object</b>	Opaque: 30-mm dia. min.	Opaque: 75-mm dia. min.
<b>Light source</b>	Infrared LED (950 nm)	Red LED (660 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)
<b>Current consumption</b>	40 mA max.	30 mA max.
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.	Open collector output. E3Z-□6□: NPN open collector output. E3Z-□8□: PNP open collector output. Load current: 100 mA max. Residual voltage: Load current of less than 10 mA: 1 V max. Load current of 10 to 100 mA: 2 V max.
<b>Response time</b>	Operate or reset: 1 ms max.	Operate or reset: 1 ms max.
<b>Degree of protection</b>	IEC60529: IP67	IEC60529: IP67
<b>Indicators</b>	Light indicator (red) Stability indicator (green)	Operation indicator (orange) Stability indicator (green)

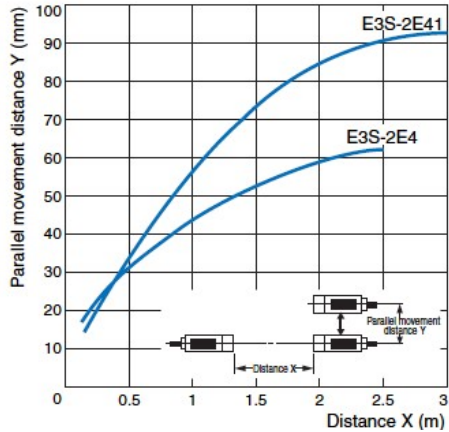
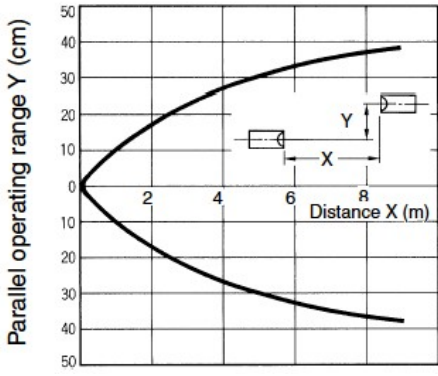
[ Characteristics ]

Item	Product discontinuation Model E3S-R2 series	Recommendable replacement Model E3S-CR11/-CR61 series
<b>Sensing distance</b>	0.1 to 2 m (When using the E39-R1)	3 m (When using the E39-R1)
<b>Standard sensing object</b>	Opaque: 30-mm dia. min.	Opaque: 75-mm dia. min.
<b>Light source</b>	Infrared LED (950 nm)	Red LED (700 nm)
<b>Power supply voltage</b>	12 to 24 VDC -10% to 10% (ripple (p-p): 10% max.)	12 to 30 VDC, ripple: 10% max.
<b>Current consumption</b>	40 mA max.	40 mA max.
<b>Control output</b>	(E3S-□E4 type) NPN voltage-current output. Output current: 1.5 to 4 mA. Load current: 80 mA max. Residual voltage: 2 V max. (E3S-□B4 type) PNP open collector output. Load current: 100 mA max. Residual voltage: 2 V max.	NPN or PNP (selectable), open collector current output. Load power supply voltage 30 VDC max., Load current 100 mA max. (residual voltage NPN output 1.2 V max., PNP output 2.0 V max.) Open collector output type (NPN/PNP output switch selectable). Light-ON/Dark-ON switch selectable.
<b>Response time</b>	Operate or reset: 1 ms max.	Operate or reset: 1 ms max.
<b>Degree of protection</b>	IEC60529: IP67	IEC60529: IP67 (company standard: oil proof) NEMA: 6P (restricts to indoor use.)
<b>Indicators</b>	Light indicator (red) Stability indicator (green)	Light indicator (red) Stability indicator (green)

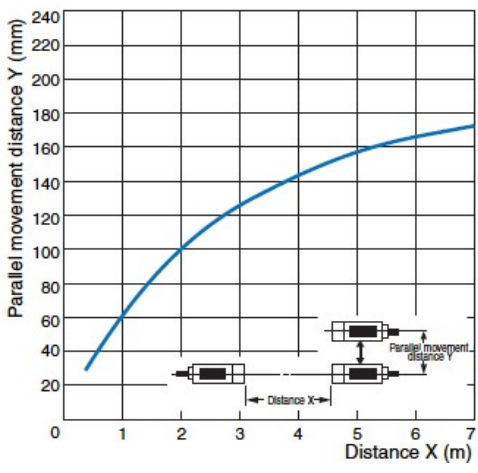
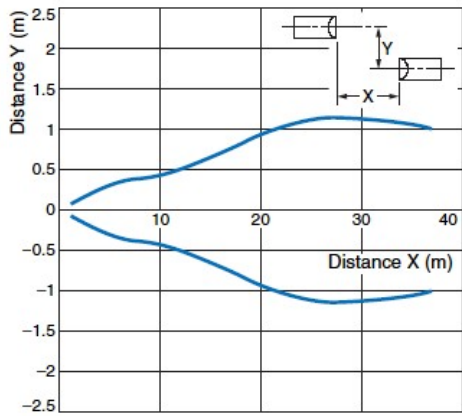
[ Operation ratings ]

<p>Product discontinuation Model E3S-2E4(41) Model E3S-5E4(41), (42)</p>	<p>Recommendable replacement Model E3Z-T□1(T□6)</p>
<p><b>Parallel Operating Range E3S-2E4 (41)</b></p>  <p><b>E3S-5E4 (41) (42)</b></p> 	<p><b>Parallel Operating Range E3Z-T□1(T□6)</b></p>  <p><b>E3Z-T□1(T□6) and Slit (A Slit is mounted to the Emitter and Receiver.)</b></p> 

[ Operation ratings ]

<p>Product discontinuation Model E3S-2E4(41)</p>	<p>Recommendable replacement Model E3S-AT[]1</p>
<p><b>Parallel Operating Range</b> E3S-2E4 (41)</p> 	<p><b>Parallel Operating Range</b> (Typical) E3S-AT[]1</p> 

[ Operation ratings ]

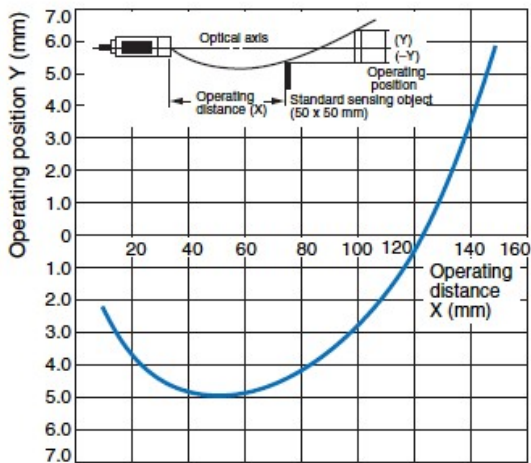
<p>Product discontinuation Model E3S-5E4(41)</p>	<p>Recommendable replacement Model E3S-CT[]1(-M1J)</p>
<p><b>Parallel Operating Range</b> E3S-5E4 (41) (42)</p> 	<p><b>Parallel Operating Range</b> Through-beam E3S-CT[] (-M1J)</p> 

[ Operation ratings ]

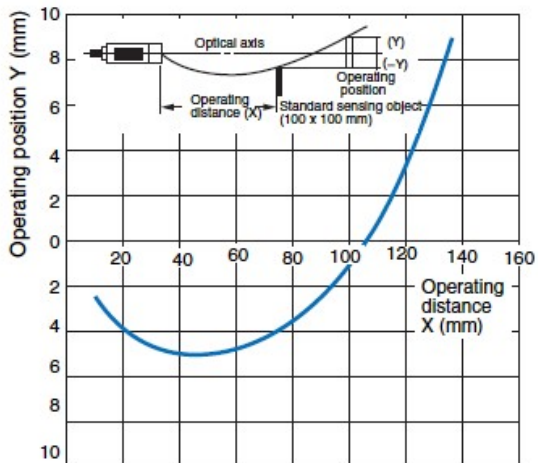
**Product discontinuation**  
**Model E3S-DS10E4(41)**  
**Model E3S-DS30E4(41), (42)**

**Recommendable replacement**  
**Model E3Z-D□1(D□6)**  
**Model E3Z-D□2(D□7)**

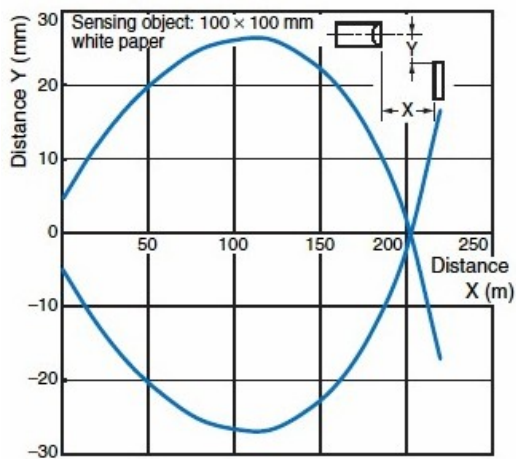
**Operating Range**  
**E3S-DS10E4 (41)**



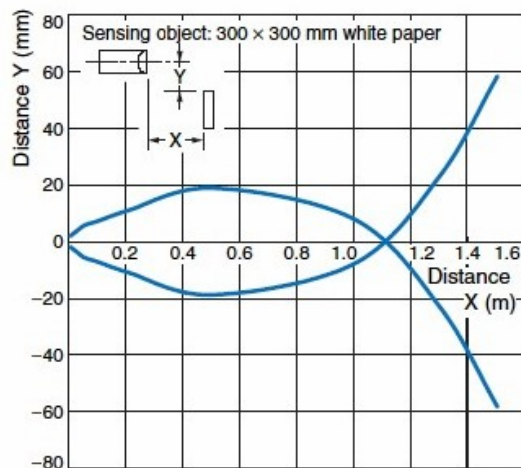
**E3S-DS30E4 (41) (42)**



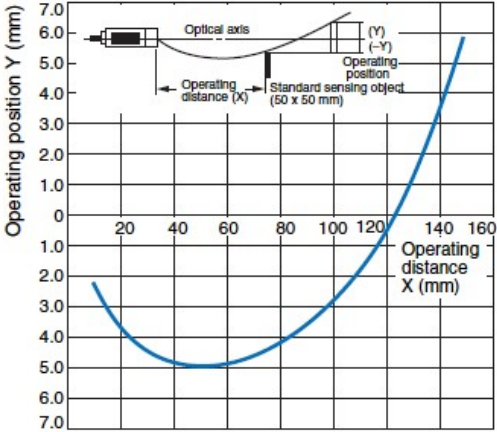
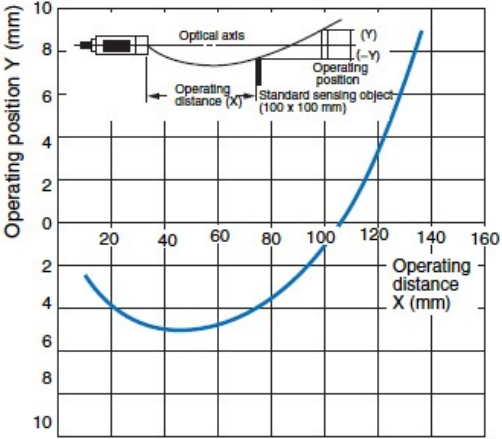
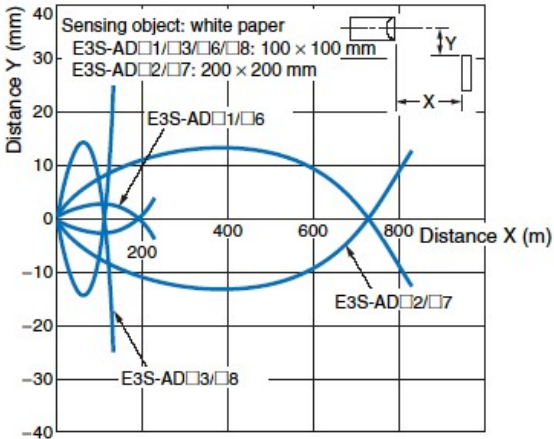
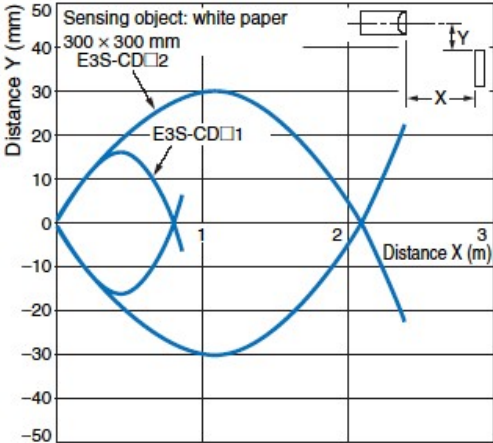
**Operating Range**  
**E3Z-D□1(D□6)**



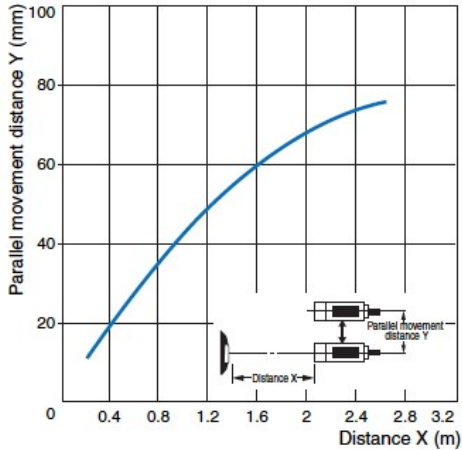
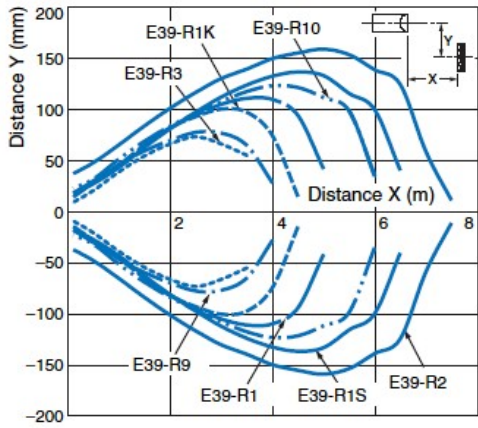
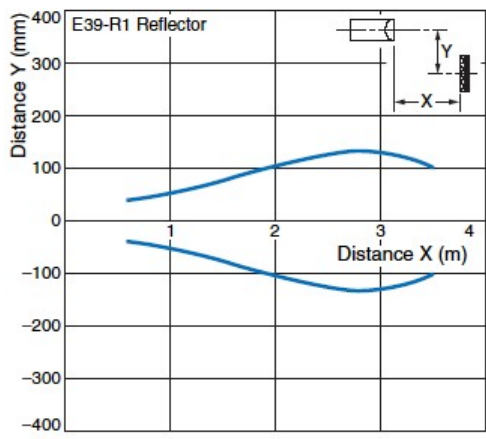
**E3Z-D□2(D□7)**



[ Operation ratings ]

<p><b>Product discontinuation</b>  <b>Model E3S-DS10E4(41)</b>  <b>Model E3S-DS30E4(41)</b></p>	<p><b>Recommendable replacement</b>  <b>Model E3S-AD series</b>  <b>Model E3S-CD series</b></p>
<p><b>Operating Range</b>  <b>E3S-DS10E4 (41)</b></p>  <p><b>E3S-DS30E4 (41) (42)</b></p> 	<p><b>Sensing Range</b>  <b>Diffuse-reflective Sensors</b>  <b>E3S-AD□1/AD□2/AD□3/AD□6/AD□7/AD□8</b></p>  <p><b>Operating Range</b>  <b>Diffuse-reflective</b>  <b>E3S-CD□□ (-M1J)</b></p> 

[ Operation ratings ]

<p><b>Product discontinuation</b>  <b>Model E3S-R2E4(41), (42)</b></p>	<p><b>Recommendable replacement</b>  <b>Model E3Z-R□1(R□6) and Reflector</b>  <b>Model E3S-CR□1(-M1J) + R39-R1 Reflector</b></p>
<p><b>Parallel Operating Range</b>  <b>E3S-R2E4 (41) (42)</b></p> 	<p><b>Retro-reflective Models</b>  <b>E3Z-R□1(R□6) and Reflector</b></p>  <p><b>Retro-reflective</b>  <b>E3S-CR□1 (-M1J) + E39-R1 Reflector</b>  <b>(Provided)</b></p> 



[ Operation methods ]

<p align="center"><b>Product discontinuation</b>  <b>Model E3S-2, -5, -DS, -R2 series</b></p>	<p align="center"><b>Recommendable replacement</b>  <b>Model E3Z-T, -D, -R series</b>  <b>Model E3S-AT, -AD series</b>  <b>Model E3S-CT, -CD, CR series</b></p>
<p><b>E3S-2/-5/-DS/-R2 series</b>  Sensitivity adjustment: One-turn adjuster.  Light-ON/Dark-ON: Inverting the connection  (Brown-Blue) .</p>	<p><b>E3Z-T/-D/-R series</b>  <b>E3S-CT/-CR series</b>  Sensitivity adjustment: One-turn adjuster.  Light-ON/Dark-ON: Switch selectable.</p> <p><b>E3S-AT/-AD series</b>  <b>E3S-CD series</b>  Sensitivity adjustment: Two-turn endless  adjuster with an  indicator.  Light-ON/Dark-ON: Switch selectable.</p>

Specifications and prices in this product news are as of the issue date and are subject to change without notice.  
Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.