

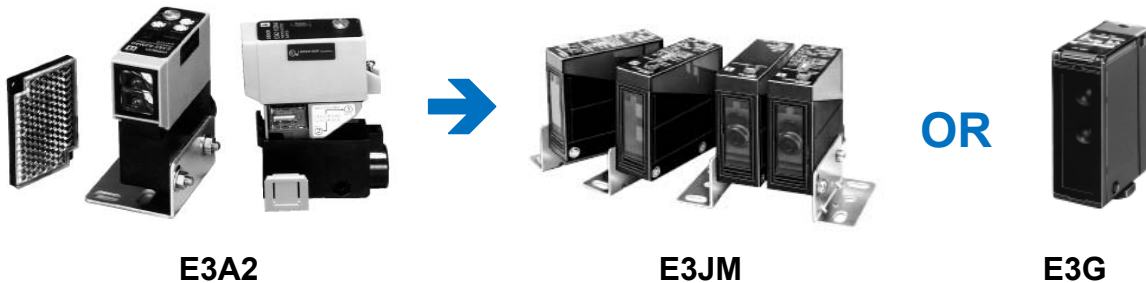
# Channel ACTION ALERT!



**NO:** PH-148  
**DATE:** July 2011

**PRODUCT:** E3A2 Photoelectric Sensor  
**TYPE:** Discontinuation Notice

Photoelectric Sensor E3A2 and Fiber-Optic Model E3A2-X will be Discontinued March 2012; Use E3JM and E3G



The E3A2 Slim Photoelectric Sensors and E3A2-X Fiber-optic Amplifiers will be discontinued March 2012. Omron Industrial Automation recommends using E3JM and E3G Sensors as conditional replacements for E3A2 models. There is no suggested replacement for E3A2-X fiber-optic models. The discontinuation includes models with built-in timer, designated with "D" or "T" in the part number.

The unique feature of E3A2 is the plug-in replaceable output. This is not available on the recommended replacements. The E3A2-X fiber-optic amplifier offered an AC/DC powered option to industry standard DC power only models.

## Discontinued Products/Suggested Replacements

Product discontinuation	Recommended replacement
<b>Diffuse reflective models</b>	
E3A2-DS70M4	E3JM-DS70M4-US
E3A2-DS70M4D	E3JM-DS70M4T-US
E3A2-DS70M4T	E3JM-DS70M4T-US
E3A2-DS70M4-G1	E3G-ML79-G
E3A2-DS70M4-G	E3JM-DS70M4-G
E3A2-DS70M4D-G	E3JM-DS70M4T-G
E3A2-DS70M4T-G	E3JM-DS70M4T-G
<b>Retro-reflective models</b>	
E3A2-R3M4	E3G-MR19
E3A2-R3M4-G	E3G-MR19-G
E3A2-R3M4D-G	E3G-MR19-G
E3A2-R3M4T-G1	E3G-MR19T-G
E3A2-R3M4D	E3G-MR19T
E3A2-R3M4T	E3G-MR19T
E3A2-R3M4-GN	E3G-MR19-G
E3A2-R3M4-GN1	E3G-MR19-G
E3A2-R3M4D-GN	E3G-MR19T-G
E3A2-R3M4D-GN1	E3G-MR19T-G
E3A2-R3M4D-G1-31	E3G-MR19T-G
E3A2-R3M4T-G	E3G-MR19T-G

Product discontinuation	Recommended replacement
<b>Through-beam models</b>	
E3A2-10M4	E3JM-10M4-US
E3A2-10M4D	E3JM-10M4T-US
E3A2-10M4T	E3JM-10M4T-US
E3A2-10M4-G	E3JM-10M4-G-N
E3A2-10M4D-G	E3JM-10M4T-G-N
E3A2-10M4T-G	E3JM-10M4T-G-N
E3A2-10L	E3JM-10L-US
<b>Fiber-optic amplifier models</b>	
E3A2-XCM4	None
E3A2-XCM4D	None
E3A2-XCM4T	None
E3A2-XCM4-G	None
E3A2-XCM4D-G	None
E3A2-XCM4T-G	None

## Summary of Differences

The table below shows the key differences between E3A2 and replacement models E3JM and E3G:

Series Name	E3A2	E3JM	E3G
Wiring	Terminals 3, 4, and 5 are for output	Terminals 1, 2, and 3 are for output	Terminals 1, 2, and 3 are for output
Mounting holes	36mm apart	42mm apart	37mm x 74mm apart
Timing Functions	Normal, ON-delay, OFF-delay, one-shot or equal ON and OFF Delays	ON-delay, OFF-delay, and one-shot	ON-delay, OFF-delay, or one-shot
Response Time	15 ms maximum (ON and OFF)	30 ms maximum (ON and OFF)	30 ms maximum (ON and OFF)

For a detailed comparison, see the following pages.

## Reference Documentation

Please refer to the E3A2, E3JM, and E3G Sensor Datasheets for complete details.

Description	Media	Publication number
E3A2 Photoelectric Sensor Datasheet	PDF only	<a href="#">CEDSAX4 E3A2</a>
E3A2-X Fiber-Optic Amplifier Datasheet	PDF only	<a href="#">CEDSAX4 E3A2-X</a>
E3JM Datasheet	PDF only	<a href="#">CEDSAX4 E3JM</a>
E3G Datasheet	PDF only	<a href="#">CEDSAX4 E3G</a>

# Body Color

Product discontinuation	Recommended replacement
Yellow+Black	Black

# Dimensions (Unit: mm)

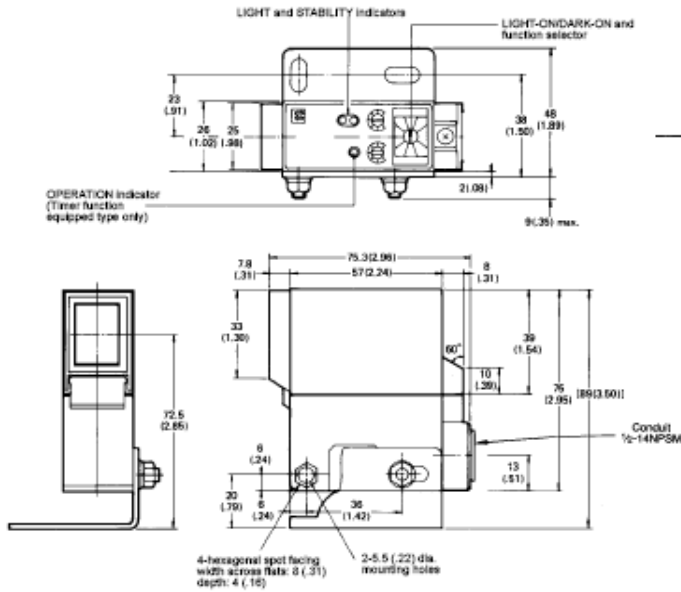
Product discontinuation	Recommended replacement
<p><b>Model E3A2-DS70□□(-G) series</b></p>	<p><b>E3JM-DS70□4(T)-G/US With Mounting Bracket Attached</b></p>

<p><b>Model E3A2-DS70M4T-G1</b></p> <p>Unit: mm (inch)</p>	<p><b>Model E3G-ML79</b></p>
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### Product discontinuation

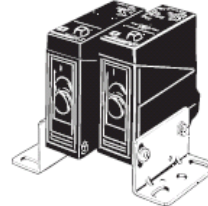
#### Model E3A2-10□□(-G) series

Unit: mm (inch)

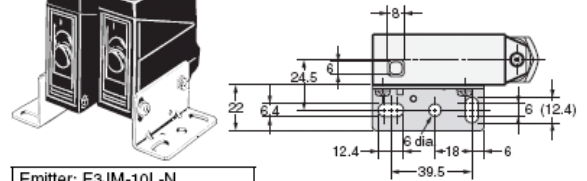


### Recommended replacement

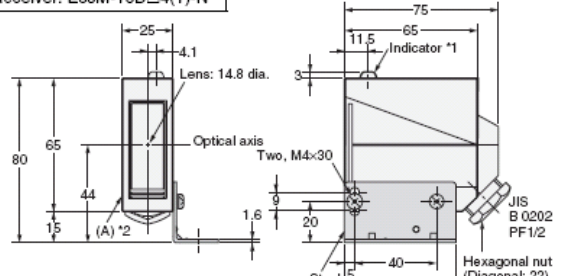
#### E3JM-10□4(T)-G-N/US



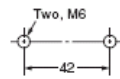
With Mounting Bracket Attached



Emitter: E3JM-10L-N  
Receiver: E3JM-10D□4(T)-N



Mounting Holes

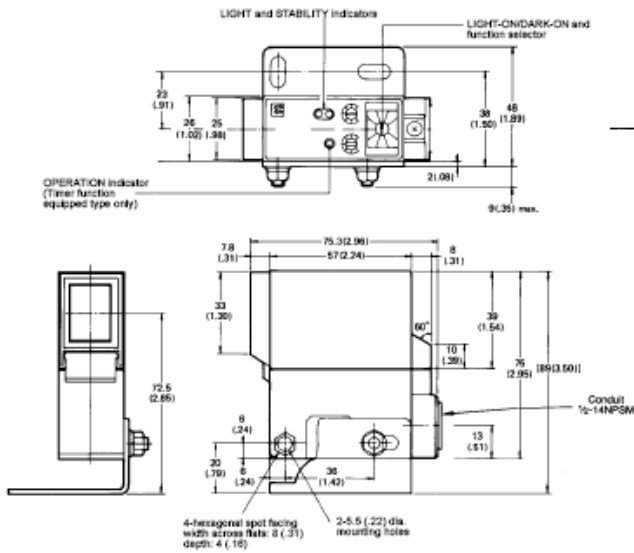


- \*1. Emitter: Power indicator  
Receiver: Light indicator (without timer function)  
Operation indicator (with timer function)
- \*2. Mounting Brackets can be used on the A side.

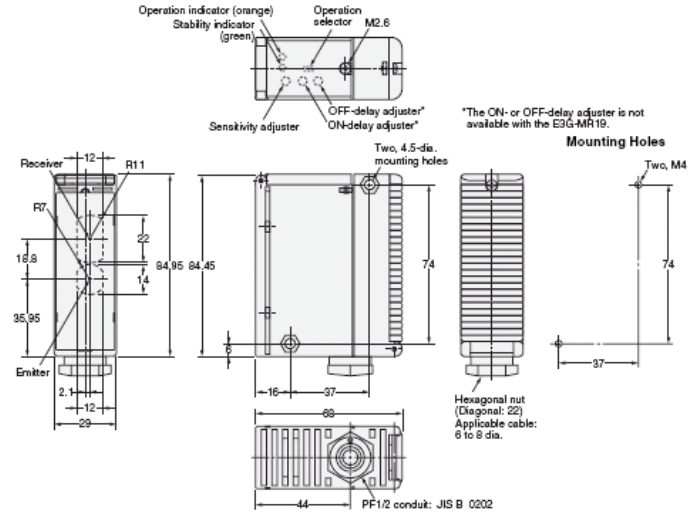
Note: The operating mode switch and timer mode switch are located inside the cover.

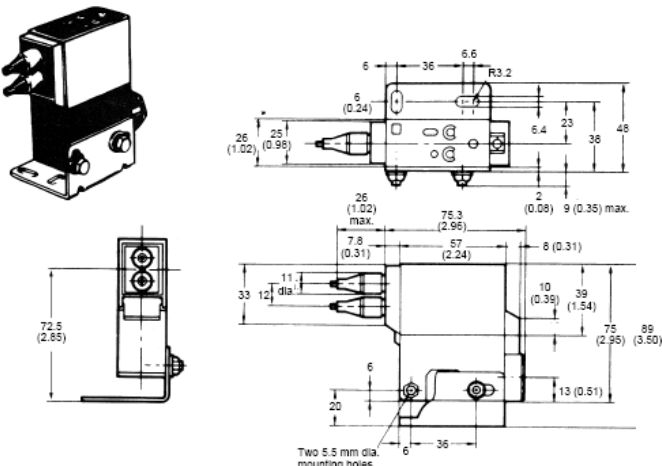
#### Model E3A2-R3□□(-G) series

Unit: mm (inch)

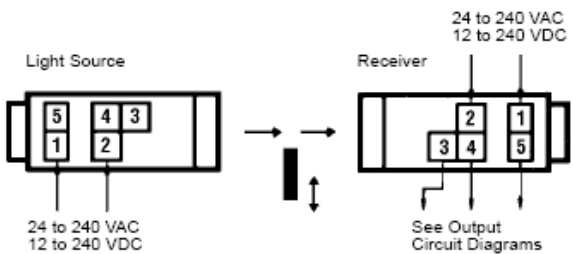
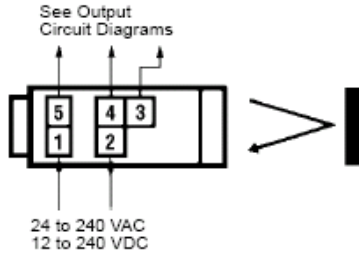
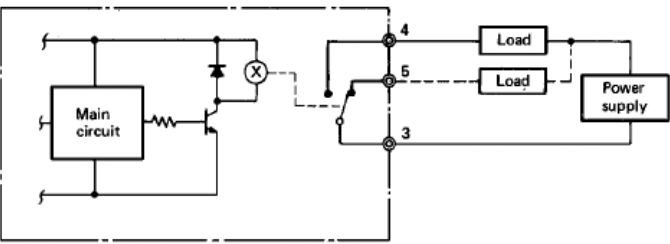
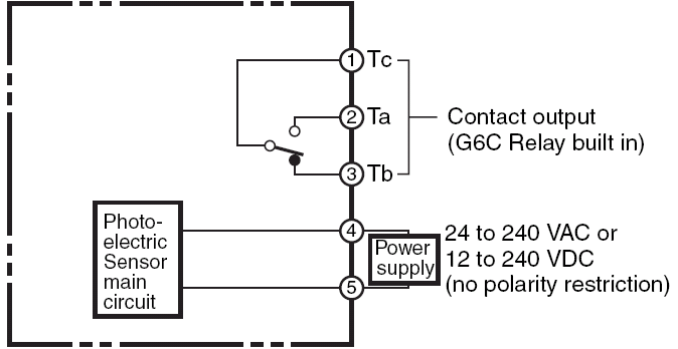


#### Model E3G-MR19(T)-G

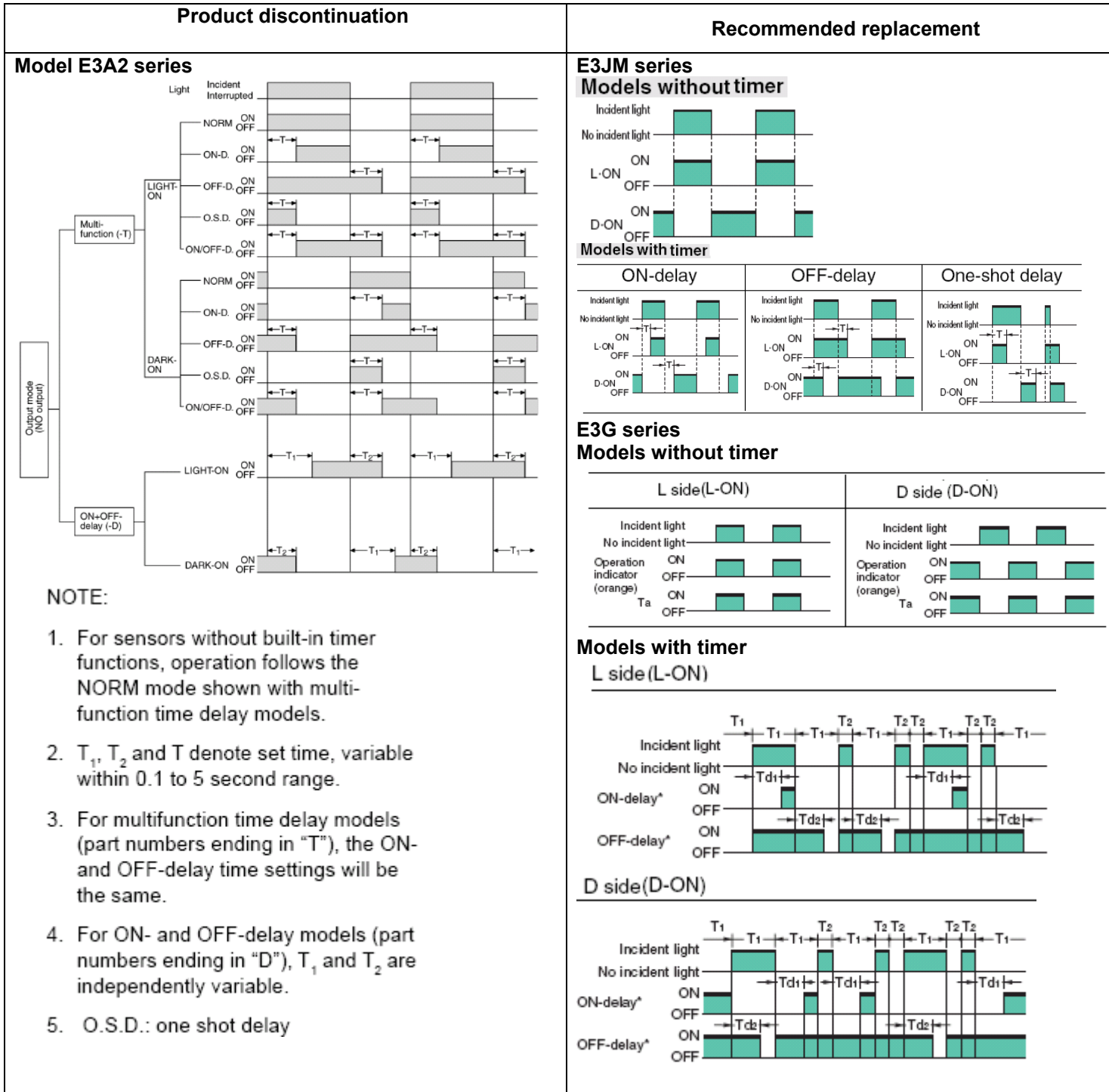


Product discontinuation	Recommended replacement
<p><b>Model E3A2-XC type</b></p> 	<p>None</p>

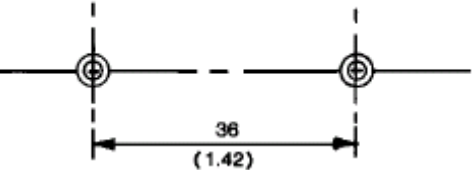
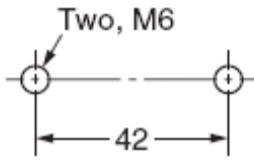
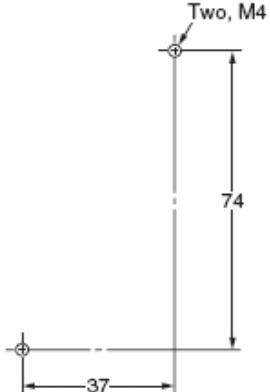
### Wire Connection

Product discontinuation	Recommended replacement
<p><b>Model E3A2-10□□□(-G) Through-beam types</b></p>  <p><b>Model E3A2-DS70M4□/ R3M□</b>  <b>Retrospective and Diffuse Reflective Types</b></p>  <p><b>Relay output</b></p> 	<p><b>Model E3JM-10□4(T)-G-N/US</b>  <b>Model E3JM-DS70□4(T)-G/US</b>  <b>Model E3G-MR19(T)(-G)</b></p>  <p>24 to 240 VAC 12 to 240 VDC</p> <p>24 to 240 VAC or 12 to 240 VDC (no polarity restriction)</p>

# Timing Chart



## Mounting Dimensions

Product discontinuation	Recommended replacement
<p><b>Model E3A2 series</b> Mounting holes</p> 	<p><b>Model E3JM-10□4(T)-G-N/US</b> <b>Model E3JM-DS70□4(T)-G/US</b></p>  <p><b>Model E3G-MR19(T)(-G)</b> Mounting Holes</p> 

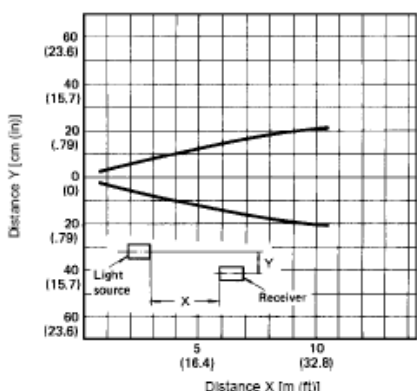
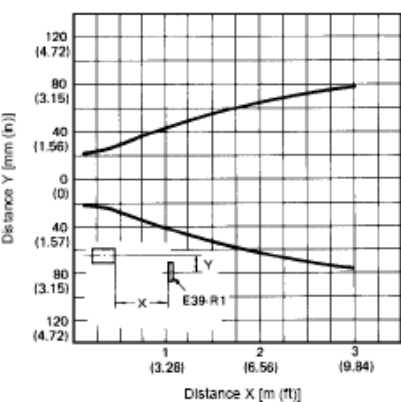
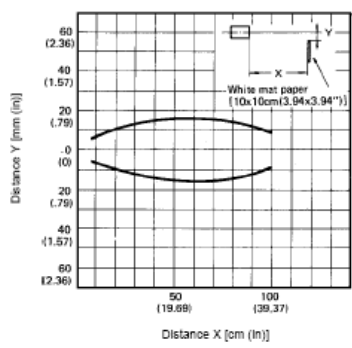
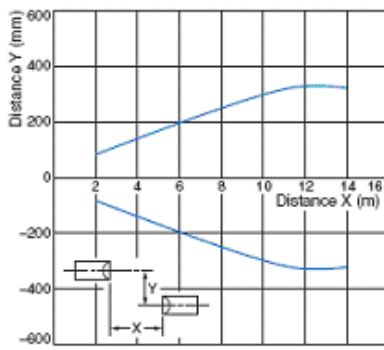
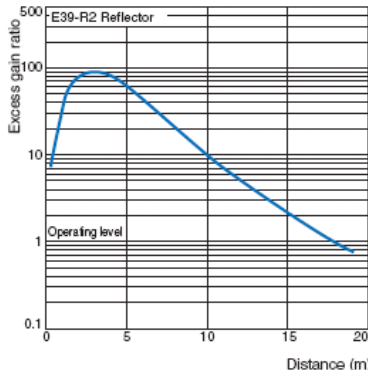
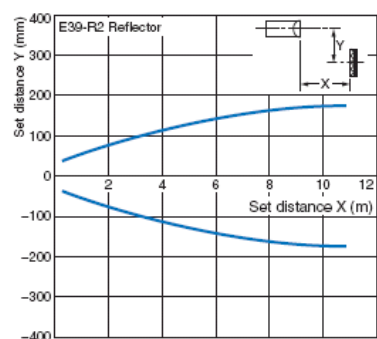
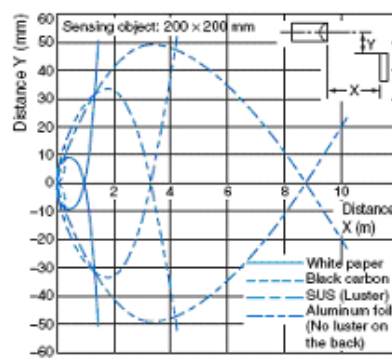
## Characteristics

Item		Product discontinuation	Recommended replacement
		E3A2-10□□□(-G)	E3JM-10□4(T)-G-N/US
<b>Sensing distance</b>		10 m (32.8 ft)	10 m
<b>Power supply voltage</b>		24 to 240 VAC, 50/60 Hz; 12 to 240 VDC	12 to 240 VDC $\pm 10\%$ , ripple (p-p): 10% max. 24 to 240 VAC $\pm 10\%$ at 50/60 Hz
<b>Light source (wavelength)</b>		Infrared LED (950 nm)	Infrared LED (950 nm)
<b>Power/Current Consumption</b>	<b>Relay output type</b>	Emitter: 0.82 W. max. Receiver: 1.2 W max.	3 W max. Emitter: 1.5 W max. Receiver: 1.5 W max.
	<b>DC solid-state output</b>		
	<b>AC solid-state output</b>	Emitter: 0.82 VA max. Receiver: 1.2 VA max.	
<b>Control output</b>	<b>Relay</b>	<b>Type</b>	Relay output (E3JM-□□M4 (T) model): SPDT, 3 A at 250 VAC ( $\cos\phi = 1$ ) 10 mA min. at 5 VDC
		<b>Max. load</b>	
<b>Response Time (ON and OFF)</b>	<b>Relay output type</b>	15 ms max. with G6C-2117P-DC8 output module (standard)	E3JM-□□M4 (T) models) Operate or reset: 30 ms max.
<b>Timer function</b>	<b>Type</b> E3A2-□□□T	Normal, ON-delay, OFF-delay, one-shot or equal ON- and OFF-delays, switch selectable	ON-delay/OFF-delay/One-shot delay switch selectable (Only for E3JM-□□□4T)
	<b>Type</b> E3A2-□□□D	Independent ON- and OFF-delays	
	<b>Range</b>	0.1 to 5 seconds	0.1 to 5 seconds (adjustable), only for E3JM-□□□4T
<b>Degree of protection</b>		IEC 60529: IP66	IEC 60529: IP66

Item		Product discontinuation		Recommended replacement	
		E3A2-DS70□□□(-G)		E3JM-DS70□4(T)-G/US	
<b>Sensing distance</b>		70 cm (27.6 in) with 10 x 10 cm (3.94 x .94 in) 90% reflectance white matte paper		70 cm with 20 x 20 cm white paper	
<b>Power supply voltage</b>		24 to 240 VAC, 50/60 Hz; 12 to 240 VDC		12 to 240 VDC ±10%, ripple (p-p): 10% max. 24 to 240 VAC ±10% at 50/60 Hz	
<b>Light source (wavelength)</b>		Infrared LED (950 nm)		Infrared LED (950 nm)	
<b>Power/Current Consumption</b>		<b>Relay output type</b>	1.5 W max.	2 W max.	
		<b>DC solid-state output</b>			
		<b>AC solid-state output</b>	2 VA max.		
<b>Control output</b>	<b>Relay</b>		SPDT with G6C-2117P-DC8 output module (standard)	Relay output (E3JM-□□M4 (T) model): SPDT, 3 A max. at 250 VAC (cosφ =1) 10 mA min. at 5 VDC	
			3 A, 250 VAC (p.f. = 1); 3 A, 30 VDC		
<b>Response Time (ON and OFF)</b>	<b>Relay output type</b>	15 ms max. with G6C-2117P-DC8 output module (standard)		Operate or reset: 30 ms max.	
<b>Timer function</b>		<b>Type</b> E3A2-□□□T	Normal, ON-delay, OFF-delay, one-shot or equal ON- and OFF-delays, switch selectable	ON-delay/OFF-delay/One-shot delay switch selectable (Only for E3JM-□□□4T)	
		<b>Type</b> E3A2-□□□D	Independent ON- and OFF-delays		
		<b>Range</b>	0.1 to 5 seconds	0.1 to 5 seconds (adjustable), only for E3JM-□□□4T	
<b>Degree of protection</b>		IEC 60529: IP66		IEC 60529: IP66	

Item		Product discontinuation	Recommended replacement	
		E3A2-R3□□□(-G)	E3G-MR19(T)(-G)	
Sensing distance		3 m (9.8 ft) with E39-R1 reflector (included)	10 m (500 mm) when using E39-R2	
Power supply voltage		24 to 240 VAC, 50/60 Hz; 12 to 240 VDC	12 to 240 VDC ±10%, ripple (p-p): 10% max. 24 to 240 VAC ±10% at 50/60 Hz	
Light source (wavelength)		Pulse modulated red LED, polarized (680 nm)	Red LED (650 nm)	
Power/Current Consumption		Relay output type	2 W max.	
		DC solid-state output		1.5 W max.
		AC solid-state output		2 VA max.
Control output	Relay	Type	Relay output: SPDT, 3 A ( $\cos\phi = 1$ ) max. at 250 VAC or 3 A max. at 30 VDC Light-ON/Dark-ON, selectable	
		Max. load		3 A, 250 VAC (p.f. = 1); 3 A, 30 VDC
Response Time (ON and OFF)	Relay output type	15 ms max. with G6C-2117P-DC8 output module (standard)	Operate or reset: 30 ms max.	
Timer function		Type E3A2-□□□T	ON-delay/OFF-delay/One-shot delay; 0.1 to 5 seconds adjustable (only for E3G-MR19T)	
		Type E3A2-□□□D		Independent ON- and OFF-delays
		Range	0.1 to 5 seconds	0.1 to 5 seconds
Degree of protection		IEC 60529: IP66	IEC 60529: IP67 (with protective cover)	

# Operation Ratings

Product discontinuation	Recommended replacement
<p><b>■ LIGHT SOURCE/RECEIVER SETTING RANGE</b></p> <p><b>Through-Beam Type</b></p>  <p><b>■ REFLECTOR SETTING RANGE</b></p> <p><b>Retroreflective Type</b></p>  <p><b>■ OPERATING RANGE</b></p> <p><b>Diffuse Reflective Type</b></p> 	<p><b>Through-beam</b></p> <p><b>E3JM-10□4(T)-G-N/US</b></p>  <p><b>E3G-R/MR Retro-reflective Models</b></p> <p><b>Excess Gain vs. Set Distance</b></p>  <p><b>Parallel Operating Range</b></p>  <p><b>Diffuse-reflective</b></p> <p><b>E3JM-DS70□4(T)-G/US</b></p> 

# Operation Methods

Product discontinuation	Recommended replacement
<p>Sensitivity adjustment:                      E3A2-10□□□: fixed                      E3A2- R3□□□/DS70□□□: one-turn adjuster</p>	<p>Sensitivity adjustment:                      E3JM-10M4(T): fixed                      E3G-MR19(T)/E3JM-DS70M4(T): one-turn adjuster</p>