

Product Discontinuation Notices

August 1, 2011

Photoelectric Sensors

No. 2011239E-1

Discontinuation Notice of Photoelectric Sensor E3S-X series, E3X-NL series, E3X-NM series / E39-G9

Product Discontinuation



**E3S-X series
E3X-NL series**

**E3X-NM series
E39-G9**



Recommended Replacement

**E3X-NAV series
E3X-DA-S series
E32 series
E3X-MDA series**

Discontinuation date : The end of March, 2012

Caution on recommended replacement

E3S-X series

- The material will be changed to PBT from zinc die cast.
- Degree of protection of the recommended exchange model is IP66 with protective cover. When using it without the protection cover, there is no water protection.

E3X-NL series

- The recommended replacement is a normal type of the fiber amplifier sensor, whereas the conventional one is a grossness detection type. So, the customers are requested to confirm the feasibility about whether or not the replacement is able to match the concerned application.
- The customers are requested to check the installation dimensions because the outline dimensions of the current model are different from the outline dimensions of the replacement.
- Please replace the amplifier along with the fiber unit to make sure the sensing performance.

E3X-NM series, E39-G9

- The use of two units will be needed because the output channels with the replacement are decreased from 4 channels to 2 channels with conventional ones.
- The remote input function will be eliminated.
- In the case that the customers are using a reflective fiber where the insertion entrance is an integrated type, the customers are needed to change the fiber unit because the pitch at the fiber insertion position of the replacement is different from that of the conventional's.

Difference from discontinued product

E3S-X series

Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
E3X-NAV	--	--	--	--	*	--	*

E3X-NL series

Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
E3X-DA-S	--	--	--	--	*	--	--
E32	*	--	--	--	--	-	-

E3X-NM series, E39-G9

Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
E3X-DA-S	--	--	--	--	*	--	--

** : Fully compatible

* : The change is a little/Almost compatible

-- : Not compatible

- : No corresponding specification

Product Discontinuation and recommended replacement

	Product discontinuation	Recommended replacement
E3S-X series	E3S-X3CE4 2M	E3X-NA11V 2M
	E3S-X3CE4 5M	E3X-NA11V 5M
	E3S-X3CB4 2M	E3X-NA41V 2M
	E3S-X3CB4 5M	E3X-NA41V 5M
	E3S-X3CB4-42 5M	E3X-NA41V 5M
	E3S-X3CGE4 2M	-
E3X-NL series	E3X-NL11 2M	E3X-DA21-S 2M
	E32-S15-1 0.5M	E32-L25L 2M
	E32-S15-2 1M	E32-L25L 2M
	E32-S15L-1 0.5M	E32-L25L 2M
	E32-S15L-2 1M	E32-L25L 2M
E3X-NM series, E39-G9	E3X-NM11 2M	E3X-MDA11 2M
	E3X-NM11 5M	E3X-MDA11 5M
	E3X-NM41 2M	E3X-MDA41 2M
	E3X-NM41 5M	E3X-MDA41 2M
	E3X-NM11-4	E3X-MDA11 2M
	E39-G9	-

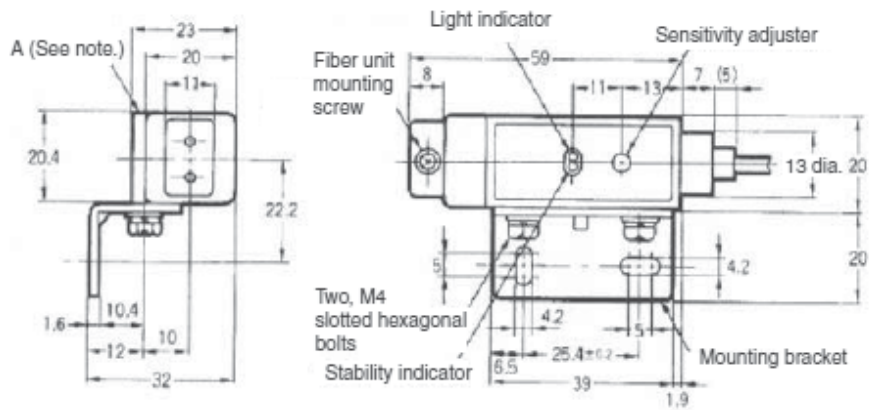
E3S-X series

Body color

Product discontinuation E3S-X series	Recommendable replacement E3X-NAV series
Color of case: Bright yellow	Color of case: Black

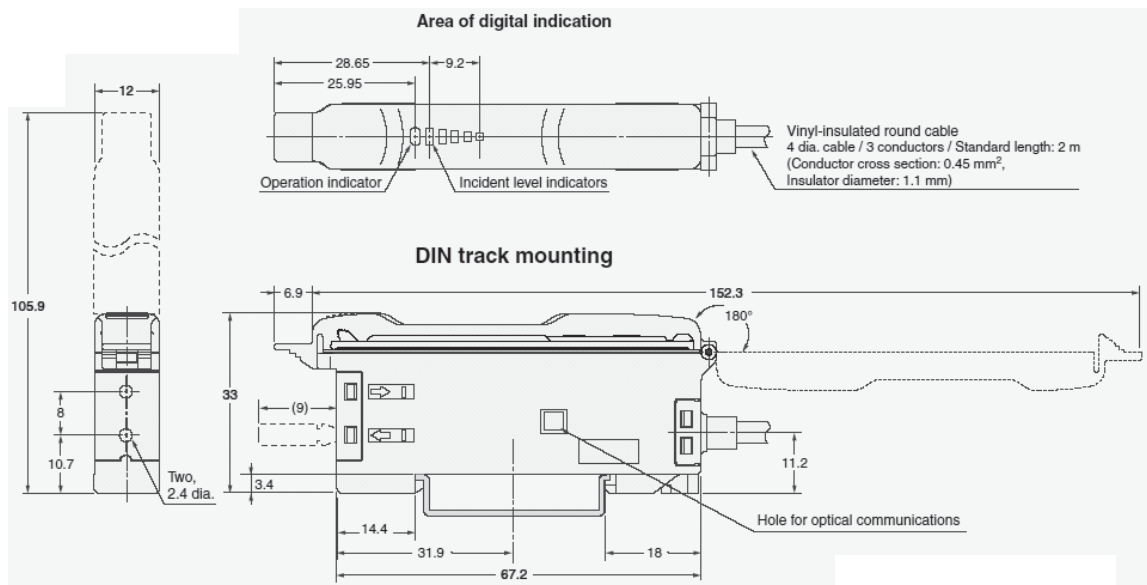
Dimensions

Product discontinuation E3S-X series

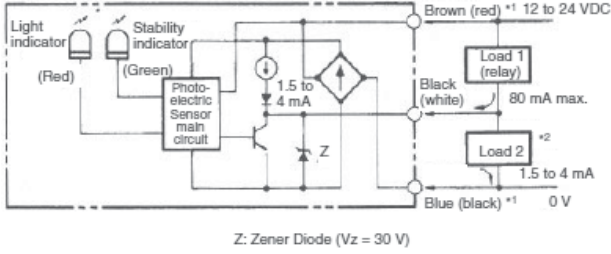
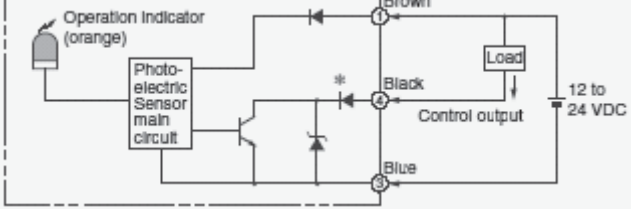
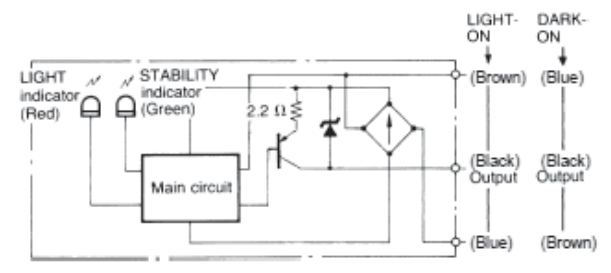
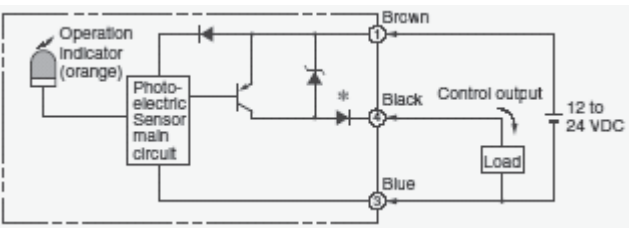


Note: The Mounting Bracket can also be used on side A.

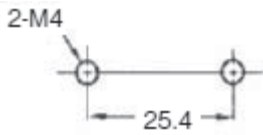
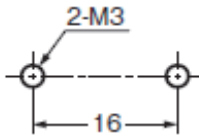
Recommendable replacement E3X-NAV series



Wire connection

Product discontinuation E3S-X series	Recommendable replacement E3X-NAV series
<p>E3S-X3CE4 (NPN Output)</p>  <p>Z: Zener Diode ($V_z = 30\text{ V}$)</p>	<p>E3X-NA11V (NPN Output)</p> 
<p>E3S-X3CB4 (PNP Output)</p>  <p>LIGHT-ON (Brown) / DARK-ON (Blue) (Black) Output / (Black) Output (Blue) / (Brown)</p>	<p>E3X-NA41V (PNP Output)</p> 

Mounting dimensions

Product discontinuation E3S-X series	Recommendable replacement E3X-NAV series
<p>Screw mounting</p> 	<ul style="list-style-type: none"> - Din track mounting - Screw mounting with a mounting bracket (E39-L143) 

Ratings and Specifications

	Product discontinuation	Recommended replacement
NPN output type	E3S-X3CE4	E3X-NA11V
PNP output type	E3S-X3CB4	E3X-NA41V
Light source (wavelength)	Red LED (660 nm)	Red LED (680 nm)
Power supply voltage	12 to 24VDC \pm 10%, ripple (p-p) 10% max.	
Current consumption/ Power consumption	50 mA max	960 mW max. (Current consumption: 40 mA max.)
Sensitivity adjustment	One-turn variable adjuster	8-turn sensitivity adjuster (with indicator)
Control output	Output current: 1.5 to 4 mA, Load current: 80 mA max. (Residual voltage: 2 V max.)	Open-collector output (NPN or PNP) Load power supply: 26.4 V max., Load current: 50 mA max. (Residual voltage: 1 V max.) Light-ON/Dark-ON mode selector.
Response time	Operate or reset: 1 ms max.	Operate or reset: 200 μ s max. (When there are 8 or more E3X-NA Amplifiers mounted side-by-side, the response time will be 350 μ s max.)
Mutual interference prevention	Up to 2 Sensors	Up to 5 Amplifiers (optically synchronized)
Ambient illumination (Receiver side)	Incandescent lamp: 3,000 lux max. Sunlight: 10,000 lux max.	Receiver side Incandescent lamp: 10,000 lux max. Sunlight: 20,000 lux max.
Ambient temperature range	Operating: -25 to +55 °C Storage: -25 to +70 °C (with no icing or condensation)	Operating: Groups of 1 to 3 Amplifiers: -25°C to 55°C Groups of 4 to 11 Amplifiers: -25°C to 50°C Groups of 12 to 16 Amplifiers: -25°C to 45°C Storage: -30°C to 70°C (with no icing or condensation)
Ambient humidity range	Operating: 35% to 85% Storage: 35% to 95% (with no condensation)	Operating and storage: 35% to 85% (with no condensation)
Insulation resistance	20 M Ω min. (at 500 VDC)	
Dielectric strength	500 VAC at 50/60 Hz for 1 minute	1,000 VAC at 50/60 Hz for 1 minute
Vibration resistance	10 to 55 Hz with a 1.5-mm double amplitude for 2 hours each in X, Y, Z directions	
Shock resistance	Destruction: 500 m/s ² , for 3 times each in X, Y, Z directions	
Degree of protection	IEC 60529 IP66	IEC 60529 IP66 (with Protective Cover attached)
Connection method	Pre-wired model	
Materials	Case	Zinc die-cast
	Cover	-
Accessories	Mounting bracket, Tab for adjustment, Bracket for adjustment	Instruction manual

E3X-NL series

Body color

Product discontinuation E3X-NL series	Recommendable replacement E3X-DA-S / E32 series
Amplifier unit E3X-NL11: Light gray Fiber unit E32-S15(L)-□: Black	Amplifier unit E3X-DA21-S: Black Fiber unit E32-L25L: Black

Dimensions

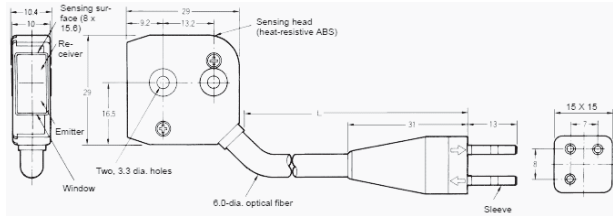
Product discontinuation E3X-NL series	Recommendable replacement E3X-DA-S series
Amplifier unit E3X-NL11	Amplifier unit E3X-DA21-S

Dimensions

Product discontinuation E3X-NL series

Fiber unit

E32-S15-□

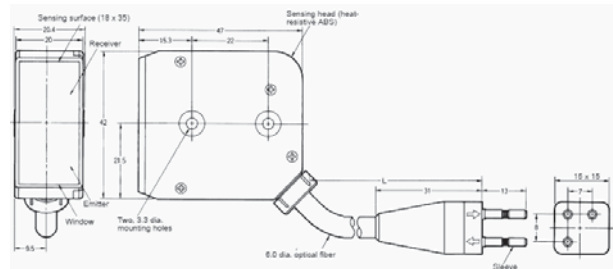


Fiber Length (L)

Model	Standard length (L)
E32-S15-1	500
E32-S15-2	1,000

Fiber unit

E32-S15L-□



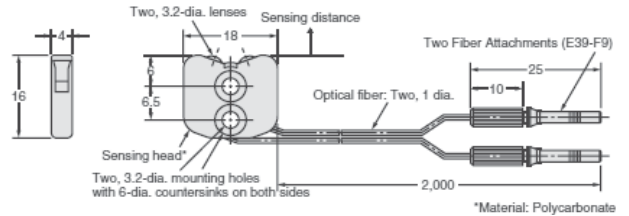
Fiber Length (L)

Model	Standard length (L)
E32-S15L-1	500
E32-S15L-2	1,000

Recommendable replacement E3X-DA-S series

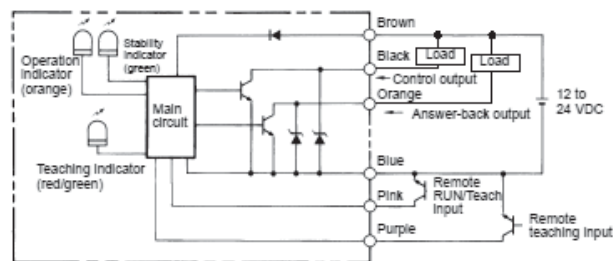
Fiber unit

E32-L25L

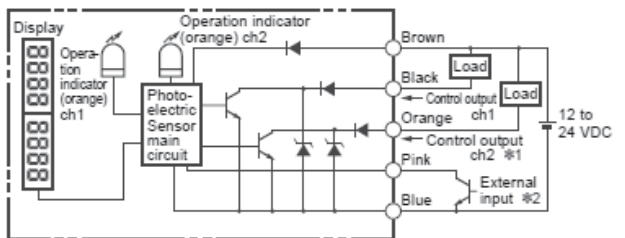


Wire connection

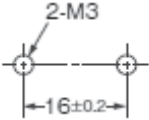
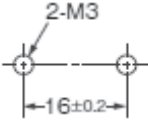
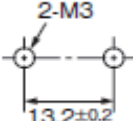
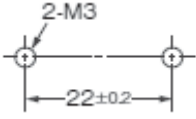
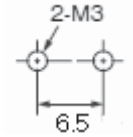
Product discontinuation E3X-NL series



Recommendable replacement E3X-DA-S series



Mounting dimensions

Product discontinuation E3X-NL series	Recommendable replacement E3X-DA-S / E32 series
<p>Amplifier unit E3X-NL11</p> <ul style="list-style-type: none"> - Din track mounting - Screw mounting 	<p>Amplifier unit E3X-DA21-S</p> <ul style="list-style-type: none"> - Din track mounting - Screw mounting  <p>* Please confirm dimensions of appearance since the appearance will be changed even if the positions of mounting holes are the same.</p>
<p>Fiber unit E32-S15-□</p>  <p>E32-S15L-□</p> 	<p>Fiber unit E32-L25L</p> 

Operation methods

Product discontinuation E3X-NL series	Recommendable replacement E3X-DA-S series
Operation with slide switch and push button.	Operation with slide switch and push button.

Characteristics

Amplifier unit

Item	Product discontinuation	Recommended replacement
	E3X-NL11	E3X-DA21-S
Light source (wavelength)	Red LED (680 nm)	Red LED (625 nm)
Power supply voltage	12 to 24VDC \pm 10%, ripple (p-p) 10% max.	
Current consumption/ Power consumption	100 mA max	Normal mode: 960 mW max. (current consumption: 40 mA max. at 24 VDC, 80 mA max. at 12 VDC) Power saving ECO1: 720 mW max. (current consumption: 30 mA max. at 24 VDC, 60 mA max. at 12 VDC) Power saving ECO2: 600 mW max. (current consumption: 25 mA max. at 24 VDC, 50 mA max. at 12 VDC)
Control output	30 VDC NPN open collector output, Load current: 100 mA max. (residual voltage: 1 V max.) Light-ON and Dark-ON switch selectable	26.4 VDC NPN open collector output, Load current: 50 mA max. (residual voltage: 1 V max.) Light-ON and Dark-ON switch selectable
Protection circuits	Power supply reserve polarity protection, output reserve polarity protection	Power supply reserve polarity protection, output short-circuit protection and output reserve polarity protection
Response time	Operate or reset: 1 ms max.	Super-high-speed mode: Operate or reset: 80 μ s (Mutual interference prevention and communication functions will be invalid) High-speed mode: Operate or reset: 450 μ s max. Standard mode: Operate or reset: 1 ms max. High-resolution mode: Operate or reset: 4 ms max. Tough mode: Operate or reset: 16 ms max.
Sensitivity setting	Teaching method	Teaching or manual method

Characteristics

Item	Product discontinuation	Recommended replacement
	E3X-NL11	E3X-DA21-S
Functions	Answer-back output, Remote teaching input	Power tuning, Different detection, APC, ATC, Zero reset, Resetting settings, Mutual interference prevention, ECO mode, External input setting, Output setting
Timer function	OFF-delay timer (fixed to 40 ms)	OFF-delay, ON-delay, One-shot, or ON-delay+OFF-delay timer 1 ms to 5 s
Ambient illumination (Receiver side)	Incandescent lamp: 3,000 lux max. Sunlight: 10,000 lux max.	Incandescent lamp: 10,000 lux max. Sunlight: 20,000 lux max.
Ambient temperature range	Operating: -25 to +55 °C Storage: -40 to +70 °C (with no icing or condensation)	Operating: Groups of 1 to 2 Amplifiers: -25 to +55 °C Groups of 1 to 3 to 10 Amplifiers: -25 to +50 °C Groups of 1 to 11 to 16 Amplifiers: -25 to +45 °C Storage: -30 to +70 °C (with no icing or condensation)
Ambient humidity range	Operating: 35% to 85% Storage: 35% to 95% (with no condensation)	Operating and storage: 35% to 85% (with no condensation)
Insulation resistance	20 MΩ min. (at 500 VDC)	
Dielectric strength	1,000 VAC at 50/60 Hz for 1 minute	
Vibration resistance	Destruction: 10 to 55 Hz with a 1.5-mm double amplitude or 300m/s ² for 2 hours each in X, Y, Z directions	Destruction: 10 to 55 Hz with a 1.5-mm double amplitude for 2 hours each in X, Y, Z directions
Shock resistance	Destruction: 500 m/s ² , for 3 times each in X, Y, Z directions	
Degree of protection	IEC 60529 IP50 (with Protective Cover attached)	
Connection method	Pre-wired model	
Materials	Case	Polybutylene terephthalate
	Cover	Polycarbonate
Accessories	Mounting bracket, Instruction manual	Instruction manual

Characteristics

Fiber unit

Item	Product discontinuation		Recommended replacement	
	E32-S15-1 E32-S15-2	E32-S15L-1 E32-S15L-2	E32-L25L	
Sensing distance	10± 3 mm	20 ± 7 mm	5.4 to 9 mm	
Min. sensing object	0.5 mm	2 mm	5 µm dia.	
Ambient temperature range	Operating: -25 to 55 °C Storage: -40 to 70 °C (with no icing or condensation)		Operating: -40 to 90 °C (For continuous operation) -40 to 105 °C (10 minute min.) Storage: -40 to 90 °C (with no icing or condensation)	
Ambient humidity range	Operating: 35% to 85% Storage: 35% to 90% (with no condensation)		Operating: 35% to 85% Storage: 35% to 95% (with no condensation)	
Permissible bending radius	4 mm min.		10 mm min.	
Degree of protection	IEC 60529 IP50			
Fiber length	E32-S15(L)-1: 500 mm E32-S15(L)-2: 1 m		2 m	
Material	Sensing head	Heat-resistant ABS plastics		Polycarbonate
	Sensing window	Transparent glass	Acrylic	Polycarbonate
	Fiber cladding	Urethane		Polyethylene

E3X-NM series, E39-G9

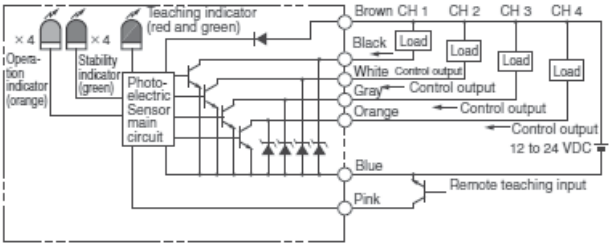
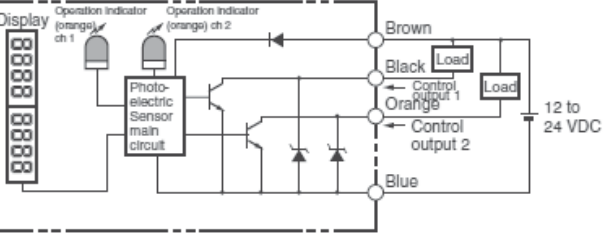
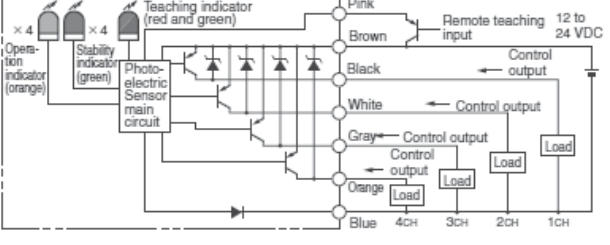
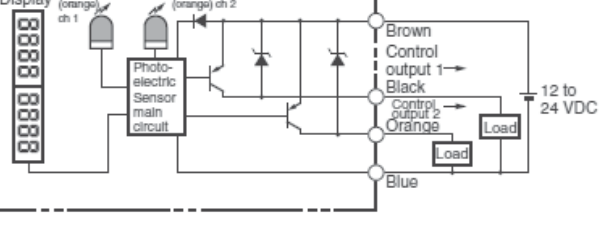
Body color

Product discontinuation	Recommendable replacement
<p>E3X-NM series Color of case: Light gray</p> <p>E39-G9 Black (transparent)</p>	<p>E3X-MDA series Color of case: Black</p>

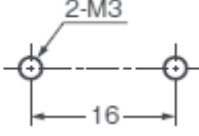
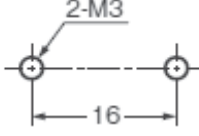
Dimensions

Product discontinuation E3X-NM series	Recommendable replacement E3X-MDA series
<p>E3X-NM series</p> <p>Operation indicator (orange) Stability indicator (green)</p> <p>Eight, 2.4 dia.</p> <p>Two, 3.2-dia. mounting holes Two, mounting holes Mounting bracket (removable), stainless steel (SUS 304)</p> <p>The mounting bracket can be attached to this side.</p> <p>4-dia. vinyl insulated round cable with 7 conductors (Conductor cross section: 0.3 mm², Insulator diameter: 1.04 mm, Standard length: 2m)</p>	<p>E3X-MDA series</p> <p>OPTICAL COMMUNICATION POSITION</p>
<p>E39-G9</p>	

Wire connection

Product discontinuation E3X-NM series	Recommendable replacement E3X-MDA series
<p>E3X-NM11</p> 	<p>E3X-MDA11</p> 
<p>E3X-NM41(-C1)</p> 	<p>E3X-MDA41</p> 

Mounting dimensions

Product discontinuation E3X-NM series	Recommendable replacement E3X-MDA series
<ul style="list-style-type: none"> - Din track mounting - Screw mounting 	<ul style="list-style-type: none"> - Din track mounting - Screw mounting  <p>* Please confirm dimensions of appearance since the appearance will be changed even if the positions of mounting holes are the same.</p>

Operation methods

Product discontinuation E3X-NM series	Recommendable replacement E3X-MDA series
Operation with slide switch and push button.	Operation with slide switch and push button.

Characteristics

	Product discontinuation	Recommended replacement
NPN output PNP output	E3X-NM11	E3X-MDA11
	E3X-NM41(-C1)	E3X-MDA41
Light source (wavelength)	Red LED (680 nm)	Red LED (635 nm)
Power supply voltage	12 to 24VDC \pm 10%, ripple (p-p) 10% max.	
Current consumption/ Power consumption	150 mA max	1,080 mW max (current consumption: 45 mA max. at power supply voltage of 24 VDC)
Control output	Load current: 100 mA max. (Residual voltage: 1 V max.) Open collector (NPN or PNP output, depending on the model)	Load power supply voltage: 26.4 VDC; NPN/PNP open collector; load current: 50 mA max.; residual voltage: 1 V max.
Protection circuits	Reverse polarity for power supply connection, output short-circuit	
Response time	Operating or reset: 500 μ s max. (at rated sensing distance)	Super-high-speed mode: Operate or reset: 130 μ s max. (When a differential output is selected, the second channel will become to 200 μ s, mutual interference prevention and communication functions will be invalid.) High-speed mode: Operate or reset: 450 μ s max. Standard mode: Operate or reset: 1 ms max. High-resolution mode: Operate or reset: 4 ms max.
Sensitivity setting	Teaching method	Teaching or manual method
Functions	Remote teaching input	Power tuning, Different detection, APC, Zero reset, Resetting settings, Output setting
Timer function	OFF-delay timer set to 40 ms (setting each channel)	OFF-delay, ON-delay or One-shot timer 1 ms to 5 s
Ambient illumination (Receiver side)	Incandescent lamp: 3,000 lux max. Sunlight: 10,000 lux max.	Incandescent lamp: 10,000 lux max. Sunlight: 20,000 lux max.

Characteristics

	Product discontinuation	Recommended replacement
NPN output PNP output	E3X-NM11	E3X-MDA11
	E3X-NM41(-C1)	E3X-MDA41
Ambient temperature range	Operating: -25 to +55 °C Storage: -40 to +70 °C (with no icing or condensation)	Operating: Groups of 1 to 2 Amplifiers: -25 to +55 °C Groups of 1 to 3 to 10 Amplifiers: -25 to +50 °C Groups of 1 to 11 to 16 Amplifiers: -25 to +45 °C Storage: -30 to +70 °C (with no icing or condensation)
Ambient humidity range	Operating: 35% to 85% Storage: 35% to 95% (with no condensation)	Operating and storage: 35% to 85% (with no condensation)
Insulation resistance	20 MΩ min. (at 500 VDC)	
Dielectric strength	1,000 VAC at 50/60 Hz for 1 minute	
Vibration resistance	Destruction: 10 to 55 Hz with a 1.5-mm double amplitude or 300m/s ² for 2 hours each in X, Y, Z directions	Destruction: 10 to 55 Hz with a 1.5-mm double amplitude for 2 hours each in X, Y, Z directions
Shock resistance	Destruction: 500 m/s ² , for 3 times each in X, Y, Z directions	
Degree of protection	IEC 60529 IP50 (with Protective Cover attached)	
Connection method	Pre-wired model	
Materials	Case	Polybutylene terephthalate
	Cover	Polycarbonate
Accessories	Mounting brackets, Protective stickers for unused channels, Instruction sheet (except E3X-NM41-C1)	Instruction manual

Item	Product discontinuation
Applicable fiber amplifier	E3X-NM
Material	Polycarbonate