

E3X-DA-N

Digital Fiber Amplifier

Sense the Difference, Make a Difference!

Amplifier

- Select from Three Clear Display Methods:
Digital incident level
Digital percent level
LED Bar Display
- Save-wiring Connector
- Auto Power Control

Mobile Console

- Remote Tuning and Adjustment
- "Copy and Paste" Function
- "Mode Lock" Function

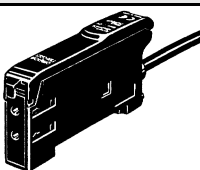
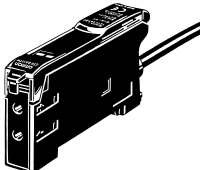


Ordering Information:

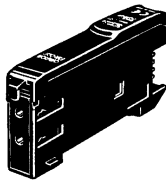
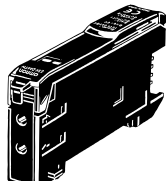
Amplifier Units, Connectors, Mobile Console, and Accessories

■ Amplifier Units

Amplifier Units with Cables

Item		Appearance	Control output	Model	
				NPN output	PNP output
Standard models			ON/OFF output	E3X-DA11-N	E3X-DA41-N
Monitor-output models			ON/OFF output Monitor output	E3X-DA21-N	E3X-DA51-N
Mark-detecting models	Blue LED		ON/OFF output	E3X-DAB11-N	E3X-DAB41-N
	Green LED			E3X-DAG11-N	E3X-DAG41-N
Infrared models				E3X-DAH11-N	E3X-DAH41-N
Water-resistant models		E3X-DA11V		E3X-DA41V	
Twin-output models				E3X-DA11TW	E3X-DA41TW

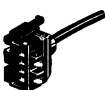
Amplifier Units with Standard Connectors

Item		Appearance	Applicable Connector (order separately)		Control output	Model	
						NPN output	PNP output
Standard models			Master	E3X-CN11	ON/OFF output	E3X-DA6	E3X-DA8
			Slave	E3X-CN12			
Monitor-output models			Master	E3X-CN21	ON/OFF output Monitor output	E3X-DA7	E3X-DA9
			Slave	E3X-CN22			
Mark-detecting models	Blue LED		Master	E3X-CN11	ON/OFF output	E3X-DAB6	E3X-DAB8
			Slave	E3X-CN12			
	Green LED		Master	E3X-CN11		E3X-DAG6	E3X-DAG8
				Slave			
Infrared models			Master	E3X-CN11		E3X-DAH6	E3X-DAH8
			Slave	E3X-CN12			
Twin-output models			Master	E3X-CN21		E3X-DA6TW	E3X-DA8TW
			Slave	E3X-CN22			

Amplifier Units with M8 Connectors

Item		Appearance	Applicable Connector (order separately)	Control output	Model	
					NPN output	PNP output
Standard models			XS3F-M421-40□-A XS3F-M422-40□-A	ON/OFF output	E3X-DA14V	E3X-DA44V

■ Amplifier Unit Connectors (Order Separately)

Item	Appearance	Cable length	No. of conductors	Model
Master Connector		2 m	3	E3X-CN11
			4	E3X-CN21
Slave Connector			1	E3X-CN12
			2	E3X-CN22

Note Stickers for Connectors are included as accessories.

■ Sensor I/O Connectors (Order Separately)

Size	Cable specifications	Appearance	Cable type		Model
M8	Standard cable	Straight connector 	2 m	Four-core cable	XS3F-M421-402-A
			5 m		XS3F-M421-405-A
		L-shaped connector 	2 m		XS3F-M422-402-A
			5 m		XS3F-M422-405-A

■ Mobile Console (Order Separately)

Appearance	Model	Remarks
	E3X-MC11	Mobile Console with head, cable, and AC adapter provided as accessories. Power supply method: chargeable battery
	E3X-MC11-C1	Mobile Console
	E3X-MC11-H1	Head
	E39-Z12-1	Cable (1.5 m)

■ Combining Amplifier Units and Connectors

Refer to the following tables when placing an order. Basically Amplifier Units and Connectors are sold separately.

Amplifier Units		
Type	NPN	PNP
Standard models	E3X-DA6	E3X-DA8
Mark-detecting models	E3X-DAB6	E3X-DAB8
	E3X-DAG6	E3X-DAG8
Infrared models	E3X-DAH6	E3X-DAH8
Monitor-output models	E3X-DA7	E3X-DA9
Twin-output models	E3X-DA6TW	E3X-DA8TW

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Applicable Connectors (Order Separately)	
Master Connector	Slave Connector
E3X-CN11 (3-wire)	E3X-CN12 (1-wire)
E3X-CN21 (4-wire)	E3X-CN22 (2-wire)

When Using 5 Amplifier Units

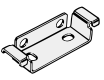
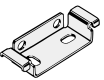
Amplifier Units (5 Units)

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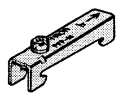
1 Master Connector + 4 Slave Connectors

■ Accessories (Order Separately)

Mounting Brackets

Appearance	Applicable model	Model	Quantity
	E3X-DA□-N E3X-DA□	E39-L143	1
	E3X-DA□V	E39-L148	1

End Plate

Appearance	Model	Quantity
	PFP-M	1

Operating Instructions Sticker

Model	Remarks
E39-Y1	Attach near the sensor.

Specifications: Amplifier Units

■ Ratings/Characteristics

Amplifier Units with Cables

Item		Standard models	Monitor-output models	Mark-detecting models		Infrared models	Water-resistant models	Twin-output models
Output type	NPN output	E3X-DA11-N	E3X-DA21-N	E3X-DAB11-N	E3X-DAG11-N	E3X-DAH11-N	E3X-DA11V	E3X-DA11TW
	PNP output	E3X-DA41-N	E3X-DA51-N	E3X-DAB41-N	E3X-DAG41-N	E3X-DAH41-N	E3X-DA41V	E3X-DA41TW
Light source (wavelength)		Red LED (660 nm)		Blue LED (470 nm)	Green LED (525 nm)	Infrared LED (870 nm)	Red LED (660 nm)	
Supply Voltage		12 to 24 VDC ± 10%, ripple (p-p) 10% max.						
Power consumption		Normally: 960 mW max. (current consumption: 40 mA max. at power supply voltage of 24 VDC) Eco Mode: 720 mW max. (current consumption: 30 mA max. at power supply voltage of 24 VDC) Digital display not lit: 600 mW max. (current consumption: 25 mA max. at power supply voltage of 24 VDC)						
Control output	ON/OFF output	NPN/PNP (depends on model) open collector; load current: 50 mA max.; residual voltage: 1 V max.; Light ON/Dark ON mode selector						
	Monitor output	---	Load 1 to 5 VDC, 10 kΩ min.	---				
Circuit protection		Reverse polarity, output short-circuit, mutual interference prevention (supported for up to 10 Units)						
Response time		Super-high-speed mode: 0.25 ms for operation and reset respectively Standard mode: 1 ms for operation and reset respectively Super-long-distance mode: 4 ms for operation and reset respectively						Super-high-speed mode: 0.5 ms for operation and reset respectively Standard mode: 2 ms for operation and reset respectively Super-long-distance mode: 7 ms for operation and reset respectively
Sensitivity setting		Teaching or manual method						
Functions	Timer function	OFF-delay timer: 0 to 200 ms, 1 to 20 ms (set in 1 ms units); 20 to 200 ms (set in 5 ms units)						
	Automatic power control (APC)	Fiber-optic current digital control			---			Fiber-optic current digital control
	Zero-reset	Display can be reset to zero when required (negative values can be displayed).						
	Initial reset	Settings can be returned to defaults as required.						
	Monitor focus	---	Upper and lower limits can be set as required for every 100 digital values.	---				
Display		Operation indicator (orange), 7-segment digital incident level display (red), 7-segment digital incident level percentage display (red), threshold and excess gain 2-color indication bar (green and red), 7-segment digital threshold display (red)						
Display timing		Switching between normal/peak-hold/bottom-hold possible						
Display orientation		Switching between normal/reverse possible						
Optical axis adjustment		Optical axis adjustment possible (hyper-flashing function)						
Ambient illumination (receiver side)		Incandescent lamp: 10,000 lux max. Sunlight: 20,000 lux max.						
Ambient temperature		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 (with no icing or condensation) Storage: -30°C to 70°C (with no icing or condensation)						
Ambient humidity		Operating and storage: 35% to 85% (with no condensation)						
Insulation resistance		20 MΩ min. (at 500 VDC)						
Dielectric strength (destruction)		1,000 VAC at 50/60 Hz for 1 minute						
Vibration resistance (destruction)		10 to 55 Hz with a 1.5-mm double amplitude for 2 hrs each in X, Y and Z directions						
Shock resistance (destruction)		500 m/s ² , for 3 times each in X, Y and Z directions						
Enclosure rating		IEC 60529 IP50 (with Protective Cover attached)					IEC 60529 IP66 (with Protective Cover attached)	IEC 60529 IP50 (with Protective Cover attached)
Connection method		Pre-wired (standard cable length: 2 m)						
Weight (packed state)		Approx. 100 g					Approx. 110 g	Approx. 100 g
Material	Case	Polybutylene terephthalate (PBT)						
	Cover	Polycarbonate					Polyethersulfone	Polycarbonate
Accessories		Instruction sheet						

Amplifier Units with Connectors

(Specifications different to those for Amplifier Units with cables)

Item		Standard models	Monitor-output models	Mark-detecting models		Infrared models	Water-resistant models (See note.)	Twin-output models
Output type	NPN output	E3X-DA6	E3X-DA7	E3X-DAB6	E3X-DAG6	E3X-DAH6	E3X-DA14V	E3X-DA6TW
	PNP output	E3X-DA8	E3X-DA9	E3X-DAB8	E3X-DAG8	E3X-DAH8	E3X-DA44V	E3X-DA8TW
Connection method		Standard connector					M8 connector	Standard connector
Weight (packed state)		Approx. 55 g					Approx. 65 g	Approx. 55 g

Note: The dielectric strength for water-resistant models is 500 VAC at 50/60 Hz for 1 minute.

Connectors

Item		E3X-CN11/21/22	E3X-CN12
Rated current		2.5 A	
Rated voltage		50 V	
Contact resistance		20 mΩ max. (20 mVDC max., 100 mA max.) (See note 1.)	
No. of insertions		50 times (See note 2.)	
Material	Housing	Polybutylene terephthalate (PBT)	
	Contacts	Phosphor bronze/gold-plated nickel	
Weight (packed state)		Approx. 55 g	Approx. 25 g

Note: 1. The figure is for connection to the Amplifier Unit and the adjacent Connector. It does not include the conductor resistance of the cable.
2. The figure for the number of insertions is for connection to the Amplifier Unit and the adjacent Connector.

Mobile Console

Item	E3X-MC11
Supply voltage	Charged with AC adapter
Connection method	Connected via adapter
Weight (packed state)	Approx. 580 g (Console only: 120 g)