

E3X-HD Fiber Amplifier Units and Related Products

Fiber Amplifier Units E3X-HD Series

Type	Appearance	Connecting method	Models		Ratings and Specifications	Dimensions
			NPN output	PNP output		
Standard models		Pre-wired (2 m)	E3X-HD11 2M	E3X-HD41 2M	Page 82	Page 82 82-A
		Wire-saving Connector	E3X-HD6	E3X-HD8		Page 83 83-A
		M8 Connector	E3X-HD14	E3X-HD44		Page 83 83-B
Model for Sensor Communications Unit		Connector for Sensor Communications Unit	E3X-HD0			Page 83 83-C

Sensor Communications Unit

Communication method	Appearance	Applicable Fiber Amplifier Model	Models	Ratings and Specifications	Dimensions
CompoNet		E3X-HD0 E3X-MDA0	E3X-CRT	Page 88	Page 89 (89-A)
EtherCAT			E3X-ECT		Page 89 (89-B)

Accessories (sold separately)

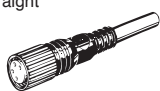
Wire-saving connectors (Required for models for Wire-saving Connectors.)

Connectors are not provided with the Fiber Amplifier Unit and must be ordered separately. * Protective stickers: provided.

Type	Appearance	Cable length	Number of conductors	Models	Ratings and Specifications	Dimensions
Master Connector		2m	3	E3X-CN11	Page 90	Page 90 90-A
Slave Connector			1	E3X-CN12		Page 90 90-B

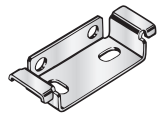
Sensor I/O Connectors (Required for models with M8 Connectors.)

Connectors are not provided with the Fiber Amplifier Unit and must be ordered separately. * Protective stickers: provided.

Appearance	Cable length	Number of conductors	Models	Ratings and Specifications	Dimensions
Straight 	2m	4	XS3F-M421-402-A	Page 90	Page 90 90-C
	5m		XS3F-M421-405-A		
L-shaped 	2m		XS3F-M422-402-A		Page 90 90-D
	5m		XS3F-M422-405-A		

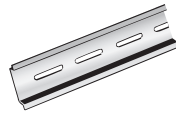
Mounting Bracket

A Mounting Bracket is not provided with the Fiber Amplifier Unit and must be ordered separately as required.

Appearance	Model	Quantity	Dimensions
	E39-L143	1	Page 91 91-A

DIN Track

A Din Track is not provided with the Fiber Amplifier Unit and must be ordered separately as required.

Appearance	Type	Models	Quantity	Dimensions
	Shallow type, total length: 1 m	PFP-100N	1	Page 91 91-B
	Shallow type, total length: 0.5 m	PFP-50N		
	Deep type, total length: 1 m	PFP-100N2		Page 91 91-C

End Plate

Two End Plates are provided with the Sensor Communications Unit.

End Plates are not provided with the Fiber Amplifier Unit and must be ordered separately as required.

Appearance	Model	Quantity	Dimensions
	PFP-M	1	Page 91 91-D

Ratings and Specifications

		Type	Standard			Model for Sensor Communications Unit *1
		NPN output	E3X-HD11	E3X-HD6	E3X-HD14	E3X-HD0
		PNP output	E3X-HD41	E3X-HD8	E3X-HD44	
Item	Connecting method		Pre-wired	Wire-saving Connector *2	M8 Connector	Connector for Sensor Communications Unit
Light source (wavelength)			Red, 4-element LED (625 nm)			
Power supply voltage			12 to 24 VDC ±10%, ripple (P-P) 10% max.			Supplied from the connector through the Sensor Communications Unit
Power consumption	Normal mode		720 mW max. (Current consumption: 30 mA max. at 24 VDC, 60 mA max. at 12 DVC)			
	Eco ON		530 mW max. (Current consumption: 22 mA max. at 24 VDC, 44 mA max. at 12 VDC)			
	Eco LO		640 mW max. (Current consumption: 26 mA max. at 24 VDC, 53 mA max. at 12 VDC)			—
Control output			Load power supply voltage: 26.4 VDC max., open-collector output Load current: Groups of 1 to 3 Amplifier Units: 100mA max., Groups of 4 to 16 Amplifier Units: 20mA max. Residual voltage: At load current of less than 10 mA: 1 V max., At load current of 10 to 100 mA: 2 V max. OFF current: 0.1mA max.			—
Protection circuits			Power supply reverse polarity protection, output short-circuit protection and output reverse polarity protection			Power supply reverse polarity protection and output short-circuit protection
Response time	Super-high-speed mode (SHS) *4		NPN outputs: Operate or reset: 50 μs PNP outputs: Operate or reset: 55 μs			—
	High-speed mode (HS)		Operate or reset: 250 μs (default setting)			
	Standard mode (Stdnd)		Operate or reset: 1 ms			
	Giga-power mode (GIGA)		Operate or reset: 16 ms			
Maximum connectable Units			16 units			with E3X-CRT: 16 units with E3X-ECT: 30 units *3
Mutual interference prevention			Possible for up to 10 units (optical communications sync) *4			
Auto power control (APC)			Always ON			
Other functions			Power tuning, differential detection, DPC, timer (OFF-delay, ON-delay, or one-shot), zero reset, resetting settings, and Eco mode			
Ambient Illumination (Receiver side)			Incandescent lamp: 20,000 lx max., Sunlight: 30,000 lx max.			
Ambient temperature range			Operating: Groups of 1 to 2 Amplifier Units: -25 to 55°C, Groups of 3 to 10 Amplifier Units: -25 to 50°C, Groups of 11 to 16 Amplifier Units: -25 to 45°C Storage: -30 to 70°C (with no icing or condensation)			Operating: Groups of 1 to 2 Amplifier Units: 0 to 55°C, Groups of 3 to 10 Amplifier Units: 0 to 50°C, Groups of 11 to 16 Amplifier Units: 0 to 45°C, Groups of 17 to 30 Amplifier Units: 0 to 40°C Storage: -30 to 70°C (with no icing or condensation)
Ambient humidity range			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 min			
Vibration resistance (destruction)			10 to 55 Hz with a 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions			10 to 150 Hz with a 0.7-mm double amplitude for 80 minutes each in X, Y, and Z directions
Shock resistance (destruction)			500 m/s² for 3 times each in X, Y, and Z directions			150 m/s² for 3 times each in X, Y, and Z directions
Degree of protection			IEC 60529 IP50 (with Protective Cover attached)			—
Weight (packed state/unit only)			Approx. 105 g/Approx. 65 g	Approx. 60 g/Approx. 20 g	Approx. 70 g/Approx. 25 g	Approx. 65 g/Approx. 25 g
Materials	Case		Polycarbonate (PC)			Heat-resistant ABS (connector: PBT)
	Cover		Polycarbonate (PC)			
	Cable		PVC			
Accessories			Instruction Manual			

*1. The E3X-ECT EtherCAT Sensor Communications Unit and the E3X-CRT CompoNet Sensor Communications Unit can be used.

*2. Use either the E3X-CN11 (master connector, 3 conductors) or the E3X-CN12 (slave connector, 1 conductor).

*3. When connected to an OMRON NJ-series Controller.

*4. The communications function and mutual interference prevention function are disabled when the detection mode is set to Super-high-speed mode (SHS).

When including E3X-DA-S with activated power tuning the maximum number of mutual interference prevention is up to 6.

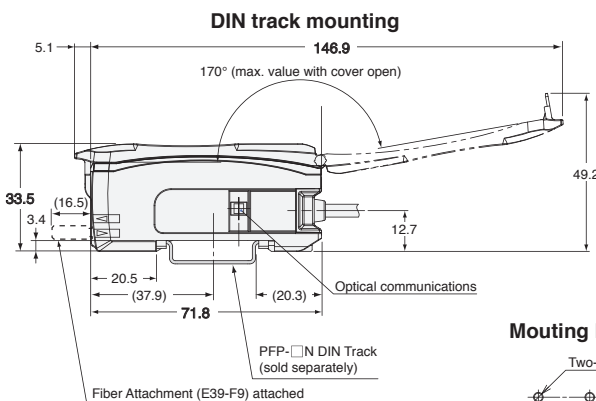
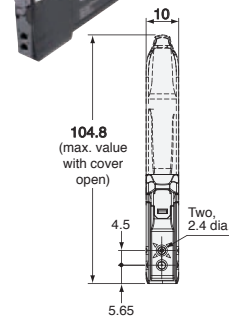
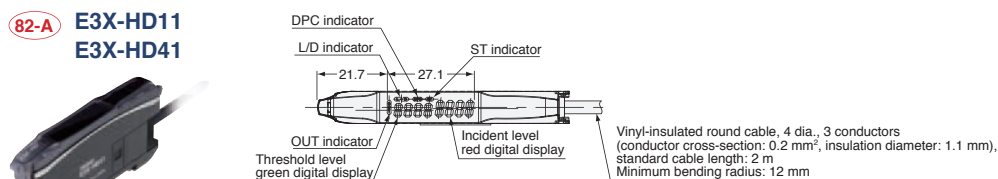
When including E3X-MDA with activated power tuning the maximum number of mutual interference prevention is up to 5.

Dimensions

(Unit: mm)
Tolerance class IT16 applies to demmensions in this date sheet unless otherwise specified.

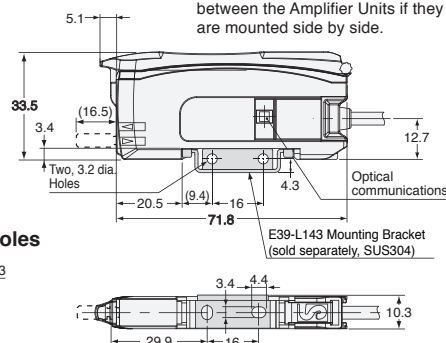
Pre-wired Amplifier Units

(82-A) E3X-HD11
E3X-HD41



With Mounting Bracket Attached

Note: When using E39-L143 Mounting Brackets, there will be small gaps between the Amplifier Units if they are mounted side by side.



Mounting Holes

