Ratings and Specifications

Item		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	
		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 VDC)			
	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: 0.1 mA 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) *3		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 (Stnd)		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
Mutual interference prevention			Possible for up to 10 units (optical communications sync) *3			
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 Amplifiers: –25 to 55°C, Groups of 3 to 10 Amplifiers: –25 to 50°C, Groups of 11 to 16 Amplifiers: –25 to 45°C Storage: –30 to 70°C (with no icing or condensation)			Operating: Groups of 1 to 2 Amplifiers: 0 to 55°C, Groups of 3 to 10 Amplifiers: 0 to 50°C, Groups of 11 to 16 Amplifiers: 0 to 45°C, Groups of 17 to 30 Amplifiers: 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 minute			
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/s^2 for 3 times each in X, Y, and Z directions			150 m/s^2 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. 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, mutual interference prevention is possible for up to 6 units.
When including E3X-MDA with activated power tuning, mutual interference prevention is possible for up to 5 units.

Sensing Distances

Threaded Models

Sensing method	Sensing direction	Size	Model	Sensing distance (mm)			
				Giga mode	Standard mode	High-speed mode	Super-high-speed mode
Through-beam	Right-angle	M4	E32-T11N 2M	2,000	1,000	700	280
			E32-LT11N 2M	4,000 *	3,500	2,300	920
	Straight		E32-T11R 2M	2,000	1,000	700	280
			E32-LT11 2M	4,000 *	4,000 *	2,700	1,080
			E32-LT11R 2M	4,000 *	3,500	2,300	920
Reflective	Right-angle	M3	E32-C31N 2M	110	50	46	14
			E32-C21N 2M	290	130	90	39
		M4	E32-D21N 2M	840	350	240	100
		M6	E32-C11N 2M	780	350	320	100
			E32-LD11N 2M	840	350	240	100
	Straight	M3	E32-D21R 2M	140	60	40	16
			E32-C31 2M	330	150	100	44
			E32-C31M 1M				
		M4	E32-D211R 2M	140	60	40	16
		M6	E32-D11R 2M	840	350	240	100
			E32-CC200 2M	1,400	600	400	180
			E32-LD11 2M	860	360	250	110
			E32-LD11R 2M	840	350	240	100

* The fiber length is 2 m on each side, so the sensing distance is given as 4,000 mm.

Cylindrical Models

Sensing method	Size	Sensing direction	Model	Sensing distance (mm)			
				Giga mode	Standard mode	High-speed mode	Super-high-speed mode
Through-beam	1 dia.	Top-view	E32-T223R 2M	450	250	150	60
	1.5 dia.		E32-T22B 2M	680	400	220	90
	3 dia.		E32-T12R 2M	2,000	1,000	700	280
		Side-view	E32-T14LR 2M	750	450	260	100
Reflective	1.5 dia.	Top-view	E32-D22B 2M	140	60	40	16
	1.5 dia. + 0.5 dia.		E32-D43M 1M	28	12	8	4
	3 dia.		E32-D22R 2M	140	60	40	16
			E32-D221B 2M	300	140	90	40
			E32-D32L 2M	700	300	200	90
	3 dia. + 0.8 dia.		E32-D33 2M	70	30	20	8

Flat Models

Sensing method	Sensing direction	Model	Sensing distance (mm)			
			Giga mode	Standard mode	High-speed mode	Super-high-speed mode
Through-beam	Top-view	E32-T15XR 2M	2,000	1,000	700	280
	Side-view	E32-T15YR 2M	750	450	260	100
	Flat-view	E32-T15ZR 2M				
Reflective	Top-view	E32-D15XR 2M	840	350	240	100
	Side-view	E32-D15YR 2M	200	100	52	24
	Flat-view	E32-D15ZR 2M				

Sleeve Models

Sensing method	Sensing direction	Model	Sensing distance (mm)			
			Giga mode	Standard mode	High-speed mode	Super-high-speed mode
Through-beam	Side-view	E32-T24R 2M	170	100	50	20
		E32-T24E 2M	450	250	150	60
	Top-view	E32-T33 1M	150	90	50	20
		E32-T21-S1 2M	510	300	170	68
		E32-TC200BR 2M	2,000	1,000	700	280
Reflective	Side-view	E32-D24R 2M	70	30	20	8
		E32-D24-S2 2M	120	53	45	14
	Top-view	E32-D43M 1M	28	12	8	4
		E32-D331 2M	14	6	4	2
		E32-D33 2M	70	30	20	8
		E32-D32-S1 0.5M	63	27	18	7
		E32-D31-S1 0.5M				
		E32-DC200F4R 2M	140	60	40	16
		E32-D22-S1 2M	250	110	72	30
		E32-D21-S3 2M				
		E32-DC200BR 2M	840	350	240	100
		E32-D25-S3 2M	250	110	72	30