

## Ratings and Specifications

Type		Standard Type		Model for Sensor Communications Unit
		E3NX-MA11	E3NX-MA6	E3NX-MA0
Item	NPN output	E3NX-MA11	E3NX-MA6	E3NX-MA0
	PNP output	E3NX-MA41	E3NX-MA8	
	Connecting method	Pre-wired	Wire-saving Connector	Connector for Sensor Communications Unit
Inputs/ outputs	Outputs	2 outputs		--- *1
	External inputs	---	---	
Light source (wavelength)		Red, 4-element LED (625 nm)		
Power supply voltage		10 to 30 VDC, including 10% ripple (p-p)		Supplied from the connector through the Sensor Communications Unit
Power consumption *2		At Power supply voltage of 24 VDC Normal mode : 960 mW max. (Current consumption at 40 mA max.) Eco function ON: 770 mW max. (Current consumption at 32 mA max.) Eco function LO : 870 mW max. (Current consumption at 36 mA max.)		
Control output		Load power supply voltage: 30 VDC max., open-collector output (depends on the NPN/PNP output format) Load current: Groups of 1 to 3 Amplifier Units: 100 mA max., Groups of 4 to 30 Amplifier Units: 20 mA 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.		---
Indicators		7-segment displays (Sub digital display: green, Main digital display: white) Display direction: Switchable between normal and reversed. OUT indicator (orange), L/D indicator (orange), ST indicator (blue), DPC indicator (green), and OUT selection indicator (orange)		
Protection circuits		Power supply reverse polarity protection, output short-circuit protection, and output reverse polarity protection		Power supply reverse polarity protection and output shortcircuit protection
Response time	Super-high-speed mode (SHS)	Operate or reset: 100 μs		
	High-speed mode (HS)	Operate or reset: 450 μs		
	Standard mode (Std)	Operate or reset: 1ms		
	Giga-power mode (GIGA)	Operate or reset: 16ms		
Sensitivity adjustment		Smart Tuning (2-point tuning, full auto tuning, position tuning, maximum sensitivity tuning, power tuning, or percentage tuning (-99% to 99%)) or manual adjustment		
Maximum connectable Units		30		With E3NW-ECT: 30 units *3 With E3NW-CCL: 16 units
No. of Units for mutual interference prevention *4		9 Note: The mutual interference prevention function is disabled if the detection mode is set to super-high-speed mode.		

\*1. Two sensor outputs are allocated in the programmable logic controller PLC I/O table.

PLC operation via Communications Unit enables reading detected values and changing settings.

\*2. Power consumption

At Power supply voltage of 10 to 30 VDC

Standard Models:

Normal mode : 1080 mW max. (Current consumption: 36 mA max. at 30 VDC, 75 mA max. at 10 VDC)

Eco function ON: 840 mW max. (Current consumption: 28 mA max. at 30 VDC, 55 mA max. at 10 VDC)

Eco function LO : 960 mW max. (Current consumption: 32 mA max. at 30 VDC, 65 mA max. at 10 VDC)

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

\*4. The tuning will not change the number of units.

The least unit count among the mutual interference prevention units of E3NX and E3NC.

Check the mutual interference prevention unit count and response speed of each model.

# E3NX-MA

Item	Type	Standard Type		Model for Sensor Communications Unit
	NPN output	E3NX-MA11	E3NX-MA6	E3NX-MA0
	PNP output	E3NX-MA41	E3NX-MA8	
	Connecting method	Pre-wired	Wire-saving Connector	Connector for Sensor Communications Unit
Functions	Automatic power control (APC)	Always enabled.		
	Dynamic power control (DPC)	Provided		
	Timer	Select from timer disabled, OFF-delay, ON-delay, one-shot, or ON-delay + OFF-delay timer: 1 to 9,999 ms		
	Zero reset	Negative values can be displayed. (Threshold value is shifted.)		
	Resetting settings *5	Select from initial reset (factory defaults) or user reset (saved settings).		
	Eco mode	Select from OFF (digital display lit), Eco ON (digital display not lit), and Eco LO (digital display dimmed).		
	Sensor OFF setting	---	Select from ON or OFF.	
	Bank switching	Select from banks 1 to 4.		
	Power tuning	Select from ON or OFF.		
	Output 1	Select from normal detection mode or area detection mode.		
	Output 2	Select from normal detection mode, AND output mode, OR output mode, XOR output mode, GAP output mode, Falling synchronization mode, Rising synchronization mode or area detection mode.		
	Hysteresis width	Select from standard setting or user setting. For a user setting, the hysteresis width can be set from 0 to 9,999.		
Ambient illumination (Receiver side)	Incandescent lamp: 20,000 lx max., Sunlight: 30,000 lx max.			
Ambient temperature range *6	Operating: Groups of 1 or 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, Groups of 17 to 30 Amplifier Units: -25 to 40°C Storage: -30 to 70°C (with no icing or condensation)		Operating: Groups of 1 or 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) within the surrounding air temperature range shown above			
Altitude	2,000 m max.			
Installation environment	Pollution degree 3			
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			
Shock resistance (destruction)	500 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions		150 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions	
Degree of protection	IEC 60529 IP50 (with Protective Cover attached)			
Weight (packed state/Sensor only)	Approx. 115 g/ approx. 75 g	Approx. 60g/ approx. 20g	Approx. 65 g/ approx. 25 g	
Materials	Case	Polycarbonate (PC)		
	Cover	Polycarbonate (PC)		
	Cable	PVC		
Accessories	Instruction Manual			

\*5. The bank is not reset by the user reset function or saved by the user save function.

\*6. When the number of connected units is 11 or more, the ambient temperature is less than 50°C.