

Photoelectric Sensor

## E Series

ET-500□□□

EL-15□□□

ED-100□□□

EL-08□□□

EL-30□□□

**OPTEX**  
**FA**

**RAMCO**  
INNOVATIONS

### INSTRUCTION MANUAL

- Thank you for purchasing the E series.
- Please read and understand this manual prior to using the sensor, also retain it for future reference.
- Carefully read and understand the safety precautions prior to operation. Important information is provided to protect your health and property.

**Caution**

Indicates a possible hazard that may result in personal injury or property damage if the product is used without observing the stated instructions.

**Caution**

### Mandatory Requirements

- This product does not have explosion proof construction. Do not use the product in locations where there is flammable and / or explosive gases or liquids.
- Never fail to turn the power supply OFF when connecting or disconnecting the sensor.

### Operating Precautions

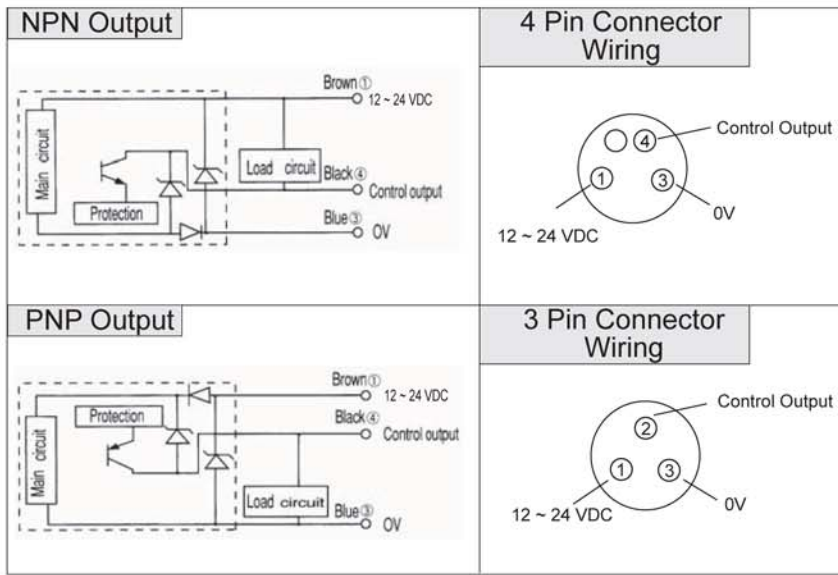
- The sensor performance may depend upon the individual units.
- Wipe off dirt on the emitter / receiver parts to maintain correct detection. Also avoid direct impact to the product.

**Caution** This product cannot be used as a safety device to protect the human body.

## Specifications

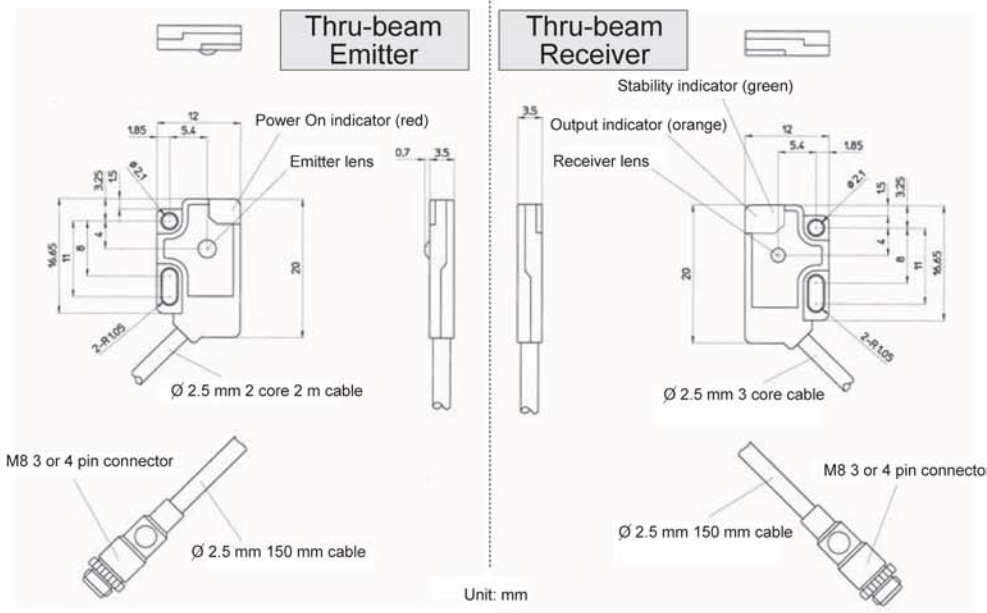
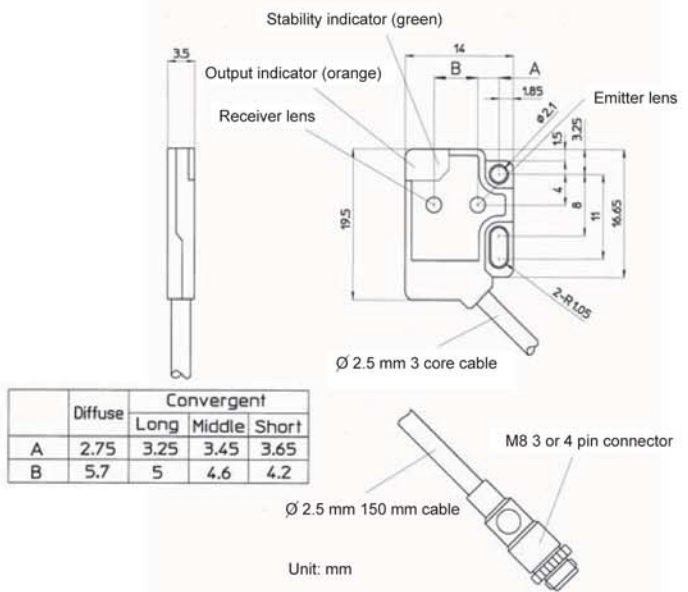
Model	Cable	Thru-beam Type		Diffuse Reflective	
		NPN Output	PNP Output	NPN Output	PNP Output
	M8 4 pin connector	ET-500N(L/D)	ET-500P(L/D)	ED-100N(L/D)	ED-100P(L/D)
	M8 4 pin connector	ET-500N(L/D)4	ET-500P(L/D)4	ED-100N(L/D)4	ED-100P(L/D)4
	M8 3 pin connector	ET-500N(L/D)3	ET-500P(L/D)3	ED-100N(L/D)3	ED-100P(L/D)3
Detecting Distance		500 mm		100 mm	
Supply Voltage		12 ~ 24 VDC (ripple 10% max.)			
Current Consumption		Emitter: 14 mA max. Receiver: 16 mA max.		20 mA max.	
Response Time		0.5 msec. max.			
Hysteresis		White paper: 10% (EL-08 and EL-15), 15% (EL-30 and ED-100)			
Control Output		Open collector NPN or PNP, 50 mA max. / 24 VDC			
Operation Mode		Light On (L in the part number, e.g. ET-500NL) or Dark On (D in the part number, e.g. ET-500ND) operation			
Beam Size		∅ 140 mm @ 500 mm		∅ 60 mm @ 100 mm	
Indicator		Stability indicator: Green LED Output indicator: Orange LED			
Operating Temp. / Humidity		-25 ~ +55°C / 35 ~ 95% RH (No condensation or freezing)			
Storage Temp. / Humidity		-40 ~ +70°C / 35 ~ 95% RH (No condensation or freezing)			
Ambient Light		3,000 lx (Incandescent light), 10,000 lx (Sunlight)			
Protection Category		IP67			
Material		PC			

Model	Cable	Convergent Beam Type					
		Long		Middle		Short	
		NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output
	M8 4 pin connector	EL-30N(L/D)	EL-30P(L/D)	EL-15N(L/D)	EL-15P(L/D)	EL-08N(L/D)	EL-08P(L/D)
	M8 4 pin connector	EL-30N(L/D)4	EL-30P(L/D)4	EL-15N(L/D)4	EL-15P(L/D)4	EL-08N(L/D)4	EL-08P(L/D)4
	M8 3 pin connector	EL-30N(L/D)3	EL-30P(L/D)3	EL-15N(L/D)3	EL-15P(L/D)3	EL-08N(L/D)3	EL-08P(L/D)3
Detecting Distance		5 ~ 30 mm		2 ~ 15 mm		3 ~ 8 mm	
Supply Voltage		12 ~ 24 VDC (ripple 10% max.)					
Current Consumption		20 mA max.					
Response Time		0.5 msec. max.					
Hysteresis		White paper: 10% (EL-08 and EL-15), 15% (EL-30 and ED-100)					
Control Output		Open collector NPN or PNP, 50 mA max. / 24 VDC					
Operation Mode		Light On (L in the part number, e.g. ET-500NL) or Dark On (D in the part number, e.g. ET-500ND) operation					
Beam Size		∅ 20 mm @ 30 mm		∅ 10 mm @ 15 mm		∅ 10 mm @ 10 mm	
Indicator		Stability indicator: Green LED Output indicator: Orange LED					
Operating Temp. / Humidity		-25 ~ +55°C / 35 ~ 95% RH (No condensation or freezing)					
Storage Temp. / Humidity		-40 ~ +70°C / 35 ~ 95% RH (No condensation or freezing)					
Ambient Light		3,000 lx (Incandescent light), 10,000 lx (Sunlight)					
Protection Category		IP67					
Material		PC					



Dimensions

Diffuse / Convergent



• The product specifications may change without notice for improvement.

**OPTEX FA CO., LTD.**

Ramco Innovations  
[www.Optex-Ramco.com](http://www.Optex-Ramco.com)  
 800.280.6933

Photoelectric Sensor



## E series

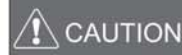
ET-S500□□□□

ED-S30□□□□

EL-S15□□□□

### INSTRUCTION MANUAL

- Thank you for purchasing the E series.
- Please read this manual before using the sensor, and retain it for future reference.
- Carefully read and understand the safety precautions before operation. The important information is provided to protect your health and property.



Indicates a possible hazard that may result in personal injury or property damage if the product is used without observing the stated instructions.



### Mandatory Requirements

- This product is not an explosion-proof construction. Do not use the product under flammable explosive gas or liquid environment.
- Never fail to turn OFF the power supply when wiring or disconnecting.

### Operating Precautions

- The sensor performance may depend on the individual units.
- Wipe off dirt on the emitting/receiving parts to maintain correct detection. Also, avoid direct impact on the product.

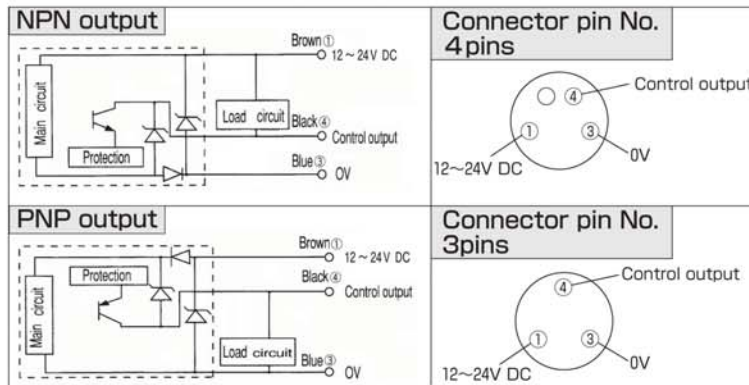


This product cannot be used as a safety device to protect human body.

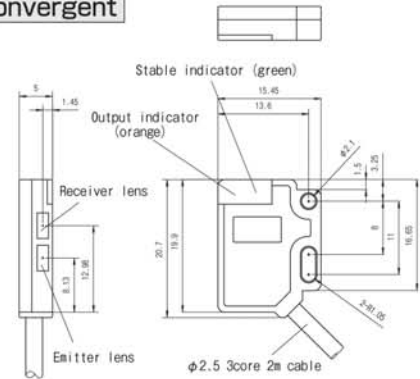
## Specifications

Model	Through Beam type		Diffuse ref. type		Convergent type	
	Cable	ET - S 500NL/ND/PL/PD	ED - S 30NL/ND/PL/PD	EL - S 15NL/ND/PL/PD		
M 8 4 pin connector	ET - S 500NL4/ND4/PL4/PD4	ED - S 30NL4/ND4/PL4/PD4	EL - S 15NL4/ND4/PL4/PD4			
M 8 3 pin connector	ET - S 500NL3/ND3/PL3/PD3	ED - S 30NL3/ND3/PL3/PD3	EL - S 15NL3/ND3/PL3/PD3			
Detecting distance	500mm	30mm	2 ~ 15mm			
Supply voltage	DC12 ~ 24V DC (ripple 10% max.)					
Current consumption	Emitter : 14mA max. Receiver : 16mA max.		20mA max.			
Response time	0.25ms max.		0.5ms max.			
Hysteresis	-		White paper : 10%			
Control output	E□ - S□□□□N□□ : NPN Open collector		E□ - S□□□□P□□ : PNP Open collector		50mA max. / 24VDC	
Operation mode	E□ - S□□□□L□ : Light ON		E□ - S□□□□D□ : Dark ON			
Beam size	φ60mm / Distance 500mm		φ3mm / Distance 30mm		φ2mm / Distance 15mm	
Indicator	Stable indicator : Green LED		Output indicator : Orange LED		Power indicator (Emitter) : Red LED	
Operating temp./ humidity	-25 ~ +55°C / 35 ~ 85% RH (No condensation or freezing)					
Storage temp./ humidity	-40 ~ +70°C / 35 ~ 95% RH (No condensation or freezing)					
Ambient light	3,000lx (Incandescent light)		10,000lx (Sunlight)			
Protection category	IP67					
Material	PC					

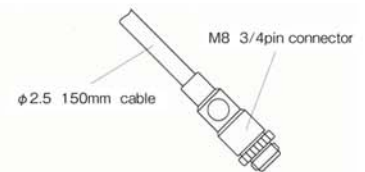
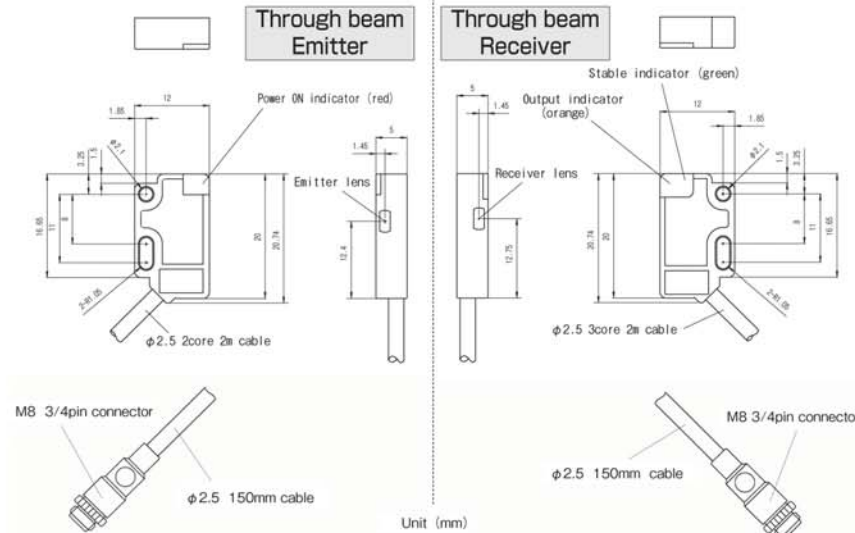
## Input and output circuit diagrams



## Diffuse/Convergent



## Dimensions



Unit (mm)

- The product specification may change without notice for improvement.

# OPTEX FA CO., LTD.

Ramco Innovations  
[www.Optex-Ramco.com](http://www.Optex-Ramco.com)  
 800.280.6933