

# EE-SPX613




## Liquid Level Photomicrosensor with operation mode and sensitivity selectors for easy application.

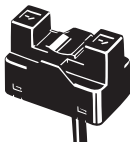
- Operation mode selector allows modes to be switched easily.
- Sensitivity selector is suitable for any 6- to 13-mm-diameter transparent or semi-transparent pipe with a wall thickness of 1 mm.
- Uses a clean (with no powder parting agent) cable.
- Operating voltage range: 12 to 24 VDC



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

 Be sure to read *Safety Precautions* on page 3.

## Ordering Information









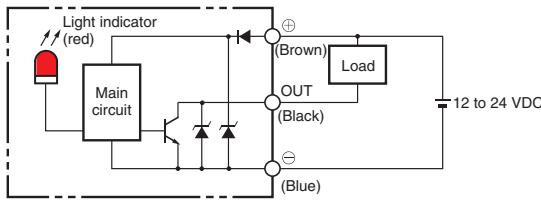








Appearance	Sensing method	Output type	Output configuration	Cable length	Model
	Through-beam type	NPN output	Dark-ON or Light-ON (selectable)	1 m	EE-SPX613 1M

## Ratings and Specifications

Item	Models	EE-SPX613
Applicable pipe		Any 6- to 13-mm-diameter pipe with a wall thickness of 1 mm that is made of FEP or any other material as transparent as FEP.
Sensing object		Liquids in pipes (High-viscosity liquids or liquids with floating materials may not be detected.)
Light source		GaAs infrared LED with a peak wavelength of 940 nm
Indicator		Light indicator GaP (Red LED: Peak wavelength of 700 nm)
Supply voltage		12 to 24 VDC $\pm 10\%$ , ripple (p-p): 5% max.
Current consumption		Average: 30 mA max., Peak: 80 mA max.
Control output		NPN open collector: Load power supply voltage: 5 to 24 VDC Load current: 100 mA max. OFF current: 0.5 mA max. 100 mA load current with a residual voltage of 0.8 V max. 40 mA load current with a residual voltage of 0.4 V max.
Ambient illumination		3,000 lx max. with incandescent light or sunlight on the surface of the receiver
Ambient temperature range		Operating: $-10$ to $+55^{\circ}\text{C}$ Storage: $-25$ to $+65^{\circ}\text{C}$ (with no icing or condensation)
Ambient humidity range		Operating: 5% to 85% Storage: 5% to 95% (with no condensation)
Vibration resistance		Destruction: 10 to 500 Hz, 1.0-mm single amplitude or $150\text{ m/s}^2$ in X, Y, and Z directions 3 times and for 11 min each
Shock resistance		Destruction: $500\text{ m/s}^2$ for 3 times each in X, Y, and Z directions
Degree of protection		IEC 60529 IP50
Connecting method		Pre-wired (Standard length: 1 m)
Weight (packed state)		Approx. 55 g
Material	Case	Polycarbonate
	Cover	
Accessories		Support belt (2), slip protection tube (2), Instruction Manual

## I/O Circuit Diagrams

### NPN Output

Model	Output configuration	Timing charts	Operation mode selector	Output circuit
EE-SPX613	Dark-ON	Incident (with no liquid)  Interrupted (with liquid)  Light indicator (red) ON  OFF  Output transistor ON  OFF  Load (relay) Operates  Releases 	D-ON (DARK ON)	
	Light-ON	Incident (with no liquid)  Interrupted (with liquid)  Light indicator (red) ON  OFF  Output transistor ON  OFF  Load (relay) Operates  Releases 	L-ON (LIGHT ON)	