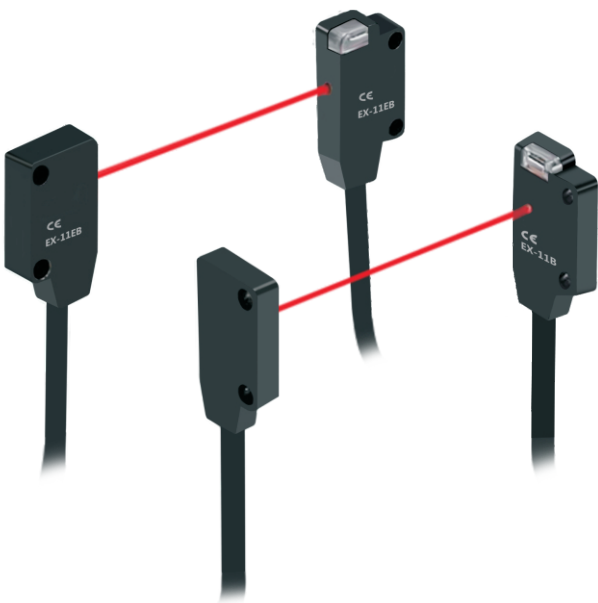


Ultra-thin Through Beam Photoelectric Switch

- Amplifier-built-in.
- Small and slim, easy for mounting, 4.6mm thickness.
- Red LED light source, easy alignment.
- Anti-electromagnetic-interference.

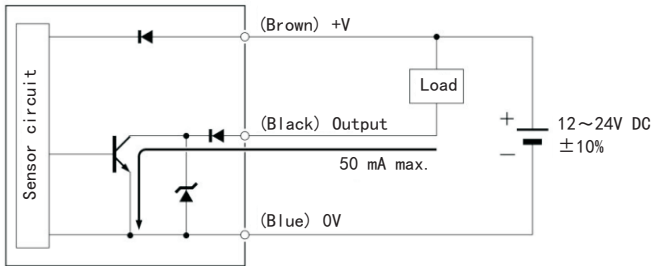


Category					
Sensing method		Appearance	Sensing distance	Operation mode (NPN)	Model
Through beam	Front sensing		150mm	Light-ON	EX-11A
				Dark-ON	EX-11B
			300mm	Light-ON	EX-13A
				Dark-ON	EX-13B
			1.2m	Light-ON	EX-19A
				Dark-ON	EX-19B
	Side sensing		150mm	Light-ON	EX-11EA
				Dark-ON	EX-11EB
			300mm	Light-ON	EX-13EA
				Dark-ON	EX-13EB
			1.2m	Light-ON	EX-19EA
				Dark-ON	EX-19EB

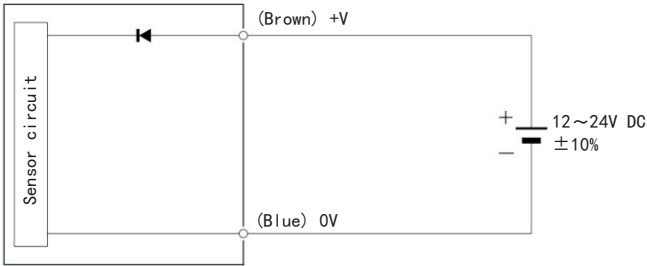
Red LED Light

I/O Circuit Diagram

Receiver



Emitter



Ratings and Specifications

Model	EX-11B	EX-13B	EX-19B	EX-11EB	EX-13EB	EX-19EB
	EX-11A	EX-13A	EX-19A	EX-11EA	EX-13EA	EX-19EA
Sensing distance	150mm	300mm	1.2m	150mm	300mm	1.2m
Sensing object	Opaque object, 1 mm dia. min.					
Light source (wavelength)	Infrared LED (680 nm)					
Power supply voltage	12 to 24 VDC, ripple (p-p): 10% max.					
Current consumption	Emitter: 10 mA max., Receiver: 10 mA max.					
Control output	Load power supply voltage: 30 VDC max., Load current: 50 mA max. (residual voltage: 2 V max.)					
Protection circuits	Output short-circuit protection					
Response time	Operate or reset: 0.5 ms max.					
Ambient illumination (Receiver side)	Incandescent lamp: 5,000 lx max.					
Ambient temperature	Operating: -25 to 55°C (with no icing or condensation) Storage: -30 to 70°C (with no icing or condensation)					
Ambient humidity	Operating: 35% to 85% (with no condensation) 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 500 Hz, 3 mm double amplitude for 2 h each in X, Y and Z directions					
Shock resistance (destruction)	500 m/s ² , for 3 times each in X, Y and Z directions					
Degree of protection	IEC IP67					
Weight	Approx. 50 g					
Material	Polyethylene terephthalate					
Accessories	Mounting screws, brackets.					

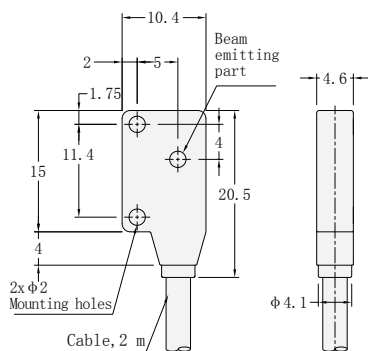
Dimensions

Unit: mm

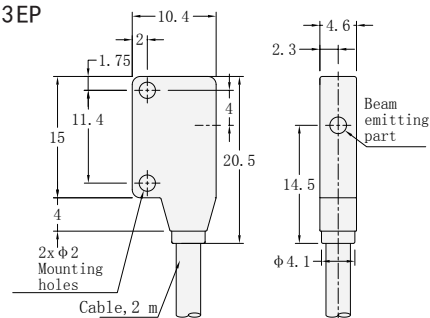
EX-11□, EX-13□

EX-11E□, EX-13E□

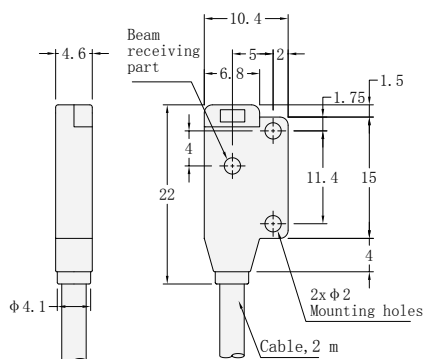
Emitter

EX-11P
EX-13P

Emitter

EX-11EP
EX-13EP

Receiver

EX-11AD
EX-13AD

Receiver

EX-11EAD
EX-13EAD