

INSTRUCTION SHEET

Photoelectric Sensor SA1E Series

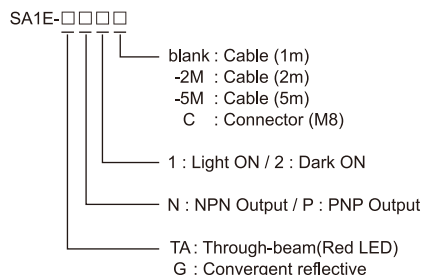
Confirm that the delivered product is what you have ordered. Read this instruction sheet to make sure of correct operation. Make sure that the instruction sheet is kept by the end user.

SAFETY PRECAUTIONS

CAUTION

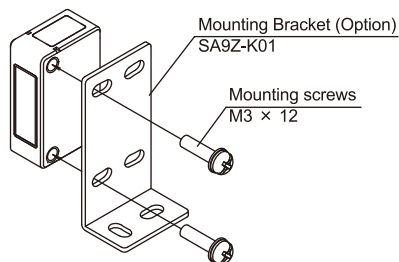
Caution notices are used where inattention might cause personal injury or damage to equipment.

1 Type



2 Installation

- Do not apply excessive impact on the sensor during the installation process, so as to prevent damage or deterioration in the degree of protection.
- To install the sensor, tighten the mounting screws to a torque of 0.4 to 0.5N·m.



3 Specifications

Detection System			Through-beam	Convergent reflective
TYPE No.	NPN Output	Light ON	SA1E-TAN1	SA1E-GN1
		Dark ON	SA1E-TAN2	SA1E-GN2
	PNP Output	Light ON	SA1E-TAP1	SA1E-GP1
		Dark ON	SA1E-TAP2	SA1E-GP2
Light Source			Red LED	Infrared LED
Power Voltage			12 to 24V DC Ripple p-p 10% maximum (Operating range 10 to 30V DC)	
Current Consumption			Emitter : 15mA maximum Receiver : 20mA maximum	30mA maximum
Sensing Range			10m	5 to 35mm (White paper 100×100mm)
Control Output			Open collector output (NPN / PNP output selectable) Load voltage : 30V DC maximum, Load current : 100mA maximum, Voltage drop : 1.2V maximum	
Protection Circuit			Reverse polarity protection, Load short circuit protection	Reverse polarity protection, Load short circuit protection Interference prevention
Response Time			1 ms maximum	
Ambient Temperature			Operating : -25 to +55 °C, Storage : -40 to +70 °C (no freezing and condensation)	
Ambient Humidity			Operating : 35 to 85% RH, Storage : 35 to 85% RH (no condensation)	
Degree of protection			IP67 (IEC60529)	
Material			Housing : PC/PBT, Lens : PC, Display : PC	
Cable			φ3.5mm, 3-core(2-core for emitter of through-beam type), 0.2mm ² , 1m/2m/5m cable type	

4 Notes for Operation

- Do not use the sensor during the transient time of 100 ms after turning on the power supply.
- If the sensor and the load are connected to different power supplies, the sensor must always be turned on first.
- Do not install the sensor outdoors, nearby induction device, or heat source. Choose locations free from frequent vibrations, shocks, dust, toxic gases, water, oil, and chemicals, so as to prevent malfunctions and damage.
- Do not expose the sensor to sunlight or other direct light projections.
- Do not use the sensor with drops of water remaining on the lens or aperture of slits. To remove dust and moisture build-up, use soft dry cloth. Polycarbonate is used for optical elements. Do not use organic solvents such as ammonia, caustic soda, alcohol or thinner for cleaning.

CAUTION

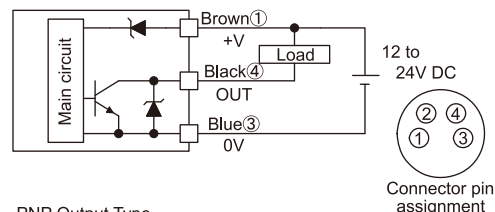
- Do not connect the sensor to AC power supply, so as to prevent explosion and burning.

5 Wiring

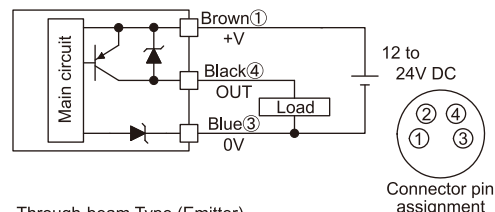
- Turn off the power supply before wiring.
- Connect correctly to prevent damage.
- The power voltage must not exceed the rated range.
- When using a switching power supply, be sure to ground the FG (frame ground) terminal.
- Do not install the sensor wiring in the same conduit with high-voltage lines and power lines.
- Cable extension is allowed up to 100m using a cable type with core wires of 0.3 mm² or more.
- To connect the sensor with connector cable, tighten connector to a torque of 0.2 to 0.4N·m.

WIRING DIAGRAM

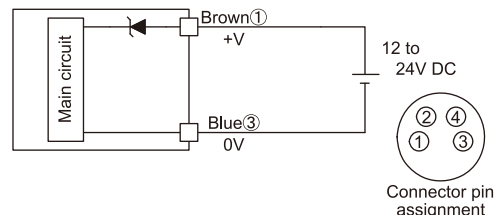
NPN Output Type



PNP Output Type

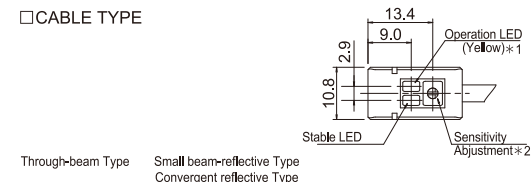


Through-beam Type (Emitter)

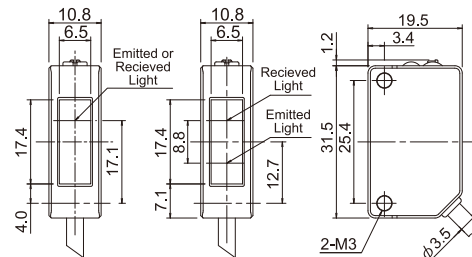


6 Dimensions

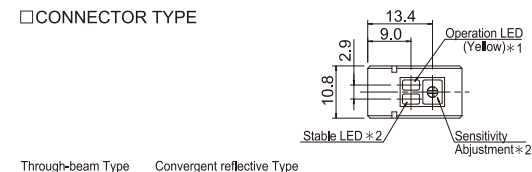
CABLE TYPE



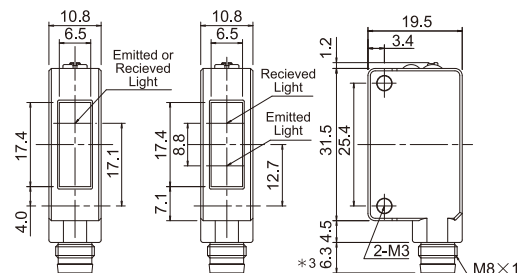
Through-beam Type Small beam-reflective Type
Convergent reflective Type



CONNECTOR TYPE



Through-beam Type Convergent reflective Type



- *1 Power LED for the through-beam type emitter.
- *2 Not incorporated on the through-beam type emitter.
- *3 18mm with the connector cable (SA9Z-CM8K-4L□) connected.

EU Authorized Representative:
IDEC Elektrotechnik GmbH
Heseltuecken 8, 22453 Hamburg, Germany

Manufacturer:
IDEC CORPORATION
2-6-64, Nishimiyahara, Yodogawa-ku,
Osaka 532-0004, Japan

IDEC CORPORATION