

INSTRUCTION SHEET

Miniature Photoelectric Switches SA2E Series

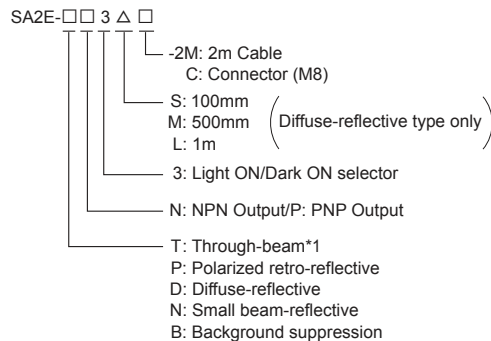
Confirm that the delivered product is what you have ordered. Read this instruction sheet to make sure of correct operation. Make sure that the instruction sheet is kept by the end user.

SAFETY PRECAUTIONS

CAUTION

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

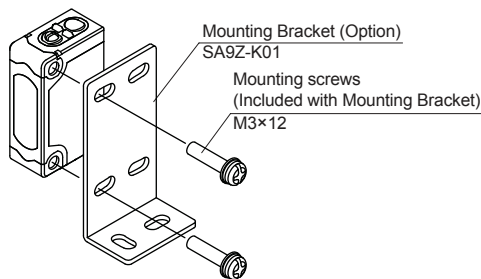
1 Type



*1 The following is displayed on the body of the through-beam type product.
 Emitter : SA2E-T□3P□
 Receiver: SA2E-T□3R□

2 Installation

- To install the SA2E, tighten the mounting screws to a torque of 0.4 to 0.5N·m.
- Do not apply excessive impact on the SA2E during the installation process, so as to prevent damage or deterioration in the SA2E.



3 Specifications

Detection System	Through-beam	Polarized retro-reflective	Diffuse-reflective			Small beam-reflective	Background suppression	
			SA2E-DN3S	SA2E-DN3M	SA2E-DN3L			
TYPE	NPN Output	SA2E-TN3	SA2E-PN3	SA2E-DN3S	SA2E-DN3M	SA2E-DN3L	SA2E-NN3	SA2E-BN3
No.	PNP Output	SA2E-TP3	SA2E-PP3	SA2E-DP3S	SA2E-DP3M	SA2E-DP3L	SA2E-NP3	SA2E-BP3
Sensing Range	20m	5m	100mm	500mm	1m	50 to 150mm	10 to 350mm	
Standard Detector	-	(Reflector: IAC-R5/R8)*2	(White paper: 200×200mm)			(White paper: 100×100mm)	(White paper: 200×200mm)	
Detection Distance	-	-	-	-	-	-	20 to 350mm	
Light Source	Red LED	Red LED	Infrared LED	Red LED	Infrared LED	Red LED	Red LED	
Power Voltage	12 to 24V DC Ripple p-p 10% maximum (Operating range 10 to 30V DC (including Ripple))							
Current Consumption	20mA maximum							
Control Output	Open collector output (NPN/PNP output selectable) Load voltage: 30V DC maximum, Load current: 100mA maximum Voltage drop: 1.2V maximum (Load current: 10mA maximum) Voltage drop: 2V maximum (Load current: 100mA maximum)							
Protection Circuit	Reverse polarity Reverse output polarity circuit Load short circuit	Reverse polarity, Reverse output polarity circuit, Load short circuit, Interference prevention						
Response Time	0.5ms maximum							
Ambient Temperature	Operating: -30 to +55°C, Storage: -40 to +70°C (no freezing and condensation)							
Ambient Humidity	Operating: 35 to 95%RH, Storage: 35 to 95%RH (no condensation)							
Degree of protection	IP67 (IEC60529)							
Material	Housing: PBT, Lens: PMMA, Display: PC							
Cable	ø3.5mm, 3-core (2-core for emitter of through-beam type), 0.2mm ² , 2m cable							

*2 Maintain at least the following distance between the SA2E and reflector.
 IAC-R5/R6/R8: 50mm, IAC-R7: 100mm, IAC-RS1/RS2: 150mm

4 Notes for Operation

- Do not use the SA2E during the transient time of 100ms after turning on the power supply.
- If the SA2E and the load are connected to different power supplies, the SA2E must always be turned on first.
- Do not install the SA2E 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 receiver axis of SA2E to sunlight or other direct light projections.
- Do not use the product with water drops, dirt etc, remaining on the sensing surface as unintended operation and detection performance may change. To remove dust and moisture build-up, use soft dry cloth.
- PMMA is used for optical elements. Do not use organic solvents such as ammonia, caustic soda, alcohol or thinner for cleaning.

CAUTION

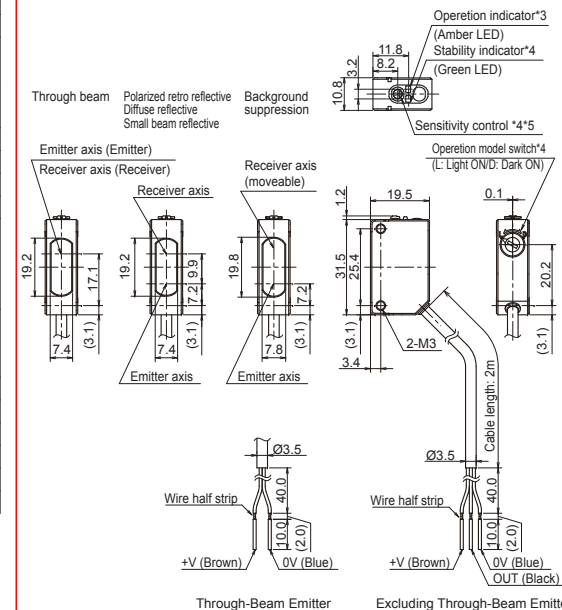
- Do not apply the voltage over the rated range or AC voltage, otherwise the switch may blow out or burn.

5 Wiring

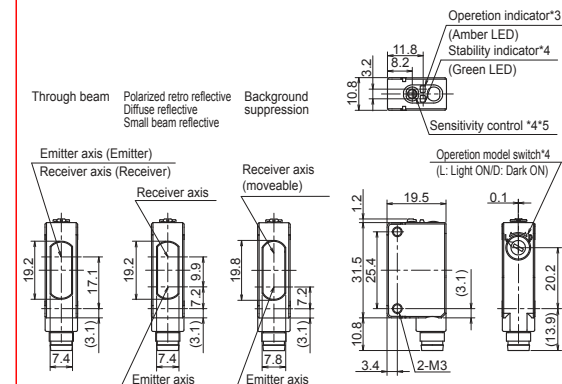
- Turn off the power supply before wiring.
- Connect correctly to prevent damage.
- The power voltage must not exceed the rated range.
- When using a switching power supply, be sure to ground the FG (frame ground) terminal.
- Do not install the SA2E wiring in the same conduit with high-voltage lines and power lines.
- If the wiring is long, or if there is a risk influence from power source and electromechanical devices etc, use it as an independent wiring.
- Cable extension is allowed up to 100m using a cable with core wires of 0.3mm² or more.
- To connect the SA2E with connector cable, tighten connector to a torque of 0.2 to 0.4N·m.

6 Dimensions

CABLE TYPE



CONNECTOR TYPE



*3 Power LED for the through-beam type emitter.
 *4 Not incorporated on the through-beam type emitter.
 *5 Distance control (approx 7-turn endless) for Background suppression type.

7 Precaution for Disposal

- Dispose of the SA2E as an industrial waste.

IDEC CORPORATION

http://www.idec.com

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