

INSTRUCTION SHEET

SA2E-EX type Intrinsically safety Photoelectric Sensor



Confirm that the delivered product is what you have ordered. Read this instruction sheet and SA2E Instruction sheet (Refer under User support link) to make sure of correct operation. Make sure that the instruction sheet is kept by the end user. The warranty period for this product is one year after delivery to the designated location.

SAFETY NOTE

In this operation instruction sheet, safety precautions are categorized in order of importance to Warning and Caution :

WARNING

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

- Turn off power before installation, removal, wiring, maintenance. Failure to turn power off may cause electrical shocks or fire hazard.
- Special expertise is required to install, wire, operate, maintain, and inspect. People without such expertise and knowledge in the installation of electrical equipment used in potentially explosive atmospheres and electric systems, relevant regulations, principle, function, and skill must not use the SA2E-EX.
- When using the Mounting Bracket, attach the metal with on the earth.
- Accordance Inductance (Lc) and Capacitance (Cc) is as below.
Lc ≤ Lo-Li , Cc ≤ Co-Ci < Li=10uH & Ci=5.4uF : Include Cable>
* Co, Lo : Please confirm the Instruction manual of using Barrier.
- Slit cover and Connector are contactable metal parts. Therefore do not scrub, impact or friction for the case of explosion by static electricity or to avoid an ignition hazard.
- Since there is non-metallic parts, there is a risk of ignition due to static electricity, therefore do not rub them.
- Defective should be returned to the factory for repair.
- On using the connector type, ensure a distance of 2 mm or more between the metal part of the connector and the ground metal.

CAUTION

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

- Please use this product in accordance with its intrinsically safe explosion-proof ratings, parameters, and description.
- Connectable barrier : EB3S type sensor barrier (manufactured by IDEC)
Please note that if you use a barrier other than EB3S, intrinsically safe explosion-proof performance may not be ensured.
- The SA2E-EX contains electronic parts. When disposing of the SA2E-EX, do so in accordance with national and local regulations.

1 Main specification and Model number

<Applicable standards>

Certification Body	Applicable Standard	Performance for Type of protection	Certificate No.	Manual No.
JPEX	Recommended Practices for Explosion-Protected Electrical Installations in General Industries	Ex ia IIB T4 Ga	CML 24JPN2074	B-2420-1
IECEX	IEC 60079-11	Ex ia IIB T4 Ga	IECEX CML 24.0007	B-2420-2
ATEX	EN 60079-11	II1G Ex ia IIB T4 Ga	CML 24ATEX2012	B-2420-2

<Explosion-proof specification>

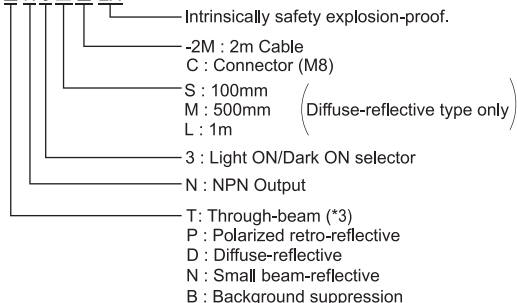
Structure of Explosion -proof	Intrinsically safe explosion-proof
Install area	Zone 0, 1, 2
Intrinsically safe rating and parameter	Ui=13.2V, li=56mA, Pi=185mW, Li=10uH, Ci=5.4uF
Connectable barrier	EB3S type sensor barrier (manufactured by IDEC)
Degree of Protection	IP20 over (IP67) (IEC60529) (*1)
Ambient temperature	Operating : -30°C - +55°C (no freezing and condensation) Storage : -40°C - +70°C (no freezing and condensation)
Ambient humidity	Operating : 35%RH - 95%RH (no condensation) Storage : 35%RH - 95%RH (no condensation)
Dielectric Strength	500V AC / 1min (Intrinsically safety circuit - earth)
Atmosphere	800hPa - 1100hPa
Mounting	M3 Screw

(*1) Explosion proof application is IP20. Product performance is IP67.

(*2) Please refer to the SA2E instruction manual for general specifications.

<Type Number>

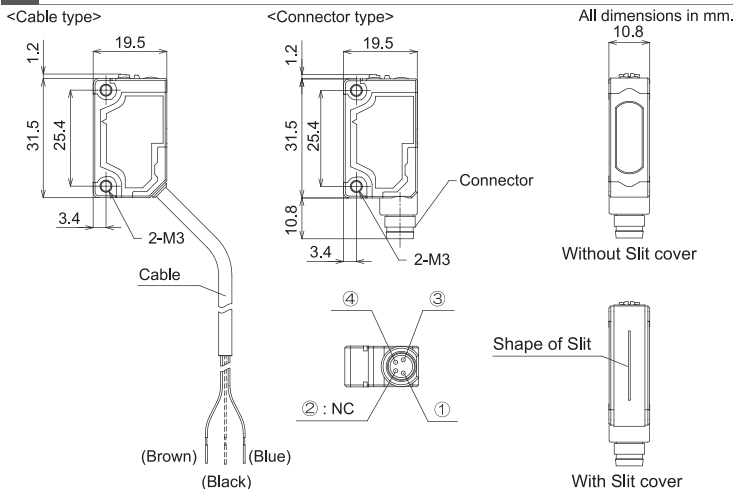
SA2E-□ N 3 △ □ -EX



(*3) The following is displayed on the body of the through-beam type product.

Emitter : SA2E-TN3□-EX
Receiver : SA2E-TN3R□-EX

2 Dimensions

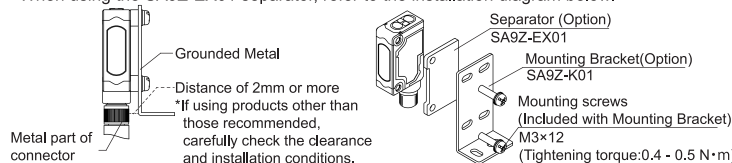


(*4) Slit cover and connector cable are optional.

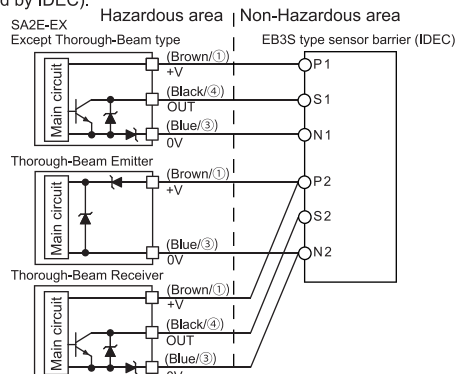
(*5) Please refer to the SA2E instruction manual for detailed dimensions.

3 Installation and Wiring

- When installing the product, use screws that engage with the product by at least 6.5 mm. Insufficient screw engagement may result in damage to the screw holes.
- When using a connector type, be sure to leave a distance of 2 mm or more between the metal part of the connector and the grounded metal part. We recommend using the optional isolation plate SA9Z-EX01.
- When using the SA9Z-EX01 separator, refer to the installation diagram below.



- (*6) The surface of SA9Z-EX01 may be scratched due to machining, but this will not affect its performance.
- Please refer to the wiring diagram below for connection with the EB3S type sensor barrier (manufactured by IDEC).



<Terminal specification of SA2E-EX>

Marking	Signal
Brown/① +V	Sensor power supply (Brown)
Black/④ OUT	Sensor output (Black)
Blue/③ 0V	Sensor GND (Blue)

<Terminal specification of EB3S sensor barrier>

Marking	Signal
Pn	Sensor (+) power supply
Sn	Sensor signal
Nn	Sensor (-) power supply

(*7) n: Indicates channel No. 1 to No. 6 of EB3S type sensor barrier.

(*8) For precautions regarding product installation and wiring, please refer to the instruction manual for IDEC standard product SA2E.

(*9) n: For connector type, SA2E mounting bracket SA9Z-K03 cannot be used.

User support

IDEC standard SA2E Instruction sheet can be downloaded from as follow.
<https://product.idec.com/?product=SA2E>

Connectable barrier EB3S Instruction sheet can be downloaded from as follow.
<https://product.idec.com/?product=EB3S-N>

IDEC CORPORATION

<https://www.idec.com>

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EU Authorized Representative: APEM SAS
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EU DECLARATION OF CONFORMITY

We, IDEC CORPORATION 2-6-64, Nishimiyahara, Yodogawa-ku, Osaka532-0004, Japan declare under our sole responsibility that the product/Description : Sensor / Model No : SA2E-EX to which this declaration relates is in conformity with the EC Directive on the following standard(s) or other normative document(s). In case of alteration of the product, not agreed upon by us, this declaration will lose its validity.

Applicable EC Directive : ATEX Directive (2014/34/EU) / EMC Directive (2014/30/EU)

/RoHS Directive (2011/65/EU) and (EU) 2015/86

Applicable Standard(s) : EN60079-0, EN60079-11 (ATEX) / EN60947-5-2 (EMC)

/EN IEC 63000 (RoHS)