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Installations of IDEC Intrinsically Safe System

EB3S-N_Sensor Barrier.(TypeB)

ATEX Certificate number：DEKRA 21ATEX0103

UKCA Certificate number：CSAE 22UKEX1312

Intrinsically Safe System

II(1)G [Ex ia Ga] IIC, II(1)D [Ex ia Da] IIIC

When installing an IDEC Intrinsically Safe System, make sure it conforms to the following drawings and descriptions as well as all applicable requirements.

European: CENELEC Standard EN IEC 60079-0:2018, EN 60079-11:2012, EN 60079-25:2010, EN 60079-14:2014

All intrinsically safe systems must have “EB3S-N in the part number. The Sensor Barrier must be located in a safe area (non-hazardous area). They are connected to the 3 wires photoelectric switches and other, which is installed in hazardous area, and are considered as “simple equipment” or have already been certified / approved.

⚠ Warning

Substitution of components or unauthorized repair may impair intrinsic safety of apparatus.

To maintain intrinsic safety, the Signal input terminal (Pn-Sn-Nn) may only be connected to intrinsically safe circuits where both the wiring and the connected equipment maintain 500 V isolation to the hazardous area earthing/bonding connections.

1 Certified Sensor Barrier

Type EB3S-Babc**N**

“**EB3S-B**= Series type

a = Output **R** : Relay , **T** : Transistor,

b = Number of channels **01**, **02**, **04 , 06**

c = Power supply **A** : 100-240V ac , **D** : 24V dc

Rating and Parameters of Sensor Barrier

Ta=60℃ Um = 250V

Uo = 13.2V Io = 56mA Po = 185mW

Lo(mH)	45.3*	22.5	10.00	5.00	1.00	0.50
Co(μF) /IIB/IIIB	5.80*	0.99	1.90	2.30	3.50	4.30
Lo(mH)	11.3*	5.6	2.00	1.00	0.50	0.25
Co(μF) /IIC/IIIC	0.94*	0.47	0.50	0.61	0.75	0.91

*: Therefore, the values are allowable only at Li<1%Lo or Ci<1%Co of the intrinsic safe apparatus.

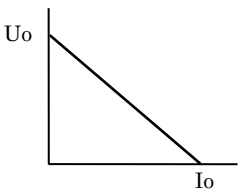

Fig.1 Voltage-Current

2 Mounting

All bolts, nuts, screws, and other means of fastening, including the unused wiring screws, shall be fastened in place, properly tightened and secured. Mount the Sensor Barrier on a 35mm track or directly mount on a panel surface using screws.

3 Servicing – Replacement and Repairs

Inspection and replacement of the Sensor Barriers shall not be made until power is disconnected and shall not be connected again until all replacement Sensor Barriers are properly re-assembled. All electrical components, including the interconnecting wiring, shall be kept in safe condition. Defective Sensor Barriers should be returned to the factory for repair.

4 Typical Installation

Install the Sensor Barrier must be according to the following Ratings and Parameters of intrinsically safe and descriptions.

To avoid electrical shock, install the Sensor Barrier in a tool-accessible enclosure.

Layout and wiring must be done to prevent the inductive or capacitive induction to the intrinsically safe circuit.

For example, separate intrinsically safe circuits from non-intrinsically safe circuits, by a minimum space of 50mm or using a full height metal separator. If color-coding is required use for the intrinsic safe components and terminals, use only cables and terminals with light blue markings.

Maintain at least 3 mm clearance between the external connection terminals and the grounded metal part.

5 Note

- The Sensor Barrier must be located in a safe area (non-hazardous area). Intrinsically safe equipment must be located in a hazardous area.
- Install the Sensor Barrier in compliance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application.
- In the external wiring of intrinsically safe circuit, the intrinsically safe circuit shall be separated mutually and shall not be effected from another. <---> shows an independent circuit.
- Make sure that the control equipment connected to the Sensor Barrier does not use or generate more than 250Vrms or Vdc(Um=250V).
- Use the Sensor Barrier at ambient temperature -20～+60℃.
- Dielectric Strength : Between intrinsically safe circuit and non-intrinsically safe circuit 1526.4V AC
- Lot No.

a b c d e f – g

a : Production base

b, c : Year (example : 22 → 2022)

d : Month

e, f : Date

g : Number of product

IDEC CORPORATION

Manufacturer: IDEC CORPORATION 2-6-64, Nishimiyahara, Yodogawa-ku, Osaka532-0004, Japan

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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 Barrier / Model No : EB3S-N 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)

UK Authorized Representative : APEM COMPONENTS LIMITED

Drakes Drive, Long Crendon, Buckinghamshire, HP18 9BA, UK

UKCA DECLARATION OF CONFORMITY

declare under our sole responsibility that the product:/Description : Sensor Barrier / Model No : EB3S-N to which this declaration relates is in conformity with 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 Standard(s) : EN60079-0, EN60079-11 (S.I. 2016 No.1107) / EN60947-5-2 (S.I. 2016 No. 1091)/ EN IEC 63000 (S.I. 2016 No.3303))

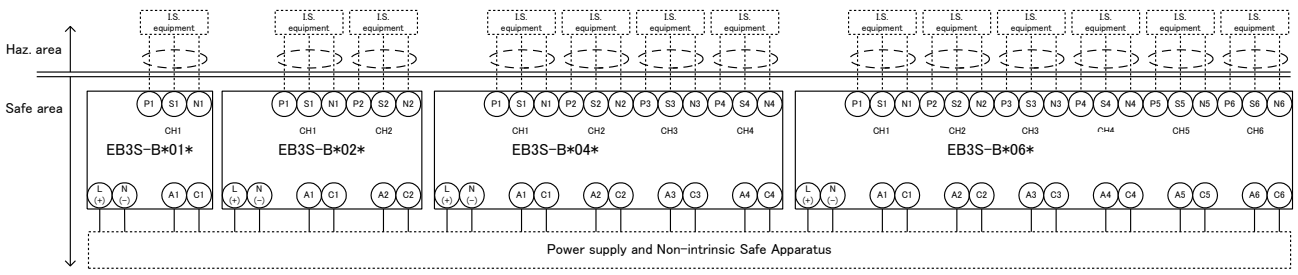

Fig.2 System configuration