



TYPE APPROVAL CERTIFICATE

Certificate No. : TKY17821-EL003 **Initial Approval** : 25th February, 2015
Product : Explosion-Proof Electrical Equipment
Manufacturer : IDEC Corporation
2-6-64 Nishimiyahara, Yodogawa-Ku, Osaka 532-0004, Japan

Product Description : Type : EB3C-N (Intrinsically Safe Type Relay Barrier)
EB3L-N (Intrinsically Safe Type Lamp Barrier)
* Manufacturing Place : IDEC CORPORATION Amagasaki Factory
5-8-10 Shioe, Amagasaki-shi, Hyogo, 661-0976, Japan

" See Appendix 1 "

Approval Condition : " See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment",

Pt. 6, Ch. 1, Sec. 9 of the Rules for Classification of Steel Ships and IEC 60079-11

This Certificate is valid until 24th February, 2025

Issued at Busan, Korea on 3rd April, 2020



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No (ME20011524931) and certificate No.(TKY17821-EL003).



KOREAN REGISTER

General Manager of
Marine & Ocean Equipment Team

- Note* : 1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Appendix 1

Product Description and/or Approval Condition

Certificate No : TKY17821-EL003

Date of Issue : 3rd April, 2020

A. Product Description

1. Product Specification

- 1) Product description ;
The EB3C-N and EB3L-N are intrinsically safe type barriers for hazardous area.
- 2) Particulars
 - a) EX-protection : Intrinsically Safe Type([Ex ia] IIC, [Ex ia] IIIC)
 - b) Intrinsically Safe Circuit (16ch. Common / 1ch. separate);
 - Max. Output Voltage : 13.2 V / 13.2 V
 - Max. Output Current : 227.2 mA / 14.2 mA
 - Max Power : 750 mW / 46.9 mW
 - Permissible Capacitance : 0.49 μ F / 0.47 μ F
 - Permissible Inductance : 0.60 mH / 87.5 mH
 - c) Non-Intrinsically Safe Circuit
 - Permissible Voltage : AC 250V(50/60Hz), DC 250V
 - d) Ambient Temperature : -20 $^{\circ}$ C ~ 60 $^{\circ}$ C

3) Type Designation

- a) EB3C-abcdeN
 - a = Output Type;
R: Relay Output, T: Transistor Output, M: MOSFET
 - b = Output Channels;
01, 02, 03, 04C, 05, 06, 08, 08C, 10, 16C (C indicates common type only)
 - c = Type of Transistor Output;
K: Sink, S: Source (for 04C, 08C and 16C)
 - d = Power Supply;
A: AC, D: DC
 - e = Connection;
-C: Connector, Nil: Terminal
- b) EB3L-abcdeN
 - a = Output type;
S: Supper LED
 - b = Number of channels;
01, 02, 03, 04C, 05, 06, 08, 08C, 10, 16C (C indicates common type only)
 - c = Input type;
K: Sink, S: Source
 - d = Power supply;
A: AC, D: DC
 - e = Connection;
-C: Connector, Nil: Terminal

2. Approved Drawings and Documents

- 1) EB3C-abcdeN : EB3C-N-IS-ME01, A39761~A39782, A49410, A39793, A39794, A49412
- 2) EB3L-abcdeN : EB3L-N-IS-ME01, A39795~A39816, A49411, A39826, A39827, A49413

3. Test Reports, etc.

- 1) Environmental testing report: 15-306-005N issued by IDEC CORPORATION
KL80140667, KL80140669 KL80190747 issued by
JAPAN QUALITY ASSURANCE ORGANIZATION
- 2) Explosion proof certificate : IECEx PTB 10.0015 Issue No.3

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the test reports and the approved documentation.
- 2) Degree of protection shall be complied with Rule Pt.6 Ch.1 Sec.2 201.2.(5).
- 3) Explosion-proof certificate by a notified/recognized Certificate Body is not covered by this certificate. Ratings and Special Condition for safe use in hazardous areas are to be obtained from the relevant valid Ex-Certificate.
- 4) The product is not to be installed in consoles, housings, etc. together with other heat dissipating power equipment.

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2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is not required.

3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

4. Others

- 1) Test condition

Approved Testing	Approved Condition	Remark
EMC	All locations excluding the bridge and deck zone	Up to 6GHz
Temperature	-25°C ~ +65°C	-
Vibration	Acceleration $\pm 0.7g$	-

< End of certificate >