

CERTIFICATE OF CONFORMITY



- HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
- Certificate No:** FM22US0085X
- Equipment:** EB3 Intrinsically Safe Barriers
(Type Reference and Name) EB3C series, EB3L series, EB3S-B series, and EB3N series.
- Name of Listing Company:** Idec Corporation .
- Address of Listing Company:** 2-6-64, Nishimiyahara, Yodogawa-Ku, Osaka, Japan
- The examination and test results are recorded in confidential report number:
PR463379 dated 2nd December 2022
- FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:
FM Class 3600:2022 FM Class 3610:2021, FM Class 3810:2021,
ANSI/UL 60079-0:2020, ANSI/UL 60079-11:2014,
- If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
- This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
- Equipment Ratings:**
Associated Intrinsically Safe Apparatus with (entity) connection for Class I, II and III, Division 1, Groups A, B, C, D, E, F and G; and for connection to, Zone 0, Group IIC per Control Drawings B-2270-4, B-2272-4, B-2274-4, B-2284-4 Indoor (IP20) Hazardous (Classified) locations.
- The marking of the equipment shall include:

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

2 December 2022

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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SCHEDULE



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AIS Class I, II, III Division 1, Groups A, B, C, D, E, F, G; Ta= 60°C;

AIS Zone 0, 1 [AEx ia Ga] IIC, IIB, IIA Ta = 60°C;

12. Description of Equipment:

General – The Relay Barriers types EB3C-*N, EB3L-*N, EB3N-* and EB3S-B*N are associated apparatus intended for connection to passive intrinsically safe circuits. They are provided with intrinsically safe I/O-circuits which can differ in the number of channels from 1 channel up to a maximum of 16 channels. The signals of the intrinsically safe circuits are electrically isolated from the non-intrinsically safe circuits by optocouplers and they are available via relay contacts or transistor switches.

Construction - The Relay Barriers are supplied in IP 20 plastic enclosures that are intended to be installed in a tool-secured final equipment enclosure located in the unclassified area (non-hazardous area),

Ratings – The ambient temperature rating is -20°C to +60°C. For electrical ratings refer to the entity parameters below. Um = 250V.

EB3C-abcdeN-2 Relay Barrier

a = Output: R (Relay), T (Transistor)

b = Number of Channels 01, 02, 03, 05, 06, 08, 08C, 10 and 16C.

c = Signal Type: K (Sink) or S (Source) for, 08C and 16C only.

d = Power Supply: A (100-240VAC) or D (24VDC).

e = Connection Type: Blank (Terminal) or -C (Connector)

Note. C = Common Wiring Only

Entity Parameters:

	Voc (V)	Isc (mA)	Vt (V)	It (mA)	Po (mW)	Ca (µF)	La (mH)
Any One Channel, i.e. Ch 1	13.2	14.2	-	-	46.9	0.47	88.0
Up to Sixteen Channels	-	-	13.2	227.2	750	0.49	0.6

EB3L-abcdeN-2 Lamp Barrier

a = Output: S (LED)

b = Number of Channels 01, 02, 03, 05, 06, 08, 08C, 10 and 16C.

c = Signal Type: K (Sink) or S (Source).

d = Power Supply: A (100-240VAC) or D (24VDC).

e = Connection Type: Blank (Terminal) or -C (Connector)

Note. C = Common Wiring Only

Entity Parameters:

	Voc (V)	Isc (mA)	Vt (V)	It (mA)	Po (mW)	Ca (µF)	La (mH)
Any One Channel, i.e. Ch 1	13.2	14.2	-	-	46.9	0.47	88.0
Up to Sixteen Channels	-	-	13.2	227.2	750	0.49	0.6

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EB3S-BabcN-2 (Type B) Sensor Barrier

a = Output: R (Relay) or T (Transistor).
b = Number of Channels 01, 02, 03, 04, 05 and 06.
c = Power Supply: A (100-240VAC) or D (24VDC).
Entity Parameters:

	Voc (V)	Isc (mA)	Vt (V)	It (mA)	Po (mW)
Any One Channel, i.e. Ch 1	13.2	56	-	-	185

	IIC	IIB
La (mH)	0.25	0.453
Ca (µF)	0.91	5.8

EB3N-abc Safety Relay Barrier

a = Safety circuit : A2(for auto start, 2 I/O) or M2(for manual start, 2 I/O)
b = Auxiliary circuit :N(without auxiliary circuit) or R5(relay output, 5 I/O)
c = Power supply: D(24V DC)

Entity Parameters:

	Voc (V)	Isc (mA)	Vt (V)	It (mA)	Po (mW)	Ca (µF)	La (mH)
Any One Channel, i.e. Ch 1	13.2	14.2	-	-	46.9	0.55	2.5
Up to Two Channels	-	-	13.2	28.4	93.8	0.48	3.5
Up to Sixteen Channels	-	-	13.2	227.2	750	0.49	0.6

13. Specific Conditions of Use:

The equipment shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application including access only by the use of tool.

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

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Member of the FM Global Group

US Certificate Of Conformity No: FM22US0085X

Date	Description
2 nd December 2022	Original Issue.

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