IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx BAS 19.0016X**	Page 1 of 5	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2021-05-04) Issue 0 (2019-07-03)
Date of Issue:	2022-01-31		

Applicant: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Equipment: **93ZX-FB3 Compact Fieldbus Barrier**

Optional accessory:

Type of Protection: **Flameproof, Increased Safety, Intrinsic Safety, Encapsulation, Dust protection by Enclosure**

Marking: **Ex eb ib mb [ia Ga] IIC T4 Gb (equipment without TP32 fitted)**
Ex db eb ib mb [ia Ga] IIC T4 Gb (equipment with TP32 fitted)
Ex tb IIIC T80°C Db
$-20°C \leq T_a \leq +60°C$

Approved for issue on behalf of the IECEx Certification Body: **R S Sinclair**

Position: **Technical Manager**

Signature: (for printed version)

Date: 31/1/2022

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom

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Manufacturer: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Additional manufacturing locations: **MTL Instruments Pvt Limited**
No 3 Old Mahabalipuram Road
Sholinganallur
Chennai 600119
India

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/BAS/ExTR19.0007/00 GB/BAS/ExTR21.0046/00 GB/BAS/ExTR21.0234/00

Quality Assessment Reports:

GB/BAS/QAR06.0022/09 GB/BAS/QAR07.0017/09

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The 937X-FB3-**-**Compact Fieldbus Barrier Equipment comprises a 9377-FB3 Compact fieldbus barrier module mounted in a stainless steel enclosure, where X = 3 for a single 12-way compact fieldbus barrier (X = 1, 2 or 4 is reserved for future use).

Different sizes of stainless steel enclosure are available.

Optional spare trunk terminals, an optional TP32 Trunk Surge Protector and associated factory wiring may also be present. The spur outputs may optionally be fitted with FS32 Spur Surge Protectors.

Trunk Connections - Safe Area Terminals

U_m = 253Vrms

The equipment is designed to operate from a d.c. supply voltage of 16V to 32V. The maximum rated current is 410mA.

Each Spur Output – Connections Suitable for Zone 0 Areas

U_o	= 16.4V
I_o(peak)	= 247.9mA
I_o(continuous)	= 107.1mA
P_o	= 1.02W
C_i	= 0
L_i	= 0

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SPECIFIC CONDITIONS OF USE: YES as shown below:
1. The equipment shall only be powered from supplies conforming to IEC 61158.

2. When a TP32 Trunk Surge Device or an FS32-XE Trunk Surge Protection Device is fitted, the power input circuit will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.

3. When one or more FS32 Spur Surge Modules are fitted, the spur outputs will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.

4. When the enclosure is fitted with a hinged lid, it shall only be mounted in a vertical orientation on a flat surface, and care is required in the installation process and when opening the hinged lid to ensure the enclosure does not distort.

5. When the enclosure is fitted with a fully bolted lid, it may be mounted in any orientation but it shall be on a flat surface and care is required in the installation process to ensure that the enclosure does not distort.

6. All Conditions for Safe Use that are present on the certificates for the glands and blanking plugs must be observed.

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Equipment (continued):

The 12 spur channels share a common 0V output connection but are galvanically isolated from the connections to the safe area.

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals must not exceed the following values:

GROUP	CAPACITANCE C_i	INDUCTANCE L_i OR	L/R RATIO
	(µF)	(mH)	(µH/ohm)
IIC	0.424	0.57	34.9
IIB	2.51	2.31	139
IIA	10.0	4.62	279

The parameters in the table above apply when one of the two conditions below is given:

- the total L_i of the external circuit (excluding the cable) is < 1% of the L_o value or

- the total C_i of the external circuit (excluding the cable) is < 1% of the C_o value.

The parameters in the table above are reduced to 50% when both of the two conditions below are given:

- the total L_i of the external circuit (excluding the cable) ≥1% of the L_o value and

- the total C_i of the external circuit (excluding the cable) ≥1% of the C_o value.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I, IIA, IIB & IIIC, and 600nF for Group IIC.

The Compact Fieldbus Barrier equipment enclosure is component certified under IECEx BAS 15.0071U.

The Compact Fieldbus Barrier equipment uses “eb” terminals that are certified under IECEx ULD 14.0005U, or under IECEx KEM 06.0027U.

The Compact Fieldbus Barrier equipment uses the Compact Fieldbus Barrier component certified apparatus covered by IECEx BAS 19.0017U.

The Compact Fieldbus Barrier equipment may be fitted with TP32 Trunk Surge Protection Modules covered by IECEx BAS 15.0056X.

The Compact Fieldbus Barrier equipment may be fitted with an FS32-XE Trunk Surge Protection Device covered by IECEx BAS 20.0079U.

The Compact Fieldbus Barrier equipment may be fitted with up to 12 FS32 Spur Surge Modules covered by IECEx BAS 09.0083X.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 2.1

To allow additional terminals to be fitted for use with the I.S. spurs, and to permit the use of an alternate component certified enclosure.

ExTR: **GB/BAS/ExTR21.0234/00**	File Reference: **21/0649**