



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Ex COMPONENT CERTIFICATE

Certificate No.: IECEx BAS 19.0017U Issue No: 0 Certificate history:
Status: Current Page 1 of 4 Issue No. 0 (2019-07-03)
Date of Issue: 2019-07-03
Applicant: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom
Ex Component: **93ZX-FB3 Compact Fieldbus Barrier**

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Increased Safety, Encapsulation, Intrinsic Safety.**

Marking:

Ex eb ib mb [ia Ga] IIC Gb
-20°C ≤ T_a ≤ +65°C

Approved for issue on behalf of the IECEx
Certification Body:

R S Sinclair

D BREARLEY
Certification
Manager

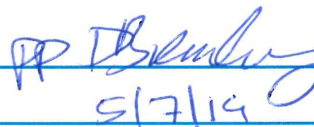
Position:

Technical Manager

Signature:

(for printed version)

Date:


5/7/19

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 the [Official IECEx Website](http://www.iecex.com).

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 location(s):

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 Component 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 Ex Component 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 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2014 Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

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

TEST & ASSESSMENT REPORTS:

A sample(s) of the Ex Component listed has successfully met the examination and test requirements as recorded in

Test Report:

[GB/BAS/ExTR19.0007/00](#)

Quality Assessment Report:

[GB/BAS/QAR06.0022/07](#)

[GB/BAS/QAR07.0017/07](#)



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Schedule

Ex Component(s) covered by this certificate is described below:

The 9377-FB3-** Compact Fieldbus Barrier with built-in selectable fieldbus terminator is designed to be supplied from a 16V to 32Vdc IEC61158 compliant fieldbus trunk supply and produce 12 intrinsically safe spur outputs that are each compliant with the FISCO power supply requirements.

The spur outputs are isolated from the trunk input but are not isolated from each other. The electrical connections are made by either spring clamp or screw clamp terminals. A Trunk Out connection is available where the fieldbus trunk is to be connected to more than one fieldbus barrier in either the same or separate enclosures.

The spur outputs may optionally be fitted with up to 12 FS32 Spur Surge Protectors.

Trunk Connections - Safe Area Terminals

$$U_m = 253V_{rms}$$

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

$$U_o = 16.4V$$

$$I_o(\text{peak}) = 247.9mA$$

$$I_o(\text{continuous}) = 107.1mA$$

$$P_o = 1.02mW$$

$$C_i = 0$$

$$L_i = 0$$

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)	($\mu H/ohm$)
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



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- 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) $\geq 1\%$ of the L_o value and

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

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

The FS32 Spur Surge Modules (if fitted) are covered by IECEx BAS 09.0083X.

SCHEDULE OF LIMITATIONS:

1. The component shall only be powered from supplies conforming to IEC 61158.
2. 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.
3. The component must be mounted in an appropriately certified enclosure when used in hazardous areas. When used in safe areas, the enclosure must provide ingress protection of at least IP20.
4. The Component is intended to meet the requirements for temperature class T4 when used within its certified temperature range.