



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 BVS 22.0048X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 1 Issue 0 (2023-02-28)
Date of Issue: 2023-08-04
Applicant: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom
Equipment: **Compact Fieldbus Barrier type 937X-FB3-XXXX-XXXI**
Optional accessory:
Type of Protection: **Flameproof Enclosures "d", Intrinsic Safety "i", Encapsulation "m", Protection by Enclosure "t", Increased Safety "e"**
Marking: Ex db eb ib mb [ia Ga] IIC T4 Gb
Ex tb IIIC T80°C Db

Approved for issue on behalf of the IECEx
Certification Body:

Dr Franz Eickhoff

Position:

**Senior Lead Auditor, Certification Manager and officially
recognised expert**

Signature:
(for printed version)


2023-08-04

Date:
(for printed version)

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Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany





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Issue No: 1

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

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

MTL Instruments PVT Limited
No 3 Old Mahabalipuram Road
Sholinganallur
Chennai
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](#) 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 Report:

[DE/BVS/ExTR23.0003/01](#)

Quality Assessment Reports:

[GB/BAS/QAR06.0022/10](#)

[GB/BAS/QAR07.0017/10](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Subject and type

See Annex

Description

See Annex

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The conditions stated in the respective certificates must be adhered to.
- Intrinsically safe circuits can be connected to earth. Potential equalization along the intrinsically safe circuits must be ensured.
- The installation requirements in hazardous areas are to be complied with in accordance with IEC 60079-14.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Adjustment of type-code, to include an option for a different number of spurs.

Annex:

[BVS_22_0048X_Eaton_Annex_Issue1.pdf](#)



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Annex
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General product information:

Subject and type

Compact Fieldbus Barrier type 937X-FB3-XXXX-XXXI

Compact Fieldbus Barrier	937	X	-FB3-	X	X	X	X	-	X	X	X	I
		X	Spur									
				X	Connection type							
					X	Enclosure						
						X	Tag Label Options					
							X	Terminals				
								-				
									X	Trunk Surge Protection options		
										X	Spur Surge Protection options	
											X	Cable entry plugs & breather options
												I

Trunk Isolation Switch as defined in the Certification drawing - CI9373-FB3-4

The "X"s represent character positions that can be Alpha-numeric (0-9 or A-Z) and the resulting 18 character part number will result in a design specific code where all features are covered and permitted within drawing – CI9373-FB3-4, and also covered by this certificate

Description

The '937X-FB3-XXXX-XXXI Fieldbus Barrier' is a field-mounted wiring hub providing up to 12, intrinsically safe spur connections from a single non-intrinsically safe trunk, for connection to Foundation™ fieldbus H1 fieldbus instruments.

The field-mounted Ex-Cell (IECEX BAS 15.0071U) enclosure contains a fieldbus barrier (IECEX BAS 19.0017U) supplied via a non-intrinsically safe trunk and converts this to several galvanically isolated, intrinsically safe, spur connections. The trunk in terminal block (IECEX ULD 14.0005U or IECEX KEM 06.0027U) is the entry point for the wiring.

The wires from the terminal block are routed to the Trunk IN Isolating switch (IECEX BVS 13.0108U) from which the wires are routed to the trunk surge protector FS32-XE (IECEX BAS 20.0079U). The Isolating switch is used to turn OFF the power to the fieldbus barrier module, in case the barrier module needs to be replaced during service.

DIN-rail terminals and the Isolating switch are protected by covers that meets an IP30 ingress protection rating, since these are all bare live parts not protected by the Type of Protection "i".

The trunk terminals are implemented as increased safety (Ex e) and the spur terminals as intrinsically safe (Ex ia) for connection to IS fieldbus instruments in IIC, Zone 0 hazardous areas. The spur connections are compatible with both FISCO and Entity-certified field instruments.

The 9377-FB3-** Compact Fieldbus Barrier (IECEX BAS 19.0017U) 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.

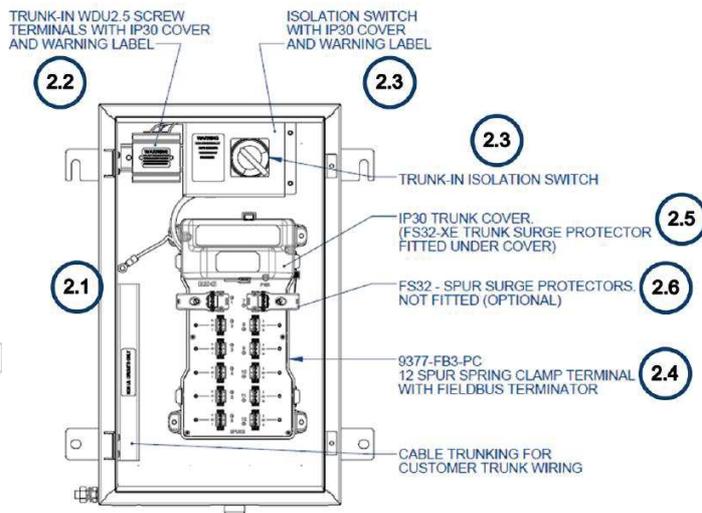
The spur outputs are isolated from the trunk input but are not isolated from each other. The electrical connections are made by either spring clamp or screw clamp terminals. A Trunk Out connection is available where the fieldbus trunk is to be connected to more than one fieldbus barrier in either the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

The spur outputs may optionally be fitted with up to 12 FS32 Spur Surge Protectors (IECEX BAS 09.0083X). Each Spur Output – Connections is suitable for Zone 0 Areas.

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

The FS32/FS32G Fieldbus Surge Protection Devices are designed as a FISCO Field Device, to provide protection for sensitive electronic Fieldbus compatible equipment, and are intended to be mounted either in a Safe Area immediately following a certified FISCO Power Supply having an intrinsically safe output or within a Hazardous Area connected in an intrinsically safe circuit.



Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Switch base GHG 238 ** ** R ****	IECEX BVS 13.0108U	IEC 60079-0:2011 Ed. 6 ¹ IEC 60079-1:2014 Ed. 7 IEC 60079-7:2015 Ed. 5 ¹ IEC 60079-11:2011 Ed. 6
FS32/FS32G Fieldbus Surge Protection Device	IECEX BAS 09.0083X	IEC 60079-0:2011 Ed. 6 ¹ IEC 60079-11:2011 Ed. 6

¹ No applicable technical differences

Components of the assembly:

No	Component	Markings	Certificates
2.1	Stainless Steel Enclosure	Ex eb IIC Gb Ex tb IIIC Db	IECEX BAS 15.0071U
2.2	Trunk In terminals (Terminal Block)	Ex eb IIC Gb	IECEX ULD 14.0005U or IECEX KEM 06.0027U
2.3	Trunk In Isolation Switch	Ex db eb I Mb Ex db eb IIB/IIC Gb Ex db ia/ib IIB/IIC Gb	IECEX BVS 13.0108U
2.4	Fieldbus Barrier Module	Ex eb ib mb [ia Ga] IIC Gb	IECEX BAS 19.0017U
2.5	Trunk Surge Device (1x)	Ex eb mb IIC Gb	IECEX BAS 20.0079U
2.6	FS32/FS32G Fieldbus Surge Protection Device (12x)	Ex ia IIC T4 Ga	IECEX BAS 09.0083X



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Temperature range of the components:

No	Component	Allowable Ambient/Service Temperature range
2.1	Stainless Steel Enclosure	-55°C ≤ T _{service} ≤ +120°C when fitted with standard grey foam in place gaskets -60°C ≤ T _{service} ≤ +135°C when fitted with optional white silicone sponge flat gaskets
2.2	Trunk In terminals (Terminal Block)	T6 (- 60°C ≤ T _{amb} ≤ +40 °C) T5 (- 60°C ≤ T _{amb} ≤ +55 °C) T4 (- 60°C ≤ T _{amb} ≤ +70 °C)
2.3	Trunk In Isolation Switch	-60°C ≤ T _{service} ≤ +80°C (IIB) -55°C ≤ T _{service} ≤ +80°C (IIC)
2.4	Fieldbus Barrier Module	-20°C ≤ T _{amb} ≤ +65°C
2.5	Trunk Surge Device (1x)	-40°C ≤ T _{amb} ≤ +80°C
2.6	Spur Surge Device (12x)	-40°C ≤ T _{amb} ≤ 75°C (Power reduced to 1.8W)

Parameters

Electrical parameters

Trunk In terminal (+, S, -)

Parameters according to the certificate IECEx BAS 19.0017U:

Maximum input voltage	U _m	253	V _{rm}
Rated voltage	U _N	DC 16...32	V
Rated current	I _N	410	mA

Intrinsically safe output spur terminals without Surge module, optional 1 to 12 spurs (“+”, “S” or “-“):

12 spur outputs that are each compliant with the FISCO power supply requirements according to the certificate IECEx BAS 19.0017U.

Parameters according to the certificate IECEx BAS 19.0017U:

For each spur

Maximum output voltage	U _o	16.4	V
Maximum output peak current	I _o	247.9	mA
Maximum output continuous current	I _o	107.1	mA
Maximum output power	P _o	1.02	W
Maximum internal capacitance	C _i	negligible	
Maximum internal inductance	L _i	negligible	
Maximum external capacitance	C _o	0.424	μF
Maximum external inductance	L _o	0.57	mH
Maximum external inductance to resistance ratio	L _o /R _o	34.9	μH/Ω

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



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Intrinsically safe output spur terminals with Surge module FS32/FS32G, optional 1 to 12 spurs (“+”, “S” or “-“):

For each spur

Maximum output voltage	U_o	16.4 V
Maximum output peak current	I_o	247.9 mA
Maximum output continuous current	I_o	107.1 mA
Maximum output power	P_o	1.02 W
Maximum internal capacitance	C_i	negligible
Maximum internal inductance	L	negligible
Maximum external capacitance	C_o	0.424 μ F
Maximum external inductance	L_o	0.57 mH
Maximum external inductance to resistance ratio	L_o/R_o	34.9 μ H/ Ω

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

The FS32/FS32G Fieldbus Surge protection Devices is designed as a FISCO Field Device and the intrinsically safe output spur terminals with the Surge module (FS32/FS32G) will have the same output parameters as without Surge module, since the surge module has output parameters as input ($U_o=U_i$, $I_o=I_i$, $P_o=P_i$) according to the certificate IECEx BAS 09.0083X.

Thermal parameters

For type of protection “db”, “eb”, “ib”, “mb”

Temperature class T4 $-20\text{ }^\circ\text{C} \leq T_{amb} \leq +60\text{ }^\circ\text{C}$

For type of protection “tb”

Maximum surface temperature T80 $^\circ\text{C}$ $-20\text{ }^\circ\text{C} \leq T_{amb} \leq +60\text{ }^\circ\text{C}$