



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

Certificate No.: IECEx BAS 07.0045X

Issue No: 7

Certificate history:

Status: **Current**

Page 1 of 4

Issue No. 7 (2017-11-22)
Issue No. 6 (2015-08-13)
Issue No. 5 (2015-05-13)
Issue No. 4 (2012-02-28)
Issue No. 3 (2010-09-22)
Issue No. 2 (2010-07-14)
Issue No. 1 (2008-12-15)
Issue No. 0 (2007-10-30)

Date of Issue: **2017-11-22**

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

Equipment: **TP**-** Series Surge Protection Devices**

Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking:
Ex ia IIC T4 / T5 / T6 Ga (-40°C ≤ Ta ≤ See Schedule)
Ex ia III C T135°C / T100°C / T85°C Da (-40°C ≤ Ta ≤ See Schedule)

Approved for issue on behalf of the IECEx
Certification Body:

R S Sinclair

Position:

Technical Manager

Signature:
(for printed version)

Date:

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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Page 2 of 4

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
600 119
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 electrical apparatus 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 : 2011	Explosive atmospheres - Part 0: General requirements
Edition:6.0	
IEC 60079-11 : 2011	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0	

*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 equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/BAS/ExTR07.0090/00	GB/BAS/ExTR08.0235/00	GB/BAS/ExTR10.0217/00
GB/BAS/ExTR12.0045/00	GB/BAS/ExTR15.0172/00	GB/BAS/ExTR16.0288/00

Quality Assessment Report:

GB/BAS/QAR06.0022/07	GB/BAS/QAR07.0017/06
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Certificate No: IECEx BAS 07.0045X

Issue No: 7

Date of Issue: 2017-11-22

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Range of TP**-** Series Surge Protection Devices are designed to provide protection for sensitive electronic equipment, and are intended to be mounted within a Hazardous Area.

Within the TP48**-** Series Surge Protection Devices, three different wiring configurations are available, TP48-2W (2-wire,) TP48-3W (3-wire) and TP48-4W (4-wire). All the TP48**-** Series units have the same safety input parameters for intrinsic safety purposes. Each unit has two, three or four active connections and an earth connection, but all connections must form part of the same intrinsically safe circuit.

The TP32**-** Series Surge Protection Devices provides a further configuration which has three active connections and an earth connection but all connections must form part of the same intrinsically safe circuit. The TP32**-** Series units have the same safety input parameters as the TP48**-** Series units for intrinsic safety purposes.

The TP**-** Series units comprise various combinations which include three-terminal gas discharge tubes, voltage dependant resistors, silicon avalanche diodes, and a diode bridge circuit mounted on a printed circuit board. Each of these assemblies is encapsulated within a tubular metal enclosure, sealed at one end. The open end is provided with a threaded stub intended for screwing into the enclosure wall of other apparatus. The connection wires emerge from the encapsulation at the open end of the threaded stub and are intended to be terminated within the apparatus enclosure. Various different thread forms are available denoted by the suffix N, I or G, to the type number.

See Annex for the range covered and for the Input / Output Parameters, differing Temperature Classifications and Ambient Temperature limits

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The apparatus is to be installed such that the flying leads are afforded a degree of protection of at least IP54.
2. Although all the TP**-** Series Surge Protection Devices covered by this certificate will meet the 500V test to the metal case, the electrical circuits within the Series Surge Protection Devices are not capable of withstanding the 500V test to the Green/Yellow wire for one minute without breakdown. This must be taken into consideration in any installation.
3. These devices are not provided with an external connection facility for an earthing or bonding conductor. Adequate earth continuity via the mounting arrangement must be ensured.
4. This apparatus is also afforded Flameproof Certification to Baseefa04ATEX0053X and IECEx BAS 15.0056X and is dual marked. On installation the relevant protection concept must be permanently marked on the apparatus in the space provided.



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Certificate No: IECEx BAS 07.0045X

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Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 7.1

To permit the manufacturer's name to be changed on the certificate and equipment marking. No other changes are made to the equipment design.

ExTR: **GB/BAS/ExTR16.0288/00**

File Reference: **16/0371**

Annex:

[IECEX_BAS_07_0045X Annex.pdf](#)

Baseefa (2001) Ltd.

Rockhead Business Park
Staden lane, Buxton
Derbyshire
SK17 9RZ
United Kingdom



ANNEX to IECEx BAS 07.0045X

Issue No. 0

Date: 2007/10/30

The type number TP	**	_*	_*	
	48/32	_*	_*	Nominal surge protection voltage
	**	- /3/4		Two, three or four wire connections and an earth
	**	_*	-N/I/G	Differing thread forms

Ex ia IIC T6 ($-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$) or

Ex ia IIC T5 ($-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$)

TP48-**-* or TP32-**-* Series Surge Protection Devices Parameters

$$U_i = 60\text{V}$$

$$I_i = 380\text{mA}$$

$$P_i = 1.2\text{W}$$

$$C_i = 0$$

$$L_i = 0$$

$$U_o = U_i$$

$$I_o = I_i$$

$$P_o = P_i$$

Variation 0.1

To permit the addition of a FISCO termination unit within the TP32-**-* Series Surge Protection Devices denoted by the suffix "T", i.e. TP32-T-* with the "*" options of the differing thread forms -N/I/G as above. The TP32-T-* Series Surge Protection Devices provides a further configuration within the series which has three active connections and an earth connection but all connections must form part of the same intrinsically safe circuit.

The TP32-T-* Surge Protection Device has been designed as a terminator to meet the requirements of **either** the Fieldbus Intrinsically Safe Concept (FISCO) to IEC 60079-27 Ed. 1.0 TS **or** may be used within any other intrinsically safe circuit.

TP32-T-* Surge Protection Device for use within a FISCO System, Parameters:-

$$U_i = 17.5\text{V}$$

$$I_i = 380\text{mA}$$

$$P_i = 5.32\text{W Ex ia IIC T4 } (-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C})$$

$$C_i = 0$$

$$L_i = 0$$

$$U_o = U_i$$

$$I_o = I_i$$

$$P_o = P_i$$

TP32-T-* Surge Protection Device for use within any other intrinsically safe circuit, Parameters:-

$$U_i = 30\text{V}$$

$$I_i = 380\text{mA}$$

$$P_i = 1.2\text{W Ex ia IIC T6 } (-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C})$$

$$P_i = 1.2\text{W Ex ia IIC T5 } (-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C})$$

$$P_i = 5.32\text{W Ex ia IIC T4 } (-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C})$$

$$C_i = 0$$

$$L_i = 0$$

$$U_o = U_i$$

$$I_o = I_i$$

$$P_o = P_i$$

Variation 0.2

To permit the introduction of three further Surge Protection Devices, Models TP24/7-N-NDI, TP24/7-I-NDI and TP24/7-G-NDI. These models are based on the Model TP48-4-** and have four wire connections and an earth. The central letter of the model number denoting the different thread forms.

The Models TP24/7-*-NDI are marked:-

Ex ia IIC T6 ($-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$) or

Ex ia IIC T5 ($-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$)

The Parameters for the Surge Protection Devices Models TP24/7-*-NDI are:-

$$U_i = 60\text{V}$$

$$I_i = 380\text{mA}$$

$$P_i = 1.2\text{W}$$

$$C_i = 0$$

$$L_i = 0$$

$$U_o = U_i$$

$$I_o = I_i$$

$$P_o = P_i$$