

1 **UK-TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

3 UK-Type Examination Certificate Number: **BAS21UKEX0560X**

4 Product: **TP**.*-* Series Surge Protection Devices**

5 Manufacturer: **Eaton Electric Limited**

6 Address: **Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 SGS Baseefa, Approved Body number 1180, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in confidential Report No. **21(C)0386/35**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-11:2012

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following :

⊗ **II 1G Ex ia IIC T4 / T5 / T6 Ga (-40°C ≤ Ta ≤ See Schedule)**

⊗ **II 1D Ex ia IIIC T135°C / T100°C / T85°C Da (-40°C ≤ Ta ≤ See Schedule)**

SGS Baseefa Customer Reference No. **0703**

Project File No. **21/0386**

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R S Sinclair

R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

13

Schedule

14

Certificate Number BAS21UKEX0560X

15 Description of Product

The 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 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**-** unit has the same safety input parameters as the TP48**-** 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 wall of other apparatus, which may be a flameproof enclosure. The connection wires emerge from the encapsulation and are intended to be terminated within the enclosure. Various different thread forms are available denoted by the suffix N, I or G, to the type number.

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

For T6 / T85°C the operating ambient temperature range is $(-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C})$.

For T5 / T100°C the operating ambient temperature range is $(-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C})$

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

$$\begin{aligned} U_i &= 60\text{V} \\ P_i &= 1.2\text{W} \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

$$\begin{aligned} U_o &= U_i \\ I_o &= I_i \\ P_o &= P_i \end{aligned}$$

The TP32-T** Series Surge Protection Devices provide 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) **or** may be used within any other intrinsically safe circuit.

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

$$\begin{aligned} U_i &= 17.5\text{V} \\ I_i &= 380\text{mA} \\ P_i &= 5.32\text{W} \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

$$\begin{aligned}U_o &= U_i \\I_o &= I_i \\P_o &= P_i\end{aligned}$$

For T4 / T135°C the operating ambient temperature range is $(-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C})$

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

$$\begin{aligned}U_i &= 30\text{V} \\I_i &= 380\text{mA} \\P_i &= 1.2\text{W} \quad \text{For T6 / T85}^{\circ}\text{C the operating ambient temperature range is } (-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}) \\P_i &= 1.2\text{W} \quad \text{For T5 / T100}^{\circ}\text{C the operating ambient temperature range is } (-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}) \\P_i &= 5.32\text{W} \quad \text{For T4 / T135}^{\circ}\text{C the operating ambient temperature range is } (-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}) \\C_i &= 0 \\L_i &= 0\end{aligned}$$

$$\begin{aligned}U_o &= U_i \\I_o &= I_i \\P_o &= P_i\end{aligned}$$

The TP24/7-N-NDI, TP24/7-I-NDI and TP24/7-G-NDI Surge Protection Devices, 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 as shown in section 12 above.

For T6 / T85°C the operating ambient temperature range is $(-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C})$.
For T5 / T100°C the operating ambient temperature range is $(-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C})$

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

$$\begin{aligned}U_i &= 60\text{V} \\P_i &= 1.2\text{W} \\C_i &= 0 \\L_i &= 0\end{aligned}$$

$$\begin{aligned}U_o &= U_i \\I_o &= I_i\end{aligned}$$

16 Report Number

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17 Specific Conditions of Use

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.

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product:

Clause	Subject	Compliance
13	Protection against other hazards (LVD type requirements, etc.)	Manufacturer responsibility
14	Overloading of equipment (protection relays, etc.)	User/Installer responsibility
22(1)	External effects	User/Installer responsibility
22(2)	Aggressive substances, etc.	User/Installer responsibility

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
1100438	1 to 6	H	10NOV21	TP** CERTIFICATION DRAWING FOR ATEX

This drawing is common to and held with BAS21UKEX0559X.

For other current drawings not re-submitted for this assessment see Baseefa04ATEX0251X.