

EU-Type Examination Certificate Number: **BVS 16 ATEX E 125 X** Issue: **03**

Manufacturer: **Phoenix Contact GmbH & Co. KG**

Address: **Flachsmarktstr. 8, 32825 Blomberg, Germany**

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 16.2210 EU.

This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 16 ATEX E 125 X.

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

General requirements

Intrinsic Safety “i”

Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the product shall include the following:



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Details siehe 15.3

DEKRA Testing and Certification GmbH
Bochum, 2026-mm-dd

Signed: Oliver Brumm

Managing Director

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15 Product description

15.1 Subject and type

The TTC Ex product portfolio consists of following surge protection devices:

One-piece surge protection devices

type **TTC-6-1X2-M-EX-24DC-UT-I**

type **TTC-6-2X1-M-EX-24DC-UT-I**

type **TTC-6-3-HF-F-M-EX-12DC-UT-I**

type **TTC-6-3-HF-F-M-EX-24DC-UT-I**

Multi-piece surge protection devices

type **TTC-6P-1X2-M-EX-24DC-UT-I** consisting of
 one base element type **TTC-6P-1X2-M-EX-UT-BE** and
 one plug module type **TTC-6P-1X2-EX-24DC-I-P**

type **TTC-6P-2X1-M-EX-24DC-UT-I** consisting of
 one base element type **TTC-6P-2X1-M-EX-UT-BE** and
 one plug module type **TTC-6P-2X1-EX-24DC-I-P**

type **TTC-6P-3-HF-F-M-EX-12DC-UT-I** consisting of
 one base element type **TTC-6P-3-HF-F-M-EX-UT-BE** and
 one plug module type **TTC-6P-3-HF-EX-12DC-I-P**

type **TTC-6P-3-HF-F-M-EX-24DC-UT-I** consisting of
 one base element type **TTC-6P-3-HF-F-M-EX-UT-BE** and
 one plug module type **TTC-6P-3-HF-EX-24DC-I-P**

type **TTC-6P-3-EX-24DC-UT-I** consisting of
 one base element type **TTC-6P-3-EX-UT-BE** and
 one plug module type **TTC-6P-3-EX-24DC-I-P**

type **TTC-6P-1X2-EX-24DC-UT-I** consisting of
 one base element type **TTC-6P-1X2-EX-UT-BE** and
 one plug module type **TTC-6P-1X2-EX-24DC-I-P**

Surge protection device with 2-WISE option

(base element) type **TTC-6P-3-APL-EX-24DC-UT-I**

with plug module type **TTC-6P-4-GDT-EX-24DC-I-P**

The base elements and the plug modules are coded. A confusion is thus excluded.

15.2 Description

Reason for the supplement:

The Surge protection devices TTC Ex were tested in accordance to the standards listed on page 1.

Description of Product:

The surge protection devices TTC Ex are used to limit transient overvoltage which could be coupled into protected intrinsically safe circuits. Thereto, a surge protection module is connected into the intrinsically safe circuit which has to be protected.

The intrinsically safe circuit is not affected by the connection of the surge protection device in its properties.

The surge protection devices TTC ... -M- ... have screw disconnectors (knife disconnection) which can interrupt the signal lines for maintenance.

The surge protection devices can be installed in the Zone 1 (Category 2 / EPL Gb).
The surge protection devices can be mounted on a 35 mm width DIN-rail.

The mounting foot establishes an electrical connection to the 35 mm width DIN-rail.
See special conditions for use.

15.3 Parameters

15.3.1 One-piece surge protection devices and multi-piece surge protection devices

Terminals 1-3 input (unprotected), terminals 4-6 output (protected)

Maximum input / output voltage	U_i / U_o	30 V for TTC ... 24 DC ... 15 V for TTC ... 12 DC ...
Maximum input / output current (see additional thermal ratings)	I_i / I_o	350 mA (T6) 100 mA (T6) 400 mA (T4 / dust) 250 mA (T4)
Maximum internal capacitance	C_i	negligible
Maximum internal inductance	L_i	negligible

15.3.2 Surge protection device with 2-WISE option

Terminals 1-3 input (unprotected), terminals 4-6 output (protected)

Maximum input / output voltage	U_i / U_o	30 V
Maximum input / output current	I_i / I_o	1 A
Maximum internal capacitance	C_i	negligible
Maximum internal inductance	L_i	negligible

The terminals 1 / 2 / 3 (One of the terminals for cable shield), input (unprotected) and terminals 4 / 5 / 6 (One of the terminals for cable shield), output (protected) are 2-WISE auxiliary device ports.

15.3.3 The intrinsically safe circuit is not affected by the connection of the surge protection device in its properties.

The mounting foot establishes an electrical connection to the 35 mm width DIN-rail.
See Specific Conditions of Use.

15.3.4 The one-piece surge protection device type TTC-6-3-HF-F-M-EX-24DC-UT-I, the multi-piece surge protection device type TTC-6P-3-HF-F-M-EX-24DC-UT-I consisting of a base element type TTC-6P-3-HF-F-M-EX-UT-BE and a plug module type TTC-6P-3-HF-EX-24DC-I-P ($I_i / I_o = 400 \text{ mA} / \text{T4}$ / $-40^\circ\text{C} \leq T_a \leq +50^\circ\text{C}$) and the surge protection device with 2-WISE option type TTC-6P-3-APL-EX-24DC-UT-I with plug module type TTC-6P-4-GDT-EX-24DC-I-P can be used for connection inside of a fieldbus system according to the FISCO concept.

15.3.5 Thermal parameters

15.3.5.1 One-piece surge protection devices and multi-piece surge protection devices

Ambient temperature range for installation inside of the hazardous area:

- $-40^\circ\text{C} \leq T_a \leq +50^\circ\text{C}$ for temperature class T4 and $I_i = 400 \text{ mA}$
- $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$ for temperature class T4 and $I_i = 250 \text{ mA}$
- $-40^\circ\text{C} \leq T_a \leq +35^\circ\text{C}$ for temperature class T6 and $I_i = 350 \text{ mA}$
- $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$ for temperature class T6 and $I_i = 100 \text{ mA}$

Ambient temperature range for installation outside of the hazardous area:

- $-40^\circ\text{C} \leq T_a \leq +85^\circ\text{C}$

15.3.5.2 Surge protection device with 2-WISE option

Ambient temperature range for installation inside of the hazardous area:

$-40\text{ °C} \leq T_a \leq +85\text{ °C}$ for temperature class T4

$-40\text{ °C} \leq T_a \leq +70\text{ °C}$ for temperature class T6

Ambient temperature range for installation outside of the hazardous area:

$-40\text{ °C} \leq T_a \leq +85\text{ °C}$

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17 Specific Conditions of Use

17.1 Ambient temperature range for installation inside of the hazardous area:

One-piece surge protection devices and multi-piece surge protection devices

$-40\text{ °C} \leq T_a \leq +50\text{ °C}$ for temperature class T4 and $I_i = 400\text{ mA}$

$-40\text{ °C} \leq T_a \leq +70\text{ °C}$ for temperature class T4 and $I_i = 250\text{ mA}$

$-40\text{ °C} \leq T_a \leq +35\text{ °C}$ for temperature class T6 and $I_i = 350\text{ mA}$

$-40\text{ °C} \leq T_a \leq +70\text{ °C}$ for temperature class T6 and $I_i = 100\text{ mA}$

Surge protection device with 2-WISE option

$-40\text{ °C} \leq T_a \leq +85\text{ °C}$ for temperature class T4

$-40\text{ °C} \leq T_a \leq +70\text{ °C}$ for temperature class T6

17.2 Ambient temperature range for installation outside of the hazardous area:

$-40\text{ °C} \leq T_a \leq +85\text{ °C}$

17.3 For installation inside of the hazardous area:

The surge protection devices must be protected from electrostatic charging.

17.4 The mounting foot establishes an electrical connection to the 35 mm width DIN-rail.

The surge protection devices type TTC-6-1X2-M-EX-24DC-UT-I, type TTC-6-2X1-M-EX-24DC-UT-I, type TTC-6P-1X2-M-EX-24DC-UT-I, type TTC-6P-2X1-M-EX-24DC-UT-I and type TTC-6P-1X2-EX-24DC-UT-I are directly connected over the terminals 3 and 6 to the mounting foot.

The surge protection devices type TTC-6-3-HF-F-M-EX-12DC-UT-I, type TTC-6-3-HF-F-M-EX-24DC-UT-I, type TTC-6P-3-HF-F-M-EX-12DC-UT-I and type TTC-6P-3-HF-F-M-EX-24DC-UT-I are connected over the terminals 3 and 6 and via a surge arrester to the mounting foot.

The terminals 1, 2, 4 and 5 are connected to terminals 3 and 6 via surge arresters for all types above.

Each of the terminal pairs 1 – 4, 2 – 5 and 3 – 6 of the surge protection device type TTC-6P-3-EX-24DC-UT-I is connected via a surge arrester with the mounting foot.

Each of the terminal pairs 1 – 4, 2 – 5 and 3 – 6 of the surge protection device with 2-WISE option type TTC-6P-3-APL-EX-24DC-UT-I with plug module type TTC-6P-4-GDT-EX-24DC-I-P is connected via two surge arrester with the mounting foot.

The breakdown voltage of the surge arresters is less than 500 VAC.

The breakdown voltage between the intrinsically safe circuit and the earth connection (mounting foot) is therefore less than 500 VAC depending on the design.

The intrinsically safe circuit is earthed, depending on the type of surge protection device and from the installation, in normal operation or by fault. Along to the intrinsically safe circuit potential equalization has to be provided.

17.5 The surge protection devices are intrinsically safe apparatus. The devices were tested in accordance to the standards EN IEC 60079-0 and EN 60079-11.
The suitability of the devices as an overvoltage protection device according to EN 60079-25 is not subject of this EU-Type Examination Certificate. Further considerations are required.

18 **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

The standard EN IEC 60079-11:2024 is for this equipment safety-related equivalent to the harmonized standard EN 60079-11:2012.

19 **Remarks and additional information**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2026-01-28
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Managing Director