

# 1 Type Examination Certificate

2 Equipment intended for use in potentially explosive atmospheres  
Directive 2014/34/EU

3 Type Examination Certificate Number: **BVS 21 ATEX E 052 X**

4 Product: **Surge protection device type TTC-\*\*-\*\*\*-\*\*-\*\_\*\*\_\*-\*\*-\*\*\_\***

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

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

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

8 DEKRA Testing and Certification GmbH 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 21.2126 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:

**EN IEC 60079-0:2018                      General requirements**  
**EN IEC 60079-7:2015+A1:2018      Increased Safety "e"**

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive 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 3G Ex ec IIC T4 Gc**

DEKRA Testing and Certification GmbH  
Bochum, 2021-10-14

  
\_\_\_\_\_  
Managing Director

13 **Appendix**

14 **Type Examination Certificate**

**BVS 21 ATEX E 052 X**

15 **Product description**

15.1 **Subject and type**

Surge protection device type TTC-\*\*-\*\*\*-\*\*-\*\_-\*\*\*\*-\*\*-\*\_-

Type designation

TTC	-aa	-bbb	-cc	-d	-e	-ffff	-gg	-h	-i
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Placeholder	Value	Description
-aa	-6	6 mm non-pluggable version
	-6P	6 mm pluggable version
-bbb	-1x2	Protection of 1 loop consisting of 2 signal wires, floating
	-3	Three signal wires, without decoupling
-cc	-3-HF	Two signal wires with reference conductor for high- frequency signals
-d	-F	Optional: floating earth (with gas discharge tube)
-e	-M	Optional: signal path breaker
-ffff	-12DC	12 V signals
	-24DV	24 V signals
-gg	-UT	Screwed connection terminals
	-PT	Push in connection terminals
-i	-I	Optional: indication window for separation
-j	-P	Spare plug-in modules

One-piece surge protection device

TTC-6-1x2-M-24DC-UT-I

TTC-6-1x2-M-24DC-PT-I



Multi-piece surge protection devices

TTC-6P-3-HF-M-12DC-UT-I

TTC-6P-3-HF-M-12DC-PT-I

TTC-6P-3-HF-F-M-12DC-UT-I

TTC-6P-3-HF-F-M-12DC-PT-I

TTC-6P-3-HF-F-M-24DC-UT-I

TTC-6P-3-HF-F-M-24DC-PT-I

TTC-6P-1x2-M-24DC-UT-I

TTC-6P-1x2-M-24DC-PT-I

TTC-6P-3-24DC-PT-I



Spare plug-in modules

TTC-6P-1x2-24DC-I-P

TTC-6P-3-HF-EX-12DC-I-P

TTC-6P-3-HF-EX-24DC-I-P

TTC-6P-3-24DC-I-P

## 15.2 Description

The Surge protection devices TTC... are used to limit transient overvoltages which could be coupled into signal circuits. Thereto, a surge protection module is connected into the signal circuits which have to be protected.

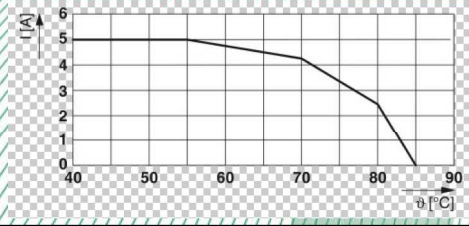
The surge protection devices TTC-\*\*-\*\*\*-\*\*-\*-M-\*\*\*\*-\*\*-\*-\* have disconnection screws which can interrupt the signal lines for maintenance purposes.

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.

## 15.3 Parameters

### Electrical parameters

Maximum continuous operating voltage of signal lines (type ...-24DC...)	DC	30	V										
Maximum continuous operating voltage of signal lines (type ...-12DC...)	DC	15	V										
Maximum current (type TTC-6P-3-24DC-PT-I)		5	A										
with derating													
Maximum current (all other types)		0.6	A										
with derating	<table border="1"> <thead> <tr> <th colspan="2">Derating for Ex-areas (Zone 2, EX ec)</th> </tr> <tr> <th><math>\vartheta</math> [°C]</th> <th>I [mA]</th> </tr> </thead> <tbody> <tr> <td><math>\leq 30^\circ\text{C}</math></td> <td>600 mA</td> </tr> <tr> <td><math>&gt; 30^\circ\text{C} \dots \leq 50^\circ\text{C}</math></td> <td>500 mA</td> </tr> <tr> <td><math>&gt; 50^\circ\text{C} \dots \leq 70^\circ\text{C}</math></td> <td>400 mA</td> </tr> </tbody> </table>			Derating for Ex-areas (Zone 2, EX ec)		$\vartheta$ [°C]	I [mA]	$\leq 30^\circ\text{C}$	600 mA	$> 30^\circ\text{C} \dots \leq 50^\circ\text{C}$	500 mA	$> 50^\circ\text{C} \dots \leq 70^\circ\text{C}$	400 mA
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Maximum current – not pluggable articles (type TTC-6-...)		0.6	A										
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### Thermal parameters

Ambient temperature range with derating (inside the separately certified enclosure)	$-40^\circ\text{C} \leq T_{\text{amb}} \leq 85^\circ\text{C}$ (T4)
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### Connection cross-sections

Conductor with ferrule	0.2 to 2.5 mm <sup>2</sup>
Conductor without ferrule	AWG 24 to AWG 12
Solid wire	0.2 to 4 mm <sup>2</sup>

16 **Report Number**

BVS PP 21.2126 EU, as of 2021-10-14

17 **Special Conditions for Use**

The surge protection device TTC must be installed in an enclosure with a minimum degree of protection of IP54 according to EN IEC 60079-0.

The ambient temperature range specified in the thermal parameters refers to the internal temperature in the IP54 enclosure.

The surge protection device TTC shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.