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

Ex COMPONENT CERTIFICATE

Certificate No.: IECEx KEM 06.0043U

Issue No: 6

Certificate history:
Issue No. 6 (2019-03-21)
Issue No. 5 (2013-12-19)
Issue No. 4 (2012-11-30)
Issue No. 3 (2009-07-24)
Issue No. 2 (2008-04-17)
Issue No. 1 (2007-06-01)
Issue No. 0 (2006-11-24)

Status: **Current**

Date of Issue: **2019-03-21**

Applicant: **PHOENIX CONTACT GmbH & Co. KG**
Flachsmarkstraße 8
32825 Blomberg
Germany

Ex Component: **Terminal Blocks: ST 1,5; ST 1,5-TWIN; ST 1,5-QUATTRO and STTB 1,5(-PV) and Protective Conductor Terminal Blocks: ST 1,5-PE; ST 1,5-TWIN-PE; ST 1,5-QUATTRO-PE and STTB 1,5-PE**

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Increased Safety**

Marking:
Ex eb IIC Gb

Approved for issue on behalf of the IECEx Certification Body: R. Schuller

Position: Certification Manager

Signature:
(for printed version)

Date: 2019-03-21

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.

Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
The Netherlands

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Manufacturer: **PHOENIX CONTACT GmbH & Co. KG**
Flachsmarkstrasse 8
32825 Blomberg
Germany

Additional Manufacturing location(s):

PHOENIX CONTACT India Pvt. Ltd.
Prithla-Datir Road, Dudhola, Dist. Palwal, Haryana, India
New Delhi – 110020
India

Nanjing PHOENIX CONTACT Ltd. and PHOENIX CONTACT Asia-Pacific (Nanjing) Co. Ltd.
36 Phoenix Road, Jiangning Development Zone
Nanjing, 211100, Jiangsu Province
China

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 Component 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 Ex Component 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 60079-7 : 2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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

Test Report:

NL/KEM/ExTR06.0042/04

Quality Assessment Report:

NL/DEK/QAR11.0009/06 NL/DEK/QAR11.0010/03 NL/DEK/QAR11.0011/03

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Schedule

Ex Component(s) covered by this certificate is described below:

Terminal Blocks (all colors) ST 1,5; ST 1,5-TWIN; ST 1,5-QUATTRO and STTB 1,5(-PV) as well as Protective Conductor Terminal Blocks ST 1,5-PE; ST 1,5-TWIN-PE; ST 1,5-QUATTRO-PE and STTB 1,5-PE with accessories are intended for the connection of copper conductors in enclosures fulfilling the degree of protection which is required by the applied type of protection for the end-application.

The Terminal Blocks are intended for installation on mounting rails type NS 35 according to EN 60715 TH 35.

Operating temperature range -60 °C to +110 °C.

See Annex 1 for electrical data and nomenclature.

SCHEDULE OF LIMITATIONS:

The Terminal Blocks and Protective Conductor Terminal Blocks shall be mounted in a certified enclosure that meets the requirements of an approved type of protection as specified in IEC 60079-0 clause 1, with a degree of protection at least as required for Ex e.

When assembling with other certified series and sizes and using the associated accessories, the required creepage distances and clearances have to be observed.

The installation instruction of the manufacturer shall be followed e.g. for the use of cover, jumpers, end brackets. The data regarding current and associated temperature rise shall be used as guideline for the given conductor cross sections. The cross section has an influence on the temperature rise which shall be assessed in the end application.

If the Terminal Blocks and Protective Conductor Terminal Blocks are used in electrical apparatus of temperature classes T1 up to T5, the highest temperature of the insulating material shall not exceed the maximum value of the operating temperature range.

If the Terminal Blokcs and Protective Conductor Terminal Blocks are used in electrical apparatus of temperature classes T6 the permissible ambient temperature range is -60 °C < Tamb < +40 °C.

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

- Assessment to recent editions of the standards
- small mechanical changes.
- PHOENIX CONTACT Ind. Com. Ltda. deleted as manufacturing location.

Annex:

219710400_Annex1.pdf

Annex 1 to IECEx Test Report NL/KEM/ExTR06.0042/04
Annex 1 to Certificate of Conformity IECEx KEM 06.0043U
Annex 1 to EU-Type Examination Certificate KEMA 01ATEX2129 U, issue 5

Electrical data

Note 1: in this document [,] is used as decimal separator.

All values are values of terminal blocks without bridges, unless indicated otherwise.

Terminal blocks

Type:	**ST 1,5**	**ST 1,5-TWIN**
Rated insulation voltage [V]	400	400
Rated voltage [V]	440	440
- with bridge FB [V]	352	352
- with bridge via PE terminal block [V]	352	-
- with cut-to-length bridge and cover D [V]	220	220
- with cut-to-length bridge and partition plate ATP [V]	275	275
Rated current [A]	17,5	17,5
- with plug-in bridge type FBS… [A]	16,5	16,5
Maximum load current [A]	17,5	17,5
Temperature rise [K]	40 (19,4 / 1,5 mm²)	40 (19,4 A; 1,5 mm²)
Contact resistance [mΩ]	1,43	1,43
Rated cross section [mm²] (AWG)	1,5 (16)	1,5 (16)
Connectable conductor cross section		
- rigid [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)
- flexible [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)

Type:	**ST 1,5-QUATTRO**
Rated insulation voltage [V]	400
Rated voltage [V]	440
- with bridge FB [V]	352
- with bridge via PE terminal block [V]	352
- with cut-to-length bridge and cover D [V]	220
- with cut-to-length bridge and partition plate ATP [V]	275
Rated current [A]	17,5
- with plug-in bridge type FBS… [A]	16,5
Maximum load current [A]	17,5
Temperature rise [K]	40 (19,7 A; 1,5 mm²)
Contact resistance [mΩ]	1,54
Level 1	-
Level 2	-
Rated cross section [mm²] (AWG)	1,5 (16)
Connectable conductor cross section	
- rigid [mm²] (AWG)	0,08 - 1,5 (28-16)
- flexible [mm²] (AWG)	0,08 - 1,5 (28-16)

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Type:	**STTB 1,5**	**STTB 1,5-PV**
Rated insulation voltage [V]	400	400
Rated voltage [V]	440	440
- with bridge FB [V]	352	352
- with bridge via PE terminal block [V]	352	-
Rated current [A]	15,5	15
- with plug-in bridge type FBS… [A]	13,5	13,5
Maximum load current [A]	15,5	15
Temperature rise [K]	40 (17,3 A; 1,5 mm²)	40 (17 A; 1,5 mm²)
Contact resistance [mΩ]		
- Level 1	1,04	1,07
- Level 2	0,96	0,91
- Level 1./2. (PV-connection)	-	1,19
Rated cross section [mm²] (AWG)	1,5 (16)	1,5 (16)
Connectable conductor cross section		
- rigid [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)
- flexible [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)

Protective Conductor Terminal Block

Type	**ST 1,5-PE**	**ST 1,5-TWIN-PE**
Rated cross-section [mm²] (AWG)	1,5 (16)	1,5 (16)
Connectable conductor cross-section		
- rigid [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)
- flexible [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)

Type	**ST 1,5-QUATTRO-PE**	**STTB 1,5-PE**
Rated cross-section [mm²] (AWG)	1,5 (16)	1,5 (16)
Connectable conductor cross-section		
- rigid [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)
- flexible [mm²] (AWG)	0,08 - 1,5 (28-16)	0,08 - 1,5 (28-16)

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Nomenclature

ST	1,5	-	QUATTRO	-	PE
I	**II**		**III**		**IV**

Designation	Explanation	Value	Explanation
I	Type indicator	ST	Terminal block with spring-cage connection
		STTB	Double-level terminal block with spring-cage connection
II	Rated cross section	1,5	1,5 mm², 16 AWG
III	Amount of connections	-	1 In- and 1 Out-connetion
		TWIN	2 In- and 1 Out-connection (only ST)
		QUATTRO	2 In- and 2 Out-connection (only ST)
IV	Terminal block	-	Feed through terminal block
		PE	Protective conductor terminal block, green-yellow colour, with a spring forced connection for mounting rail contact
		PV	Feed through terminal block with equipotential bonding between 1st and 2nd level (only STTB)