IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com
Ex COMPONENT CERTIFICATE

Certificate No.: **IECEx KEM 07.0023U**

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Certificate history:
Issue 5 (2021-07-27)
Issue 4 (2020-11-23)
Issue 3 (2015-09-07)
Issue 2 (2009-07-27)
Issue 1 (2007-05-23)
Issue 0 (2007-05-01)

Status: **Current**

Issue No: 6

Date of Issue: 2024-07-19

Applicant: **Phoenix Contact GmbH & Co. KG.**
Flachsmarktstraβe 8
Blomberg 32825
Germany

Ex Component: PCB Single Terminal Blocks Types FRONT 2,5-H/...-EX and FRONT 2,5-V/...-EX

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: **L.G. van Schie**

Position: **Certification Manager**

Signature: (for printed version)

Date: (for printed version) **2024-07-19**

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 www.iecex.com or use of this QR Code.

Certificate issued by:

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

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Manufacturer: **Phoenix Contact GmbH & Co. KG.**
Flachsmarktstraβe 8
Blomberg 32825
Germany

Manufacturing locations:

Phoenix Contact GmbH & Co. KG.
Flachsmarktstraβe 8
Blomberg 32825
Germany

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

PHOENIX CONTACT Asia-Pacific (Nanjing) Co., Ltd. and Nanjing PHOENIX CONTACT Co., Ltd.
6 Mozhou East Road, Jiangning District,
Nanjing, Jiangsu Province 211111
China

See following pages for more locations

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 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 safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the component listed has successfully met the examination and test requirements as recorded in:

Test Report:

NL/KEM/ExTR07.0025/03

Quality Assessment Reports:

NL/DEK/QAR11.0009/09 NL/DEK/QAR11.0010/07 NL/DEK/QAR11.0011/07

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

PCB Single Terminal Blocks Types FRONT 2,5-H/...-EX and FRONT 2,5-V/...-EX, with accessories for the connection of copper conductors to electronic modules in enclosures in type of protection increased safety "e". The PCB Terminal Blocks may be used in explosive dust atmospheres when mounted in enclosures certified for dust ignition protection by enclosure “t”. The fixing on printed circuit boards is through double pin soldering.

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

Refer to the Annex 1 for ratings and nomenclature.

SCHEDULE OF LIMITATIONS:

The PCB Terminal Blocks and accessories are designed for interconnection of copper wires in enclosures for type of protection by increased safety “e”.

When assembling the PCB connectors and accessories the clearances and creepage distances shall be respected.

If conductors with smaller cross sections than the rated cross section are connected, the belonging lower current has to be laid down in the Certificate of Conformity of the complete equipment.

Based on the self-heating with the specified rated current and ambient temperatures of -60 °C to +40 °C measured at the mounting position in electrical equipment, e.g. junction and connection boxes, the PCB Terminal Blocks may be used for temperature class T6. When used in electrical equipment of temperature classes T1 to T5, the insulating material shall not exceed the maximum operating temperature.

To avoid mechanical stress to the soldered joints, the headers have to be mechanically supported by e.g. screwing or bending the solder pins.

When assembling the PCB Terminal Blocks the instructions in the manufacturer’s documentation shall be respected.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Mimimum service temperature changed into -60 °C

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Additional manufacturing locations:

PHOENIX CONTACT India Pvt. Ltd.
Prithla-Datir Road, Dudhola, Dist. Palwal,
Haryana
India

Annex:

228282100-ExTR07.0025.03_Annex1.pdf

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

Type designation

FRONT	2,5	-	H	/	SA 5	-	EX
I	II		III		IV		V

Design ation	Explanation	Value	Explanation
I	Type indicator	FRONT	Single PCB Terminal Blocks with screw connection.
II	Rated cross section	2,5	2.5 mm², 14 AWG
III	Electrical contacts between plug an header	H V	Horizontal connection direction, 0°. Vertical connection direction, 90°.
IV	Indicator for plug	SA 5 SA 10	Mounting Pin distance 5 mm Mounting Pin distance 10 mm
V	Indicator for use in potential explosive atmospheres	EX	With EX approval

Electrical data

Type:	**FRONT 2,5-H/...-EX** **FRONT 2,5-V/...-EX**
Rated insulation voltage [V]	
- without spacer [V]	160
- with one spacer [V]	250
- with two spacers [V]	400
Rated voltage [V]	
- without spacer [V]	176
- with one spacer [V]	275
- with two spacers [V]	440
Nominal current [A]	21
Max. load current [A]	21
Contact resistance [mΩ]	0.6
Rated conductor cross-section [mm²] or (AWG)	2.5 or (14)
Connectable conductor cross-section	
- rigid [mm²] or (AWG)	0.2 - 2.5 or (24 - 14)
- flexible [mm²] or (AWG)	0.2 - 2.5 or (24 - 14)
Multi-conductor connection (Two conductor with the same cross section and conductor type)	
- rigid [mm²] or (AWG)	0.2 – 0.75 or (24 - 18)
- flexible [mm²] or (AWG)	0.2 – 0.75 or (24 - 18)