



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

Certificate No.: IECEx BVS 10.0097X issue No.:4

Status: **Current**

Date of Issue: **2017-08-14** Page 1 of 4

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

Certificate history:
Issue No. 4 (2017-8-14)
Issue No. 3 (2016-11-18)
Issue No. 2 (2013-8-19)
Issue No. 1 (2013-1-15)
Issue No. 0 (2010-11-16)

Equipment: **Smart Repeater type MACX MCR-EX-SL-RPSSI-2I-xxx, MACX PL-EX-RPSSI-2I-xxx, MACX MCR-EX-SL-RPSSI-2I-xxx-SP, MACX PL-EX-RPSSI-2I-xxx-SP**
Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i", Equipment protection by type of protection "n"**

Marking: [Ex ia Ga] IIC
[Ex ia Da] IIIC
Ex nA [ia Ga] IIC T4 Gc

Approved for issue on behalf of the IECEx Certification Body: Dr Franz Eickhoff

Position: Deputy Head of Certification Body

Signature:
(for printed version)


2017-08-24

Date:

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](http://www.iecex.com).

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany





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

Additional Manufacturing location(s):

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 electrical apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

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

Test Report:

[DE/BVS/ExTR10.0124/04](#)

Quality Assessment Report:

[NL/DEK/QAR11.0009/05](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Type Code

MACX MCR-EX-SL-RPSSI-2I-xxx, MACX PL-EX-RPSSI-2I-xxx
MACX MCR-EX-SL-RPSSI-2I-xxx-SP, MACX PL-EX-RPSSI-2I-xxx-SP

xxx = customer specific extension, optional, not Ex relevant

In the types with the ending -SP Spring-Cage-Plugs instead of terminals are used.
The MACX PL types differ from the other types only in the colour of the housing (yellow).

General product information:

The Smart Repeater types MACX MCR-EX-SL-RPSSI-2I-xxx, MACX PL-EX-RPSSI-2I-xxx, MACX MCR-EX-SL-RPSSI-2I-xxx-SP and MACX PL-EX-RPSSI-2I-xxx-SP, which have to be installed outside the hazardous area or in an enclosure which is in accordance with IEC 60079-15, are used for transmission of 0(4)...20 mA signals between intrinsically safe and non-intrinsically safe signal circuits. Additionally, digital communication signals (HART) can be modulated and bi-directional transmitted.

The intrinsically safe circuits type of protection Ex ia can be led into areas which require Zone 0 equipment. The intrinsically safe circuits can also be connected to apparatus which are located in areas where combustible dust can be present. It must be guaranteed, that only apparatus may be connected to this circuits which are designed and certified for this use.

Ratings:

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

For the installation of the Smart Repeater in areas, where EPL Gc (Zone 2) equipment is required, they have to be mounted in enclosures which are in accordance with IEC 60079-15.



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

The marking and the documentation were partly supplemented or modified.
The housing is now manufactured in two variants with different mounting direction.
Variant 1: The device is hooked on at the top, pushed down and snapped on the 35 mm rail.
Variant 2: The device is hooked on at the bottom, pushed up and snapped on the 35 mm rail.

Annex: [BVS_10_0097X_Phoenix_Annex_issue4.pdf](#)



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Annex
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Ratings:

- 1 Power supply circuit (terminals 1.1 – 1.2)
 Nominal voltage U_n DC 19.2 ... 30 V
 Maximum voltage U_m AC 253 V
 DC 125 V
- 2 Non-intrinsically safe interfaces (terminals 2.1 – 2.2 resp. 3.1 – 3.2)
 Nominal signal 0(4) ... 20 mA
 Maximum voltage U_m AC 253 V
 DC 125 V
- 3 Intrinsically safe interface
 The intrinsically safe interface is galvanically isolated from the non-intrinsically safe circuits and from earth.
- 3.1 Smart repeater mode - Output (terminals 4.1 – 4.2)
 Maximum output voltage U_o DC 25.2 V
 Maximum output current I_o 93 mA
 Maximum output power P_o 587 mW

Maximum external inductivity and capacity with separated connection of C_o or L_o , see table

	Group IIB	Group IIC
C_o	820 nF	107 nF
L_o	4 mH	2 mH

Maximum external inductivity and capacity if concentrated C_o and L_o are connected, see tables

For Group IIB

C_o	370 nF	430 nF	510 nF	660 nF	820 nF
L_o	4 mH	1 mH	500 μ H	200 μ H	100 μ H

For Group IIC

C_o	49 nF	63 nF	80 nF	107 nF
L_o	2 mH	1 mH	500 μ H	200 μ H

The values of Group IIB can be used for areas with combustible dust.

- 3.2 Isolating amplifier mode - Input (terminals 5.1 – 5.2)
 Maximum input voltage U_i DC 30 V
 Maximum input current I_i 150 mA
 Maximum internal capacitance C_i negligible
 Maximum internal inductance L_i negligible
- 4 Ambient temperature range $-20\text{ }^\circ\text{C} \leq T_a \leq +60\text{ }^\circ\text{C}$