



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

Certificate No.: IECEx BVS 08.0016X issue No.:3

Status: **Current**

Date of Issue: **2014-05-12** Page 1 of 5

Certificate history:  
Issue No. 3 (2014-5-12)  
Issue No. 2 (2010-10-11)  
Issue No. 1 (2009-11-6)  
Issue No. 0 (2008-5-26)

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

Electrical Apparatus: **Smart Repeater type MACX MCR-EX-SL-RPSSI-I or MACX MCR-EX-SL-RPSSI-I-SP or BTS211-E0**  
Optional accessory:

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

Marking: [Ex ia Ma] I  
[Ex ia Ga] IIC/IIB  
[Ex ia Da] IIIC  
Ex nA [ia Ga] IIC/IIB T4 Gc

Approved for issue on behalf of the IECEx  
Certification Body:

H.-Ch. Simanski

Position:

Head of Certification Body

Signature:  
(for printed version)

Date:

12.5.2014

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://Official IECEx Website).

Certificate issued by:

**DEKRA EXAM GmbH**  
Dinnendahlstrasse 9  
44809 Bochum  
Germany

**DEKRA**  
DEKRA EXAM GmbH



# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 08.0016X

Date of Issue: 2014-05-12

Issue No.: 3

Page 2 of 5

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

|  |   |
|--|---|
| <b>IEC 60079-0 : 2011</b><br>Edition: 6.0  | Explosive atmospheres - Part 0: General requirements                            |
| <b>IEC 60079-11 : 2011</b><br>Edition: 6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"   |
| <b>IEC 60079-15 : 2010</b><br>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/ExTR08.0019/03](#)

Quality Assessment Report:  
[NL/DEK/QAR11.0009/02](#)



# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 08.0016X

Date of Issue: 2014-05-12

Issue No.: 3

Page 3 of 5

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

#### Type variants

Smart Repeater  
Type MACX MCR-EX-SL-RPSSI with screw terminals  
Type MACX MCR-EX-SL-RPSSI-SP with spring cage terminals  
Type BTS211-EO

#### Description

The Smart Repeater, which will be installed outside the hazardous area or in an enclosure which is in accordance with IEC 60079-15, is used for transmission of 0(4)...20 mA signals between one intrinsically safe and one non-intrinsically safe signal circuit.

### CONDITIONS OF CERTIFICATION: YES as shown below:

If the Smart Repeater is used in zone 2 areas it has to be mounted in an enclosure which is in accordance with IEC 60079-15.



# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 08.0016X

Date of Issue: 2014-05-12

Issue No.: 3

Page 4 of 5

## EQUIPMENT(continued):

### Electrical Parameters

|     |  |       |    |             |    |
|-----|--|-------|----|-------------|----|
| 1   | Power supply circuit (terminals 1.1 - 1.2)   |       |    |             |    |
|     | Nominal voltage  | $U_n$ | DC | 19.2 ... 30 | V  |
|     | Max. voltage   | $U_m$ | AC | 253         | V  |
|     |  |       | DC | 125         | V  |
| 2   | Non-intrinsically safe interface (terminals 2.1 - 2.2 resp. 3.1 - 3.2)   |       |    |             |    |
|     | Nominal signal   |       |    | 0(4) ... 20 | mA |
|     | Max. 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 | Output (terminals 4.1 - 4.2)   |       |    |             |    |
|     | Max. output voltage  | $U_o$ | DC | 25.2        | V  |
|     | Max. output current  | $I_o$ |    | 93          | mA |
|     | Max. output power  | $P_o$ |    | 587         | mW |
|     | For group IIC  |       |    |             |    |
|     | Max. external capacitances   | $C_o$ |    | 107         | nF |
|     | Max. external inductances  | $L_o$ |    | 2           | mH |
|     | For group IIB  |       |    |             |    |
|     | Max. external capacitances   | $C_o$ |    | 820         | nF |
|     | Max. external inductances  | $L_o$ |    | 4           | mH |
|     | The values for group IIB can be used for areas with combustible dust.  |       |    |             |    |
| 3.2 | Input (terminals 5.1 - 5.2)  |       |    |             |    |
|     | Max. input voltage   | $U_i$ | DC | 30          | V  |
|     | Max. input current   | $I_i$ |    | 150         | mA |
|     | Max. internal capacitances   | $C_i$ |    | negligible  |    |
|     | Max. internal inductances  | $L_i$ |    | negligible  |    |

### Thermal parameters

Ambient temperature range  $-20\text{ °C} \leq T_a \leq +60\text{ °C}$



# IECEX Certificate of Conformity

Certificate No.: IECEx BVS 08.0016X

Date of Issue: 2014-05-12

Issue No.: 3

Page 5 of 5

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

The electrical design and the layout was modified. The ratings of the Smart Repeater are unchanged.

For testing of the device the new standard versions of IEC 60079-\* have been taken as basis; a modified marking is the result.