



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

Certificate No.: **IECEX KEM 09.0052X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 3 Issue 2 (2012-07-24)
Date of Issue: 2016-07-13 Issue 1 (2009-12-15)
Issue 0 (2009-09-04)
Applicant: **PR Electronics A/S**
Lerbakken 10
8410 Rønne
Denmark
Equipment: **Temperature / mA Converter, Type 9113AA, Type 9113AB, Type 9113BA and Type 9113BB**
Optional accessory: Display, Type 4501
Type of Protection: **Ex n, [Ex ia]**
Marking: Ex nA nC IIC T4 Gc (Type 9113A. and 9113B.)
[Ex ia Ga] IIC/IIB/IIA (Type 9113B.)
[Ex ia Da] IIIC (Type 9113B.)
[Ex ia Ma] I (Type 9113B.)

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

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



Certificate issued by:

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





IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 09.0052X**

Page 2 of 4

Date of issue: 2016-07-13

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Manufacturer: **PR Electronics A/S**
Lerbakken 10
8410 Rønne
Denmark

Additional
manufacturing
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 equipment 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 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

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

Test Reports:

[NL/KEM/ExTR09.0053/00](#)
[NL/KEM/ExTR09.0053/03](#)

[NL/KEM/ExTR09.0053/01](#)

[NL/KEM/ExTR09.0053/02](#)

Quality Assessment Report:

[NL/DEK/QAR13.0017/02](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx KEM 09.0052X**

Page 3 of 4

Date of issue: 2016-07-13

Issue No: 3

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Temperature / mA Converters Type 9113AA, Type 9113AB, Type 9113BA and Type 9113BB, for rail mounting, are 24 V powered 1 channel (Type 9113*A) or 2 channel (Type 9113*B) isolating barriers, interfacing temperature sensors or current sources located in an explosive atmosphere.

Electrical data:

Refer to attachment.

SPECIFIC CONDITIONS OF USE: YES as shown below:

The Temperature / mA Converter shall be installed in a controlled environment with suitably reduced pollution, limited to pollution degree 2 or better.

The non-intrinsically safe circuits may only be connected to an overvoltage category I or II power source, as defined in IEC 60664-1.

If the Temperature / mA Converter is installed in an explosive atmosphere where equipment protection level Gc is required, the following conditions of certification additionally apply:

The Temperature / mA Converter shall be installed in an enclosure in type of protection Ex n or Ex e, providing a degree of protection of at least IP54. Cable entry devices and blanking elements shall fulfill the same requirements.

Removable Display Module 4501, when connected to the Temperature / mA Converter, may not be damaged and shall be free of dust and moisture.



IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 09.0052X**

Page 4 of 4

Date of issue: 2016-07-13

Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- update to IEC 60079-15: 2010
- remove IEC 60079-26
- Addition of Ex nA version '9113A*'

Annex:

[IECEX KEM 09.0052X,iss3-Annex1.pdf](#)

Annex 1 to Certificate of Conformity IECEx KEM 09.0052 X, issue 3

Description

Temperature / mA Converters, Type 9113AA, Type 9113AB, Type 9113BA and Type 9113BB, for rail mounting are 24 V powered 1 channel (Type 9113.A) or 2 channel (Type 9113.B) isolating barriers, interfacing temperature sensors or current sources located in an explosive atmosphere.

The Temperature / mA Converter is supplied via terminals at the front of the module, or via Power Rail Type 9400. Removable display module 4501 can be used for programming of the Converter.

Ambient temperature range -20 °C to +60 °C.

Electrical data

Supply (terminals 31, 32 and rear contacts): $U = 19.2 \dots 31.2 \text{ Vdc}$.

Outputs (terminals 11, 12 and 13, 14): $I = 0 \dots 20 \text{ mA}$ or $4 \dots 20 \text{ mA}$

Status output (terminals 33, 34):

Relay contacts, $U \leq 32 \text{ Vdc}$ or 32 Vac , $I \leq 1 \text{ Adc}$ or $I \leq 0.5 \text{ Aac}$ respectively.

If the Temperature / mA Converter is installed outside the hazardous area, the following data for the relay contacts apply: $U \leq 110 \text{ Vdc}$ or 125 Vac , $I \leq 0.3 \text{ Adc}$ or $I \leq 0.5 \text{ Aac}$ respectively

For all circuits above: $U_m = 253 \text{ Vac}$ (max. frequency 400 Hz).

Sensor circuits (terminals 41 ... 44 respectively 51 ... 54):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_o = 8.7 \text{ V}$; $I_o = 18.4 \text{ mA}$; $P_o = 40 \text{ mW}$; $C_o = 5 \mu\text{F}$ (IIC) or $50 \mu\text{F}$ (IIB) or $1000 \mu\text{F}$ (IIA);

$L_o = 100 \text{ mH}$ (IIC) or 300 mH (IIB) or 700 mH (IIA); $L_o/R_o = 892 \mu\text{H}/\Omega$ (all groups);

$U_i = 10 \text{ V}$; $I_i = 30 \text{ mA}$; $C_i = 30 \text{ nF}$; $L_i = 820 \text{ nH}$;

for group IIIC, the parameters of group IIB apply;

for group I, the parameters of group IIA apply.

The intrinsically safe sensor circuits are infallibly galvanically isolated from each other and from the non-intrinsically safe circuits.

Sensor circuits, when combined to one circuit (terminals 41 ... 44 and 51 ... 54):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_o = 17.4 \text{ V}$; $I_o = 18.4 \text{ mA}$; $P_o = 80 \text{ mW}$; $C_o = 0.3 \mu\text{F}$ (IIC) or $1.6 \mu\text{F}$ (IIB) or $8 \mu\text{F}$ (IIA);

$L_o = 80 \text{ mH}$ (IIC) or 250 mH (IIB) or 600 mH (IIA); $L_o/R_o = 445 \mu\text{H}/\Omega$ (all groups);

$U_i = 10 \text{ V}$; $I_i = 30 \text{ mA}$; $C_i = 15 \text{ nF}$; $L_i = 1.7 \mu\text{H}$;

for group IIIC, the parameters of group IIB apply;

for group I, the parameters of group IIA apply.