



# 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 KEM 10.0083X issue No.:2

Status: **Current**

Date of Issue: **2012-12-19** Page 1 of 4

Certificate history:  
Issue No. 2 (2012-12-19)  
Issue No. 1 (2011-12-16)  
Issue No. 0 (2010-10-4)

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

Electrical Apparatus: **2-Wire Transmitter with HART Protocol, Types 5335A, 5335D, 5336A, 5336D, 5337A and 5337D**

Optional accessory:

Type of Protection: **Ex ia for Types 533\*D; Ex nA [ic] and Ex ic for Types 533\*A**

Marking: Ex ia IIC T6 ... T4 Ga  
Ex ia IIIC Da  
Ex ia I Ma  
Ex nA [ic] IIC T6 ... T4 Gc or  
Ex ic IIC T6 ... T4 Gc or  
Ex ic IIIC Dc

Approved for issue on behalf of the IECEx  
Certification Body:


C.G. van Es

Position:

Certification Manager

Signature:  
(for printed version)

Date:

  
\_\_\_\_\_  
2012-12-19

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**DEKRA Certification B.V.**  
Utrechtseweg 310  
6812 AR Arnhem  
The Netherlands

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.





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

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 : 2007-10</b> Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
<b>IEC 60079-11 : 2006</b> Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-15 : 2010</b> Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
<b>IEC 60079-26 : 2006</b> Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
<b>IEC 61241-11 : 2005</b> Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety 'iD'

*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:

[NL/KEM/ExTR10.0074/00](#)

[NL/KEM/ExTR10.0074/01](#)

[NL/KEM/ExTR10.0074/02](#)

Quality Assessment Report:

[NL/KEM/QAR07.0004/03](#)



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## Schedule

### EQUIPMENT:

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

2-Wire Transmitters Type 5335A and Type 5335D with HART 5 protocol, Type 5336A and Type 5336D with HART 6 protocol, Type 5337A and Type 5337D with HART 7 protocol, are used to convert temperature measurement signals from a temperature sensor or a mV signal into a 4 ... 20 mA current signal with digital communication (HART).

For further information, refer to the Attachment.

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

Transmitters Type 533\*A in type of protection Ex nA

The Transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP54 according to IEC 60529.

For an ambient temperature  $\geq 60$  °C, heat resistant cables shall be used with a rating of at least 20 K above the ambient temperature.



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

### Issue 1:

- Addition of Transmitters Type 5335A and Type 5336A in type of protection Ex nA [ic] and Ex ic.
- Addition of Transmitters Type 5337A and Type 5337D with similar hardware but with firmware that enables them to communicate using the HART 7 protocol.
- Product evaluation according to IEC 60079-11: 2006 for application in mines (group I).

### Issue 2:

- Minor changes to non safety components, schematics and layout.

## Attachment 1 to IECEx KEM 10.0083, Issue 02

### General product information:

The 2-Wire Transmitter Type 5335A and Type 5335D with HART 5 protocol, Type 5336A and Type 5336D with HART 6 protocol, Type 5337A and Type 5337D with HART 7 protocol, are used to convert temperature measurement signals from a temperature sensor or a mV signal into a 4 ... 20 mA current signal with digital communication (HART).

The transmitter is suitable for mounting in an enclosure form B according to DIN 43729, or equivalent.

#### Type of protection Ex ia IIC Ga

The transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP20 according to IEC 60529.

Ambient temperature range: -40 °C to +45 °C for temperature class T6  
-40 °C to +85 °C for temperature class T4

#### Type of protection Ex ia I Ma

The transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP54 according to IEC 60529, that is suitable for the application and is correctly installed.

Ambient temperature range: -40 °C to +85 °C

#### Type of protection Ex nA

Ambient temperature range: -40 °C to +60 °C for temperature class T6  
-40 °C to +85 °C for temperature class T4

#### Type of protection Ex ia IIIC Da and Ex ic IIIC Dc

The transmitter shall be mounted in an enclosure that provides a degree of protection of at least IP6X according to IEC 60529 eg. a form B enclosure according to DIN 43729. The surface temperature of the enclosure is equal to the ambient temperature +20 K for a dust layer with a maximum thickness of 5 mm.

### Electrical data

#### Type of protection Ex ia:

Supply and output circuit (terminals 1 and 2):

In type of protection intrinsic safety Ex ia IIC, Ex ia IIIC or Ex ia I Ma, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30 \text{ V}$ ;  $I_i = 120 \text{ mA}$ ;  $P_i = 0.84 \text{ W}$ ;  $C_i = 1 \text{ nF}$ ;  $L_i = 10 \text{ }\mu\text{H}$ ;

Sensor circuit (terminals 3 ... 6):

In type of protection intrinsic safety Ex ia IIC, Ex ia IIIC or Ex ia I Ma, with following maximum values:

$U_o = 9.6 \text{ V}$ ;  $I_o = 28 \text{ mA}$ ;  $P_o = 67 \text{ mW}$ ;  $C_o = 3.5 \text{ }\mu\text{F}$ ;  $L_o = 35 \text{ mH}$ ;

#### Types of protection Ex ic and Ex nA

Supply and output circuit (terminals 1 and 2), in type of protection non sparking Ex nA, with

$U \leq 35 \text{ Vdc}$ ;  $I = 4 \dots 20 \text{ mA}$ ; or

Supply and output circuit (terminals 1 and 2), in type of protection intrinsic safety Ex ic IIC or Ex ic IIIC, with the following maximum values:

$U_i = 35 \text{ V}$ ;  $C_i = 1 \text{ nF}$ ;  $L_i = 10 \text{ }\mu\text{H}$ .

Sensor circuit (terminals 3, 4, 5 and 6) intended for connection to a thermocouple, RTD, resistance or mV-source, in type of protection intrinsic safety Ex ic IIC or Ex ic IIIC, with the following maximum values:

$U_o = 9.6 \text{ V}$ ;  $I_o = 28 \text{ mA}$ ;  $P_o = 67 \text{ mW}$ ;  $C_o = 28 \text{ }\mu\text{F}$ ;  $L_o = 45 \text{ mH}$ .