



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.: issue No.: Certificate history:

Status:

Date of Issue: **2011-12-06** Page 1 of 3

Applicant: **PR electronics A/S**
Lerbakken 10
8410 Rønde
Denmark

Electrical Apparatus: **HART-Transparent Driver, Type 9107BA and Type 9107BB**
Optional accessory: Display, type 4501

Type of Protection: **Ex ia; nA**

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


Approved for issue on behalf of the IECEx
Certification Body:

C.G. van Es

Position:

Certification Manager

Signature:
(for printed version)



Date:

2011-12-06

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.





IECEX Certificate of Conformity

Certificate No.: IECEx DEK 11.0088X

Date of Issue: 2011-12-06

Issue No.: 0

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

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 : 2011-06 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
IEC 60079-15 : 2005-03 Edition: 3	Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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/DEK/ExTR11.0102/00

Quality Assessment Report:

NL/KEM/QAR07.0004/03



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

HART-Transparent Driver, Type 9107BA and Type 9107BB, for rail mounting, are 24 V powered isolating barriers that serve as current output isolator for 4 - 20 mA signals with HART communication.

The HART-Transparent Driver, Type 9107BA is the one channel version and Type 9107BB is the two channel version.

The Driver provides a potential free contact for status indication.

The Driver 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 Driver.

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

For electrical data, refer to "Annex to IECEx DEK 11.0088 X - issue 0.pdf".

CONDITIONS OF CERTIFICATION: YES as shown below:

The HART-Transparent Driver shall be installed in a controlled environment with suitably reduced pollution, limited to pollution degree 2 or better.

The non intrinsically safe circuits shall be limited to overvoltage category I/II as defined in IEC 60664-1.

If the HART-Transparent Driver is installed in an explosive atmosphere where equipment protection level Gc is required, the following specific conditions of use apply:

The HART-Transparent Driver 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 fulfil the same requirements.

Removable Display Module 4501, when connected to the HART Transparent Driver, may not be damaged and shall be free of dust and moisture.

Annex to Certificate of Conformity IECEx DEK 11.0088 X, issue 0

Electrical data

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

Status-Relay output (terminals 33, 34):

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

If the Driver 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.

Inputs (terminals 11, 12 resp. 13, 14): $I = 4 \dots 20 \text{ mA}$.

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

Loop supply outputs (terminals 41, 42 resp. terminals 51, 52):

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

$U_o = 28 \text{ V}$; $I_o = 93 \text{ mA}$; $P_o = 0.65 \text{ W}$;

$C_o = 0.08 \mu\text{F}$ (IIC) or $0.65 \mu\text{F}$ (IIB) or $2.15 \mu\text{F}$ (IIA) or $3.76 \mu\text{F}$ (I);

$L_o = 4 \text{ mH}$ (IIC) or 16 mH (IIB) or 32 mH (IIA) or 25 mH (I).

For group IIIC, the parameters of group IIB apply.

Both channels (terminals 41...44 and terminals 51...54) are infallibly galvanically isolated from each other and from the non-intrinsically safe supply and output circuits.