

CERTIFICATE

(1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **DEKRA 11ATEX0247 X** Issue Number: **1**

(4) Equipment: **HART-Transparent Driver, Type 9107BA and Type 9107BB**

(5) Manufacturer: **PR electronics A/S**

(6) Address: **Lerbakken 10, 8410 Rønde, Denmark**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR11.0102/**.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2009
EN 60079-26 : 2007

EN 60079-11 : 2007
EN 61241-11 : 2006

EN 60079-15 : 2005

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:



II (1) G [Ex ia Ga] IIC/IIB/IIA
II (1) D [Ex ia Da] IIIC
I (1) M [Ex ia Ma] I

This certificate is issued on 2 December, 2011 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

C.G. van Es
Certification Manager

Page 1/3

* Integral publication of this certificate and adjoining reports is allowed. This Certificate may only be reproduced in its entirety and without any change.



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

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate DEKRA 11ATEX0247 X**

Issue No. 1

(15) **Description**

HART-Transparent Drivers, Type 9107BA and Type 9107BB, for rail mounting, are 24 V powered isolating barriers that serve as current output isolators 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.

Marking

The equipment marking may additionally include the code II 3 G Ex nA nC IIC T4 Gc.

Electrical data

Supply (terminals 31, 32 and rear contacts): $U = 19,2 \dots 31,2$ Vdc.

Status-Relay output (terminals 33, 34):

$U \leq 32$ Vac or 32 Vdc, $I \leq 0,5$ Aac or $I \leq 1$ Adc respectively.

If the Driver is installed outside the hazardous area, the following data for the relay contacts apply:

$U \leq 110$ Vdc or 125 Vac, $I \leq 0,3$ Adc or $I \leq 0,5$ Aac respectively.

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

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

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:

$U_o = 28$ V; $I_o = 93$ mA; $P_o = 0,65$ W;

$C_o = 0,08$ μ F (IIC) or 0,65 μ F (IIB) or 2,15 μ F (IIA) or 3,76 μ F (I);

$L_o = 4$ 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.

Installation instructions

The instructions provided with the equipment shall be followed in detail to assure safe operation.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate DEKRA 11ATEX0247 X**

Issue No. 1

(16) **Test Report**

No. NL/DEK/ExTR11.0102/**.

(17) **Special conditions for safe use**

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 EN 60664-1.

If the HART-Transparent Driver is installed in an explosive atmosphere where the use of apparatus of equipment category 3 G 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.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. NL/DEK/ExTR11.0102/**.