

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

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

(4) Product: **HART-Transparent Driver, Types 9107BA, 9107BB and Types 9107AA, 9107AB**

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

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

(7) This product 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 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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/ExTR11.0102/02.

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

EN IEC 60079-0 : 2018

EN 60079-11 : 2012

EN 60079-15 : 2019

EN 60079-7 : 2015 + A1 : 2018

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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



**II (1) G [Ex ia Ga] IIC/IIB/IIA
II (1) D [Ex ia Da] IIIC
I (M1) [Ex ia Ma] I**

Date of certification: 23 June 2020

DEKRA Certification B.V.

R. Schuller
Certification Manager



(13) **SCHEDULE**

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

Issue No. 3

(15) **Description**

HART-Transparent Drivers, Types 9107BA, 9107BB and Types 9107AA, 9107AB 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, Types 9107BA, 9107AA are one channel version and Types 9107BB, 9107AB are 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 ec nC IIC T4 Gc

Electrical data

All Repeater Types

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).

Repeater Types 9107BA, 9107BB

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 product shall be followed in detail to assure safe operation.

(13) **SCHEDULE**

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

Issue No. 3

(16) **Report Number**

No. NL/DEK/ExTR11.0102/02.

(17) **Specific conditions of 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 item (9)

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR11.0102/02.

(20) **Certificate history**

Issue 1 - 214941100 initial certificate
Issue 2 - 215635200 changes to the construction
assessed per EN 60079-15: 2010
Issue 4 - 224396500 assessed per latest edition of the standards
addition of 9107Ax models