

# 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: **KEMA 07ATEX0146 X** Issue Number: **3**

(4) Equipment: **Pulse Isolator Series 9202B, Type 9202B1., Type 9202B2. and Type 9202B3.**

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

(6) Address: **Lerbakken 10, 8410 Rønne, 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 no. NL/DEK/ ExTR06.0039/\*\*.

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

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

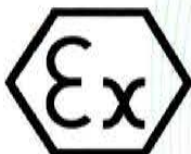
**EN 60079-11 : 2007**  
**EN 61241-11 : 2006**

**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 (M1) [Ex ia Ma] I**

This certificate is issued on 16 January 2012 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

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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 07ATEX0146 X**

Issue No. 3

(15) **Description**

Pulse Isolators Type 9202B1., Type 9202B2. and Type 9202B3. for rail mounting, are 24 V powered 1 channel (Type 9202B.A) or 2 channel (Type 9202B.B) isolating barriers, interfacing "Namur" sensors or contacts located in an explosive atmosphere.

The Pulse Isolator 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 Pulse Isolator.

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.

Digital outputs (terminals 11, 12 and 13, 14):

Transistor output,  $U \leq 30$  Vdc,  $I \leq 80$  mA (Type 9202B1.)

Relay contacts,  $U \leq 30$  Vdc or 32 Vac,  $I \leq 2$  A (Type 9202B2. and Type 9202B3.)

If the Pulse Isolator is installed outside the hazardous area, the following data for the relay contacts apply:  $U \leq 30$  Vdc or 250 Vac,  $I \leq 2$  Adc or Aac respectively.

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 Pulse Isolator 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.

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

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

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

$U_o = 10,6$  V;  $I_o = 12$  mA;  $P_o = 32$  mW;

$C_o = 2,0$   $\mu$ F (IIC) or 6,0  $\mu$ F (IIB) or 18,0  $\mu$ F (IIA) or 90  $\mu$ F (I);

$L_o = 260$  mH (IIC) or 780 mH (IIB) or 1000 mH (IIA) or 1000 mH (I);

$L_o/R_o = 1150$   $\mu$ H/ $\Omega$  (all groups).

For group IIIC, the parameters of group IIB apply.

The intrinsically safe sensor circuits are infallibly galvanically isolated from each other and from the non-intrinsically safe 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 KEMA 07ATEX0146 X**

Issue No. 3

(16) **Test Report**

No. NL/DEK/ ExTR06.0039/\*\*.

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

The Pulse Isolator 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 EN60664-1.

If the Pulse Isolator 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 Pulse Isolator 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 Pulse Isolator, may not be damaged and shall be free of dust and moisture.

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

Assured by compliance with the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. NL/DEK/ ExTR06.0039/\*\*.