



## ATEX Installation drawing – V3R0



For safe installation of 9107B the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.  
Year of manufacture can be taken from the first two digits in the serial number.



For installation in Zone 2 the following must be observed.  
The 4501 programming module is to be used solely with PR electronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

9107BA: 1 channel HART<sup>®</sup> -transparent driver  
9107BB: 2 channel HART<sup>®</sup> -transparent driver

ATEX Certificate: DEKRA 11 ATEX0247X

Marking: II (1) G [Ex ia Ga] IIC/IIA/IIA  
II 3 G Ex nA nC IIC T4 Gc  
II (1) D Ex ia Da) IIC  
I (M1) [Ex ia Ma] I

Standards: EN 60079-0 : 2012, EN 60079-11 : 2012, EN 60079-15 : 2010  
EN 60079-26 : 2007

**Supply terminal (31,32)**  
Voltage: 19.2 – 31.2 VDC

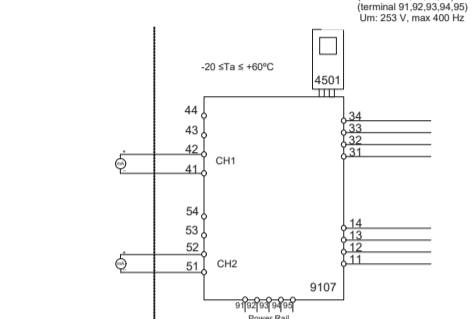
**Status Relay, terminal (33,34)**  
Zone 2 Installation  
Voltage max: 125 VAC / 110 VDC  
Power max: 62.5 VA / 32 W  
Current max: 0.5 A AC / 0.3 ADC

**Installation notes:**  
Install in pollution degree 2, overvoltage category II as defined in EN 60664-1  
Do not separate connectors when energized and an explosive gas mixture is present.  
Do not mount or remove modules from the Power Rail when an explosive gas mixture is present.  
Disconnect power before servicing.  
The wiring of unused terminals is not allowed.

In type of protection [Ex ia Da] the parameters for intrinsic safety for gas group IIB are applicable.  
For installation in Zone 2, the module 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 fulfill the same requirements.

For installation on Power Rail in Zone 2, only Power Rail type 9400 supplied by Power Control Unit type 9410 (Type Examination Certificate KEMA 07ATEX0152 X) is allowed.

Hazardous area Zone 0, 1, 2, 20, 21, 22



CH1 (terminal 41,42)  
CH2 (terminal 51,52)  
U<sub>s</sub>: 28 V  
I<sub>s</sub>: 93 mA  
P<sub>s</sub>: 0.65 W

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

## IECEx Installation drawing – V3R0



For safe installation of 9107B the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.  
Year of manufacture can be taken from the first two digits in the serial number.



For installation in Zone 2 the following must be observed.  
The 4501 programming module is to be used solely with PR electronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

9107BA: 1 channel HART<sup>®</sup> -transparent driver  
9107BB: 2 channel HART<sup>®</sup> -transparent driver

IECEx Certificate: IECEx DEK 11.0088X

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

Standards: IEC60079-15 : 2010, IEC60079-11:2011, IEC60079-0 : 2011  
IEC60079-26 : 2006

**Supply terminal (31,32)**  
Voltage: 19.2 – 31.2 VDC

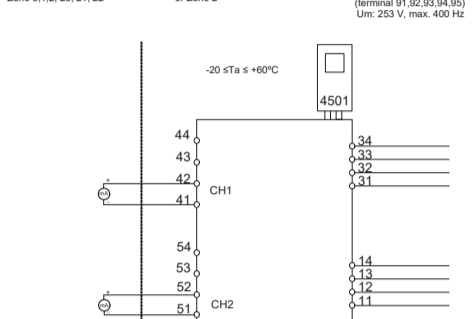
**Status Relay, terminal (33,34)**  
Zone 2 Installation  
Voltage max: 125 VAC / 110 VDC  
Power max: 62.5 VA / 32 W  
Current max: 0.5 A AC / 0.3 ADC

**Installation notes:**  
Install in pollution degree 2, overvoltage category II as defined in IEC 60664-1.  
Do not separate connectors when energized and an explosive gas mixture is present.  
Do not mount or remove modules from the Power Rail when an explosive gas mixture is present.  
Disconnect power before servicing.  
The wiring of unused terminals is not allowed.

In type of protection [Ex ia Da] the parameters for intrinsic safety for gas group IIB are applicable.  
For installation in Zone 2, the module 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 fulfill the same requirements.

For installation on Power Rail in Zone 2, only Power Rail type 9400 supplied by Power Control Unit type 9410 (Type Examination Certificate KEMA 07ATEX0152 X) is allowed.

Hazardous area Zone 0, 1, 2, 20, 21, 22



CH1 (terminal 41,42)  
CH2 (terminal 51,52)  
U<sub>s</sub>: 28 V  
I<sub>s</sub>: 93 mA  
P<sub>s</sub>: 0.65 W

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

## FM Installation drawing – V3R0



For safe installation of 9107B the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.  
Year of manufacture can be taken from the first two digits in the serial number.



For installation in Zone 2 the following must be observed.  
The 4501 programming module is to be used solely with PR electronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

9107BA: 1 channel HART<sup>®</sup> -transparent driver  
9107BB: 2 channel HART<sup>®</sup> -transparent driver

**Supply terminal (31,32)**  
Voltage: 19.2 – 31.2 VDC

**Status Relay, terminal (33,34)**  
Voltage max: 125 VAC / 110 VDC  
Power max: 62.5 VA / 32 W  
Current max: 0.5 A AC / 0.3 ADC

**Zone 2 installation:**  
Voltage max: 32 VAC / 32 VDC  
Power max: 16 VA / 32 W  
Current max: 0.5 A AC / 1 ADC

**Installation notes:**  
In Class I, Division 2 installations, the subject equipment shall be mounted within a too-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or Canadian Electrical Code (C22.1).  
In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or Canadian Electrical Code (C22.1). Where installed in outdoor or potentially wet locations, the enclosure shall, at a minimum, meet the requirements of IP54.

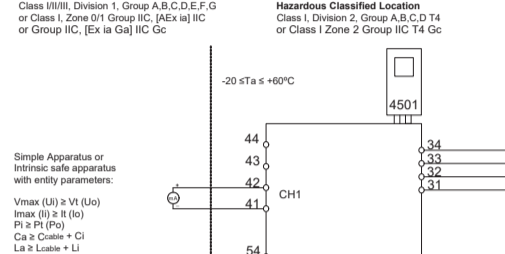
Install in environments rated Pollution Degree 2 or better; overvoltage category I or II.  
The equipment shall be installed in an enclosure with a minimum ingress protection rating of IP54 unless the apparatus is intended to be afforded an equivalent degree of protection by location.  
The module is galvanically isolated and does not require grounding.  
Use 60 / 75 °C copper conductors with wire size AWG: (26-14)

**Warning:** Substitution of components may impair intrinsic safety.

**Warning:** To prevent ignition of the explosive atmosphere, disconnect power before servicing and do not separate connectors when energized and an explosive gas mixture is present.

**Warning:** Do not install or remove modules from the Power Rail when an explosive gas mixture is present.

Hazardous Classified Location Class III/II, Division 1, Group A,B,C,D,E,F,G or Class I, Zone 0/1 Group IIC, [AEx ia] IIC or Group IIC, [Ex ia Ga] IIC Gc



CH1 (terminal 41,42)  
CH2 (terminal 51,52)  
U<sub>s</sub>: 28 V  
I<sub>s</sub>: 93 mA  
P<sub>s</sub>: 0.65 W

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

## INMETRO - Desenhos para Instalação 9107QB01 – V3R0



Para instalação segura do 9107B o manual seguinte deve ser observado. O módulo deve ser instalado somente por profissionais qualificados que estão familiarizados com as leis nacionais e internacionais, diretivas e normas que se aplicam a esta área.  
Ano de fabricação pode ser obtido a partir dos dois primeiros dígitos do número de série.



Para instalação na Zona 2 o seguinte deve ser observado. O módulo de programação de 4501, deve ser utilizado apenas com os módulos PR electronics. É importante que o módulo esteja intacto e não tenha sido alterado ou modificado de qualquer maneira.  
Apenas os módulos 4501 livres de poeira e umidade devem ser instalados.

9107BA: 1 canal HART - driver transparente  
9107BB: 2 canais HART - driver transparente

INMETRO Certificado: DEKRA 16.0062X

Marcas: [Ex ia Ga] IIC/IIA/IIA  
Ex nA nC IIC T4 Gc  
[Ex ia Da] IIC  
[Ex ia Ma] I

Normas: ABNT NBR IEC 60079-0:2011, ABNT NBR IEC 60079-11:2011, ABNT NBR IEC 60079-15:2012

**Terminal de fonte de alimentação (31,32)**  
Voltagem: 19.2 – 31.2 VDC

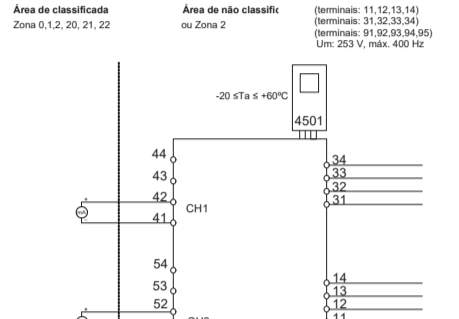
**Relé de estado terminal (33,34)**  
Instalação Zone 2  
Voltagem máx.: 125 VAC / 110 VDC  
Potência máx.: 62.5 VA / 32 W  
Corrente máx.: 0.5 A AC / 0.3 ADC

**Notas de instalação:**  
Instalação em grau de poluição 2, categoria de sobretensão II conforme definido no IEC 60664-1.  
Os circuitos não intrinsecamente seguros só podem ser conectados para sobretensão limitado a categoria III como definido no IEC 60664-1.  
Não separe conectores quando energizado ou quando uma mistura de gás explosivo estiver presente.  
Não monte ou remova módulos do trilho de alimentação quando uma mistura explosiva de gás estiver presente.  
Desligue a alimentação antes da manutenção.  
A fixação de terminais sem uso não é permitida.  
Em tipo de proteção [Ex ia Da] os parâmetros para a segurança intrínseca para grupo de gás IIB são aplicáveis.  
Para a instalação em Zona 2, o módulo deve ser instalado em um Invólucro conformidade com o tipo de proteção Ex n ou Ex e, fornecendo no mínimo grau de proteção IP54.  
Dispositivos de entrada de cabo e elementos de vedação devem cumprir com os mesmos requisitos.  
Para a instalação de trilho de energia na Zona 2, apenas o trilho de alimentação Rail 9400 fornecido pela Unidade de Controle de Potência 9410 é permitido.

In tipo de proteção [Ex ia Da] os parâmetros para a segurança intrínseca para grupo de gás IIB são aplicáveis.  
Para a instalação em Zona 2, o módulo deve ser instalado em um Invólucro conformidade com o tipo de proteção Ex n ou Ex e, fornecendo no mínimo grau de proteção IP54.  
Dispositivos de entrada de cabo e elementos de vedação devem cumprir com os mesmos requisitos.  
Para a instalação de trilho de energia na Zona 2, apenas o trilho de alimentação Rail 9400 fornecido pela Unidade de Controle de Potência 9410 é permitido.

Para a instalação de trilho de energia na Zona 2, apenas o trilho de alimentação Rail 9400 fornecido pela Unidade de Controle de Potência 9410 é permitido.

Área de classificada Zona 0, 1, 2, 20, 21, 22



CH1 (terminais 41,42)  
CH2 (terminais 51,52)  
U<sub>s</sub>: 28 V  
I<sub>s</sub>: 93 mA  
P<sub>s</sub>: 0.65 W

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

## UL Installation drawing 9107QU01 – V1R0



For safe installation of the Process Control Equipment (Associated Apparatus) 9107 the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.



For installation in Div2 / Zone2 the following must be observed.  
The 4501 programming module is to be used solely with PR electronics modules. It is important that the module is undamaged and has not been altered or modified in any way. Only 4501 modules free of dust and moisture shall be installed.

9107AA-U9: 1 channel HART<sup>®</sup> -transparent driver  
9107BA-U9: 1 channel HART<sup>®</sup> -transparent driver  
9107AB-U9: 2 channel HART<sup>®</sup> -transparent driver  
9107BB-U9: 2 channel HART<sup>®</sup> -transparent driver

Marking: Proc. Cont. Eq. for Use in Haz. Loc.  
Install in CL I, DIV2 GP A-D T4 provide IS circuits to CL I, III DIV 1 GP A-G or CL I, Zr2 GP IIC T4 provides IS circuits for CL I, Zn0 GP IIC/Zn20 GP IIC Um=253V [Exia] Installation Drawing: 9107QU01

Proc. Cont. Eq. for Use in Haz. Loc.  
Install in CL I, DIV2 GP A-D T4 or CL I, Zr2 GP IIC T4  
E233311 Installation Drawing: 9107QU01

**Standards:**  
UL 121201 NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I AND II, DIVISION 2 AND CLASS III, DIVISIONS 1 AND 2 HAZARDOUS (CLASSIFIED) LOCATIONS - Edition 9 - Revision Date 2018/08/31  
CSA C22.2 NO. 213 NONINCENDIVE ELECTRICAL EQUIPMENT FOR USE IN CLASS I AND II, DIVISION 2 AND CLASS III, DIVISIONS 1 AND 2 HAZARDOUS (CLASSIFIED) LOCATIONS - Edition 3 - Issue Date 2017/09/01  
UL 913 STANDARD FOR INTRINSICALLY SAFE APPARATUS AND ASSOCIATED APPARATUS FOR USE IN CLASS I, II, DIVISION 1, HAZARDOUS (CLASSIFIED) LOCATIONS - Edition 8 - Revision Date 2015/10/16  
CSA C22.2 NO. 60079-0 EXPLOSIVE ATMOSPHERES — PART 0: EQUIPMENT — GENERAL REQUIREMENTS - Edition 3 - Issue Date 2015/10/01  
CSA C22.2 NO. 60079-11:14 EXPLOSIVE ATMOSPHERES — PART 11: EQUIPMENT PROTECTION BY INTRINSIC SAFETY "I" - Edition 2 - Issue Date 2014/02/01

**Installation notes 9107Ax and 9107Bx:**  
The module must be installed in a tool-secured enclosure suitable for the application in accordance with the National Electrical Code (ANSI/NFPA 70) for installation in the United States, the Canadian Electrical Code for installations in Canada, or other local codes, as applicable.  
The module is galvanically isolated and does not require grounding.  
Terminal 41, 42, 43, 44 are internally connected to CH1.  
Terminal 51, 52, 53, 54 are internally connected to CH2.  
Install in pollution degree 2, overvoltage category II in accordance with IEC 60664-1.  
Use minimum 75 °C copper conductors with wire size AWG: (26-14)

**Warning:** Substitution of components may impair intrinsic safety.  
**Avvertimento:** La sostituzione dei componenti può nuocere alla sicurezza intrinseca.  
There are no serviceable parts in the equipment and no component substitution is permitted.  
**Warning:** To prevent ignition of the explosive atmosphere, disconnect power before servicing and do not separate connectors, install or remove module from Power Rail when energized and an explosive gas mixture is present.  
**Avvertimento:** Per evitare l'infiammazione di atmosfere esplosive, sconnettete l'alimentazione avanti les operazioni d'intervento. Ne montez pas ou n'enlevez pas les connecteurs quand le module est sous tension et en présence d'un mélange de gaz. Ne montez pas ou n'enlevez pas les modules du rail d'alimentation en présence d'un mélange de gaz.

**Installation notes 9107Bx:**  
Associated Equipment / Appareillage Associé [Ex ia]  
The Ex output current of this associated apparatus is limited by a resistor such that the output voltage-current plot is a straight line drawn between open-circuit voltage and short-circuit current.  
Selected intrinsically safe equipment must be third party listed as intrinsically safe for the application, and have intrinsic safety parameters conforming with Table 1 below.

**TABLE 1:**  
I.S. Equipment Associated Apparatus  
V max (or U<sub>i</sub>) ≥ V<sub>oc</sub> or V<sub>t</sub> (or U<sub>o</sub>)  
I max (or I<sub>s</sub>) ≥ I<sub>sc</sub> or I<sub>t</sub> (or I<sub>o</sub>)  
P max, P<sub>i</sub> ≥ P<sub>o</sub>  
C<sub>i</sub> + C<sub>cab</sub> ≥ C<sub>a</sub> (or C<sub>o</sub>)  
L<sub>i</sub> + L<sub>cab</sub> ≤ L<sub>a</sub> (or L<sub>o</sub>)

The module may also be connected to a simple apparatus as defined in Article 504.2 and installed in temperature classified in accordance with Article 504.10(D) of the National Electrical Code (ANSI/NFPA 70), or other local codes, as applicable.

## UL Installation drawing 9107QU01 – V1R0

Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations as shown in Table 1. Cable capacitance, C<sub>c</sub>, plus intrinsically safe equipment capacitance, C<sub>i</sub>, must be less than the marked capacitance, C<sub>a</sub> (or C<sub>o</sub>), shown on any associated apparatus used. The same applies for inductance (L<sub>cab</sub>, L<sub>i</sub> and L<sub>a</sub> or L<sub>o</sub>, respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: C<sub>cab</sub> = 60 pF/ft., L<sub>cab</sub> = 0.2 µH/ft.

Where multiple circuits extend from the same piece of associated apparatus, they must be installed in separate cables or in one cable having suitable insulation. Refer to Article 504.30(B) of the National Electrical Code (ANSI/NFPA 70) and Instrument Society of America Recommended Practice ISA RP12.06 for installing intrinsically safe equipment.

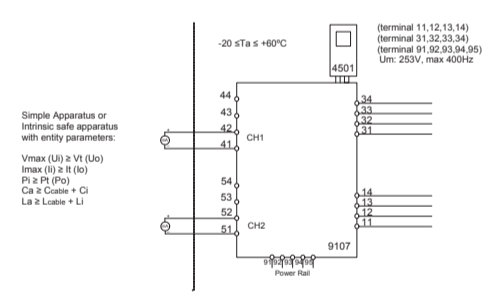
Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 of the National Electrical Code (ANSI/NFPA 70) or other local codes, as applicable.

The module has not been evaluated for use in combination with another associated apparatus.

For installations in which both the C<sub>i</sub> and L<sub>i</sub> of the intrinsically safe apparatus exceeds 1% of the C<sub>a</sub> (or C<sub>o</sub>) and L<sub>a</sub> (or L<sub>o</sub>) parameters of the associated apparatus (excluding the cable), then 50% of C<sub>a</sub> (or C<sub>o</sub>) and L<sub>a</sub> (or L<sub>o</sub>) parameters are applicable and shall not be exceeded. The reduced capacitance shall not be greater than 1 µF for Groups C and/or D, and 600 nF for Groups A and B. The values of C<sub>a</sub> (or C<sub>o</sub>) and L<sub>a</sub> (or L<sub>o</sub>) determined by this method shall not be exceeded by the sum of all of C<sub>i</sub> plus cable capacitances and the sum of all of the L<sub>i</sub> plus cable inductances in the circuit respectively.

**9107Bx Installation:**  
Hazardous Classified Location Class I / II / III, Division 1, Group A,B,C,D,E,F,G or Class I, Zone 0 / 1 / 2 Group IIC, IIB, IIA or Zone 20/21

Unclassified Location or Hazardous Classified Location Class I, Division 2, Group A,B,C,D,T4 Class I, Zone 2, Group IIC, IIB, IIA T4



CH1 (terminal 41,42)  
CH2 (terminal 51,52)  
V<sub>oc</sub> or U<sub>s</sub>: 28 Vdc  
I<sub>sc</sub> or I<sub>s</sub>: 93 mA  
P<sub>s</sub>: 0.65 W

	IIC	IIB	IIA	I
C <sub>s</sub>	0.080µF	0.650µF	2.15 µF	3.76 µF
L <sub>s</sub>	4 mH	16 mH	32 mH	35 mH

**Supply terminal (31,32)**  
Voltage: 19.2 – 31.2 VDC

**Status Relay, terminal (33,34)**  
Class I Division 2 or Zone 2 Installation  
Voltage max: 32 VAC / 32 VDC  
Current max: 0.5 AAC / 0.3 ADC

**9107Ax and 9107Bx installation:**  
Unclassified Location or Hazardous Classified Location Class I, Division 2, Group A,B,C,D,T4 Class I, Zone 2, Group IIC, IIB, IIA T4

**Supply terminal (31,32)**  
Voltage: 19.2 – 31.2 VDC

**Status relay, terminal (33,34)**  
Class I Division 2 or Zone 2 Installation:  
Voltage max: 32 VAC / 32 VDC  
Current max: 0.5 AAC / 0.3 ADC



## EU DECLARATION OF CONFORMITY



(9107DoC\_102)

As manufacturer PR electronics A/S, Lerbakken 10, DK-8410 Rønde hereby declares that the following products:

Type: 9107  
Name: HART transparent driver  
From serial no.: 151333064

is in conformity with the following directives and standards:  
The EMC Directive 2014/30/EU and later amendments  
EN 61326-1 : 2013

Immunity test requirements for equipment intended to be used in an industrial electromagnetic environment. For specification of the acceptable EMC performance level, refer to the electrical specifications for the device.  
The Low Voltage Directive 2014/35/EU and later amendments  
EN 61010-1 : 2010

The ATEX Directive 2014/34/EU and later amendments  
EN 60079-0 : 2012, EN 60079-11 : 2012, EN 60079-15 : 2010 and EN 60079-26 : 2007  
ATEX certificate: PR 14ATEX0101 X (9107A)

ATEX certificate: DEKRA 11ATEX0247 X (9107B)  
No changes are required to enable compliance with the replacement standards:  
EN 60079-0 : 2012 + A11 : 2013

ATEX notified body (type approval)  
DEKRA Certification B.V.  
Meander 1051, 6825 MJ Arnhem  
P.O. Box 5185, 6802 ED Arnhem  
The Netherlands

The RoHS2 Directive 2011/65/EU and later amendments  
EN 50581 : 2012

Notified body 0344  
DEKRA Certification B.V.  
Meander 1051, 6825 MJ Arnhem  
P.O. Box 5185, 6802 ED Arnhem  
The Netherlands

Rønde, 16 January 2018

Stig Lindemann, CTO  
Manufacturer's signature