



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.:	IECEX KEM 09.0001X	Issue No: 4	<u>Certificate history:</u>
Status:	Current	Page 1 of 4	Issue No. 4 (2015-02-24)
Date of Issue:	2015-02-24		Issue No. 3 (2012-01-31)
Applicant:	PRelectronics A/S Lerbakken 10 8410 Rønde Denmark		Issue No. 2 (2010-03-10)
Electrical Apparatus:	Solenoid / Alarm driver, Type 9203B1..., Type 9203B2.. and Type 9203A... .		Issue No. 1 (2009-12-23)
Optional accessory:	<i>Display module, Type 4501</i>		Issue No. 0 (2009-01-16)
Type of Protection:	Ex i, Ex n		
Marking:	Type 9203B...: [Ex ia Ga] IIC/IIB/IIA [Ex ia Da] IIIC [Ex ia Ma] I Type 9203A... and Type 9203B...: Ex nA nC IIC T4 Gc		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

2015-02-24

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.
Meander 1051
6825 MJ Arnhem
The Netherlands





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Manufacturer: **PRElectronics A/S**
Lerbakken 10
8410 Rønde
Denmark

Additional 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 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

*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/KEM/ExTR09.0001/04](#)

Quality Assessment Report:

[NL/DEK/QAR13.0017/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Solenoid / Alarm drivers Type 9203B1..., Type 9203B2.. and Type 9203A..., for rail mounting, are 24 V powered isolating barriers, converting digital signals from PLC's and other equipment into signals for driving valves, solenoids and light emitting diodes located in a hazardous area.

Solenoid / Alarm driver Type 9203... is supplied via terminals, or via Power Rail Type 9400.
Removable display module 4501 can be used for programming of the Solenoid / Alarm driver.

Ambient temperature range -20°C to $+60^{\circ}\text{C}$.

Electrical data:

See attached "Annex to IECEx KEM 09.0001X Issue 4.pdf".

Type designation:

Attached "Annex to IECEx KEM 09.0001X Issue 4.pdf" provides detailed Nomenclature of the approved Solenoid / Alarm driver, Type 9203B1..., Type 9203B2.. and Type 9203A... .

CONDITIONS OF CERTIFICATION: YES as shown below:

If the Solenoid / Alarm driver is installed in an explosive atmosphere where equipment protection level Gc is required, the following specific conditions of use apply:

The Solenoid / Alarm 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, and providing a pollution degree 2 or better as defined in IEC 60664-1. Cable entry devices and blanking elements shall fulfil the same requirements.

Removable Display Module 4501, when connected to the Solenoid / Alarm driver , may not be damaged and shall be free of dust and moisture.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Hardware changes, not affecting the type of protection.
Addition of models 9203A* for zone 2.
Update to the EN60079-15: 2010

Annex:

[Annex to IECEx KEM 09.0001X issue 4.pdf](#)

Annex 1 to Certificate of Conformity IECEx KEM 09.0001 X, issue 4
Annex 1 to IECEx Test Report NL/KEM/ExTR09.0001/04
Annex 1 to EC-Type Examination Certificate KEMA 07ATEX0147 X, issue 5

Electrical data

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

Digital input (terminals 11, 12 and 13, 14): $U \leq 28 \text{ Vdc}$

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 Pulse Isolator 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.

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

Solenoid / Alarm driver, Type 9203A..., output circuits (terminals 41 ... 44 resp. 51 ... 54):
in type of protection Ex nA, with $U_{max} = 28 \text{ V}$, $I_{max} = 135 \text{ mA}$ and $P_{max} = 0.95 \text{ W}$.

Solenoid / Alarm driver, Type 9203B1.. and Type 9203B2.. output circuits (terminals 41 ... 44 and 51 ... 54):
in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

9203B1A, 9203B1B Terminal 41-42, resp. Terminal 51-52			C_o	L_o	L_o/R_o
U_o	28V	IIC	80nF	4.2mH	54 μ H/ Ω
I_o	93 mA	IIB	640nF	16.8mH	218 μ H/ Ω
P_o	0.65W	IIA	2.1 μ F	32.6mH	436 μ H/ Ω
		I	3.76 μ F	32.6mH	436 μ H/ Ω

9203B2A Terminal 41-42			C_o	L_o	L_o/R_o
U_o	28V	IIC	80nF	2.69mH	44 μ H/ Ω
I_o	115mA	IIB	640nF	10.8mH	176 μ H/ Ω
P_o	0.81W	IIA	2.1 μ F	20.8mH	353 μ H/ Ω
		I	3.76 μ F	20.8mH	353 μ H/ Ω

9203B1A, 9203B1B Terminal 41-43 resp. Terminal 51-53			C_o	L_o	L_o/R_o
U_o	28V	IIC	80nF	3.5mH	54 μ H/ Ω
I_o	100mA	IIB	640nF	14.2mH	218 μ H/ Ω
P_o	0.70W	IIA	2.1 μ F	27.6mH	436 μ H/ Ω
		I	3.76 μ F	27.6mH	436 μ H/ Ω

9203B2A Terminal 41-43			C_o	L_o	L_o/R_o
U_o	28V	IIC			
I_o	125mA	IIB	640nF	9.1mH	163 μ H/ Ω
P_o	0.88W	IIA	2.1 μ F	17.6mH	327 μ H/ Ω
		I	3.76 μ F	17.6mH	327 μ H/ Ω

Annex 1 to Certificate of Conformity IECEx KEM 09.0001 X, issue 4
Annex 1 to IECEx Test Report NL/KEM/ExTR09.0001/04
Annex 1 to EC-Type Examination Certificate KEMA 07ATEX0147 X, issue 5

9203B1A,9203B1B Terminal 41-44 resp. Terminal 51-54			C _o	L _o	L _o /R _o
U _o	28V	IIC	80nF	2.9mH	46μH/Ω
I _o	110mA	IIB	640nF	11.8mH	184μH/Ω
P _o	0.77W	IIA	2.1μF	22.8mH	369μH/Ω
		I	3.76μF	22.8mH	369μH/Ω

9203B2A Terminal 41-44			C _o	L _o	L _o /R _o
U _o	28V	IIC			
I _o	135mA	IIB	640nF	7.8mH	150μH/Ω
P _o	0.95W	IIA	2.1μF	15.1mH	301μH/Ω
		I	3.76μF	15.1mH	301μH/Ω

For group IIIC, the parameters of group IIB apply.

The intrinsically safe output circuits are infallibly galvanically isolated from the non-intrinsically safe circuits, and from each other.

Type designation

Detailed Nomenclature of the approved Solenoid / Alarm driver, Type 9203B1.., Type 9203B2.. and Type 9203A... is as follows:

Type	Installation	Current Output	Channels	Input
9203	Non Ex / Zone 2 :A	Low current :1	Single :A	Standard :-
			Double :B	PNP :1
	Ex-Barrier / Zone 2 :B	High current :2	Single :A	NPN :2