



# 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](http://www.iecex.com)

Certificate No.: IECEx BVS 12.0090X issue No.: 0 Certificate history: \_\_\_\_\_

Status: **Current**

Date of Issue: 2012-12-18 Page 1 of 3

Applicant: **G.M. International S.R.L.**  
Via San Fiorano 70  
20852 Villasanta (MB)  
Italy

Electrical Apparatus: **DIN Rail Isolator, type D5231E, D5231E-xxx**  
Optional accessory:

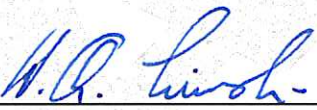
Type of Protection: **Equipment protection by intrinsic safety "i", Equipment protection by type of protection "n", Equipment with equipment protection level (EPL) Ga**

Marking: **Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I**

Approved for issue on behalf of the IECEx Certification Body: H.-Ch. Simanski

Position: Head of Certification Body

Signature:  
(for printed version)

  
\_\_\_\_\_  
18/12/2012

Date:

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.

Certificate issued by:

**DEKRA EXAM GmbH**  
Dinnendahlstrasse 9  
44809 Bochum  
Germany

 **DEKRA**  
DEKRA EXAM GmbH



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Manufacturer: **G.M. International S.R.L.**  
Via San Fiorano 70  
20852 Villasanta (MB)  
**Italy**

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:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-11 : 2011-06</b> Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-15 : 2010</b> Edition: 4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
<b>IEC 60079-26 : 2006</b> Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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:  
DE/BVS/ExTR12.0096/00

Quality Assessment Report:

NO/DNV/QAR07.0005/04





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## Schedule

### EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

#### General product information:

The DIN Rail Isolators provide intrinsically safe supply- and/or signal circuits intended for interconnection to IS equipment installed in hazardous areas requiring Group I, Group IIA, IIB, IIC or Group IIIC equipment.

Electronic components of DIN Rail Isolators are arranged on printed-circuit-boards (PCB) packaged in plastic enclosures suitable for installation on T35 DIN Rails.

The DIN Rail Isolators provide safe galvanic separation between intrinsically safe circuits and non-intrinsically safe signal circuits / non-intrinsically safe power supply on the PCB up to a sum of peak values of rated voltages of 375 V.

#### Type Code:

Switch/Proximity Repeater type D5231E, D5231E-xxx  
(Option 'xxx' = non Ex -relevant details of function)

#### Description:

Switch/Proximity Repeater type D5231E, D5231E-xxx

Switch/Proximity Repeater type D5231E, D5231E-xxx provide 8-channel conversion of intrinsically safe proximity sensor signals or voltage free contact signals from equipment located in potentially hazardous areas into non-IS open collector outputs.

Available versions of the Switch/Proximity Repeater type D5231E, D5231E-xxx:

8-channel common ground type only.

#### Ratings:

see Annex

### CONDITIONS OF CERTIFICATION: YES as shown below:

#### 1. Group I application:

DIN Rail Isolators of type series D5\*\*\*\*, D5\*\*\*\*-xxx shall be installed outside the hazardous area or alternatively in an enclosure providing a suitable type of protection according to separate certification.

#### 2. Group II application:

DIN Rail Isolators of type series D5\*\*\*\*, D5\*\*\*\*-xxx shall be installed:

- outside the hazardous area, or
- shall be mounted inside an enclosure, which is in accordance with IEC 60079-15 in case of alternative installation in areas requiring EPL Gc equipment.

#### 3. Group III application:

DIN Rail Isolators of type series D5\*\*\*\*, D5\*\*\*\*-xxx shall be installed outside the hazardous area.

#### 4. General:

The installation of DIN Rail Isolators of type series D5\*\*\*\*, D5\*\*\*\*-xxx shall be carried out in such a way that the clearances of un-insulated conductors of intrinsically safe circuits to grounded metal parts of the enclosure are at least 3 mm, and un-insulated conductors of non-intrinsically safe circuits of other apparatus are situated at least 50 mm from terminals for external intrinsically safe circuits, or are separated from them by an insulating barrier according to clause 6.2.1 of IEC 60079-11:2011.



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Annex  
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**Ratings:**

- 1 Non intrinsically safe circuits
- 1.1 Power supply

DIN Rail Isolator version	Voltage		Power
	$U_n$	$U_m$	$P_n$
	DC [V]	AC [V]	[W]
D5231E, D5231E-xxx	24	250	≤ 1.9

1.2 Input / output signal circuits

Voltage  $U_m$  = AC 250 V

2 Intrinsically safe circuits level of protection Ex ia IIC / IIB / IIA / I / IIIC

Single channel parameters		DIN Rail Isolator type D5231E, D5231E-xxx
Channel / Terminals	1	21-13
	2	21-14
	3	22-15
	4	22-16
	5	23-17
	6	23-18
	7	24-19
	8	24-20
Voltage $U_o$		DC 11.2 V
Current $I_o$		12 mA
Power $P_o$		34 mW
Voltage $U_i$		N / A
Current $I_i$		N / A
Power $P_i$		N / A
Effective internal capacitance $C_i$		0 nF
Effective internal inductance $L_i$		0 nH
Max. external capacitance $C_o$	IIC	1.84 $\mu$ F
	IIB IIIC	12.6 $\mu$ F
	IIA	54 $\mu$ F
	I	58 $\mu$ F
Max. external inductance $L_o$	IIC	246.9 mH
	IIB IIIC	987.6 mH
	IIA	1975 mH
	I	3240 mH
Max. inductance / resistance ratio $L_o/R_o$	IIC	1.07 mH/ $\Omega$
	IIB IIIC	4.28 mH/ $\Omega$
	IIA	8.55 mH/ $\Omega$
	I	14.03 mH/ $\Omega$
Characteristics		linear
Ambient temperature range		-40 °C ≤ $T_a$ ≤ +70 °C
Remark: N / A = not applicable		