Translation

(1) EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 12 ATEX E 122 X**

(4) Equipment: **Switch/Proximity repeater type D5231E / D5231E-xxx**

(5) Manufacturer: **GM International S.R.L.**

(6) Address: **Via San Fiorano 70, 20852 Villasanta (MB), Italy**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 the test and assessment report BVS PP 12.2192 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009	**General requirements**
EN 60079-11:2012	**Intrinsic safety ´i´**
EN 60079-15:2010	**Type of protection 'n'**
EN 60079-26:2007	**Equipment with equipment protection level (EPL) Ga**
EN 50303:2000	**Equipment Group I Category M1**

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to 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 3(1)G Ex nA [ia Ga] IIC T4 Gc
II (1)D [Ex ia Da] IIIC
I (M1) [Ex ia Ma] I

DEKRA EXAM GmbH
Bochum, dated 10.12.2012

Signed: Simanski
Certification body

Signed: Eickhoff
Special services unit

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(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 12 ATEX E 122 X

(15) 15.1 Subject and type

Switch/Proximity repeater type D5231E / D5231E-xxx

(Option 'xxx' = non Ex -relevant details of function)

The Switch/Proximity repeater is a new model of DIN Rail Isolator type series D5**** / D5****-xxx.

15.2 Description

The Switch/Proximity repeater is designed as associated apparatus and designated for installation in the safe area or alternatively in areas requiring EPL Gc equipment.

The Switch/Proximity repeater provides 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 the Switch/Proximity repeater are arranged on printed-circuit-boards (PCB) packaged in plastic enclosures suitable for installation on T35 DIN Rails.

The Switch/Proximity repeater provides 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.

The Switch/Proximity Repeater type D5231E / D5231E-xxx provides 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.

15.3 Parameters

15.3 1 Non-intrinsically safe circuits

15.3.1.1 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

15.3.1.2 Output signal circuits

Voltage U_m = AC 250 V

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15.3.2 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 µF
	IIB IIIC	12.6 µF
	IIA	54 µF
	I	58 µF
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/Ω
	IIB IIIC	4.28 mH/Ω
	IIA	8.55 mH/Ω
	I	14.03 mH/Ω
Characteristics		linear
Ambient temperature range		-40 °C ≤ T_a ≤ +70 °C
Remark: N / A = not applicable		

(16) Test and Assessment Report
BVS PP 12.2192 EG as of 10.12.2012

(17) Special conditions for safe use

17.1 Group I application

The Switch/Proximity repeater type D5231E / D5231E-xxx shall be installed outside the hazardous area or alternatively in an enclosure providing a suitable type of protection according to separate certification.

For Group I application interconnection of the Switch/Proximity repeater with other electrical apparatus to an intrinsically safe electrical system shall be assessed in a System Certificate, if required in local installation rules.

17.2 Group II application (Gas)

The Switch/Proximity repeater type D5231E / D5231E-xxx shall be installed:
- outside the hazardous area, or
- shall be mounted inside an enclosure, which is in accordance with EN 60079-15:2010 in case of alternative installation in areas requiring EPL Gc equipment.

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17.3 Group II application (Dust)

The Switch/Proximity repeater type D5231E / D5231E-xxx shall be installed outside the hazardous area.

17.4 General

The installation of the Switch/Proximity repeater type D5231E / D5231E-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 EN 60079-11:2012.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 10.12.2012
BVS-Scha/Sch A 20120910

Certification body

Special services unit

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