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 053 X**

(4) Equipment: **DIN Rail Isolator type D5072*, D5072*-xxx, D5273S, D5273S-xxx**

(5) Manufacturer: **G.M. 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 12.2099 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:

I or II extended with the applicable category- and type of protection-marking; see tables in 15.1

DEKRA EXAM GmbH
Bochum, dated 10.07.2012

Signed: Simanski
Certification body

Signed: U. Hauke
Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 12 ATEX E 053 X

(15) 15.1 Subject and type

DIN Rail Isolators type series D5****, D5****-xxx comprises the following models:

Temperature Converter	type	D5072*, D5072*-xxx
Temperature Converter and Trip Amplifier	type	D5273S, D5273S-xxx

In the full designation of type D5072*, D5072*-xxx the "*" is replaced by letters marking details of the construction as follows:

S	= single channel	S-xxx	= single channel
D	= dual channel	D-xxx	= dual channel

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

Allocation of different versions of the DIN Rail Isolators type series D5****, D5****-xxx to temperature class and apparatus category shall be achieved from the following table:

DIN Rail Isolator type code	Type of protection (Gas)	Type of protection (Dust)	Type of protection (Mining)
D5072S / D5072S-xxx	II 3(1) G Ex nA [ia Ga] IIC T4 Gc	II (1) D [Ex ia Da] IIIC	I (M1) [Ex ia Ma] I
D5072D / D5072D-xxx	II 3(1) G Ex nA [ia Ga] IIC T4 Gc	II (1) D [Ex ia Da] IIIC	I (M1) [Ex ia Ma] I
D5273S / D5273S-xxx	II 3(1) G Ex nA nC [ia Ga] IIC T4 Gc	II (1) D [Ex ia Da] IIIC	I (M1) [Ex ia Ma] I

15.2 Description

The DIN Rail Isolators are designed as associated apparatus and designated for installation in the safe area or alternatively in areas requiring EPL Gc 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.

Temperature Converter type D5072S, D5072S-xxx, D5072D, D5072D-xxx
Temperature Converter types D5072*, D5072*-xxx provide single or dual channel conversion of intrinsically safe temperature signals (e.g. thermocouples 2, 3, 4 wire resistance temperature detectors RTD), 'mV' sources or transmitting potentiometers from equipment located in potentially hazardous areas.

Available versions of the Temperature Converter: single channel: type D5072S, D5072S-xxx. dual channel: type D5072D, D5072D-xxx.

Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx
Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx provide single channel conversion of intrinsically safe signals produced by temperature sensors (i.e. thermocouples, 2, 3, 4 wires resistances, RTD temperature detectors), 'mV' sources or transmitting potentiometers from equipment located in potentially hazardous areas and repeats the signals to drive a Safe Area/Location load. In addition, two independent alarm trip amplifiers are provided. Each alarm energizes or de-energizes an SPDT relay with a rating up to 250 V, 6 A for alarm functions. The two alarm relays trip points are settable over the entire input signal range.
Available versions of the Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx: single channel only.

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

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]
D5072S, D5072S-xxx	24	250	≤ 1
D5072D, D5072D-xxx	24	250	≤ 1.5
D5273S, D5273S-xxx	24	250	≤ 1.5

15.3.1.2 Input / output signal circuits

Voltage U_m = AC 250 V

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

15.3.2.1 Temperature Converter type D5072S, D5072S-xxx, D5072D, D5072D-xxx
Level of protection: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

15.3.2.2 Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx
Level of protection: Ex nA nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Single channel parameters		DIN Rail Isolator type		
		D5072S, D5072S-xxx	D5072D, D5072D-xxx	D5273S, D5273S-xxx
Channel / Terminals	1	7-8-9-10	7-8-9	13-14-15-16
	2	N / A	10-11-12	N / A
Voltage U_o		DC 7,2 V	DC 7,2 V	DC 7,2 V
Current I_o		23 mA	16 mA	23 mA
Power P_o		40 mW	27 mW	40 mW
Voltage U_i		DC 12.8 V	DC 12.8 V	DC 12.8 V
Current I_i		28.7 mA	N / A	28.7 mA
Power P_i		N / A	N / A	N / A
Effective internal capacitance C_i		0 nF	0 nF	0 nF
Effective internal inductance L_i		0 nH	0 nH	0 nH
Max. external capacitance C_o	IIC	13.5 µF	13.5 µF	13.5 µF
	IIB IIIC	240 µF	240 µF	240 µF
	IIA	1000 µF	1000 µF	1000 µF
	I	1000 µF	1000 µF	1000 µF
Max. external inductance L_o	IIC	67.2 mH	138 mH	67.2 mH
	IIB IIIC	268,8 mH	555 mH	268,8 mH
	IIA	537.7 mH	1111 mH	537.7 mH
	I	882.2 mH	1822 mH	882.2 mH
Max. inductance / resistance ratio L_o/R_o	IIC	0.875 mH/Ω	1.29 mH/Ω	0.875 mH/Ω
	IIB IIIC	3.5 mH/Ω	5.16 mH/Ω	3.5 mH/Ω
	IIA	7 mH/Ω	10.33 mH/Ω	7 mH/Ω
	I	11.48 mH/Ω	16.95 mH/Ω	11.48 mH/Ω
Characteristics		linear	linear	linear
Ambient temperature range		-40 °C ≤ T_a ≤ +70 °C		
Remark: N / A = not applicable				

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(16) Test and Assessment Report
BVS PP 12.2099 EG as of 10.07.2012

(17) Special conditions for safe use

17.1 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.

For Group I application interconnection of DIN Rail Isolators of type series D5****, D5****-xxx 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)

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 EN 60079-15:2010 in case of alternative installation in areas requiring EPL Gc equipment.

17.3 Group II application (Dust)

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

17.4 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 bare conductors of intrinsically safe circuits to grounded metal parts of the enclosure are at least 3 mm, and bare 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, 10.07.2012
BVS-Scha/Sch A 20120131

Certification body

Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com