Translation

(1) # EC-Type Examination Certificate

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

(3) ## DMT 01 ATEX E 042 X

(4) **Equipment:** **Eurocard / DIN Rail Isolators E10** / D10** series**

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

(6) **Address:** **I - 20058 Villasanta (MI)**

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

(8) The certification body of Deutsche Montan Technologie 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 00.22010 EG and the supplements 1 to 3.

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

EN 50014:1997+A1-A2	General requirements
EN 50020:1994	Intrinsic safety ´i´
EN 50284:1999	Category 1G

(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 schedule 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:

Ex II (1) G [EEx ia] IIC / IIB / IIA
I M2 [EEx ia] I

Deutsche Montan Technologie GmbH
Essen, dated 15.03.2001

Signed: Signed:

DMT-Certification body Head of special services unit

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Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

(13) Appendix to

(14) # EC-Type Examination Certificate

DMT 01 ATEX E 042 X

(15) 15.1 Subject and type

The Eurocard / DIN Rail Isolators E10** / D10** series comprises the subsequent devices:

Repeater Power Supply	Type E1010*, E1011*, E1012*, E1013*, E1014*, E1019* Type D1010*
Powered Isolating Driver	Type E1020*, E1021* Type D1020*, D1021S
Switch/Proximity Repeater	Type E1030*, E1031*, E1032*, E1038*, E1039* Type D1030*, D1031*
Analogue Signal / Temperature Converter	Type E1058*, E1059*, E1070*, E1078*, E1079* Type D1050*, D1052*, D1053*, D1070*, D1072*, D1073*
Repeater Power Supply + Powered Isolating Driver	Type D1025S
Digital Output	Type D1040Q, D1041Q, D1042Q, D1043Q
Digital Output	Type PSD1001

(In the full designation the "*" is replaced by a letter marking details of construction as follows:
S = single channel; D = dual channel; Q = quad channel; X = single channel / two analogue-outputs;
Y = dual channel / dual analogue-output)

15.2 Description

The Eurocard / DIN Rail Isolators of E10** / D10** series are associated apparatus providing single or multi-channel intrinsically safe power supply for electrical apparatus and/or transmission of data signals between non intrinsically safe and intrinsically safe circuits.

Electronic components of Eurocard Isolators of E10** series are arranged on a printed-circuit-board (PCB) designed as plug in Standard Eurocard for 19" rack mounting.

Electronic components of DIN Rail Isolators of D10** series are arranged on printed-circuit-boards (PCB) packaged in a plastic enclosure suitable for installation on DIN Rails.

Terminals for the intrinsically safe supply and signal circuits and for the non intrinsically safe circuits are interconnected to terminals placed at the front side of the enclosure.

The Eurocard / DIN Rail Isolators of E10** / D10** series provide safe galvanic separation between intrinsically safe supply and signal circuits and non intrinsically safe signal circuits and power supply on the PCB up to a sum of peak values of rated voltages of 375 V.

The Eurocard / DIN Rail Isolators of E10** / D10** series is designated for installation in the safe area and is suitable to provide intrinsically safe power supply for equipment installed in areas requiring category 1G, 1/2G, 2G or M1, M2 apparatus.

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DMT

15.3 Parameters

15.1 Non intrinsically safe circuits

15.1.1 Power supply

Eurocard / DIN Rail Isolator Type	Voltage U_n	U_m	Power consumption P_n
E1010*, E1011*, E1012*, E1013*, E1014*, E1019*, D1010*, D1020*, D1021S	DC 24 V (20 - 30 V)	AC 250 V	2.9 W
E1020*, E1021*, E1070*	DC 24 V (20 - 30 V)	AC 250 V	2 W
E1030*, E1031*, E1032*, E1038*, E1039*, D1030*, D1031*	DC 24 V (20 - 30 V)	AC 250 V	1.9 W
D1025S	DC 24 V (20 - 30 V)	AC 250 V	3.1 W
D104*Q, PSD1001	DC 24 V (20 - 30 V)	AC 250 V	3 W
D1050*, D1052*, D1053*, E1058*, E1059*, D1070*, D1072*, D1073*, E1078*, E1079*	DC 24 V (20 - 30 V)	AC 250 V	1.8 W

15.1.2 Input / output signal circuits

Voltage U_m = AC 250 V

15.2 Intrinsically safe circuits (Eurocard /DIN Rail Isolators)

15.2.1 Types E101**, E102**, E103**

Single channel parameters		Eurocard Isolator Type		
		E1010*, E1011*, E1012*, E1013*, E1014*, E1019*	E1020*, E1021*	E1030*, E1031*, E1032*
Voltage U_o		DC 22,63 V*)	DC 21,53 V	DC 9,58 V
Current I_o		92,96 mA *)	89,17 mA	9,7 mA
Power P_o		600 mW *)	576 mW	23,2 mW
max. external capacitance C_o	IIC	148 nF	174 nF	3,6 µF
	IIB	1,06 µF	1,19 µF	26 µF
	IIA	3,83 µF	4,44 µF	210 µF
max. external inductance L_o	IIC	4,2 mH	4,47 mH	330 mH
	IIB	15 mH	18 mH	1,42 H
	IIA	33 mH	35 mH	2,84 H
max. external capacitance C_o and inductance L_o (combined installation)	IIC	57,5 nF 1,15 mH	64,7 nF 1,25 mH	400 nF 30 mH
	IIB	134,8 nF 1,15 mH	150 nF 1,25 mH	759,5 nF 30 mH
	IIA	212,4 nF 1,15 mH	235,7 nF 1,25 mH	1,19 µF 30 mH
max. inductance/resistance ratio L_o/R_o	IIC	61,7 µH/Ω	61,7 µH/Ω	1,53 mH/Ω
	IIB	246,9 µH/Ω	246,9 µH/Ω	6,12 mH/Ω
	IIA	493,8 µH/Ω	493,8 µH/Ω	12,24 mH/Ω
Characteristics		trapezoidal	trapezoidal	Linear
Current limiting resistor		≥ 289.8 Ω	≥ 289.8 Ω	--

*) 3-wire circuit "+", "signal", "GND" sum of parameters

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15.2.2 Eurocard Isolator Types E1010*, E1011*, E1012*, E1013*, E1014*, E1019* used as 2-wire input "signal", "GND"

Single channel parameters

2-wire connection	(-IN --> +IN)		
Voltage	U_o	=	1.1 V
Current	I_o	=	44.63 mA
Power	P_o	=	13 mW
Characteristics			linear
max. internal capacitance	C_i	=	1.05 nF
max. internal inductance			negligible

15.2.3 Types D101**, D103**, E107**

Single channel parameters		DIN Rail / Eurocard Isolator Type		
		D1010*	D1030*, D1031*, E1038*, E1039*	E1070*
Voltage U_o		DC 26,94 V *)	DC 10,86 V	DC 12,1 V
Current I_o		92,96 mA *)	14,63 mA	4,6 mA
Power P_o		625 mW *)	39,7 mW	13,8 mW
max. external capacitance C_o	IIC	89 nF	2,05 µF	1,37 µF
	IIB	705 nF	14,4 µF	8,7 µF
	IIA	2,32 µF	63 µF	34 µF
max. external inductance L_o	IIC	4,2 mH	165 mH	1,68 H
	IIB	15 mH	661 mH	6,72 H
	IIA	33 mH	1,32 H	13,44 H
max. external capacitance C_o and inductance L_o (combined installation)	IIC	40,1 nF 1,15 mH	252,5 nF 30 mH	205 nF 472 mH
	IIB	96 nF 1,15 mH	589,1 nF 30 mH	478 nF 472 mH
	IIA	158,8 nF 1,15 mH	925,8 nF 30 mH	751 nF 472 mH
max. inductance/resistance ratio L_o/R_o	IIC	56,5 µH/Ω	0,89 mH/Ω	2,55 mH/Ω
	IIB	226,1 µH/Ω	3,58 mH/Ω	10,23 mH/Ω
	IIA	452,3 µH/Ω	7,16 mH/Ω	20,45 mH/Ω
Characteristics		linear	linear	linear
Current limiting resistor		--	--	--

*) 3-wire circuit "+", "signal", "GND" sum of parameters

15.2.4 DIN Rail Isolator Type D1010* used as 2-wire input "signal", "GND"

Single channel parameters

2-wire connection	(-IN --> +IN)		
Voltage	U_o	=	1.1 V
Current	I_o	=	44.63 mA
Power	P_o	=	13 mW
Characteristics			linear
max. internal capacitance	C_i	=	1.05 nF
max. internal inductance			negligible

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15.2.5 Types D1050*, D1052*, D1053*, E1058*, E1059, D1070*, D1072*, D1073*, E1078*, E1079*, D1020*, D1025S

Single channel parameters		DIN Rail / Eurocard Isolator Type		
		D1050*. D1052*. D1053*, E1058*. E1059* D1070*. D1072*. D1073* E1078*. E1079*	D1020*, D1021S, D1025S *)	D1025S **)
Voltage U_o		DC 10,75 V	DC 25,84 V	DC 26,94 V
Current I_o		8,63 mA	89,17 mA	92,96 mA
Power L_o		23,2 mW	576 mW	626 mW
max. external capacitance C_o	IIC	2,14 µF	99 nF	89 nF
	IIB	15 µF	769 nF	705 nF
	IIA	66 µF	2,63 µF	2,32 µF
max. external inductance L_o	IIC	477 mH	4,47 mH	4,2 mH
	IIB	1909 mH	17,8 mH	15 mH
	IIA	3819 mH	35,7 mH	33 mH
max. external capacitance C_o and inductance L_o (combined installation)	IIC	259 nF 134 mH	45,2 nF 1,15 mH	40,1 nF 1,15 mH
	IIB	605 nF 134 mH	105,1 nF 1,15 mH	96 nF 1,15 mH
	IIA	951 nF 134 mH	165 nF 1,15 mH	158,8 nF 1,15 mH
max. inductance resistance ration L_o/R_o	IIC	1,53 mH/Ω	61,7 µH/Ω	56,5 µH/Ω
	IIB	6,13 mH/Ω	246,9 µH/Ω	226,1 µH/Ω
	IIA	12,26 mH/Ω	493,8 µH/Ω	452,3 µH/Ω
Characteristics		linear	linear	linear
Current limiting resistor		--	--	--

*) D1025S analogue output channel
**) D1025S analogue input channel: 3-wire circuit "TX1". "-IN1". "+IN1" sum of parameters

15.2.6 DIN Rail Isolator Types D1025S used as 2-wire input "signal", "GND"

Single channel parameters

2-wire connection	(-IN --> +IN)		
Voltage	U_o	=	1.1 V
Current	I_o	=	44.63 mA
Power	P_o	=	13 mW
Characteristics			linear
max. internal capacitance	C_i	=	1.05 nF
max. internal inductance			negligible

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15.2.7 Types D104*Q and Type PSD1001 (single-channel)

Single channel parameters		DIN Rail Isolator Type		
		D1040Q. D1041Q	D1042Q. PSD1001	D1043Q
Voltage U_o		DC 24,2 V	DC 24,2 V	DC 24,2 V
Current I_o		74,08 mA	90,7 mA	54,4 mA
Power P_o		448 mW	548,7 mW	329 mW
max. external capacitance C_o	IIC	122 nF	122 nF	122 nF
	IIB	910 nF	910 nF	910 nF
	IIA	3,27 µF	3,27 µF	3,27 µF
max. external inductance L_o	IIC	6,4 mH	4,3 mH	12 mH
	IIB	25,9 mH	17,2 mH	48 mH
	IIA	51,8 mH	34,5 mH	96,1 mH
max. external capacitance C_o and inductance L_o (combined installation)	IIC	58,9 nF 1 mH	54,29 nF 1 mH	63,2 nF 1 mH
	IIB	127,2 nF 1 mH	122,5 nF 1 mH	131,5 nF 1 mH
	IIA	195,5 nF 1 mH	190,8 nF 1 mH	199,8 nF 1 mH
max. inductance/resistance ratio L_o/R_o	IIC	79,3 µH/Ω	64,7 µH/Ω	108 µH/Ω
	IIB	318 µH/Ω	259 µH/Ω	432 µH/Ω
	IIA	634,7 µH/Ω	518 µH/Ω	864 µH/Ω
Characteristics		linear	linear	linear
Current limiting resistor		--	--	--

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15.2.8 Types D1040Q, D1041Q (multi-channel)

Parameters when channels are interconnected in parallel		DIN Rail Isolator Type		
		D1040Q. D1041Q		
Number of channels		2	3 *)	4 *)
Voltage U_o		DC 24.2 V		
Current I_o		148,16 mA	222,24 mA	296,32 mA
Power P_o		896,4 mW	1346 mW	1793 mW
max. external capacitance C_o	IIC	122 nF	--	--
	IIB	910 nF	910 nF	910 nF
	IIA	3,27 µF	3,27 µF	3,27 µF
max. external inductance L_o	IIC	1,61 mH	--	--
	IIB	6,4 mH	2,8 mH	1,61 mH
	IIA	12,9 mH	5,7 mH	3,2 mH
max. external capacitance C_o and inductance L_o (combined installation)	IIC	26,1 nF 0,5 mH	--	--
	IIB	99,1 nF 1 mH	52,2 nF 1 mH	61,6 nF 0,5 mH
	IIA	167,4 nF 1 mH	120,5 nF 1 mH	55 nF 1 mH
max. inductance/resistance ratio L_o/R_o	IIC	39,6 µH/Ω	--	--
	IIB	158,6 µH/Ω	105,8 µH/Ω	79,3 µH/Ω
	IIA	317,3 µH/Ω	211,5 µH/Ω	158,6 µH/Ω
Characteristics		linear	linear	linear
Current limiting resistor		--	--	--

*) not permitted for Group IIC

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15.2.9 Type D1042Q and PSD1001 (multi-channel)

Parameters when channels are interconnected in parallel		DIN Rail Isolator Type		
		D1042Q. PSD1001		
Number of channels		2 *)	3 *)	4 *)
Voltage U_o		DC 24.2 V		
Current I_o		181,4 mA	272,1 mA	362,8 mA
Power P_o		1097,5 mW	1646,2 mW	2194,9 mW
max. external capacitance C_o	IIC	--	--	--
	IIB	910 nF	910 nF	910 nF
	IIA	3,27 µF	3,27 µF	3,27 µF
max. external inductance L_o	IIC	--	--	--
	IIB	4,32 mH	1,92 mH	1,08 mH
	IIA	8,64 mH	3,84 mH	2,16 mH
max. external capacitance C_o and inductance L_o (combined installation)	IIC	--	--	--
	IIB	80,4 nF 1 mH	73,3 nF 0,5 mH	24,2 nF 0,5 mH
	IIA	148,7 nF 1 mH	146,7 nF 0,5 mH	92,9 nF 0,5 mH
max. inductance/resistance ratio L_o/R_o	IIC	--	--	--
	IIB	129,5 µH/Ω	86,4 µH/Ω	64,7 µH/Ω
	IIA	259 µH/Ω	172,7 µH/Ω	129,4 µH/Ω
Characteristics		linear	linear	linear
Current limiting resistor		--	--	--

*) not permitted for Group IIC

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15.2.10 Type D1043Q (multi-channel)

Parameters when channels are interconnected in parallel		DIN Rail Isolator Type		
		D1043Q		
Number of channels		2	3	4 *)
Voltage U_o		DC 24.2 V		
Current I_o		108.8 mA	163.2 mA	217.6 mA
Power P_o		658.2 mW	987.4 mW	1316.5 mW
max. external capacitance C_o	IIC	122 nF	122 nF	--
	IIB	910 nF	910 nF	910 nF
	IIA	3.27 µF	3.27 µF	3.27 µF
max. external inductance L_o	IIC	3.0 mH	1.33 mH	--
	IIB	12 mH	5.33 mH	3.0 mH
	IIA	24 mH	10.6 mH	6 mH
max. external capacitance C_o and inductance L_o (combined installation)	IIC	58.1 nF 0.5 mH	45.5 nF 0.5 mH	--
	IIB	116.3 nF 1 mH	91.1 nF 1 mH	96.1 nF 0.5 mH
	IIA	184.6 nF 1 mH	159.4 nF 1 mH	124 nF 1 mH
max. inductance/resistance ratio L_o/R_o	IIC	54 µH/Ω	36 µH/Ω	--
	IIB	216 µH/Ω	144 µH/Ω	108 µH/Ω
	IIA	432.1 µH/Ω	288 µH/Ω	216 µH/Ω
Characteristics		linear	linear	linear
Current limiting resistor		--	--	--

*) not permitted for Group IIC

15.3 Ambient temperature range for Eurocard / DIN Rail Isolators E10** / D10** series: $-20°C \leq T_a \leq +60°C$

(16) Test and assessment report
BVS PP 00.2010 EG as of 03.02.2000, including 1st supplement of 17.05.2000, 2nd supplement of 02.08.2000 and 3rd supplement of 15.03.2001

(17) Special conditions for safe use

17.1 Eurocard Isolators E10** series

17.1.1 Eurocard Insulators E10** series shall be installed outside the hazardous area and shall be mounted - including terminals - in an enclosure which guarantees as a minimum degree of protection IP 20 according to EN 60529.

17.1.2 Internal wiring shall satisfy the conditions of section 6.4.11 and section 7.6.e of EN 50020:1994

17.1.3 Terminals or connectors for intrinsically safe circuits shall be arranged according to section 6.3.1 or 6.3.2 of EN 50020:1994 respectively.

17.2 DIN Rail Isolators D10** series

17.2.1 DIN Rail Insulator D10** series shall be installed outside the hazardous area.

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17.2.2 The installation of DIN Rail Insulator D10** series shall be carried out in such a way that the clearances of uninsulated conductors of intrinsically safe circuits to grounded metal parts of the enclosure are at least 3 mm, and uninsulated 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 6.3.1 of EN 50020.

17.3 For Group I application interconnection of Eurocard / DIN Rail Isolators D10** / E10** with other electrical apparatus to an intrinsically safe electrical system shall be assessed in a System Certificate.

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.

45307 Essen. 15.03.2001
BVS-Scha/Ar A 20010103

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

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Translation

1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 042 X

Equipment: **Eurocard / DIN Rail Isolators E10** / D10** series**

Manufacturer: **GM International S.R.L.**

Address: **I - 20058 Villasanta (MI)**

Description

The Eurocard / DIN Rail Isolators E10** / D10** series can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report

Eurocard / DIN Rail Isolator E10** / D10** series are extended optionally by the following versions:
Switch/Proximity Repeater Types D1032*, D1033*
(In the full designation the "*" is replaced by a letter marking details of construction as follows:
D = dual channel; Q = quad channel)

The electronic circuitries of the following versions of DIN Rail Isolators D10** series are subject to optional change:

Repeater Power Supply	Type	D1010*
Powered Isolating Driver	Type	D1020*, D1021S
Switch/Proximity Repeater	Type	D1030*, D1031*
Analogue Signal / Temperature Converter	Type	D1050*, D1052*, D1053*, D1070*, D1072*, D1073*
Repeater Power Supply + Powered Isolating Driver	Type	D1025S
Digital Output	Type	D1040Q, D1041Q, D1042Q, D1043Q
Digital Output	Type	PSD1001

The variations of electronic circuitries do not affect safety parameters.

The marking of Eurocard / DIN Rail Isolators E10** / D10** - previous versions as well as new versions - according to Council Directive 94/9/EG may be enhanced optionally with the letter "D" for applications where electrical apparatus certified for use in the presence of combustible dust are interconnected.

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DMT

Parameters

1. non intrinsically safe circuits

1.1 power supply

DIN Rail Isolator Type	Voltage U_n	Voltage U_m	Power consumption P_n
D1032*, D1033*	DC 24 V (20 - 30 V)	AC 250 V	1,9 W

1.2 input / output signal circuits

Voltage U_m = AC 250 V

2. Intrinsically safe circuits (DIN Rail Isolators) type of protection EEx ia IIC / IIB / IIA

Single channel parameters		Eurocard Isolator Type	
		D1032*, D1033*	
Voltage U_o		DC 9,58	V
Current I_o		9,7	mA
Power P_o		23,2	mW
max. external capacitance C_o	IIC	3,6	µF
	IIB	26	µF
	IIA	210	µF
max. external inductance L_o	IIC	330	mH
	IIB	1,42	H
	IIA	2,84	H
max. external capacitance C_o and inductance L_o (combined installation)	IIC	400	nF
		30	mH
	IIB	759,5	nF
		30	mH
	IIA	1,19	µF
		30	mH
max. inductance/resistance ratio L_o/R_o	IIC	1,53	mH/Ω
	IIB	6,12	mH/Ω
	IIA	12,24	mH/Ω
Characteristics		Linear	

3. Ambient temperature range $-20°C \leq T_a \leq +60°C$

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DMT

Test and assessment report
BVS PP 00.2010 EG as of 23.04.2002

Special conditions for safe use

Special conditions mentioned in (17) DMT 01 ATEX E 042 X also apply to the new versions of Eurocard / DIN Rail Isolators D10** / E10** series.

Deutsche Montan Technologie GmbH
Essen, dated 23. April 2002

Jockers	Eickhoff
DMT-Certification body	Head of special services unit

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.

45307 Essen, 23.04.2002
BVS-Scha/Mi A 20010636

Deutsche Montan Technologie GmbH

DMT-Certification body	Head of special services unit

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Translation

DMT

2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 042 X

Equipment: **Eurocard / DIN Rail Isolators type E10** /D10** series**

Manufacturer: **GM International S.R.L.**

Address: **I - 20058 Villasanta (MI)**

Description

The Eurocard / DIN Rail Isolators E10** / D10** series can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

Eurocard / DIN Rail Isolator E10** / D10** series are extended optionally by the following versions:

Repeater Power Supply Type E1015*
Powered Isolating Driver Type E1022*,
Switch/Proximity Repeater Type E1033*

(In the full designation the "*" is replaced by a letter marking details of construction as follows:
S = single channel, D = dual channel; Q = quad channel)

Parameters

1. Non intrinsically safe circuits

1.1 Power supply

Eurocard Isolator Type	Voltage U_n	Voltage U_m	Power consumption P_n
E1015*	DC 24 V (20 - 30 V)	AC 250 V	2,9 W
E1022*	DC 24 V (20 - 30 V)	AC 250 V	3,6 W
E1033*	DC 24 V (20 - 30 V)	AC 250 V	2,2 W

1.2 Input / output signal circuits

Voltage U_m = AC 250 V

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Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

2. Intrinsically safe circuits

2.1 type of protection EEx ia IIC / IIB / IIA

Single channel parameters		Eurocard Isolator Type		
		E1010*, E1011*, E1012*, E1013*, E1014*, E1015*, E1019*	E1020*, E1021* E1022*	E1038*, E1039*, E1033*
Voltage U_o		DC 22.63 V*)	DC 21.53 V	DC 10.86 V
Current I_o		92.96 mA *)	89.17 mA	14.63 mA
Power L_o		600 mW *)	576 mW	39.7 mW
max. external capacitance C_o	IIC	148 nF	174 nF	2.05 µF
	IIB	1.06 µF	1.19 µF	14.4 µF
	IIA	3.83 µF	4.44 µF	63 µF
max. external inductance L_o	IIC	4.2 mH	4.47 mH	165 mH
	IIB	15 mH	18 mH	661 mH
	IIA	33 mH	35 mH	1.32 H
max. external capacitance C_o and inductance L_o (combined installation)	IIC	57.5 nF 1.15 mH	64.7 nF 1.25 mH	252.5 nF 30 mH
	IIB	134.8 nF 1.15 mH	150 nF 1.25 mH	589.1 nF 30 mH
	IIA	212.4 nF 1.15 mH	235.7 nF 1.25 mH	925.8 nF 30 mH
max. inductance/resistance ratio L_o/R_o	IIC	61.7 µH/Ω	61.7 µH/Ω	0.89 mH/Ω
	IIB	246.9 µH/Ω	246.9 µH/Ω	3.58 mH/Ω
	IIA	493.8 µH/Ω	493.8 µH/Ω	7.16 mH/Ω
Characteristics		trapezoidal	trapezoidal	linear
Current limiting resistor		≥ 289,8 Ω	≥ 289,8 Ω	--

*) 3-wire circuit "+", "signal", "GND" sum of parameters

2.2 Eurocard Isolator Type E1010*, E1011*, E1012*, E1013*, E1014*, E1015* E1019* used as 2-wire input "signal", "GND"

Single channel parameters

2-wire connection	(-IN --> +IN)		
Voltage	U_o	=	1.1 V
Current	I_o	=	44.63 mA
Power	P_o	=	13 mW
Characteristics			linear
max. internal capacitance	C_i	=	1.05 nF
max. internal inductance			negligible

Ambient temperature range $-20°C \leq T_a \leq +60°C$

Test and assessment report
BVS PP 00.2010 EG as of 16.05.2002

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DMT

Special conditions for safe use

1. Special conditions mentioned in DMT 01 ATEX E 042 X also apply to the new versions of Eurocard Isolators E10** series.
2. For Group I application interconnection of Eurocard / DIN Rail Isolators D10** / E10** with other electrical apparatus to an intrinsically safe electrical system shall be assessed separately.

Deutsche Montan Technologie GmbH

Essen, dated 16.May 2002

Jockers	Eickhoff
DMT-Certification body	Head of special services unit

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.

45307 Essen, 16.05.2002
BVS-Scha/Mi A 20020217

Deutsche Montan Technologie GmbH

DMT-Certification body	Head of special services unit

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Translation

DMT

3rd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 042 X

Equipment: **Eurocard / DIN Rail Isolators type E10** / D10** / D11** series**

Manufacturer: **GM International S.R.L.**

Address: **I - 20058 Villasanta (MI)**

Description

The Eurocard / DIN Rail Isolators type E10** / D 10** / D11** series can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

Eurocard / DIN Rail Isolator type E10** / D10** / D11** series are extended optionally by the following new or updated versions:

Repeater Power Supply	Type D1010*
Switch/Proximity Repeater	Types D1030*, D1031*, D1130* E1033*, E1038*, E1039*
Frequency Input Converter and Trip Amplifier	Type D1060S
Liquid Presence Detector Interface	Types D1080D, D1081D, D1180D

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50020:1994	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II Category 1G

Parameters

1.1 Non intrinsically safe circuits

1.1.1 Power supply

Eurocard / DIN Rail Isolator Type	Voltage U_n	U_m	Power consumption P_n
D1010*	DC 24 V (20 - 30 V)	AC 250 V	2.9 W
D1030*, D1031*,E1033*, E1038*, E1039*	DC 24 V (20 - 30 V)	AC 250 V	2.2 W
D1130*	AC 115 V / 230 V	AC 250 V	2.8 W
D1060S	DC 24 V (20 - 30 V)	AC 250 V	2.2 W
D1080D, D1081D	DC 24 V (20 - 30 V)	AC 250 V	2.6 W
D1180D	AC 115 V / 230 V	AC 250 V	2.9 W

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Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

1.1.2 Input / output signal circuits

Voltage U_m = AC 250 V

1.2 Intrinsically safe circuits (DIN Rail / Eurocard Isolators) type of protection EEx ia IIC / IIB / IIA

1.2.1 Types D1010*;
D1030*, D1130*, D1031*, E1033*, E1038*, E1039*;
D1080D, D1081D, D1180D

Single channel parameters		DIN Rail / Eurocard Isolator Type			
		D 1010*	D1030*, D1130* D1031* E1033* E1038* E1039*	D1080D, D1081D, D1180D	
				Terminals	
				VCC - GND	IN+ - GND (VCC - IN-)
Voltage U_o		DC 26.94 V *)	DC 10.86 V	DC 15.75 V	DC 15.75 V
Current I_o		92.96 mA *)	14.63 mA	108.68 mA	12.78 mA (11.44 mA)
Power P_o		625 mW *)	39.7 mW	427.9 mW	50.32 mW (45 mW)
Max. external capacitance C_o	IIC	89 nF	2.05 µF	478 nF	478 nF
	IIB	705 nF	14.4 µF	2.88 µF	2.88 µF
	IIA	2.32 µF	63 µF	11.6 µF	11.6 µF
Max. external inductance L_o	IIC	4.2 mH	165 mH	3.01 mH	217.6 mH
	IIB	15 mH	661 mH	12.04 mH	870.7 mH
	IIA	33 mH	1.32 H	24.08 mH	1741 mH
Max. external capacitance C_o and inductance L_o (combined installation)	IIC	40.1 nF 1.15 mH	252.5 nF 30 mH	113.6 nF 1 mH	157.9 nF 5 mH
	IIB	96 nF 1.15 mH	589.1 nF 30 mH	274.8 nF 1 mH	319.2 nF 5 mH
	IIA	158.8 nF 1.15 mH	925.8 nF 30 mH	436.1 nF 1 mH	480.4 nF 5 mH
Max. inductance/ resistance ratio L_o/R_o	IIC	56.5 µH/Ω	0.89 mH/Ω	83 µH/Ω	0.706 mH/Ω
	IIB	226.1 µH/Ω	3.58 mH/Ω	337 µH/Ω	2.92 mH/Ω
	IIA	452.3 µH/Ω	7.16 mH/Ω	664 µH/Ω	5.65 mH/Ω
Characteristics		linear	linear	linear	linear
Current limiting resistor		--	--	--	--

*) 3-wire circuit "+", "signal", "GND" sum of parameters.

2.2.2 DIN Rail Isolator Type D1010* used as 2-wire input "signal", "GND"

Single channel parameters			
2-wire connection	-IN --> +IN		
Voltage	U_o	1.1	V
Current	I_o	44.63	mA
Power	P_o	13	mW
Characteristics		linear	
Max. internal capacitance	C_i	1.05	nF
Max. internal inductance	L_i	negligible	

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4.2.2 Type D1060S

Parameters		DIN Rail Isolator Type D1060S Terminals			
		IN1 - IN4	IN2 - IN4	IN3 - IN4	IN2 - IN3
Voltage U_o		DC 10.56 V	DC 10.56 V	DC 10.56 V	DC 11.56 V
Current I_o		1.07 mA	21.42 mA	21.64 mA	11.79 mA
Power P_o		2.85 mW	57 mW	57.62 mW	34 mW
Max. external capacitance C_o	IIC	2.32 µF	2.32 µF	2.32 µF	1.59 µF
	IIB	16.2 µF	16.2 µF	16.2 µF	10.8 µF
	IIA	72 µF	72 µF	72 µF	43 µF
Max. external inductance L_o	IIC	31 H	77.49 mH	75.92 mH	255.78 mH
	IIB	124 H	309.9 mH	303.7 mH	1023 mH
	IIA	248 H	619.9 mH	607.4 mH	2046 mH
Max. external capacitance C_o and inductance L_o (combined installation)	IIC	357.6 nF 100 mH	317.5 nF 10 mH	316.7 nF 10 mH	268.1 nF 30 mH
	IIB	716.3 nF 100 mH	676.2 nF 10 mH	675.4 nF 10 mH	567.4 nF 30 mH
	IIA	1.07 µF 100 mH	1.03 µF 10 mH	1.03 µF 10 mH	866.7 nF 30 mH
Max. inductance/ resistance ratio L_o/R_o	IIC	12.6 mH/Ω	628.7 µH/Ω	622.3 µH/Ω	512 µH/Ω
	IIB	50.4 mH/Ω	2.51 mH/Ω	2.48 mH/Ω	2.04 mH/Ω
	IIA	100.8 mH/Ω	5.03 mH/Ω	4.97 mH/Ω	4.09 mH/Ω
Characteristics		linear	linear	linear	linear
Current limiting resistor		--	--	--	--

Test and assessment report
BVS PP 00.2010 EG as of 21.02.2003

Special conditions for safe use

1. Special conditions mentioned in DMT 01 ATEX E 042 X also apply to the new versions of Eurocard / DIN Rail Isolators type E10** / D10** / D11** series.

2. For Group I application interconnection of Eurocard / DIN Rail Isolators type E10** / D10** / D11** series with other electrical apparatus to an intrinsically safe electrical system shall be assessed separately.

Deutsche Montan Technologie GmbH
Essen, dated 21. February 2003

signed: Jockers
DMT-Certification body

signed: Eickhoff
Head of special services unit

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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.

45307 Essen, 21.02.2003
BVS-Scha/Mi A 20020731

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

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Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

Translation

4th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 042 X

Equipment: **Eurocard DIN Rail Trenner type E10** / D10** / D11****

Manufacturer: **GM International S.R.L.**

Address: **I - 20058 Villasanta (MI)**

Description

The Eurocard / DIN Rail Isolators type E10** / D 10** / D11** series can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

Eurocard / DIN Rail Isolator E10** / D10** / D11** series are extended optionally by the following new or updated versions:

Repeater Power Supply	Type D1011*, D1014*
	Type E1015*-013
Switch/Proximity Repeater	Type D1034*
Adapter	Type GMEI1000ADP

(In the full designation the "*" is replaced by a letter marking details of construction as follows:
S = single channel, D = dual channel; Q = quad channel)

The electronic circuitry of the following version of DIN Rail Isolators D10** series is subject to optional change:
Powered Isolating Driver Type D1020*

The variations of electronic circuitries do not affect safety parameters.

The Adapter Type GMEI1000ADP optionally provides mechanical conversion of DIN Rail Isolators D10** series to 21-pin DIN 41617 connector.
The Adapter consists of a plastics enclosure adaptable to DIN Rail Isolator enclosures, a printed circuit board fitted with connectors and the wiring between the printed circuit board and the terminals of the individually adapted DIN Rail Isolator. Electrical parameters of the adapted DIN Rail Isolator remain unchanged.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50020:2002	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II Category 1G

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

Parameters

1.1 Non intrinsically safe circuits

1.1.1 Power supply

Eurocard / DIN Rail Isolator Type	Voltage U_n	U_m	Power consumption P_n
D1011*, D1014*	DC 12 V - 24 V (9 V - 30 V)	AC 250 V	3,2 W
E1015*-013	DC 24 V (20 - 30 V)	AC 250 V	3,4 W
D1034*	DC 12 V - 24 V (9 V - 30 V)	AC 250 V	1,4 W

1.1.2 Input / output signal circuits

Voltage U_m = AC 250 V

1.2 Intrinsically safe circuits (DIN Rail / Eurocard Isolators) type of protection EEx ia IIC / IIB / IIA

1.2.1 Types E1015*-013, D1011*, D1014*; D1034*

Single channel parameters		DIN Rail / Eurocard Isolator Type		
		E1015*-013	D1011*, D1014*	D1034*
Voltage U_o		DC 26,94 V *)	DC 25,2 V	DC 9,56 V
Current I_o		92,96 mA *)	92,93 mA	10,28 mA
Power P_o		625 mW *)	585 mW	24,6 mW
Max. external capacitance C_o	IIC	89 nF	102 nF	3,6 µF
	IIB	705 nF	0,82 µF	26 µF
	IIA	2,32 µF	2,9 µF	210 µF
Max. external inductance L_o	IIC	4,2 mH	4,2 mH	336 mH
	IIB	15 mH	15 mH	1,345 H
	IIA	33 mH	33 mH	2,69 H
Max. external capacitance C_o and inductance L_o (combined installation)	IIC	40,1 nF 1,15 mH	46,3 nF 1,15 mH	402,9 nF 30 mH
	IIB	96 nF 1,15 mH	109,3 nF 1,15 mH	840,6 nF 30 mH
	IIA	158,8 nF 1,15 mH	172,3 nF 1,15 mH	1,278 µF 30 mH
Max. inductance/ resistance ratio L_o/R_o	IIC	56,5 µH/Ω	60,73 µH/Ω	1,49 mH/Ω
	IIB	226,1 µH/Ω	242,9 µH/Ω	5,79 mH/Ω
	IIA	452,3 µH/Ω	485,8 µH/Ω	11,58 mH/Ω
Characteristics		linear	linear	linear

*) 3-wire circuit "+", "signal", "GND" sum of parameters.

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1.2.2 DIN Rail Isolator Type E1015*-013 used as 2-wire input "signal", "GND"

Single channel parameters			
2-wire connection	-IN --> +IN		
Voltage	U_o	1.1	V
Current	I_o	44.63	mA
Power	P_o	13	mW
Characteristics		linear	
Max. internal capacitance	C_i	1.05	nF
Max. internal inductance	L_i	negligible	

1.2.3 Adapter Type GMEI1000ADP

1.2.3.1 Non intrinsically safe circuits

Voltage (general) U_m = AC 250 V

Power supply
Parameters according to the individual DIN Rail Isolator

1.2.3.2 Intrinsically safe circuits

Voltage U_o / U_i = DC 30 V
Parameters according to the individual DIN Rail Isolator

additional effective capacitance and inductance: negligible

1.3 Ambient temperature range: $-20°C \leq T_a \leq +60°C$

Test and assessment report
BVS PP 00.2010 EG as of 13.11.2003

Special conditions for safe use

Special conditions mentioned in DMT 01 ATEX E 042 X also apply to the new versions of Eurocard / DIN Rail Isolators type E10** / D10** / D11** series.

Deutsche Montan Technologie GmbH
Bochum, dated 13. November 2003

signed: Jockers
Certification body

signed: Eickhoff
Special services unit

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DMT

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.

44809 Bochum, 13.11.2003
BVS-Scha/Mi A 20030554

Deutsche Montan Technologie GmbH

Certification body

Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

EXAM
BBG Prüf- und Zertifizier GmbH

Translation

5th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 042 X

Equipment: **Eurocard / DIN Rail Isolator type E10** / D10** / D11****

Manufacturer: **GM International S.R.L.**

Address: **I - 20058 Villasanta (MI)**

Description

The Eurocard / DIN Rail Isolators type series E10** / D 10** / D 11** can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

Eurocard / DIN Rail Isolator type series E10** / D10** / D 11** are extended optionally by the following new versions:

Repeater Power Supply Type D1010*-046

(In the full designation the "*" is replaced by a letter marking details of construction as follows:
S = single channel, D = dual channel)

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50020:2002	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II Category 1G
EN 50281-1-1 :1998	Dust explosion protection

Parameters

1.1 Non intrinsically safe circuits

1.1.1 Power supply

DIN Rail Isolator type	Voltage U_n	Voltage U_m	Power consumption P_n
D1010*-046	DC 24 V (20 - 30 V)	AC 250 V	3,7 W

1.1.2 Input / output signal circuits

Voltage U_m = AC 250 V

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen)

1.2 Intrinsically safe circuits type of protection EEx ia IIC / IIB / IIA

Single channel parameters		DIN Rail Isolator type D1010*-046
Voltage U_o		DC 26,3 V *)
Current I_o		78,2 mA *)
Power P_o		514 mW *)
Max. external capacitance C_o	IIC	89 nF
	IIB	705 nF
	IIA	2,32 µF
Max. external inductance L_o	IIC	5,8 mH
	IIB	23,2 mH
	IIA	46,5 mH
Max. external capacitance C_o and inductance L_o (combined installation)	IIC	46,6 nF 1,15 mH
	IIB	105,4 nF 1,15 mH
	IIA	163,3 nF 1,15 mH
Max. inductance/ resistance ratio L_o/R_o	IIC	69,2 µH/Ω
	IIB	276,8 µH/Ω
	IIA	553,6 µH/Ω
Characteristics		linear

*) 3-wire circuit "+" "signal", "GND" sum of parameters

DIN Rail Isolator Type D1010*-046 used as 2-wire input "signal", "GND"

Single channel parameters

2-wire connection	-IN --> +IN		
Voltage	U_o	1,1	V
Current	I_o	44,63	mA
Power	P_o	13	mW
Characteristics		linear	
Max. internal capacitance	C_i	1,05	nF
Max. internal inductance L_i	negligible		

1.3 Ambient temperature range $-20° C \leq T_a \leq 60° C$

Test and assessment report
BVS PP 00.2010 EG as of 12.05.2004

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen)

EXAM
BBG Prüf- und Zertifizier GmbH

Special conditions for safe use

Special conditions mentioned in clause 17.2 of DMT 01 ATEX E 042 X also apply to the new version DIN Rail Isolator type D1010*-046.

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 12. May 2004

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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.

44809 Bochum, 12.05.2004
BVS-Scha/Mi A 20040264

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

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