

(3)



Translation

(1) EC-Type Examination Certificate

(2) - Directive 94/9/EC -

Equipment and protective systems intended for use in potentially explosive atmospheres

BVS 10 ATEX E 113 X

(4) Equipment: DIN Rail Isolators type D5****, D5****-xxx

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

(6) Address: 20058 Villasanta (MI), 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 10.2216 EG.

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

EN 60079-0:2009 General requirements EN 60079-11:2007 Intrinsic safety 'i' EN 60079-15:2005 Type of protection 'n'

EN 60079-26:2007 Equipment with equipment protection level (EPL) Ga

EN 61241-11:2006 Protection by IS

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:

(Ex) I or II extended with the applicable category- and type of protection-marking; see tables in 15.1.2

DEKRA EXAM GmbH

Bochum, dated 22 September 2010

Signed:	Simanski	Signed: Dr. Eickhoff

Certification body Special services unit



(13)

(14)

Appendix to

EC-Type Examination Certificate

BVS 10 ATEX E 113 X

(15) 15.1 Subject and type

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

Repeater Power Supply type D5011*, D5011*-xxx type D5014*, D5014*-xxx Repeater Power Supply Powered Isolating Driver D5020*, D5020*-xxx D5030*, D5030*-xxx Switch/Proximity Detector Repeater type Switch/Proximity Detector Repeater type D5031*, D5031*-xxx Switch/Proximity Detector Repeater type D5032*, D5032*-xxx Switch/Proximity Interface type D5034*, D5034*-xxx type D5048S, D5048S-xxx, D5049S, D5049S-xxx Digital Output Driver

In the full designation 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)

15.1.2 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 (Mine)	
D5011*	D5011*-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	
D5014*	D5014*-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	
D5020*	D5020*-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	
D5030*	D5030*-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	
D5031*	D5031*-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	
D5032*	D5032*-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	
D5034*	D5034*-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	
D5048S	D5048S-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	
D5049S	D5049S-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	



15.2 Description

The DIN Rail Isolators of type series D5****, D5****-xxx are designed as electrical apparatus, suitable for applications requiring a defined SIL level (according to EN 61508) in safety related systems for high risk industries.

Compliance with EN 61508 is not subject to this EC-Type Examination Certificate.

DIN Rail Isolators of D5***, D5****-xxx series 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.

DIN Rail Isolators of D5***, D5***-xxx series 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.

Repeater Power Supply type D5011S, D5011S-xxx, D5011D, D5011D-xxx

Repeater Power Supply Type D5011*, D5011*-xxx provides a fully floating single or dual channel intrinsically safe DC supply for energizing conventional 2 wires 4 - 20 mA transmitters located in hazardous areas, and repeats the current in floating circuit to drive a safe area load.

Available versions of the Repeater Power Supply: single channel: type D5011S, D5011S-xxx; dual channel: type D5011D, D5011D-xxx.

Repeater Power Supply type D5014S, D5014S-xxx, D5014D, D5014D-xxx

Repeater Power Supply type D5014*, D5014*-xxx provides a fully floating single or dual channel DC supply for energizing conventional 2/3 wires 0/4-20 mA, active or passive, transmitters located in hazardous areas, and repeats the current in floating circuit to drive a safe area load.

Available versions of the Repeater Power Supply: single channel: type D5014S, D5014S-xxx; dual channel: type D5014D, D5014D-xxx.

Powered Isolating Driver type D5020S, D5020S-xxx, D5020D, D5020D-xxx

Isolating Driver Type D5020*, D5020*-xxx provides single or dual channel intrinsically safe power supply for valve positioners or I/P-converters and repeat a non intrinsically safe 4 - 20 mA analogue signal from a controller located in a safe area to a load up to 700 Ω .

Available versions of the Powered Isolating Driver: single channel: type D5020S, D5020S-xxx; dual channel: type D5020D, D5020D-xxx.

Switch/Proximity Detector Repeater type D5030S, D5030S-xxx, D5030D, D5030D-xxx

The single and dual channel Switch/Proximity Detector Repeater D5030*, D5030*-xxx is a device that can be configured for a switch or proximity detector (EN 60947-5-6, NAMUR), NO or NC and for NE or ND SPST (D5030D, D5030D-xxx) or SPDT (D5030S, D5030S-xxx) relay output contact.

Each channel enables a safe area load to be controlled by a switch, or a proximity detector, located in a hazardous area.

Available versions of the Switch/Proximity Detector Repeater: single channel: type D5030S, D5030S-xxx. dual channel: type D5030D, D5030D-xxx..

Switch/Proximity Detector Repeater type D5031S, D5031S-xxx, D5031D, D5031D-xxx

The single and dual channel Switch/Proximity Detector Repeater D5031*, D5031*-xxx is a device that can be configured for a switch or proximity detector (EN60947-5-6, NAMUR).

NO or NC and for NO or NC optocoupled open collector transistor output.

Each channel enables a safe area load to be controlled by a switch, or a proximity detector, located in a hazardous area.

Available versions of the Switch/Proximity Detector Repeater: single channel: type D5031S, D5031S-xxx. dual channel: type D5031D, D5031D-xxx.



Switch/Proximity Detector Repeater type D5032S, D5032S-xxx, D5032D, D5032D-xxx

The single and dual channel Switch/Proximity Detector Repeater D5032*, D5032*-xxx is a device that can be configured for a switch or proximity detector (EN60947-5-6, NAMUR).

NO or NC and for NE or ND SPST (D5032D, D5032D-xxx) or SPDT (D5032S, D5032S-xxx) relay output contact.

Each channel enables a safe area load to be controlled by a switch, or a proximity detector, located in a hazardous area.

Available versions of the Switch/Proximity Detector Repeater: single channel: type D5032S, D5032S-xxx. dual channel: type D5032D, D5032D-xxx.

Switch/Proximity Interface type D5034S, D5034S-xxx, D5034D, D5034D-xxx

Switch/Proximity Interface types D5034*, D5034*-xxx provides single or dual channel intrinsically safe power supply for switch / proximity switch circuits and repeat the status of contacts or proximity switches in non intrinsically safe output circuits.

Available versions of the Switch/Proximity Interface: single channel: type D5034S, D5034S-xxx. dual channel: type D5034D, D5034D-xxx.

Digital Output type D5048S, D5048S-xxx, D5049S, D5049S-xxx

Digital Output Type D504*S, D504*S-xxx provides single channel intrinsically safe remote outputs to operate solenoid valves, LEDs or audible alarms driven by non intrinsically safe digital remote signals. The versions type D5048S, D5048S-xxx, type D5049S, D5049S-xxx provide different electrical parameters.

Short cut explanation

NO = Normal Open

NC = Normal Closed

NE = Normal Energized

ND = Normal De-energized

SPST = Single-Pole Single-Throw

SPDT = Single-Pole Double-Throw

15.3 Parameters

15.3.1 Non intrinsically safe circuits

15.3.1.1 Power supply

	Vol	tage	Power
DIN Rail Isolator version	Un	U _m	P_n
	DC [V]	AC [V]	[W]
D5011S, D5011S-xxx	24	250	≤ 1.35
D5011D, D5011D-xxx	24	250	≤ 2.90
D5014S, D5014S-xxx,	24	250	≤ 1.35
D5014D, D5014D-xxx	24	250	≤ 2.70
D5020S, D5020S-xxx,	24	250	≤ 1.00
D5020D, D5020D-xxx	24	250	≤ 2.00
D5030S, D5030S-xxx	24	250	≤ 0.50
D5030D, D5030D-xxx	24	250	≤ 1.00
D5031S, D5031S-xxx	24	250	≤ 0.35
D5031D, D5031D-xxx	24	250	≤ 0.70
D5032S, D5032S-xxx	24	250	≤ 0.50
D5032D, D5032D-xxx	24	250	≤ 1.00
D5034S, D5034S-xxx,	24	250	≤ 0.40
D5034D, D5034D-xxx	24	250	≤ 0.80
D5048S, D5048S-xxx	24	250	≤ 1.80
D5049S, D5049S-xxx	24	250	≤ 1.80



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

15.3.2.1 Repeater Power Supply D5**** / D5****-xxx

15.3.2.1.1 Repeater Power Supply type D5011*, D5011*-xxx

Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Single channel parameters	Terminals			
Channel	1	7-8)1		
Channel	2	9-10)1		
Voltage U _o		DC 25.9 V		
Current I _o		92 mA		
Power P _o		594 mW		
Voltage Ui		N/A		
Current Ii		N/A		
Power P _i		N/A		
Effective internal capacitance	Ci	N/A		
Effective internal inductance	L _i .	N/A		
	IIC	100 nF		
Max. external	IIB iaD	770 nF	- Verreit L	
capacitance C _o	IIA	2.63 μF		
1200	I	4.02 μF		
	IIC	4.2 mH		
Max. external	IIB iaD	16.8 mH		
inductance L _o	IIA	33.7 mH		
All States	I	55.2 mH		
	IIC	59.9 μΗ/Ω		
Max. inductance / resistance	IIB iaD	239.7 μΗ/Ω		
ratio L _o /R _o	IIA	479.4 μΗ/Ω		
	I	786.6 μΗ/Ω		
Characteristics		linear		
Ambient temperature range		-40	$^{\circ}$ C \leq T _a \leq +70 $^{\circ}$ C	

Remarks:

)12-wire circuit "T*+", "T*-" parameters of supply circuit



15.3.2.1.2 Repeater Power Supply type D5014*, D5014*-xxx Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

> Single channel parameters Terminals $7-8)^{1}$ 7-11 $8-11)^2$ 1 Channel 2 9-12) 10-12) 9-10) Voltage U DC 25.9 V DC +/- 1.1 V Current Io 92 mA 56 mA Power Po 594 mW 16 mW Voltage Ui N/A DC 30 V 128 mA Current Ii N/A N/A N/A Power Pi 0 nF Effective internal capacitance Ci N/A Effective internal inductance Li N/A 0 mH 100 μF IIC 100 nF Max. external IIB iaD 770 nF 1000 µF capacitance Co IIA 2.63 µF 1000 μF 1000 μF $4.02 \mu F$ I 11.5 mH IIC 4.2 mH IIB iaD 16.8 mH 46.0 mH Max. external 33.7 mH 92.1 mH inductance Lo IIA 55.2 mH 151.1 mH I IIC 59.9 μΗ/Ω 2327.2 μΗ/Ω IIB iaD Max. inductance / resistance $239.7 \mu H/\Omega$ 9309.0 μ H/Ω

> > $479.4 \mu H/\Omega$

 $786.6 \, \mu H/\Omega$

linear

18618.1μΗ/Ω

 $30545.4 \mu H/\Omega$

linear

 $-40 \, ^{\circ}\text{C} \le T_a \le +70 \, ^{\circ}\text{C}$

Remarks:

ratio Lo/Ro

Characteristics

Ambient temperature range

)¹ 2-wire circuit "T*+", "T*-" parameters of supply circuit)² 2-wire circuit "-I*+", "I*-" parameters of input circuit)³ 3-wire circuit "T*+" "I*+", "I*-" not used

IIA

I



15.3.2.2 Powered Isolating Driver D5**** / D5****-xxx

15.3.2.2.1 Powered Isolating Driver type D5020*, D5020*-xxx
Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Single channel parameters	Terminals			
	1	7-8)1		
Channel	2	9-10)1		
Voltage U _o	Ma —	DC 25.9 V		
Current I _o		93 mA		
Power Po		595 mW		
Voltage Ui		N/A		AMEN
Current I _i		N/A		
Power P _i		N/A		
Effective internal capacitance	Ci	N/A		
Effective internal inductance	L _i	N/A		
	IIC	100 nF	all beautiful and the second	
Max. external	IIB iaD	770 nF		
capacitance Co	IIA	2.63 μF		
	I	4.02 μF		
	IIC	4.1 mH		
Max. external	IIB iaD	16.7 mH		
inductance L _o	IIA	33.5 mH		
	I	54.9 mH		
	IIC	59.7 μΗ/Ω		
Max. inductance / resistance	IIB iaD	239.0 μΗ/Ω		
ratio L _o /R _o	IIA	478.1 μΗ/Ω		
	I	784.5 μΗ/Ω		
Characteristics		linear		
Ambient temperature range		$-40 ^{\circ}\text{C} \le \text{T}_{\text{a}} \le +70 ^{\circ}\text{C}$		

Remarks:

)12-wire circuit "O*+", "O*-" parameters of supply circuit



15.3.2.3 Switch/Proximity Detector Repeater / Switch/Proximity Interface D5**** / D5****-xxx

15.3.2.3.1 Switch/Proximity Detector Repeater type D5030*, D5030*-xxx

Device marking: Ex nA nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

15.3.2.3.2 Switch/Proximity Detector Repeater type D5031*, D5031*-xxx

Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

15.3.2.3.3 Switch/Proximity Detector Repeater type D5032*, D5032*-xxx

Device marking: Ex nA nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Simple abound payamataya	Device	D5030*	D5031*	D5032*			
Single channel parameters	Terminals						
Channel .	1	7-8)1	7-8) ¹	7-8)1			
Channel	2	9-10)1	9-10)1	9-10)1			
Voltage U _o		DC10.5 V	DC10.5 V	DC10.5 V			
Current I _o		22 mA	22 mA	22 mA			
Power P _o		56 mW	56 mW	56 mW			
Voltage Ui		N/A	N/A	N/A			
Current I _i		N/A	N/A	N/A			
Power P _i	- THE 2000	N/A	N/A	N/A			
Effective internal capacitance	C _i	1.1 nF	1.1 nF	1.1 nF			
Effective internal inductance	Li	N/A	N/A	N/A			
	IIC	2.41 μF	2.41 μF	2.41 μF			
Max. external	IIB iaD	16.8 nF	16.8 nF	16.8 nF			
capacitance Co	IIA	75 μF	75 μF	75 μF			
W ===	I	66 μF	66 μF	66 μF			
	IIC	78.3 mH	78.3 mH	78.3 mH			
Max. external	IIB iaD	313.4 mH	313.4 mH	313.4 mH			
inductance L _o	IIA	626.9 mH	626.9 mH	626.9 mH			
	I	1028.6 mH	1028.6 mH	1028.6 mH			
	IIC	635.9 μΗ/Ω	635.9 μH/ Ω	635.9 μΗ/Ω			
Max. inductance / resistance	IIB iaD	2543.9 μΗ/Ω	2543.9μΗ/Ω	2543.9 μΗ/Ω			
ratio L _o /R _o	IIA	5087.9 μΗ/Ω	5087.9μΗ/Ω	5087.9 μΗ/Ω			
	I	8347.4 μΗ/Ω	8347.4μΗ/Ω	8347.4 μΗ/Ω			
Characteristics		linear	linear	linear			
Ambient temperature range		-4	$10 \text{ °C} \le T_a \le +70$	°C			

Remarks:

)12-wire circuit "I*+", "I*-" parameters of supply circuit



15.3.2.3.4 Switch/Proximity Interface type D5034*, D5034*-xxx

Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Single channel parameters		Tern	ninals	
GL	1	7-8)1		7
Channel	2	9-10)1		
Voltage U _o	1	DC10.5 V		
Current I _o		15 mA		li .
Power P _o		39 mW		
Voltage Ui		N/A		Alle
Current Ii	2	N/A		ALC: STERLE
Power P _i		N/A	- 4	
Effective internal capacitance	Ci	N/A		
Effective internal inductance	L _i	N/A		
	IIC	2.41 μF	100	
Max. external	IIB iaD	16.8 nF	Assessment of the second	
capacitance Co	IIA	75 μF		
	I	66 μF		
	IIC	163.2 mH		
Max. external	iaD	652.8 mH	man de la companya de	
inductance L _o		1305.6 mH		
	I	2142.0 mH		
	IIC	918.2 μΗ/Ω		
Max. inductance / resistance	IIB iaD	3672.9μΗ/Ω		
ratio L _o /R _o	IIA	7345.8μΗ/Ω		
	I	12051.8μΗ/Ω	- T	
Characteristics		linear		
Ambient temperature range		-40 °C ≤ T _a ≤ +70 °C		°C

Remarks:

)12-wire circuit "T*+", "T*-" parameters of supply circuit



Digital Output Driver D5**** / D5****-xxx 15.3.2.4

15.3.2.4.1 Digital Output Driver type D5048S, D5048S-xxx

Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

15.3.2.4.2 Digital Output Driver type D5049S, D5049S-xxx

> Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I Device marking:

Single channel parameters	Terminals			
Ch1	1	7-10)1	8-10) ²	$9-10)^3$
Channel	2	N/A	N/A	N/A
Voltage U _o	12.	DC 24.8 V	DC 24.8 V	DC 24.8 V
Current I _o		147 mA	108 mA	93 mA
Power P _o		907 mW	667 mW	571 mW
Voltage U _i		N/A	N/A	N/A
Current Ii		N/A	N/A	N/A
Power P _i		N/A	N/A	N/A
Effective internal capacitance	Ci	N/A	N/A	N/A
Effective internal inductance	Li	N/A	N/A	N/A
	IIC	113 nF	113 nF	113 nF
Max. external	IIB iaD	860 nF	860 nF	860 nF
capacitance Co	IIA	3.05 μF	3.05 μF	3.05 μF
	I	4.35 μF	4.35 μF	4.35 μF
	IIC	1.65 mH	3.07 mH	4.19 mH
Max. external	IIB iaD	6.63 mH	12.30 mH	16.79 mH
inductance Lo	IIA	13.27 mH	24.60 mH	33.58 mH
	I	21.78 mH	40.36 mH	55.09 mH
	IIC	39.2 μΗ/Ω	53.3 μΗ/Ω	62.3 μΗ/Ω
Max. inductance / resistance	IIB iaD	156.8 μΗ/Ω	213.5 μΗ/Ω	249.4 μΗ/Ω
ratio L _o /R _o	IIA	313.6 μΗ/Ω	427.0 μΗ/Ω	498.9 μΗ/Ω
	I	514.6 μΗ/Ω	700.6 μΗ/Ω	818.5 μΗ/Ω
Characteristics		linear	linear	linear
Ambient temperature range		-40	$^{\circ}C \le T_a \le +70$	°C

Remarks:

)¹ 2-wire circuit 'Out A' "O1+", "O-" parameters of supply circuit)² 2-wire circuit 'Out B' "O2+", "O-" parameters of supply circuit)³ 2-wire circuit 'Out C' "O3+", "O-" parameters of supply circuit

"O-" = common ground for "O*+"

'Out A / B / C' are used exclusive or only



(16) Test and assessment report

BVS PP 10.2216 EG as of 22.09.2010

(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:

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 in case of alternative installation in areas requiring EPL Gc equipment.

17.3 Group III application:

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 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 6.2.1 of EN 60079-11:2007.

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, 22.09.2010 BVS-Scha/Her A 20100877

DEKRA EXAM GmbH

Certification body

Translation

1. Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: BVS 10 ATEX E 113 X

(4) Equipment: DIN Rail Isolators type D5****, D5****-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 supplement.
- (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 10.2216 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with

EN 60079-0:2012 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 / 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.
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 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 3(1)G Ex nA nC [ia Ga] IIC T4 Gc I (M1) [Ex ia Ma] I II (1)D [Ex ia Da] IIIC

DEKRA EXAM GmbH Bochum, dated 2013-10-10

Signed: Dr. Eickhoff	Signed: Dr. Wittler
Certification body	Special services unit

- (13) Appendix to
- (14) 1. Supplement to the EC-Type Examination Certificate BVS 10 ATEX E 113 X
- (15) 15.1 Subject and type

DIN Rail Isolators type D5****, D5****-xxx

(Type code: no change)

15.2 Description

The DIN Rail Isolators can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

The status of applied standards has been subjected to update.

Allocation of Ex marking listed in (12) to DIN Rail Isolator models: no change.

15.3 Parameters

Parameters specified in basic certificate remain valid without change.

Lo, Co and Lo/Ro parameters specified for Group IIB in basic certificate apply in addition for Group IIIC.

(16) Test and Assessment Report

BVS PP 10.2216 EG as of 2013-10-10

- (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 in case of alternative installation in areas requiring EPL Gc equipment.
- 17.3 Group III application (Dust):

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.

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 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, 10.10.2013 BVS-Scha/Sch A 2013003

Certification body



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Translation

2nd Supplement to the **EC-Type Examination Certificate**

(2)Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6

No. of EC-Type Examination Certificate:

BVS 10 ATEX E 113 X

Equipment:

DIN Rail Isolators type D5****, D5****-xxx

Manufacturer:

G.M. International S.R.L.

(6)Address: Via Mameli, 53-55, 20852 Villasanta (MB), Italy

- (7)The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- 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 10.2216 EG.
- The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 + A11:2013 General requirements

EN 60079-11:2012

Intrinsic safety "i"

EN 60079-15:2010

Type of protection 'n'

- If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special (10)conditions for safe use specified in the appendix to this certificate.
- This supplement to the 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.
- The marking of the equipment shall include the following:



II 3(1)G Ex nA [ia Ga] IIC T4 Gc II 3(1)G Ex nA nC [ia Ga] IIC T4 Gc I (M1) [Ex ia Ma] I II (1)D [Ex ia Da] IIIC

DEKRA EXAM GmbH Bochum, dated 2015-12-07

Signed: Simanski

Signed: Dr. Wittler

Certification body

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- (13) Appendix to
- (14) 2nd Supplement to the EC-Type Examination Certificate BVS 10 ATEX E 113 X
- (15) 15.1 Subject and type

DIN Rail Isolators of D5*** / D5****-xxx type series have been extended with new Switch/Proximity Detector Repeaters

Switch/Proximity Detector Repeater:

type D5036* / type D5036*-xxx,

type D5037* / type D5037*-xxx

In the full designation the "*" is replaced by letters marking details of construction as follows:

S = single channel
D = dual channel
D = dual channel

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

15.2 Description

Switch/Proximity Detector Repeater type D5036S, D5036S-xxx, D5036D, D5036D-xxx
The single and dual channel Switch/Proximity Detector Repeater D5036*, D5036*-xxx generates fully floating intrinsically safe power supply for proximity sensor field devices or for voltage free contacts of field devices and repeats the operation status of the proximity sensors / voltage free contacts on the non-intrinsically safe side by means of voltage free relay contacts.

Each channel enables a safe area load to be controlled by a switch, or a proximity detector, located in a hazardous area.

The Switch/Proximity Detector Repeater D5036*, D5036*-xxx is designed for installation on T35 DIN Rail only.

Switch/Proximity Detector Repeater type D5037S, D5037S-xxx, D5037D, D5037D-xxx
The single and dual channel Switch/Proximity Detector Repeater D5037*, D5037*-xxx/generates fully floating intrinsically safe power supply for proximity sensor field devices or for voltage free contacts of field devices and repeats the operation status of the proximity sensors / voltage free contacts on the non-intrinsically safe side by means of voltage free opto-isolator outputs.

Each channel enables a safe area load to be controlled by a switch, or a proximity detector, located in a hazardous area.

The Switch/Proximity Detector Repeater D5037*, D5037*-xxx is designed for installation on T35 DIN Rail or on Termination Board.

Electronic components of the new Switch/Proximity Detector Repeater models are arranged on a printed-circuit-board (PCB) packaged in a plastic enclosure suitable for installation on T35 DIN Rails (or on Termination Board).

Switch/Proximity Detector Repeaters of D5036*-* / D5037*-* type series 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.

Listing of all components used, referring to older standards: not applicable.

Furthermore, the following previous models of DIN Rail Isolators are subject to revision or correction of parameters:

- Switch/Proximity

Detector Repeater

type D5030*, D5030*-xxx, D5031*, D5031*-xxx, D5032*, D5032*-xxx

Switch/Proximity Interface type D5034*, D5034*-xxx:

Correction of printing mistake Co parameter 16.8 nF to 16.8 µF referring to Group IIB and IIIC

Page 2 of 5 of BVS 10 ATEX E 114 / N2
This certificate may only be reproduced in its entirety and without any change.



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15.3 Parameters

15.3.1 Non intrinsically safe circuits

15.3.1.1 Power supply

	Volt	Voltage		
Device	Un	U _m	Pn	
	DC [V]	AC [V]	[W]	
D5036S, D5036S-xxx	24	250	≤ 0.5	
D5036D, D5036D-xxx	24	250	≤ 1	
D5037S, D5037S-xxx	24	250	≤ 0.35	
D5037D, D5037D-xxx	24	250	≤ 0.7	

15.3.1.2 Input-/output-signal circuits

Voltage Um = AC 253 V

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

15.3.2.1 Switch/Proximity Detector Repeater type D503** / D503**-xxx

Switch/Proximity Detector Repeater type D5030*, D5030*-xxx

Device marking: Ex nA nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Switch/Proximity Detector Repeater type D5031*, D5031*-xxx

Device marking: Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

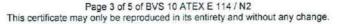
Switch/Proximity Detector Repeater type D5032*, D5032*-xxx

Device marking: Ex nA nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Single channel	Device	D5030*	//D5031*////	///D5032*///		
parameters	Terminals ////////////////////////////////////					
Observal (/////	01/////	7-8 1)///	////7-8/1)////	(///7-8/1)//		
Channel	2////	(/9-10 ¹)//	///9-10 ¹)///	(///9-101)//		
Voltage U _o	11111111	DC 10.5 V	//DC 10.5/V//	// DC 10.5 V		
Current I _o	977777	//22 mA///	///22 mA ///	///22 mA		
Power P _o	17/11/17	56 mW	///56 mW///	///56 mW//		
Voltage U	1111111	//N/A//	///N/A///	NA		
Current I _i	7777777	//N/A///	///N/A///	///N/A//		
Power P _i	1/1/1/1//	///N/A///	///N/A///	///N/A		
Effective internal cap	pacitance	1.1 nF	1.1 nF	1.1/nF//		
Effective internal ind	luctance Li	N/A//	N/A	N/A//		
	IIC	2.41 µF	2.41 µF	2.41 µF		
Max external	IIB, IIIC	16.8 µF	16.8 µF	16.8 μF		
capacitance Co	IIA	75 µF	75 µF	75 µF		
	1	66 µF	66 µF	66 µF		
	IIC	78.3 mH	78.3 mH	78.3 mH		
Max. external	IIB, IIIC	313.4 mH	313.4 mH	313.4 mH		
inductance L _o	IIA	626.9 mH	626.9 mH	626.9 mH		
	1	1028.6 mH	1028.6 mH	1028.6 mH		
	IIC	635.9 μH/Ω	635.9 μΗ/Ω	635.9 μΗ/Ω		
Max. inductance /	IIB, IIIC	2543.9 μΗ/Ω	2543.9μΗ/Ω	2543.9 μΗ/Ω		
resistance ratio	IIA	5087.9 μΗ/Ω	5087.9μΗ/Ω	5087.9 μΗ/Ω		
L _o /R _o	1	8347.4 μΗ/Ω	8347.4μΗ/Ω	8347.4 μΗ/Ω		
Characteristics		linear	linear	linear		
Ambient temperature	e range	-4	0 °C ≤ T _a ≤ +70	°C		
Remarks:						

Remarks

1) 2-wire circuit "I*+", "I*-" parameters of supply circuit



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15.3.2.2 Switch/Proximity Detector Repeater / Switch/Proximity Interface type D503** / D503**-xxx

Switch/Proximity Interface type D5034*, D5034*-xxx

Device marking: Ex nA [ia Ga] IIC T4 G

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

Switch/Proximity Detector Repeater type D5036*, D5036*-xxx

Device marking:

Ex nA nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I

Switch/Proximity Detector Repeater type D5037*, D5037*-xxx

Device marking:

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

Single channel	Device	D5034*	D5036*	D5037*
parameters		Te	erminals	
Channal	1	7-8 1)	7-8 1)	7-8 1)
Channel	2	9-10 1)	9-10 1)	9-10 1)
Voltage U _o		DC 10.5 V	DC 10.5 V	DC 10.5 V
Current Io		15 mA	22 mA	22 mA
Power P _o		39 mW	56 mW	56 mW
Voltage U _i		N/A	N/A	N/A
Current I _i		N/A	N/A	N/A
Power P _i		N/A	N/A	N/A
Effective internal cap	pacitance	N/A	1.1 nF	1.1 nF
Effective internal ind	uctance L	N/A	N/A	N/A
	IIC	2.41 µF	2.41 µF	2.41 µF
Max. external	IIB, IIIC	16.8 µF	16.8 µF	16.8 µF
capacitance Co	IIA	75 µF	75 µF////	75 µF
	X////	66 µF	66 µF///	/// 66 µF
1	IIC	163.2 mH	78.3 mH	78.3 mH
Max. external	IIB, IIIC	652.8 mH	313.4 mH	// 313,4 mH
inductance Lo	IIA	1305.6 mH	626.9 mH	// 626.9 mH/
3333	11////	2142.0 mH	//1028.6 mH//	1028.6 mH
	IIC ///	918.2 μH/Ω	635.9 μH/Ω	635.9 μΗ/Ω
Max. inductance /	IIB, IIIC	3672.9 μH/Ω	2543.9μH/Ω	2543.9 μH/Ω
resistance ratio	IIA ///	7345.8 μΗ/Ω	5087.9μH/Ω	5087.9 μH/Ω
L _o /R _o	11/////	12051.8 μΗ/Ω	/8347.4μH/Ω	8347.4 μΗ/Ω
Characteristics	7/1/////	///linear///	///linear///	////linear///
Ambient temperature	e range //	////////////-4	0 °C ≤ T _a ≤ +70	°C//////////
Remarks: 1) 2-wire circuit "I*+", N / A = not applicabl	"I*-" paran	neters of supply	circuit	

(16) Test and Assessment Report

BVS PP 10.2216 EG as of 2015-12-07

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(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 in case of alternative installation in areas requiring EPL Gc equipment.
- 17.3 Group III application (Dust):

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.

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 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, 2015-12-07 BVS-Scha/Mu A20151083

Certification body