INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

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Certificate No.:	**IECEx BVS 14.0111X**	Page 1 of 4	
Status:	**Current**	Issue No: 2	
Date of Issue:	2022-05-30		

Applicant: **G.M. International S.R.L.**
Via Mameli 53/55
20852 Villasanta (MB)
Italy

Equipment: **Digital Output Driver type D5040* or D5040*-xxx / D5240* or D5240*-xxx**

Optional accessory:

Type of Protection: **Intrinsic safety "i", Increased safety "e"**

Marking:
Ex ec [ia Ga] IIC T4 Gc
[Ex ia Da] IIIC
[Ex ia Ma] I

Approved for issue on behalf of the IECEx
Certification Body:

Dr Franz Eickhoff

Position:

Lead Auditor and officially recognised expert

Signature:
(for printed version)

Date:
(for printed version)

2022-05-30

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Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
On the safe side.

IECEx Certificate
of Conformity

Manufacturer:	**G.M. International S.R.L.** Via Mameli 53/55 20852 Villasanta (MB) **Italy**
Manufacturing locations:	**G.M. International S.R.L.** Via Mameli 53/55 20852 Villasanta (MB) **Italy**

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 equipment 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

IEC 60079-0:2011
Edition:6.0   Explosive atmospheres - Part 0: General requirements

IEC 60079-11:2011
Edition:6.0   Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

IEC 60079-7:2017
Edition:5.1   Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

This Certificate **does not** indicate compliance with 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/ExTR14.0106/02

Quality Assessment Report:

NO/DNV/QAR07.0005/10

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Type Code:

See Annex

Description

See Annex

Ratings

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:
1 Group I application:

The Digital Output Driver 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:

The Digital Output Driver shall be installed:

- outside the hazardous area, or

- in case of alternative installation in areas requiring EPL Gc equipment:

  • The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.

and

  • The equipment shall be installed in an enclosure that provides a minimum ingress protection of IP 54 in accordance with IEC 60079-0.

3. Group III application:

The Digital Output Driver shall be installed outside the hazardous area or alternatively in an enclosure providing a suitable type of protection according to separate certification.

4. General:

The installation of the Digital Output Driver 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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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Updating of the standards: IEC 60079-0:2011 to IEC 60079-0:2017

Converting type of Protection "nA" to "ec" by introducing standard IEC 60079-7:2017

Annex:

BVS_14_0111X_GM_Annex2.pdf

General product information:

The Digital Output Driver models type D5040* or D5040*-xxx / D5240* or D5240*-xxx are designed as associated apparatus extending DIN Rail Isolator series *D5****, *D5****-xxx and are designated for installation in the safe area or alternatively in areas requiring EPL Gc equipment.

Type Code

Digital Output Driver type D5040* or D5040*-xxx / D5240* or D5240*-xxx

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

S = single channel	S-xxx = single channel	D5040* only
D = dual channel	D-xxx = dual channel	
T = triple channel	T-xxx = triple channel	D5240* only
Option 'xxx' = non Ex-relevant details of construction or function		

Description

Electronic components of the Digital Output Driver models are arranged on printed-circuit-boards (PCB) packaged in plastic enclosures, suitable for installation on T35 DIN Rails.

The Digital Output Drivers provide fully floating single, dual or triple channel intrinsically safe power supply for solenoid valves, visual or audible alarm devices located in hazardous areas driven by control-signals generated in the safe area.

Digital Output Driver type D5040* or D5040*-xxx providing single or dual channel configuration:

For each channel two basic outputs are selectable (output A or B) with different safety parameters.
The basic outputs of the same channel can be used 'exclusive-or' only.
In addition, the basic outputs A and/or B of the two channels of dual channel model D5040D or D5040D-xxx may be interconnected in parallel for single channel operation. See 'Ratings' for permissible combinations.

Digital Output Driver type D5240T or D5240T-xxx providing three channel configuration:

For each channel three basic outputs are selectable (output A or B or C) with different safety parameters. The basic outputs of the same channel can be used 'exclusive-or' only.
In addition, the basic outputs A, B and/or C of the three channels may be interconnected in parallel for dual or single channel operation. See 'Ratings' for permissible combinations.

The intrinsically safe output circuits provide safe galvanic separation from the non-intrinsically safe circuits on the PCB up to a sum of peak values of rated voltages of 375 V.

Ratings

1   Non intrinsically safe power supply circuit

Digital Output Driver type	Voltage		Power
	U_n	U_m	P_n
	DC [V]	AC [V]	[W]
D5040S, D5040S-xxx	24	253	≤ 1.7
D5040D, D5040D-xxx	24	253	≤ 2 x 1.5
D5240T, D5240T-xxx	24	253	≤ 3.3

2   Intrinsically safe output circuits

2.1   Digital Output Driver type D5040S, D5040S-xxx, D5040D, D5040D-xxx

General single channel parameters	Maximum parameters			
	Group	C_o [µF]	L_o [mH]	L_o/R_o (µH/Ω)
Output A: Terminals: 7-8 or 10-11 $U_o = DC$ 25.2 V $I_o =$ 146 mA $P_o =$ 916 mW Characteristic: linear	IIC	0.107	1.67	38.8
	IIB	0.82	6.71	155.3
	IIA	2.9	13.42	310.7
	I	4.8	22.01	509.8
	IIIC	0.82	6.71	155.3
Output B: Terminals: 7-9 or 10-12 $U_o = DC$ 25.2 V $I_o =$ 108 mA $P_o =$ 676 mW Characteristic: linear	IIC	0.107	3.07	52.6
	IIB	0.82	12.3	210.4
	IIA	2.9	24.61	420.0
	I	4.8	40.37	690.3
	IIIC	0.82	12.3	210.4

Remarks:

parameters of output A and output B of the same channel interconnected in parallel are identical with parameters of output A

D5040S, D5040S-xxx:
Terminal 7: common '+' of both outputs
Terminals 8, 9: '-' output A, B

D5040D, D5040D-xxx
Terminal 7: common '+' of both outputs channel 1
Terminals 8, 9: '-' output A, B channel 1
Terminal 10: common '+' of both outputs channel 2
Terminals 11, 12: '-' output A, B channel 2

2.2 Digital Output Driver type D5040D, D5040D-xxx

General parameters, outputs of both channels in parallel	Maximum parameters			
	Group	C_o [µF]	L_o [mH]	L_o/R_o (µH/Ω)
Output A+A: Terminals: 7//10 - 8//11 U_o = DC 25.2 V I_o = 292 mA P_o = 1831 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.82	1.67	77.6
	IIA	2.9	3.35	155.3
	I	4.8	5.50	254.9
	IIIC	0.82	1.67	77.6
Output B+B: Terminals: 7//10 - 9//12 U_o = DC 25.2 V I_o = 216 mA P_o = 1352 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.82	3.07	105.2
	IIA	2.9	6.15	210.4
	I	4.8	10.09	345.1
	IIIC	0.82	3.07	105.2
Output A+B: [1] Terminals: 7//10-8//12 or 7//10-9//11 U_o = DC 25.2 V I_o = 254 mA P_o = 1592 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.82	2.22	89.3
	IIA	2.9	4.44	178.7
	I	4.8	7.28	293.2
	IIIC	0.82	2.22	89.3
Remarks: [1] parameters of output A of channel 1 and output B of channel 2 interconnected in parallel or vice versa // = terminals connected in parallel				

2.3 Digital Output Driver type D5240T or D5240T-xxx

2.3.1 Application mode: three single channels

General single channel parameters	Maximum parameters			
	Group	C_o [µF]	L_o [mH]	L_o/R_o (µH/Ω)

Output A:
Terminals: 13-14
        or 17-18
        or 21-22
U_o = DC   25.2 V
I_o =   146 mA
P_o =   916 mW
Characteristic: linear
	IIC	0.096	1.67	38.8

	IIB	0.809	6.71	155.3
	IIA	2.889	13.42	310.7
	I	4.789	22.01	509.8
	IIIC	0.809	6.71	155.3

Output B:
Terminals: 13-15
        or 17-19
        or 21-23
U_o = DC   25.2 V
I_o =   108 mA
P_o =   676 mW
Characteristic: linear
	IIC	0.096	3.07	52.6

	IIB	0.809	12.3	210.4
	IIA	2.889	24.61	420.0
	I	4.789	40.37	690.3
	IIIC	0.809	12.3	210.4

Output C:
Terminals: 13-16
        or 17-20
        or 21-24
U_o = DC   25.2 V
I_o =   93 mA
P_o =   580 mW
Characteristic: linear
	IIC	0.096	4.18	61.3

	IIB	0.809	16.72	245.3
	IIA	2.889	33.45	490.6
	I	4.789	54.88	804.9
	IIIC	0.809	16.72	245.3
Remarks: Parameters of output A, B and/or C of the same channel interconnected in parallel are identical with parameters of output A Terminals 13, 17, 21: common '+' of all channels and outputs Terminals 14, 15, 16: '-' output A, B, C channel 1 Terminals 18, 19, 20: '-' output A, B, C channel 2 Terminals 22, 23, 24: '-' output A, B, C channel 3				

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2.3.2 Application of two channels in parallel (third channel not used or used as single channel)

General parameters, outputs of two of the three channels in parallel	Maximum parameters			
	Group	C_o [µF]	L_o [mH]	L_o/R_o (µH/Ω)
Output A+C: [1]) Terminals: 13//17-14//20 or 13//21-14//24 or 17//13-18//16 or 17//21-18//24 or 21//13-22//16 or 21//17-22//20 U_o = DC 25.2 V I_o = 238 mA P_o = 1496 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.798	2.51	95.1
	IIA	2.878	5.03	190.2
	I	4.778	8.25	312.1
	IIIC	0.798	2.51	95.1
Output B+B: Terminals: 13//17-15//19 or 13//21-15//23 or 17//21-19//23 U_o = DC 25.2 V I_o = 216 mA P_o = 1352 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.798	3.07	105.2
	IIA	2.878	6.15	210.4
	I	4.778	10.09	345.1
	IIIC	0.798	3.07	105.2
Output C+C: Terminals: 13//17-16//20 or 13//21-16//24 or 17//21-20//24 U_o = DC 25.2 V I_o = 185 mA P_o = 1160 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.798	4.18	122.6
	IIA	2.878	8.36	245.3
	I	4.778	13.72	402.4
	IIIC	0.798	4.18	122.6
Remarks: [1]) parameters of output A of channel 1 or 2 or 3 and output C of one of the other two channels // = terminals connected in parallel				

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2.3.3 Application of three channels in parallel (3 x output A or B or C in parallel)

General parameters	Maximum parameters			
	Group	C_o [µF]	L_o [mH]	L_o/R_o (μH/Ω)
Output A+A+A: Terminals: 13//17//21-14//18//22 U_o = DC 25.2 V I_o = 437 mA P_o = 2138 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	N/A	N/A	N/A
	IIA	2.867	1.49	103.5
	I	4.767	2.44	169.9
	IIIC	N/A	N/A	N/A
Output B+B+B: Terminals: 13//17//21-15//19//23 U_o = DC 25.2 V I_o = 323 mA P_o = 2028 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.787	1.36	70.1
	IIA	2.867	2.73	140.2
	I	4.767	4.48	230.1
	IIIC	0.787	1.36	70.1
Output C+C+C: Terminals Output: 13//17//21-16//20//24 U_o = DC 25.2 V I_o = 277 mA P_o = 1740 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	0.787	1.85	81.7
	IIA	2.867	3.71	163.5
	I	4.767	6.09	268.3
	IIIC	0.787	1.85	81.7
Remarks:				
// = terminals connected in parallel				

2.3.4 Application of three channels in parallel (3 x output in parallel A or B or C mixed)

General parameters, various outputs of the three channels in parallel	Maximum parameters			
	Group	C_o [µF]	L_o [mH]	L_o/R_o (µH/Ω)
Output A+B+B: Terminals: 13//17//21-14//19//23 or 17//13//21-18//15//23 or 21//13//17-22//15//19 U_o = DC 25.2 V I_o = 361 mA P_o = 2138 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	N/A	N/A	N/A
	IIA	2.867	2.18	125.4
	I	4.767	3.58	205.8
	IIIC	0.787	1.09	62.7
Output A+A+C: Terminals: 13//17//21-14//18//24 or 13//21//17-14//22//20 or 17//21//13-18//22//16 U_o = DC 25.2 V I_o = 384 mA P_o = 2138 mW Characteristic: linear	IIC	N/A	N/A	N/A
	IIB	N/A	N/A	N/A
	IIA	2.867	1.93	118
	I	4.767	3.17	193.6
	IIIC	0.787	0.96	59
Remarks:				
// = terminals connected in parallel				