


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 14 ATEX E 159 X**
- (4) Equipment: **Digital Output Driver type D5040* or D5040*-xxx / D5240* or D5240*-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 14.2231 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'
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

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

DEKRA EXAM GmbH
Bochum, dated 2014-11-04

Signed: Dr. Eickhoff

Certification body

Signed: Dr. Wittler

Special services unit

- (13) Appendix to
- (14) **EC-Type Examination Certificate
BVS 14 ATEX E 159 X**
- (15) 15.1 Subject and type

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 | | |

15.2 Description

The Digital Output Driver models are designed as associated apparatus and designated for installation in the safe area or alternatively in areas requiring EPL Gc equipment.

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 each channel can be used 'exclusive-or' only.

In addition, the basic outputs A and/or B of the two channels of model D5040D or D5040D-xxx may be interconnected in parallel for single channel operation. See '15.3 Parameters' 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 each 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 '15.3 Parameters' 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.

15.3 Parameters

15.3.1 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 | ≤ 0.75 |
| D5040D, D5040D-xxx | 24 | 253 | ≤ 2 x 0.75 |
| D5240T, D5240T-xxx | 24 | 253 | ≤ 3.3 |

15.3.2 Intrinsically safe output circuits

15.3.2.1 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 = 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 | | | | |

15.3.2.2 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 = 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 = 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: Terminals: 7//10-8//12 or 7//10-9//11 U _o = 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 N / A = not applicable | | | | |

15.3.2.3 Digital Output Driver type D5240T, D5240T-xxx

15.3.2.3.1 Application mode: three single channels

| General parameters, single channel | 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 | | | | |

15.3.2.3.2 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 | 690.3 |
| | 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 N / A = not applicable | | | | |

15.3.2.3.3 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: 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 N / A = not applicable | | | | |

15.3.2.3.4 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 N / A = not applicable | | | | |

(16) Test and Assessment Report

BVS PP 14.2231 EG as of 2014-11-04

(17) Special conditions for safe use

17.1 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.

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

17.2 Group II application (gas):

The Digital Output Driver 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 II application (dust):


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.

17.4 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 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, 2014-11-04
BVS-Scha/Ma A20140559



Certification body



Special services unit

Translation

(1) **1st 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 14 ATEX E 159 X**
- (4) Equipment: **Digital Output Driver type D5040*, D5040*-xxx / D5240T, D5240T-xxx**
- (5) 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.
- (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 14.2231 EG.
- (9) 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'
- (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 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.
- (12) The marking of the equipment shall include the following:

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

DEKRA EXAM GmbH
 Bochum, dated 2015-12-16

Signed: Dr. Eickhoff

Signed: Dr. Wittler

Certification body

Special services unit

- (13) Appendix to
- (14) **1st Supplement to the EC-Type Examination Certificate
BVS 14 ATEX E 159 X**
- (15) 15.1 Subject and type

Digital Output Driver type D5040*-* / D5240T-*
(Type Code: no change)

15.2 Description

The status of applied standards in the certificate has been subjected to update as listed in item (9).

The Digital Output Driver type D5040*-* / D5240T-* can be modified according to the descriptive documents referred to in the pertinent test and assessment report.

Some electrical parameters have been subjected to update.

15.3 Parameters

15.3.1 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 | $\leq 2 \times 1.5$ |
| D5240T, D5240T-xxx | 24 | 253 | ≤ 3.3 |

15.3.2 Intrinsically safe output circuits

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

| General single channel parameters | Maximum parameters | | | |
|---|--------------------|---------------------|---------------|------------------------------------|
| | Group | C_o [μ F] | L_o [mH] | L_o/R_o [μ H/ 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 $U_o = 25.2 \ V$ $I_o = 108 \ mA$ $P_o = 676 \ mW$ 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 | | | | |

15.3.2.2 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 = 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 = 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 = 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 N / A = not applicable | | | | |

15.3.2.3 Digital Output Driver type D5040T, D5040T-xxx

15.3.2.3.1 Application mode: three single channels

| General parameters, single channel | 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

15.3.2.3.2 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 | 690.3 |
| | 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 N / A = not applicable | | | | |

15.3.2.3.3 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: 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 N / A = not applicable | | | | |

15.3.2.3.4 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 N / A = not applicable | | | | |

(16) Test and Assessment Report

BVS PP 14.2231 EG as of 2015-12-16

(17) Special conditions for safe use

17.1 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.

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

17.2 Group II application (gas):

The Digital Output Driver 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 II application (dust):

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.

17.4 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 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, 2015-12-16
BVS-Scha/Nu A 20151221



Certification body



Special services unit