

Translation

# Type Examination Certificate Supplement 3

Change to Directive 2014/34/EU

Equipment intended for use in potentially explosive atmospheres  
Directive 2014/34/EU

Type Examination Certificate Number: **BVS 12 ATEX E 053 X**

Product: **Temperature Converter module type D5072\*, D5072\*-xxx, D5072\*-087,  
D5072\*-096, D5072\*-099, D5273S, D5273S-xxx**

Manufacturer: **G.M. International S.R.L.**

Address: **Via Mameli 53/55, 20852 Villasanta (MB), Italy**

This supplementary certificate extends Type Examination Certificate No. BVS 12 ATEX E 053 X to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any variations specified in the appendix attached to this certificate and the documents referred to therein.

DEKRA Testing and Certification GmbH certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
The examination and test results are recorded in the confidential Report No. PP 12.2099 EU.

The Essential Health and Safety Requirements are assured in consideration of:

<b>EN IEC 60079-0:2018</b>	<b>General requirements</b>
<b>EN IEC 60079-7:2015 + A1:2018</b>	<b>Increased Safety "e"</b>
<b>EN 60079-11:2012</b>	<b>Intrinsic Safety "i"</b>
<b>EN 60079-15:2019</b>	<b>Type of protection "n"</b>

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

This Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the product shall include the following:

For Temperature Converter type D5072\*, D5072\*-xxx, D5072\*-087, D5072\*-096, D5072\*-099:

**⊕ II 3(1)G Ex ec [ia Ga] IIC T4 Gc**

For Temperature Converter type D5273S, D5273S-xxx:

**⊕ II 3(1)G Ex ec nC [ia Ga] IIC T4 Gc**

For all Temperature Converter types:

**⊕ II (1)D [Ex ia Da] IIIC  
I (M1) [Ex ia Ma] I**

DEKRA Testing and Certification GmbH  
Bochum, 2020-09-07

Signed: Jörg-Timm Killisch

Managing Director

13 **Appendix**  
 14 **Type Examination Certificate**

**BVS 12 ATEX E 053 X  
 Supplement 3**

15 **Product description**

15.1 **Subject and type**

Temperature Converter type D5072S, D5072D, D5072S-xxx, D5072D-xxx, D5072S-087, D5072D-087, D5072S-096, D5072D-096, D5072S-099, D5072D-099, D5273S, D5273S-xxx

The extended DIN Rail Isolator type series D5\*\*\*\*, D5\*\*\*\*-xxx, comprises the following models:

Temperature Converter	type	D5072*, D5072*-xxx
type		D5072*-087,
type		D5072*-096,
	type	D5072*-099,

Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx

In the full designation of type D5072\*, D5072\*-xxx the "\*" is replaced by letters marking details of 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)

With this supplement the certificate is changed to Directive 2014/34/EU.  
 (Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

**Reasons for the supplement:**

- Change to Directive 2014/34/EU
- Assessment of current standard version
- Modification of the circuit
- Introduction of optional versions

**Description of Product**

Temperature Converter type D5072\*, D5072\*-xxx, D5072\*-087, D5072\*-096, D5072\*-099

Temperature Converter D5072 series provide single or dual channel conversion of intrinsically safe temperature sensor signals (e.g. thermocouples 2, 3, 4 wire resistance temperature detectors RTD), 'mV' sources or transmitting potentiometers from equipment located in potentially hazardous areas to non-IS circuits and provide safe galvanic separation of IS circuits from non-IS circuits.

Available versions of the Temperature Converter

Single channel: type D5072S, D5072S-xxx, D5072S-087, D5072S-096, D5072S-099  
 dual channel: type D5072D, D5072D-xxx, D5072D-087, D5072D-096, D5072D-099

Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx

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

Available versions of the Temperature Converter and Trip Amplifier  
Single channel only: type D5273S, D5273S-xxx

The D5273 variant has a relay evaluated according to nC.

Listing of all components used referring to older standards: Not applicable

15.3 **Parameters**

15.3.1 Non-intrinsically safe circuits

15.3.1.1 Power supply

DIN Rail Isolator version	Voltage		Power
	U <sub>n</sub> DC [V]	U <sub>m</sub> AC [V]	P <sub>n</sub> [W]
D5072S, D5072S-087, D5072S-099, D5072S-xxx	24	253	≤ 0.9
D5072S-096	24	253	≤ 0.75
D5072D, D5072D-087, D5072D-099, D5072D-xxx	24	253	≤ 1.4
D5072D-096	24	253	≤ 1
D5273S, D5273S-xxx	24	253	≤ 2.4

15.3.1.2 Input / output signal circuits

Voltage U<sub>m</sub> = AC 253 V

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

15.3.2.1 Temperature Converter type D5072S, D5072S-xxx, D5072S-087, D5072S-096, D5072S-099, D5072D, D5072D-xxx, D5072D-087, D5072D-096, D5072D-099

Device marking: Ex ec [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I<sup>1)</sup>

15.3.2.2 Temperature Converter and Trip Amplifier type D5273S, D5273S-xxx

Device marking: Ex ec nC [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I<sup>1)</sup>

1) in addition, marking as required in Council Directive 2014/34/EU; see 5) Marking

Single channel parameters		DIN Rail Isolator type				
		D5072S, D5072S-xxx D5072S-087, D5072S-099	D5072S-096	D5072D, D5072D-xxx, D5072S-087, D5072S-099	D5072D-096	D5273S, D5273S-xxx
Channel / Terminals	1	7-8-9-10	7-8	7-8-9	7-8	13-14-15-16
	2	N / A	N / A	10-11-12	11-12	N / A
Voltage U <sub>o</sub>		DC 7.2 V	DC 7.2 V	DC 7.2 V	DC 7.2 V	DC 7.2 V
Current I <sub>o</sub>		23 mA	23 mA	16 mA	16 mA	23 mA
Power P <sub>o</sub>		40 mW	40 mW	27 mW	27 mW	40 mW
Voltage U <sub>i</sub>		DC 12.8 V	DC 12.8 V	DC 12.8 V	DC 12.8 V	DC 12.8 V
Current I <sub>i</sub>		N / A	N / A	N / A	N / A	N / A
Power P <sub>i</sub>		N / A	N / A	N / A	N / A	N / A
Effective internal capacitance C <sub>i</sub>		0 nF	0 nF	0 nF	0 nF	0 nF
Effective internal inductance L <sub>i</sub>		0 nH	0 nH	0 nH	0 nH	0 nH
Max. external capacitance C <sub>o</sub>	IIC	13.5 μF	13.5 μF	13.5 μF	13.5 μF	13.5 μF
	IIB	240 μF	240 μF	240 μF	240 μF	240 μF
	IIA	1000 μF	1000 μF	1000 μF	1000 μF	1000 μF
	I	1000 μF	1000 μF	1000 μF	1000 μF	1000 μF
Max. external inductance L <sub>o</sub>	IIC	67.2 mH	67.2 mH	138 mH	138 mH	67.2 mH
	IIB	268.8 mH	268.8 mH	555 mH	555 mH	268.8 mH
	IIA	537.7 mH	537.7 mH	1111 mH	1111 mH	537.7 mH
	I	882.2 mH	882.2 mH	1822 mH	1822 mH	882.2 mH

Max. L/R - ratio $L_0/R_0$	IIC	0.875 mH/Ω	0.875 mH/Ω	1.29 mH/Ω	1.29 mH/Ω	0.875 mH/Ω
	IIB	3.5 mH/Ω	3.5 mH/Ω	5.16 mH/Ω	5.16 mH/Ω	3.5 mH/Ω
	IIIC					
	IIA	7 mH/Ω	7 mH/Ω	10.33 mH/Ω	10.33 mH/Ω	7 mH/Ω
I	11.48 mH/Ω	11.48 mH/Ω	16.95 mH/Ω	16.95 mH/Ω	11.48 mH/Ω	
Characteristics		linear	linear	linear	linear	linear
Ambient temperature range	-40 °C ≤ T <sub>a</sub> ≤ +70 °C					
Remark: N / A = not applicable						

**16 Report Number**

BVS PP 12.2099 EU, as of 2020-09-07

**17 Special Conditions for 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 in an area of at least pollution degree 2 according to EN 60664-1.

For hazardous location, DIN Rail Isolators of type series D5\*\*\*\*, D5\*\*\*\*-xxx shall be installed in a certified Ex enclosure that provides a minimum ingress protection of IP54 in accordance with IEC 60079-0.

**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 uninsulated 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.

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

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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.

DEKRA Testing and Certification GmbH  
Bochum, 2020-09-07  
BVS-Fro/Mu A 20200540

  
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Managing Director

