

EU-TYPE EXAMINATION CERTIFICATE



Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

- [3] EU-Type Examination Certificate Number: **DEMKO 19 ATEX 2290X Rev. 1**
- [4] Product: **Switch / Proximity Repeater, D5038 and D5039 series**
- [5] Manufacturer: **G.M. International srl**
- [6] Address: **Via G. Mameli, 53-55 Villasanta, MB, 20852 Italy**
- [7] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to 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 confidential report no. **4789440535.1.1**
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- | | |
|----------------------------------|-------------------------|
| EN IEC 60079-0:2018 | EN 60079-11:2012 |
| EN 60079-7: 2015 +A1:2018 | EN 50303: 2000 |
- [10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This EU-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 the certificate.
- [12] The marking of the product shall include the following:

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

 II (1) D **[Ex ia Da] IIIC**

 I (M1) **[Ex ia Ma] I**

Certification Manager
Jan-Erik Storgaard

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2019-10-31

Re-issued: 2020-04-23



Certification Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
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Schedule EU-TYPE EXAMINATION CERTIFICATE No. DEMKO 19 ATEX 2290X Rev. 1

[15]

Description of Product

D5038 and D5039 Series are Associated Apparatus and non-sparking, non-incendive Electrical Apparatus, designed as single/double channel galvanic isolators, to interface Intrinsically Safe field devices located in potentially explosive atmospheres with non-intrinsically safe measuring and process control equipment located in non-explosive atmospheres.

The Switch/Proximity Detector Repeater D5038 and D5039 are modules suitable for applications requiring SIL 3 level and SIL 2 level respectively in safety related systems for high risk industries. The unit can be configured for switches or proximity detectors, located in Hazardous Area, and repeats the input state to the output in Safe Area. The output port can assume two different impedance values (RL or RH) or it can open completely. The module output repeats the input state according to the following correspondence: low input state -> RL, high input state -> RH. Alternatively, the output can be configured to invert the input state. In both cases, the output opens if any fault (open or short circuit) occurs at the corresponding input.

They are packaged in a plastic enclosure suitable for installation on EN 60715 TH 35 DIN Rail, with or without Power Bus connector, or on Termination Board provided with customer dedicated connection.

D5038 and D5039 modules can be located in non-explosive atmospheres or Zone 2 potentially explosive gas atmospheres.

Electrical connections are accommodated by plug-in removable terminal block or with customer dedicated connector when installed on Termination Board.

Supply voltage can optionally be fed through the Termination Board or by the Power Bus connector installed on DIN Rail.

Nomenclature:

D5038	S	A	-xxx
I	II	III	IV

I – Model designation:

D5038 – SIL 3 Switch / Proximity repeater, DIN-Rail and Termination Board

D5039 – SIL 2 Switch / Proximity repeater, DIN-Rail and Termination Board

II – No. of Channel:

S – Single channel

D – Double channel

X – Duplicator

III – Output resistance (RH and RL):

A – RL = 2.2kΩ, RH = 14.3kΩ

Any other alphanumeric character – depending on low input state (RL) or high input state (RH) with $RL \leq 1.8 \text{ k}\Omega$ or $\geq 2.2 \text{ k}\Omega$ and $RH \leq 1.38 \text{ k}\Omega$ or $\geq 2.9 \text{ k}\Omega$.

IV – Configuration – Optional:

xxx – Any alphanumeric character denoting pre-delivery testing or configuration requested by end-user.

Performance testing

The optical radiation output of the product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is covered in this certificate based on Exception 1) to the scope of EN 60079-28:2015 .

Temperature range

The relation between ambient temperature and the assigned temperature class is as follows:

Ambient temperature range

-40 °C to +70 °C

Temperature class

T4

Electrical data

Model	Supply voltage (terminals 5-6)	Current consumption	Power consumption	Input	Output
D5038S	24V dc	25 mA	0.4W	8V dc, 1 KΩ (8V dc no load, 8 mA short circuit) / Terminals 7-8	Max. 30V dc, Max. 15 mA Terminals 1- 2
D5038D	24V dc	45 mA	0.8W	8V dc, 1 KΩ (8V dc no load, 8 mA short circuit) / Terminals 7-8, 9-10	Max 30V dc, Max 15 mA Terminals 1-2, 3-4
D5038X	24V dc	35 mA	0.6W	8Vdc, 1 KΩ (8 Vdc no load, 8 mA short circuit) / Terminals 7-8	Max 30V dc, Max 15 mA Terminals 1-2, 3-4
D5039S	24V dc	25 mA	0.4W	8 Vdc, 1 KΩ (8 Vdc no load, 8 mA short circuit) / Terminals 7-8	Max. 30V dc, Max. 15 mA Terminals 1- 2
D5039D	24V dc	45 mA	0.8W	8 Vdc, 1 KΩ (8 Vdc no load, 8 mA short circuit) / Terminals 7-8, 9-10	Max 30V dc, Max 15 mA Terminals 1-2, 3-4

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Schedule

EU-TYPE EXAMINATION CERTIFICATE No.

DEMKO 19 ATEX 2290X Rev. 1

Model	Supply voltage (terminals 5-6)	Current consumption	Power consumption	Input	Output
D5039X	24V dc	35 mA	0.6W	8 Vdc, 1 K Ω (8 Vdc no load, 8 mA short circuit) / Terminals 7, 8	Max 30V dc, Max 15 mA Terminals 1-2, 3-4

Intrinsically safe specifications:
U_m : 250V rms

Terminals		Group	Co [μ F]	Lo [mH]	Lo/Ro [μ H/ Ω]
7-8 (Ch1) 9-10 (Ch2)	U _o : 10.5 V I _o : 22 mA Po: 56 mW	IIC	2.4	78.3	635
		IIB or III	16.7	313.5	2543
		IIA	74.9	627.1	5087
		I	94.9	1028.8	8347

Routine tests

Each piece of equipment shall be subjected to the routine tests for transformers in accordance with clause 11.2 of EN 60079-11. A test voltage of 1500 Vrms shall be applied between T200 and T300 pins 5-6 and pins 1-4 for a minimum of 60 s without breakdown resulting in more than 5 mArms flowing. Alternatively, a test voltage of 1800 Vrms for a minimum of 1 s may be used

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Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

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Specific conditions of use:

- For installations in which both the Ci and Li of the Intrinsically Safe apparatus exceeds 1% of the Co and Lo parameters of the Associated Apparatus (excluding the cable), then 50% of Co and Lo parameters are applicable and shall not be exceeded. The reduced capacitance of the external circuit (including the cable) shall not exceed 1 μ F for Groups I, IIA and IIB and 600 nF for Group IIC.
- The unit shall be installed in an area of at least pollution degree 2 according to EN 60664-1.
- For hazardous location, the unit shall be installed in a certified Ex enclosure that provides a minimum ingress protection of IP54 in accordance with EN 60079-0.

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9

Additional information



The trademark

will be used as the company identifier on the marking label.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.