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CERTIFICATO

CERTIFICATE

Sicurezza Funzionale
Functional Safety

Certificato No.: *Certificate No.:*	**TUV IT 26 SIL 0725 A**
Nome ed indirizzo del fabbricante: *Name and address of manufacturer:*	G.M. International S.p.A. Via G. Mameli, 53-55 20852 Villasanta (MB) Italy
Sede/i di produzione: *Address of production site:*	Via G. Mameli, 53-55 20852 Villasanta (MB) Italy
Prodotto: *Product:*	SIL 2 Switch/Proximity Detector Repeaters with Open-Collector Outputs for DIN-Rail, Power Bus and Termination Board
Modello/tipo: *Model/type:*	D5231E, D6231E
Rapporto Tecnico: *Technical report:*	**TUV SIL 722407798 A M009**

Si certifica che il componente E/EE/EP / SIS soddisfa, per la(le) Funzione(i) di Sicurezza riportata(e) nell'allegato al presente certificato, i requisiti della(e) norma(e):

We herewith certify that the E/EE/PE component / SIS meets the requirements of the following standard(s) for the Safety Function(s) reported in the annex to this certificate:

IEC 61508-2:2010 and IEC 61508-3:2010

Data 1a emissione: **17-04-2026**
First Issue date:

Data emissione: **17-04-2026**
Issue date:

Data di scadenza: **16-04-2029**
Expiry date:

00077

TÜV Italia S.r.l.

Alberto Carelli
Industry Service – Real Estate & Infrastructure Division
Managing Director

Allegato al Certificato
n° TUV IT 26 SIL 0725 A

1. Safety Function(s):

Configuring equally all module channels with the 2nd actuation mode (Normally Open (NO) input → NO transistor (equivalent to Normally closed (NC) input → NC transistor)) and enabling the input line fault detection to open each output transistor in case of fault, the failure behaviour of modules here considered is described, for each channel, by the following definitions:

- Fail-Safe State: it is defined as the output transistor being de-energized or open.
- Fail Safe: failure mode that causes the module / (sub)system to go to the defined Fail-Safe state without a demand from the process.
- Fail Dangerous: failure mode that does not respond to a demand from the process (i.e. being unable to go to the defined Fail-Safe state), so that output transistor remains energized or closed.
- Fail Dangerous Detected: a dangerous failure which has been detected from module internal diagnostic so that output transistor is forced to be de-energized (that is to Fail-Safe state), so that it goes open.
- Fail “No effect”: failure mode of a component that plays a part in implementing the Safety Function but that is neither a safe failure nor a dangerous failure. When calculating the SFF, this failure mode is not taken into account.
- Fail “Not part”: failure mode of a component which is not part of the Safety Function but is part of the circuit diagram and is listed for completeness. When calculating the SFF this failure mode is not taken into account.

2. Main Technical Features

Item name	Proof test time (T_{Proof})	Configuration	Allowed SIL	Allowed Systematic SIL	Notes
D5231E	9 years	Each channel	SIL2*	SIL3	none
	20 years		SIL2**		none

(*)Considering the products do not contribute more than 10% of total SIF dangerous failure
(**)Considering the products contribute more than 10% of total SIF dangerous failure

Item name	Proof test time (T_{Proof})	Configuration	Allowed SIL	Allowed Systematic SIL	Notes
D6231E	9 years	Each channel	SIL2*	SIL3	none
	20 years		SIL2**		none

(*)Considering the products do not contribute more than 10% of total SIF dangerous failure
(**)Considering the products contribute more than 10% of total SIF dangerous failure

3. Notes

The applicant shall inform TÜV Italia of all modifications that have been made or are intended to be made.

A copy of technical report n.: TUV SIL 722407798 A M009 is given to the manufacturer.

This annex is an integral part of the certificate TUV IT 26 SIL 0725 A

Milan, 17-04-2026