

CERTIFICAT

CERTIFICADO

СЕРТИФИКАТ

認證證書

CERTIFICATE

ZERTIFIKAT



Italia

CERTIFICATO

CERTIFICATE

Sicurezza Funzionale
Functional Safety

Certificato No.:

Certificate No.:

TÜV IT 22 SIL 0001 A Rev. 2

Nome ed indirizzo del fabbricante:

Name and address of manufacturer:

G.M. International S.r.l.

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:

SIL3 4-wire HART® Transmitter Current Repeater DIN-Rail and Termination Board

Modello/tipo:

Model/type:

D5016SS, D5016SK, D5016DS, D5016DK
D6016SS, D6016SK, D6016DS, D6016DK

Rapporto Tecnico:

Technical report:

TR A SIL 0001 Rev.4

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

Data 1a emissione: **04/05/2022**

First Issue date:

Data emissione: **15/06/2023**

Issue date:

Data di scadenza: **03/05/2025**

Expiry date:



PRD N° 081B

Membro degli Accordi di Mutuo Riconoscimento
EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual
Recognition Agreements



TÜV Italia S.r.l.

Alberto Carelli

Industrie Service Division Manager



Allegato al Certificato n° TÜV IT 22 SIL 0001 A Rev. 2



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1. Safety Function(s):

The failure behaviour of each module channel is described by the following definitions:

- Fail-Safe State: it is defined as the output going to 0 mA due to module shutdown.
- 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 or deviates the channel output current by more than 5% (0.8 mA) of full span.
- Fail High: failure mode that causes the output signal to go above the maximum channel output current (> 20 mA). Assuming that the application program in the safety logic solver is configured to detect High failure, this failure has been classified as a dangerous detected (DD) failure.
- Fail Low: failure mode that causes the output signal to go below the minimum channel output current (< 4 mA). Assuming that the application program in the safety logic solver is configured to detect Low failure, this failure has been classified as a dangerous detected (DD) failure.
- 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 that is not part of the Safety Function but that is part of the circuit diagram and is listed for completeness. When calculating the SFF, this failure mode is not taken into account.

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2. Main Results

Item name	Proof test time (T _{Proof})	Configuration	Allowed SIL	Allowed Systematic SIL	Notes
D5016SS	2 years	Single channel	SIL3*	SIL3	none
D5016SK	20 years		SIL2*		none
D6016SS	6 years		SIL3**		none
D6016SK	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
D5016DS	2 years	Each channel	SIL3*	SIL3	none
D5016DK	20 years		SIL2*		none
D6016DS	6 years		SIL3**		none
D6016DK	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
D5016DS	2 years	Duplicator with input loop on two input channels	SIL3*	SIL3	none
D5016DK	20 years		SIL2*		none
D6016DS	6 years		SIL3**		none
D6016DK	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.: TR A SIL 0001 Rev.4 is given to the manufacturer.

This annex is an integral part of the certificate **TÜV IT 22 SIL 0001 A Rev. 2**

Milan, June 15th 2023