

SIL



Functional Safety Certificate

No. 11190123.GME0Q07

Technical Construction File no. GM-SIL-TCF-01

Certificate's Holder: GOLDEN MOUNTAIN ENTERPRISE CO., LTD.
No. 9, Lane 133, Xing-Hua St., Chien Chen Dist., Kaohsiung 806, TAIWAN

Product: Flow Meter
Model(s): BF300-GT/GTA/GTH/GS series, BR250S- GT/GTA/GTH/GS series, OF 100-GT/GTA/GTH/GS series, BPF300-GT/GTA/GTH/GS series, EDW/EDX900-GT/GTA/GTH/GS series

Standard: Standard:
Has been assessed per the relevant requirements of:
IEC 61508:2010 Parts 1, 2
And meets requirements providing a level of integrity to:
Systematic Capability: SC 2 (SIL 2 Capable)
Random Capability: Type B Element
SIL 2 @ HFT= 0;
PFD_{avg} and Architecture Constraints must be verified each application.
* Safety Function:
To monitor the methane and other similar combustible gas.
* Application Restrictions:
The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements
* Is suitable to be safety function according to the description and the configuration defined in Annex I.

Related to:
SIL Functional Safety Verification

Verification Mark:



The Verification Mark can be affixed on the product. It is NOT permitted to alter the Verification Mark in any way

Remark: This SIL Verification of Compliance has been issued on a voluntary basis. ECM confirms that a Test Report is existent for the above listed product(s) and found to meet the requirements of above standards for application in safety related system up to Safety Level of SIL 2.

The unit must be properly designed into a Safety Instrument Function as per the requirements in the Safety Manual. The Verification Mark shown above can be affixed on the product. It is NOT permitted to alter the Verification Mark in any way. In addition the Verification's Holder is NOT allowed to transfer the Verification to third parties. This certificate can be checked for validity at www.entecerma.it

Date of issue 23 January 2019

Expiry date 22 January 2024

Chief Manager
Marco Morina

Deputy Manager
Amanda Payne

Ente Certificazione Macchine

Via Ca Folla, 243 - 40053 Valsamoggia Loc. Castello di Serravalle (Bo) Italia
 ☎ +39.0516705141 ☎ +39.0516705156 ✉ info@entecerma.it 🌐 www.entecerma.it



Annex I

No. 11190123.GME0Q07

Technical Construction File no. GM-SIL-TCF-01

1. The flow meter will measure the flow speed within the safety accuracy and provide the measurement on a 4~20mA current output.
2. The unit must be properly designed into a Safety Instrument Function per the requirements in the Safety Manual.
3. The Safety Integrity Level parameters are listed below:

GT series with 4~20mA

Type B device / HFT=0 / Low demand mode / $PFD_{avg}=6.03E-03$

| λ_{SD} | λ_{SU} | λ_{DD} | λ_{DU} | SFF | DC_D | MTBF | SIL | PFD_{avg} |
|----------------|----------------|----------------|----------------|-----|--------|-----------|-----|-------------|
| 0 | 72 FIT | 232 FIT | 26 FIT | 92% | 89% | 174 years | 2 | 6,03E-03 |

GTA series with Hall Sensor 4~20mA

Type B device / HFT=0 / Low demand mode / $PFD_{avg}=6.27E-03$

| λ_{SD} | λ_{SU} | λ_{DD} | λ_{DU} | SFF | DC_D | MTBF | SIL | PFD_{avg} |
|----------------|----------------|----------------|----------------|-----|--------|-----------|-----|-------------|
| 0 | 79 FIT | 242 FIT | 29 FIT | 92% | 89% | 171 years | 2 | 5,95E-03 |

GTH series with Hart 4-20mA

Type B device / HFT=0 / Low demand mode / $PFD_{avg}=6.27E-03$

| λ_{SD} | λ_{SU} | λ_{DD} | λ_{DU} | SFF | DC_D | MTBF | SIL | PFD_{avg} |
|----------------|----------------|----------------|----------------|-----|--------|-----------|-----|-------------|
| 0 | 82 FIT | 260 FIT | 30 FIT | 92% | 89% | 172 years | 2 | 6,27E-03 |

GS series with limit switch

Type B device / HFT=0 / Low demand mode / $PFD_{avg}=6.27E-03$

| λ_{SD} | λ_{SU} | λ_{DD} | λ_{DU} | SFF | DC_D | MTBF | SIL | PFD_{avg} |
|----------------|----------------|----------------|----------------|-----|--------|-----------|-----|-------------|
| 0 | 75 FIT | 252 FIT | 31 FIT | 91% | 89% | 169 years | 2 | 5,72E-03 |