Thüringen Italia

CERTIFICATION OF COMPLIANCE

with IEC EN 61508:2010

CERTIFICATE No.: C–2307–SIL–029

LICENCE HOLDER:
FIREPRO SYSTEMS Limited
8 Faleas Street,
CY - 4101 Limassol – CYPRUS

MANUFACTURER:
FIREPRO SYSTEMS Limited
8 Faleas Street,
CY - 4101 Limassol – CYPRUS

WE HEREWITH CONFIRM THAT THE ANALYSIS DEVELOPED BY MEDICAIR, REPORTED IN THE DOCUMENT:

Safety Manual for

Fire extinguishing AEROSOL GENERATOR
Series FP

HAS BEEN ASSESSED AND FOUND TO MEET THE SIL REQUIREMENTS DETAILED IN THE ANNEXED TABLE FOR THE SAFETY FUNCTION:

"Electrical pulse triggers aerosol discharge generation, in low demand mode of operation"

The above-described document was found to meet the standard defined requirements of the safety levels detailed in the table T-2307-SIL-029 according to IEC EN 61508:2010 Part 1 ÷ 7 under fulfillment of the conditions listed in the

Assessment Report No.: AR-2307-SIL-029 dated July 18th 2023

First issuing date: July 14th 2020 **Expiry date:** July 2026

NOTE: This certificate excludes any changes to manufacturer documentation after the date of issue of the certificate itself

Milan, 24.07.2023

Dipl.-Ing. J. Moreno
Assessor

Ing. M. Sansone
General Manager

TÜV Thüringen Italia Certificate
TÜV Thüringen Italia
Industrial Plants & Machinery
TTIC

CERTIFICATION OF COMPLIANCE

La validità dei certificati può essere verificata presso i nostri uffici:
TÜV Thüringen Italia Srl C.so Eguaglianza, 4 – 43044 Collecchio (PR) - Tel: +39 0521 805715 * email: info@tuv-thuringen.it

Thüringen Italia

SUMMARY TABLE
T–2307–SIL–029

Product description and scope of attestation - The series FP include following generator ***types***:

Activation type						
Electrical			Thermal	Thermal + electrical		
Steel housing						
Stainless		Red coated	Stainless			Red coated
Cylinder	Box		Cylinder		Box	
FP20T	***FP1200S***	***FP1200***	***FP40T***	***FP20TH***	***FP1200TS***	***FP1200T***
	FP2000S	***FP2000***	***FP80T***	***FP100S***	***FP2000TS***	***FP2000T***
	FP3000S	***FP3000***	***FP100T***	***FP200S***	***FP3000TS***	***FP3000T***
	FP4200S	***FP4200***	***FP200T***	***FP500S***	***FP4200TS***	***FP4200T***
	FP5700S	***FP5700***	***FP500T***		***FP5700TS***	***FP5700T***

Inspection of the **reliability data** and PFD calculation

	E/EE/EP safety-related system (final element)	**Fire extinguishing AEROSOL GENERATOR SYSTEM, Series FP**
SIL Classification according to IEC EN 62508:2010 (Chapters 2, 4, 6, 7)	***System type***	Type A
	Configuration	SARGT001, Fig. 2.1.2.4 – typical drawing
	Safety Function Definition	*An electrical pulse triggers the extinguishing agent within the aerosol generator, in low demand mode of operation. Further, when a thermal sensor reaches the preset temperature rating, the extinguishing agent is by the control bulb activated, discharging aerosol.*
	Max SIL	**SIL 3 with HFT=0, single channel configuration** and external diagnostic test **SIL 4 with double channel configuration and external diagnostic test**
	Additional requirements for the max SIL classification	*Checking equipment regularly. Execution of tests with time interval not higher than 12 months and Full Functional Proof Test with time interval not higher than 6 months*
	λ_{TOT}	1,01E-07
	λ_S	1,00E-07
	λ_D	1,00E-09
	PFD (1)	**4,39E-04**
	DC	0
	SFF	> 90%
	MTTR	< 24 h
	Hardware Safety Integrity	Route 2_H
	Systematic Safety Integrity	Route 2_S

Remarks

(1) ***PFD of reference calculated on the basis of a Full Functional Proof Test with time interval reported in the line Additional requirements for the max SIL classification for HFT = 0 configuration. This time intervals are considered by TÜV as reasonably consistent with the implementation of the equipment for safety related applications, with reference to the overall range of results shown in the report, where other possible combination of time intervals adequate for a classification up to SIL 2 are reported. Note that, concerning Full Proof Tests, time intervals for higher than 36 months are considered by TÜV as not adequate and consistent for equipment for safety related applications.***

Summary of results

The assessment has been performed according to the requirement as per Part 2 – Annex D of the IEC 61508 edition 2010.

All the necessary documentation used for the assessment is archived in electronically format.

The equipment must be used only with specified environmental condition documented in the user manual. The compliance of the existing condition for an application with the specified condition must be checked during the commissioning.