



COMPLIANCE

with IEC EN 61508:2010

Certificate No.: C – IS – 722160171

CERTIFICATE OWNER: G.M. International s.r.l.
Via G. Mameli, 53-55 I-20852 Villasanta (MB) - ITALY

WE HEREWITH CONFIRM THAT
THE MODULES IN THE TABLE ENCLOSED TO THE PRESENT DOCUMENT
MEET THE REQUIREMENTS OF IEC EN 61508:2010
(LOW DEMAND MODE OF OPERATION)

Examination result: The above described Modules were found to meet the standard defined requirements of the safety levels detailed in the following table (T-IS-722160171) according to IEC EN 61508:2010 - Route 2H, under fulfillment of the conditions listed in the related Reports, mentioned in the same table, in their currently valid version, on which this Certificate is based

Examination parameters: Functional characteristics, reliability and availability parameters and functional safety management

Official Summary Table No.: T-IS-722160171

IT IS TO BE INTENDED THAT THE ABOVE OFFICIAL SUMMARY TABLE IS AN INTEGRAL PART OF THIS DOCUMENT.

Reference Standard IEC EN 61508:2010

Sesto San Giovanni, April, 20th 2018

TÜV ITALIA Srl

TÜV ITALIA Srl
Industry Service Division
Director


Paolo Marcone





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**SUMMARY TABLE
T-IS-722160171**

	ITEM NAME HARDWARE	ITEM NAME SOFTWARE	REPORT CODE	FINAL RESULTS					
				System type	PFD _{avg}	T _{Proof}	Configuration	Allowed SIL	Allowed Systematic SIL
1.	D5254S	PRG054A into ADUC7061 processor + PRG053A into MK12DX128VLH processor	R-IS-722160171-03 Rev.1	Type B	9.38E-04	10 years	Passive input and analog current output	SIL2*	SIL3
					1.88E-03	20 years		SIL2**	
					9.37E-04	10 years	Active input and analog current output	SIL2*	
					1.87E-03	20 years		SIL2**	

Configuration	Safe Detected Failure λ_{SD}	Safe Undetected Failure λ_{SU}	Dangerous Detected Failure λ_{DD}	Dangerous Undetected Failure λ_{DU}	Diagnostic Coverage DC	Safe Failure Fraction SFF	No Effect Failure λ_{NE}	Not Part Failure λ_{NP}
Passive input and analog current output	0.00 FIT	142.31 FIT	168.00 FIT	21.08 FIT	88.85%	93.64%	329.11 FIT	262.00 FIT
Active input and analog current output	0.00 FIT	142.31 FIT	163.29 FIT	21.05 FIT	88.58%	93.56%	320.65 FIT	275.20 FIT

(*)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.

Please, for more Functional Safety information see Safety Manual ISM0315_r2.

T-IS-722160171

NOTE: The present table is integral part of the Document: C-IS-722160171

Date: April, 19th 2018





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	ITEM NAME HARDWARE	ITEM NAME SOFTWARE	REPORT CODE	FINAL RESULTS					
				System type	PFD _{avg}	T _{Proof}	Configuration	Allowed SIL	Allowed Systematic SIL
1.	D5254S	PRG054A into ADUC7061 processor + PRG053A into MK12DX128VLH processor	R-IS-722160171-03 Rev.1	Type B	9.37E-04	5 years	Passive input and single relay output	SIL2*	SIL3
					3.74E-03	20 years		SIL2**	
					9.35E-04	5 years	Active input and single relay output	SIL2*	
					3.74E-03	20 years		SIL2**	

Configuration	Safe Detected Failure λ_{SD}	Safe Undetected Failure λ_{SU}	Dangerous Detected Failure λ_{DD}	Dangerous Undetected Failure λ_{DU}	Diagnostic Coverage DC	Safe Failure Fraction SFF	No Effect Failure λ_{NE}	Not Part Failure λ_{NP}
Passive input and single relay output	0.00 FIT	192.29 FIT	108.41 FIT	42.46 FIT	71.86%	87.63%	256.69 FIT	322.65FIT
Active input and single relay output	0.00 FIT	192.29 FIT	103.70 FIT	42.43 FIT	70.96%	87.46%	248.23 FIT	335.85 FIT

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	ITEM NAME HARDWARE	ITEM NAME SOFTWARE	REPORT CODE	FINAL RESULTS					
				System type	PFD _{avg}	T _{Proof}	Configuration	Allowed SIL	Allowed Systematic SIL
1.	D5254S	PRG054A into ADUC7061 processor + PRG053A into MK12DX128VLH processor	R-IS-722160171-03 Rev.1	Type B	9.78E-04	20 years	Passive input and 1oo2 architecture relay output	SIL2*	SIL3
					9.75E-04	20 years	Active input and 1oo2 architecture relay output	SIL2*	

Configuration	Safe Detected Failure λ_{SD}	Safe Undetected Failure λ_{SU}	Dangerous Detected Failure λ_{DD}	Dangerous Undetected Failure λ_{DU}	Diagnostic Coverage DC	Safe Failure Fraction SFF	No Effect Failure λ_{NE}	Not Part Failure λ_{NP}
Passive input and 1oo2 architecture relay output	0.00 FIT	162.27 FIT	108.41 FIT	10.95 FIT	90.83%	96.11%	403.17 FIT	237.70 FIT
Active input and 1oo2 architecture relay output	0.00 FIT	162.27 FIT	103.70 FIT	10.92 FIT	90.47%	96.06%	394.71 FIT	250.90 FIT

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FUNCTIONAL SAFETY ASSESSMENTS		
	REPORT CODE	FINAL RESULT
1	R IS 236198-05-Rev.1	Compliant to the standard for the following parts: <ul style="list-style-type: none">- Documentation (IEC EN 61508:2010 Part 1 Chapter 5)- Management of functional safety (IEC EN 61508:2010 Part 1 Chapter 6)- Functional safety assessment (IEC EN 61508:2010 Part 1 Chapter 8)- Realization: E/E/PES safety lifecycle from 10.1 to 10.6 (IEC EN 61508:2010 Part 2) for the all safety related modules object of this certificate.



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