

CERTIFICATE ■ CERTIFICATO ■ ZERTIFIKAT ■ SERTIFIKA ■ CERTIFICADO ■ گواهینامه ■ ΠΙΣΤΟΠΟΙΗΤΙΚΟ ■ شهادة ■ 証明 ■ 証明書 ■ 인증서



# C E R T I F I C A T E

**Certificate no.** 16-SIL-0010017-02-TIC

WE HEREBY CERTIFY THAT

**Product description** DISTRIBUTED I/O SYSTEM  
**Models** SAFETY BUS  
**Manufacturer** SCAME SISTEMI S.r.l.  
Via Lombardia 5 - 20010 Arluno MI

IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE STANDARDS

**IEC 61508 Parts 1-7:2010**

**IEC 60079-29-3: 2014**

AS RESULT OF THE ASSESSMENT ACCORDING TO THE PROVISION  
SET OUT IN THE ABOVE-MENTIONED STANDARDS

**Summary Report no.** RC-1217-SIL-TIC-PC-0010017-16-04

**Expiry date** 01.01.2021

**Note**

This certificate is issued upon the request of the manufacturer as voluntary certification; it does not include the production surveillance.  
This certificate does not allow the manufacturer to use the safety mark of TÜV INTERCERT.



Reggio Emilia, 02.01.2018

Eng. Andrea Vivi  
TÜV INTERCERT Certification Body



# C E R T I F I C A T E

## ANNEX to Certificate no. 16-SIL-0010017-02-TIC

Type	B
HFT	<ul style="list-style-type: none"> <li>mono configuration: HFT=0 for each module</li> <li>duplex configuration: HFT=1 for control board S81-F7011-1, HFT=0 for all the other modules</li> </ul>
Safety functions	<ol style="list-style-type: none"> <li>SF-1: Fire and gas detection and alarm transmission</li> <li>SF-2: Fire and gas detection and shutdown</li> <li>SF-3: Fire and gas detection and extinguishing</li> </ol>
Mode of operation	Low Demand Mode

Random failure rates				
Module	Description	$\lambda_{DU}$ [1/h]	$\lambda_{DD}$ [1/h]	$\lambda_S$ [1/h]
S81-F7011-1	Safety Bus board	7,58E-09	1,88E-06	9,81E-07
SB-SIM, SB-SIM-GM, SB-ECM	Common part	6,83E-09	1,84E-06	9,81E-07
	Input channel	1,78E-10	1,93E-08	0,00E+00
SB-AIM	Common part	6,83E-09	1,84E-06	9,81E-07
	Input channel	1,68E-10	1,74E-08	0,00E+00
SB-SCM (E*)	Common part	6,83E-09	1,84E-06	9,81E-07
	Output channel	8,31E-11	1,54E-08	0,00E+00
SB-SCM (D*)	Common part	5,09E-09	1,40E-06	1,36E-06
	Output channel	1,40E-12	1,39E-10	1,54E-08
SB-ECM (E*)	Common part	6,91E-09	1,87E-06	9,81E-07
	Output channel	8,31E-11	1,54E-08	0,00E+00
SB-ECM (D*)	Common part	5,60E-09	1,45E-06	1,38E-06
	Output channel	1,40E-12	1,39E-10	1,54E-08
CAN Protocol	Safety Bus	1,94E-11	1,92E-09	1,94E-09

E\*: Energise to trip / D\*: De-energise to trip

Systematic capability	3 (Route 1 <sub>s</sub> applied)			
Architectural constraints	Route 1 <sub>H</sub> :	Applied	Route 2 <sub>H</sub> :	Not applied
	The product can be used up to SIL 3 in mono / duplex configuration			

**Remarks:**

- For further details, including environmental conditions, limitations of use, lifetime, failure rates traceability, mean repair times, common cause factors and systematic capability constraints, make reference to Safety Manual ST-171-IT.

END OF CERTIFICATE

Reggio Emilia, 02.01.2018

  
 Eng. Andrea Vivi  
 TÜV INTERCERT Certification Body