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CERTIFICATE

Machinery Directive 2006/42/EC Annex. IX
EC type-examination certificate for logic units to ensure safety functions
(ref. Annex IV – 21)

Certificate No.:	**TUV IT 0948 10 MAC 016 B Rev.06**
Name and address of manufacturer:	STEM S.r.l. Via della Meccanica, 2 27010, Cura Carpignano (PV) Italy
Designation:	Safety module
Model/type:	N96 ☐ Single sample ☑ Group of samples
Reference Standards:	EN ISO 13849-1:2023 - EN ISO 13849-2:2012 EN ISO 13856-1:2013 - EN ISO 13856-2:2013 EN ISO 13856-3:2013 - EN ISO 13850:2015 EN 60204-1:2018
Test report:	**RRTR-25-0948-MAC-722379812-05**

We herewith certify, as per Notified Body no.0948, that the product for the respective scope of application stated in the annex to this EC type-examination certificate meets the requirements of the Directive:

2006/42/CE

Issue date:	**28/03/2025**
Expiry date:	**29/03/2030**

PRODUCT CERTIFICATION ACCREDIA 00077

TÜV Italia Srl Industrie Service 09 48 Notified Body

TÜV Italia S.r.l.
Notified Body, Identification N° 0948

Alberto Carelli
Industrie Service Division Manager

First Issue date:	**30/03/2010**
Expiration date of the last certification cycle:	**29/03/2025**

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Annex to EC type-examination certificate n° TUV IT 0948 10 MAC 016 B Rev.06

1. Scope:

Pressure-sensitive mat control:

The safety module NC96 can control the status of pressure-sensitive devices like mats, edges and bumbers (4-wires type) by deactivating the safety outputs when pressure is applied to the device or when one of the two input channels is open. The NC96 can only be used in applications where automatic restart of the machine is allowed when pressure is removed from the safety device.

Control of emergency buttons or magnetic, mechanical or RFID sensors for movable guards:

The safety module NC96 can control the status of two N.O. contacts: the output is activated by pressing the start button (if present) only if the contacts are closed. The opening of even a single input contact determines a safety situation, placing the safety outputs in the open state and preventing them from closing even after the contact has been closed (both contacts need have to be opened and closed to allow a restart).

Manual reset, although possible, does not fully satisfy the requirements of the EN ISO 13849-1 standard regarding the manual reset safety function.

The component falls under Annex IV point 21 of the Machinery Directive 2006/42/EC as it belongs to the category *“Logic units to ensure safety functions”.*

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2. Reference Standard:

EN ISO 13849-1:2023 - EN ISO 13849-2:2012

EN ISO 13850:2015 - EN 60204-1:2018

The standards cited on the reference certificate of this Annex (see above)

☒ have been fully applied

☐ have been partially applied

EN ISO 13856-1:2013

EN ISO 13856-2:2013

EN ISO 13856-3:2013

The standards cited on the reference certificate of this Annex (see above)

☐ have been fully applied

☒ have been partially applied (for applicable parts)

3. Main technical characteristics

General characteristics of the safety module

Power supply: 24 V ac +10%, -15% 50 – 60 Hz

24 V dc +10%, -15%

Current consumption: 25 ÷100mA @24Vdc

110 ÷220mA @24Vac

Short circuit protection: Fast fuse 630 mA

Housing material: PA 6.6

Mounting: standard 35 mm DIN rail

Protection degree: IP20

Operating temperature: -5°C ÷ +55°C

Storage temperature: -25°C ÷ +70°C

Connections: screw terminals (tightening torque 0.5 Nm)

Synchronization time between channels

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(automatic restart): <500 ms

Maximum voltage on safety outputs (terminals 13-14, 23-24): 240 Vac/dc

Maximum current on safety outputs: 3 A

Maximum power on safe outputs (ohmic load): 720 VA

Maximum collector-emitter voltage phototransistor auxiliary output: 24 V

Maximum collector current phototransistor auxiliary output: 60 mA

Mechanical life: 10^7 operations

SIGNALS:

POWER, green LED = power supply

CH1, green LED = Channel 1

CH2, green LED = Channel 2

TERMINAL FUNCTION:

A1: Power supply +24 Vdc / 24 Vac

A2: Power supply GND / 24 Vac

Inputs:

S11-S12: NO contact input or pressure sensitive device channel 1

S12-S22: NO contact input or pressure sensitive device channel 2

Y1-Y2: Start button input and control loop feedback

Outputs:

13-14: First instantaneous safe output

23-24: Second instantaneous safe output

31-32: Auxiliary NC output

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Reliability data

Safety category and PL (EN ISO 13849-1:2023)	Cat. **4** (1 safety sensor)		Cat. **3** (more then 1 sensor or pressure sensitive device)			
	PL - **e**	PL - **e**	PL - **d**	PL - **e**	PL - **e**	
nop (number of operations / year)	61320	17520	61320	30000	17520	N. op. / year
MTTFd	30	100	30	62	100	years
PFHd	$2{,}47\times10^{-8}$	$9{,}54\times10^{-8}$	$2{,}65\times10^{-7}$	$8{,}84\times10^{-8}$	$4{,}29\times10^{-8}$	
TM	20					years
Stop category (EN ISO 13850:2015)	0					

4. Conditions of validity of the certificate

The connection of the NC96 board to the control circuit of the machines must not cause:

- Restarting the machine following the reset of the safety module, but enabling the start-up of the machine to be done in an intentional manner by a dedicated start-up button (§9.2.5.4.2 of EN 60204-1:2018, EN ISO 13850:2015);

- Starting a dangerous operation of the machine following the reclosing or reactivation of a mobile guard or protection (§9.3.1 of EN 60204-1:2018);

The validity of the EC type examination certificate is subject to review every five years. If the validity is not extended, the manufacturer has the obligation to stop placing the machine on the market.

The manufacturer has the obligation to communicate any modification made to the approved type. TÜV Italia reserves the right to confirm the validity of the EC type examination certificate issued.

5. Note

In accordance with the provisions of the Machinery Directive 2006/42/EC, the applicant must inform the notified body regarding the modifications, even of minor importance, that he has made or intends to make to the model of the machine to which the certificate refers.

Copy of the test report n.: **RRTR-25-0948-MAC-722379812-05** is delivered to the Manufacturer.

This annex is an integral part of the EC type examination certificate n°

TUV IT 0948 10 MAC 016 B Rev.06

Milan, 28/03/2025

CERTIFICAT ◆ CERTIFICADO ◆ СЕРТИФИКАТ ◆ 認證證書 ◆ ZERTIFIKAT ◆ CERTIFICATE

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Information regarding the TÜV Italia Certificate

This certificate is only valid for the referenced company and its facilities stated on the certificate. Only the Certification Body is allowed to transfer (assign) it to a third party.

The right to use the marking depicted on the certificate covers solely products, which match with the type approval and the specifications within the test report or within its complementary (additional) agreements.

Each product has to contain (be accompanied) the necessary operating and assembly instructions. Each product must bear the clearly visible identification of the manufacturer or importer as well as a type plate, in order to identify the compliance of the type approval with the product placed on the market.

The holder of the TÜV Italia certificate is obliged to continuously observe if the manufacture of the marked products complies with the test requirements; he is obliged to perform the control tests defined within the test requirements or by the Certification Body in an orderly manner.

Aside from the conditions referenced above, the conditions within the General Contract are effective for the TÜV Italia certificate.

It is valid as long as the state of the art requirements on which the test (approval) was based, are effective, if it was not withdrawn prior on conditions within the General Contract.

If this certificate expires or is withdrawn it has to be returned to the Certification Body immediately.

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