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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 005 B Rev.08**
Name and address of manufacturer:	STEM S.r.l. Via della Meccanica, 2 27010, Cura Carpignano (PV) Italy
Designation:	Safety module
Model/type:	NC62 – NC66 ☐ Single sample ☑ Group of samples
Reference Standards:	EN ISO 13849-1:2023 - EN ISO 13849-2:2012 EN 60947-5-1:2017/AC:2020 - EN ISO13850:2015 EN 60204-1:2018
Test report:	**RRTR-25-0948-MAC-722379812-01**

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:	**25/03/2025**
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 005 B Rev.08

1. Scope:

The NC62 and NC66 safety control units are able to control the status of devices with two separate N.O.+N.C. contacts (Reed or Hall effect magnetic sensors, mechanical switches, emergency stop buttons, RFID sensors): the output is closed by pressing the START button only if the N.O. contacts are closed and the N.C. contacts are open; the switching of even just one input contact (N.O. or N.C.) determines a safety situation, placing the safety outputs in the open state. In order to restart the closing procedure of the safety outputs, a reset of both channels is necessary (N.O. open and N.C. closed). An automatic start procedure is also possible when the input contacts are switched, without the need to use Start button. In the case of using a monitored feedback loop, the safety outputs close only if the feedback loop is closed when the unit is requested to activate. The feedback loop contacts must be connected in series to the Start button (if used), otherwise they must be connected to the input terminals of the Start button.

Inputs

The NC62 model can control from 1 to 30 devices (up to 2 directly connected to the control unit; from 3 to 30 by connecting the N.O. contacts in series and the N.C. contacts in parallel).

The NC66 model can control from 1 to 6 devices (all directly connected to the control unit).

Both models ensure a safety category (UNI EN ISO 13849-1:2023)

- 4 for the control of a single device
- 3 for the control of multiple devices

Outputs

The NC62 model has two N.O. safety outputs and one N.C. signalling output.

The NC66 model has two N.O. safety outputs, one N.C. signalling output. and 6 opto-isolated outputs matched to the connected sensors (they provide a 24Vdc signal when the corresponding sensor is activated).

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 60947-5-1:2017/AC:2020 - EN ISO13850:2015
EN 60204-1:2018

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

☒ have been fully applied

☐ have been partially applied

3. Main technical characteristics

NC62: General characteristics

Power supply: 24 V ac ±10% (50 ÷ 60 Hz)
24 V dc ±10%
Current consumption: @24Vdc: 10 min, 110 max; @24Vac: 30 min, 150 max
Short circuit protection: PTC 750 mA
Housing material: PA 6.6
Mounting: 35 mm standard 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)
Maximum voltage on safety outputs (terminals 13-14, 23-24): 240 V ac/dc
Maximum current on safety outputs: 3 A
Maximum power on safety outputs (ohmic load): 750 VA
Maximum voltage on auxiliary output N.C.: 24 V ac/dc
Maximum current on auxiliary output N.C.: 1.5 A
Mechanical life: 10^7 cycles
Minimum electrical life according to IEC 60947-5-1 Table C1: 50000*1 cycles min (AC-15: 3A-240V / DC-13: 3A-24 V).
*1Data approved for assembly version 2CA010G06000

SIGNALS:
POWER, green LED = power supply
K1, green LED = channel 1
K2, green LED = channel 2

TERMINAL FUNCTION:
A1: Power supply +24 V dc / 24 V ac
A2: Power supply GND / 24 V ac
Inputs:
S11-S12: Input NO contact device 1
S11-S22: Input NO contact device 2
S73-S74: Input NC contacts devices 1 and 2

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X1-X2: Input start button (start when the button is released) and feedback loop control
X1-X3: Automatic start input with or without feedback control loop

Outputs:
13-14: First instantaneous safe output
23-24: Second instantaneous safe output
31-32: Auxiliary output NC

NC66: General characteristics

Power supply: 24 V ac ±10% (50 ÷ 60 Hz)
24 V dc ±10%
Current consumption: @24V dc: 10 min, 120 max; @24V ac: 30 min, 170 max
Short circuit protection: PTC 750 mA
Housing material: PA 6.6
Mounting: 35 mm standard 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)
Maximum voltage on safety outputs (terminals 13-14, 23-24): 240 V ac/dc
Maximum current on safety outputs: 3 A
Maximum power on safety outputs (ohmic load): 750 VA
Maximum voltage on auxiliary output N.C. : 24 V ac/dc
Maximum current on auxiliary output N.C. : 1.5 A
Maximum voltage on opto-isolated auxiliary outputs. : 24 V dc
Maximum current on opto-isolated auxiliary outputs : 50 mA
Mechanical life: 10^7 cycles
Minimum electrical life according to IEC 60947-5-1 Table C1: 50000*1 cycles min (AC-15: 3A-240V / DC-13: 3A-24 V).
*1Data approved for assembly version 2CA010G07000

SIGNALS:
POWER, green LED = power supply
K1, green LED = channel 1
K2, green LED = channel 2
S1, S2, S3, S4, S5, S6, green LEDs = activation of input sensors.

TERMINAL FUNCTION:
A1: Power supply +24 V dc / 24 V ac
A2: Power supply GND / 24 V ac
Inputs:
S11-S12: Input NO contact device 1
S11-S22: Input NO contact device 2
S73-S74: Input NC contacts devices 1 and 2
S31-S32: Input NO contact device 3
S31-S42: Input NO contact device 4
S83-S84: Input NC contacts devices 3 and 4

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S51-S52: Input NO contact device 3
S51-S62: Input NO contact device 4
S93-S94: Input NC contacts devices 3 and 4

X1-X2: Input start button (start when the button is released) and feedback loop control
X1-X3: Automatic start input with or without feedback control loop

Outputs:
13-14: First instantaneous safe output
23-24: Second instantaneous safe output
31-32: Auxiliary output NC
Y1, Y2, Y3, Y4, Y5, Y6: Auxiliary outputs NO (24Vdc) related to sensors

Reliability data:

Safety category (EN ISO 13849-1)	**4** with one sensor	**3** with more then one sensor		
PL	**e**	**d**	**e**	
nop (n. of operations / year) AC-15 ; I = 0,9 A	29500	65000	29500	nop/ year
nop (n. of operations / year) DC-13 I = 0,1 A	97000	261000	97000	nop/ year
DC-13 I = 1 A	75000	128000	75000	
DC-13 I = 1,5 A	18000	31500	18000	
MTTFd	100	56	100	years
PFHd	$2{,}47 \times 10^{-8}$	$1{,}03 \times 10^{-7}$	$4{,}29 \times 10^{-8}$	
TM	20 (For MTTFd = 100)			years

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4. Conditions of validity of the certificate

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-722379812-01** is delivered to the Manufacturer.

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

TUV IT 0948 10 MAC 005 B Rev.08

Milan, 25/03/2025

CERTIFICAT ◆ 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.