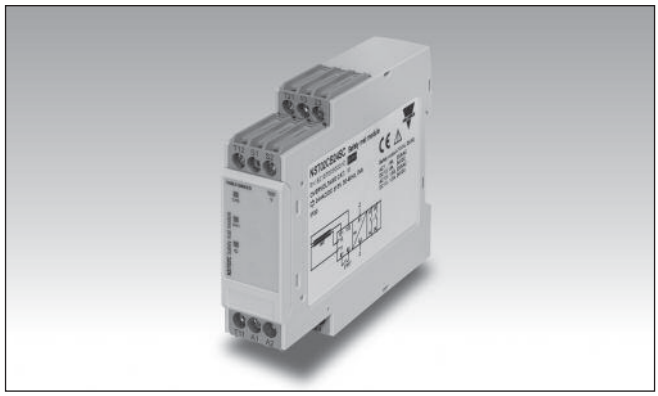
Safety Modules
Safety Mat and Safety Edge modules
Types NST02C, NSE02C



- **Performance Level d (safety category 3) according to EN ISO 13849-1**
- **2 x 5 A NO safety outputs**
- **Automatic or manual reset**
- **Four (NST02C) or two (NSE02C) wire inputs**
- **LED indication for outputs status and power supply ON**
- **Connection by fixed screw terminals**
- **For mounting on DIN-rail in accordance with DIN/EN 50 022**
- **22.5 mm Euronorm housing**

Product Description

Safety Mat (NST02C) and Safety Edge (NSE02C) modules according to EN ISO 13849-1. These products are the control unit of the safety mats and safety edges.
With automatic or manual restart.

Ordering Key

N ST 0 2 C B24 S A

- **Housing**
- **Function**
- **Auxiliary outputs**
- **Safety outputs**
- **Safety category**
- **Power supply**
- **Terminals**
- **Start/Reset type**

Type Selection

Safety outputs	Performance Level/ Safety Category	Application	Start/Reset type	Supply: 24 VAC/DC
2 NO	d/3	Safety Mat	Automatic / Manual	**N ST 0 2 C B24 S A**
2 NO	d/3	Safety Edge	Automatic / Manual	**N SE 0 2 C B24 S A**

Time Specifications

Delay ON energisation	≤ 30 ms
Delay ON de-energisation	≤ 30 ms
Recovery time Nxx02CB24SA	2 s ± 20%

Input Specifications

Function	4 wires (NST) 2 wires (NSE)
External resistor to be connected between the two layers (NSE02C)	8.2 kΩ
Input current	
NST02C	
Terminals T11-T12	Max. 2 mA
Terminals T21-S22	Max. 2 mA
Terminals S1-S2	Max. 4 mA
NSE02C	
Terminals T11-T22	Max. 2 mA
Terminals S1-S2	Max. 4 mA

Output Specifications

Safety outputs	Performance Level d (Safety category 3) (EN ISO 13849-1) 2 NO (13-14, 23-24)
Rated insulation voltage	250 VAC (rms)
Contact ratings ($AgSnO_2$)	2 µm Au
Resistive loads AC1	5 A @ 230 VAC
DC12	5 A @ 24 VDC
Small inductive loads AC15	1.5 A @ 230 VAC
DC13	1.2 A @ 24 VDC
External contact fuse protection	5 A fast, 4 A slow
Mechanical life	> 10^7 operations
Electrical life	> 10^5 operations
Dielectric strength	
Dielectric voltage	2.5 kVAC (rms)

Supply Specifications

Power supply	Overvoltage cat. III (EN IEC 60664)
Rated operational voltage through terminals: A1, A2	24 VAC ±15%, 45 to 65 Hz 24 VDC ±15%
Short circuit protection	Internal PTC
Dielectric voltage	
Supply to input	None
Supply to output	4 kV (1.2/50 µs)
Input to output	4 kV (1.2/50 µs)
Rated operational power	Max. 5 VA

General Specifications

Indication for	
Power supply ON	LED, green
Output relays ON	LED, green (CH1, CH2)
Environment	(EN IEC 60529)
Degree of protection	IP 20
Pollution degree	2
Operating temperature	0 to 55°C, R.H. < 95%
Storage temperature	-30 to 65°C, R.H. < 95%
Housing dimensions	22.5 x 84 x 100 mm
Weight	Approx. 200 g
Screw terminals	
Tightening torque	Max. 0.5 Nm
Approvals	TUV
CE Marking	Yes
EMC	Electromagnetic Compatibillity
Immunity	Acc. to EN IEC 61000-6-2
Emission	Acc. to EN IEC 61000-6-3

Mode of Operation

The safety modules NST02C and NSE02C monitor the status and the integrity of Safety Mats and Safety Edge respectively, according to 2006/42/EC Machinery Directive.
If the unit is correctly supplied and the safety mat (or edge) is not pressed, the module is enabled to close the safety outputs and the external contactors can be energized.
When the safety mat (edge) is pressed the module opens the safety outputs and the external contactors can not be energized.

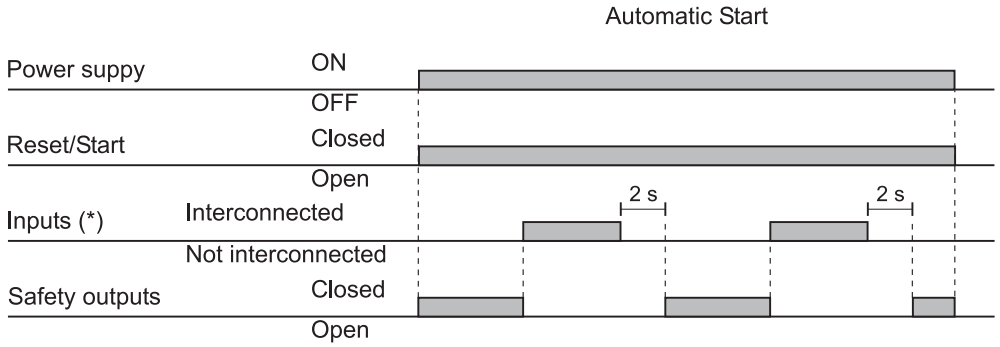
Automatic START
Provided that the terminals S1 and S2 are connected and the safety mat (edge) is not pressed, the module closes its own safety outputs.
The relevant CH1 and CH2 LED turn on.
If the safety mat (edge) is pressed (layers in contact to each other), the module immediately forces the safety outputs to open.
After the releasing of the safety mat (edge), a new operating cycle starts when a time of 2 seconds has expired.

Manual START
Provided that the mat (edge) is not pressed, the safety outputs close as soon as the START pushbutton is pushed (connecting S1 and S2).
The relevant CH1 and CH2 LED turn on.
A new operating cycle is possible only after mat (edge) releasing, pushing the START button and waiting for a time of 2 seconds.

Specifications are subject to change without notice (05.03.25)

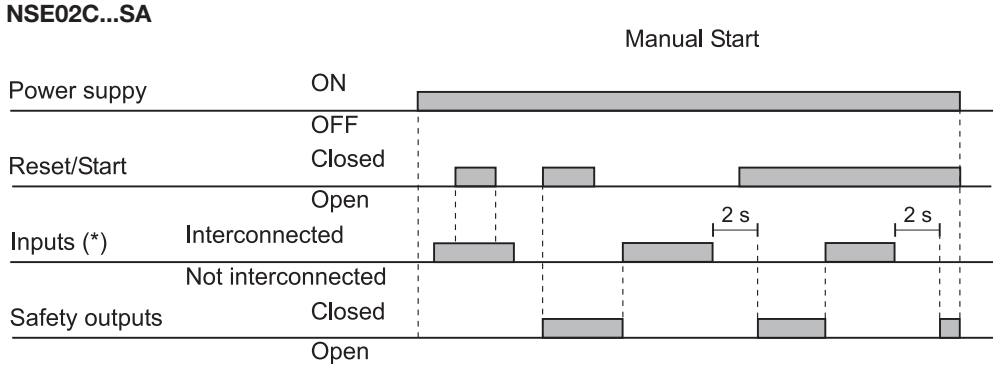
Operation Diagrams

NST02C...SA, NSE02C...SA



(*) Inputs interconnected: mat or edge pressed
Inputs not interconnected: mat or edge not pressed

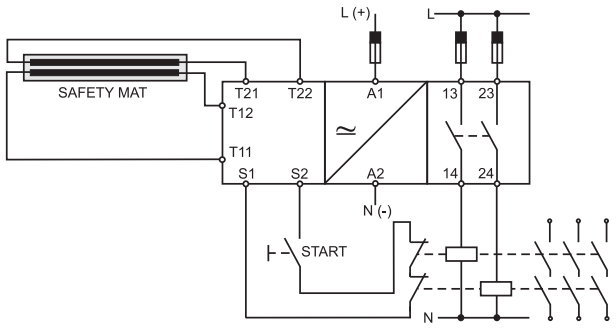
NST02C...SA, NSE02C...SA



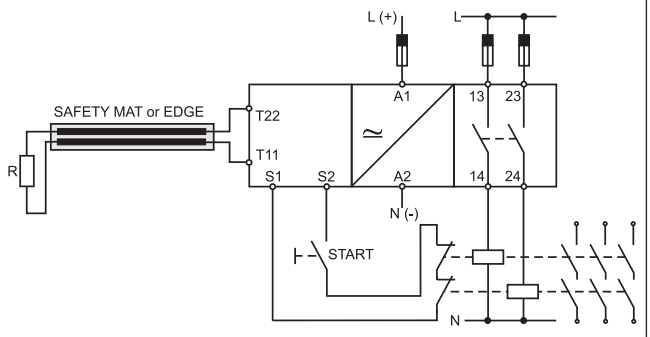
(*) Inputs interconnected: mat or edge pressed
Inputs not interconnected: mat or edge not pressed

Wiring Diagrams

NST02C...SA, NST02C...SC



NSE02C...SA, NSE02C...SC



Dimensions

