

# NST-3 (& EU-3)

Approved: MD, EMC, LVD

## Category 2/3, EN 954-1

(Estimated category by 2-channel operation)

- Inexpensive
- Forced contacts
- Doubling of output contacts
- Internal redundancy
- 22,5 mm slimline relay

### Function:

Small and vigorous emergency stop relay for monitoring of emergency stop and other safety arrangements. Furthermore the relay is useful as an inexpensive extension module, when additional output contacts are needed.

### Technical facilities regarding safety requirements:

- Forced contacts
- Doubling of output contacts
- Internal redundancy

### Approvals, NST-3:



● Approved  
 UL-Rating: Pilot Duty, B300; R300  
 (valid for NST-3, NST-3L, EU-3)

### Approvals, EU-3:



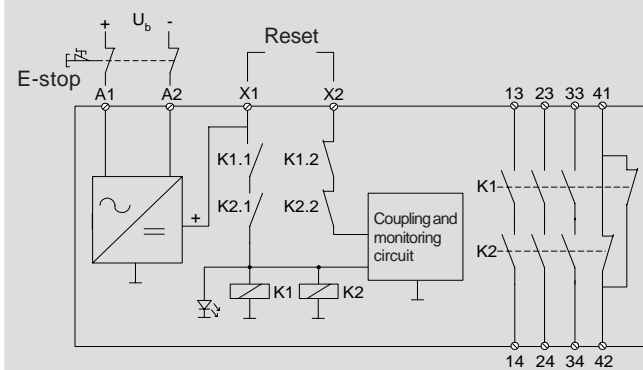
● Approved

### User's advantages:

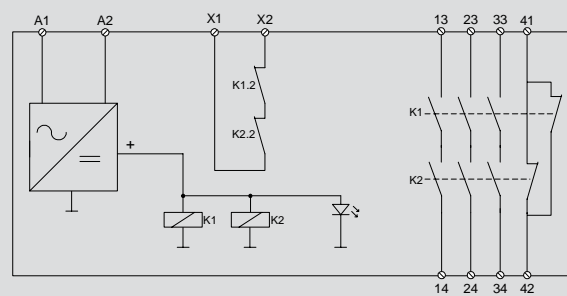
- 3 NO safety outputs
- 1 NC signal output
- Contact load: AC 6 A / DC 6 A
- Various supply voltages; 12VDC, 24VAC/DC og 48VDC
- Manual / automatic reset
- AC / DC supply results in protection against reverse polarity
- Connection of external relays
- LED indication of output status
- 22,5 mm housing for space-saving DIN rail mounting
- Design is based on the European Standard, EN 60204-1
- Complies with MD, EMC, LVD (98/37/EC, 92/31/EEC and 73/23/EEC)

➔ **Technical specifications and physical dimensions, see page 44-45**

### Block diagram, NST-3 (manual, automatic reset):



### Block diagram, EU-3 (extension contact block):

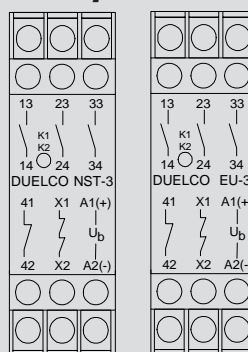


### Order information

Article name	Article no.
NST-3, 12 V DC	42041128
NST-3, 48 V DC	42040248
NST-3, 24 V AC/DC	42041248
NST-3L, 24 V AC/DC	42041243
NST-3S, 0,5s, 24 V AC/DC	42041246
NST-3CL, 24 V AC/DC	42041244
NST-3MR, 24 V AC/DC	42041253
EU-3, 24 V AC/DC	42232248
EU-3L, 24 V AC/DC	42232243

**Note:** NST-3L, NST-3 12 V DC and EU-3L is in a low housing, D=98,8 mm. NST-3S, 0,5s has 0,5 second delayed outputs.

### Front layout:



### Terminal description:

- A1(+):** Power supply (+)
- A2(-):** Power supply (-)
- X1\*\*:** Reset, output
- X2\*\*:** Reset, input
- 13-14:** NO safety output
- 23-24:** NO safety output
- 33-34:** NO safety output
- 41-42:** NC signal output

\*Must be used by normal and automatic reset (NST-3)  
 \*\*Feedback monitoring contact (EU-3)

### Operation description and connection examples, NST-3

The power supply is connected to the terminals A1(+) and A2(-). When not activated, the relay's NO contacts 13-14, 23-24 and 33-34 are open and the NC contact 41-42 is closed. If the emergency stop is deactivated and the monitoring circuit detects, that the relay function is correct, the relay can be started by activating a reset contact between the terminals X1 and X2. This switches on the NO contacts 13-14, 23-24, 33-34 and the NC contact 41-42 will open. The light-emitting diode for the relay illuminates.

If the emergency stop is activated, the relays K1 and K2 will be deactivated. So the current paths 13-14, 23-24, 33-34 are open and 41-42 is closed.

After resetting of the emergency stop the NST-3 will be ready for activation again, provided that the monitoring circuit not detects any defects.

**N.B!** Automatic reset can be provided by connecting the terminals X1 / X2 permanently.

NST-3 is also available in a version (NST-3MR) which operates with monitored reset. This version can not be used for manual or automatic reset.

### Operation description and connection examples, EU-3

EU-3 is a simple extension module with 3 NO safety contacts and 1 NC signal contact. EU-3 is working by activating the internal relays K1 and K2. This is done by applying a voltage across the terminals A1(+) and A2(-), these are supply inputs.

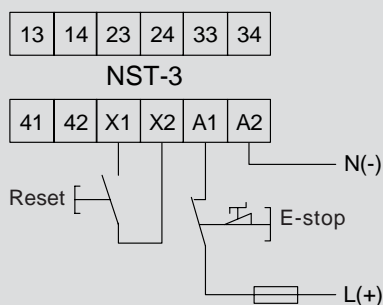
When the power is applied, the contacts 13-14, 23-24 and 33-34 will close, the LED 1 illuminates and the contact 41-42 will open. When the supply voltage is removed, the contacts 13-14, 23-24 and 33-34 will open, the LED 1 turns off and the contact 41-42 will close.

The terminals X1 and X2 are monitoring terminals, and are used in connection to the reset function of the controlling relay, where they are monitored via the reset function of the controlling relay. If an error in the internal relays of EU-3 should occur, these contacts will be disconnected, and a reactivation of the controlling relay will not be possible.

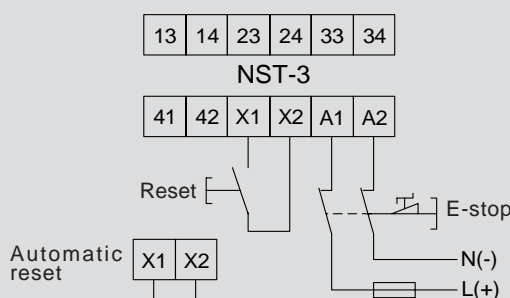
**Note:** Whether 1- or 2-channel operation of the extension block is used depends alone on the extent of safety the system must provide.

**Note:** The extension block **must** be connected to a safety relay as it does not itself comply with any safety requirements!

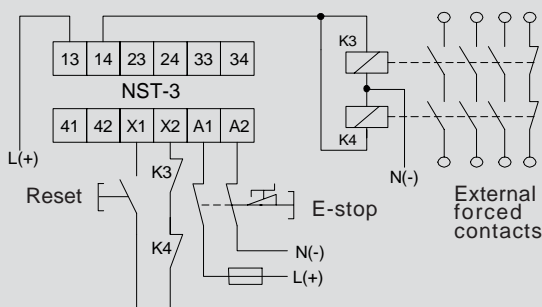
#### 1 1-channel operation



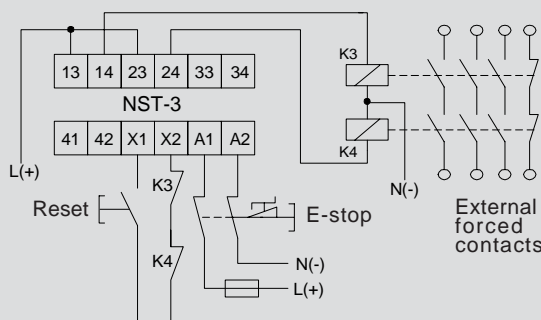
#### 2 2-channel operation (1-channel-)



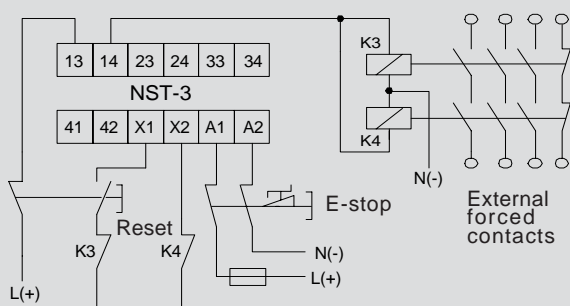
#### 3 Connection of external relays - 1-channel operation



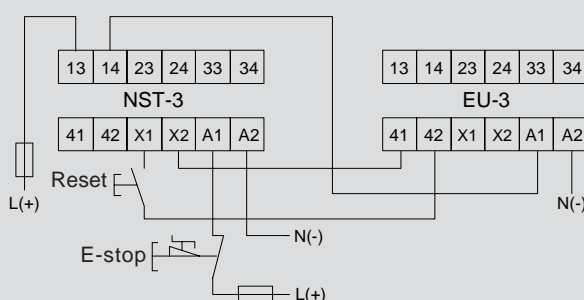
#### 4 Connection of external relays - 2-channel operation



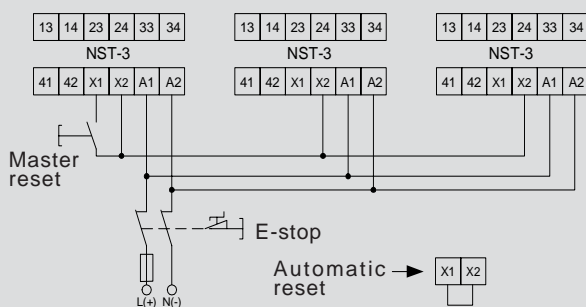
#### 5 Monitoring of reset and external contacts



#### 6 NST-3 connected to extension module EU-3 (1-channel)



#### 7 NST-3 in a parallel connection with master reset



#### 8 NST-3 in a parallel connection

