

# Contactor Safety Combination

**3TK2801**  
**3TK2802**

DIN EN 60947-5-1 (08.00)

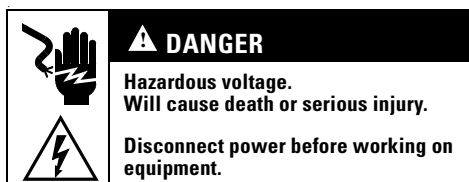
## Operating Instructions

Order No.: 3ZX1012-0TK28-1AA1

**English**

Read and understand these instructions before installing, operating, or maintaining the equipment.

Reliable functioning of the equipment is only ensured with certified components.



**The devices must be installed in a switchgear cabinet with the IP32, IP43 or IP54 degree of protection, depending on the ambient conditions.**

### Important notice

The products described herein are designed to be components of a customized machinery safety-oriented control system. A complete safety-oriented system may include safety sensors, evaluators, actuators and signaling components. It is the responsibility of each company to conduct its own evaluation of the effectiveness of the safety system using trained individuals. Siemens AG, its subsidiaries and affiliates (collectively "Siemens") are not in a position to evaluate all of the characteristics of a given machine or product not designed by Siemens.

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### Application

The contactor safety combinations can be used in EMERGENCY-OFF circuits and for monitoring protective devices (e.g. protective screens).

### Functions and connections

The internal control circuit of the contactor safety combination is designed according to DIN EN 60204-1, VDE 0113 Part 1: (1998-11), para. 9.4.2.2, so that in the case of a fault in one of the contactor relays the function of the safety circuit is maintained. The supply voltage must meet the requirements of the DIN EN 60204-1, VDE 0113 Part 1: (1998-11) (the terminals "A2" must be connected to that side of the control current circuit which is linked to the protective conductor system). The contacts of the contactor relays are checked for proper opening and closing in every ON and OFF cycle of the machine to be switched. This is, for instance, done by

- connecting and disconnecting the control voltage with the main switch
- activating and deactivating the EMERGENCY-OFF unit
- opening and closing of the protective screen

For circuit diagrams, see:

**Fig. III:** EMERGENCY-OFF circuit/DC

**Fig. IV:** Protective screen monitoring/DC

**Fig. V:** EMERGENCY-OFF circuit/AC

**Fig. VI:** Protective screen monitoring/AC

S1 = EMERGENCY-OFF     ① = Door open     a) Release circuit  
S2 = Actuator on        ② = Door closed     b) Signal circuit

**Note:** The units are tested by the BIA. The external control circuit connections are shown for example only; the actual connections must be defined by the user on the basis of a risk assessment.

Further applications available upon request.

### Installation

For dimension drawings see Fig. I (dimensions in mm)

Connection see Fig. IIb

**Cover the contactor safety combination during installation if foreign particles, such as swarf, can fall onto it. Install contactor safety combinations in a housing if they are exposed to dirt, dust or aggressive atmospheres.**

Permissible operating position: any

**Cleaning:** Remove dust with a vacuum cleaner

### Operation

Operating states of the unit:

**"READY"** indicates that voltage is applied to the unit, provided that the contacts of the EMERGENCY OFF pushbutton or door safety switch are closed.

**"ON"** lights up, when the ON button is pressed and the release circuits are switched through.

### Technical data

Permissible ambient temperature T<sub>U</sub>:

- Operation                             –25 to +55 °C
- Storage                                –55 to +80 °C

Degree of protection                  IP20

Insulation coordination to **DIN EN 60664-1 (11.2003)**

Clearances in air and creepage paths:     4 kV/3

Rated insulations voltage                 U<sub>i</sub> = 250 V

Rated impulse withstand voltage         U<sub>imp</sub> = 4 kV

| Utilization category according to DIN EN 60947-1 (1202), IEC 60947-1 (1999) | Rated operation voltage U <sub>e</sub> | Rated operating current |                        |
|---|--|-------------------------|------------------------|
|   |  | I <sub>e</sub> 40 °C    | (I <sub>e</sub> 55 °C) |

|            |       |       |         |
|------------|-------|-------|---------|
| AC-1/AC-12 |       | 6 A   | (6 A)   |
| AC-15      | 230 V | 4 A   | (4 A)   |
|            | 400 V | 3 A   | (3 A)   |
| DC-13      | 24 V  | 6 A   | (6 A)   |
|            | 220 V | 0.5 A | (0.5 A) |

### Values according to DIN EN 60255 (March 1997)

|                                    |          |     |       |
|------------------------------------|----------|-----|-------|
| Continuous current I <sub>th</sub> |          | 8 A | (6 A) |
| Switching capacity at:             |          |     |       |
| p.f. = 0.7 to 1                    | AC 230 V | 8 A | (6 A) |
| resistive                          | DC 24 V  | 8 A | (6 A) |

### Short-circuit protection for signal circuit and release circuit:

|   |                       |
|---|-----------------------|
| No-weld fuse protection at short-circuit current:       | I <sub>K</sub> ≥ 1 kA |
| – Fuse links according to <b>DIN EN 60269-1</b> gL (gG) | 6 A                   |

### Fusing of contactor safety combination:

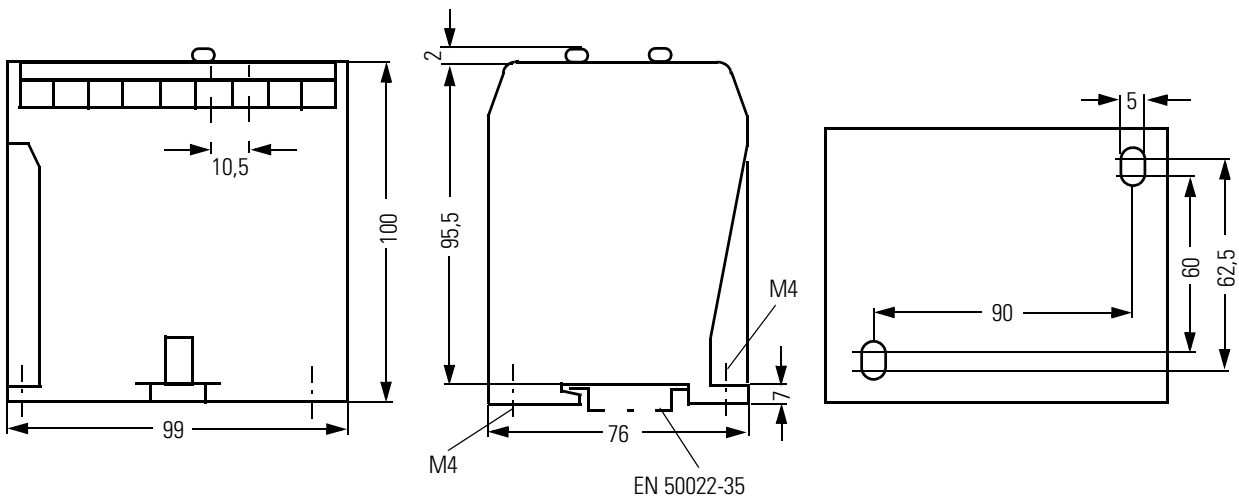
|   |     |
|---|-----|
| – Fuse links according to <b>DIN EN 60269-1</b> gL (gG) | 6 A |
|---|-----|



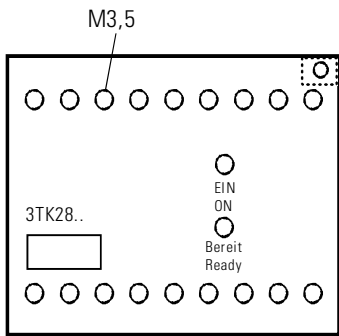
**Be sure to fit the specified fuses. Otherwise safe interruption in the event of a fault cannot be guaranteed.**

For further data and accessories see Catalog.

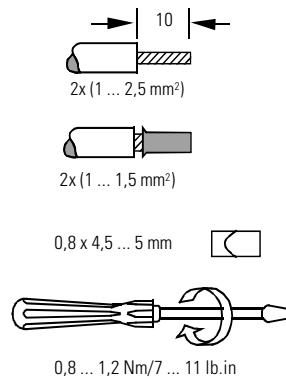
# I



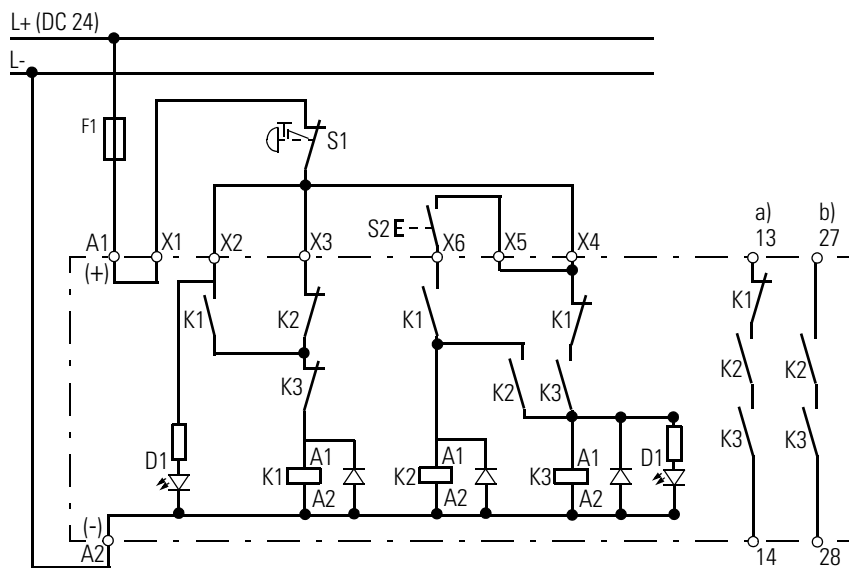
# II a



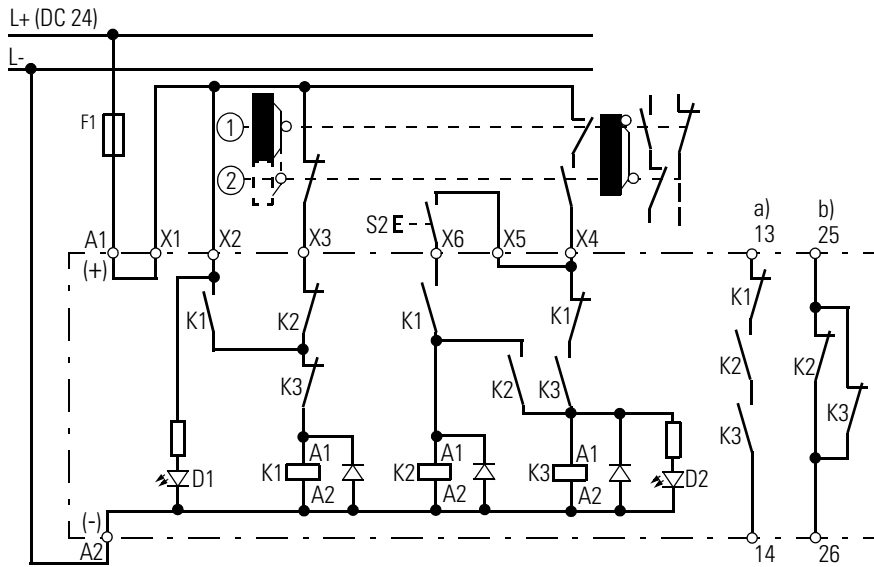
# II b



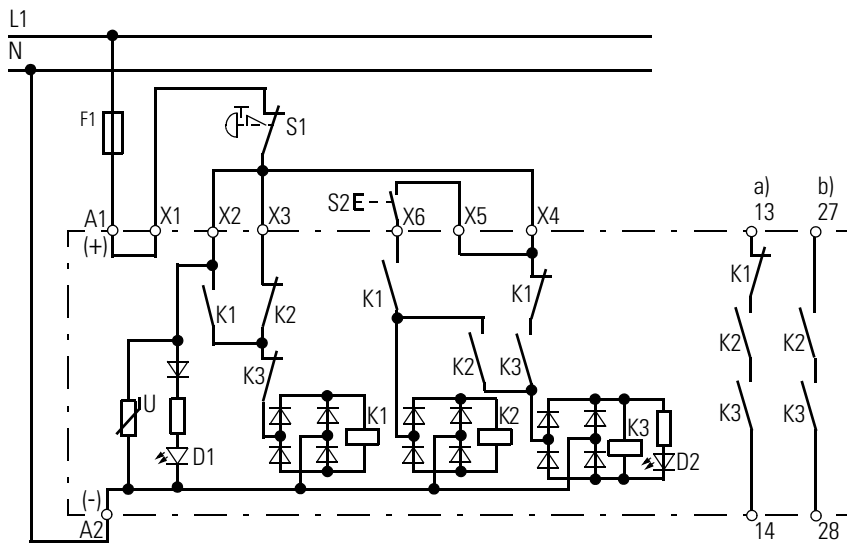
# III



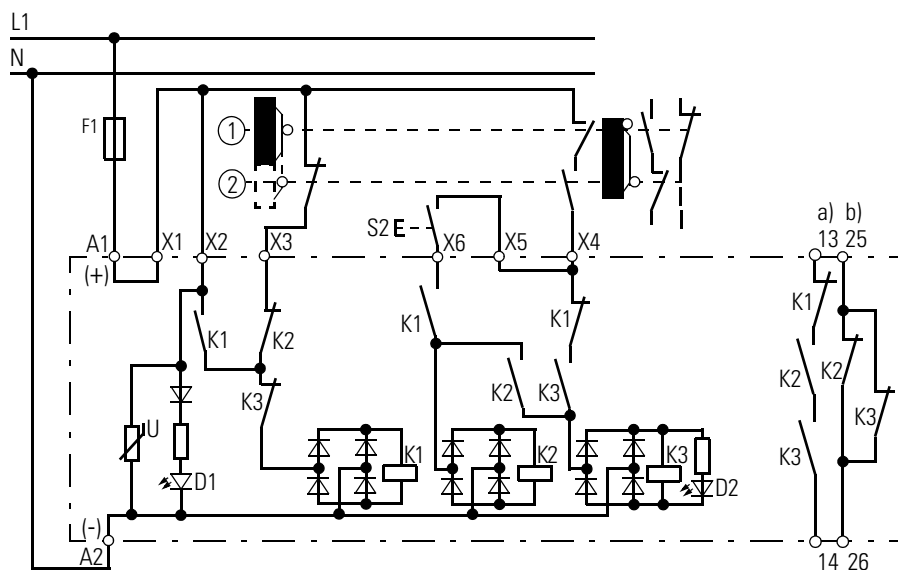
# IV



# V



# VI



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