

Contactor Safety Combination

3TK2803, 3TK2804 3TK2907, 3TK29.3

DIN EN 60439 Part 1/ VDE 0660 Part 500 (04.94)

Instructions

Order No.: 3ZX1012-0TK20-1AA2

English

	WARNING:
	HAZARDOUS VOLTAGE CAN CAUSE ELECTRICAL SHOCK AND BURNS. DISCONNECT POWER BEFORE PROCEEDING WITH ANY WORK ON THIS EQUIPMENT.

Operation permissible in switchgear cabinet with degree of protection IP 54 only!

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, Part 1 (VDE 0113, Part 1), 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 (VDE 0113, Part 1) (the terminals "L-/N; 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

Fig. IV: Protective screen monitoring (A=door open; B=door closed)

Fig. V: EMERGENCY-OFF with expansion module (no delay)

Fig. VI: EMERGENCY-OFF with time-delay module

For internal circuit diagrams, see Low-Voltage Control Equipment, Switchgear and Systems Catalog.

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).

Minimum clearances from earthed parts on the sides: 3 mm (see **Fig. IIa**).

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" (3TK2803/2804) 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 enabling circuits are switched through.

"FEEDBACKCIRCUIT" (3TK29.3/2907) lights up when the ON button is pressed and the enabling circuits of the expansion modules are switched through.

Technische Daten

Permissible ambient temperature T_U :

- Operation -25 to +55 °C
 - Storage -55 to +80 °C
 - for 3TK 29.3 -25 to +80 °C
- Degree of protection IP 20

Insulation coordination to DIN VDE 0110 Part 1 and Part 2 (01.89):

Clearances in air and creepage paths: 4 kV/3

(Control circuit: 1.5 kV/3)

- Rated insulations voltage $U_i = 400$ V
- (for control circuit $U_i = 250$ V)
- Rated impulse withstand voltage $U_{imp} = 4$ kV
- (for control circuit $U_{imp} = 1.5$ kV)

Utilization category as per DIN VDE 0660, Part 100 (07.92) IEC 60947-1: 1988	Rated operation voltage U_e	Rated operating current	
		I_e 40 °C	(I_e 55 °C)
AC-1/AC-12		6 A	6 A
AC-15	250 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)
		Rated power	
AC-3	230 V	0.55 kW	0.55 kW
	400 V	1.1 kW	1.1 kW

Values as per DIN IEC 60255 / VDE 0435 (09.62):

Continuous current I_{th}		10 A	(8 A)
Making capacity at:			
p.f. = 0.7 to 1	AC 230 V	10 A	(8 A)
resistive	DC 24 V	10 A	(8 A)
		Σ max. 30 A	(Σ max. 24 A)

Short-circuit protection for signal circuit and enable circuit:

No-weld fuse protection

at short-circuit current:

	$I_k \geq 1$ kA
- Fuse links	Low-voltage HRC, NEOZED or DIAZED
	gL (gG)
	quick response
	6 A
	10 A

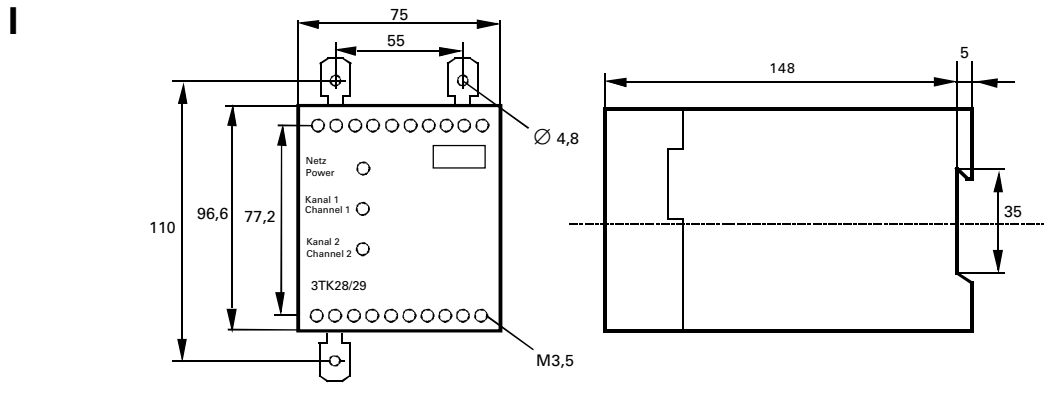
Fusing of contactor safety combination:

- M.C.B., type G time-lag/quick-resp. 6 A
- M.C.B., type A, B, C 6 A
- Protective circuit-breaker terminals type 8 WA1011 6 A

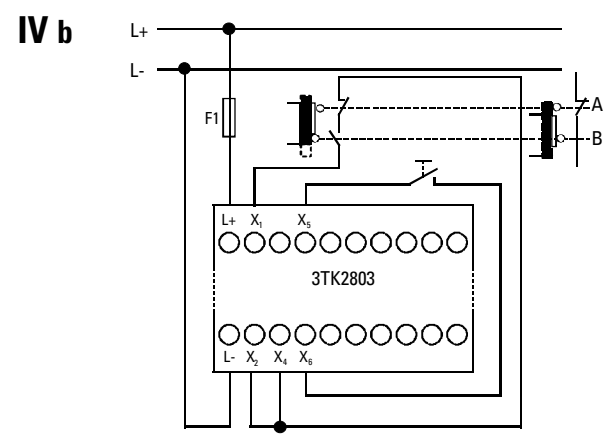
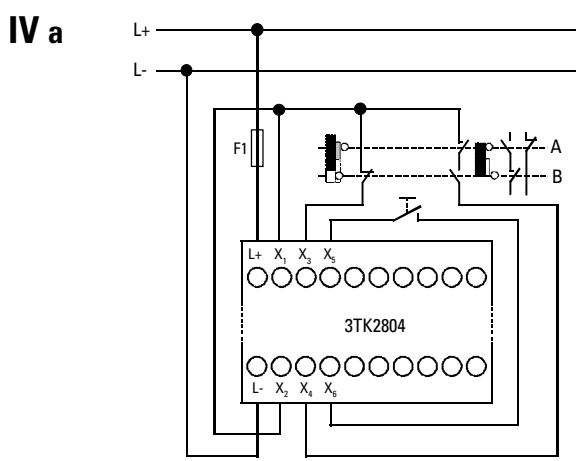
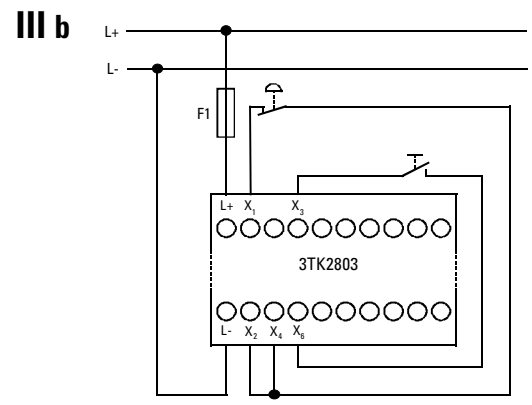
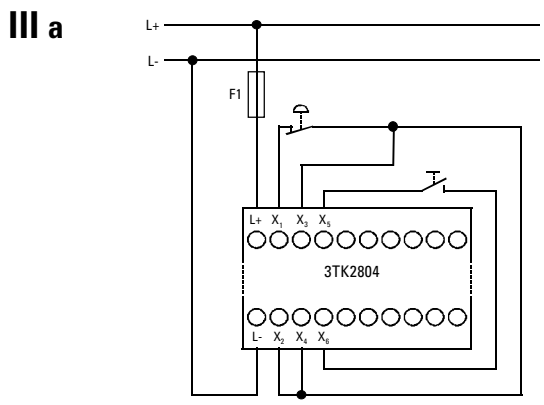
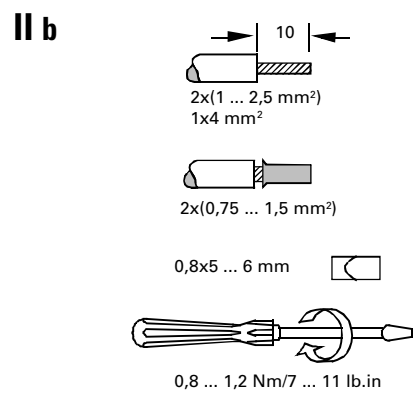
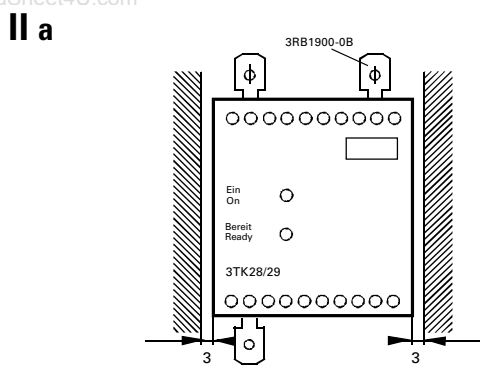


Be sure to fit the specified fuses. Otherwise safe interruption in the event of a fault cannot be guaranteed.

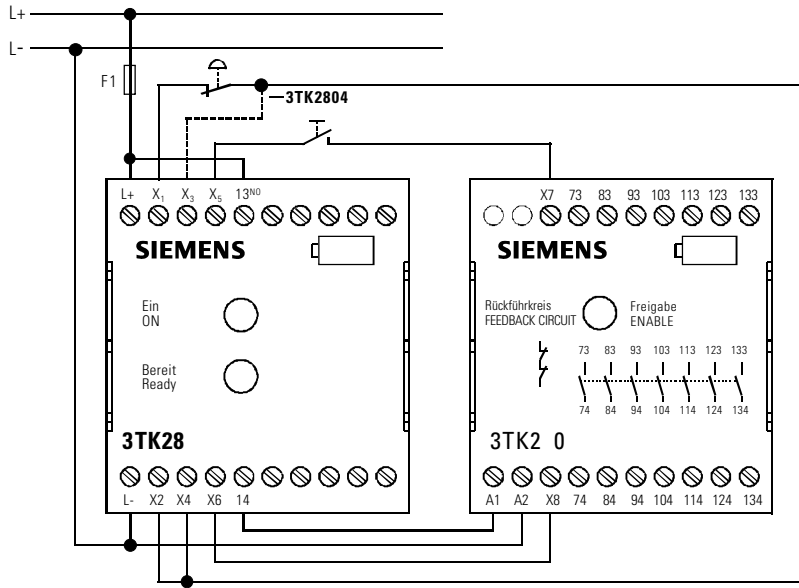
For further data and Order nos. for accessories see Catalog NSK.



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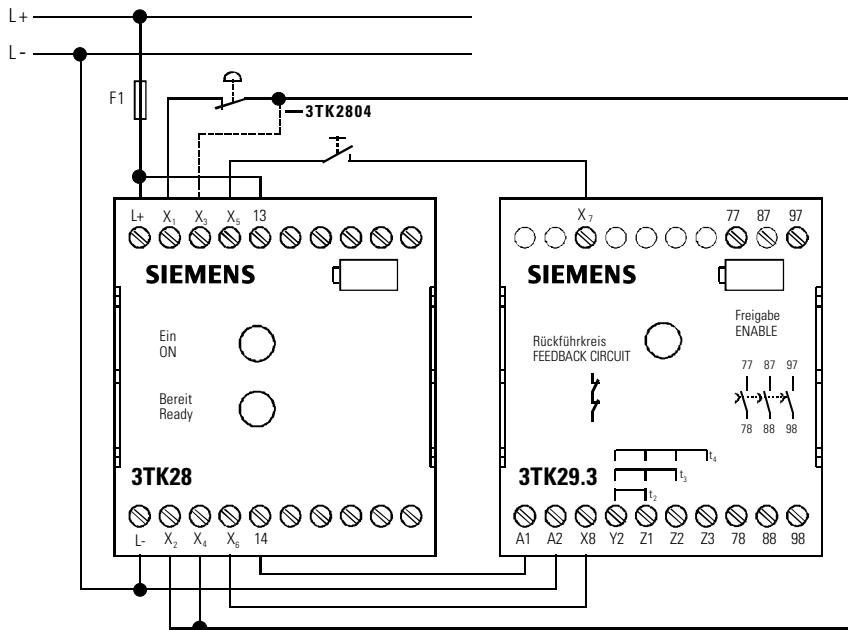


V



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VI



	3TK2923 0,5 - 2 s	3TK2943 1 - 4 s	3TK2983 2 - 8 s	
t_1	0,5	1	2	
t_2	1	2	4	
t_3	1,5	3	6	
t_4	2	4	8	
Δt	1,0 U_S	- 35 ... + 65 %		
	0,8 ... 1,1 U_S	- 50 ... + 75 %		

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Bestell-Nr./Order No.: 3ZX1012-0TK20-1AA2
Printed in the Federal Republic of Germany

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