Contactor

3TF30, 3TF31

DIN VDE 0660, IEC 60947

Instructions Order No.: 3ZX1012-0TF00-1AA2 **English**

⚠ Limited protection against contact with live parts

Degree of protection IP 20 to IEC 60529
Safe from finger touch to DIN VDE 0106, Part 100
Commissioning and maintenance by qualified personnel only.
Follow the operating instructions.

WARNING:

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

Installation

For dimension drawings (dimensions in mm) see
- **Fig. I a** a.c. operated
- **Fig. I b** d.c. operated

1) Minimum clearances from earthed parts

Snap onto 35 mm standard mounting rail to DIN EN 50 022 or fix on a plain surface with two M4 screws. With screw mounting, always use plain washers and spring washers.

Cover the contactors during installation if foreign particles, such as swarf, can fall onto them. Install contactors in a housing if they are exposed to dirt, dust or aggressive atmospheres.

For permissible mounting positions see
- **Fig. II a** a.c. operated
- **Fig. II b** d.c. operated

Connection

The terminal screws can be tightened with a power screwdriver.

Screwdriver blade width: 5 to 6 mm

Permissible cross-sections for main and auxiliary conductors :

Solid	2×0.5 to 1 mm²
	2×1 to 2.5 mm²
	1×4 mm²
Finely stranded, with end sleeve	2×0.75 to 2.5 mm²
AWG wires	2×AWG 18 to 12
Tightening torque standard type	0.8to 1.4 Nm/7 to 12 lb • in
Tightening torque auxiliary contact block	0.8to 1.1 Nm/7 to 10 lb • in

Use 75 °C copper wire only.

For circuit diagram and position of connection terminals see **Fig. III**.
For circuit diagram (NEMA) see **Fig. A**.
- **Fig. III a** 1NO
- **Fig. III b** 1NC
- **Fig. III c** without auxiliary contacts

Operation

Observe operating voltage (see rating plate of magnet coil).

The operating state of the contactor is shown by the position of the contact carrier; see **Fig. IV**.

⚠ **When the system voltage is applied and the load is connected, do not operate the contactor by pressing down the contact carrier.**

Maintenance

The following components can be replaced: magnet coil and single-pole auxiliary contact block 3TX40.

For Order Nos. see Catalog NSK.

Only use of original spare parts ensures the operational safety of the contactors.

Cleaning

Remove dust by suction.

Auxiliary contact block

For replacement see **Fig. V**.

Magnet coil

For coil replacement see **Fig. VI**.
- **Fig. VI a** a.c. coil
- **Fig. VI b** d.c. coil

Ensure that the pole faces of the magnet coil are clean. Do not use grease solvents or sharp objects for cleaning.

Technical Data

Permissible ambient temperature

- Operation	- 25 to + 55 °C
- Storage	- 50 to + 80 °C

Main circuit

Rated insulation voltage U_i	AC 690 V	
Rated operational current I_e/AC-1 (55 °C)		
- Open model	A	20
- Closed model	A	16

Rated operational voltage		Motor rating P_N/AC-3 3TF30	3TF31
- 230 V	kW	2.4	3.3
- 400 V	kW	4	5.5
- 500 V	kW	5.5	7.5
- 690 V	kW	5.5	7.5

Horsepower Ratings (ⓢⓟ and Ⓤ ratings)

Rated insulation voltage U_i AC 600 V

		Rated output of three-phase motors at 60 Hz 3TF30..-....1 NEMA/EEMAC SIZE 00	3TF30	3TF31
Continuous current (open and enclosed type)	A	9	20	20
- 200 V	hp	1½	2	3
- 230 V	hp	1½	3	3
- 460 V	hp	2	5	7.5
- 575 V	hp	2	7.5	10

Suitable for use on a circuit capable of delivering not more than 5000 rms symmetrical amperes, 600 V max.

Short-circuit protection:

Degree of protection to DIN VDE 0660 part 102 A/IEC 60947-4 **		Fuse-links Duty class gL (gG) 3TF30	3TF31
- Assignment type 1	A	35	35
- Assignment type 2	A	16	16
- Non-welding $I_K \geq 100 \times I_e$	A	10	10
- Circuit-breaker, C-char.	A	16	25

Auxiliary circuit

Rated operational voltage		Rated operational current I_e/**AC-15**/**AC-11**
- 230 V	A	10
- 240 V	A	10
- 400 V	A	6
- 415 V	A	4
- 500 V	A	4
- 690 V	A	2

Rated operational voltage		Rated operational current I_e/**DC-13**/**DC-11**
- 24 V	A	10
- 48 V	A	5
- 110 V	A	0.9
- 220 V	A	0.45
- 440 V	A	0.25
- 600 V	A	0.2

Short-circuit protection:

- Fuse-links		
NEOZED and DIAZED, gL (gG)	A	16
- Circuit-breaker, C-char.	A	16

Auxiliary contact block 3TX40

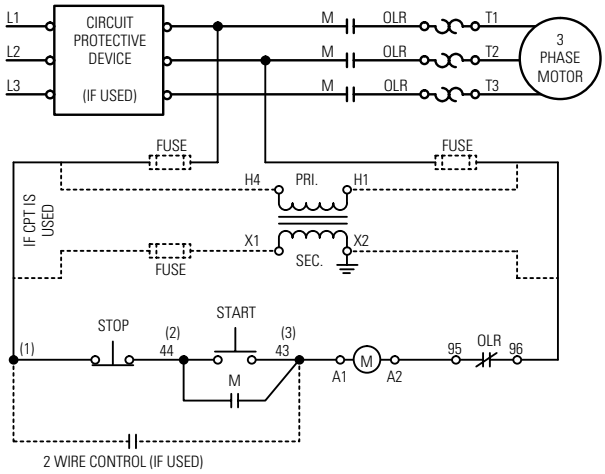
Rated operational voltage		Rated operational current I_e/**AC-15**/**AC-11**
- 230 V	A	5.6
- 400 V	A	3.8
- 500 V	A	2.5
- 690 V	A	1.8

Rated operational voltage		Rated operational current I_e/**DC-13**/**DC-11**
- 24 V	A	10
- 48 V	A	4.6
- 110 V	A	0.8
- 220 V	A	0.2
- 440 V	A	0.11
- 600 V	A	0.08

Short-circuit protection:

- Fuse-links		
NEOZED and DIAZED, gL (gG)	A	16
- Circuit-breaker, C-char.	A	10

Fig. A



For further data and accessories see Catalog NSK.

** Footnote:
According to IEC 60947/VDE 0660, the types of protection mean:
"Assignment type 1": Short circuits can cause damage to the contactors making replacement of the equipment necessary
"Assignment type 2" : Easily separable contact welding but no other damage