6 AC Power Supply

All standard components of the Transmitter NV820x are interconnected by wires. Thus, the rack merely needs to be connected to one AC power supply.

ATTENTION!
Before you connect the transmitter, disconnect the power supply cable from the supply.

Requirements

AC supply voltage - three-phase current 230 V/400 V ± 15%

AC supply frequency - 47 Hz to 63 Hz

ATTENTION!
Make sure that the AC supply voltage is within the specified range and check all power cables for possible damage.

System type	Power consumption * ± 10% (frequency-dependent)	Backup fuse	Line cross-section	Max. currents
NW8201	1.8 kW	3 x 16 A	2.5 mm^2	L1: 3.6 A L2: 2.1 A L3: 2.6 A
NW8202	3.2 kW	3 x 16 A	2.5 mm^2	L1: 5.5 A L2: 4.3 A L3: 4.6 A
NW8203	4.6 kW	3 x 16 A	2.5 mm^2	L1: 7.6 A L2: 6.5 A L3: 6.8 A
NW8204	5.9 kW	3 x 20 A	4.0 mm^2	L1: 9.5 A L2: 8.7 A L3: 8.9 A
NW8205	7.3 kW	3 x 20 A	4.0 mm^2	L1: 11.4 A L2: 10.5 A L3: 10.8 A
NW8206	8.7 kW	3 x 20 A	4.0 mm^2	L1: 13.4 A L2: 12.6 A L3: 12.8 A

*) without optional equipment

6.1 Connection of Transmitter Ground

ATTENTION!
The rack must be connected to the station's main ground terminal.

A grounding bolt is located on the bottom of the transmitter rack, well accessible from the front.

☞ Secure the external ground conductor to the grounding bolt using the ground nut.

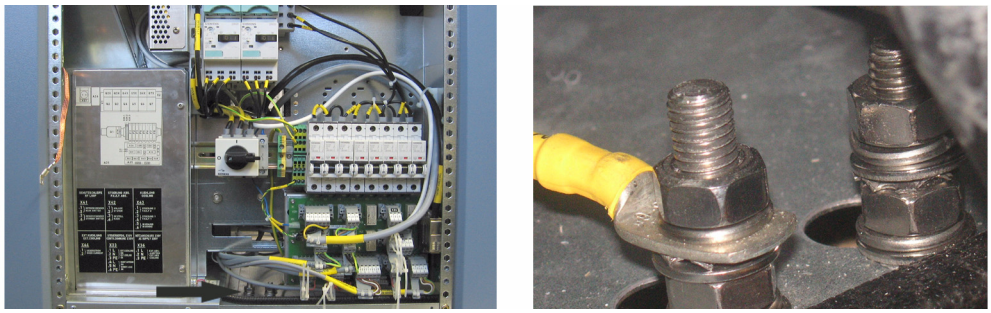

Fig. 8 *Ground connection on transmitter rack*

6.2 Connection of AC Power Cable

The external AC power supply is connected directly to the main switch. The main switch completely isolates the rack from the AC supply. Use a five-wire cable (3 phases, neutral and PE conductor)

AC power supply	Main switch Q1
L1	Q1.T1
L2	Q1.T2
L3	Q1.T3
N	Q1.N
PE	Ground terminal X.PE1

1. Unscrew the rotary switch and the cover of the main switch.

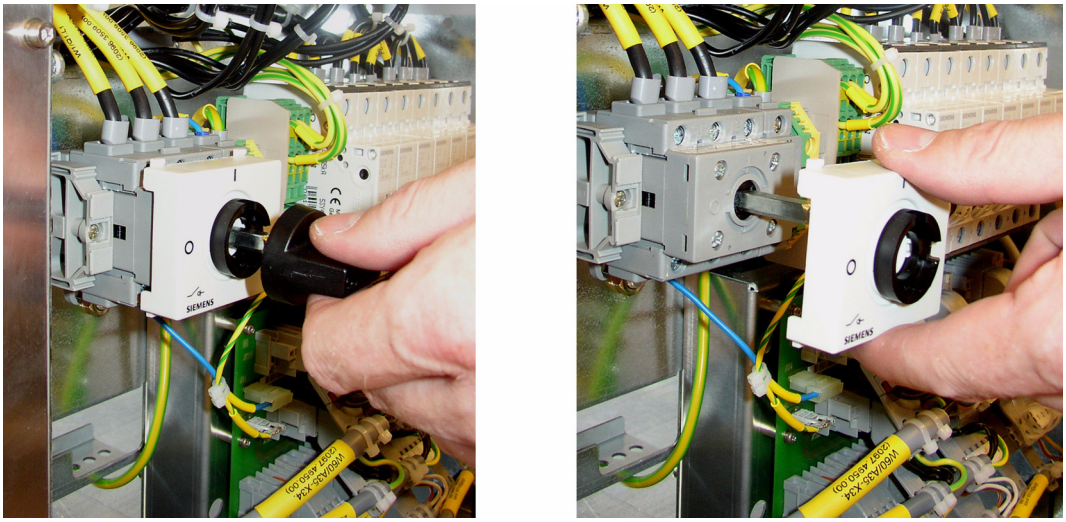

Fig. 9 Unscrew rotary switch and cover.

2. Secure the supplied strain relief for the AC supply cable in place as shown.

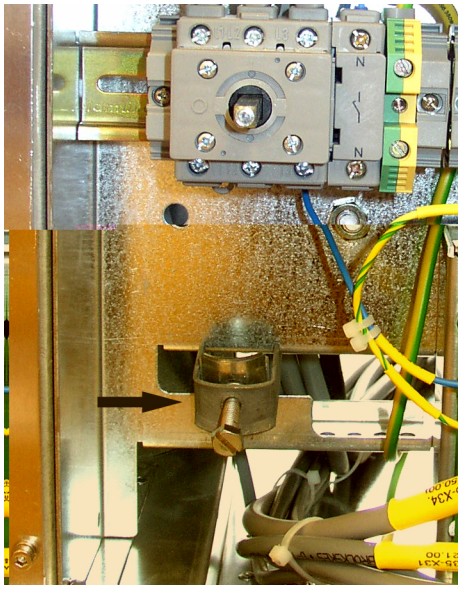

Fig. 10 Strain relief for the AC supply cable

3. Loosen the locking screws on the switch housing so that you can easily insert the cables.
4. Insert the cables into the corresponding openings and fasten them in place with screws.
5. Using a phase-sequence indicator, determine the phase sequence of the rotating field (should be clockwise).

   If the phase sequence is correct, continue to the next step. If the phase sequence is not correct, reverse the cables and measure the phase sequence again.

6. Remount cover and rotary switch with screws.

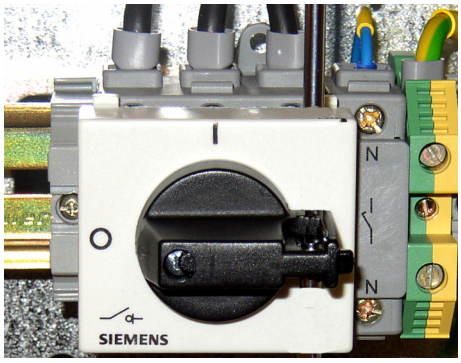

Fig. 11 *Main switch connection*

6.3 Connection of External Equipment

You can connect the following equipment to the transmitter's power distribution board:

- External fan
- External dummy antenna

The exact dummy plugs needed are already installed in the proper positions.

1. Remove the required dummy plug from the power distribution board.
2. Connect the cables of the external equipment to the plug.
3. Reinsert the plug in the power distribution board.

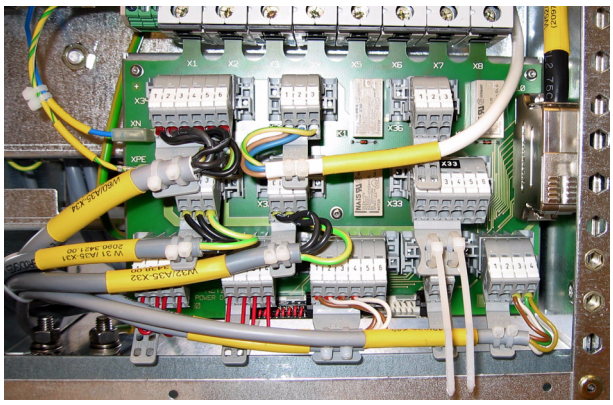

Fig. 12 *Power distribution board with plugs.*

7 Amplifiers

When the transmitter is shipped from the factory, one or two exciters and an NETCCU® are already mounted in the rack. In contrast, the amplifiers must be installed in the rack later.

7.1 Installing the Amplifier

ATTENTION!
Always make sure that the power supply is disconnected before commencing any installation work on the transmitter rack; this will prevent injury from electric shock and damage to the equipment.

ATTENTION!
Always install the amplifiers in pairs since they are quite heavy (approx. 25 kg).

Note *Before installing the amplifier, make sure that the ventilation covers on the amplifier slots provided in the frame are open on both sides. Remove the covers if necessary.*

Install the amplifiers in the sequence top to bottom.

1. Carefully remove the amplifier from its packaging.
2. Select the installation position provided for the amplifier in the transmitter rack.
3. Place the amplifier on the guide rails and slide it carefully into the rack as far as it will go.

   The amplifier is taken to the connections by means of guide pins on the rear panel.
4. Fasten the amplifiers in place using the four screws of the two front brackets on the rack.
5. To install additional amplifiers, repeat steps 1 through 4.

Fig. 13 *Installing the amplifier*

8 Connection of Antenna/Dummy Antenna to RF Connector

The connection flanges for the antenna cables are uniformly 1 $^{5}/_{8}$" EIA for 325 W to 1.95 kW TV transmitters; they are located on the roof of the transmitter. Depending on the transmitter station (one or more transmitters), either the antenna (RF cable or RF transmission line) or an RF connection is connected directly to a multi-transmitter combining filter.

ATTENTION!
Do not connect the antenna until you have completed all measurements, because the link to the antenna produces emissions.

8.1 Connection of Antenna

Connect the antenna as follows:

☞ Using the four screws (M8, 35 mm), fasten the ready-made coaxial cable located on the station in place. To prevent the screw connection from locking in place, insert a plain washer and spring-lock washer.

Note *In regions with high humidity, the supplied rubber ring can be inserted in the groove between the two EIA flanges.*

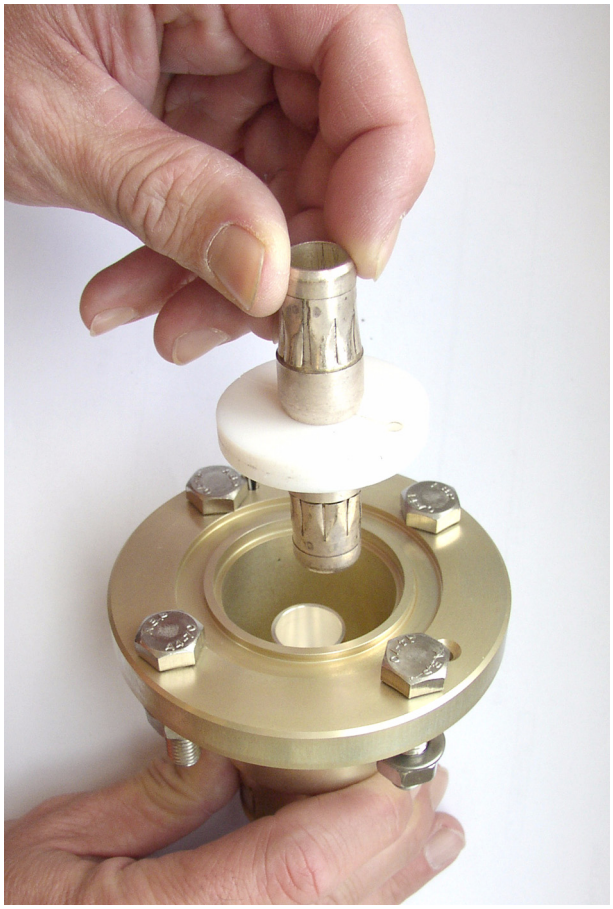

Fig. 14 *RF connector with coupling*

8.2 Connection of Dummy Antenna

Connect the dummy antenna only for maintenance and repair purposes.

With some dummy antennas that have coolant monitoring and excess temperature monitoring, the monitoring equipment can be connected to the transmitter. As a temporary installation (e.g. during switchover), the main protection loop can be used here (X41.1 and X41.2 in the power distribution).

☞ Remove the jumpers and connect the monitoring unit.

If you are using an RF patch panel that allows you to switch between the antenna and dummy antenna by means of an RF U-link (permanet installation), you should attach the dummy antenna monitoring unit to the standby protection loop (X41.3 and X41.4 in the power distribution). For this to be done, the messages of the patch panel must also be sent to the controller.

9 Connection Panel

The following table lists all the connectors that you may need to assign.

Connector	Description
CANBUS X101A	CAN bus data connection for additional racks or output stage A
CANBUS X101B	CAN bus data connection for additional racks or output stage B
CANBUS X101C	CAN bus data connection for external pump in the case of high-power transmitters
RS232 X232	Serial data connection for external BITBUS interface
ETHERNET	Remote LAN connector or system LAN connector, e.g. for N+1
ANTENNA 1 INPUT	Antenna connector for receiver module input 1 in the NETCCU® (DTV only)
ANTENNA 2 INPUT	Antenna connector for receiver module input 2 in the NETCCU® (DTV only)
TS1 / TS2	Transport stream inputs (digital TV)
TS3 / TS4	Additional connectors to TS1 and TS2 in the case of hierarchical coding
10 MHz REF INPUT	Input for 10 MHz reference for synchronizing the output signal
1PPS MONITORING	Test output 1PPS (1PPS = 1 pulse per second)
1PPS EXT INPUT	Input for 1PPS signal, reference signal for DVB-T in SFN mode T
TS1/2 MONITORING	Monitor output for selected TS signal of inputs 1 and 2
TS3/4 MONITORING	Monitor output for selected TS signal of inputs 3 and 4