2 Specifications

2.1 Transmitter System in General

Frequency range	170 MHz to 254 MHz
Voltage supply	3 x 400 V AC ± 15% 47 Hz to 63 Hz three-phase
Maximum installation altitude	2000 m above sea level (over 2000 m on request)
Operating temperature range	+1° C to +45° C
Max. permissible humidity	95%, noncondensing
Dimensions (W x H x D)	600 mm x 2000 mm x 800 mm
RF Connector	$1^5/_8$ EIA

Synchronization

Reference frequency	10 MHz, 0.1 V to 5 Vpp or TTL, BNC
Reference puls	1 Hz, TTL, BNC

Operation

Local

Color display and keys	Front control via graphical user interface (GUI)
RJ-45	Operation via PC using standard web browser

Remote

RJ45	IEC864-2 via Ethernet (standard)
RJ45	Network management interface (web server and/or SNMP agent, optional)
Parallel I/O interface	Floating contacts for messages and commands (optional)
BITBUS	Bus interface in accordance with IEC 864-2 (optional)

2.2 Transmitter System - Specifically NW8202

Number of amplifiers	2
P_{out}	650 W
Air throughput	At least 8.5 m^3/min
Power consumption	3.2 kW ± 10%
Backup fuse	3 x 16 A
Line cross-section	2.5 mm^2

Total weight (approx.)	270 kg
Inputs (DVB-T/H)	4 x ASI
Coding and modulation	According to EN 300744, EN 302304 (optional)
Modulation	QPSK, 16QAM or 64QAM
Guard interval	1/4, 1/8, 1/16 or 1/32 usefull symbol period
IFFT mode	2 k and 8 k, 4 k (optional)
Innere code rate	1/2, 2/3, 3/4, 5/6 or 7/8
Useful symbol period	224 µs (2 k) or 896 µs (8 k), 448 µs (4 k, optional)

CHAPTER 3

INSTALLATION

Printed in Germany

CONTENTS

1 Equipment Supplied

1.1 Integrated Transmitter Components

When you receive the Transmitter NV820x, the following units and modules are already installed in the rack if they form part of your order:

Note *Use the tables below to check that all the relevant components have been supplied.*

Qty	Designation	Type	ID
1	Cabinet rack	KG830M1	2096.2002.02
1	Mid-range power distribution		2096.3009.XX
1	Control unit NETCCU®	NETCCU800	2095.8007.02
1 - 2	TV exciter **Transmitter type:** NW82XXE NW82XXV	SX800 **Quantity of SX800** 1 2	2095.1502.XX
1	Auxiliary power supply		1081.0254.00
1	Rack controller		2096.4505.02
2	Pressure capsule		2077.3936.00
2	Temperature sensor		2010.0006.00
2	Fan set		2096.2131.02
1	Exciter switch		2095.3257.02
1	Harmonics filter		2096.7304.02
1	Coupler/splitter unit **Transmitter type:** NW8201 NW8202 NW8203 NW8204 NW8205 NW8206	 **Coupler unit** none two-way coupler BV822M1 three-way coupler BV823M1 four-way coupler BV824M1 five-way coupler BV825M1 six-way coupler BV826M1	 2099.5502.02 2099.5702.02 2099.5602.02 2099.5802.02 2099.5902.02
1	Absorber unit		2096.3909.XX
1	Directional coupler with lightning protection	GD800	2096.7204.XX

Qty	Designation	Type	ID
Separate items			
1	Strain relief for AC supply feed		
Options			
1	Emergency key installation kit VAR (model): 11 = 1x pushbutton front panel VAR: 12 = pushbutton front and rear panel VAR: 13 = pushbutton rear panel	ZR800N1	2099.4506.VAR
1	Parallel remote control interface	ZR800F1	3562.4210.02
1	AC transformer 115 V/200 V	ZR800Z3	2099.3200.02
1	External socket kit	ZR800Z1	2099.3000.02
1	Internal socket kit VAR: 02 = 3x protective ground contact strip VAR: 04 = 4x protective ground contact strip	ZR800Z2	2099.3100.VAR
1	TS distributor kit VAR: 10 = 1x ASI distributor VAR: 20 = 2x ASI distributor (TS3/4)	ZR800Z4	2099.3300.VAR

1.2 Transmitter Components Supplied Separately

The transmitter contains the following components that must be installed in the rack after delivery.

Qty	Designation	Type	ID
1 - 6	VHF amplifier	VM8350A1	2097.9000.02
NX82xx accessories consisting of:			
1	Junction 13/30-7/16		2096.7004.00
2	Cover for air outlet		2096.2925.00

2 Overview

The basic procedure for installing the transmitter is as follows:

- Transmitter setup
  - Set up the transmitter rack
  - Align the transmitter rack
  - Remove front panels/rear panel
  - Unpack components
- Install transformer (optional)
- Ventilation system
  - Connect intake/exhaust ducts
  - Connect external backup fan (optional)
  - Check ventilation covers
- AC power supply
  - Connect transmitter ground
  - Connect AC power cable
  - Connect external equipment
- Install amplifier
- Connect antenna/dummy antenna to RF connector
- Program feed/remote (connection panel)

A detailed description of the installation procedure is provided in the following sections of this chapter.

3 Transmitter Setup

Make sure that the transmitter is standing in a stable position and that ventilation is sufficient.

Note *During installation, the transmitter must be easily accessible from the front and rear. A clearance space of at least 1.2 m is necessary in order to install all components.*

3.1 Transmitter Rack Setup

The transmitter rack can be set up using lift equipment (crane). The roof of the rack has lift rings for this purpose.

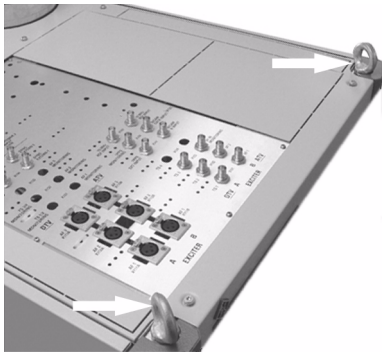

Fig. 1 *Lift rings*

ATTENTION!
Due to the danger of getting crushed, do not stand underneath a rack suspended in the air. To avoid falling, take the necessary precautions when climbing ladders.

3.2 Transmitter Rack Alignment

The transmitter rack must be aligned vertically and horizontally to prevent distortion caused by shearing forces. Use a spirit level to align the rack.

3.3 Removal of Front Panels/Rear Panel

Before you start installing the individual pieces of equipment, make sure that you have easy access to all equipment, connectors and interfaces needed.

☞ Using a torx screwdriver, remove all front panels and the rear panel of the rack. This allows you to reach all equipment, connectors and interfaces necessary.

Note *When removing and mounting the front panels and rear panel, pay special attention to the ground terminals.*

Fig. 2 *Ground terminal of a front panel*

3.4 Unpacking of Components

Each transmitter component is packaged separately.

☞ Remove the packaging and arrange all equipment so that it is ready for installation.

4 Transformer

Note *For more information about the transformer, refer to the manual on the optional AC supply transformer.*

5 Ventilation System

Note *The ventilation system is already installed and wired inside the transmitter.*

5.1 Connection of Intake/Exhaust Ducts

Depending on your specific order, the intake/exhaust openings are located at either the top or bottom of the rack. The "external intake" option may also be available. In this case, the air intake is routed to the output box via an integrated air filter on the rear panel.

The external pressure drop must not exceed 100 Pa for the required amount (e.g. for NV8206, 6 amplifiers: 17 m^2/min).

Thus, a total of max. 12 m tubing (D = 250 mm), two 90° arcs and an air filter with a final pressure drop of 40 Pa can be used.

Note *Only tubing with a diameter of 250 mm is permissible.*

If air intake is directly from outside the building, use an air filter.

ATTENTION!
The temperature of the cooling air must not drop below the dew point, otherwise condensation may occur in the air shafts.

Note *Be sure to connect the intake and exhaust lines properly, otherwise the system may become overheated.*

The following drawings show the transmitter roof and floor dimensioning for properly connecting the transmitter to the station.

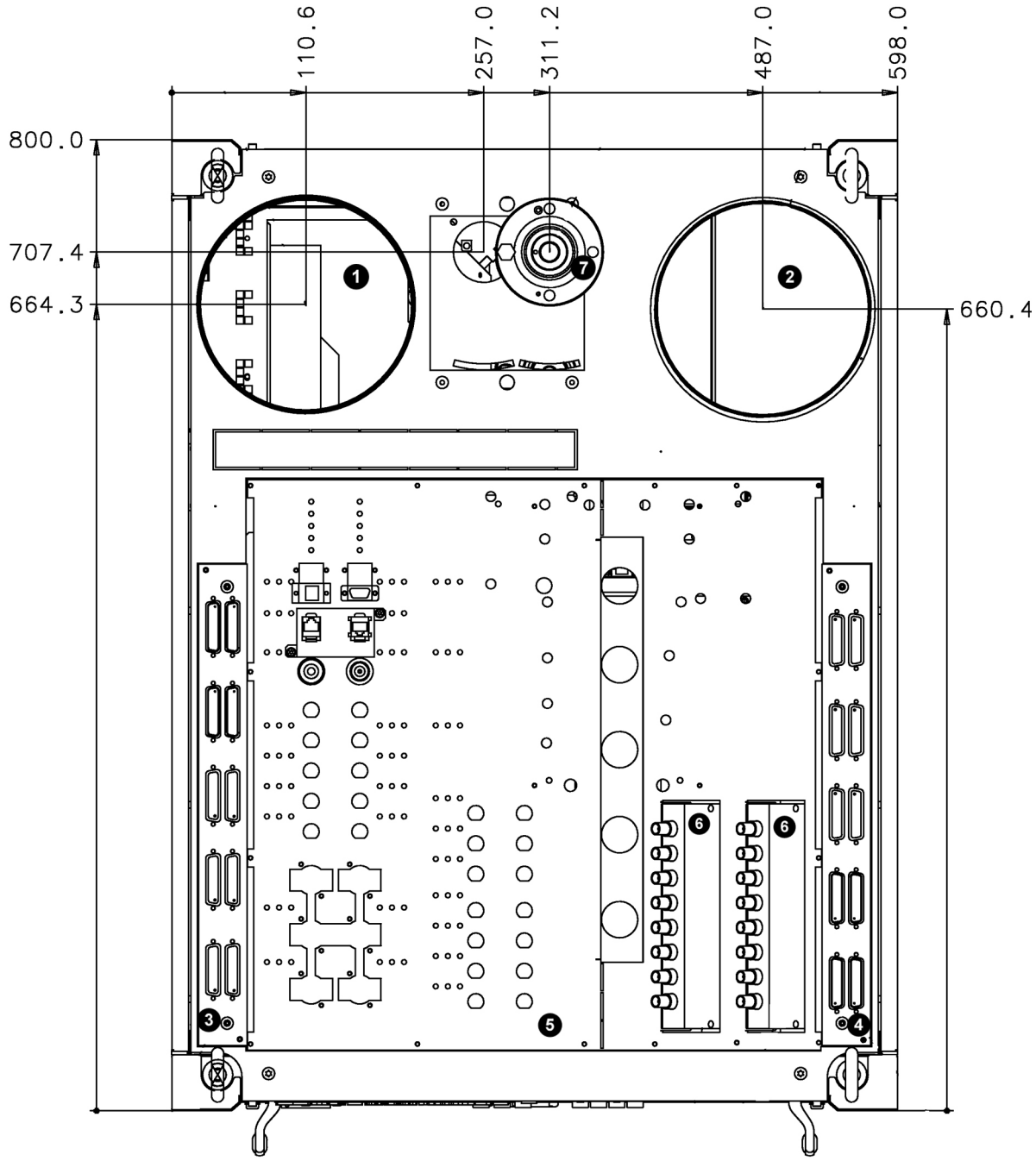

Fig. 3 *Transmitter roof dimensioning*

1) *Intake (flange Ø178)*
2) *Exhaust (flange Ø178)*
3) *Remote interface*
4) *Remote interface (optional)*
5) *Transmitter connection panel*
6) *ASI distributor*
7) *RF output (1 5/8 EIA)*

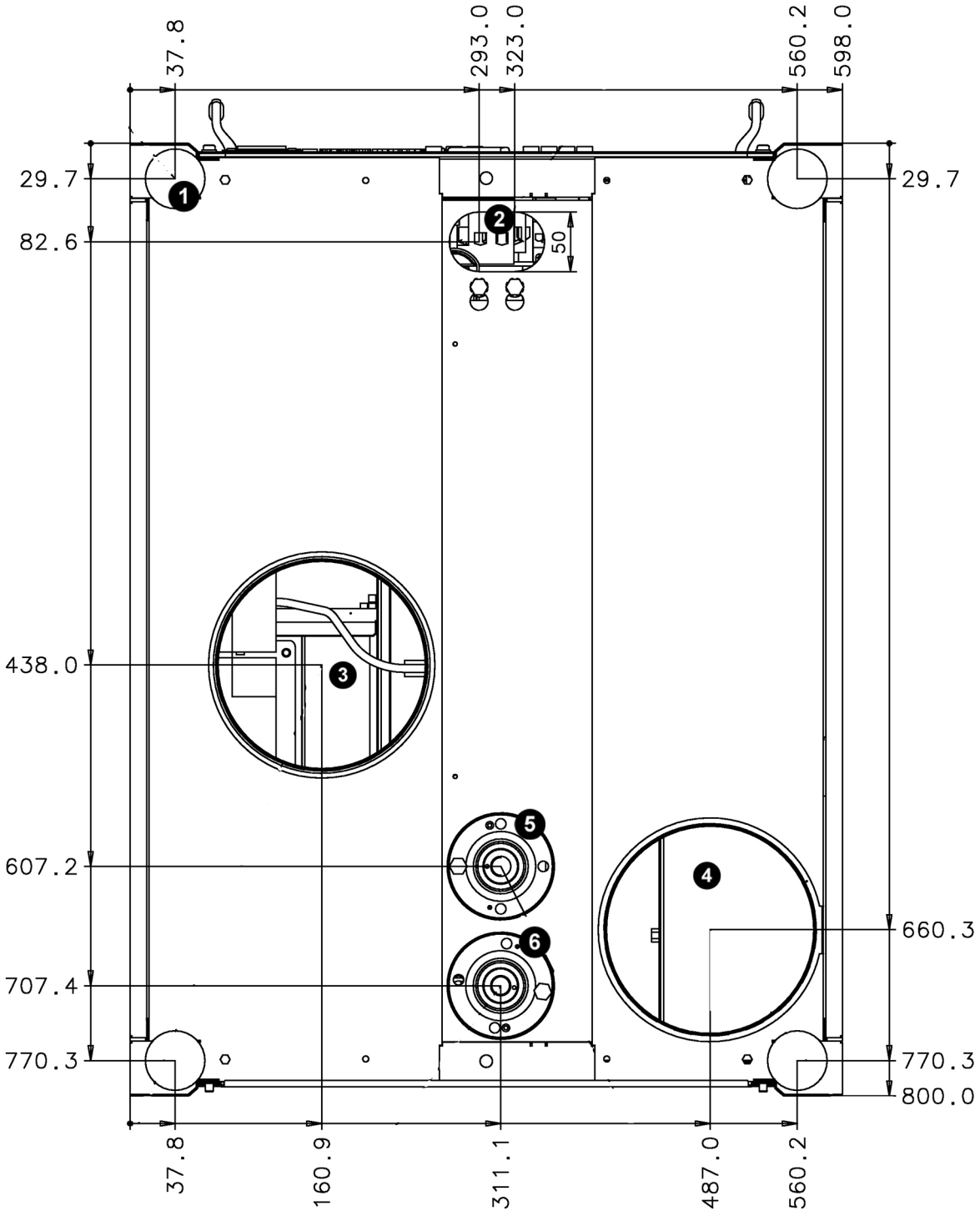

Fig. 4 *Transmitter floor dimensioning*

1) Adjustable foot (Ø 50)
2) AC supply input
3) Bottom intake (flange Ø178)
4) Bottom exhaust (flange Ø178)
5) Bottom RF output (ATV, 1 5/8 EIA))
6) Bottom RF output (DVB, 1 5/8 EIA))

5.2 Connection of External Backup Fan

Note *If longer distances (more than 12 m) are involved on-site, an external fan should be used.*

The transmitter offers a switched phase for controlling an external AC supply relay. In addition, you can insert an external protective motor switch with release contact in the transmitter's cooling fault detection circuit if necessary.

Switched phase for external fan

- X33.1 = L (overcurrent protector 3A)
- X33.2 = N
- X33.3 = PE

Overcurrent (external cooling)

- 44.1
- 44.2

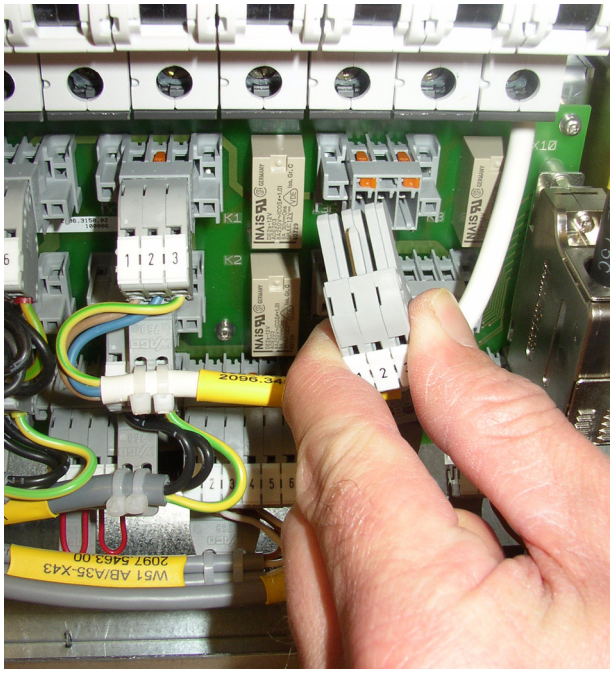

Fig. 5 *Plug for connecting an external fan*

5.3 Check of Ventilation Covers

To ensure that ventilation functions properly inside the transmitter, the interior part of the transmitter rack has an opening on each side to permit air circulation.

☞ Make sure that the ventilation covers on the slots in the frame where the amplifiers will be fitted are open on both sides. Remove the covers if necessary.

Fig. 6 Ventilation opening

Note *The ventilation openings on vacant slots (without amplifiers) have to be closed.*

5.4 Checking of Differential Pressure Gage

For the differential pressure gages to be able to measure the pressure between the fans and the environment, the covers must be removed.

☞ Make sure that the covers of both differential pressure gages on the left side have been removed.

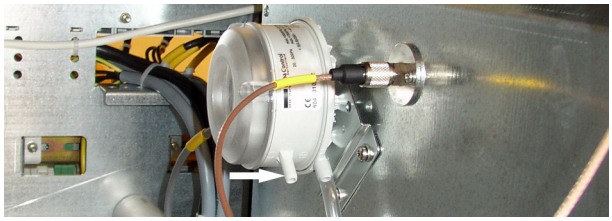

Fig. 7 Differential pressure gage without cover