

NORD

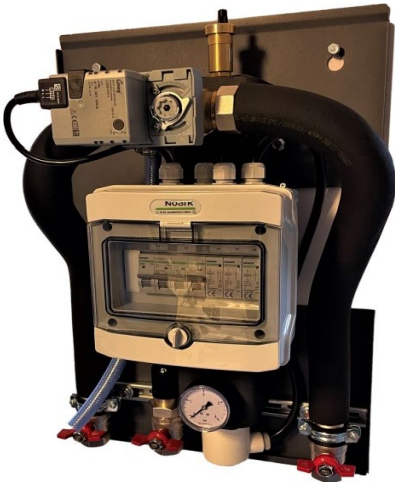
HTechnology

HYDROBOX

INSTALLATION AND OPERATING INSTRUCTIONS

Table of contents

- 1 Introduction 2**
- 2 Schematic diagram of the installation..... 2**
- 3 Safety precautions and recommendations 3**
 - 3.1 Safety precautions..... 3
 - 3.2 Electrical recommendations..... 3
 - 3.3 Hydraulic recommendations 3
- 4 Technical data and components 4**
- 5 Transport and storage 5**
- 6 Wall mounting and service clearances 5**
- 7 Electrical connections 6**
- 8 Heater thermal protection 7**
- 9 Cleaning and maintenance 7**
- 10 Disposal 8**



1 Introduction

HYDROBOX is a module designed for indoor installation to speed up the installation of a system with a monoblock air-to-water heat pump, buffer tank and domestic hot water cylinder. Its compact form and clever design mean that the entire installation takes up less space, while providing easy access for maintenance.

Due to the company's philosophy of continuous product improvement, we reserve the right to change the operating instructions and any specifications in this document without notice.

2 Schematic diagram of the installation

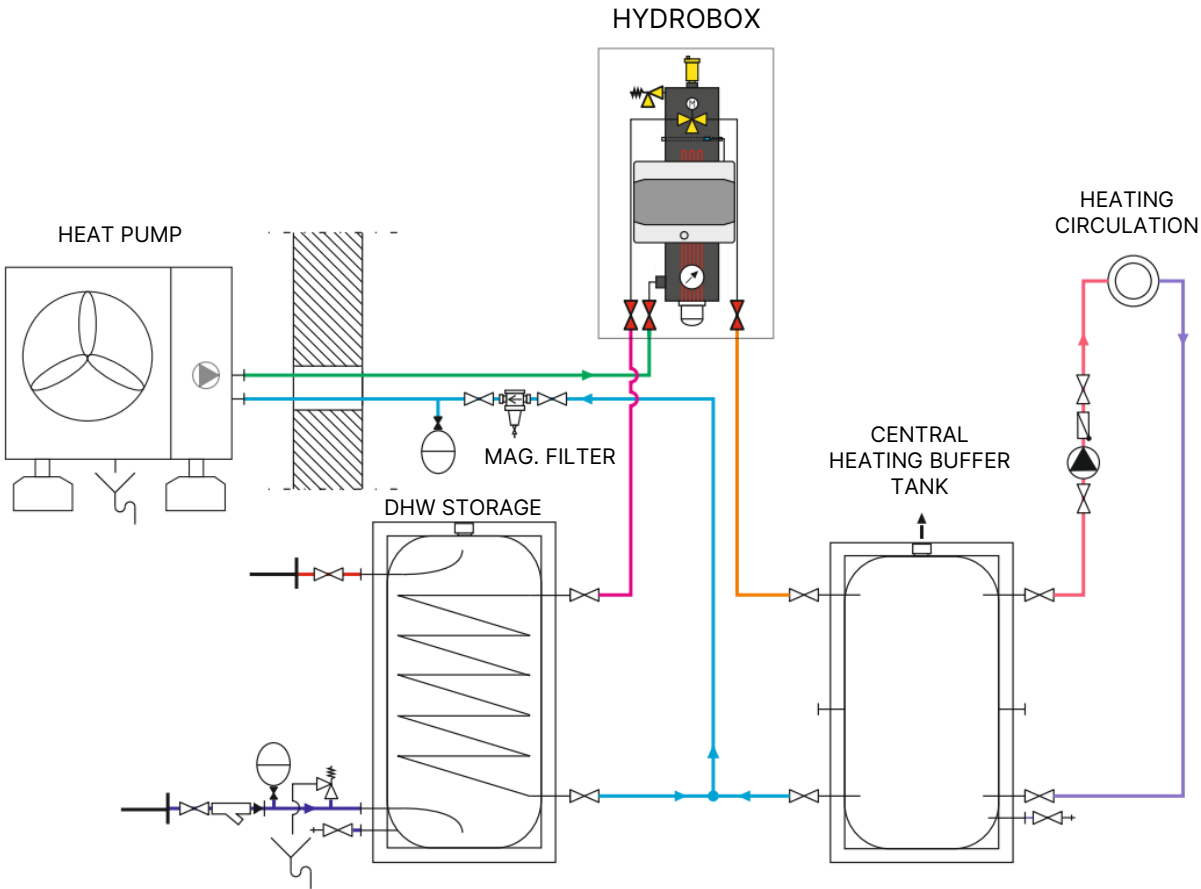


Fig. 1. Example installation diagram using HYDROBOX

3 Safety precautions and recommendations

3.1 Safety precautions

- All installation work must be carried out only by a qualified and trained installer. Incorrect installation carries the risk of fire, flooding, electrical shock and damage to the device and heat pump.
- The device is not intended for use by children.
- For safety reasons, the condition of the device must be checked regularly.
- Lightning may damage the device; therefore, it must be disconnected from the mains during a storm.
- The device must not be misused.
- Do not touch the device with wet hands – risk of electric shock!

3.2 Electrical recommendations

- Live electrical device. Before carrying out any power supply operations (connecting cables, installing the device, etc.), ensure that the device is not connected to the mains.
- The electrical connection must be made taking into account the electrical characteristics of the device and in accordance with applicable regulations. The electrical installation components, used such as electrical wires and apparatus, must be selected correctly.

3.3 Hydraulic recommendations

- The device can be filled with low-oxygen water, preferably using dedicated corrosion inhibitors for heating systems.
- The device must be installed with a view to applying the necessary pressure and thermal protection in accordance with standard PN-EN 12828+A1:2014-05.
- Dry running of the heater and circulation pump is not permitted.
- The drain of the safety valve must not be blocked. **Do not install ball valves, non-return valves, filters or other shut-off devices on the section from the safety valve to the heat pump!**
- If the device is used for installations operating in cooling mode, vapour-proofing of hydraulic components must be added to reduce the effect of condensation.

4 Technical data and components

Diverter valve	DN25
Electric heater	3 x 2 kW (stepped)
Safety valve	3 bars
Size of hydraulic connections	GW 5/4"
Dimensions H x W x D	690 mm x 450 mm x 290 mm
Weight	20 kg
Recommended electrical supply	min. 3 x 10 A, 230 V AC, 50 Hz
Recommended power supply cable	5 x 2.5 mm ²
Recommended control cable	5 x 1 mm ²

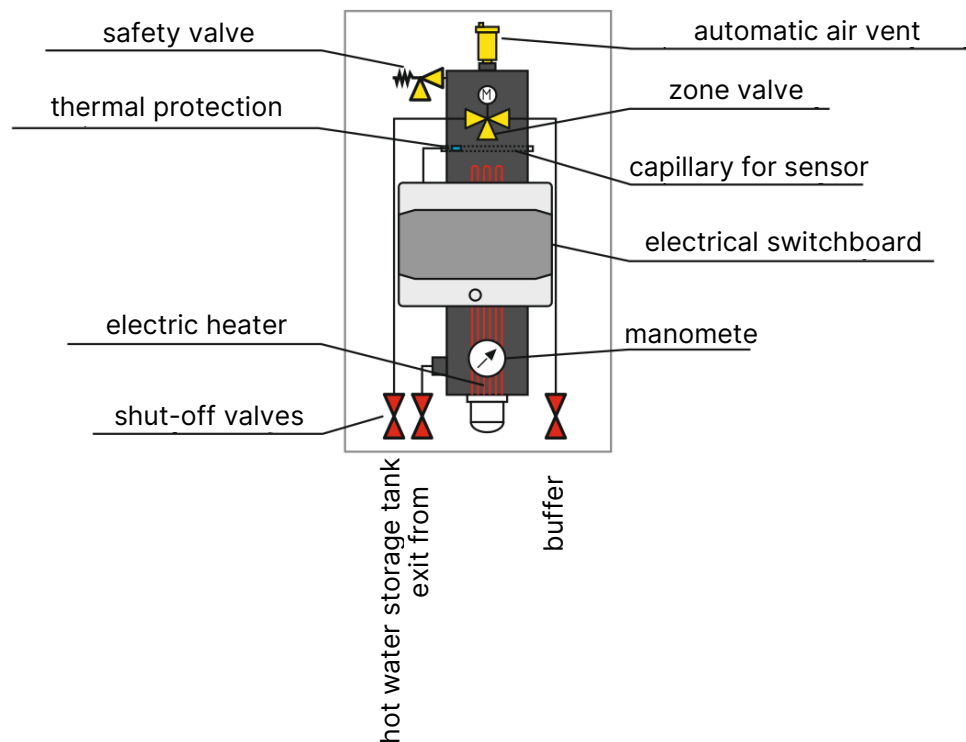


Fig. 2. Components and description of hydraulic connections

5 Transport and storage

- Store the device in a dry and dust-free place.
- Do not store the device below 0 °C or above 40 °C.
- It is not recommended to transport the device with the supplied packaging removed.
- Moving the device requires at least two people or the use of a transport trolley.
- When lifting the device, be careful not to accidentally open the door. Do not lift by gripping the spigots.

6 Wall mounting and service clearances

The device must be mounted on a wall or on a structure that allows vertical suspension. Observe the minimum distances to obstacles as shown in Fig. 3. Mount the device using two upper M8 bolts as shown in Fig. 4. Mounting should be carried out using the supplied set of bolts and anchors, or others adapted to the technical condition of the wall and/or structure. The selection of suitable anchoring elements is up to the installer. Next, additionally affix the device using the lower mounting holes.

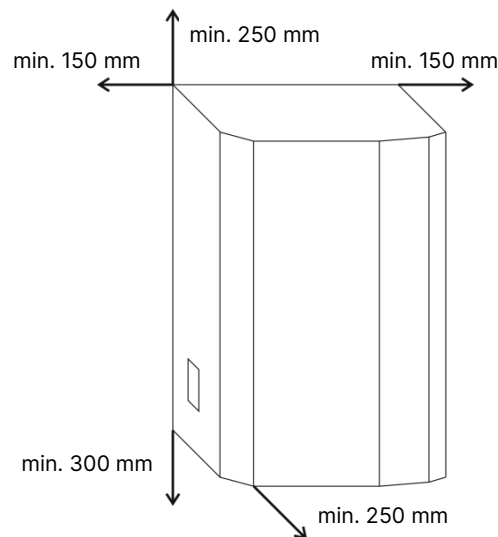


Fig. 3. Minimum clearances from obstacles

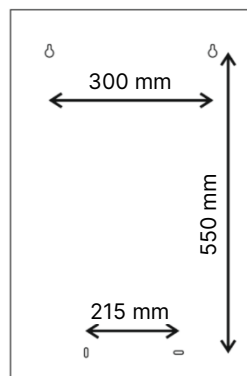


Fig. 4. Mounting holes

7 Electrical connections

The basic electrical connections in HYDROBOX assembly include:

- Insertion of the heater supply wires into the bus couplings (inputs 1, 2 and 3) and into the N and PE buses.
- Connection of zone valve wires (A – actuator power supply 230 V AC / 50 Hz, B – control signal for valve position change 230 V AC / 50 Hz). The neutral wire is already plugged in. **Both the actuator power supply and the control signal must come from the same phase! Plugging in from two different phases can result in a short circuit between phases and damage to the actuator.**
- Connection of the step heater control wires to the A2 inputs of the built-in contactors (inputs 4, 5, 6).

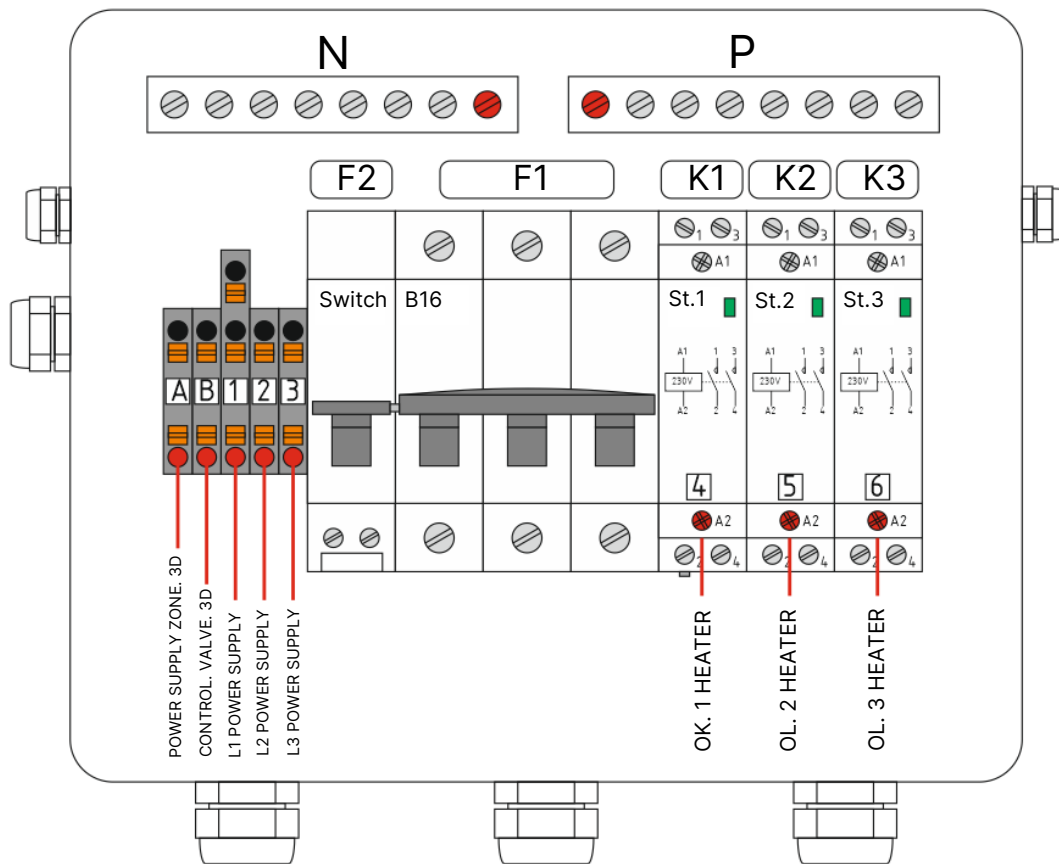


Fig. 6. Connections in the electrical box (marked places to be plugged into)

- OL.1** – Overtoltage limiter
- F1** – heater protection
- F2** – rise trigger
- K1** – contactor of the first heater stage
- K2** – contactor of second heater stage
- K3** – contactor of the third heater stage
- A** – constant power supply of actuator (rotation on CO mode)
- B** – actuator control signal (rotation on HUW mode)
- 1** – L1
- 2** – L2
- 3** – L3
- 4** – signal for contactor coil (A2) of first stage heater
- 5** – signal on contactor coil (A2) of second stage heater
- 6** – signal on contactor coil (A2) of third stage heater

The electrical connections between the HYDROBOX and the EcoControl are shown in fig. 7:

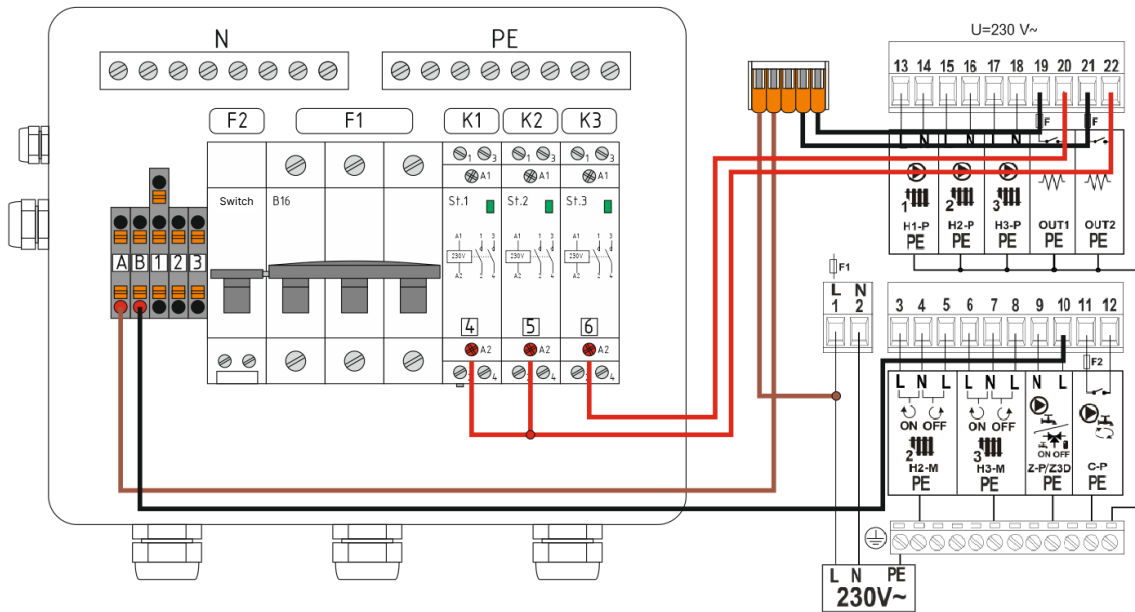


Fig. 7. Connections between the electrical box and the EcoControl controller

8 Heater thermal protection

The built-in heater has a thermal protection that, if the critical temperature of 80 °C is exceeded, the electrical supply to the heaters is cut off via a trigger. In the event that it's tripped, once the heater body has cooled down, the heater fuse must be switched back on, after first verifying the cause of the system overheating.

Make sure that the thermal protection is in place in the capillary and adheres correctly to the metal body of the heater! The location is shown in Fig. 2.

9 Cleaning and maintenance

Basic maintenance activities include:

- Washing the housing with a damp cloth and possibly a mild detergent.
- Dusting the inside of the housing.
- Checking the condition of the electrical wiring.
- Checking the condition of the hydraulic connections.
- Checking the operation of the thermal protection.

10 Disposal

Caring for the environment is of paramount importance to us. Knowing that we manufacture devices containing electronics, batteries and many other complex components obliges us to dispose of used components and devices in a manner that is safe for the environment. The symbol of a crossed-out rubbish bin on the product means that the product must not be disposed of in normal waste bins. By separating waste for recycling, we are helping to protect the environment. It is the user's responsibility to take used equipment to a designated collection point for the recycling of waste from electrical and electronic equipment.



NORD HT AS
Plattformvegen 2, 4056 Tananger, Norway

www.nord-solution.com