AFRISO Sp. z o.o.
Szałsza, ul. Kościelna 7
42-677 Czekanów
Poland
Phone +48 32 330 33 55
Fax +48 32 330 33 51
zok@afriso.pl
www.afriso.pl

Installation and operation manual

Buffer tank ABT 160

- Read the manual before using the device
- Pay attention to all information regarding safety
- Keep the instruction manual

953.001.0099

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1 Explanations to the installation and operation manual

Installation and operation manual is an important part of the scope of delivery. That is why we recommend:

- ▶ Read the installation and operating instruction before installing the device.
- ▶ Keep the installation and operating instruction for the entire life of the device.
- ▶ Hand over the installation and operating instructions to any subsequent owner or user of the device.

1.1 Safety messages and hazard categories

DANGER Specifies the type and source of a threat

▶ Describes what to do to avoid a hazard.

Threats have three levels:

Danger	Importance
DANGER	DANGER indicates a hazardous situation, which, if not avoided, will result in death or serious injury.
WARNING	WARNING indicates a potentially hazardous situation, which, if not avoided, can result in serious injury or equipment damage.
NOTICE	NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

2 Information on safety

2.1 Intended use of the device

The ABT 160 buffer tank is intended for use in a closed heating systems in accordance with EN 12828. The ABT 160 buffer tank is designed for combining various heat sources with a heating system. It enables the combination of one or two sources plus an electric heater. Thanks to its sufficient capacity, it ensures smooth and efficient operation of the entire system.

It is designed for heat sources such as a heat pump, electric boiler, fireplace with water jacket, pellet boiler and other automatic solid fuel boilers.

In the installation with heat pump, buffer guarantees an adequate fluid flow through the heat exchanger. With air source heat pumps, it also

ensures that there is sufficient heat capacity for defrosting the external unit when required. Any use other than that indicated in point. 2.1 is forbidden.

2.2 Quality control

Construction of buffer tank ABT 160 complies with the current state of the technical standards regarding safety. Each device is checked for safety before shipment.

▶ The product should only be used if it is in a qualified technical condition. Read the instructions for assembly and use as well as observe the relevant safety regulations.

2.3 Qualification of personnel

The device may only be installed, commissioned, shut down and disassembled by suitably qualified and trained personnel. To avoid errors in installation, operation, and accidents during exploatation, ensure that all persons are familiar with its operation and with Chapter 2 of this manual.

2.4 Personal protective equipment

Always wear the required personal protective equipment. When working with the product, it must also be taken into account that hazards may occur at the place of use that are not directly caused by the product.

2.5 Modifications to the product

Changes and modifications conducted by unauthorized persons may cause hazards and are prohibited for safety reasons.

2.6 Using additional parts and accessories

Improper additional parts and accessories may damage the device

▶ Use only original spare parts and accessories from the manufacturer.

2.7 Liability

The manufacturer is not responsible for direct damages or their consequences resulting from inaccurate reading of assembly and usage instructions and recommendations.

The manufacturer and the company selling the device are not responsible for damages and costs incurred by the user or third parties using the device, in particular for damage resulting from improper use indicated in chapter 2.1 of assembly and use instructions, improper or faulty connection or maintenance and noncompliant operation with manufacturer's recommendations. AFRISO Sp. z o.o. makes every effort to ensure that the information materials do not contain errors. If errors or inaccuracies are found in the following installation and

operation instructions, please contact: zok@afriso.pl, tel. +48 32 330 33 55.

3 Product description

The ABT 160 buffer tank is a thermal energy storage tank without a coil. It consists of a rectangular steel body with welded connections, thermal insulation, and an external casing. The tank body is made from 4 mm thick steel with an anti-corrosion coating. Inside the tank, there is a partial baffle which is responsible for the desired stratified temperature distribution inside the buffer and, at the same time, enables the flow and return streams to be mixed. The ABT tank is designed for direct connection to the AFRISO KSV boiler manifolds and AFRISO PrimoTherm pump groups.

3.1 Buffer construction

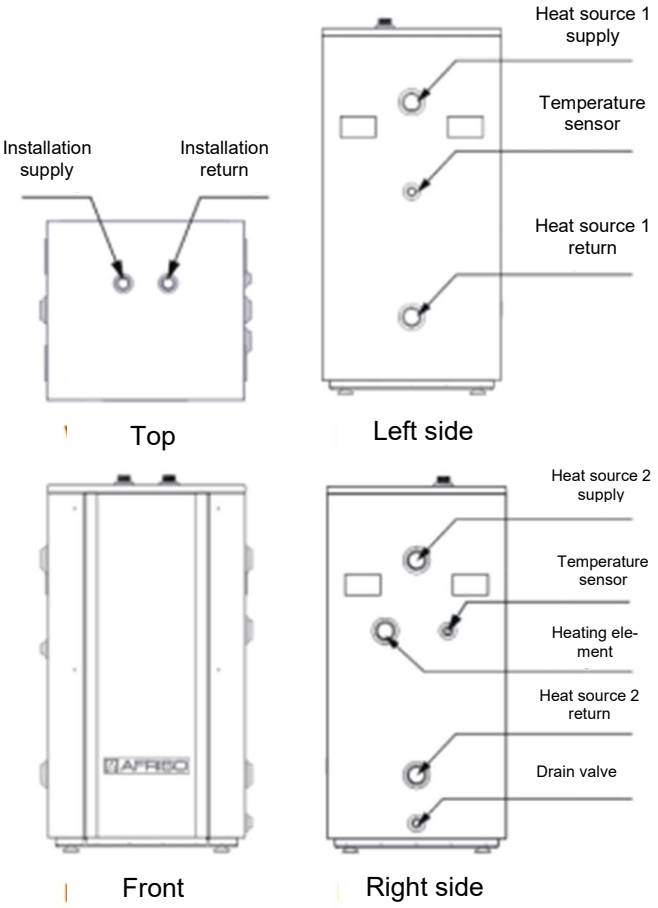

Figure 1: Description of buffer tank ABT 160 connections

3.2 Dimensions

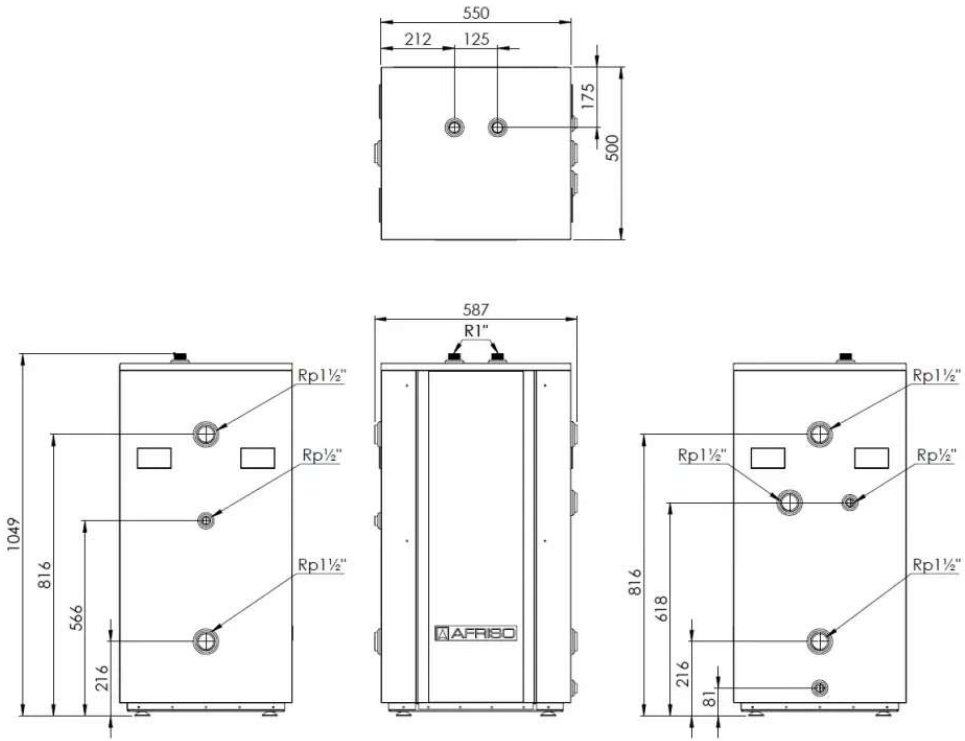

Figure 2: Dimensions of the ABT 160 buffer tank and its connections

3.3 Buffer operation

The ABT 160 buffer tank is a storage tank for heat that, once accumulated, can be used when the heat source is switched off. This reduces the on/off frequency of the heat source.

The ABT 160 buffer also acts as a hydraulic low-loss header (in case of parallel connection) - stabilising the operation of the system as well as the heat sources.

The buffer increases the water capacity in the system and that ensures an adequate minimum fluid flow through the source. This is a key aspect for the correct operation of the heat pump.

3.4 Scope of delivery

The scope of the delivery of the ABT 160 buffer tank includes:

- buffer tank ABT 160,
- two half union G1" F x union nut G1½",
- temperature sensor sleeve ½",
- drain valve ½",
- three plugs 1½" for closing heat source and heating element connections,
- one plug ½" for closing temperature sensor sleeve connections,
- installation and operation manual.

4 Transport and storage

WARNING

Possibility of damage to the device during improper transport.

- ▶ Do not throw the device.
- ▶ Protect against water, moisture, dirt and dust.
- ▶ It is only permissible to transport the buffer in a vertical position. Do not lay the buffer horizontally during transport.

WARNING

Possibility of damage during incorrect storage.

- ▶ Store the device in a dry and clean room.
- ▶ Protect against water, moisture, dirt and dust.

5 Examples of application schemes

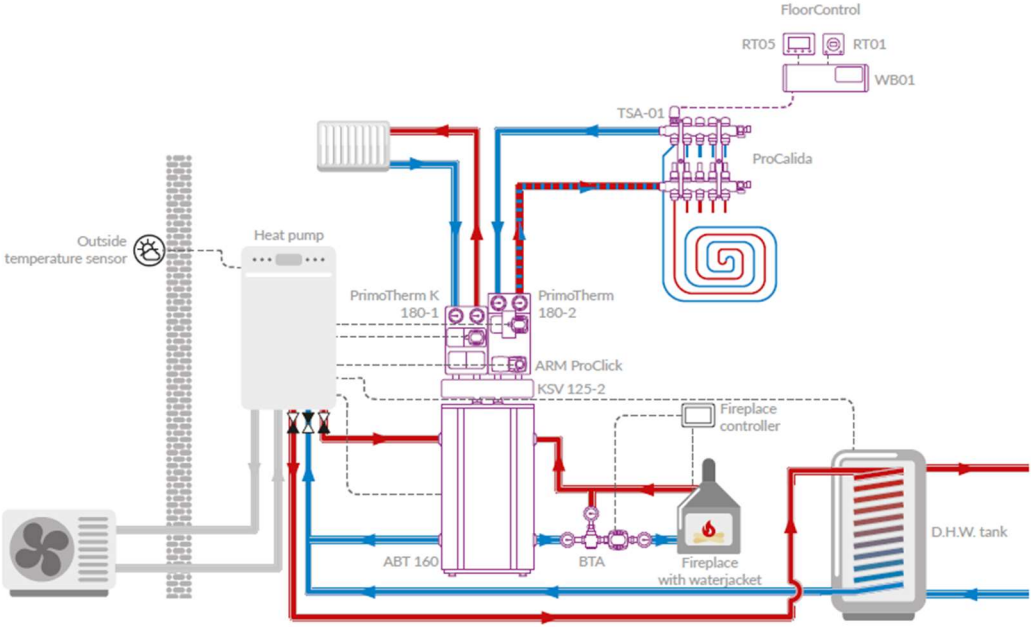

Figure 3. Combination of heat pump and fireplace with water jacket. The central heating system is divided into two circuits using a KSV 125-2 manifold and two PrimoTherm 180 pump groups.

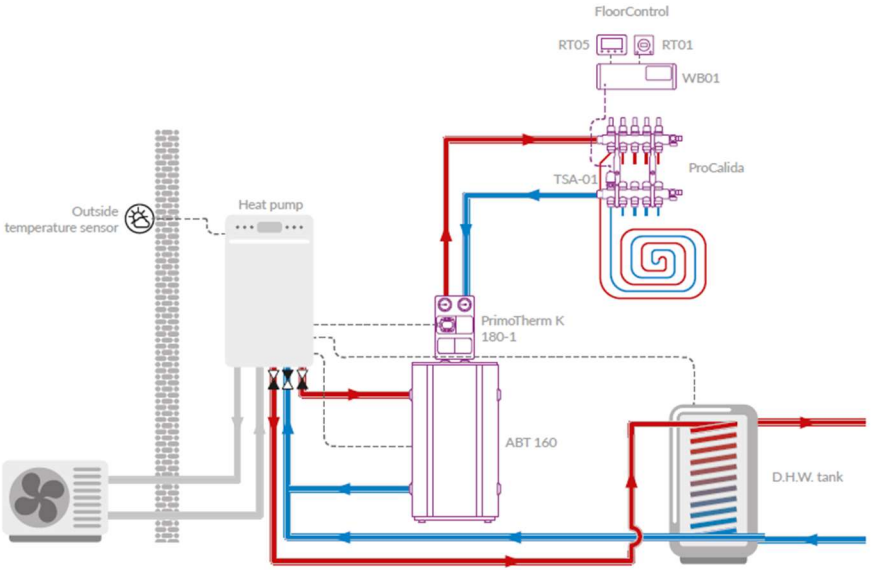

Figure 4. ABT 160 buffer tank supplying an underfloor heating system. The heat source is a heat pump.

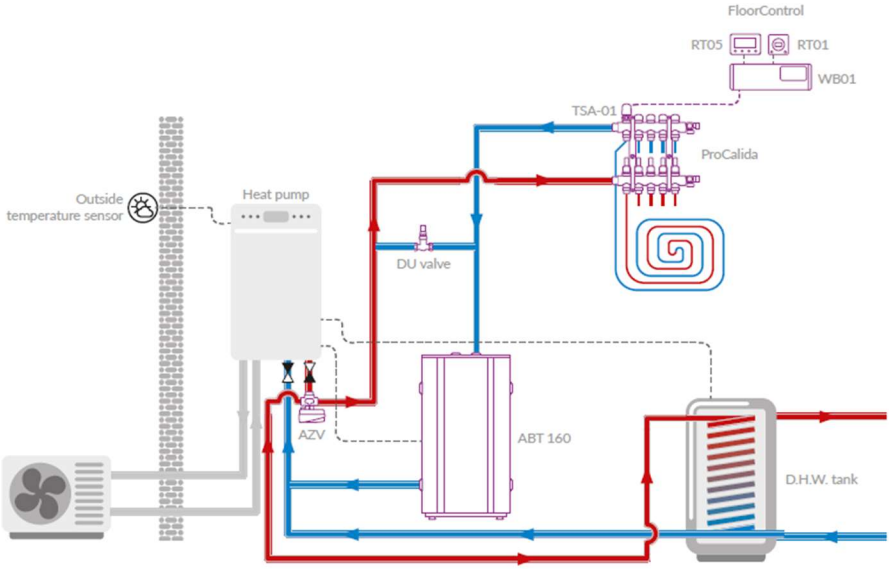

Figure 5. ABT 160 buffer tank supplying an underfloor heating system. The heat source is a heat pump. This application serves to increase the installation's charge and extend the operating cycles of the heat pump compressor.

6 Technical data

Table 1: Technical data of buffer tank ABT 160

Parameter	Value
General specification	
Dimension (h. X w. X d.)	1055 x 550 x 500 mm
Weight	103 kg
Nominal capacity	160 l
Working pressure	max 3 bar
Working temperature	max 90ºC
Heat source connections	4x Rp1½”
Installation / boiler manifold connections	2x R1”, 2 x half union R1” F x union nut G1½” in package
Heating element connection	Rp1½”
Heating element length	max 480 mm
Tank wall thickness	4 mm
Energy class In accordance with EU Regulation 812/2013	B
Standing loss (S) In accordance with EU Regulation 814/2013	57,1 W

7 Approvals

Buffer tank ABT 160 subjects to the Pressure Directive 2014/68/EU and in accordance with art. 4.3 (sound engineering practice) are not CE marked.

The ABT 160 complies with EU Regulation 812/2013 and EU Regulation 814/2013.

8 Installation and commissioning

The installation location of the ABT 160 storage tank must be protected from the weather. The storage tank must not be installed outdoors. It can be installed in any room protected from temperatures below 0 °C. It is designed to be placed on the floor of the room. The device is not designed to be wall mounted. After placing the tank at its destination, it must be levelled by height-adjustable feet. Once the tank has been positioned, you can proceed with the installation work to connect the heat source(s) and the system. Connect the heat source(s) to the corresponding connections on the left or right (see Fig. 1). Plug unused holes with plugs. Connect the installation from

the top of the buffer, paying particular attention to the connection identification (supply - red, return - blue). The KSV manifold or PrimoTherm pump groups can be used for this purpose, or the installation can be connected directly. Screw the sleeve for the temperature sensor and drain valve into the ½" connections and plug the unused connections (see Fig. 1). After the buffer has been correctly connected, fill the system and start it up. The pressure and temperature in the central heating system connected to the ABT buffer storage must not exceed the maximum operating parameters of the appliance (see Chapter 5 "Technical data"). If the heat source is equipped with a safety valve, its opening pressure must be checked. If the opening pressure is higher than 3 bar, the buffer tank must be fitted with an additional safety valve with an opening pressure of max. 3 bar (see Operating pressure of the tank, Chapter 5 "Technical data").

When installing an ABT storage tank in a closed heating installation, due to the additional 160 litres of storage capacity, it must be verified whether the installed expansion vessel has sufficient capacity. If the installed expansion vessel is insufficient, an additional expansion vessel must be installed or the existing expansion vessel must be replaced with a larger one. For the connection of a possible additional safety valve and/or expansion vessel, one of the connections of the buffer that has not been already used in the selected application can be used.

DANGER Danger of scalding.

▶ Scalding can occur from the hot medium during installation and maintenance work. Ensure that the installation has cooled down sufficiently before proceeding.

9 Maintenance

Buffer tank ABT 160 is maintenance free. The integrity of the system connections to the storage tank must be checked periodically (at least once a year) and visually inspecting the condition of the tank for mechanical damage, corrosion and leaks.

10 Decommissioning, disposal

1. Dismount the device
2. To protect the environment, this product must not be disposed together with normal household waste. Dispose of the product in accordance with the local directives and guidelines.

Buffer tank ABT 160 consist of materials that can be recycled.

11 Return

Before returning a product, please contact the manufacturer: zok@afriso.pl, phone +48 32 330 33 55.

12 Warranty

Product warranty in accordance with the general conditions of sale and delivery.