

Fact sheet

Akva Vita II

Instantaneous water heater for single-family houses and flats



Application

The Akva Vita II is an instantaneous water heater featuring high performance and simple operation. It is especially suitable for single-family houses and for systems with a similar domestic hot water requirement.

The Akva Vita II can be used directly on district heating networks with a differential pressure of max. 2.5 bar.

Construction

The Akva Vita II water heater is prefabricated with a brazed, highly efficient Danfoss plate heat exchanger for domestic hot water production, a domestic hot water controller Danfoss PM2+P, as well as a Danfoss FJVR thermostat for control of the bypass/circulation temperature. All pipes are made of stainless steel and the connections are made by nuts and gaskets. As an option and if approved by local regulations the water heater can be supplied with a Danfoss AVE expansion unit to avoid having to establish a discharge pipe.

Design

The Akva Vita II is designed for wall-mounting and the design emphasizes a user-friendly placement of the controllers. The Akva Vita II can be supplied with a brushed or white-lacquered stainless steel cover in an elegant and modern design.

Bypass (thermostatic circulation)

The water heater is supplied with a thermostatically controlled bypass, which ensures

that hot water is produced immediately, when tapping starts. The bypass temperature is set with due consideration of the best possible DHW comfort and economy.

Domestic hot water circulation

The water heater is prepared for domestic hot water circulation. If the household piping includes hot water recirculation the water heater must be connected to the hot water recirculation system and a circulation pump and a non-return valve must be mounted on the circulation pipe and a safety valve must be mounted in the DCW inlet. The pump must be installed so that it pumps towards the water heater. Domestic hot water circulation ensures that hot water is available at the tapping point without waiting time and waste of water. The circulation temperature is set independently of the set DHW temperature. This ensures the best possible DHW comfort, very low standby losses and thus a very good district heating economy. Please note that Akva Vita II with AVE expansion unit should not be used on systems with domestic hot water recirculation.

Heat exchanger for DHW heating

The water heater is based on a brazed, highly efficient plate heat exchanger type XB 06H-126, which is controlled by a pressure controlled DHW controller, Danfoss PM+P with integrated differential pressure controller and $e_{\text{save}}^{\text{TM}}$ function, which ensures that the heat exchanger is cold during standby. After

completion of the tapping process, the controller immediately blocks the district heating flow, to avoid standby losses and to protect the heat exchanger from the formation of lime scale and growth of bacteria. The heat exchanger is cold during standby, so the heat loss is very low. The integrated differential pressure controller compensates for variations in supply temperature and varying differential pressure and thereby ensures a constant hot water temperature at all times.

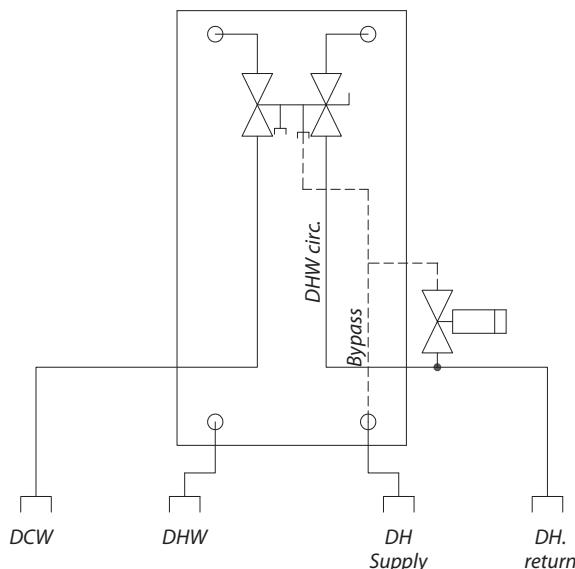
Service and maintenance

The water heater is very service-friendly and easy to install. It is mounted on the wall and as all pipes are placed in pipe bracket distance, it is possible to establish a nice piping.

FEATURES AND BENEFITS

- COLD heat exchanger during standby, - no standby losses
- DHW controller PM2+P with integrated differential pressure controller and energy-saving function
- Pipes and heat exchanger made of stainless steel, connections with EPDM gaskets
- Minimized risk of lime scale and bacteria formation, no Legionella
- Capacity: 35 kW

CIRCUIT DIAGRAM – EXAMPLE



1. Danfoss copper brazed plate heat exchanger in stainless steel AISI 316, type XB 06H-1 26.
2. Domestic hot water controller type Danfoss PM2+P.
3. Bypass/circulation thermostat Danfoss FJVR.
4. Connection of capillary tube from Danfoss FJVR acting as bypass thermostat (standard function).
5. Connection of capillary tube from Danfoss FJVR acting as circulation thermostat (DHW recirculation).
6. Connection piece for circulation pipe, if any.

Note: Circulation set is not part of the delivery and must be ordered separately and mounted on site.

Design specifications:

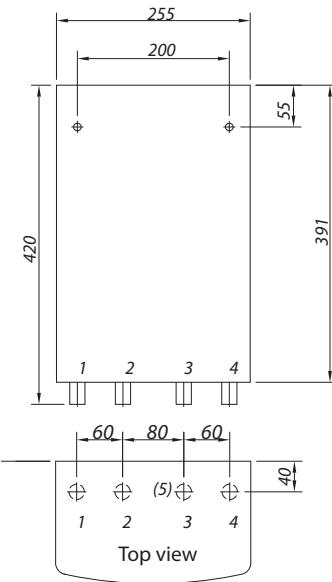
Nominal pressure (prim/sec.): PN 16 / PN 16
 Max. supply temperature: 120 °C
 DCW static pressure: $p_{min} = 2.0$ bar
 Min. ΔP : See capacity examples
 Chloride compounds: Max. 300 mg/l

Weight incl. cover: 9 kg
 (incl. packing)

Cover: Brushed steel

Dimensions (mm):
 Without cover: H420xW250xD150
 With cover: H420xW255xD160

Connections sizes:
 DH, DCW, DHW: R 1/2" ET (ext. thread)
 Circulation: R 1/2" ET (ext. thread))

**Recirculation:**

Remember to order circulation set for systems that feature DHW recirculation.

Connections:

1. District heating (DH) supply
2. District heating (DH) return
3. Heating (HE) return
4. Heating (HE) supply
5. Domestic hot water (DHW)
6. Domestic cold water (DCW)

Options:

- Cover, white-lacquered steel, with door
- Electronic controller Danfoss ECL310
- Circulation set for DHW recirculation
- Safety function - safety thermostat + actuator
- Connection of pipes can be established in the top or in the bottom of the substation
- Pipe insulation
- Mounting of heat meter (supplied by customer)
- Supplementary fitting set for change of fitting piece size 3/4 x 110 mm to fitting piece size 1" x 190 mm

DHW: CAPACITY EXAMPLES, 10°C/45°C

DHW Capacity kW	Supply flow Primary °C	Return flow Primary °C	DHW tap load l/min	Pressure loss* Primary bar	Flow rate Primary l/h
32.3	55	21.8	13.16	0.28	840
32.3	60	18.9	13.16	0.18	680
41.0	60	20.4	16.96	0.31	900
41.0	70	16.8	16.86	0.17	670

*) Stated pressure loss values are complete, incl. pipes, heat exchanger and valves.

Danfoss Redan A/S · District Energy · Omega 7 · DK-8382 Hinnerup

Tel.: +45 87 43 89 43 · Fax: +45 87 43 89 44 · redan@danfoss.com · www.redan.danfoss.dk

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary in specifications already agreed.
 All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.