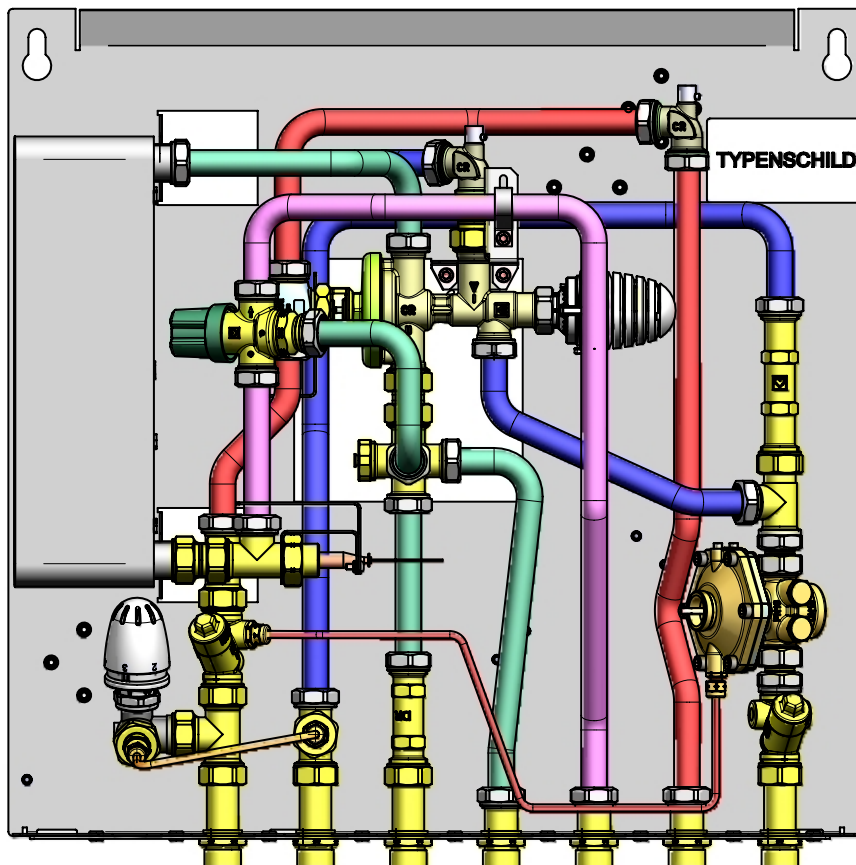


 **HERZ® DELUXE**

with hot water priority

FOR OPERATOR AND PLUMBER

HEAT INTERFACE UNIT



USER MANUAL

HERZ Armaturen GmbH Deutschland

Fabrikstraße 76, D-71522 Backnang

Tel: +49 (0)7191 9021-0, Fax: +49 (0)7191 9021-79

E-Mail: verkauf@herz-armaturen.de

HERZ Armaturen GmbH

Richard-Strauss-Str. 22, 1230 Wien

Tel.: +43 (0)1 616 26 31-0, Fax: +43 (0)1 616 26 31-227

E-Mail: office@herz.eu

www.herz.eu

Introduction

The HERZ HIU DELUXE is a wall mounted unit for providing hot water. In contrast to a hot water boiler which heats and then stores the water before it is being used, the unit operates only when hot water is required.

The HERZ HIU DELUXE ensures constant temperature and flow of hot water, no matter how much or how often water is drawn from a tap

Advantages of the HERZ HIU:

- enables individual room heating and supply of domestic hot water
- the continuous-flow heating enables a permanent supply when domestic hot water is required
- the HERZ HIU can be customized to the individual requirements of the consumer
- minimal space required
- needs no domestic hot water boiler
- the constant water temperature in the heat exchanger reduces the danger of legionella- and lime formation
- low return temperature
- minimal heat losses in the system
- easy to install
- optimal heating comfort

1. Function

In the stand-by mode the heating water flows from the primary circuit (district heating main) via a bypass which is kept at operating temperature with a return temperature limiter. If hot water is drawn from a tap by a domestic user connected to the system, the control valve for the cold and heating water is opened by the difference in pressure. Cold water flows through the heat exchanger, is heated up and promptly available as hot water at the domestic hot water tap. A mixing valve for drinking water (acc. to EN 1111) serves as safety armature against scalding. If less water is extracted, it is possible that the temperature is under the nominal value. Strainers with a fine-mesh screen of 0.5 mm are fitted in the primary heating flow and secondary heating return to catch impurities.

4. Equipment

Important components of the HERZ HIU DELUXE

DT-controller

Is the central control valve in the HERZ HIU the HERZ PT-controller ensures the provision of hot water and constant temperatures. Reacting to the difference in pressure the valve opens or shuts the heating water and the cold water inlet to the exchanger. Simultaneously, the temperature of the hot water is controlled by a thermostat. The PT-controller closes so that maximum power is used for the domestic hot water processing.

Mixing valve for hot water

The mixing valve for hot water regulates the temperature of the domestic hot water up to a maximum of 52°C. Thus eliminating any risk of scalding when a hot water tap is operated. The HERZ HIU InEx UF is thus usable for all public applications, like daycare centres, schools, hospitals. Hot and cold water mixing is regulated by a thermostatic element, which can be adjusted to the required hot water temperature. The mixing valve closes immediately if the cold water supply is interrupted. Thermostatic mixing valves according to EN 1111 are mandatory in certain applications for temperature protection at terminal points.

Thermostat

The HERZ thermostat is an automatic temperature regulator, which is independently regulating the water flow through the control valve in reference to the capillary sensor temperature. The factory settings of the hand wheel keep temperature fixed and through automatic opening and closing temperature is constant. The HERZ thermostat does not require any maintenance. Length of capillary: 500mm.

Return Temperature Limiter

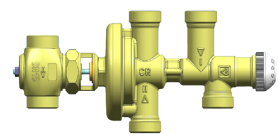
Used for controlling the return temperature in the HERZ HIU between 25-60°C. Limitation and locking of the set value range can be achieved by means of stop pins, which need to be ordered separately.

2. General notes on installation

1. For installation please refer to the drawings and manual included in the packaging.
2. When choosing where to mount the HERZ HIU, the weight of the unit itself as well as the weight of the water must be taken into account.
3. If the HERZ HIU is built in or installed in confined spaces, intermediate ceilings, etc., the front of the unit must be freely accessible for repair and maintenance purposes.
4. Before mounting the HERZ HIU, check that the wall is vertical.
5. Depending on the type of wall where the unit is mounted, the appropriate wall anchors and screws must be used.

3. Safety notes

1. The unit must be installed and connected by professional plumbing and heating engineers only.
2. Only use original HERZ spare parts to replace faulty parts or heating components.
3. Check all connections for leakages prior to starting up the heating system.
4. All screws must be checked and tightened after the unit has been installed.
5. The user must not make any technical changes to the heating system. Otherwise HERZ will not assume liability for any resulting damage.
6. The HERZ HIU must only be installed in rooms and locations that meet the legal requirements.



Actuating drive

Electro thermal actuating drive for heating regulation valves, installation in combination with an electrical room thermostat for twopoint- regulation in heating and cooling systems.



Differential pressure controller

Differential pressure controllers are proportional controller, which are working without auxiliary energy. They are used in heating and chilling systems to hold the differential pressure constant and to control it in a fixed pressure range, but the differential pressure has to be preset. In substations the differential pressure controller is incorporated in primary side to holt the differential pressure constant. Differential pressure fixed at 23 kPa



Strainer

Strainer with external thread and finely woven mesh out of chrome nickel steel. Mesh: 0,5 mm



Thermostatic bypass valve

HERZ thermostatic valve, nickel coated brass, with screw cap. In the HERZ HIU Deluxe, this valve is installed in a bypass.



Premounting unit

Supplied as first fix mounting rail, complete with ball valves for isolating heating, cold- and hot water circuits, connection to the ball valves is possible from the wall, or underneath. The HIU can be connected at a later date by using the connections and fittings included. The HERZ premounting unit needs to be ordered separately.



5. Operation data

Hot water extraction:

With limiting valve (15 [l/min])

Primary pressure 2,5 [bar]

	Flow temperature [°C]		
	60	70	80
Water supply [l/min]	15	15	15
Cold water temperature [°C]	10	10	10
$\Delta p_{tot.}$ [kPa]	30	25	20
$V_{tot.}$ [l/h]	880	780	640
Temperature after heat exchanger [°C]	50	50	50
Heating capacity heat exchanger [kW]	42		

Differential pressure fixed at 23 kPa

Weight of HIU including the premounting rail:

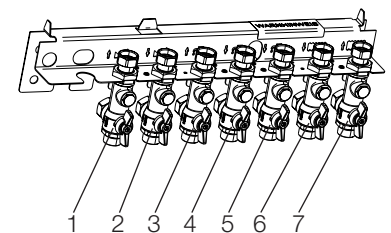
empty device	cover	water content	total weight
~15 kg	~8 kg	~10 kg	~33 kg

6. Dimensions of the HERZ HIU

Dimensions of the HERZ HIU	
<i>Dimensions of the connections, inlet/outlet</i>	
Supply flow district heating plant	G 3/4 male thread
Return flow district heating plant	G 3/4 male thread
Cold water supply	G 3/4 male thread
Hot water outlet	G 3/4 male thread
Heating flow	G 3/4 male thread
Heating return	G 3/4 male thread

Distribution of the connections:

1. Supply flow district heating plant
2. Return flow district heating plant
3. Cold water supply
4. Return cold water
5. Hot water outlet
6. Heating flow
7. Heating return



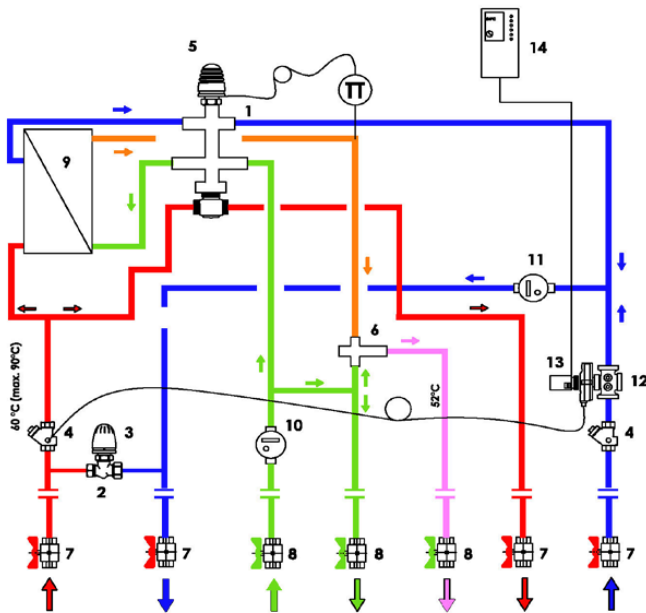
7. Construction

Through its reduced dimensions and its compact design the HERZHIU can be flush mounted, so the HERZ HIU can be installed either in the staircase or in the apartment (e.g.: instead of a classic hot water tank).

Therefore the HERZ- HIU is delivered as a flush mounted version, with all of her components on a metal steel plate and screwed in the inwall unit. In-wall unit has to be ordered separately.

The strainer is installed in the flow, directly after DTR and in return in front of the heat exchanger. The intermediate elements are made of stainless steel 1.4401, Ø18mm. All elements of the HERZ- HIU are mounted with detachable connections so they can be changed or maintained.

8. Function schematic HIU DELUXE

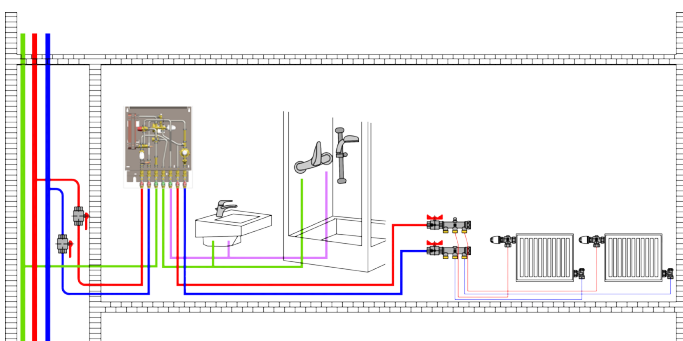


1	HERZ- PT - controller
2	HERZ- thermostatic bypass valve
3	HERZ- return temperature limiter
4	HERZ- strainer
5	HERZ- thermostatic head with hydrosensor
6	HERZ- mixing valve for drinking water
7	HERZ- ball valve
8	HERZ- ball valve for drinking water
9	Heat exchanger
10	Water meter
11	Heat meter
12	HERZ- differential pressure controller
13	HERZ- actuating drive
14	HERZ- room temperature controller

System description:

The control system consists of a heat exchanger with HERZ differential pressure controller which, is the central unit in the HERZ Substation, ensures the provision of hot water and constant temperatures. Through the difference in pressure the valve opens or shuts the heating water and the cold water inlet to the exchanger and simultaneously the temperature of the hot water is controlled by a thermostat. The mixing valve for the domestic hot water system is another essential component of the HERZ Substation. It is fitted with a thermostat and mixes cold and hot water to the desired temperature in order to avoid scalding at the tap. Hot water is drawn via the HERZ ball valves.

9. Connection to the district heating main



The Substation is connected parallel to the district heating main. If

possible, the HIU should be installed before the first end user.

10. Operating conditions

Besides the national rules and regulations, the industrial standards as well as the connection conditions of the local water supplier need to be met and, furthermore, installation and operating instructions need to be followed. The room where the substation will be installed should be frostfree and the place of installation has to be chosen in such a way that the substation is easily accessible for maintenance and repair work. The incoming water temperature should range between a minimum of 60 °C and a maximum of 80 °C. A primary static pressure of 10 bar and a primary differential pressure of 0.5 bar are fine. Furthermore, in case of system failure, all connecting pipes must be able to withstand a maximum temperature of 95 °C.

11. Starting-up:

The HERZ HIU is easy to operate and user-friendly. All you have to do is open up the ball valves in the following order to avoid water hammer:

1. Open heating water inlet slowly (red ball valve)
2. Open cold water inlet slowly (green ball valve)
3. Open heating water return slowly (red ball valve)
4. Open hot and cold water outlet slowly (green ball valve)

12. Temperature setting

The HERZ HIU DELUXE is set to a default temperature of max. 50°C. The settings of the thermostat cannot be changed to ensure the optimal tap water temperature at all times.

13. Initial start-up

In accordance with the Austrian ÖNORM H5195-1 standard, before initially starting up the HERZ HIU, make sure to use only clean pipe materials that comply with standards (i.e., all pipe work must be free from forging scale, rust, burrs and impurities). The same holds true for fittings and units (boilers, radiators, convectors, expansion vessels, etc.). The Austrian ÖNORM H5195 standard further provides for clean and professional workmanship (without welding beads, sealing or solder residues, burrs, bore chips and others) and cleaning of all components prior to their installation. Strainers should be fitted because deposits in the pipes can damage the controller and impurities can enter the drinking water system.

To prevent corrosion in the heating system, the Austrian ÖNORM H5195-1 standard requires the following measures: When installing and operating the heating system, make sure that as little air as possible enters the closed heating circuit. Before initially starting up the heating plant, flush it through twice (so that the entire water contained in the system is replaced twice). Then fill with clear, filtered water (filtered with a $\leq 25 \mu\text{m}$ pore size filter) of the required quality standard. When first starting up the heating system, it must be kept running at normal operating conditions for 24 hours so that the heating water is evenly mixed with the inhibitor. Old heating systems must be treated with a chemical cleanser and then flushed with water before refilling them. Do not partially or entirely drain the heating system, leaving it without anti-corrosion treatment for a prolonged period of time; otherwise the system will be more susceptible to corrosion. To avoid damage by frost at low temperatures, the heating system must be protected in compliance with the Austrian ÖNORM H5195-2 standard as follows:

In general, anti-freeze and water can be mixed to any percentage. However, heating systems with circulation pumps should be filled two thirds with water, then the anti-freeze added and only then should the system be topped up with water. The anti-freeze will be thoroughly mixed with the water once the system is put into operation and the fluids start circulating. Gravity-fed heating systems, however, must be filled with a combined anti-freeze and thermal fluid.

If anti-freeze needs to be put into a heating system that has so far

been unprotected, the following must be observed:

1. Ensure that the anti-freeze is suitable for the sealing materials.
2. The system should be power flushed.
3. After having added the anti-freeze, the system must be double checked for leaks.

In order to be able to do this, HERZ recommends using the HERZ multifunction ball valves on the inlet and return pipes (order no.: 1 2414 xx and order no.: 1 2415 xx, respectively).

14. Shutting down, emptying

Shutting down the HERZ HIU for a prolonged period of time or dismantling it for whatever reason is done by shutting all ball valves.

In rooms exposed to temperatures below freezing the HERZ HIU must be drained down prior to the start of the cold season if the substation is to be shut down for several days. To drain the HIU, place a vessel with a capacity of 4 to 8 liters underneath the substation and drain the hot water from the ball valves till the HERZ-HIU is completely empty.

If temperatures are liable to drop below freezing point, be aware that not only the water in the HERZ HIU and the hot water pipes may freeze but also the water in the cold water inlet pipes leading to the fittings and to the unit itself. Therefore it is best to drain all water pipes and pipe fittings up to the frost-proof part of the domestic heating system.

15. Servicing and maintenance

Owing to its outstanding design, the HERZ HIU requires comparably little maintenance work. However, in hard water areas lime-scale can build up in the system. Depending on the hardness of the water, your system should be de-scaled by a professional every one to two years. In case scale in the system has damaged the valves, these should be replaced immediately to ensure smooth operation of your heating system. If the strainers provided have been fitted into the mixing valves, they have to be inspected by a plumber at regular intervals in order to prevent the hot water temperature from rising.

Do not clean the unit with scouring or harsh cleaning products. Wipe it down with a damp cloth which has been rinsed in water with a few drops of mild detergent.

Heat exchanger

Parameters	Recommended limits for the tap water quality on the secondary side
Temperature	Depends on the composition of the water, but under 60°C, to reduce the risk of stress corrosion of the stainless steel and pitting corrosion in the copper through the hot water.
Sulphate	$[\text{SO}_4^{2-}] < 70 \text{ mg/l}$
Conductivity	10 - 500 $\mu\text{S/cm}$
pH	7,5 - 9,0
Chloride	$[\text{Cl}^-] < 300 \text{ mg/l}$
Free chlorine	$[\text{Cl}_2] < 1$



Note:

The given reference values of the heat exchanger producer are considered with regard to the required water quality

16. Spare Parts

Article	
PT-controller	
Thermostat	
Return temperature limiter	
Thermostatic bypass valve	
Pre mounting unit	
Mixing valve for drinking water	
Actuating drive	
Differential pressure controller FIX-TS	
Heat exchanger E8TH-40	

17. Accessory

<p>Premounting unit</p>	
<p>HERZ- Inwall unit Inwall unit made of zinc coated steel, with mounting frame. - Front frame and door white powder coated (RAL 9003), door with lock - W x H x D: 650 x 850 x 200 mm - order separatly</p>	
<p>HERZ- Cover steel, white powder coated (RAL 9003) - W x H x D: 500 x 800 x 200 mm - order separatly</p>	
<p>Electronic Room Temperature Controller 1 change-over contact Set value range 10-30 °C Switching difference ± 0.2 K fixed</p>	
<p>Room Temperature Controller For individual time and temperatre program-mable adjustment. Digital timer with program on a weekly and yearly basis, automatic switching between summer and winter time.</p> <ul style="list-style-type: none"> • Set value range 8–38 °C • Switching difference as 2-point-controller 0,4–8 K • Metering precision 0,3 K at a temperature of 20 °C 	

18. Troubleshooting, malfunctioning

Problem: The hot water temperature is too high

Solution: The HERZ PT controller must be checked and, if necessary, replaced by a qualified and approved plumbing and heating engineer

Problem: The hot water temperature is too low

Lösung: The heat exchanger must be checked and, if necessary, replaced by a qualified and approved plumbing and heating engineer. Check with your district heating provider whether there is a failure in their system. Check that the red ball valves are turned on. The thermostat controller must be checked and, if necessary, replaced by a qualified and approved plumbing and heating engineer. The whole system must be checked by a qualified and approved plumbing and heating engineer for scale buildup.

19. Recycling and disposal

The substation as well as the packaging are mainly made of recyclable raw material.

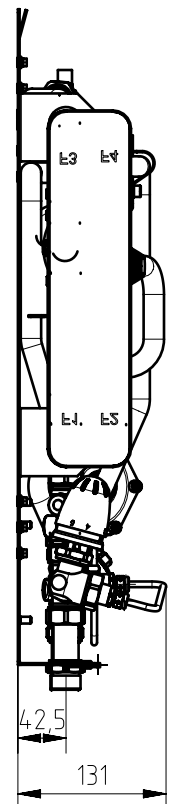
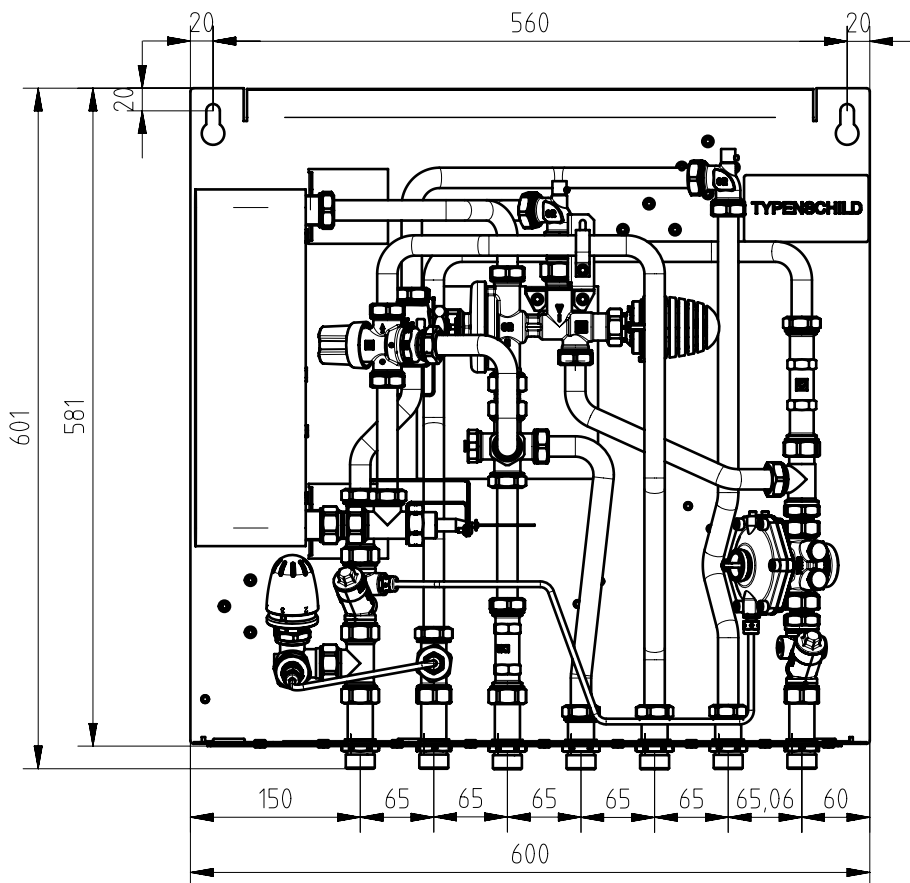
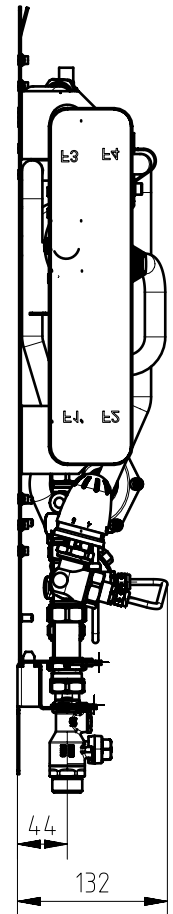
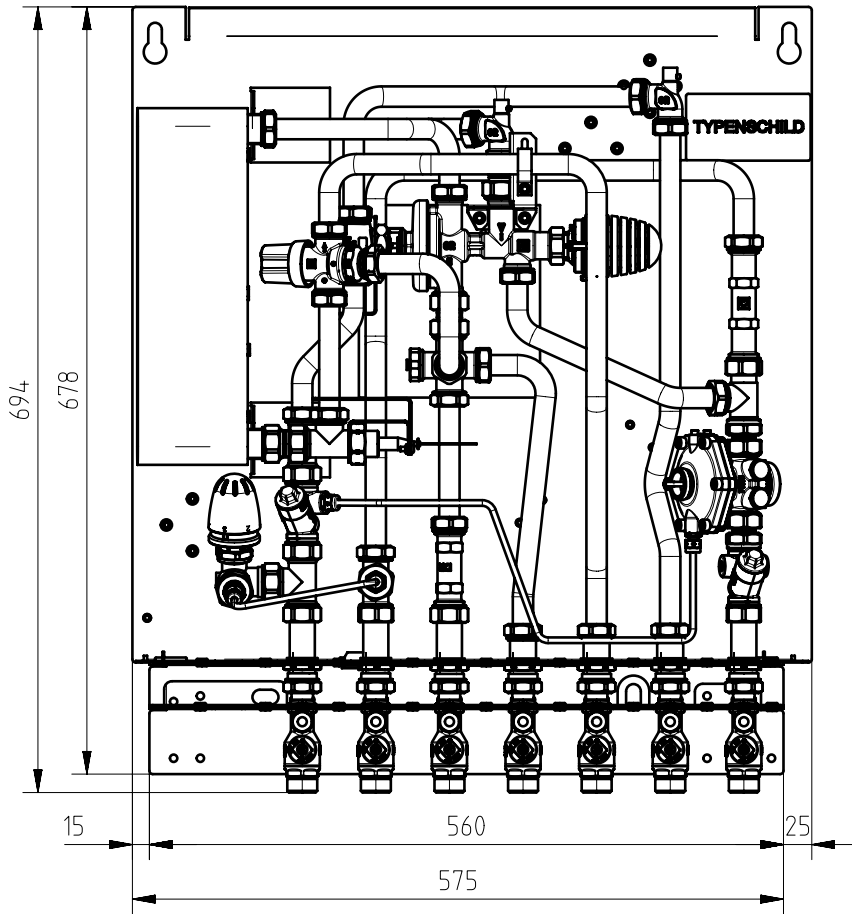
HIU

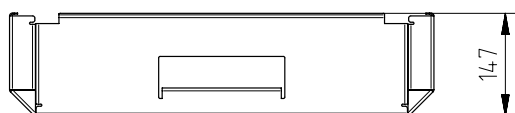
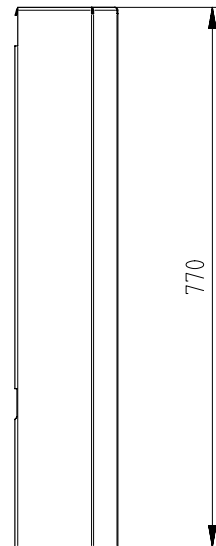
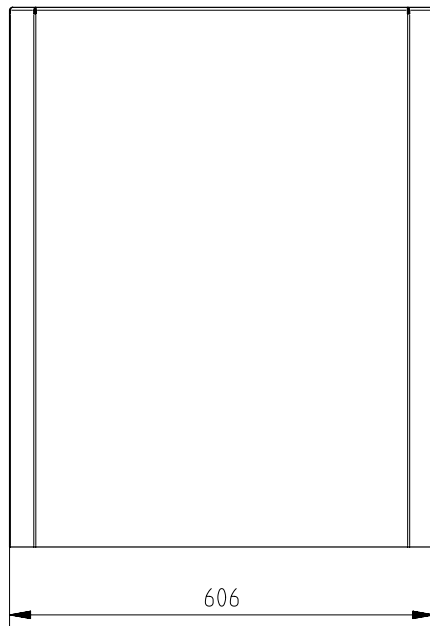
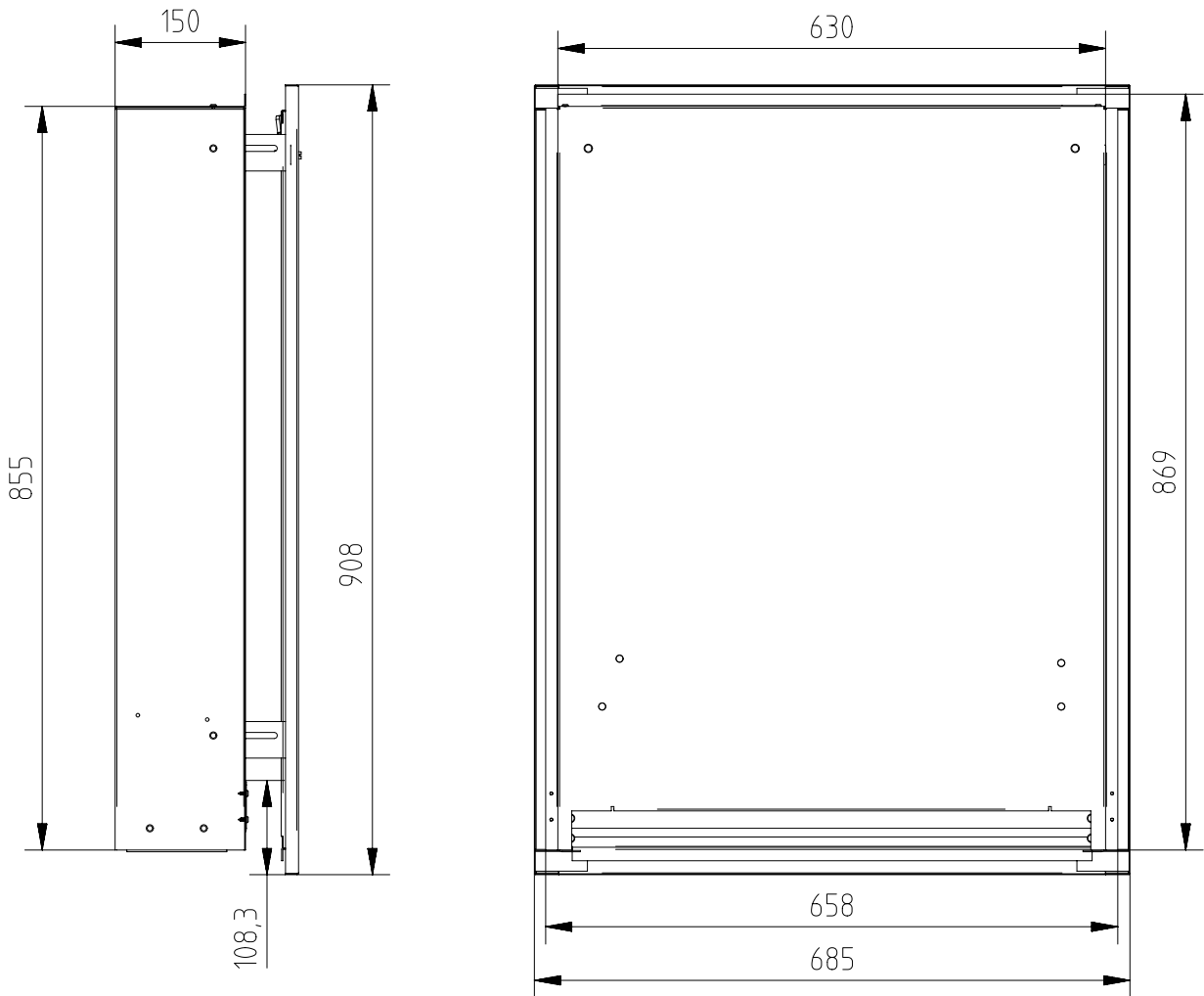
Substation as well as the accessory don't belong to the household waste.

- It needs to be taken care of that the substation and available spare parts are disposed properly.

Packaging

- The disposal of the packaging is left for the craftman's establishment, who installed the substation.





Please note: all diagrams are indicative in nature and do not claim to be complete.
 All specifications and statements within this brochure are according to information available at the time of printing and meant for informational purpose only. Herz Armaturen reserves the right to modify and change products as well as its technical specifications and/or its functioning according to technological progress and requirements. It is understood that all images of Herz products are symbolic representations and therefore may visually differ from the actual product. Colours may differ due to printing technology used. In case of any further questions don't hesitate to contact your closest HERZ Branch-office.

BA_WÜS-DELUXEmVRS_23kPa_0614_4