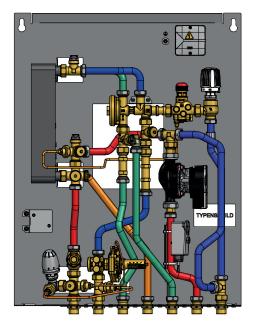
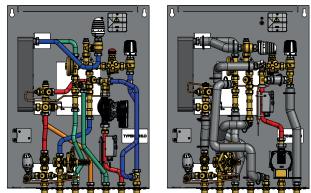


HIU compactUFH

INSTRUCTION FOR OPERATORS AND PLUMBERS





HIU compactUFH HIU compactUFH TSR HIU compactUFH WP

1 4021 29; 1 4021 30; 1 4024 42; 1 4021 31 1 4021 26; 1 4021 27; 1 4024 87; 1 4021 28 HIU compactUFH TSR, insulated 1 4021 32 ;1 4021 33; 1 4024 92; 1 4021 34 1 4024 82

INSTRUCTION

Description

The HERZ Compact UFH Hydraulic Interface Unit (HIU) provides domestic hot water and space heating to properties that are serviced from district heating or central boiler plants. The HIU utilizes a heat exchanger for instant and on demand DHW production. The HIU is direct so the primary heating circuit is directly transferred to the property space heating. A suitable flow temperature for the underfloor heating in the HIU is established by means of fixed value control, a bypass and an integrated heating circuit pump. Pipe connection to the HIU is realized by means of ball valves. Connection of the pipe work with the HIU is possible from the floor.

Main Features:

- Instantaneous hot water and space heating to properties.
- Highly efficient heat exchanger for DHW supply
- HERZ Pressure temperature control valve allows DHW heat exchanger to operate on demand only.
- HERZ Hot water priority valve maximises primary flow to DHW heat exchanger by stopping the supply to the space heating when a hot tap is opened.
- HERZ "Summer bypass" valve maintains a minimum primary temperature when space heating is not in use.
- 2 HERZ Differential pressure controllers for secure operation and automatic hydraulic balancing between multiple HIU's.
- Low primary return temperature maximises system efficiency
- Suitable for low temperature systems such as underfloor heating
- 18mm stainless steel pipe work
- 110 mm spool piece for heat meter
- 80 mm spool piece for water meter

1. Function

In stand-by mode the heating water flows from the primary circuit (district heating main) via a summer bypass which is kept at operating temperature with a HERZ return temperature limiter. Thus heating water from the primary circuit is always and immediately available at the heat exchanger, even when the space heating is not in use. If a hot water tap is opened the HERZ pressure temperature control valve reacts to the difference in pressure and opens allowing the cold and primary heating water to flow through the heat exchanger. At the same time, a hot water priority valve closes the primary feed to the space heating, thus ensuring maximum temperature is available at the domestic heat exchanger. The cold water is heated up instantly and flows to the domestic hot water tap.

2. Safety Warnings

- 1. The unit must be installed and connected by professional plumbing and heating engineers only.
- 2. Only use original HERZ spare parts when maintaining the HIU.
- 3. Check all connections for leakages prior to starting up the heating system.
- 4. The user must not make any technical changes to the HIU. Otherwise HERZ will not assume liability for any resulting damage.
- The unit must be filled with water that meets the requirements for heating water according to ÖNORM H5195, otherwise the guarantee will be void.
- 6. If the property is to be left unoccupied for a prolonged period, it is recommended that the HIU domestic pipe work is isolated and drained.
- 7. The hot water tap temperature can vary depending on the current tap volume, the current system differential pressure and

the current flow temperature and can also be in the temperature range where there is a risk of scalding. To avoid scalding, a drinking water mixing valve should be installed as a safety device centrally or in front of every tap.

Surfaces of individual components, connections and leaking water can be very hot and cause severe burns and scalds. Before the start of any dismantling work the isolation valves must be closed and water drained out. Out flowing water is likely to be hot and under high pressure. Take appropriate precautions. If a fault occurs, please contact the installer. Do not attempt to carry out repairs yourself.

3. Operating data

Max. flow temperature	55-70°C
with thermostatic control valve (TSR)	60-85°C
Max. operating pressure HIU	10 bar
Min. flow pressure mains cold water	2,5 bar
Max. heating power	10 kW
Tapping capacity	11/15/18/22 [l/min]
Cold water temperature	10 [°C]
Tap temperature	50 [°C]

4. Construction

Due to its small dimensions and compact design, the HIU can be flush-mounted and thus either installed in the stairwell or in the apartment itself (e.g. instead of a classic hot water tank). The tubes are made of stainless steel 1.4401, Ø18mm. All elements of the HIU are designed with detachable connections to enable interchangeability and maintenance.

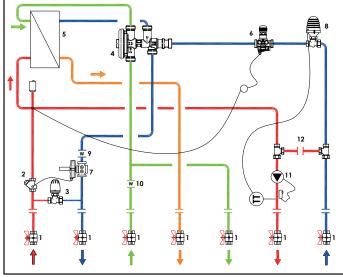
Weight information of the transfer station with pre-assembly strip:

Empty weight	Hood	Water content	Total weight
~15 kg	~8 kg	~10 kg	~33 kg

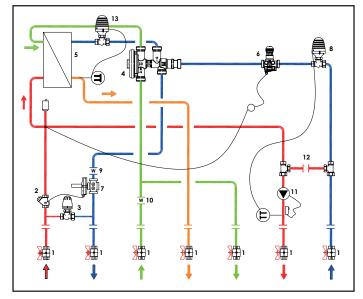
5. Connections



Type of connections, input / output			
1	Primary heating supply	3/4" flat sealing	
2	Primary heating return	3/4" flat sealing	
3	Cold water mains	3/4" flat sealing	
4	Domestic hot water outlet	3/4" flat sealing	
5	Domestic cold water outlet	3/4" flat sealing	
6	Space Heating supply	3/4" flat sealing	
7	Space Heating return	3/4" flat sealing	



HIU compactUFH

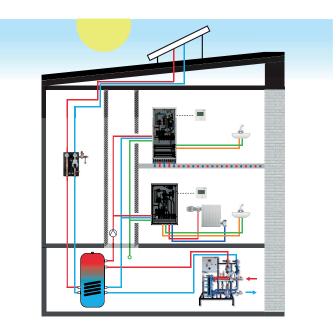


HIU compactUFH TSR

1	HERZ - Ball valve
2	HERZ - Strainer
3	HERZ - Summer bypass
4	HERZ - PT-Controller
5	Heat exchanger DHW
6	HERZ - Differential pressure controller 21 kPa (Space heating)
7	HERZ - Differential pressure controller 25-60 kPa (Primary)
8	HERZ - Fixed value control 20-50 °C with contact sensor
9	HERZ - Spool piece for heat meter 110 mm
10	HERZ - Spool piece for water meter 80 mm
11	High efficiency circulating pump
12	HERZ Spring-loaded check valve
13	HERZ Thermostatic control (TSR)

7. Connection Example

The HIU is connected in parallel to the district heating network and via 3 pipe system (MCW, primary flow and return). There is no need of a central DHW boiler and a central DHW circulation pipeline, as the DHW is produced on demand and on spot in the HIU. The primary supply temperature is directly transferred to the space heating and mixed to underfloorheating temperatures between 20 -50 °C according to the desired setting. The HIU can serve an underfloor heating system.



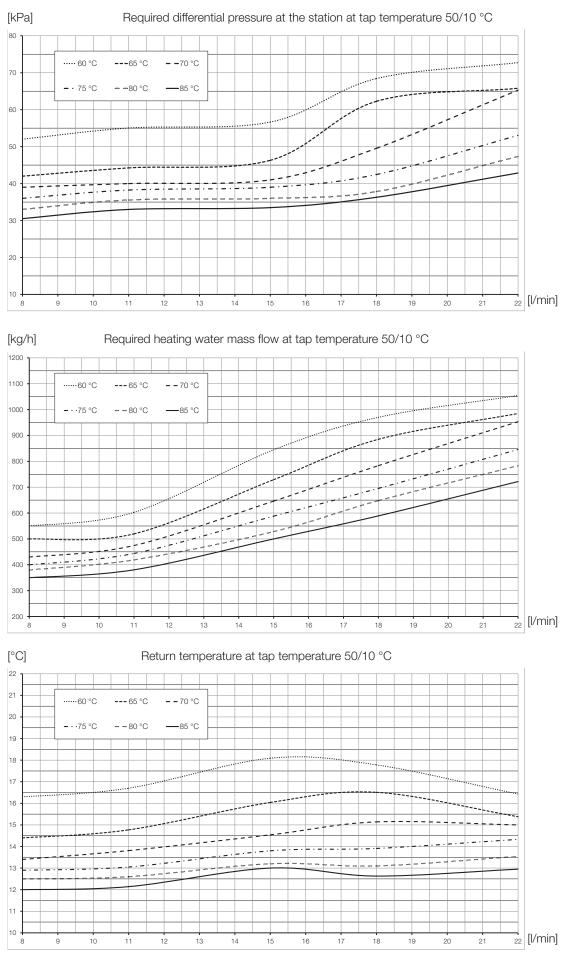
8. Accessories and spare parts

1 4008 66	
PT controller for HIU compact	
1 4008 67	
PT controller for HIU compact WP version	
1 9201 06	
Return temperature limiter (summer bypass).	*
Set to 45°C.	
1 4019 78	
Strainer with fine-mesh sieve made of	
chrome-nickel steel. Mesh size: 0.5 mm.	
Sieve insert 1 6386 32.	
1 4024 47	
HIU compact flush box short	
LxBxT 1035 x 624 x 90 mm	
with pre-assembly strip installed	
	bt Li

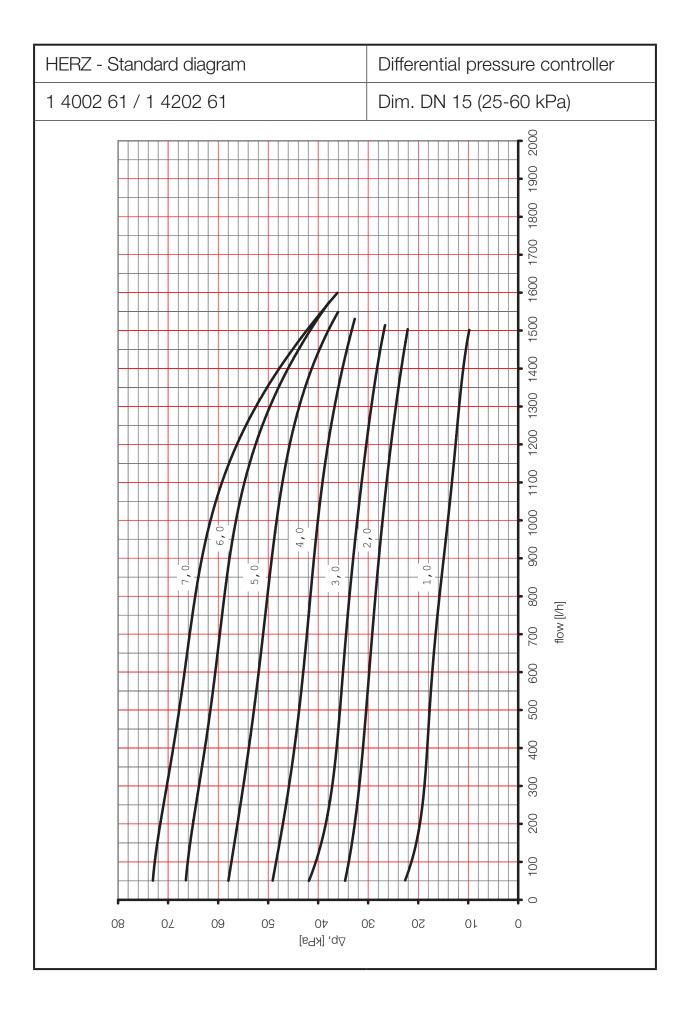
1 4021 63	• • •	1 4019 94	
HIU compact flush box short	* * .	Ball valve DN15 AG3/4" flat sealing with red	R
LxBxT 1035 x 624 x 150 mm		T-handle 1 4019 95	
with pre-assembly strip installed.			
(required in combination with insulated pipework and with the circulation set		Ball valve DN15 AG3/4" flat sealing with green T-handle	
1 4024 73)		1 4012 31 (Space heating)	
1 4024 48		HERZ differential pressure controller 20 kPa with adjustable flow limitation, can be used in	
Front frame and front door short LxBxT 1058 x 678 x 23 mm		combination with actuating drive 1 7708 53 as a zone valve for zone control of space heating.	
			6 0 -
powder-coated (RAL 9003), front door with latch		3 E531 00 Replacement pump Para RS 15/6 (SCU)	
1 4021 61			
HIU compact flush box long			
LxBxT 1575 x 624 x 150 mm	<u></u>	1 7420 06	-
with pre-assembly strip installed, connection pipework for the heating distributor included		Fixed value control 20-50 °C with contact	
Pipework for the nearing distributor included		sensor	
1 4021 62		(supply temperature control space heating)	
Front frame and front door long		1 7795 01	j Denter j
LxBxT 1442 x 678 x 12 mm		Digital room thermostat with 7 day program.	
powder-coated (RAL 9003), front door with latch		Operation with batteries (batteries included)	- (X)-
1 4024 09		1 6390 91	
Surface mount cover		Thermostatic insert (summer bypass)	
1 4024 49		1 4019 92	
Pre-installation bracket suited for HIU Compact		Thermostatic valve incl. insert (summer bypass)	
1 4024 19 (Primary)	-	1 6379 03	
HERZ Differential pressure controller can be set between 25-60 kPa.		Thermostatic insert (supply temperature control space heating)	
1 7708 53		1 4019 93	æ
HERZ-actuating drive for 2-point control for floor heating circuit distributors and valves M 28 x 1.5, 2-point, also suitable for	er	Thermostatic valve incl. insert (supply temperature control space heating)	
pulsepause operation, 5 mm stroke, adapter M 28 x 1.5 colour red integrated, cable fixed,		1 4022 46	
without limit switch. Closing force 100 N. Power consumption 1 watt.		Sensor mount M 10 x 1 mm for temperature sensor for the heat meter	
1 4018 47	100		
Asymmetrical stainless steel plate heat exchanger brazed with copper (E8LASHx42)			
1 4024 73			
Circulation line retrofit set HIU Compact			
	1		

9. Performance data for domestic hot water production

At supply temperatures of 60-85 °C

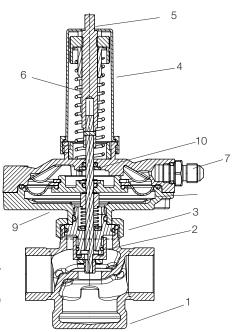


NOTE: In case of high tapping capacities (from 21 l/min), the tapping temperature can deviate slightly from the information in the diagram.



HERZ Differential Pressure Controller

#	Description	Material
1	Body	DZR brass CC770S
2	Valve stem	Stainless steel 14301
3	Connection nut	Brass CW614N
4	Indicator sleeve	Plastic (red)
5	Adjusting spindle	Brass CW614N
6	Compression spring	Spring steel 14310 NS
7	Connection point	Brass CW602N
8	Membrane	EPDM
9	Membrane body	Brass CW602N
10	O-Ring	EPDM



Ammonia contained in hemp damages brass valve housings, EPDM seals are swollen by mineral oils or lubricants containing mineral oils and thus lead to failure of the EPDM seals. For antifreeze and corrosion protection agents based on ethylene glycol and propylene glycol, the relevant information can be found in the manufacturer's documents.

Pursuant to Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that all brass components manufactured in our products exceed 0.1% (w/w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is a component part of an alloy, actual exposure is not expected and therefore no additional information on safe use is necessary.

Field of application

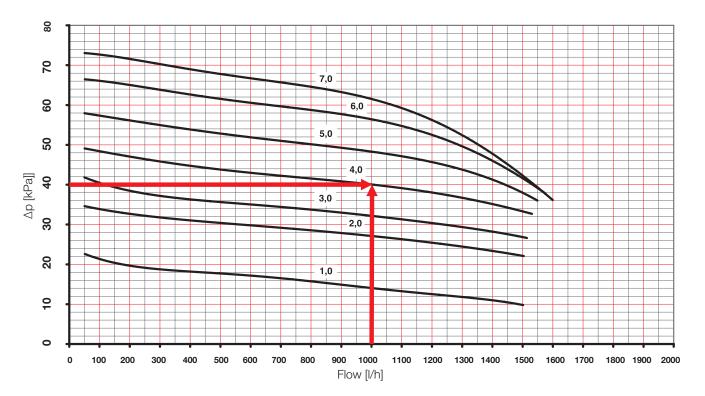
The differential pressure controller is a straight-version linear controller and works without auxiliary power. The desired differential pressure setpoint can be continuously adjusted between 25 and 60 kPa. The set value can be read using the setting diagram. The setpoint is set to minimum at the factory. The set value can be read off using the setting diagram. The setpoint is set to minimum at the pre-setting key (1 **4006** 02). A capillary (1000 mm) is included and should be connected to the regulating valve in the flow.

Setting

The controller is set to minimum at the factory. The setting is made by turning the knurled nut. The differential pressure controller can be set in any position. The respective setting of the controller is clearly displayed. Example: Desired differential pressure $\Delta p_{resr} = 40$ kPa (400 mbar)

Flow rate 1000 l/h.

Setting value on scale 4



10. Electric connection

The electrical components (e.g. drive for zone valve) must be wired according to the electrical connection diagram. The 230 V / AC voltage supply in the terminal box and the respective room thermostats have to be electrically connected in accordance with the manufacturer's specifications. The terminal box is located in the upper right area of the HIU.

11. Operating requirements

In addition to the national regulations and standards, the connection conditions of the local water supply company must also be observed.

The room in which the system is operated should be frost-free and the installation should take place in a location that is freely accessible for necessary maintenance and repairs. On the primary side, 10 bar static and 2 bar differential pressure are permissible. It should also be noted that the connection pipes must withstand temperatures up to a maximum of 90 °C in the event of a breakdown.

12. Commissioning

The operation of the transfer station is simple and user-friendly. All you have to do is open the ball valves in the following order to avoid water hammer:

- 1. Slowly open the heating flow (red ball valve)
- 2. Slowly open the cold water supply (green ball valve)
- 3. Slowly open returns for heating (red ball valve)
- 4. Slowly open the hot and cold water outlet (green ball valve)

13. Temperature setting

The HIU is operated at a preset tap temperature of a maximum of 50°C. The temperature settings cannot be changed in order to ensure the optimum tap temperature.

14. First commissioning

Prior to first commissioning of the HIU, according to ÖNORM H5195-1 it is necessary to note that clean and standard-compliant pipe materials (without scale, rust and internal burrs, as well as without contamination), fittings and devices (boilers, radiators, convectors, expansion vessels, etc.) must be used. Furthermore, ÖNORM H5195 also requires clean and professional production (without welding beads, sealing material residues or soldering aids, burrs, metal shavings, etc.), as well as the cleaning of all heating system parts before installation.

Otherwise damage to the controller may arise due to the deposits in the pipes. There would also be a risk of contaminants getting into the drinking water. The installation of strainers is recommended.

In order to prevent corrosion damage in the system, ÖNORM H5195-1 stipulates the following:

The installation and operation of a heating system must be carried out in such a way that the air entering the closed heating system is prevented as far as possible.

When commissioning the heating for the first time, flush the secondary time side with a water quantity at least two times the volume of the system. Afterwards, fill the heating system with clear, filtered water quality. The heating system must remain in operation for 24 hours under operating conditions in order to achieve even

mixing of the heating water with the inhibitors. Old systems must be chemically cleaned before filling and then rinsed with water. Partial or complete emptying of the heating system for a longer period of time without preservation should be avoided, as this would lead to increased corrosion processes in the system. In order to ensure adequate frost protection in the system at low temperatures, ÖNORM H5195-2 stipulates:

Although the antifreeze is miscible with water at any ratio, systems with pumps should intially be filled with roughly two thirds of the required quantity of water. The antifreeze should then be added to the system with water. Thorough mixing is achieved by starting up the circuit. If it is necessary to add to heating systems that have not previously protected against frost then observe the following:

1. It is necessary to ensure that the sealing materials are suitable for this.

2. The systems should be carefully flushed through.

3. After adding antifreeze it is necessary to watch for any leaks even more carefully.

15. Decommissioning, emptying

Shutting down the hydraulic interface unit 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 hydraulic interface unit have to be drained down prior to the start of the cold season if the unit is to be shut down for several days. To drain the substation, place a vessel with a capacity of 4 to 8 liters underneath the unit and drain the hot water from the ball valves till the hydraulic interface unit is completely empty.

If temperatures are liable to drop below freezing point, be aware that not only the water is in the substation 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.

16. Servicing and maintenance

Owing to its outstanding design, the HERZ Salzburg NT 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.

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

Note:

The specified guide values from the heat exchanger manufacturer must be observed with regard to the required water quality.

Table 1, corrosion resistance of stainless steels and brazing material in water at room temperature

The guide below is an attempt to give a picture of the corrosion resistance of stainless steels and brazing material in water at room temperature. In the table, a number of important chemical components are listed, however the actual corrosion is a very complex process influenced by many different components in combination. This document is therefore a considerable simplification and should not be overvalued!

Table key	Important Note: The following paratmeters can also influence the corrosion
	resistence
+ Good resistance under normal conditions	Temperature: The data in the table are based water temperature of 20°C
	unless otherwise is stated.
0 Corrosion problems may occur especially	Presence of oxidants in the environment: guidelines regarding the oxygen
when more factors are valued 0	content are shown in Table 3.
	Product form, heat treatment and presence of intermetallic phases:
- Use is not recommended	The data in the table is based on untreated raw material.

			Plate N	Material	B	srazing Mat	terial
WATER CONTENT	CONCENTRATION (mg/l or ppm)	TIME LIMITS Analyze before	AISI 304	AISI 316	COPPER	NICKEL	STAINLESS STEEL
	< 70	Fullary20 Soloro	+	+	0	+	+
Alkalinity (HCO₃⁻)	70-300	Within 24 h	+	+	+	+	+
) (= = 0)	> 300		+	+	0/+	+	+
	< 70		+	+	+	+	+
Sulphate ^[1] (SO ₄ ²⁻)	70-300	No limit	+	+	0/-	+	+
	> 300		+	+	-	+	+
	> 1.0		+	+	+	+	+
HCO ₃ ⁻ / SO ₄ ²⁻	< 1.0	No limit			0/-		
			+	+		+	+
Electrical conductivity ^[2]	< 10 µS/cm		+	+	0	+	+
(Refer to Table 3 for oxygen content guidelines)	10-500 µS/cm	No limit	+	+	+	+	+
	> 500 µS/cm		+	+	0	+	+
	< 6.0		0	0	0	+	0
	6.0-7.5		+	+	0	+	+
рН ^[3]	7.5-9.0	Within 24 h	+	+	+	+	+
P	9.0-10		+	+	0/+[4]	+	+
	>10.0		+	+	0	+	+
	< 2		+	+	+	+	+
Ammonium (NH4 ⁺)	2-20	Within 24 h	+	+	0	+	+
	>20		+	+	-	+	+
	<100		+	+	+	+	+
	100-200		0	+	+	+	+
Chlorides (Cl ⁻)	200-300	No limit	-	+	+	+	+
(Refer to Table2 for temperature- dependent values)	300-700		-	0/+	0/+	+	-
	>700		-	-	0	+	-
	< 1		+	+	+	+	+
Free chlorine (Cl ₂)	1-5	Within 5 h	-	-	0	+	-
	> 5	Within O II	-	-	0/-	+	-
	< 0.05			+	+	+	
Hydrogen sulfide (H ₂ S)	>0.05	No limit	+	++	+ 0/-	++	+
	< 5		+ +	+	-/0/-	+	+ +
Free (aggressive) carbon dioxide (CO ₂)	5-20	No limit	+	++	+	+	+
	> 20		+	+	-	+	+
			1		-		
Total hardness ^[5]	4.0 - 11 °dH						
(Refer to "Scaling Document" for scaling aspect of		No limit	+	+	+	+	+
hardness effect)	70 - 200 mg/l CaCO3						
	< 100		+	+	+	+	+
Nitrate ^[1] (NO ₃ ⁻)	> 100	No limit	+	+	0	+	+
. [6]	< 0.2	N - 11 - 11	+	+	+	+	+
Iron ^[6] (Fe)	> 0.2	No limit	+	+	0	+	+
	< 0.2	No line it	+	+	+	+	+
Aluminium (Al)	> 0.2	No limit	+	+	0	+	+
[6] (44.)	< 0.1	N I. Jiwa it	+	+	+	+	+
Manganese ^[6] (Mn)	> 0.1	No limit	+	+	0	+	+

17. Troubleshooting, malfunction

Problem: Hot water temperature too high.

Solution: The built-in DT controller must be checked by a competent and authorized craftsman and replaced if necessary.

Problem: Hot water temperature too low.

Solution: The built-in heat exchanger must be checked by a qualified and authorized craftsman and replaced if necessary. Find out whether your district heating operator is experiencing a failure. Check that the red ball valves are turned on. The built-in thermostatic controller must be checked by a competent and authorized craftsman and replaced if necessary. The system should be checked for limescale deposits by a competent and authorized craftsman.

Further information on service and troubleshooting can be found in the corresponding data sheets from HERZ Armaturen.

18. Recycling and disposal

Both the HIU and the associated transport packaging consist for the most part of recyclable raw materials.

Your HIU and all accessories do not belong in the household waste.

• Make sure that your device and any accessories that may be present are disposed properly.

Packaging

• Leave the disposal of the transport packaging to the approved specialist company that installed the device.

19. Materials

According to Article 33 of the REACH regulation (EC No. 1907/2006), we are obliged to point out that the substance lead is on the SVHC list and that all brass components used in our products are more than Contains 0.1% (w / w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is firmly bound as an alloy component, no exposure is to be expected and therefore no additional information on safe use is required.

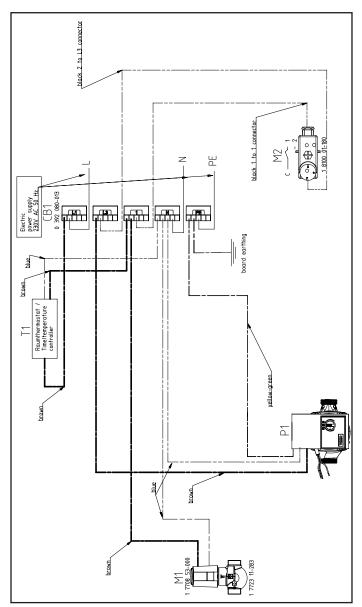
20. High efficiency circulating pump ("E"-models)

Type: Wilo - PARA 15-130/6 -43/SCU-3/N1,0 Hmax. [m] 6,7 Qmax. [m³/h] 3,2 Temperature range 0 °C – 100 °C Max. operating pressure [bar]: 10 Power supply 1~ [V] : 230 V, +10 % / -15 % Frequency [Hz]: 50Hz/60Hz Protection class: IP X4D Cable length: 1,0 m Insulation class: F Installation length: 130 mm Connection: 1" male thread Power consumption: 3 - 43 W

Minimum suction head at the suction connection for avoiding cavitation with water pumping temperature:

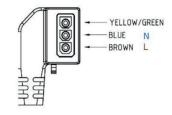
Minimum suction head [m] bei 50 / 95 °C - 0,5 / 4,5 m

Electrical connection diagram



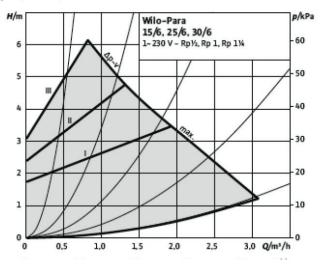


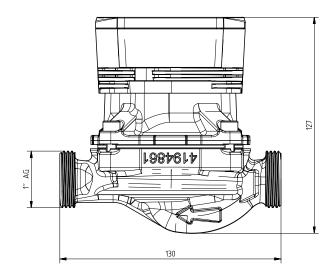
PR260



Variable differential pressure (Δp-v):

p-v (variable)

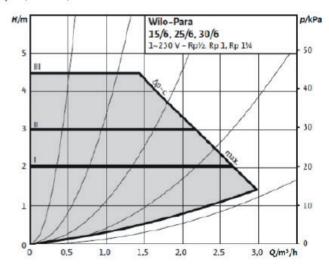




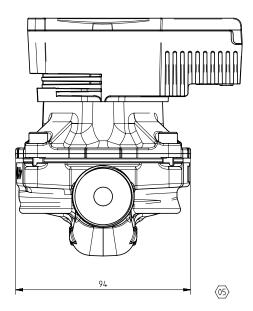
The target differential pressure value H is increased on a linear basis above the permissible pumped flow range between ½H and H. The differential pressure generated by the pump is regulated to the corresponding target differential pressure value. This form of regulation is particularly expedient in the case of heating systems with radiators because the flow noise at the thermostatic valves is reduced.

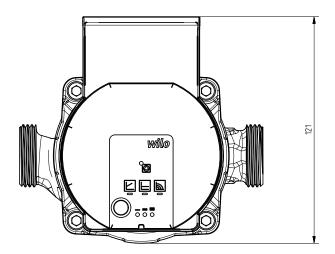
Constant differential pressure (Δp-c):

∆p-c (constant)



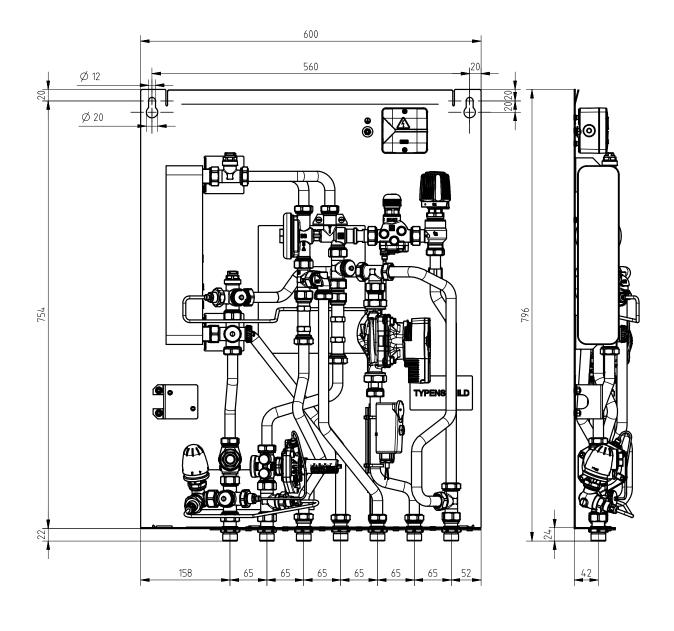
The target value H for the differential pressure is held constant at the set target differential pressure value above the permissible pumped flow range up to the maximum characteristic curve. Wilo recommends this form of regulation with underfloor heating circuits or older heating systems with pipes with large dimensions, and with all applications that do not have variable pipe network characteristic curves.



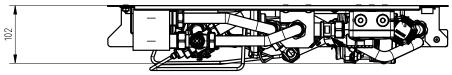


21. Dimensions

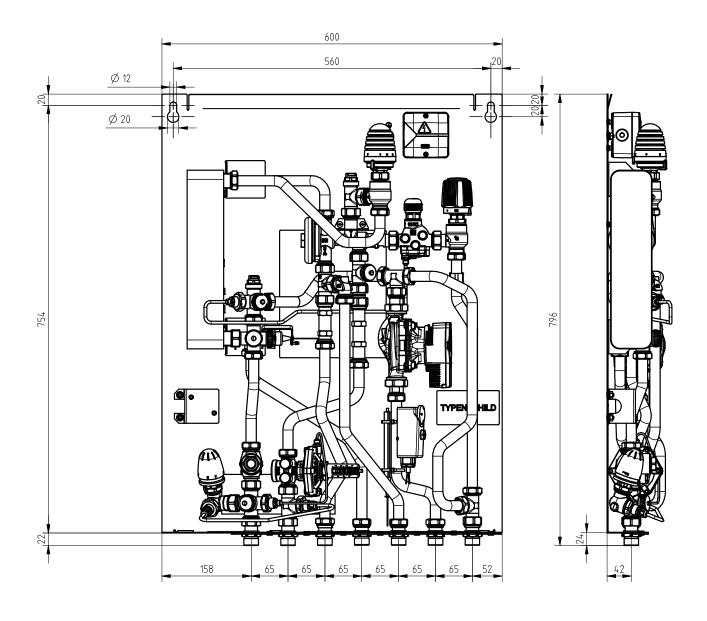
HIU compactUF	Ή	HIU compactU	FH WP
1 4021 29	11 l/Min	1 4024 82	18 l/
1 4021 30	15 l/Min		
1 4024 42	18 l/Min		
1 4021 31	22 l/Min		

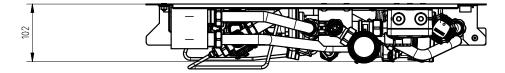


18 I/Min

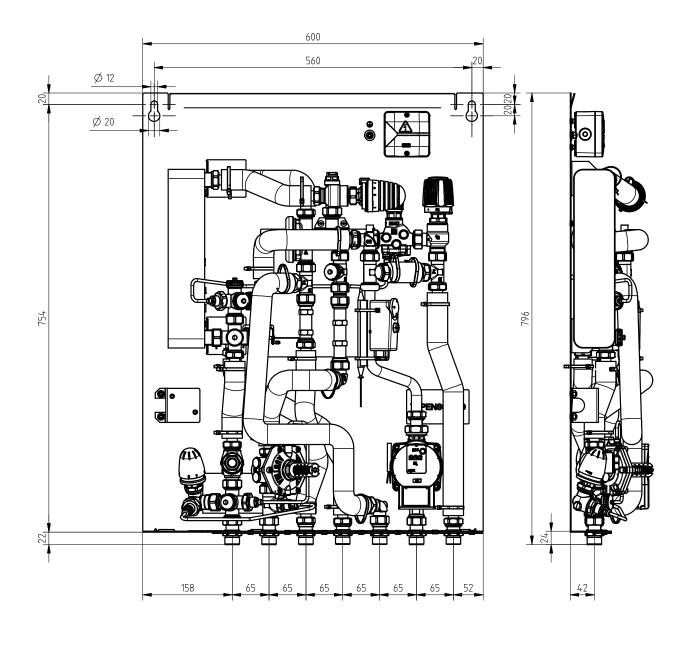


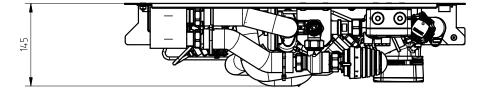
HIU compactUFH	TSR
1 4021 26	11 l/Min
1 4021 27	15 l/Min
1 4024 87	18 l/Min
1 4021 28	22 I/Min

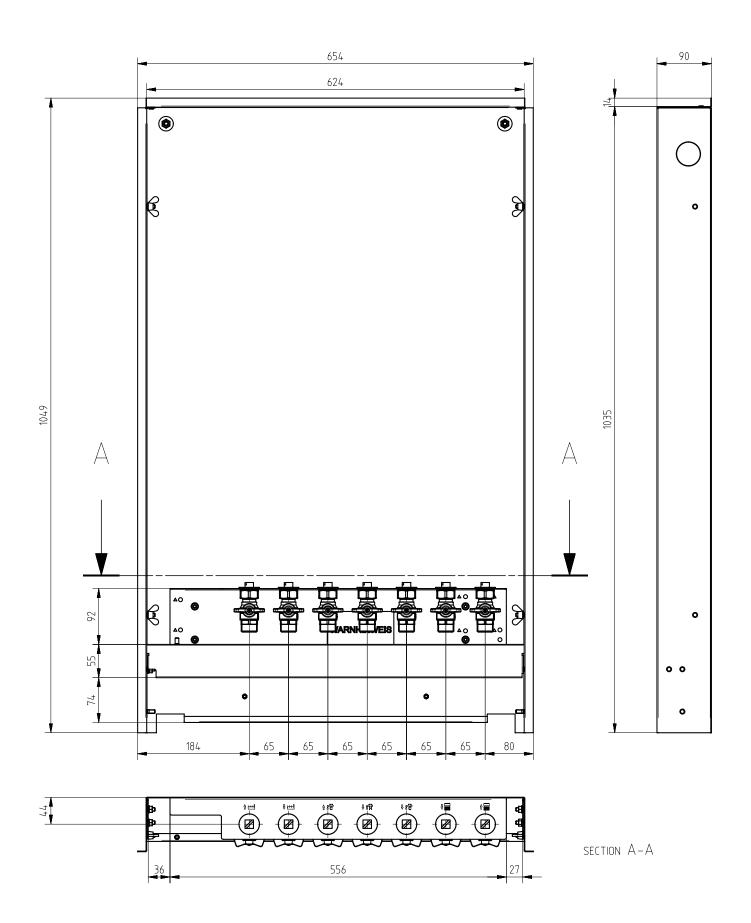


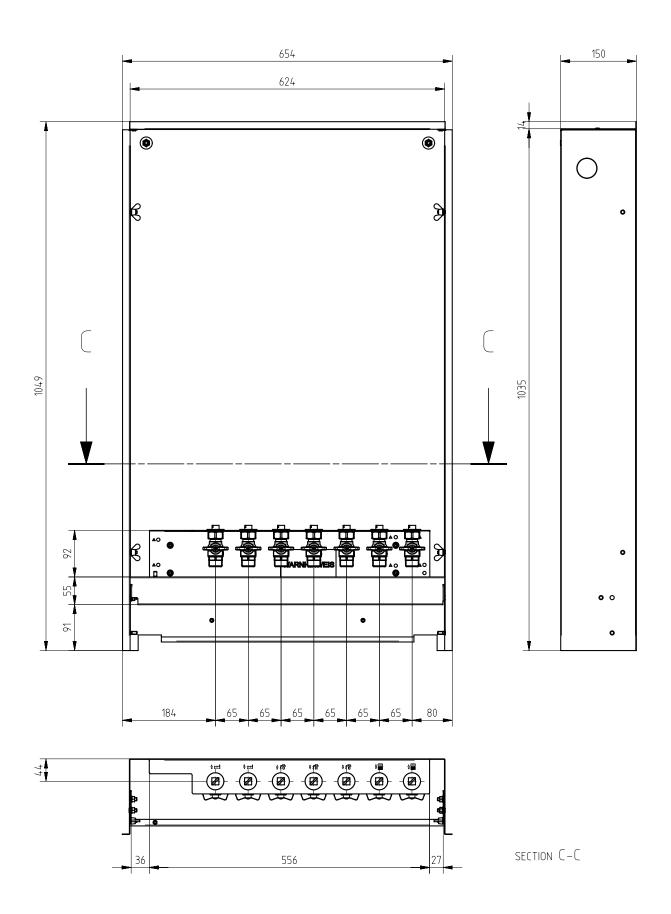


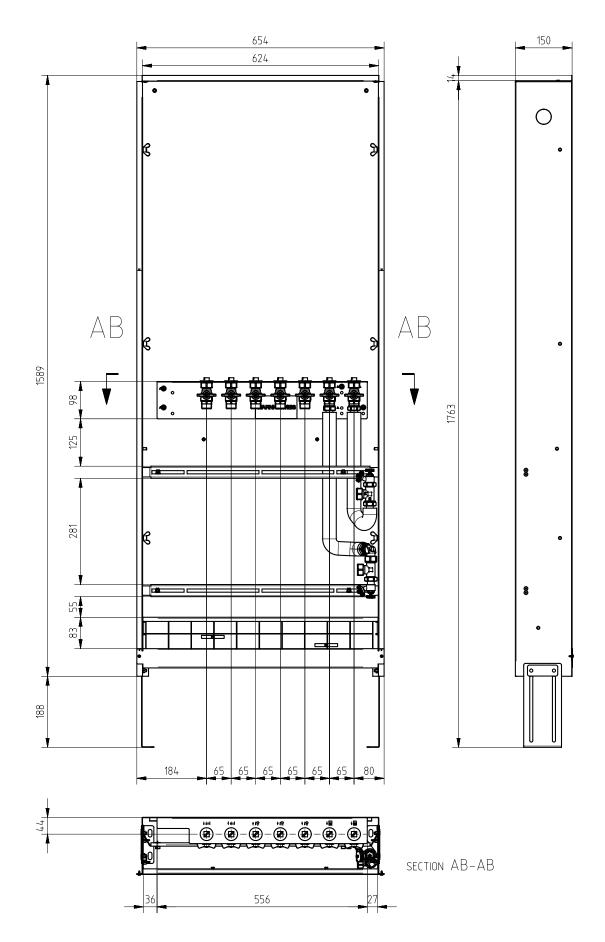
HIU compactUFH	TSR, insulated
1 4021 32	11 I/Min
1 4021 33	15 l/Min
1 4024 92	18 l/Min
1 4021 34	22 I/Min

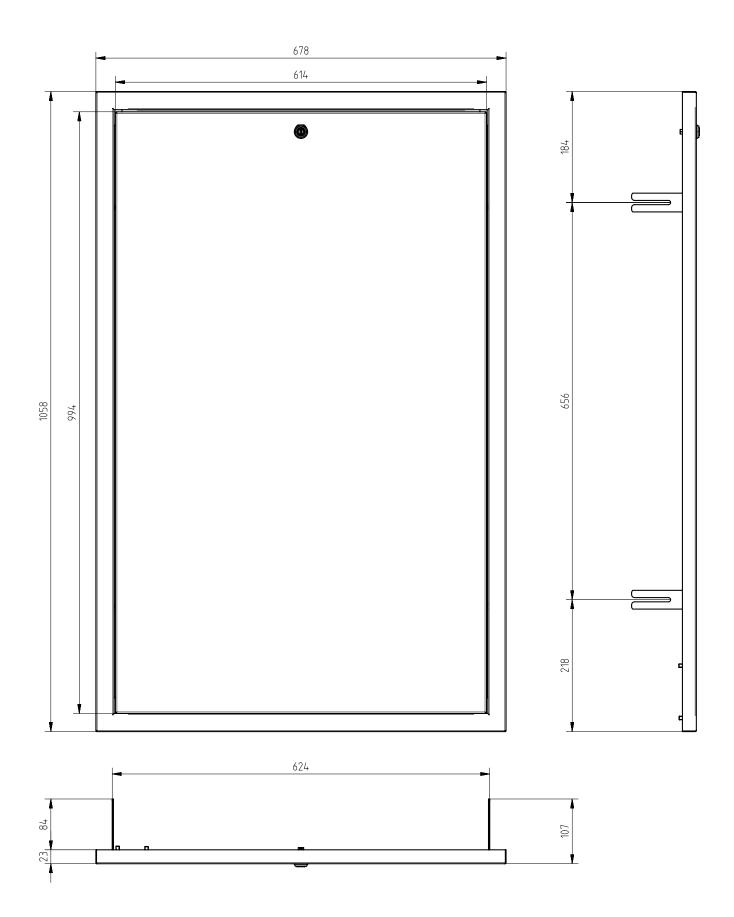












HIU compact front frame with door, long

1 4021 62

