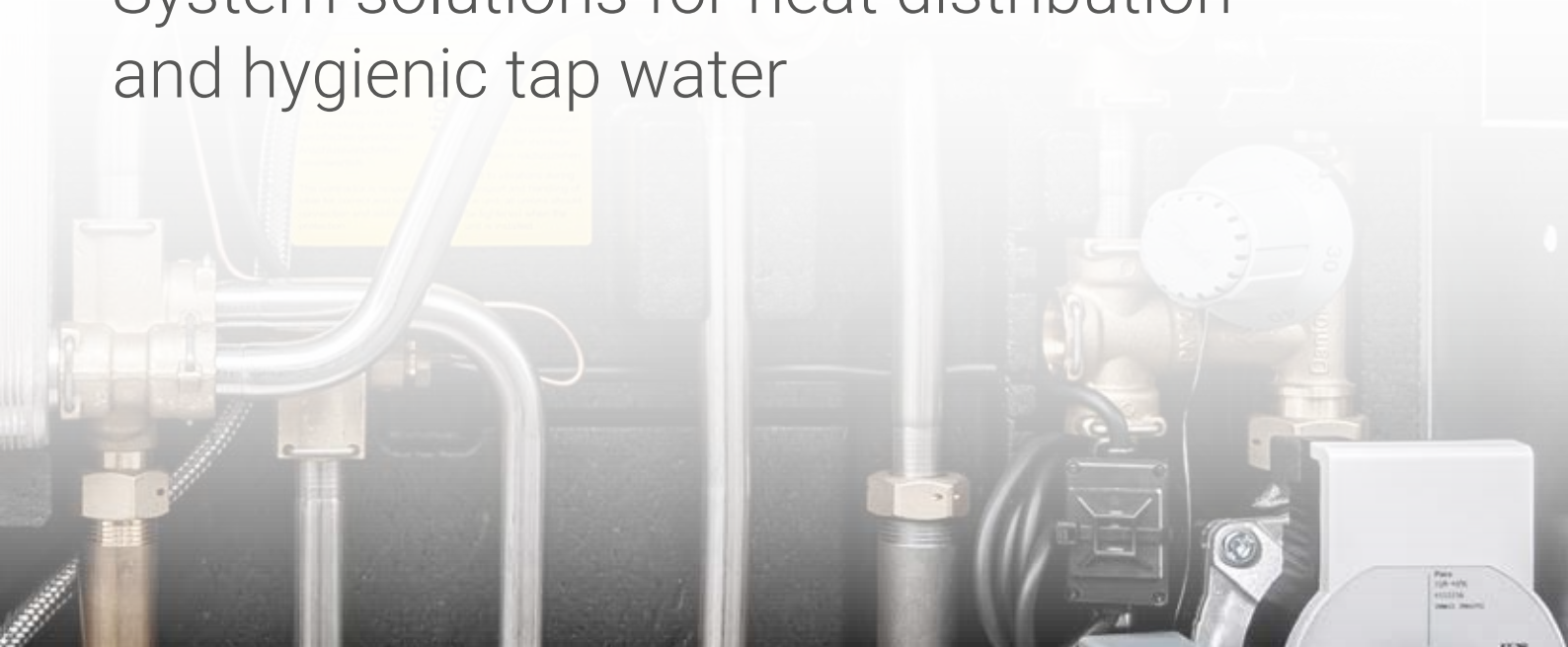


## Flat transfer stations



## Flat transfer stations

System solutions for heat distribution  
and hygienic tap water



# EMPUR® Flat transfer stations

Quality for your home



## Quality „Made in Germany“ from one source

EMPUR® Produktions GmbH is a producer and full-range of innovative, high-quality surface heating and cooling systems and offers the right solution for every requirement:

- Surface heating/cooling systems for floor, walls and ceilings
- Systems without additional installation height or with minimum installation height for modernisation
- Diverse systems with composite panels and additional insulation for new buildings in the private, municipal or industrial sectors
- System accessories and tools
- High-quality heat distribution and drinking water systems
- Innovative control technology

The company produces and is solely responsible for over 90% of all system components itself using its state-of-the-art systems. We work under a structured quality management system, which is certified by DEKRA in accordance with the DIN EN ISO 9001 international norm.

In the interest of the most objective and neutral product evaluation possible, EMPUR® subjects its products to material testing and certification by nationally recognised testing institutes and assessment centres. High quality, continual and pioneering product developments, technical advice and support, a three-level distribution network across Germany, reliable services, as well as specialist training for wholesalers, tradesmen and planners make EMPUR® a competent partner in the heating industry.

## Validity and Contents

This documentation is valid upon issue dated may 1st, 2022 until reprinted. In addition to a description of the system components, it contains detailed technical information on the optimum design of the system as well as configurations for exemplary system combinations. Deviating specifications and requirements of the system planner or builder must be taken into account for each individual case. Further details can be found in the relevant standards in the currently valid version.

EMPUR® Produktions GmbH reserves the right to make changes according to technical advances and/or due to market requirements and to deliver without separate announcement.



<b>1   The company</b>	
1.1   Contact persons	4 – 5
<b>2   The system</b>	6
<b>3   Components</b>	
3.1   Flat transfer station	7 – 11
3.2   Control	12 – 13
3.3   Heating manifold brass + stainless steel	14
3.4   Complete manifold Geniax	15
3.5   Accessories	16 – 17
<b>4   Technique</b>	
4.1   Hydraulics	18
4.2   Water Quality Guideline	19
4.3   Simultaneity factor	20
4.4   Requirement level VDI 6003	21
4.5   3 litre rule DVGW W551	22
4.6   Basis of interpretation with example	23
<b>5   Configurations</b>	
5.1   Complete station in combination with brass manifold, version 2.0	24 – 25
5.2   Complete station in combination with stainless steel manifold, series 03	26 – 27
5.3   Complete station in combination with stainless steel manifold, series 03 Balance	28 – 29
5.4   EMPUR® Geniax	30 – 31
5.5   Complete station in combination with brass manifold Geniax	32 – 33
5.6   Complete station in combination with stainless steel manifold Geniax	34 – 35
5.7   Special solutions	36
5.8   Commissioning	37
<b>6   Notes</b>	38 – 39

The technical information in this price list represents the state of our knowledge and experience on going to press. Unless expressly agreed, however, they represent no assurance in the legal sense. The level of experience is constantly developing further. The latest edition of these price list brochures should always be used. The product applications described may not take into account special conditions in an individual case. Here suitability for the specific application purpose must be checked. Our products are delivered exclusively on the basis of our general conditions of sale and delivery. We reserve the right to make technical changes, price changes, errors and misprints.





# The company

## 1.1 Contact persons



### Business Hours:

Mondays to Thursdays:  
7.15 am – 5.15 pm  
Friday: 7.15 am – 2.15 pm

Tel: +49 2683 96062-0  
Fax: +49 2683 96062-99  
E-mail: [info@empur.com](mailto:info@empur.com)

### Managing Director, authorized signatory

Gunther Noll  
Tel: +49 2683 96062-0  
E-mail: [info@empur.com](mailto:info@empur.com)

### Sales Manager:

See right-hand page

Contact persons in detail:  
[www.empur.com/en/contact](http://www.empur.com/en/contact)

### Technical Support

Technical quotes, calculations,  
configurations, information

Tel: +49 2683 96062-155  
Fax: +49 2683 96062-159  
E-mail: [technik@empur.com](mailto:technik@empur.com)

### Product Management

Product manager: Günter Kunz  
Tel: +49 2683 96062-154  
E-mail: [g.kunz@empur.com](mailto:g.kunz@empur.com)

### Quality Management

Head of Quality Management:  
Christian Starzetz  
Tel: +49 2683 96062-168  
E-mail: [c.starzetz@empur.com](mailto:c.starzetz@empur.com)

### Manufacturing and Logistics

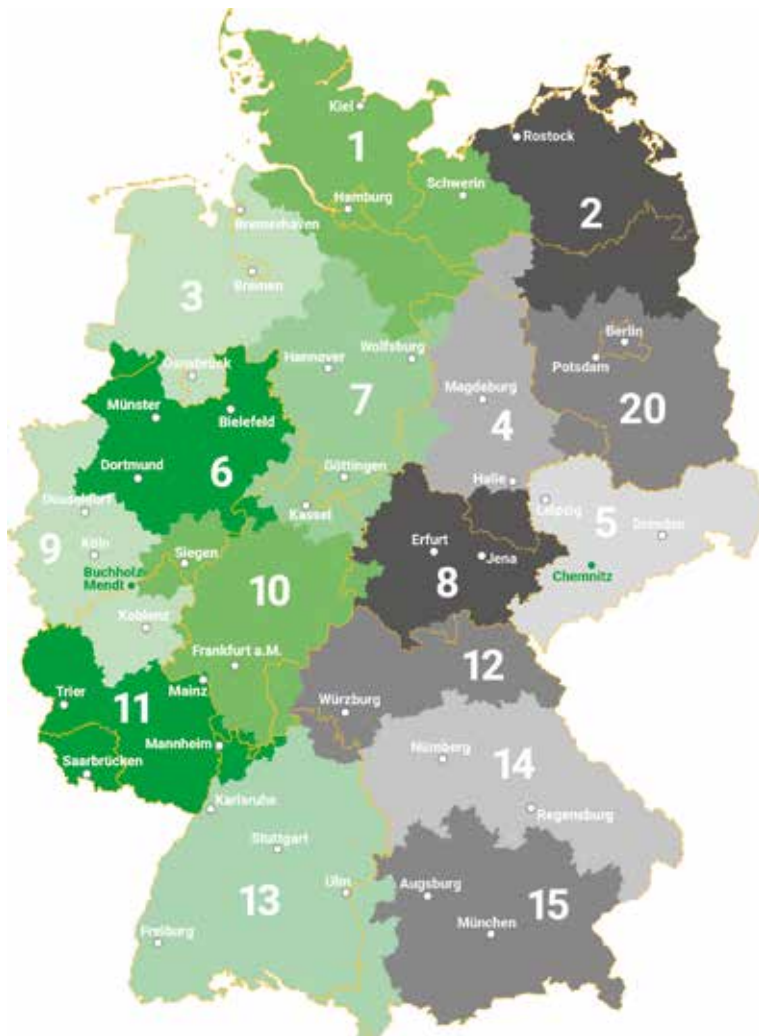
Operational and Logistics Manager:  
Volker Nelles  
Tel: +49 2683 96062-146  
E-mail: [v.nelles@empur.com](mailto:v.nelles@empur.com)

# The company

## 1.1 Contact persons

### Regional Sales

Our sales representatives in Germany can be found on our website [www.empur.com](http://www.empur.com)



### Internal Sales



Sales Export/OEM:

**Christian Brenner**

Team manager Internal Sales

Phone: +49 2683 96062-117

E-mail: [c.brenner@empur.com](mailto:c.brenner@empur.com)



Internal sales area 1, 3, 4, 7:

**Saskia Pritz**

Phone: +49 2683 96062-116

E-mail: [s.pritz@empur.com](mailto:s.pritz@empur.com)



Internal sales area 6, 9, 10, 11:

**Birgit Müller**

Phone: +49 2683 96062-114

E-mail: [b.mueller@empur.com](mailto:b.mueller@empur.com)



Internal sales area 12, 13, 14, 15:

**Ralf Sterzenbach**

Phone: +49 2683 96062-115

E-mail: [r.sterzenbach@empur.com](mailto:r.sterzenbach@empur.com)



Internal sales area 2, 5, 8, 20:

**Nina Heiduk**

Phone: +49 2683 96062-182

E-mail: [n.heiduk@empur.com](mailto:n.heiduk@empur.com)

# EMPUR® Flat transfer stations

## 2 The system



### Comfort and hygienic tap water

Energy efficiency is a high priority for builders, whether for new build or renovation. Reducing energy requirements and compliance with statutory regulations are matters of far-reaching importance. Decentralized heating systems reduce heat losses and heating costs, while also increasing comfort and the hygiene of tap water.

Tenants and property owners both want maximum comfort from their heating system at the lowest possible cost. They are less concerned at first about the source of energy used or how the system works.

**Flat transfer stations control the heat output for space heating and domestic hot water heating in the flats of an apartment building.** These stations can be used in new build but can also be employed in the modernisation of older buildings.

Stations for direct, decentralised heating operate on the heating side **with no system separation**. The primary energy carrier flows directly into the unit from the supply network. This is where the control components are employed to obtain the required temperature. Thus, **the tap water is heated on a continuous flow basis and is only provided when it is actually required and used.**

Provided that they are carefully designed, planned and installed, these systems **do not require regular legionella inspections** as are prescribed for central hot water systems by the Ordinance on water for human consumption (Trinkwasserordnung).

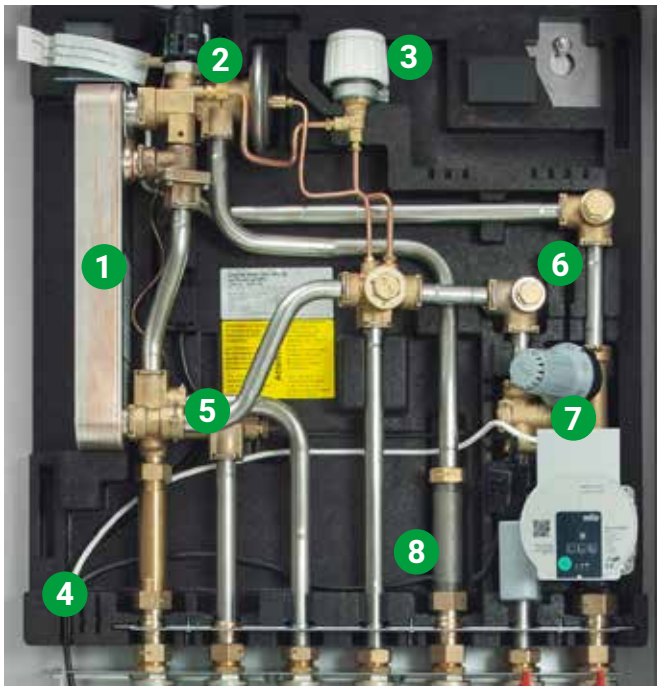
### Decentralised continuous flow water heater

- Hydraulic unit for decentralised hot water supply
- For direct connection to an EMPUR® floor heating distributor with up to 12 heating circuits
- Central installation location in the dwelling, usually in the bathroom or corridor area, in compliance with Guideline 551 (the 3-litre rule) of the German gas and water association DVGW is recommended
- With built-in adapters for the incoming cold water meter and the heat flow meter to allow easy calculation for each unit



# EMPUR® Flat transfer stations

## 3.1 Flat transfer station



The built-in components make up the overall quality of the home station. The components coordinated for the specific functions in the basic version guarantee safe and reliable operation.

### The most important components of our flat transfer station

- 1 **Stainless steel heat exchanger** for energy-efficient flow-through drinking water heating (fresh water system)
- 2 **Combination regulators** – differential pressure and flow regulator, zone valve, thermostat and deaerator in one unit
- 3 **Summer bypass** for fast heating of drinking water, even outside the heating season
- 4 **Heat-insulated rear panel** with insulation hood for lowest radiation losses
- 5 Internal pipe connections in the new **Click-fit technology**, tightness even without tightening
- 6 **Radiator connection** – high-temperature circuit for bathroom radiators
- 7 **Fixed value control set** – addition control including safety temperature monitor and circulation pump for surface heaters, thermostatic sensor element with feed thermostat, control range 15-50°C
- 8 **Fittings** (3/4" x 110 mm) for heat and cold water meters

### Heat exchanger

What is decisive for the energy efficiency of freshwater systems in flat stations is a low-return temperature with simultaneous provision of the required amount of hot water/pouring capacity. Within the heat exchanger, the heating medium and the drinking water flow past each other based on the counter-current principle.

The hot water temperature is thus substantially determined by the available primary-side temperature of the heating medium. Innovative plate pressing and optimised flow geometry for efficient heat transfer with low pressure loss form the basis for the economical operation of the entire system.

**If the water quality is unknown, we recommend the use of a stainless steel brazed heat exchanger.**

**If the home flat transfer is used with copper-brazed heat exchangers, its suitability with regard to the Water quality to be checked in advance by the system planner or installer!**

**When closing a water fitting, pressure shocks can occur. Since pressure surges can have an effect on the service life of the heat exchangers, we recommend the on-site installation of a water shock absorber, especially when using stainless steel brazed heat exchangers!**

### NOTE

The connection option for the circulation is pre-assembled at the factory, so please specify it when ordering! An on-site drain for the safety valve on the circulation set is required! For use of flat stations with a circulation set, the flush-mounted manifold cabinet with 850 mm width should be used.

# EMPUR® Flat transfer stations

## 3.1 Flat transfer station

### Performance values drinking water heating/pouring capacity at 10/50°C (10/45°C)

Size/type Heat exchanger	Capacity (kW)	Flow/return (°C) Primary side	Pressure loss (kPa) Primary side (without WMZ)	Flow (l/h) Primary side	Hot water Tap capacity (l/min)
Size 1/Cu or stainless steel brazed	37	65 / 21	23	730	<b>13,3</b>
	43	65 / 22	40	850	15,3 (18,4)
Size 2/Cu or stainless steel brazed	45	65 / 20	22	867	<b>16,1</b>
	49	65 / 21	30	950	17,5 (20,9)
Size 3/Cu brazed	55	65 / 16	27	950	<b>19,4</b> (22,9)
	38	55 / 21	27	950	13,6
Size 3/stainless steel brazed	51	65 / 19	28	950	<b>18,3</b> (22,7)
	34	55 / 14	28	950	12,5

Requirements for the operating temperature at the tapping point in accordance with DIN 1988-200 and DIN EN 806-2 (sections 3.6 in each case) must be met so that the drinking water installation conforms to the standard.

For cold drinking water, the requirement is deemed to be fulfilled if the temperature falls below 25°C 30 s after opening the tapping valve. Temperatures above 25°C in the drinking water cold, which can be measured before the tapping time

of 30 s has elapsed, can be attributed to heating of the drinking water due to stagnation of the drinking water in areas with increased ambient air temperature.

The requirement for hot drinking water is fulfilled if the temperature reaches a temperature of at least 55°C within 30 seconds. If the requirements for drinking water cold or drinking water warm are not met, on-site measures must be taken.

Performance values		Mixed water quantity depending on the desired mixed water temperature			
Size	10/50°C (l/min)	Mixed water temperature	32°C	35°C	38°C
37 kW (730 l/h)	13,3	possible mixed water quantity (l/min) without heat losses	23,9	21,9	20,1
45 kW (867 l/h)	16,1		28,3	25,9	23,8
55 kW (950 l/h)	19,4		33,4	30,6	28,2
51 kW (950 l/min)	18,3		31,7	29,0	26,7

### Performance values heating

Power (kW)	Δ°C (VL/RL) Heating circuit	Primary side without heat meter	
		Pressure loss (kPa)	Flow rate (l/h)
10	20	3	430
10	30	1	287
10	40	1	215
15	20	8	645
15	30	3	430
15	40	2	323

#### NOTE

The following applies to all stations: At the consumer connection (heating circuits), the available differential pressure is between 220-165 mbar, depending on the volume flow (40-645 l/h).



### Combi controller

The integrated combination controller for heating and hot water is the central element of the home station. It picks up the currently desired hot water/tap quantity via a diaphragm and thus supplies the heat exchanger with the necessary heating water quantity.

A thermostatic control of the hot water temperature, which works in addition to the flow controller, already before the heat exchanger, ensures constant hot water temperatures by changing the heating water flow rate, even with low tapping quantities. This function ensures the lowest possible return temperatures and prevents unnecessarily high heating water quantities, thus ensuring the energy efficiency of the entire system for DHW heating.

A differential pressure controller integrated in the combi-controller prevents the stations from influencing each other during heating operation and during hot water tapping. Furthermore, a deaerator with hose connection is provided.

The built-in zone valve, in combination with the integrated thermal actuator and an on-site clock thermostat (room control unit 230 V with display, surcharge item Z4), enables individual, convenient and energy-optimised control of the heating times and room temperature. In this way, the legal requirements are fulfilled.

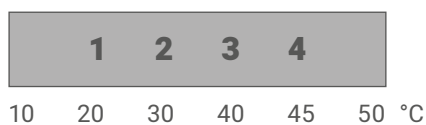


### Summer bypass

Outside the heating period, the summer bypass ensures that hot water is available at the station outlet immediately after tapping begins.

A temperature-controlled summer bypass (adjustable from 20-50°C), which is preset to 40°C in the factory and maintains this temperature, takes over the circulation pipe in the home station, which is common in central hot water systems. In this way, hot drinking water is available very quickly as soon as a tap is opened. This offers the consumer a high level of hot water comfort with little energy loss.

The bypass remains closed during the heating season, when the station is permanently distributing heat. In this way, heat losses are avoided compared to circulation lines of central drinking water heaters.



# EMPUR® Flat transfer stations

## 3.1 Flat transfer station

### Thermal insulation

The home station is equipped with full insulation as standard (EPP  $\lambda$  0,039 W/(m\*K)) for lowest heat loss with full insulation (<150 kWh/a). Both the rear side and the supplied thermal insulation bonnet ensure the lowest heat loss and extremely economical operation of the station.



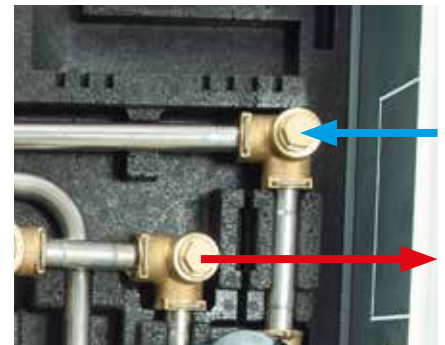
### Click-fit pipe connections

All pipes are made of stainless steel and are connected to each other using a newly designed click-fit technology. Compared to conventional stations with internal screw connections, this connection technique requires no retightening. This means that, in addition to quick installation, lower construction costs can be realised. These resilient connections (test pressure in the test 200 bar) eliminate the risk of leaks and the resulting follow-up costs. A dirt trap with a mesh size of 0.6 mm is included.



### Radiator connection

The standard high-temperature circuit connection (1/2" IT) can be used to connect a bath radiator. The bathroom radiator can be directly supplied with heat during summer operation without flowing through the underfloor heating circuit manifold. A cut-out with a predetermined breaking point is provided both in the insulation bonnet and in the flush-mounted distributor connection box. The pipe-work is then provided by the customer outside the station.



# EMPUR® Flat transfer stations

## 3.1 Flat transfer station



### Fixed value control set with temperature sensor

The set with contact thermostat regulates the flow temperature for the panel heating in the range of 15-50°C. The integrated safety temperature monitor interrupts the power supply to the actuator (NC) on the zone valve in the combi-controller from 59°C. The circulation pump continues to operate!

### Fittings for heat and cold water meters

Two fitting pieces 3/4" x 110 mm for the installation of heat and cold water meters are pre-mounted in the station. The heat quantity is thus billed via a heat quantity meter to be installed in the primary return of the station (in the picture on the left). The water meter is installed in the cold water inlet (PWC) of the station. In this way, the energy and water consumption for domestic hot water and heating is recorded for each residential unit as required by law. Ultrasonic heat meters (e.g. Sono Select 10) with a sampling rate of max. 4 seconds should be used for this purpose.



### Circulation set (optional)

To ensure that even remote taps are quickly supplied with hot water. The set consists of a ball valve with non-return valve, circulation pump and safety valve. The circulation set must be specified when ordering, as it must be pre-assembled at the factory and cannot be retrofitted.

# EMPUR® Flat transfer stations

## 3.2 Control

### Control of the stations

#### Weather-compensated controller WCC (optional)

The WCC is a weather-compensated electronic temperature controller for use in district heating, central heating and cooling systems. The housing is designed for wall and DIN rail mounting.

**The set consists of the control unit, an outdoor sensor, a flow contact sensor and a 3-point actuator, 230 V with adapter for mounting instead of the thermostat head on the fixed value control set.**

An Ethernet connection is also integrated into the unit. Using the application key, the programme of a selected application can be loaded into the controller. A maximum of 3 circuits can be controlled.

It is designed for comfortable temperatures, optimal energy consumption, easy installation by means of an application key (plug & play) and user-friendly operation. Through weather control, temperature adjustment according to the programme, and optimisation and limitation of return temperature, flow and energy consumption, significantly more energy is saved compared to an uncontrolled system. Functional features such as data logging and alarms are included in the controller.

The controller can be easily adjusted using a dial (multifunctional knob) or a remote control unit. The dial allows the user to navigate through the text menus on the display in the selected language. It has, among other things, electronic outputs for controlling the motor control valves and relay outputs for the pumps or for controlling the changeover valve. It also has an alarm output.

6 temperature sensors of the type Pt 1000 can be connected. In addition, 4 configurable inputs for temperature sensors of type Pt 1000, can be selected as analogue input (0-10 V) or as digital input.





### What control equipment is necessary?

The legal basis is the Building Energy Act (GebäudeEnergieGesetz, GEG) in the currently valid version

The GEG brings together the Energy Saving Act, the Energy Saving Ordinance and the Renewable Energies Heat Act and applies from 1 November 2020.

#### § 61 Reduction and switching off of the heat supply as well as switching on and off of electrical drives

(1) If a central heating system is installed in a building, the builder or the owner shall ensure that the central heating system is equipped with central automatic devices for reducing and switching off the heat supply and for switching electrical drives on and off. The regulation of the heat supply as well as the electric drives within the meaning of sentence 1 shall be carried out in dependence on

1. the outdoor temperature or another suitable reference variable and
2. the time.

(2) Insofar as the equipment required in paragraph 1 sentence 1 is not present in an existing building in the case of central heating, the owner must retrofit it by 30 September 2021.

(3) If a central heating system is installed in a residential building which has more than five dwellings, which supplies each individual dwelling with heat for heating and hot water from the central system by means of heat exchangers in a continuous flow principle, each individual dwelling may be equipped with the devices according to paragraph 1.

#### § 62 Water heating connected to a local or district heating supply without heat exchanger

In the case of a water heating system that is connected to a local or district heating supply without a heat exchanger, the obligation under section 61 with regard to reducing and switching off the heat supply can also be fulfilled without a corresponding device in the house and customer installation by regulating the flow temperature of the local or district heating network as a function of the outside temperature and time by means of a corresponding device in the central generation plant.

#### § 63 Room-by-room control of the room temperature

(1) If a heating system with water as the heat transfer medium is installed in a building, the builder or the owner shall ensure that the heating system is equipped with an automatic device for the room-by-room control of the room temperature.

Sentence 1 does not apply to

- underfloor heating in rooms with less than six square metres of floor space or
- a single heating appliance that is set up for operation with solid or liquid fuels.

(2) With the exception of residential buildings, group regulation is permitted for groups of rooms of the same type and use.

(3) If the equipment required in paragraph 1 sentence 1 is not available in an existing building, the owner must retrofit it. Paragraph 1 sentence 2 and paragraph 2 are to be applied accordingly.

(4) An underfloor heating system installed before 1 February 2002 may, in deviation from paragraph 1, sentence 1, be equipped with a device for room-by-room adjustment of the heat output to the heating load.

#### § 64 Circulation pump

(1) A circulation pump installed in the heating circuit of a central heating system with a rated output of more than 25 kilowatts shall be equipped in such a way that the electrical power consumption is automatically adapted to the operational demand in at least three stages, insofar as the operational safety of the boiler does not prevent this.

(2) When installed in a hot water system, a circulation pump must be equipped with an automatic on/off device. The Drinking Water Ordinance remains unaffected.

# EMPUR® Flat transfer stations

## 3.3 Heating circuit manifold brass + stainless steel

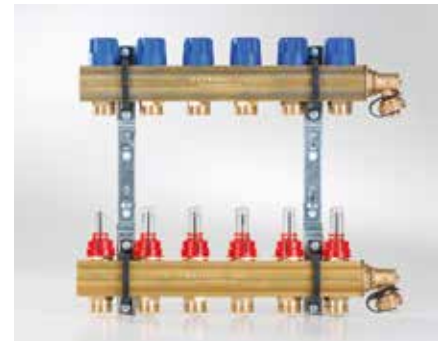
### EMPUR® system manifold

EMPUR® produces high-quality manifolds and special solutions for customer-specific requirements from brass and stainless steel on its own facilities at the Buchholz-Mendt site.

#### Brass system manifold, version 2.0

##### System manifold HCM-D with integrated valves and flow rate indicators

Complete manifold made of 1" brass section pipe with integrated valves, 50 mm valve clearance, return valves (above) with blue protection cap, factory assembled on manifold holders with inserts for noise suppression. EMPUR® actuators can be installed directly instead of the blue protection cap. Feed flow (bottom) with controllable and adjustable flow rate indicators (0-2.5 l/min.). Max. permissible volume flow of all heating circuits 1.8 m³/h. Heating circuit connection 3/4" ET eurocones. Two manifold endpieces with reducer for filling, bleeding and draining.



#### Stainless steel system manifold, series 03

##### System manifold HCM-D with integrated valves and flow rate indicators

Complete manifold made of 1" stainless steel section pipe, 50 mm valve clearance, factory assembled on the manifold holder with inserts for noise suppression, return flow valve (above) with blue protection cap, EMPUR® actuators are pre-assembled instead of the blue protection cap. Feed flow (below) with controllable and adjustable flow rate indicators (0-2.5 l/min.). Heating circuit connections 3/4" euroconus, two manifold end-pieces with reducer revolving for filling, bleeding and draining.



#### Stainless steel system manifold, series 03 Balance

##### System manifold HCM-D Balance with integrated, dynamically control valves

in the pressure range 17-60 kPa, pre-settable for flow rates of 30-300 l/h  
Complete manifold made of 1" stainless steel section pipe, 50 mm valve clearance, factory assembled on the manifold holder with inserts for noise suppression, return flow valve (above) with blue protection cap, EMPUR® actuators are pre-assembled instead of the blue protection cap. Feed flow (below) with flow indicator without scaling for shut off and function display. Heating circuit connections 3/4" euroconus, two manifold end-pieces with reducer revolving for filling, bleeding and draining



### EMPUR® Geniax complete manifold

Also produced in-house, the EMPUR® Geniax complete manifolds are an important part of our range when it comes to the greatest possible energy efficiency and increased heating comfort.

The EMPUR® Geniax heat distribution system is a flexible surface heating and control system which enables the appropriate, customised heating of individual rooms in residential and non-residential buildings.

Each heating circuit is equipped with a small, highly-efficient glandless circulation pump on the manifold or directly on the radiator, which often makes the central heating pump obsolete. The decentralised pumps are controlled by a central intelligence system, the Geniax server. This server receives its information regarding changing actual and target temperature values from control units with integrated sensors which are networked with one another using the Geniax BUS.

The combination of software-controlled temperature regulation and decentralised pumps at the heat transfer panels ensures that each individual room is provided with the exact required heat.

The system is characterised by high functionality and flexibility.

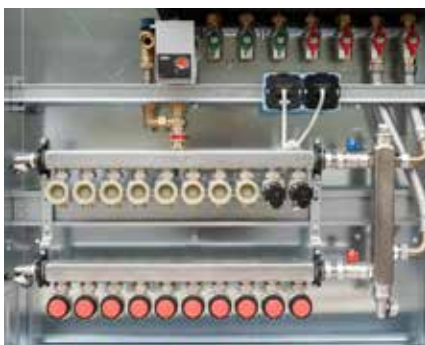


#### Geniax complete brass manifold

**EMPUR® Geniax complete manifold HCM-G, brass, fully assembled in flush-mounted manifold cabinet**

with factory assembled pump electronics and bus terminals. Geniax pumps and backflow preventer supplied loose, factory tested and logged.

Manifold made of 1" (5/4") brass section pipe with pump adapters for installation of Geniax pumps in return flow (above) and adapters for installing the backflow preventer in the feed flow, two manifold end-pieces with reducer for filling, bleeding and draining.



#### Geniax complete stainless steel manifold

**EMPUR® Geniax complete manifold HCM-G, stainless steel, fully assembled in flush-mounted manifold cabinet**

with factory assembled pump electronics and bus terminals, Geniax pumps and backflow preventer supplied loose, factory tested and logged.

Manifold made of 1" stainless-steel section pipe with pump adapters for installation of Geniax pumps in return flow (above) and adapters for installing the backflow preventer in the feed flow, two nickel-plated manifold end-pieces with reducer for filling, bleeding and draining.

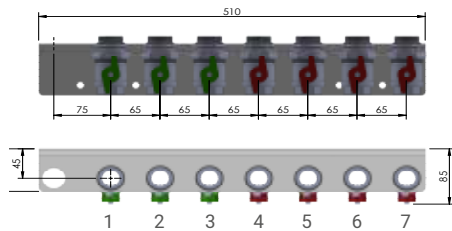
# EMPUR® Flat transfer stations

## 3.5 Accessories

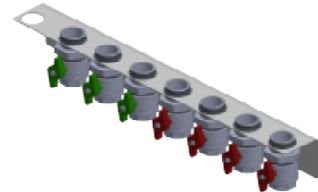
### Supplementary system components

#### Mounting rail with 7 shut-off ball valves

pre-assembled in the manifold cabinet in combination with the transfer station and EMPUR® manifold technology.



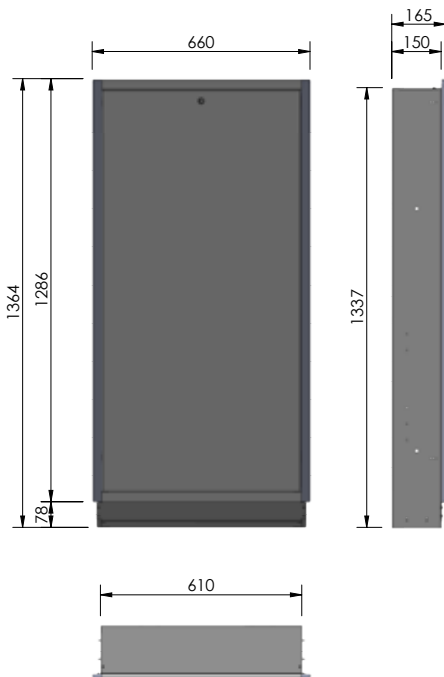
- 1 Cold water inlet (KW)
- 2 Warm water (TWW)
- 3 Cold water outlet (KW)
- 4 Supply flow (FW)
- 5 Supply return (FW)
- 6 Heating flow (HZ)
- 7 Heating return (HZ)



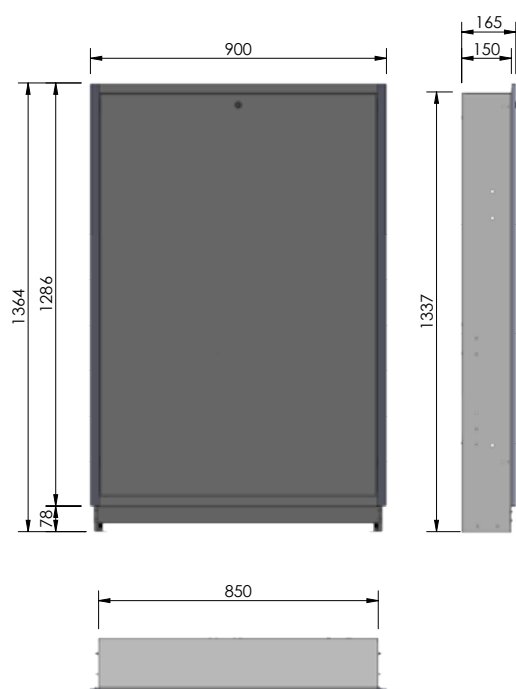
#### Manifold cabinets

Depending on the size of the flat transfer station, two different width cabinet variants with frame and door are available, version for flush-mounted installation. The standard colour is white (RAL 9016).

**Flush-mounted cabinet narrow (610 mm)**



**Flush-mounted cabinet wide (850 mm)**



Cabinet width (B) in mm	Frame width (B1) in mm	Niche width (NB) in mm	Cabinet height (H) in mm	Cabinet height incl. frame (H1) in mm	Niche height (NH) in mm	Cabinet depth (T) in mm	Niche depth (NT) in mm
610	660	650	1.337-1.487	1.162-1.512	1.347-1.497	150-200	160-210
850	900	890	1.337-1.487	1.162-1.512	1.347-1.497	150-200	160-210

#### NOTE

Floor construction (screed height) min. 78 mm from top edge of finished floor to bottom edge of frame and additional 150 mm foot height adjustment possible.



Included in the basic version with brass manifold version 2.0, stainless steel manifold series 03 or stainless steel manifold series 03 Balance:

### Regulator terminal strip

#### Regulator terminal strip for 6 heating zones and 6 room control units

max. 15 actuators 230 V NC, max. power consumption 50 VA, max. rated load of all actuators 24 W, fuse protection T4AH, inrush current per actuator max. 500 mA, integrated standard-compliant strain relief, screwless terminal technology for connection cross-section up to max. 1.5 mm<sup>2</sup>, change-over input switchable via potential-free contact (heating/cooling change-over), pump control (normally open contact, single-pole switching), signal input for temperature limiter or dew point sensor, two separate lowering channels for control via external timer signal, protection type IP20, protection class II, dimensions (H/W/D): 90 x 327 x 50 mm, ABS casing, light grey, cover transparent



### Actuators

#### Actuator "Economy", normally closed (NC)

For easy mounting on EMPUR® brass/stainless steel manifolds with connection thread M 30 x 1.5. Nominal stroke 3 mm, protection type IP 42 in all mounting positions (also overhead), protection class II, ambient temperature: 0-50 °C, opening/closing time: approx. 3-5 min., connecting cable 0.8 m/2 x 0.5 mm<sup>2</sup>, position indicator 2-fold available (top and side)



## NOTE

These components are not necessary with Geniux complete distributors!

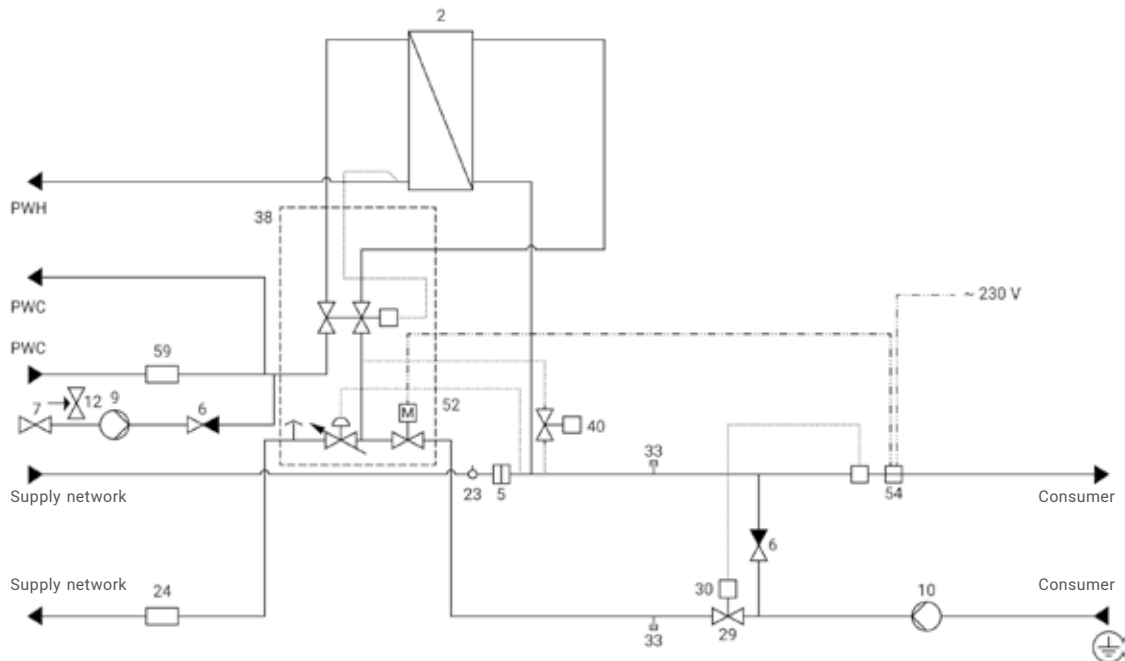
As a further supplement to our flat transfer stations, we provide innovative and coordinated control technology components such as room control units. Depending on the area of application and installation variant, we offer wired standard solutions.

In the case of retrofitting or modernisation, we mainly use wireless versions that can be combined with modern heat generators. The control technology Exclusiv (radio/bus) also has the option of control your heating system via smartphone and PC. For further information, please refer to our current product catalogue and the respective valid price information. We will be happy to advise you!

# EMPUR® Flat transfer stations

## 4.1 Hydraulic

### Hydraulic diagram of a flat station



- 2 Stainless steel plate heat exchanger (material 1.4404); solder: copper, alternatively: stainless steel
- 5 Dirt trap (mesh size 0.6 mm)
- 6 Non-return valve in the bypass in the heating circuit

**Variant with circulation set; on-site drain and external electrical connection for pump required!** Consisting of:

- 7 Ball valve with non-return valve
- 9 Circulation pump Yonos Para Z 15/7
- 12 Safety valve
- 10 Circulation pump Wilo Para 15/6; 230 V, 50 Hz, 3-45 W (in the return) for supplying the floor heating system
- 23 Sensor immersion sleeve M10x1
- 24 Fitting piece 3/4" x 110 mm for heat meter and 59 Fitting piece 3/4" x 110 mm for cold water meter
- 29 Actuator 230 V NC, in combination with STB (pos. 54) to protect the FBH against overtemperature
- 30 Fixed-value control set with temperature sensor, adjustable flow temperature for panel heating 15-50°C
- 33 Outlet high temperature circuit (radiator connection)
- 38 Combination controller for heating and hot water as central element of the home station
- 40 Summer bypass, ensures that hot water is available at the station outside the heating period immediately after tapping begins. Factory-set to approx. 40°C, can be reduced to 20°C (setting range 1-4,20-45°C)
- 54 Safety temperature monitor 56°C ±3K; 1~230 V, 50 Hz interrupts the power supply to the actuator (closed without voltage). However, the circulation pump is still in operation! The electrical wiring of pump and STB is done on site or at the factory to the control terminal strip with pump logic, which is mandatory and included in the basic version.

### Guide values for drinking and heating water

These guide values apply to the water quality of tap water (drinking water) and district heating water (heating water) used in plate heat exchangers with stainless steel plates (EN 1.4404 ~ AISI 316L) with solder materials copper (Cu) or stainless steel (E) as heat transfer medium. The guide values are not a guarantee against any form of corrosion, but should be seen as an aid to achieving maximum service life for the units and to identifying and avoiding critical operating conditions in advance.

Parameter	Unit	Limit value/ concentration	Plate material AISI 316L WNR. 1.4404	Solder material	
				Copper	Stainless steel
ph		< 6,0	o	-	o
		6,0 - 7,5	+	o/-	+
		7,5 - 10,5	+	+	+
		> 10,5	+	o	+
Conductivity	μS/cm	< 10	+	+	+
		10 - 500	+	+	+
		500 - 1.000	+	o	+
		> 1.000	+	-	+
Free chlorine	mg/l	< 0,5	+	+	+
		0,5 - 1	o	+	+
		1 - 5	-	o	o
		> 5	-	-	-
Ammonia (NH <sub>3</sub> , NH <sub>4</sub> <sup>+</sup> )	mg/l	< 2	+	+	+
		2 - 20	+	o	+
		> 20	+	-	+
Alkalinity (HCO <sub>3</sub> )	mg/l	< 60	+	+	+
		60 - 300	+	+	+
		> 300	+	o	+
Sulphate (SO <sub>4</sub> <sup>2-</sup> )	mg/l	< 100	+	+	+
		100 - 300	+	o/-	+
		> 300	+	-	+
HCO <sub>3</sub> /SO <sub>4</sub> <sup>2-</sup>	mg/l	> 1,5	+	+	+
		< 1,5	+	o/-	+
Nitrate (NO <sub>3</sub> )	mg/l	< 100	+	+	+
		> 100	+	o	+
Manganese	mg/l	< 0,1	+	+	+
		> 0,1	+	o	+
Iron (Fe)	mg/l	< 0,2	+	+	+
		> 0,2	+	o	+
[Ca <sup>2+</sup> , Mg <sup>2+</sup> ]/[HCO <sub>3</sub> ]*		0 - 0,3	+	-	+
		0,3 - 0,5	+	o/-	+
		> 0,5	+	+	+

\* Hardness ratio limits were determined by experience and internal tests.

Explanation of symbols for the upper table		Recommended max. chloride concentration as a function of temperature to avoid stress crack concentration (SCC) of the stainless steel plates.	
+	Good corrosion resistance	T ≤ 20°C	max. 1.000 mg/l
o	Corrosion or reduced service life if several parameters „O“; If 3 or more parameters „O“, please consult the technical department	T ≤ 50°C	max. 400 mg/l
o/-	Corrosion risk	T ≤ 80°C	max. 200 mg/l
-	Use not recommended!	T ≥ 100°C	max. 100 mg/l

# EMPUR® Flat transfer stations

## 4.3 Simultaneity factor

### Required thermal output

#### Calculation of the PWH heat exchanger capacity

The choice of a flat station is made according to the required heat output for domestic hot water and space heating. The heat output for room heating is to be determined according to the valid national or international standards. The heat output for DHW heating of the individual flat station is determined via the DHW demand that can occur simultaneously in a flat. In accordance with DIN 1988-300, the maximum number of simultaneous hot water tapping points in a flat that are open at the same time is the two with the highest power demand. These are, for example, the taps at the shower and kitchen sink or kitchen sink and bathtub. Detailed specifications are to be agreed with the client in the room book. If no output requirements are agreed, a usual output of 35 kW (this corresponds to requirement level II of VDI 6003) can be used for the calculation of a flat.

#### Simultaneity factor

Since it is impossible that all DHW heaters are in operation at the same time, a simultaneity factor (SCF) is used in the calculation. The larger the number of flat units, the lower the factor. **In our example** (see page 23), **the simultaneity factor of VDI 2072 is used**. In planning, other factors are also used, e.g. according to DIN 4708, TU Dresden or Danfoss-Redan.

The simultaneity according to VDI 2072 is calculated as follows:

$$\varphi = 0,03 + \frac{0,5}{\sqrt{N}} + 0,45 * \frac{1}{N}$$

Where:  $\varphi$  = Simultaneity of domestic hot water heating of all residential units

N = Number of residential units (RU) with the same output (max. 10 kW difference)

Number RU	VDI 2072
1	1,00
2	0,62
3	0,48
4	0,40
5	0,35
6	0,31
7	0,29
8	0,27
9	0,25
10	0,24
11	0,22
12	0,21
13	0,20
14	0,20
15	0,19

Number RU	VDI 2072
ab 16	0,18
ab 18	0,17
ab 21	0,16
ab 23	0,15
ab 27	0,14
ab 31	0,13
ab 37	0,12
ab 45	0,11
ab 57	0,10
ab 73	0,09
ab 99-143	0,08

Simultaneity factors VDI 2072



### Requirement level and output times

In addition to standard 1988-200, guideline 6003 of the Association of German Engineers (VDI) provides further guidance for the planning and evaluation of comfort criteria and requirement levels. Here, 3 requirement levels are defined and explicitly permitted output times are assigned. The maximum time span between the opening of the tapping fitting and the discharge of hot drinking water (DHW) or cold drinking water (DHCW) at the temperature required for the tapping point is referred to as the discharge time.

The table shows the output times according to VDI 6003:

Sanitary object	required temperature	Maximum time allowed according to requirement level (seconds)		
		I	II	III
	°C			
Washbasin	40	60	18	10
Shower	42	26	10	7
Bathtub	45	26	12	9
Sink	50	60	18	10
Bidet	40	-	15	15
Whirlpool/large tub	50	-	10	10

**The duration of the ejection time depends on the desired comfort level, the distance between the DHW heater and the tap (fitting), the type of supply and the quality of the insulation.**

The more branched the drinking water installation and the lower the user frequency, the less the water flows through the system and the dwell time of the drinking water in the pipe increases. Hot and cold drinking water do not emerge at the required temperature, which, in addition to impairing comfort, also causes hygienic problems. Furthermore, the lukewarm temperature range provides optimal growth conditions for microorganisms and legionella.

Measures to reduce the risk: Decentralised drinking water heating instead of centralised, separation of hot drinking water, circulation and heating risers from the cold water riser, reduce the length of the pipes, use higher insulation quality, install a circulation pipe, take into account the calculated flow rate and simultaneity of the taps.

For the purpose of thermal disinfection, the hot water system must be regularly heated to 70°C up to the most distant tapping point, in accordance with DIN EN 806-2.

Theoretical exemplary comparison of the maximum permissible pipe length according to the 3l rule (DIN 1988-200) and comfort levels (VDI 6003) using the example of a washstand (calculated with = 0.07 l/s tap volume flow).

Nominal width	3 litre rule	Comfort level		
		I	II	III
DN10	38 m	53 m	16 m	8 m
DN12	26 m	37 m	11 m	6 m
DN15	17 m	23 m	7 m	3 m

Calculation example of discharge times/pipe lengths

# EMPUR® Flat transfer stations

## 4.5 3 litre rule DVGW W551

### Requirements for drinking water installations

The 3 litre rule from DVGW Code of Practice W 551 is used to define small and large systems and as a specification for the construction of drinking water installations.

Regardless of which system is involved, according to the Drinking Water Ordinance, every operator of water supply systems (including drinking water installations in buildings) is responsible for ensuring that no pathogens are distributed in harmful concentrations through the drinking water.

max. line length with 3 litre capacity	
Cu pipe (mm)	length (m)
10 x 1,0	60
12 x 1,0	38
15 x 1,0	22,5

#### Small systems

Are defined as storage water heaters and central flow-through water heaters in single-family houses and two-family houses (irrespective of the content of the water heater and the content of the pipe) as well as systems with water heaters with a capacity of less than or equal to 400 litres and a capacity of less than or equal to 3 litres in each pipe between the outlet of the water heater and the tapping point. This does not take into account any circulation pipe.

Corresponding systems in detached and semi-detached houses are not subject to routine testing for legionella. If all flats are occupied by the respective owners themselves, there is no commercial activity in the sense of the Drinking Water Ordinance. If, on the other hand, an owner-occupied flat is rented out, for example, the prerequisite for a testing obligation in the sense of a systemic test according to § 14b paragraph 1 of the Drinking Water Ordinance exists.

For small systems, it is recommended to set the controller temperature at the drinking water heater to 60 °C. However, operating temperatures below 50 °C should be avoided in any case. However, the client or operator should be informed about the possible health risk (legionella growth) during commissioning and instruction.

#### Large systems

Large systems, on the other hand, are storage water heaters and central flow-through water heaters, e.g. in residential buildings (apartment buildings), old people's homes, hospitals, baths, sports and industrial facilities, campsites, swimming pools or hotels with a capacity greater than 400 litres and/or less than 3 litres in each pipe between the outlet of the drinking water heater and the tapping point.

**The following characteristics are therefore used to distinguish between small and large-scale systems:**

1. The volume of the stored heated drinking water and
2. The volume of water between the drinking water heater and the tapping points

Type of building	Storage volume	Line volume	Installation requirements	Definition
One and two family house	Not relevant	Not relevant		Small system
Other buildings	< 400 Liter	≤ 3 Liter		Small system
Other buildings	> 400 Liter	≤ 3 Liter		Large system
Other buildings	> 400 Liter	> 3 Liter	Circulation installation	Large system
Other buildings	< 400 Liter	> 3 Liter	Circulation installation	Large system

The circulation system must be dimensioned so that the temperature in the circulating drinking water is not reduced by more than 5 Kelvin between the outlet at the drinking water heater and the inlet (return) into the drinking water heater.

### Basics for the design of flat stations

In order to be able to calculate the power rating of a home station, three factors must be determined in advance:

#### 1. Heat output for domestic hot water

Hot water tap capacity (10/50°C at 65°C VL)	<input type="checkbox"/> ≤ 13 l/min	→	Size 1 / 37 kW
	<input type="checkbox"/> ≤ 16 l/min	→	Size 2 / 45 kW
	<input type="checkbox"/> ≤ 19 l/min	→	Size 3 / 55 resp. 51 kW

The tapping capacity is the maximum hot water demand that can occur simultaneously in a residential unit and can be determined in accordance with DIN 1988-300. If no output is specified, requirement level II according to VDI 6003 can be met with 37 kW output. Special fittings in showers in particular must be taken into account here.

#### 2. Drinking water circulation

no  yes

It is recommended to check the necessity of hot water circulation, as higher heat losses, an increased tendency to calcification and a higher return temperature are to be expected due to the higher network temperature (min. 70°C VL)!

#### 3. Drinking water quality

Stainless steel plate heat exchanger  copper-brazed (Cu)  stainless steel brazed (E)

When using the flat station with copper brazed heat exchanger, its suitability (water quality) must be checked in advance by the system planner or installer. The installation of the stainless steel brazed heat exchanger is recommended if the water quality is unknown.

### Example design / example calculation

1. Tap capacity per flat unit (FU):	12 l/min		
2. Circulation:	no		
3. Drinking water quality:	unknown	→	Heat exchanger, stainl. steel braz.
		→	Size 1 (E) / 37 kW (at 65°C VL)

#### ... for a multi-family house with 5 flats

Number of identical flat units:	5		
	↓		
Simultaneity factor according to VDI 2072 (table value)		→	0,35
Size of the buffer storage tank: Calculated depending on the peak load time of the heat generator (7-20 min)!		→	300 litres
Heat demand for space heating according to EN 12831-1		→	3,2 kW
Output of the heat generator:		→	28 kW
Through-loading time of the buffer storage tank: The time should not exceed 3-4 times the peak load time!		→	19 min

We will be happy to answer your questions about our flat stations. The specialist engineers and planning consultants of our subsidiary EMPLAN® will support you with the calculation for the specific building project.



#### NOTE

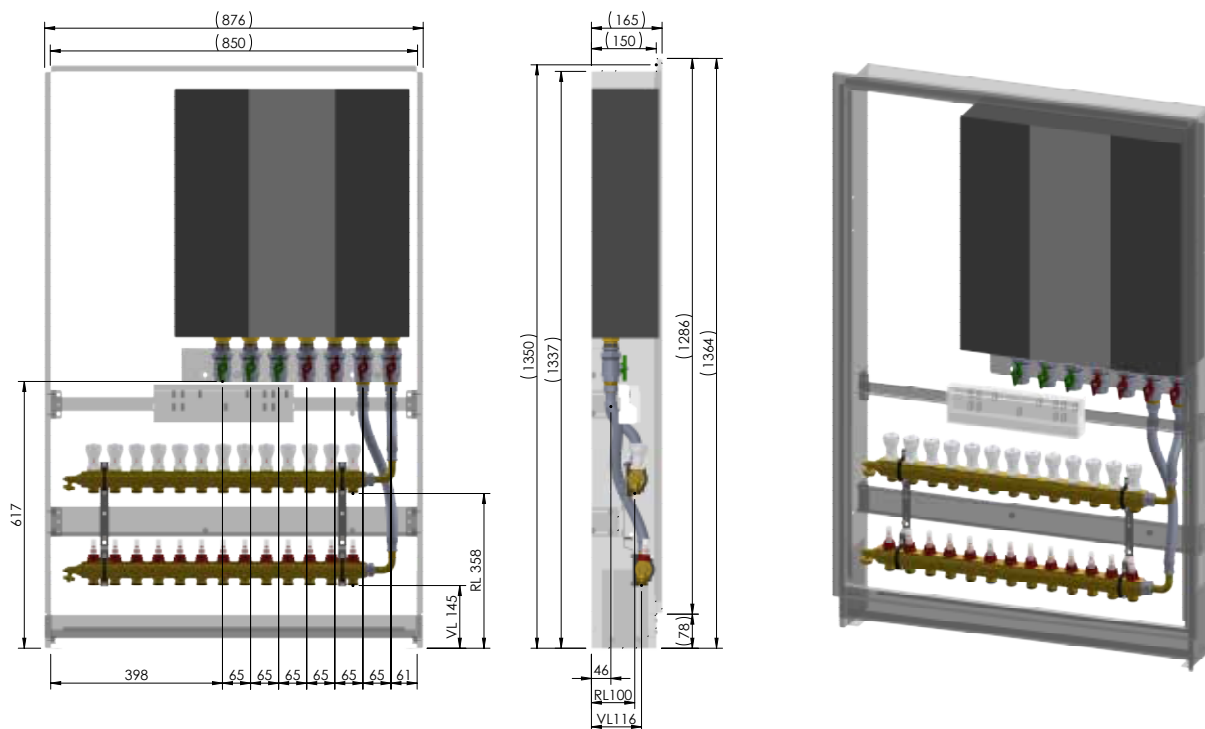
The values calculated above do not constitute an assurance in the legal sense. The sample calculation can not special circumstances of the individual case. In this case, suitability for the specific application must be checked.

# EMPUR® Flat transfer stations

## 5.1 Complete station in combination with brass manifold, version 2.0

### Basic version with brass manifold, version 2.0

- **Flat transfer station incl. copper-brazed 37 kW stainless steel heat exchanger**, summer bypass, thermal insulation, radiator connection, combi controller, **without circulation set, in the flush-mounted manifold cabinet 610 mm** (or 850 mm from 10 outlets) on mounting rail with 7 shut-off ball valves pre-assembled in the manifold cabinet, incl. piping (supply/return) to the manifold
- **Control terminal strip 230 V with pump logic for 6 heating zones/max. 15 actuators** pre-assembled on top-hat rail and corresponding number of actuators 230 V assembled and prewired
- **Brass manifold, version 2.0** (up to max. 13 outlets) pre-assembled on manifold mounting rail



# EMPUR® Flat transfer stations

## 5.1 Complete station in combination with brass manifold, version 2.0

### Configuration Item 280064 (brass) basic version

Manifold circuits	Configuration number	Item description	PG
5	ÜMS05WT2K16SB20UP6	HCM-D 5, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
6	ÜMS06WT2K16SB20UP6	HCM-D 6, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
7	ÜMS07WT2K16SB20UP6	HCM-D 7, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
8	ÜMS08WT2K16SB20UP6	HCM-D 8, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
9	ÜMS09WT2K16SB20UP6	HCM-D 9, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
<b>A cabinet width of 850 mm is required for 10 manifold outlets and more!</b>			
10	ÜMS10WT2K16SB20UP8	HCM-D 10, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
11	ÜMS11WT2K16SB20UP8	HCM-D 11, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
12	ÜMS12WT2K16SB20UP8	HCM-D 12, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
13	ÜMS13WT2K16SB20UP8	HCM-D 13, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07

HE = heat exchanger    FM = flush-mounted cabinet    RTS = regulation terminal strip    ACT = actuator

### Additional price item

Item No.	Item description	PG
WTI	* <b>Circulation set</b> , pre-assembled consisting of pump, non-return valve and safety valve	07
UP850	* <b>850 mm FM manifold cabinet</b> (instead of 610) always required in <b>combination with circulation set!</b>	07
K11	<b>Control terminal strip with pump logic for 10 heating zones/18 actuators</b> (instead of 6 zones)	07
K18	<b>Balance control terminal strip w. pump logic for 8 heating zones/17 actuators</b> (instead of 6 zones)	07
SB30	<b>Actuator with „Man Open“ mounting aid</b> , normally closed (instead of „Economy“ actuator)	07
Z3	<b>Controller, weather-compensated</b> (APP operation) with outdoor and flow contact sensor, 3-point actuator, 230V with adapter	07
Z4	<b>Room control unit 230 V with display</b> , with setback output and adjustable time programme (clock thermostat)	07
WT4	* 45 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT6	* 55 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT3	* 37 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT5	* 45 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT7	* 51 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07

\* ATTENTION: Items must be specified when ordering, as they are pre-assembled at the factory and cannot be retrofitted or converted!

### NOTE

Delivery time after receipt of order and final technical clarification 6 weeks! Item and configuration number must always be stated when ordering!

Please note that a separate discount applies for the flat transfer stations.

For further control components, please refer to our current product catalogue and the respective valid price information!

To facilitate transport and installation and to prevent damage and theft in the shell, the flat transfer station can be disassembled. On request, the delivery can be made in two pre-assembled sub-units.

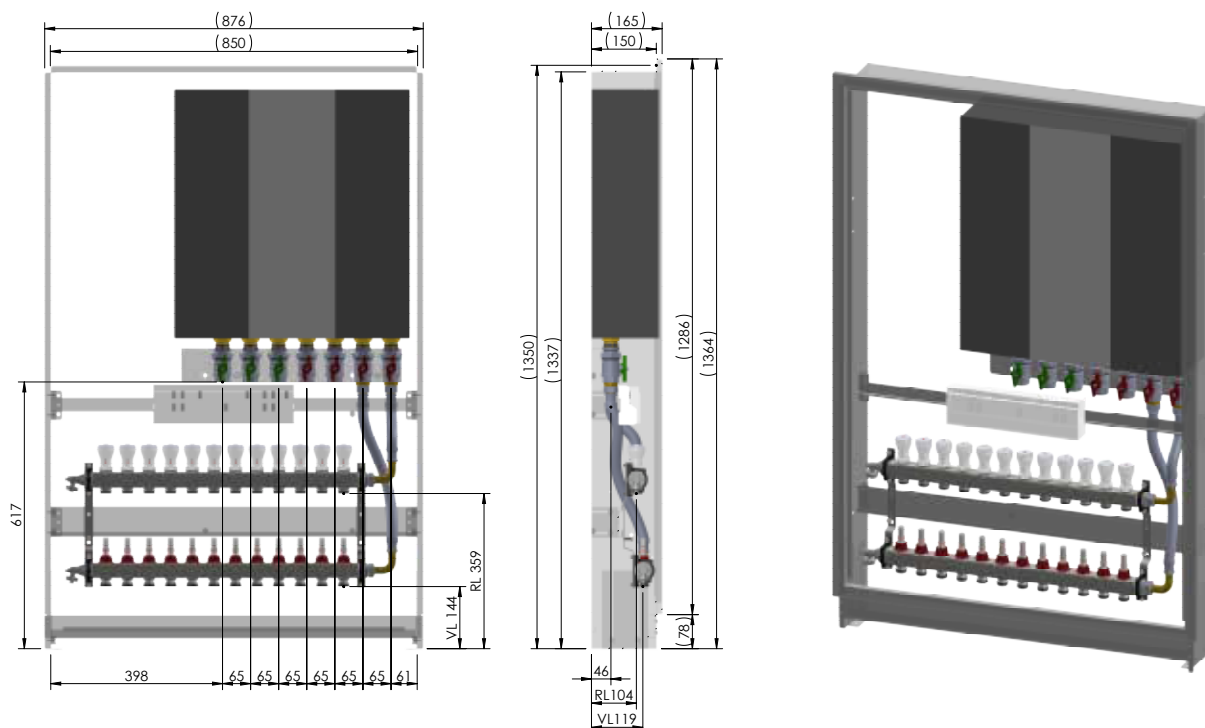


# EMPUR® Flat transfer stations

## 5.2 Complete station in combination with stainless steel manifold, series 03

### Basic version with stainless steel manifold, series 03

- **Flat transfer station incl. copper-brazed 37 kW stainless steel heat exchanger**, summer bypass, thermal insulation, radiator connection, combi controller, **without circulation set, in the flush-mounted manifold cabinet** 610 mm (or 850 mm from 9 outlets) on mounting rail with 7 shut-off ball valves pre-assembled in the manifold cabinet, incl. piping (supply/return) to the manifold
- **Control terminal strip 230 V with pump logic for 6 heating zones/max. 15 actuators** pre-assembled on top-hat rail and corresponding number of actuators 230 V assembled and prewired
- **Stainless steel manifold, series 03** (up to max. 12 outlets) pre-assembled on manifold mounting rail



# EMPUR® Flat transfer stations

## 5.2 Complete station in combination with stainless steel manifold, series 03

### Configuration Item 280065 (stainless steel) basic version

Manifold circuits	Configuration number	Item description	PG
5	ÜES05WT2K16SB20UP6	HCM-D 5, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
6	ÜES06WT2K16SB20UP6	HCM-D 6, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
7	ÜES07WT2K16SB20UP6	HCM-D 7, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
8	ÜES08WT2K16SB20UP6	HCM-D 8, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
<b>A cabinet width of 850 mm is required for 9 manifold outlets and more!</b>			
9	ÜES09WT2K16SB20UP8	HCM-D 9, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
10	ÜES10WT2K16SB20UP8	HCM-D 10, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
11	ÜES11WT2K16SB20UP8	HCM-D 11, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
12	ÜES12WT2K16SB20UP8	HCM-D 12, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07

HE = heat exchanger

FM = flush-mounted cabinet

RTS = regulation terminal strip

ACT = actuator

### Additional price item

Item No.	Item description	PG
WTI	* <b>Circulation set</b> , pre-assembled consisting of pump, non-return valve and safety valve	07
UP850	* <b>850 mm FM manifold cabinet</b> (instead of 610) always required in <b>combination with circulation set!</b>	07
K11	<b>Control terminal strip with pump logic for 10 heating zones</b> /18 actuators (instead of 6 zones)	07
K18	<b>Balance control terminal strip w. pump logic for 8 heating zones</b> /17 actuators (instead of 6 zones)	07
SB30	<b>Actuator with „Man Open“ mounting aid</b> , normally closed (instead of „Economy“ actuator)	07
Z3	<b>Controller, weather-compensated</b> (APP operation) with outdoor and flow contact sensor, 3-point actuator, 230V with adapter	07
Z4	<b>Room control unit 230 V with display</b> , with setback output and adjustable time programme (clock thermostat)	07
WT4	* 45 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT6	* 55 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT3	* 37 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT5	* 45 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT7	* 51 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07

\* ATTENTION: Items must be specified when ordering, as they are pre-assembled at the factory and cannot be retrofitted or converted!

### NOTE

Delivery time after receipt of order and final technical clarification 6 weeks! Item and configuration number must always be stated when ordering!

Please note that a separate discount applies for the flat transfer stations.

For further control components, please refer to our current product catalogue and the respective valid price information!

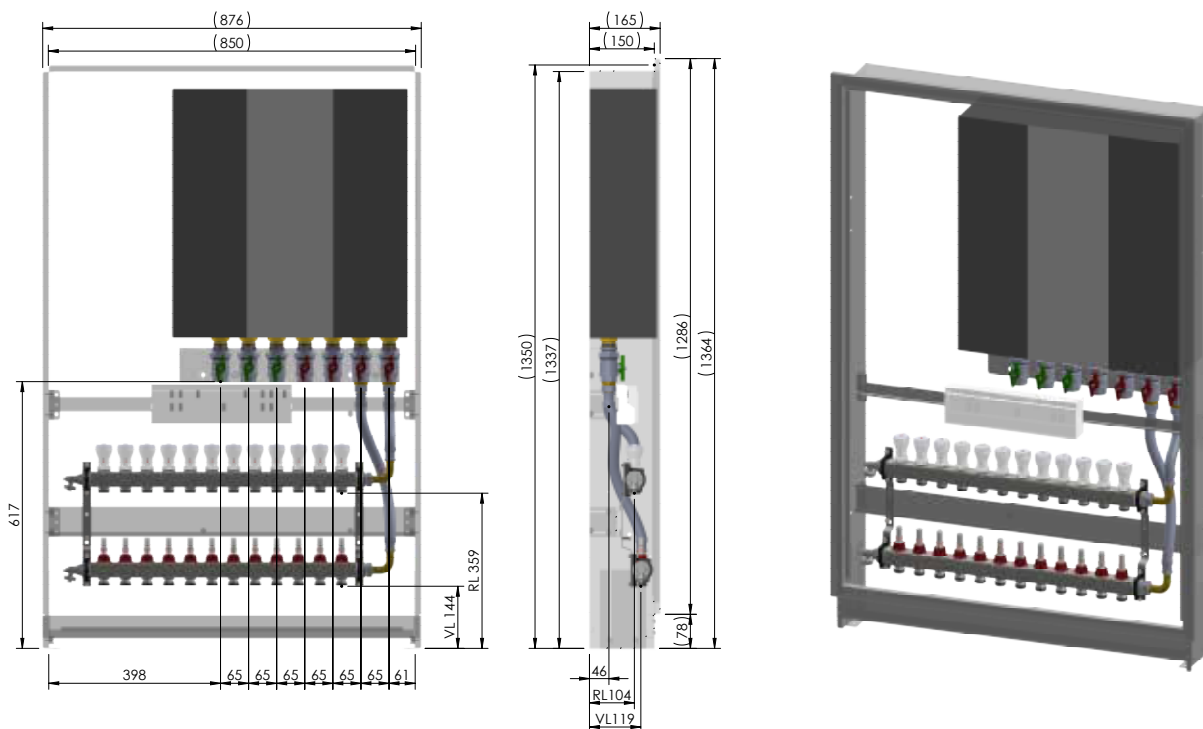
To facilitate transport and installation and to prevent damage and theft in the shell, the flat transfer station can be disassembled. On request, the delivery can be made in two pre-assembled sub-units.

# EMPUR® Flat transfer stations

## 5.3 Complete station in combination with stainless steel manifold, series 03 Balance

### Basic version w. stainless steel manifold, series 03 Balance

- **Flat transfer station incl. copper-brazed 37 kW stainless steel heat exchanger**, summer bypass, thermal insulation, radiator connection, combi controller, **without circulation set, in the flush-mounted manifold cabinet** 610 mm (or 850 mm from 9 outlets) on mounting rail with 7 shut-off ball valves pre-assembled in the manifold cabinet, incl. piping (supply/return) to the manifold
- **Control terminal strip 230 V with pump logic for 6 heating zones/max. 15 actuators** pre-assembled on top-hat rail and corresponding number of actuators 230 V assembled and prewired
- **Stainless steel manifold, series 03 Balance** (up to max. 12 outlets) pre-assembled on manifold mounting rail



# EMPUR® Flat transfer stations

## 5.3 Complete station in combination with stainless steel manifold, series 03 Balance

### Configuration Item 280068 (stainless steel Balance) basic version

Manifold circuits	Configuration number	Item description	PG
5	ÜBE05WT2K16SB20UP6	HCM-D 5, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
6	ÜBE06WT2K16SB20UP6	HCM-D 6, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
7	ÜBE07WT2K16SB20UP6	HCM-D 7, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
8	ÜBE08WT2K16SB20UP6	HCM-D 8, HE 37kW Cu, FM610, RTS230-HK6/15, ACT	07
<b>A cabinet width of 850 mm is required for 9 manifold outlets and more!</b>			
9	ÜBE09WT2K16SB20UP8	HCM-D 9, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
10	ÜBE10WT2K16SB20UP8	HCM-D 10, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
11	ÜBE11WT2K16SB20UP8	HCM-D 11, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07
12	ÜBE12WT2K16SB20UP8	HCM-D 12, HE 37kW Cu, <b>FM850</b> , RTS230-HK6/15, ACT	07

HE = heat exchanger

FM = flush-mounted cabinet

RTS = regulation terminal strip

ACT = actuator

### Additional price item

Item No.	Item description	PG
WTI	* <b>Circulation set</b> , pre-assembled consisting of pump, non-return valve and safety valve	07
UP850	* <b>850 mm FM manifold cabinet</b> (instead of 610) always required in <b>combination with circulation set!</b>	07
K11	<b>Control terminal strip with pump logic for 10 heating zones</b> /18 actuators (instead of 6 zones)	07
K18	<b>Balance control terminal strip w. pump logic for 8 heating zones</b> /17 actuators (instead of 6 zones)	07
SB30	<b>Actuator with „Man Open“ mounting aid</b> , normally closed (instead of „Economy“ actuator)	07
Z3	<b>Controller, weather-compensated</b> (APP operation) with outdoor and flow contact sensor, 3-point actuator, 230V with adapter	07
Z4	<b>Room control unit 230 V with display</b> , with setback output and adjustable time programme (clock thermostat)	07
WT4	* 45 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT6	* 55 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT3	* 37 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT5	* 45 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT7	* 51 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07

\* ATTENTION: Items must be specified when ordering, as they are pre-assembled at the factory and cannot be retrofitted or converted!

### NOTE

Delivery time after receipt of order and final technical clarification 6 weeks! Item and configuration number must always be stated when ordering!

Please note that a separate discount applies for the flat transfer stations.

For further control components, please refer to our current product catalogue and the respective valid price information!

To facilitate transport and installation and to prevent damage and theft in the shell, the flat transfer station can be disassembled. On request, the delivery can be made in two pre-assembled sub-units.

# EMPUR® Flat transfer stations

## 5.4 EMPUR® Geniax

# EMPUR® Geniax

## Comfort manager for the heating

The EMPUR® Geniax heat distribution system is a flexible surface heating and control system which enables the appropriate, customised heating of individual rooms in residential and non-residential buildings.

Each heating circuit is equipped with a small, highly-efficient glandless circulation pump on the manifold or directly on the radiator, which often makes the central heating pump obsolete. The decentralised pumps are controlled by a central intelligence system, the Geniax server. This server receives its information regarding changing actual and target tem-

perature values from control units with integrated sensors which are networked with one another using the Geniax BUS.

The combination of software-controlled temperature regulation and decentralised pumps at the heat transfer panels ensures that each individual room is provided with the exact required heat.

Besides the benefits which include best possible energy efficiency and increased heating comfort, the system is characterised by high functionality and flexibility.

### Benefits for specialised trade

- Automatic hydraulic balancing through pre-setting of the Geniax pumps when designing the heating circuits
- No installation of thermostat and line regulating valves
- Installation of pump adapters with simple connection and assembly technology
- Pumps can be installed and removed when the system is full
- Can be remotely operated
- Satisfied customers due to high temperature stability
- Support from **EMPLAN®/EMPUR®** during planning
- On-site service during design and commissioning by **EMSOLUTION®** service technicians

### Benefits for the TGA planner

- Safety through an optimally hydraulically balanced system
- Average heating cost savings of 20%\*
- Can be integrated into building automation via BACnet or KNX
- Intelligent principle for maximum security of supply and reliability
- Proven technology, documented by a large number implemented projects
- Innovative technology change for impressive efficiency values and high savings effects in energy and emissions

### Benefits for operators and investors

- Proven, future-proof technology increases the residential and property value of your properties
- Investment in EMPUR® Geniax pays for itself more quickly than other energy-saving measures
- Reduction of the second rent ensures the satisfaction of your customers in the long term
- Easy integration into higher-level building automation systems enables more efficient control
- Inexpensive alternative to building automation in terms of a single room control system with focus on heating and cooling and graphical analysis option of the overall system
- Sustainable heating technology strengthens your position as a progressive, environmentally conscious entrepreneur

### Benefits for the end-consumer

- Average 20% heating cost savings\*
- Average 50% electricity cost savings\*
- Additional 15% saving potential **through automatic hydraulic balancing**
- Simple and intuitive operation
- Sustainable and environmentally friendly system
- Maximum living comfort thanks to incomparable temperature stability, room-by-room control and time and usage profiles
- Quick heating function for pleasant warmth in short time
- Modern design in terms of shape and function

\* compared to conventional heating systems

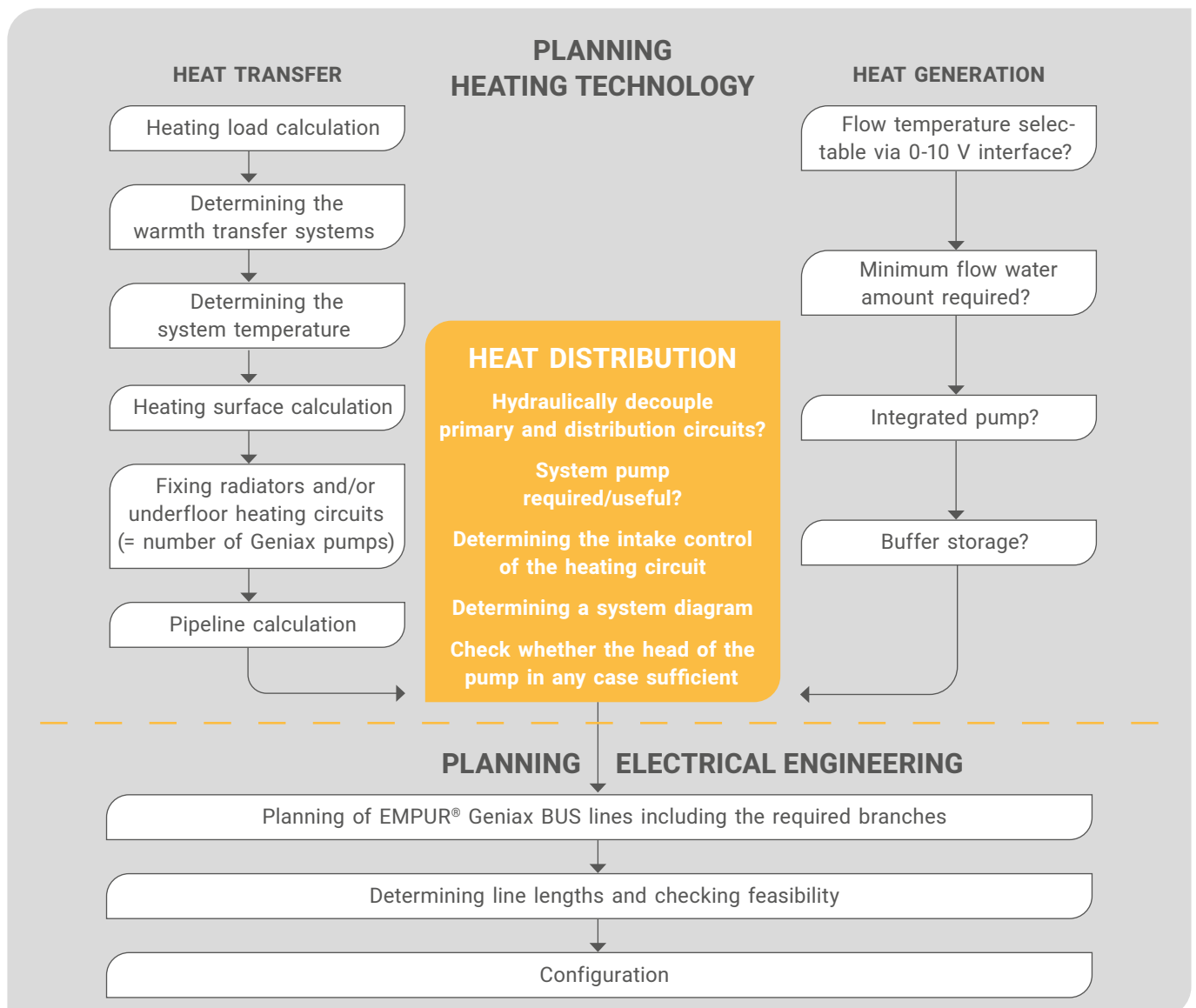


### Note

The EMPUR® Geniax decentralised pump system consists of three component groups: Geniax pump, Geniax management and Geniax operation. The interaction between the decentralised pumps, the control units (for temperature recording and operation in each room) and the components at the management level (server, BUS, coupler, power supply...) ensures that the system functions as a whole. The decentralised pumps cannot be used without the management and operating level components.

### Use

- **Hot-water heating** in combination with surface heating or radiators
- **Cooling function**

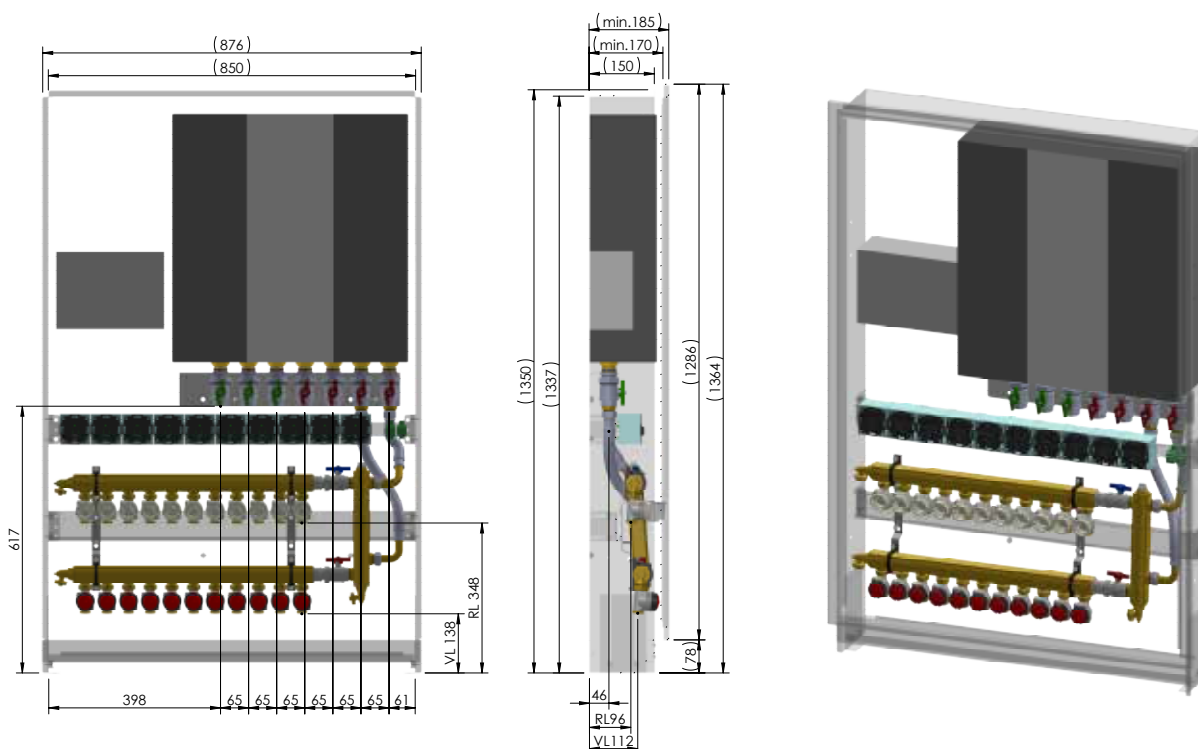


# EMPUR® Flat transfer stations

## 5.5 Complete station in combination with brass manifold Geniax

### Basic version with brass manifold Geniax

- **Flat transfer station incl. copper-brazed 37 kW stainless steel heat exchanger**, summer bypass, thermal insulation, radiator connection, combi controller, **without circulation set, in the flush-mounted manifold cabinet 850 mm** on mounting rail with 7 shut-off ball valves pre-assembled in the manifold cabinet, incl. piping (supply/return) to the manifold
- **Geniax server with 2.5 A power supply**, flow sensor, actuator 24 V, 0-10 V with power supply 230/24 V continuously regulating for volume flow/flow temperature control, external connections placed on terminal
- **EMPUR® Geniax complete manifold HCM-G, brass** (up to max. 11 outlets) with thermal switch, fully pre-assembled in the flush-mounted manifold cabinet with factory-mounted pump electronics and BUS terminals, Geniax pumps and backflow preventer supplied loose, factory tested and logged



# EMPUR® Flat transfer stations

## 5.5 Complete station in combination with brass manifold Geniax

### Configuration Item 280061 (Geniax brass) basic version

Manifold circuits	Configuration number	Item description	PG
5	ÜGM05WT2Z5UP8	HCM-G 5+TS, HE 37kW Cu, FM850, CS 2,5A	07
6	ÜGM06WT2Z5UP8	HCM-G 6+TS, HE 37kW Cu, FM850, CS 2,5A	07
7	ÜGM07WT2Z5UP8	HCM-G 7+TS, HE 37kW Cu, FM850, CS 2,5A	07
8	ÜGM08WT2Z5UP8	HCM-G 8+TS, HE 37kW Cu, FM850, CS 2,5A	07
9	ÜGM09WT2Z5UP8	HCM-G 9+TS, HE 37kW Cu, FM850, CS 2,5A	07
10	ÜGM10WT2Z5UP8	HCM-G 10+TS, HE 37kW Cu, FM850, CS 2,5A	07
11	ÜGM11WT2Z5UP8	HCM-G 11+TS, HE 37kW Cu, FM850, CS 2,5A	07

TS = thermoseparator    HE = heat exchanger    FM = flush-mounted cabinet    CS = control system

### Additional price item

Item No.	Item description	PG
WT1	* <b>Circulation set</b> , pre-assembled consisting of pump, non-return valve and safety valve	07
WT4	* 45 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT6	* 55 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT3	* 37 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT5	* 45 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT7	* 51 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07

\* ATTENTION: Items must be specified when ordering, as they are pre-assembled at the factory and cannot be retrofitted or converted!

### NOTE

Delivery time after receipt of order and final technical clarification 6 weeks! Item and configuration number must always be stated when ordering!

Please note that a separate discount applies for the flat transfer stations.

For further control components, please refer to our current product catalogue and the respective valid price information!

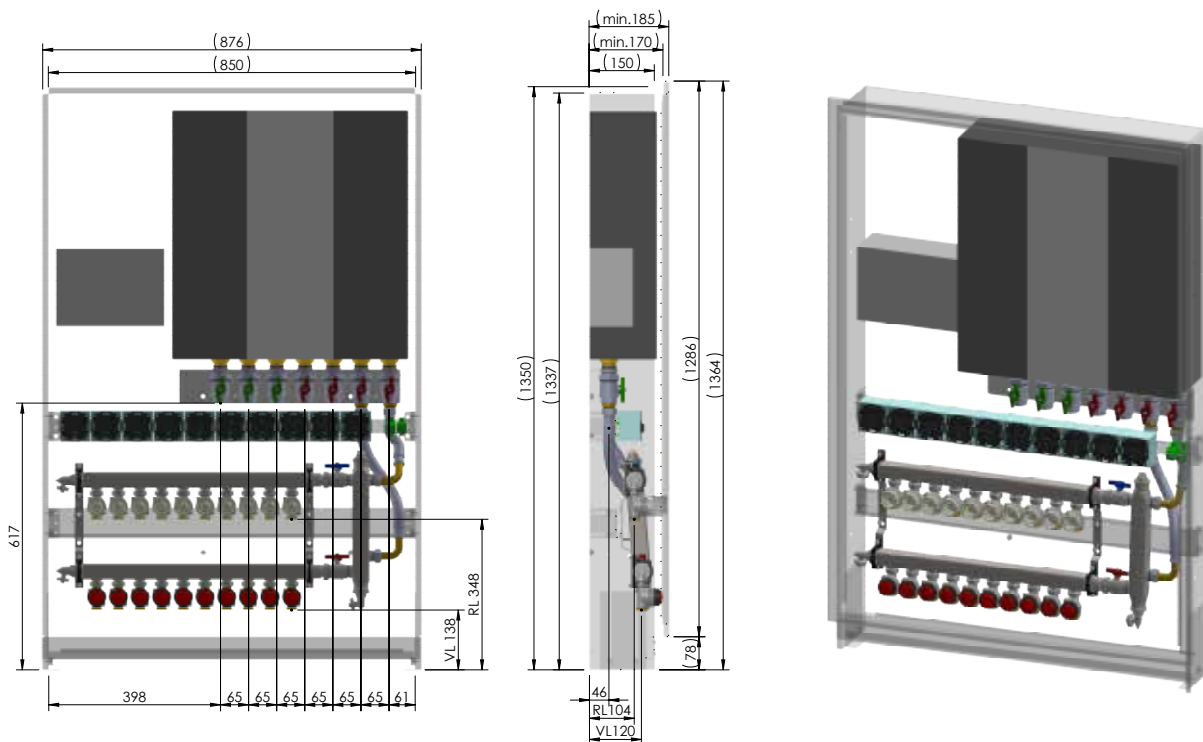
To facilitate transport and installation and to prevent damage and theft in the shell, the flat transfer station can be disassembled. On request, the delivery can be made in two pre-assembled sub-units.

# EMPUR® Flat transfer stations

## 5.6 Complete station in combination with stainless steel manifold Geniax

### Basic version with stainless steel manifold Geniax

- **Flat transfer station incl. copper-brazed 37 kW stainless steel heat exchanger**, summer bypass, thermal insulation, radiator connection, combi controller, **without circulation set, in the flush-mounted manifold cabinet 850 mm** on mounting rail with 7 shut-off ball valves pre-assembled in the manifold cabinet, incl. piping (supply/return) to the manifold
- **Geniax server with 2.5 A power supply**, flow sensor, actuator 24 V, 0-10 V with power supply 230/24 V continuously regulating for volume flow/flow temperature control, external connections placed on terminal
- **EMPUR® Geniax complete manifold HCM-G, stainless steel** (up to max. 10 outlets) with thermal switch, fully pre-assembled in the flush-mounted manifold cabinet with factory-mounted pump electronics and BUS terminals, Geniax pumps and backflow preventer supplied loose, factory tested and logged



# EMPUR® Flat transfer stations

## 5.6 Complete station in combination with stainless steel manifold Geniux

### Configuration item 280060 (Geniux stainless steel) basic version

Manifold circuits	Configuration number	Item description	PG
5	ÜGE05WT2Z5UP8	HCM-G 5+TS, HE 37kW Cu, FM850, CS 2,5A	07
6	ÜGE06WT2Z5UP8	HCM-G 6+TS, HE 37kW Cu, FM850, CS 2,5A	07
7	ÜGE07WT2Z5UP8	HCM-G 7+TS, HE 37kW Cu, FM850, CS 2,5A	07
8	ÜGE08WT2Z5UP8	HCM-G 8+TS, HE 37kW Cu, FM850, CS 2,5A	07
9	ÜGE09WT2Z5UP8	HCM-G 9+TS, HE 37kW Cu, FM850, CS 2,5A	07
10	ÜGE10WT2Z5UP8	HCM-G 10+TS, HE 37kW Cu, FM850, CS 2,5A	07

TS = thermost separator    HE = heat exchanger    FM = flush-mounted cabinet    CS = control system

### Additional price item

Item No.	Item description	PG
WT1	* <b>Circulation set</b> , pre-assembled consisting of pump, non-return valve and safety valve	07
WT4	* 45 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT6	* 55 kW heat exchanger capacity, Cu brazed (instead of 37 kW Cu brazed)	07
WT3	* 37 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT5	* 45 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07
WT7	* 51 kW heat exchanger capacity, stainless steel brazed (instead of 37 kW Cu brazed)	07

\* ATTENTION: Items must be specified when ordering, as they are pre-assembled at the factory and cannot be retrofitted or converted!

### NOTE

Delivery time after receipt of order and final technical clarification 6 weeks! Item and configuration number must always be stated when ordering!

Please note that a separate discount applies for the flat transfer stations.

For further control components, please refer to our current product catalogue and the respective valid price information!

To facilitate transport and installation and to prevent damage and theft in the shell, the flat transfer station can be disassembled. On request, the delivery can be made in two pre-assembled sub-units.



# EMPUR® Flat transfer stations

## 5.7 Special solutions

### Customised solutions made to measure

We are also happy to develop customised special solutions for heating and cooling on request.

Here you will find a small excerpt of the possibilities.

#### Geniax

- Control of the external Geniax complete distributor with pumps
- Central server with remote access option
- Interface to the building control centre via KNX, BACnet or Universal Gateway



#### Heating/cooling changeover

- Heat exchanger cooling
- Three-way switching valves
- String regulating and zone valve



#### Control

- Complete control for flat transfer station
- Weather-compensated control with outdoor temperature sensor
- Dew point monitoring
- Control of circulation pump



Planning and design by **EMPLAN®**, installation and assembly by **EMSOLUTION®**

### Commissioning of flat transfer stations

#### with brass manifold version 2.0 and stainless steel manifold series 03

**Service description:**

- Checking the installation and connections
- Trial operation
- Preparation of the commissioning report
- Arrival and departure included

A prerequisite for commissioning is a system installation in accordance with our planning and installation specifications. The system must be in an operational state.

For commissioning the flat transfer station, the system must be flushed, filled and electrically wired ready. If the station is not ready for commissioning when our service technician arrives, the service technician decides on the termination of the commissioning or an appropriate, chargeable waiting period or, after consultation with the client, will provide the missing services himself.

Item description	Item No.	PG
Commissioning of 1-3 stations	EM999026	05
Commissioning of 4-9 stations		05
Commissioning from 10 stations		05

#### with Geniix complete manifold

The commissioning of Geniix systems is charged separately according to expenditure.

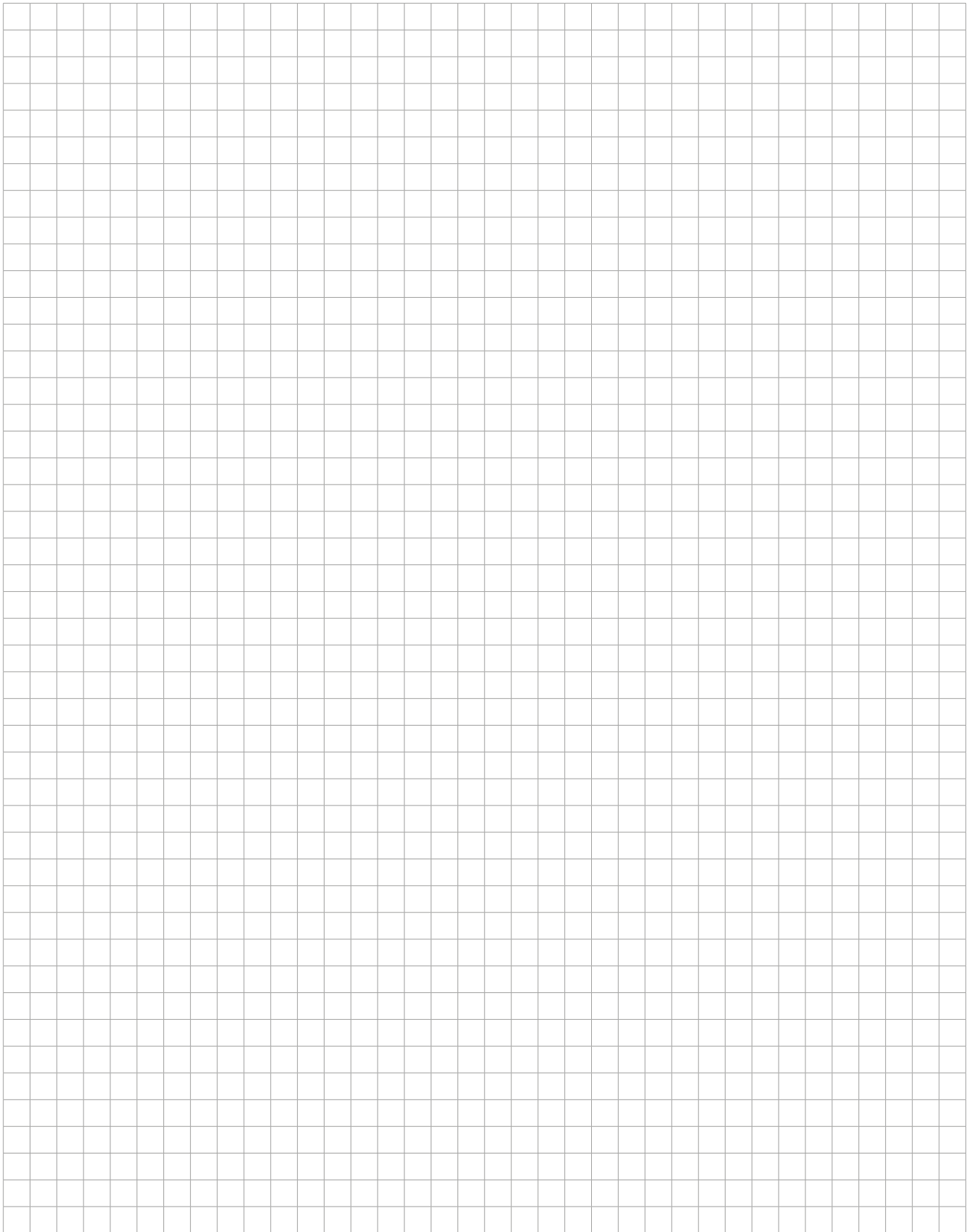
Item description	Item No.	PG
Commissioning Geniix Server	572060	05

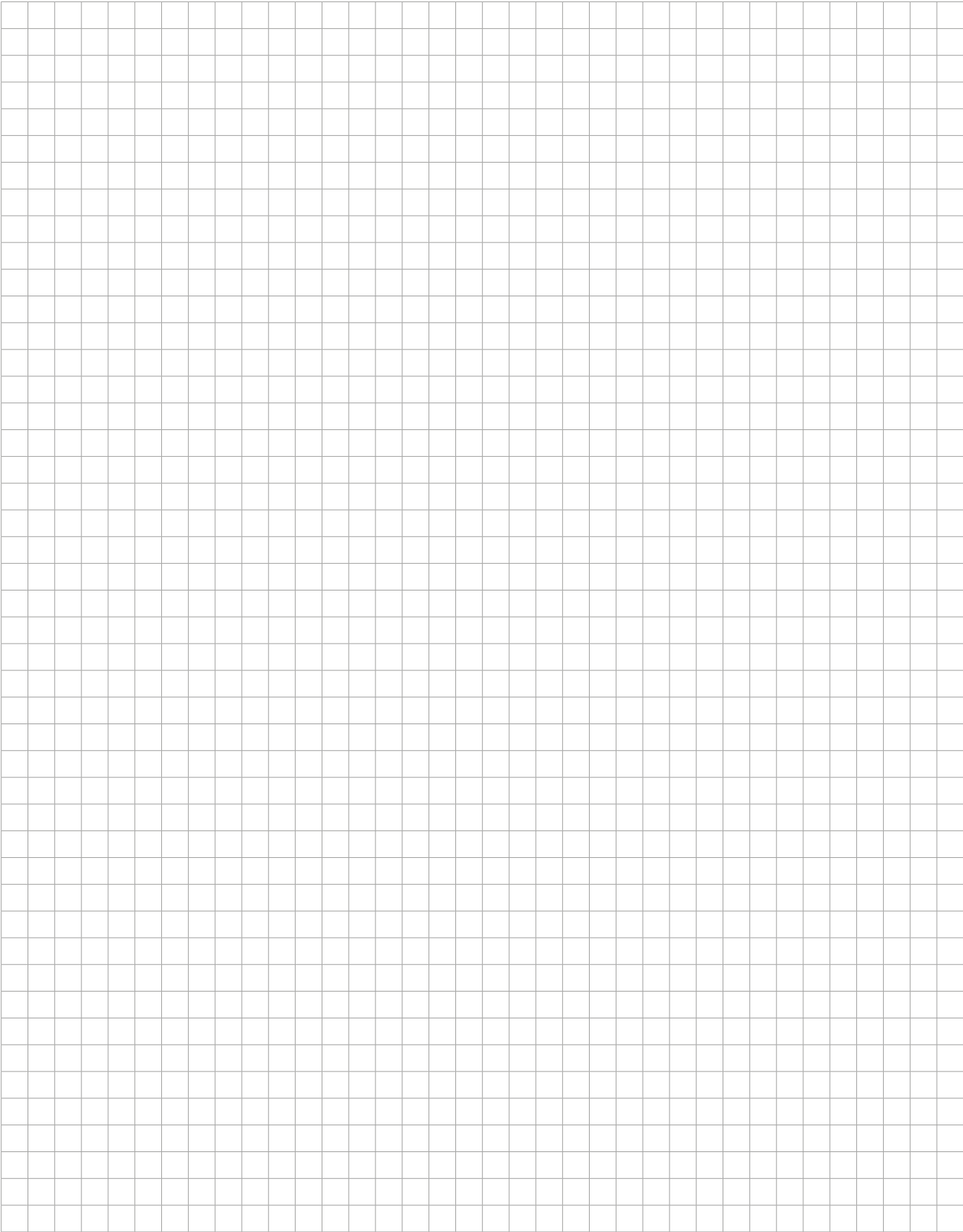
**NOTE**

For commissioning orders, please inform us at least 10 working days before your desired date. Please note that services (PG 05) are generally not eligible for discounts and cash discounts!

# EMPUR® Flat transfer stations

## 6. Notes

A large grid of graph paper, consisting of 20 columns and 30 rows of small squares, intended for taking notes.





## Your specialists for surface heating and cooling systems

Expertise, reliability and commitment are **EMPUR®**'s strengths. In addition to the production and sale of high-quality surface heating and cooling systems and components, the company's range of services also includes comprehensive services relating to the planning and installation of our complete systems.

**EMPLAN®**'s specialist engineers and planning consultants are available to help you with their expertise in demanding property planning in almost all TGA areas such as heating, air conditioning, ventilation, plumbing and electrical.

We have bundled our many years of experience in the installation of surface heating and cooling systems into our **EMSOLUTION®** and support tradesmen to complete their construction projects on time.

**EMPUR®**, **EMPLAN®** and **EMSOLUTION®** together form the **EMGRUPPE®**. Thus, the three core areas of expertise – production, planning and installation – come from a single source.

TBE . PLANNING . CONCEPTS

## EMPLAN®

- Planning surface heating and cooling systems for new builds, modernisation projects and customised solutions
- Project planning for heating, ventilation and air conditioning applications, electrical engineering and swimming pool technology
- Creation of performance specifications
- Planning and designing Geniex projects
- Energy planning and assessment of residential and non-residential buildings (GEG certificates)
- Construction supervision for technical building systems

[www.em-plan.net](http://www.em-plan.net)

TBE . PRODUCTION . SALES

## EMPUR®

- Plastic heating pipes, insulation and composite panels for surface heating and cooling systems for new builds and modernisation projects
- Manifold and control technology
- Geniex heat distribution systems
- Accessories and tools
- Customised solutions for industrial, sports and commercial buildings

[www.empur.com](http://www.empur.com)

TBE . ASSEMBLY . SERVICE

## EMSOLUTION®

- Installation of surface heating and cooling systems in new build and modernisation projects
- Installation of the CUT-THERM® milling system
- Commissioning of Geniex heat distribution systems and heat pump systems
- Service for technical building installations

[www.em-solution.de](http://www.em-solution.de)