2025-07-22

English (EN)

939004-003

0000000220-021

SW: 3.63.0

HW:

Handover module

Operating instructions

ETA Heiztechnik GmbH
Gewerbepark 1
4716 Hofkirchen an der Trattnach
+43 (0)7734 2288-0
www.eta.co.at
info@eta.co.at

Contents

1 General

1.1 General information

Copyright

Subject to technical changes

We reserve the right to make technical modifications without notice. Printing and typesetting errors or changes of any kind made in the interim are not cause for claims. Individual configurations depicted or described here are only available optionally. In the event of contradictions between individual documents regarding delivery scope, the information in our current price list applies.

Software Description

The software version described in this documentation corresponds to the version valid at the time of publication. The software version installed on your product may differ from that described in this documentation.

A software update to a higher version can be performed at any time with the appropriate authorization. The required files can be found at www.meinETA.at.

Explanation of symbols

Instructions and information

Layout of safety instructions

SIGNAL WORD!

Type and source of danger

Possible effects

- Measures for avoiding the danger

Types of safety instruction

CAUTION!

On non-compliance with this safety instruction, there is a risk of material damage.

WARNING!

On non-compliance with this safety instruction, there is a risk of physical injury.

DANGER!

On non-compliance with this safety instruction, there is a risk of major physical injury.

Explanation of pictograms

Switch the boiler on/off with the mains switch.

Perform a visual check of the components.

Clean the components with a soft cloth, for example.

Remove deposits with a vacuum cleaner or an ash vacuum.

Remove deposits with the poker.

Remove deposits with the cleaning brush.

Replace the wear parts (e.g., seals) with new items.

Lubricate the components. The lubricant to use is listed in the respective step.

Only mount or loosen the components (e.g. screws or nuts) by hand without tools.

Tighten the components (e.g., screws or nuts) with a tool.

Install the components with some force (e.g., the retaining tube or the Lambda probe).

Handle the components carefully, since they break very easily.

Measure or check dimensions or clearances on the components.

Mark the components so that the correct position can be determined, for example, when mounting.

Wear a protective mask to avoid damage to the airways.

Seal the components. The sealant to be used is listed in the respective step.

Insulate the components. The insulation material to be used is indicated in the respective step.

Use adhesive to affix, for example, seals.

Use spray adhesive to affix, for example, seals.

Only blow out the components with your mouth.


Affix a seal. The required cross-section and sealing material are stated in each step.


Tighten screws and nuts alternately and evenly.


Clean the components by rinsing them with water.

Lubricate the components or contact surfaces with copper paste.

Lubricate the components or contact surfaces with a dry lubricant, e.g. PTFE.

Lubricate the components or contact surfaces with multipurpose grease.


Disconnect the component's electrical plug connection.


Connect the electrical plug connection to the component.


Perform a tactile check on the components.


Do not use compressed air to clean the components.


Do not use cleaning brushes to clean the components.


Do not use an ash vacuum or vacuum cleaner.


Do not lubricate the components.


No water or moisture in this area.


No leaks in the components, e.g. screw connection or maintenance cover.


Do not bend the components.


Do not allow any components or small parts to fall into it.

1.2 Warranty, guarantee and liability

Requirements

We can only accept liability for the function of our products if they are correctly installed and operated. This is only possible if the conditions below are complied with.

Installation in a dry, frost-proof room

A dry, frost-proof room is required for the installation.

pH value between 8 and 9

The pH value of water used to fill the heating system must be between 8 and 9.

Frost protection for the secondary side

The maximum frost protection content must be adjusted to the local conditions and checked on an annual basis if frost protection is required, for example, on the secondary side for outdoor heating systems.

Permissible water hardness

In order to protect the heat exchanger from calcification, the water hardness of the heating water must be taken into account. Observe the indications outlined in ÖNORM H 5195-1, see 9 "Water hardness".

Expanding the control system

Only components provided by us may be used for expanding the control system, unless these are generally available standard devices, such as thermostats.

Regularly perform cleaning and maintenance

Cleaning and maintaining the product is essential. The required steps and intervals are either contained in this documentation or included as a separate document.

Proper installation

The installing contractor is liable for proper installation according to the corresponding installation instructions and the relevant rules and safety regulations. If you as customer have installed the heating system partly or entirely without relevant training and in particular without up-to-date practical experience, without having the installation checked by a trained and responsible expert, we exclude defects in our delivery and consequential damages resulting from this cause from our warranty, guarantee and liability.

Repairs

Repairs are only permitted using spare parts provided by us. The only exceptions are common standardised parts such as electrical fuses or fastening materials, as long as they possess the required features and do not restrict the functionality of the system.

Repair of defects

For repairs of defects carried out by the customer or by a third party, ETA shall only bear the costs or remain obligated by warranty if this work was approved in writing in advance by the customer service of ETA Heiztechnik GmbH.

2 Declaration of conformity

CE Declaration of Conformity

Manufacturer:	ETA Heiztechnik GmbH Gewerbepark 1, 4716 Hofkirchen an der Trattnach, Austria
Product:	Heat transfer module, heat transfer station
Types:	ETA heat transfer module
EU Directives:	
2014/30/EU	Legislation on electromagnetic compatibility
2014/35/EU	Legislation for electrical equipment: low voltage directive
2011/65/EU	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2 guideline)
Applied standards:	
EN 60335-1:2020	Household and similar electrical appliances - Safety - Part 1: General requirements
IEC 61000-6 1/2:2005	Electromagnetic compatibility (EMC): Generic standards - Immunity for residential, commercial and light-industrial environments (1) and industrial environments (2)
IEC 61000-6 3/4:2011 + A1:2011	Electromagnetic compatibility (EMC): Generic standards - Emission standard for residential, commercial and light-industrial environments (3) and industrial environments (4)

We hereby declare that the product in its standard design as stated here corresponds to the above provisions. The sole responsibility for issuing this declaration of conformity lies with the manufacturer. The technical documentation for this product is managed by ETA Heiztechnik GmbH. Signed for and on behalf of:

Hofkirchen, 12/01/2021

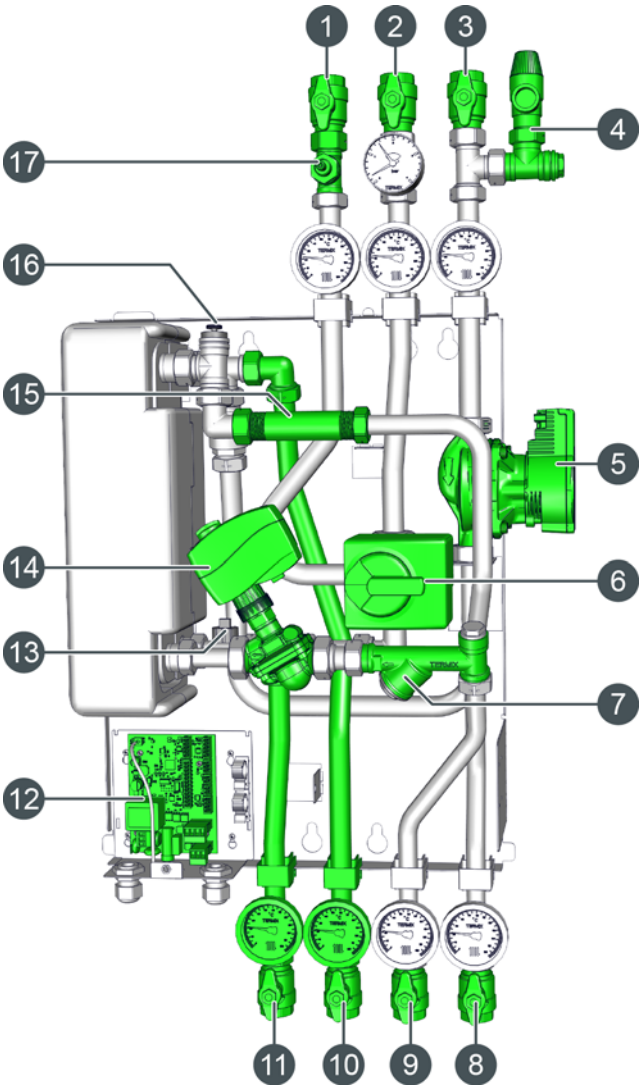
Ing. Johann Eibelhuber
Quality assurance

DI Ferdinand Tischler
Management

3 Description

3.1 Technical data

Connections and components



1 Flow for hot water (or buffer tank)
2 Flow for (first) heating circuit
3 Return for (first) heating circuit and hot water (or buffer tank)
4 Safety valve with connection for membrane expansion vessel
5 High-efficiency pump of secondary side
6 Changeover valve between (first) heating circuit and hot water
7 Strainer for heat producer (primary side)
8 Return for heat producer
9 Flow for heat producer
10 Optional: return for second heating circuit
11 Optional: flow for second heating circuit
12 Circuit board [EM-FC]
13 Flow temperature sensor for heat consumer (secondary side)
14 primary valve with pressure-independent volume flow limiter
15 Adapter for optional heat meter
16 Bleed screw
17 Branch reducing valve for the hot water tank or buffer tank (depending on the version)

If the optional second heating circuit is installed, the consumer with the higher flow temperature must be connected to the first heating circuit . If there are two equivalent heating circuits (e.g. two radiator heating circuits or two underfloor heating circuits), both must be connected to the additional heating circuit. Consider the maximum possible output of the transfer module. The safety valve and the membrane expansion vessel must be installed on the second heating circuit. Otherwise, the safety devices are ineffective when the second heating circuit is operated alone.

Technical data

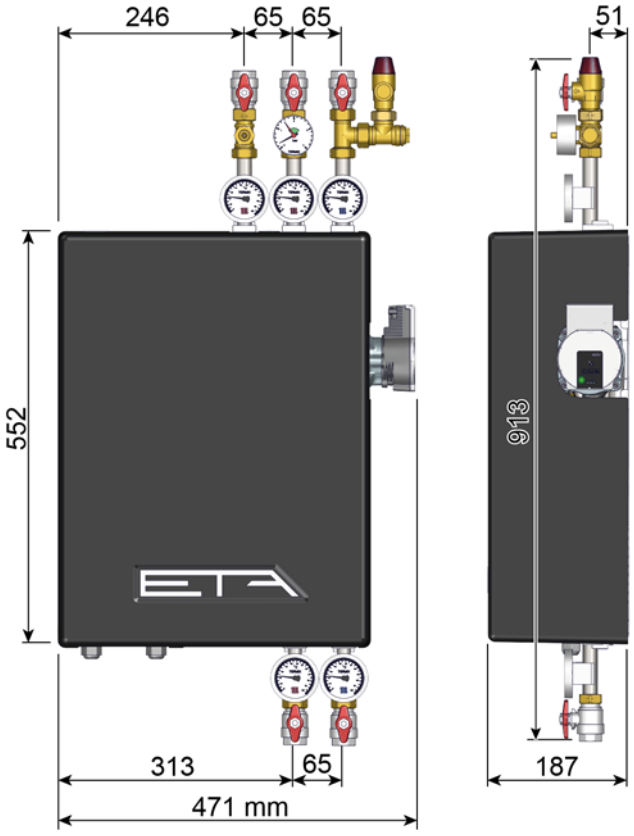
Connections	
	DN20 (3/4") internal thread

Primary side	
	Primary valve with pressure-independent volume flow limitation through differential pressure control (kvs = 2.5). Primary-side maximum pressure: 10 bar Maximum primary temperature: 100 °C
Pressure loss on the primary side	
	Underfloor heating: 13 kW; 75/33 °C; 0.27 m³/h = 0.90 mWs Radiator heating: 25 kW; 75/50 °C; 0.87 m³/h = 2.30 mWs

Secondary side	
	High-efficiency pump, model "WILO Para 15-130/6-43/SCU-9", for differential or constant pressure operation with bleed function. Maximum secondary temperature: 95 °C
Residual pump head on the secondary side	
	Underfloor heating: 13 kW; 35/28 °C; 1.62 m³/h = 1.70 mWs Radiator heating: 25 kW; 65/45 °C; 1.09 m³/h = 4.30 mWs

In the case of external local heating networks and external district heating networks, clarify special requirements and the maximum possible flow temperatures with the operator in advance.

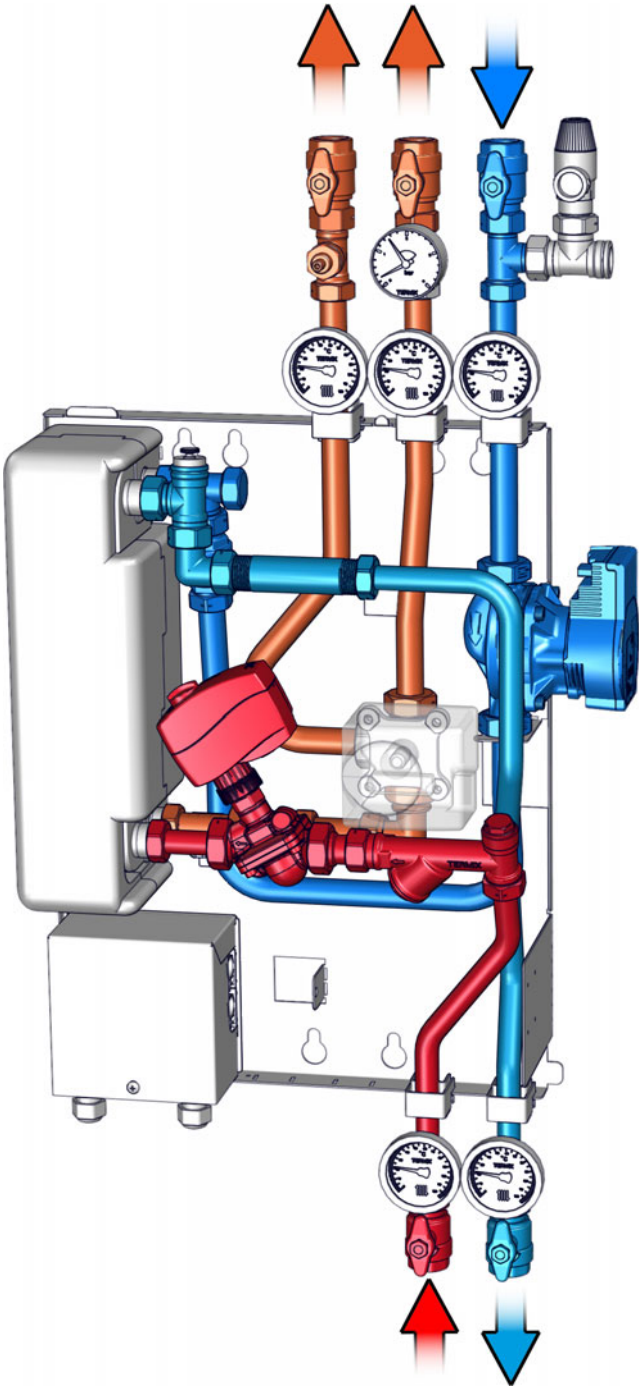
Dimensions



3.2 Function

Mode of operation

The heat supplied by the heat producer reaches the primary valve on the underside of the module. This valve is preset and thus can limit the maximum flow rate. The flow rate is adjusted during commissioning.



The secondary side, i.e. the consumer, receives the heat via the heat exchanger. The secondary side high-efficiency pump feeds the heat to the changeover valve, where it then winds up in the heating circuit or hot water tank, for example.

The consumer is controlled via the ETAtouch control panel, which is mounted in any position and communicates with the module via CAN-bus.

All components have already been connected at the factory. Power is supplied via a 230 V Schuko socket. The customer must clamp on the outside temperature sensor as well as the hot water temperature sensor and connect the CAN bus to the ETAtouch control panel.

An optional heat meter can be retrofitted on the primary side as well as a second heating circuit.

Limitation of the return temperature is also possible with the optional heat meter. This does not replace hydraulic calibration, however.
Also possible is a restriction of the flow rate of the primary circuit in the heat exchanger through the primary valve. This enables temperature management of the primary side.

3.3 Secondary side characteristic curve

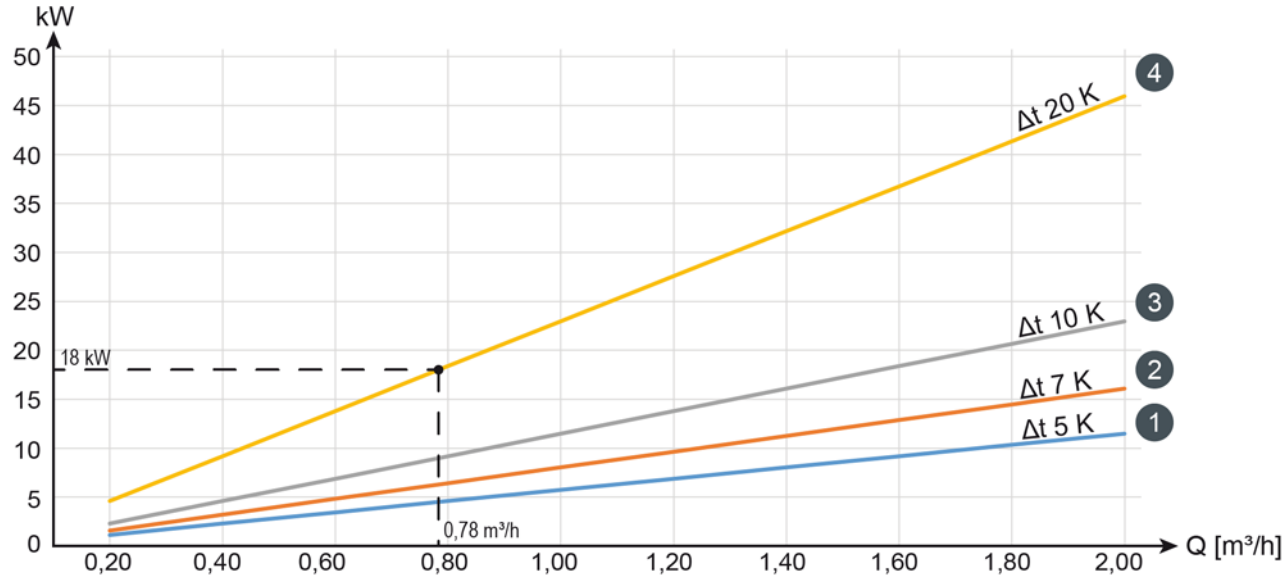
Secondary side characteristic curves

Below is a description of the determination of volume flows, pressure loss, free residual pump head and restriction of the primary valve using a simple example. A precise calculation can also be made, see chapter 3.7 "Example calculation".

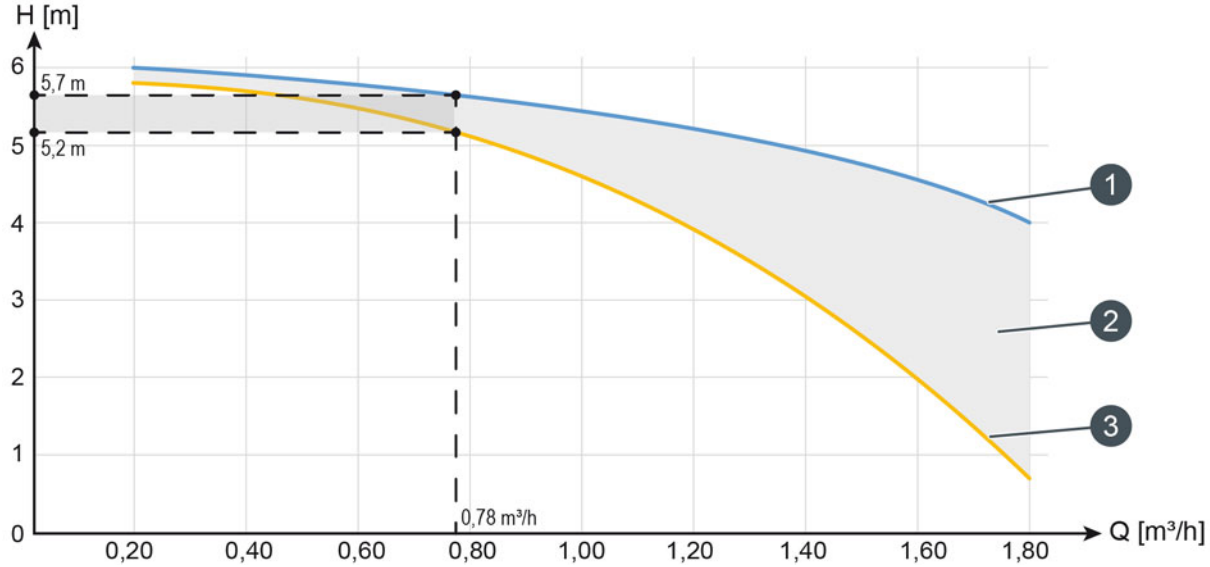
Example:
A radiator heating system with 18 kW and 20 K spread (60-40°C) is connected to the secondary side. The performance chart shows a secondary side flow of approx. 0.78 m³/h.
=> 0.78 m³/h a free residual pump head of 5.2 m occurs on the secondary side with a pressure loss of approx 0.5 m.

Primary spread Flow - return	Secondary spread Flow - return
1 75 °C - 35 °C = 40 K	35 °C - 30 °C = 5 K
2 75 °C - 33 °C = 42 K	35 °C - 28 °C = 7 K
3 75 °C - 30 °C = 45 K	35 °C - 25 °C = 10 K
4 75 °C - 45 °C = 30 K	60 °C - 40 °C = 20 K

Performance chart



Free residual pump head



1 Pump head
2 Module pressure loss
3 Free residual pump head

3.4 Primary side characteristic curve

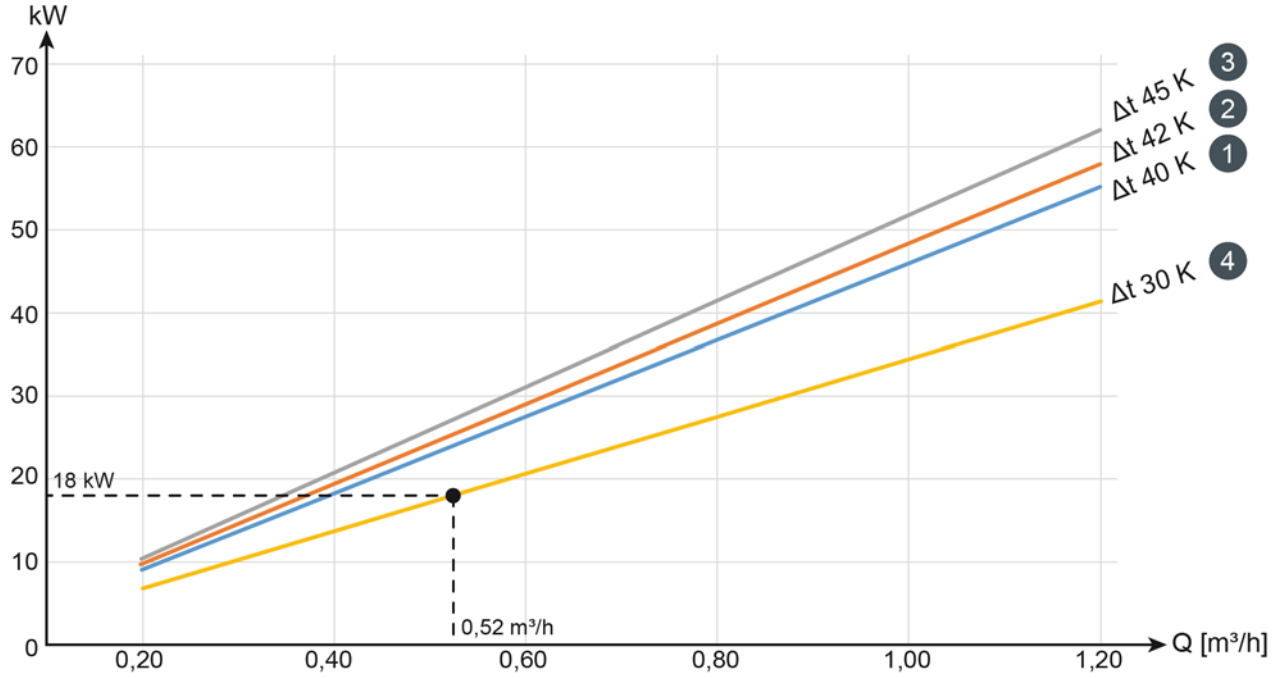
Primary side characteristic curves

Using the table, a primary side spread of 30 K results for the secondary side radiator heating (18 kW, 20 K spread). At 18 kW power and 30 K spread a primary side flow rate of approx. 0.52 m³/h results from the performance chart. => 0.52 m³/h results in a primary side pressure loss of approx. 0.74 m.

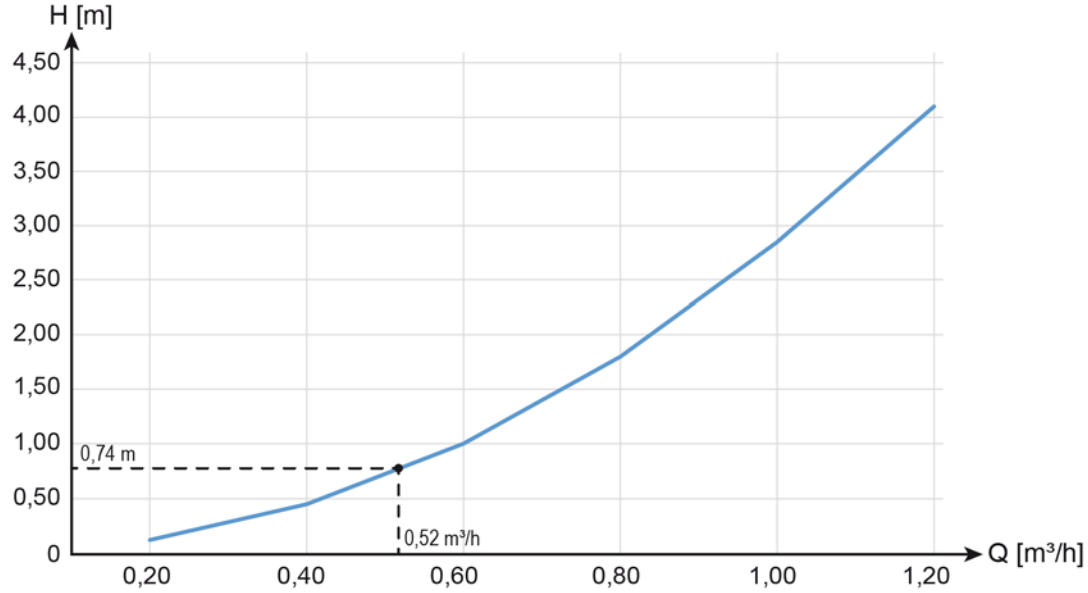
The temperature difference of the heat exchanger of 5 K is already taken into consideration in the table.

Primary spread Flow - return	Secondary spread Flow - return
1 75 °C - 35 °C = 40 K	35 °C - 30 °C = 5 K
2 75 °C - 33 °C = 42 K	35 °C - 28 °C = 7 K
3 75 °C - 30 °C = 45 K	35 °C - 25 °C = 10 K
4 75 °C - 45 °C = 30 K	60 °C - 40 °C = 20 K

Performance chart



Pressure loss (primary side)



3.5 Determination of volume flow

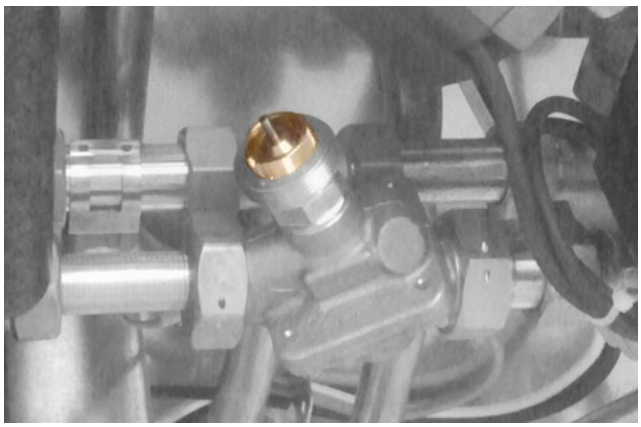


Fig. 3-1: Restrictor

Setting flow rate at the primary valve

1. Remove the actuator from the primary valve.
2. Close the restrictor (knurled screw with recess for positioning) completely by turning clockwise.
3. Adjust the primary side flow rate by rotating the restrictor counterclockwise by the number of required rotations ("U"). The rotations are depicted in the adjusting diagram.

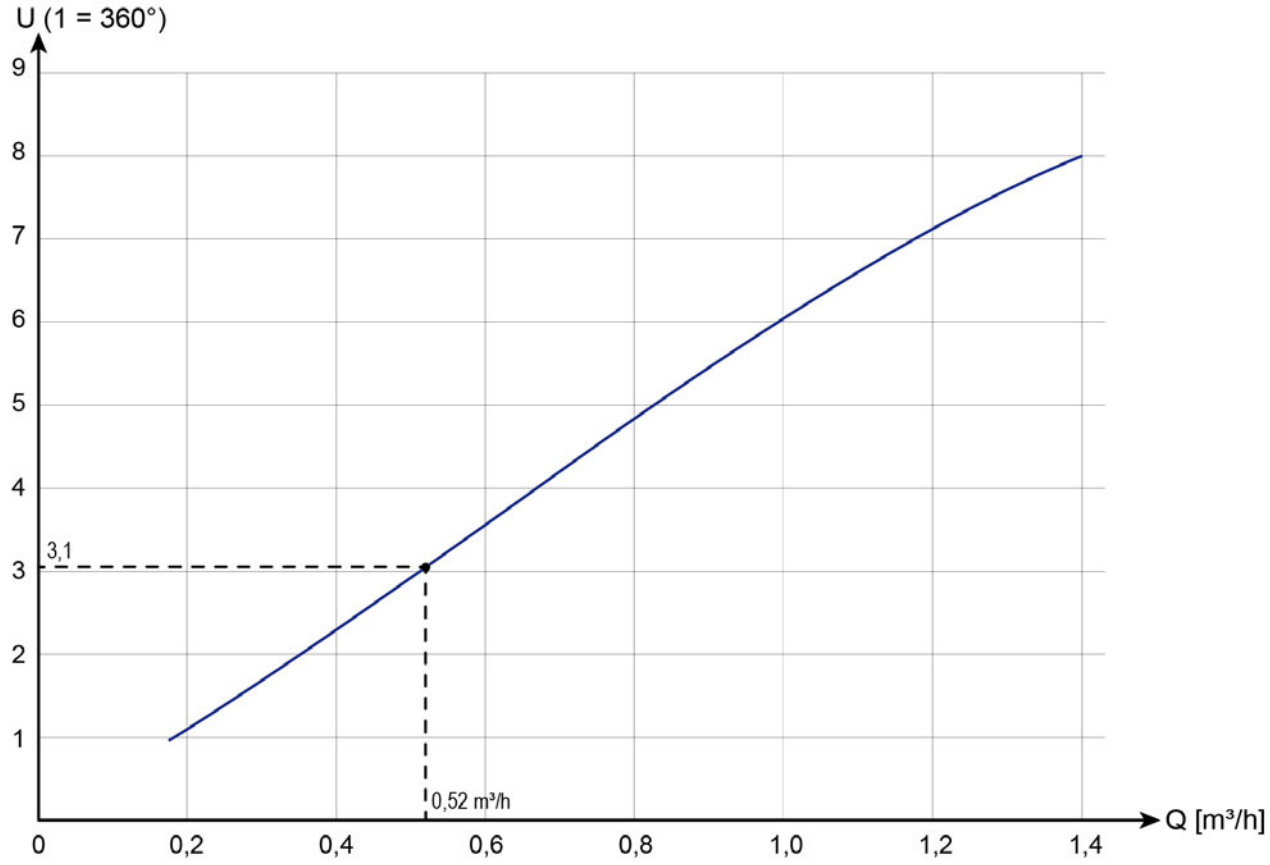


Fig. 3-2: Adjusting diagram (source: Danfoss)

The depicted flow rate applies to a differential pressure over the controller from 0.5 bar to 4 bar.

In the example, a primary side flow rate of 0.52 m³/h is required. The required rotations for the restrictor are shown in the adjusting diagram.
=> 0.52 m³/h equals 3.1 rotations from the completely closed to completely open position.

3.6 Self-adjustment of the actuator

Carrying out a self-adjustment of the actuator

After changing the restrictor of the primary valve, the stroke of the actuator must also be adjusted. This takes place automatically as soon as the position of the DIP switch [1] in the actuator is changed. To do this, carry out the following steps.

1. Turn off the power supply of the heat transfer module at the mains and secure it against being turned back on.
2. Remove the actuator from the primary valve and the upper half of the housing.

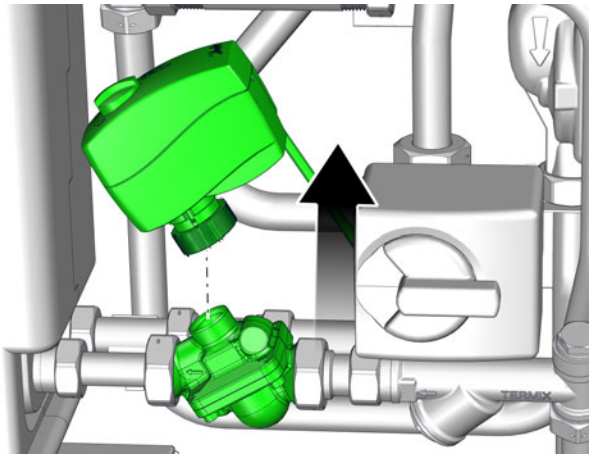


Fig. 3-3: Actuator

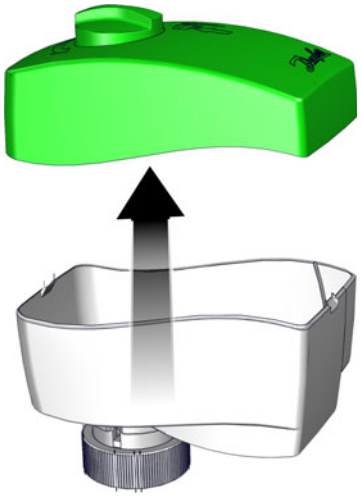


Fig. 3-4: Housing

3. Change the current position of the DIP switch [1] (=reset of the self-adjustment of the actuator).

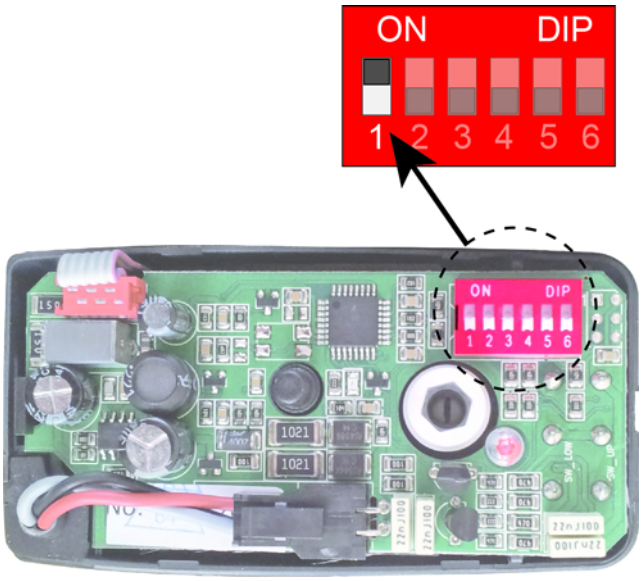


Fig. 3-5: DIP switch

The original position of this DIP switch is not important, the actuator only reacts to the change.

4. Refit the upper half of the housing and mount the actuator on the primary valve. Then restore the power supply to the module.

⇨ *The self-adjustment starts after the power supply has been reconnected. The LED display on the actuator flashes until the self-adjustment is completed. This lasts a few minutes depending on the stroke. After which the maximum stroke is saved. It will remain stored even after a power failure. Only if the restrictor is changed is a renewed self-adjustment required.*

3.7 Example calculation

Example with 2 heating circuits

A building with two heating circuits should be supplied by way of a heat transfer module. Total heat output is 18 kW. Radiators (60°- 40 °C) which provide 70% of the total heat output are installed. The remaining 30% is designed as underfloor heating (35-28 °C).

2 heating circuits can be connected to the heat transfer module. The heating circuit that requires the highest temperature (e.g. radiators) must be connected to the heat transfer module. The heating circuit with the lower temperature (e.g. underfloor heating) must be connected to the optional second heating circuit.

1. Determining volume flow and residual pump head on the secondary side

✓ Only the radiators are relevant to the interpretation of the secondary side, since it requires the highest temperature.

✓ The output of the radiators accounts for 70% of the total output. Only this output, therefore, is used for the interpretation.

1. For the interpretation of the secondary side, the output of the radiators must first be calculated. In this example, this is 70% of the total heat output.

   => 18 kW x 0.70 = **12.6 kW**

2. A secondary flow of approx. 0.56m³/h at 12.6 kW and a 20 K spread (= 60°- 40°) results from the performance chart on the secondary side.

3. A free residual pump head of 5.6m at 0.56 m³/h is determined from the "Free residual pump head" diagram.

⇨ *The required data are determined on the secondary side. The data for the primary side are determined subsequently.*

2. Determining the average return temperature

✓ The average return temperature of the heating circuit is needed in order to determine the spread required on the primary side for its interpretation.

1. 70% of the heating output is provided by the radiators. with 60° flow and 40° return.
   => 40 °C x 0.7 = 28 °C

   30% of the heating output is provided by the underfloor heating designed for 35-28°C.
   => 28 °C x 0.3 = 8.4 °C

2. Therefore, the average return temperature on the secondary side is **36.4 °C** (= 28° + 8.4°).

   ⇨*The grade of the heat exchanger must be added to this average (at 5 K in this case) in order to calculate the average return temperature on the primary side.*
   *=> This results in an average return temperature of **41.4 °C** (= 36.4° + 5 K) on the primary side.*

Determining flow rate and pressure loss on the primary side

1. The performance chart for the primary side shows that the average return temperature of 41.4 °C lies between the 35 °C and 45 °C characteristic curves. See chapter 3.4 "Primary side characteristic curve", graphic "Performance chart".

2. Since a characteristic curve with the exact spread of 75° flow - 41.4 °C return does not exist, the flow is calculated using the following formula:

$$Q\,[m^3/h] = \frac{P\,[kW]}{c\,\left[\frac{Wh}{kg\,K}\right] \times \Delta T\,[K]}$$

Q	Flow
P	Output
c	specific heating capacity. For 1.16 [Wh/kgK] of water, this corresponds to
ΔT	spread between flow and return

The values from the example result in a primary-side flow rate of **0.46 m³/h**.

$$Q = \frac{18}{1{,}16 \times (75 - 41{,}4)}$$

3. At 0.46 m³/h, a pressure loss of approx. **0.65 m** is determined from the "Pressure loss" (primary side) diagram.

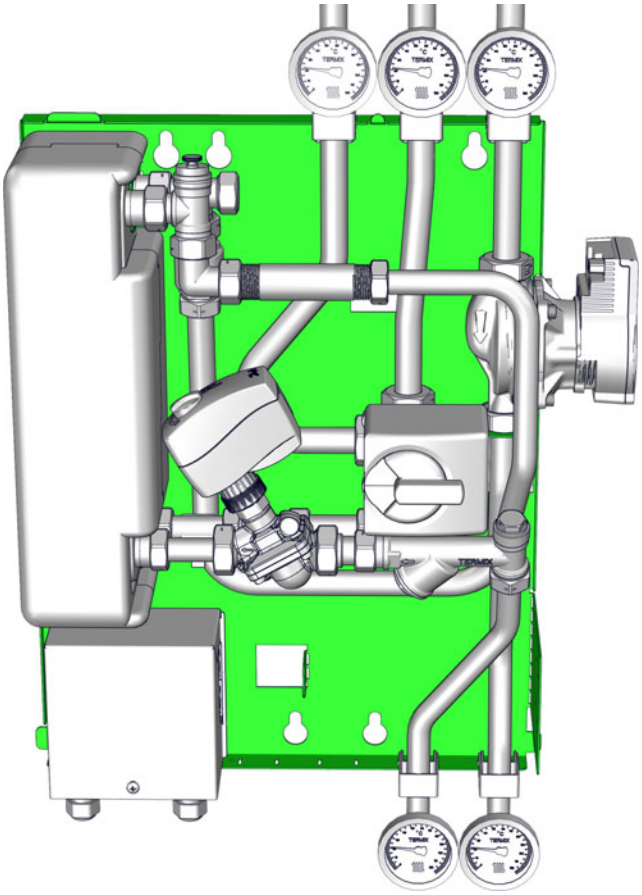
4. It is evident from the "adjusting diagram" that at 0.46 m³/h the restrictor must be opened by **2.5 rotations**.

4 Installation

Mounting the module on the wall

The length of the CAN-Bus line supplied for connection to the ETAtouch control panel is 20 m.

Mark the position of both mounting screws at the top and bottom on the wall.



Mount the fixing screws in the wall, hang the module and fix it in place.

Mounting the screw joints

Mount the screw joints for the secondary side. It differs depending on whether a buffer tank or a hot water tank and heating circuit is connected. See the following graphics. The continuous reducing valve must always be installed in the flow line and the safety valve in the return line.

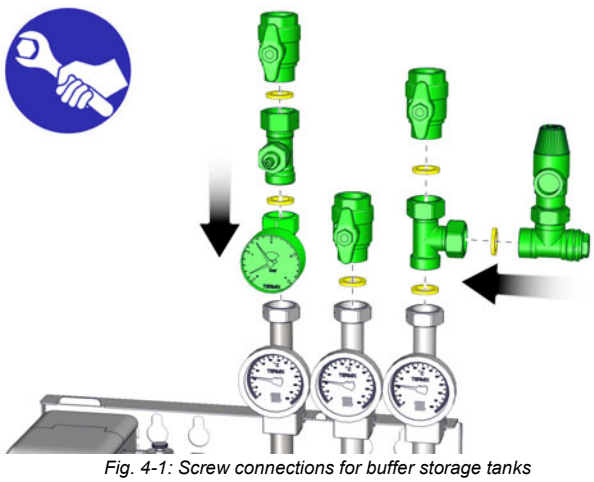


Fig. 4-1: Screw connections for buffer storage tanks

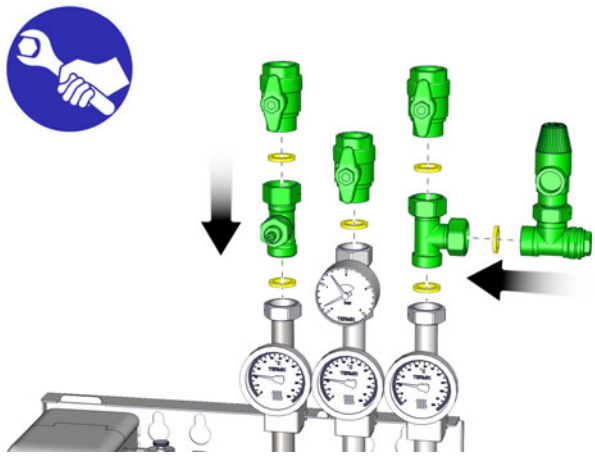


Fig. 4-2: Screw connections for heating circuit and hot water tank

Mount both ball valves on the primary side with the included flat seals.

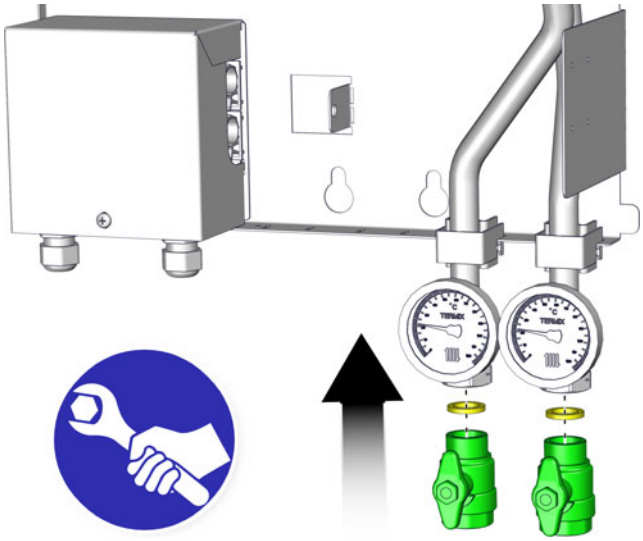


Fig. 4-3: Screw joints for the primary side

Installing the piping

Connect the piping to the heat generator on the primary side and the piping for the consumers (buffer tank, hot water tank or heating circuit) on the secondary side.

Installing outlet pipes for the safety valve

A safety valve with 3 bar opening pressure has already been installed for the secondary circuit at the factory. A membrane expansion vessel can be connected to this T-piece.

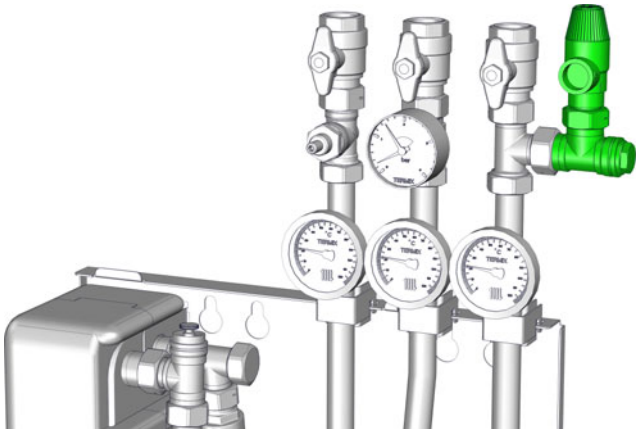


Fig. 4-4: Position of the safety valve for one heating circuit

If a buffer storage is connected, the membrane expansion vessel should not be connected to the safety valve. Instead, install a separate connection next to the buffer.

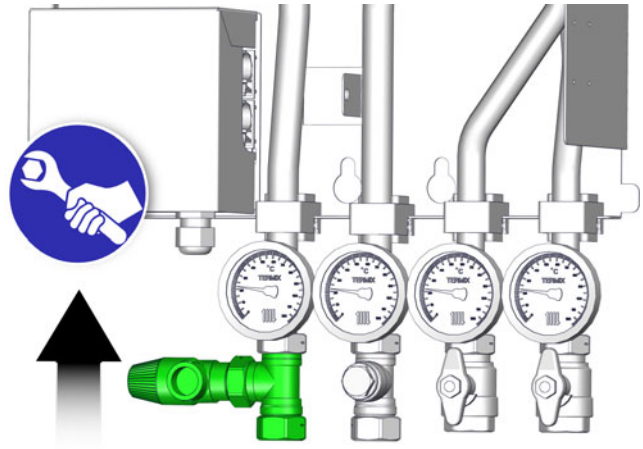


Fig. 4-5: Position of the safety valve for two heating circuits

If the optional second heating circuit is installed, the safety valve and the membrane expansion vessel must be installed on the second heating circuit . Otherwise, the safety devices are ineffective when the second heating circuit is operated alone.

DANGER!

Safety valve outlet

The safety valve outlet must be directed to the ground in a pipe so nobody is endangered when hot water or steam is drained.

- The safety valve outlet must be fed to the sewage system (e.g. duct) via a clearly visible, open route (siphon funnel). This will ensure that malfunctions, especially a failure of the safety valve to close, can be detected. If no connection is available to the sewage system, the outlet must be directed to the ground in a pipe.

For frost protection in the secondary circuit, guide the safety valve outlet into a canister

DANGER!

Safety valve outlet

The safety valve outlet must be directed to a canister with sufficient dimensions in a pipe so nobody is endangered by hot water or steam.

- The safety valve outlet must be directed into the canister via a clearly visible, open route (siphon funnel) so that malfunctions, especially a failure of the safety valve to close, can be detected. In the same way, the frost protection is collected when opening the safety valve and can be filled again.

Establishing a CAN-bus connection to the control panel

Establish the bus connection between the module and the control panel with the supplied CAN bus line. Also see 6.2 "CAN bus installation" for more information.

Contact thermostats are required for underfloor heating and wall heating

For safety reasons, contact thermostats must be installed for the operation of underfloor and wall heating. In the event of a malfunction, they switch off the affected heating circuit to protect it from excessively high flow temperatures.

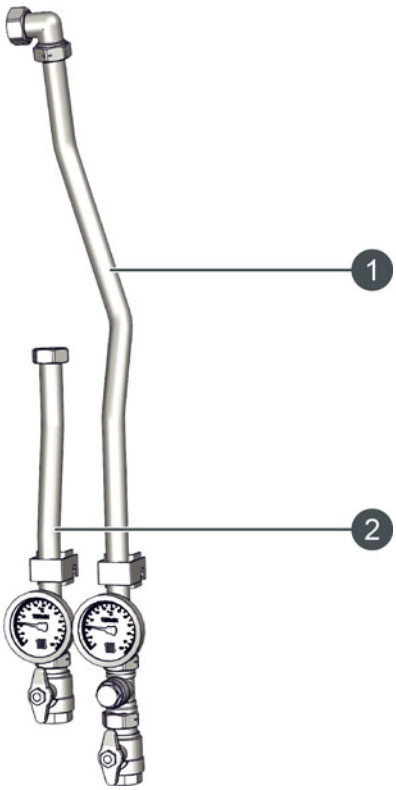
They are available separately and pre-wired.

Fig. 4-6: Contact thermostat

4.1 Installing the second heating circuit

Optional secondary heating circuit

If the optional second heating circuit is installed, the consumer with the higher flow temperature must be connected to the first heating circuit . If there are two equivalent heating circuits (e.g. two radiator heating circuits or two underfloor heating circuits), both must be connected to the additional heating circuit. Consider the maximum possible output of the transfer module. The safety valve and the membrane expansion vessel must be installed on the second heating circuit. Otherwise, the safety devices are ineffective when the second heating circuit is operated alone.



1 Return for second heating circuit
2 Flow for second heating circuit

Mounting piping for second heating circuit

Remove both blind caps on the secondary side of the heat exchanger.

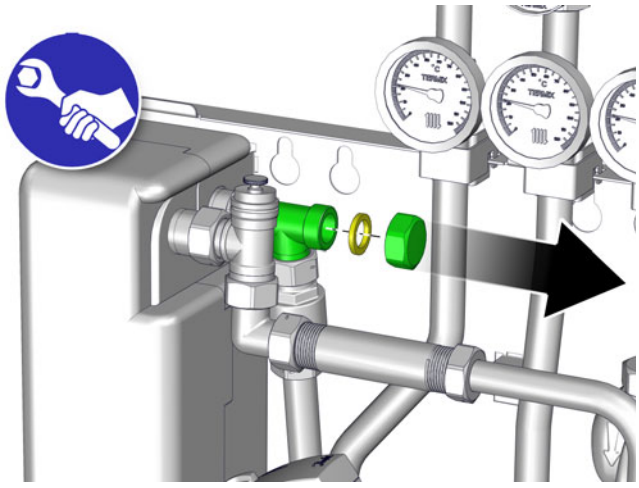


Fig. 4-7: Blind cap

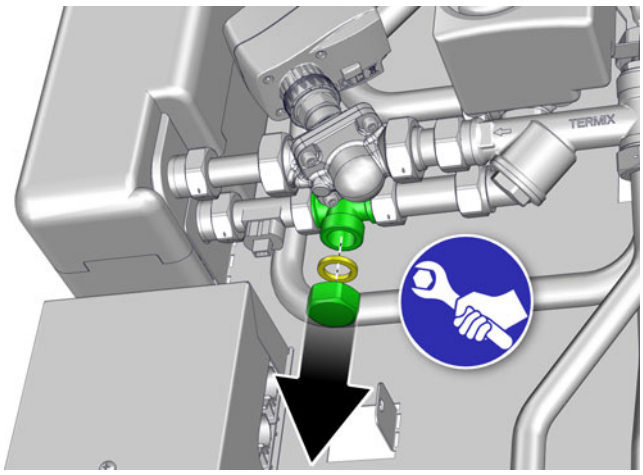


Fig. 4-8: Blind cap

Fit the T-piece supplied with the optional piping for the second heating circuit to the pipeline.

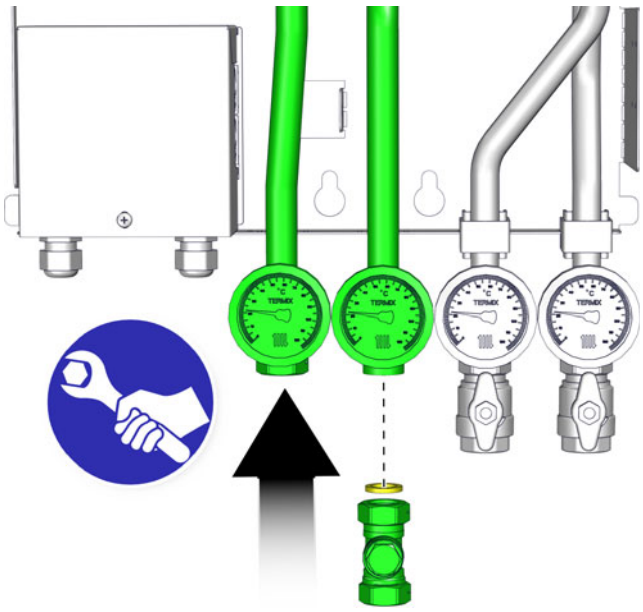


Fig. 4-9: T-piece

Install the piping with the supplied flat seals.

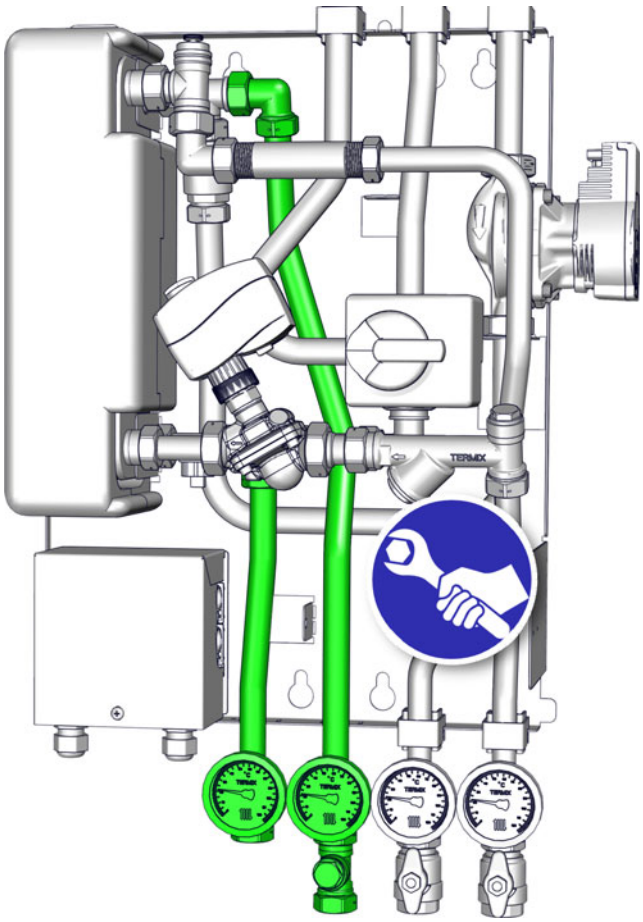


Fig. 4-10: Piping

To attach the piping, push the bracket into the recess on the housing.

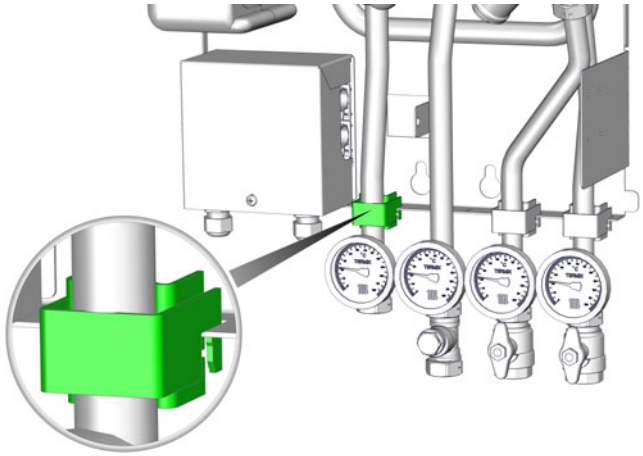


Fig. 4-11: Bracket

Detach the T-piece and the safety valve from the first heating circuit.

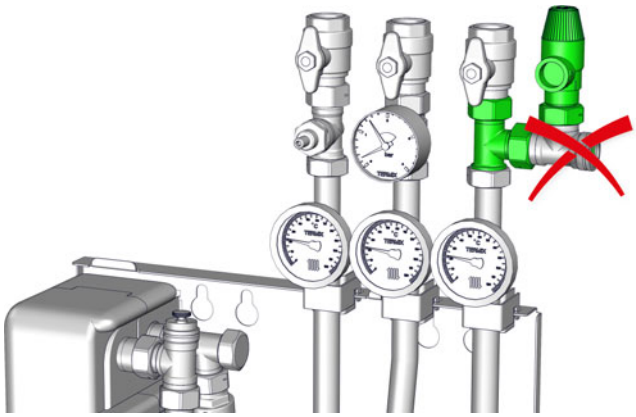


Fig. 4-12: T-piece with safety valve in the first heating circuit

Mount the T-piece with safety valve in the flow of the second heating circuit.

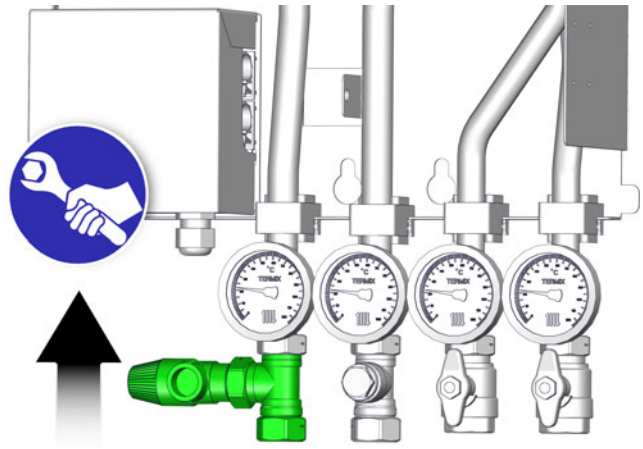


Fig. 4-13: T-piece with safety valve in the second heating circuit

The safety valve and the membrane expansion vessel must be installed on the second heating circuit . Otherwise, the safety devices are ineffective when the second heating circuit is operated alone.

Mount the ball valves with the enclosed flat seals on the connections.

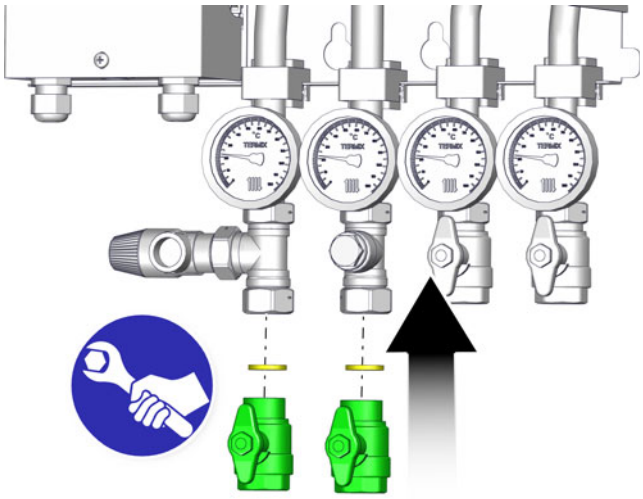


Fig. 4-14: Ball valves

Then connect the piping to the second heat consumer on the ball valves. Mount the expansion tank in the return of the second heating circuit.

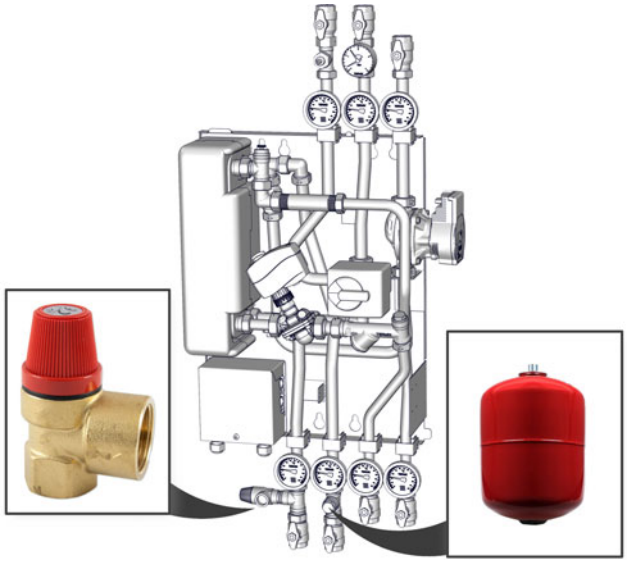


Fig. 4-15: Safety valve and expansion tank in the second heating circuit

Contact thermostats are required for underfloor heating and wall heating

For safety reasons, contact thermostats must be installed for the operation of underfloor and wall heating. In the event of a malfunction, they switch off the affected heating circuit to protect it from excessively high flow temperatures.

They are available separately and pre-wired.

Fig. 4-16: Contact thermostat

4.2 Heat flow meter

Installing the heat meter

Remove the adapter in the primary circuit, and in its place install the ultrasound piece of the heat meter into the piping.

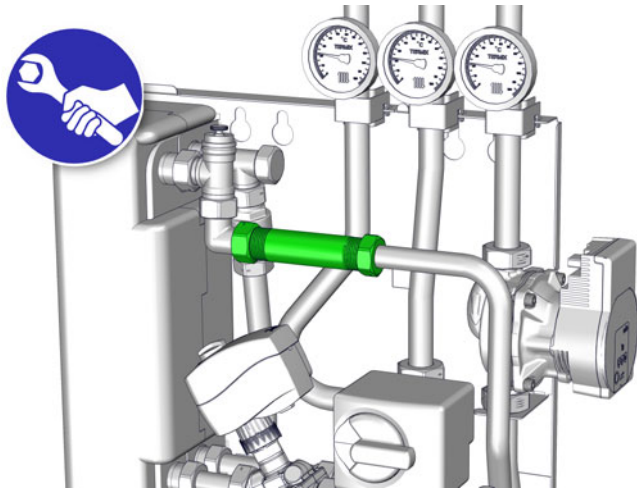


Fig. 4-17: Adapter

Remove the sealing plug and install the enclosed reducer. Slide the flow temperature sensor for the primary side into this reduction.

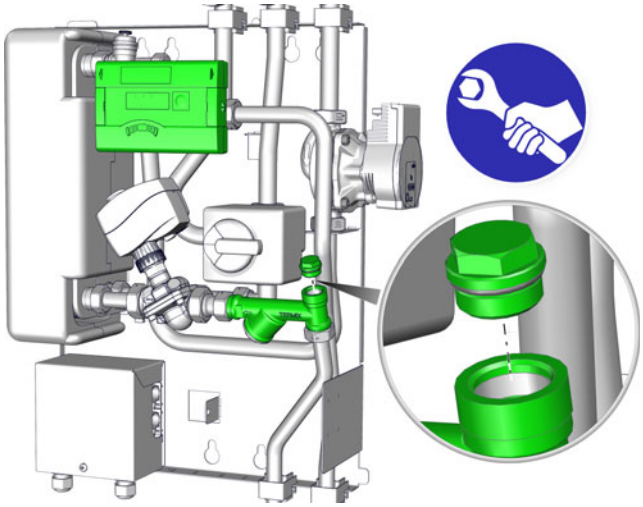


Fig. 4-18: Plug screw

So that it is always in view, the heat meter display can also be fixed to the side strap (bend it 90°) on the module.

5 Configuration

General explanation provided in the additional document

A general description for the configuration with the assistant is provided in the document "Control extension - configuration". The configuration of the individual examples is described subsequently.

Required software version

Different minimum software versions are required for the configuration. Therefore, first check the current software version of your heating system. The individual possibilities are listed below.

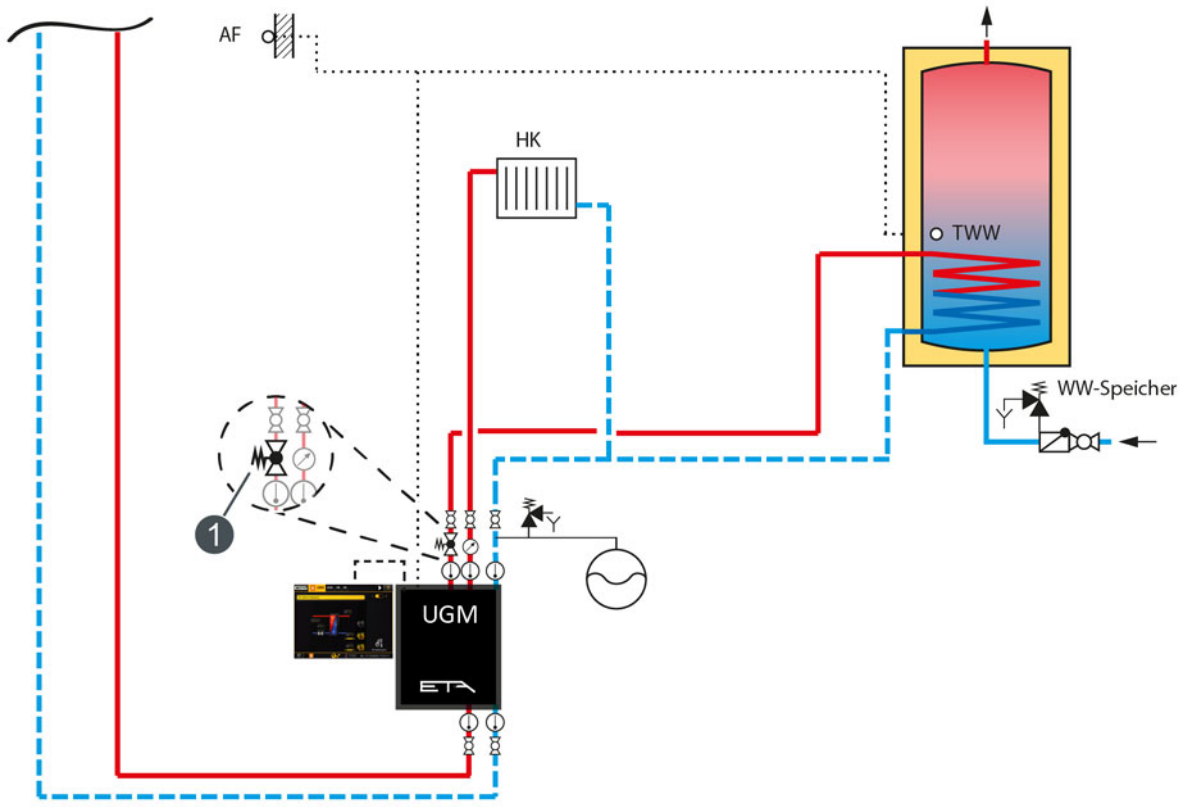
- up to software version X.35.X
  → Adjustments required, see chapter 11 "Operation with software version up to X.35.X".
- from X.36.0 to X.55.X
  → Update to X.56.3 (or above) required
- from X.56.3
  → no update necessary

Factory configuration

The function blocks for the heat transfer module [HTM], heating circuit [HC], hot water tank [HW] and system [Sys] (for the outside temperature sensor) are installed at the factory.

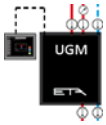
5.1 Example 1

Hydraulic schematic



1 This throttle valve is included in the scope of delivery. The hot water tank must be connected to this connection in order to be able to throttle the flow due to the high pump output.

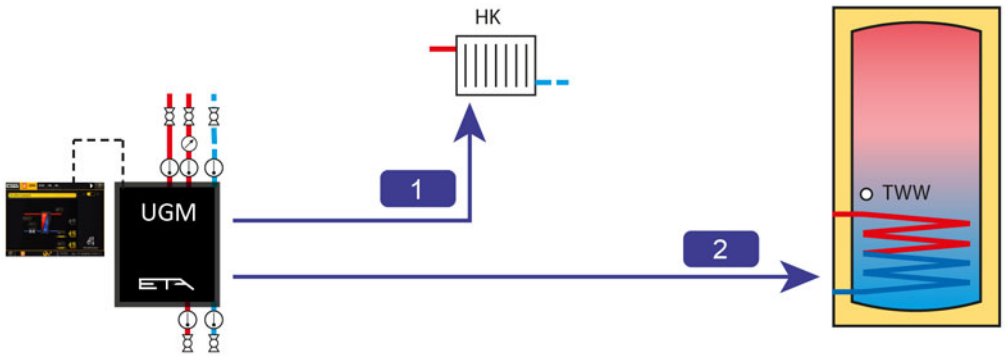
Circuit board [EM-FC 4]

Function blocks			Description
	Heat Transfer Module		Handover module
	Hydraulic environment		
	Hydraulic variants	1 direct circuit + hot water change over valve	
	Primary valve	Analogue control (0-10V)	
	Secondary pump	Standard pump	
	Options		
	☐ Module is a consumer within an ETA system		Only select this option if the heat transfer module is a consumer in an ETA heating system. This option may not be selected for stand-alone operation (e.g., as district heating station).
	HWT		Hot water tank
	Hydraulic environment		
	Charging pump	none	
	Circulation pump	No	

Circuit board [EM-FC 4]

Function blocks			Description
	Heating circuit		Heating circuit
	Hydraulic environment		
	HC type	Radiator heating	
	Heating circuit pump	none	
	Heating circuit mixing valve	no	
	Settings		
	Room sensor	None	
	Sys		System
	Settings		
	Outside temperature sensor	via circuit board input	
	Display external fault message on the screen	No	
	Output all fault messages	No	

Connections

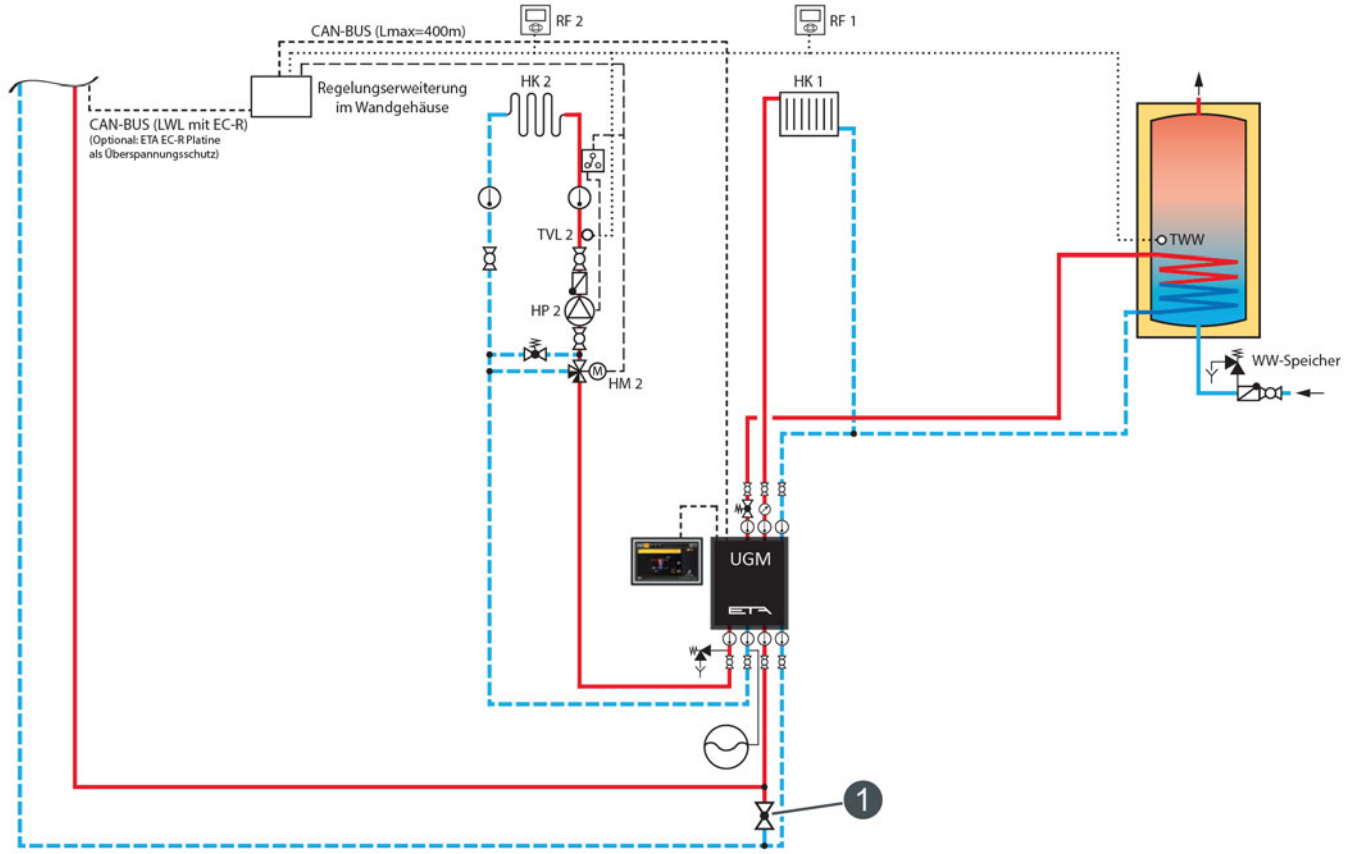


= type [Heating water]

Producers		Consumers	
1	EM-FC 4: HTM: Flow	1	EM-FC 4: HC: .
2	EM-FC 4: HTM: HW (rapid charge)	2	EM-FC 4: HW: .

5.2 Example 2

Hydraulic schematic

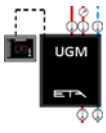


1 Overflow valve: If the network pump is in continuous operation, then an overflow valve (radiator valve with kv<0.4) is required in the network to ensure a minimum flow for the network pump. If the overflow valve is installed at the end of the line, the line is also kept warm.

If the optional second heating circuit is installed, the consumer with the higher flow temperature must be connected to the first heating circuit . If there are two equivalent heating circuits (e.g. two radiator heating circuits or two underfloor heating circuits), both must be connected to the additional heating circuit. Consider the maximum possible output of the transfer module. The safety valve and the membrane expansion vessel must be installed on the second heating circuit. Otherwise, the safety devices are ineffective when the second heating circuit is operated alone.

For the additional heating circuit with pump and mixing valve, a control extension in the wall housing with the circuit board [GM-C] is required.

Circuit board [EM-FC 4]

Function blocks			Description
	Heat Transfer Module		Handover module
	Hydraulic environment		
	Hydraulic variants	1 DC + HW diverter valve + consumer with its own pump	
	Primary valve	Analogue control (0-10V)	
	Secondary pump	Standard pump	
	Options		
	☐ Module is a consumer within an ETA system		Only select this option if the heat transfer module is a consumer in an ETA heating system. This option may not be selected for stand-alone operation (e.g., as district heating station).

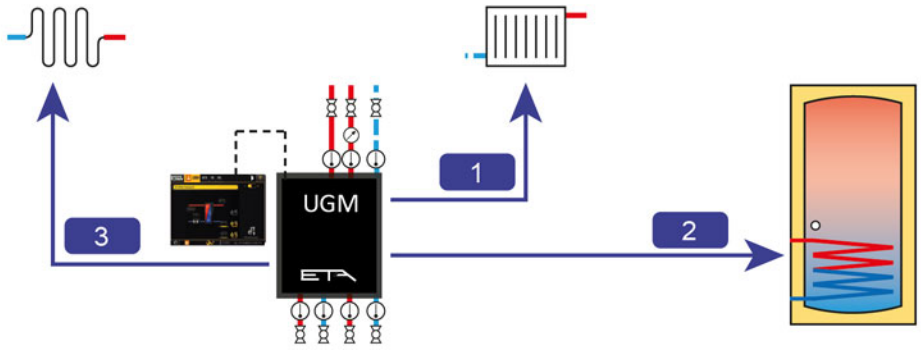
Circuit board [EM-FC 4]

Function blocks			Description
	HWT		Hot water tank
	Hydraulic environment		
	Charging pump	none	
	Circulation pump	No	
	Heating circuit		Heating circuit
	Hydraulic environment		
	HC type	Radiator heating	
	Heating circuit pump	none	
	Heating circuit mixing valve	no	
	Settings		
	Room sensor	Digital	
	Sys		System
	Settings		
	Outside temperature sensor	via circuit board input	
	Display external fault message on the screen	No	
	Output all fault messages	No	

Circuit board [GM-C 1]

Function blocks			Description
	Heating circuit		Heating circuit
	Hydraulic environment		
	HC type	Underfloor heating	
	Heating circuit pump	Standard pump	
	Heating circuit mixing valve	3 point control (230 V)	
	Settings		
	Room sensor	Digital	

Connections

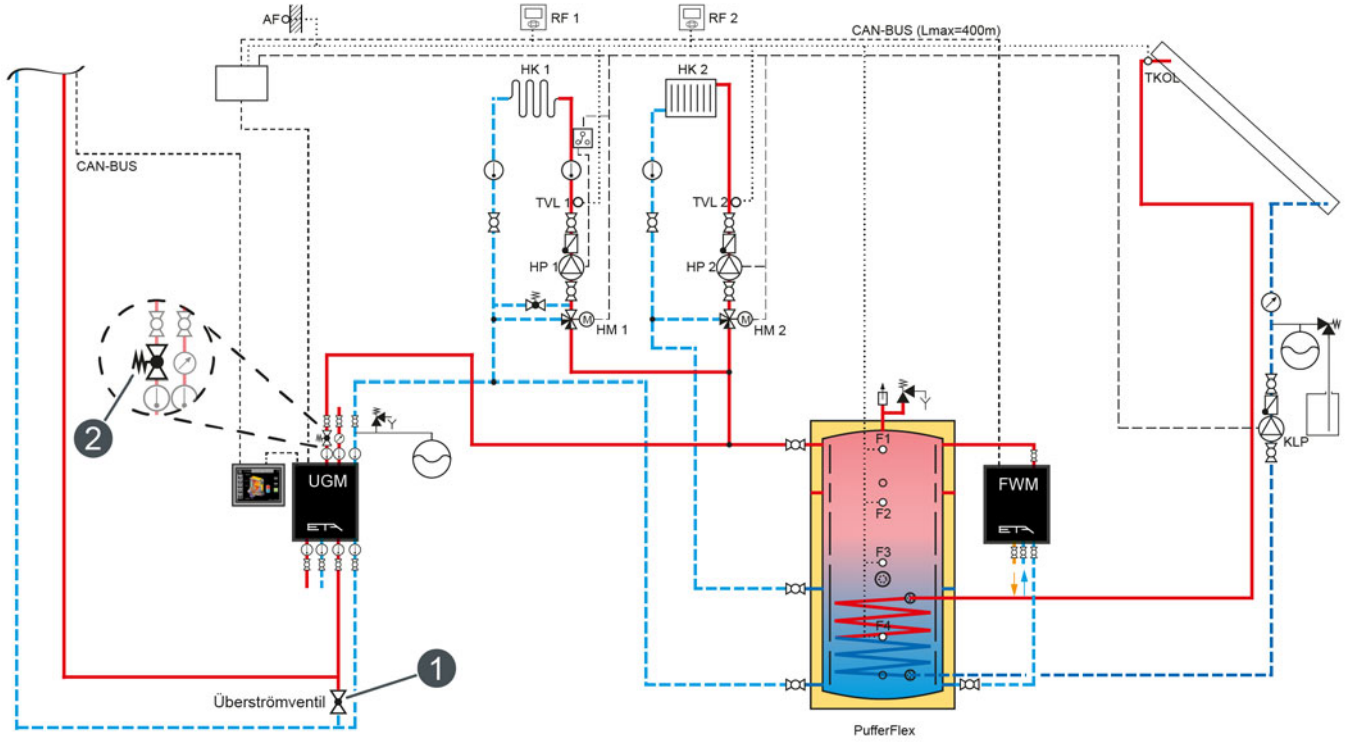


= type [Heating water]
= type [SolarMedium]

Producers		Consumers	
1	EM-FC 4: HTM: Flow	1	EM-FC 4: HC: .
2	EM-FC 4: HTM: HW (rapid charge)	2	EM-FC 4: HW: .
3	EM-FC 4: HTM: Flow HC2	3	GM-C 1: HC: .

5.3 Example 3

Hydraulic schematic



1 Overflow valve: If the network pump is in continuous operation, then an overflow valve (radiator valve with kv<0.4) is required in the network to ensure a minimum flow for the network pump. If the overflow valve is installed at the end of the line, the line is also kept warm.

2 This throttle valve is included in the scope of delivery. The buffer storage tank must be connected to this line. Due to the high pump output, the secondary side must be throttled so that the buffer is stirred less. For more information, please read the chapters 7.2 "Setting the pump" and 7.3 "Adjusting the continuous reducing valve".

In this example, both heating circuits as well as the buffer and solar heating system are connected to the [GM-C] circuit board of the control extension.

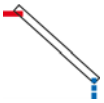
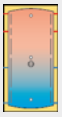
Circuit board [EM-FC 4]

Function blocks			Description
	Heat Transfer Module		Handover module
	Hydraulic environment		
	Hydraulic variants	Buffer storage tank	
	Primary valve	Analogue control (0-10V)	
	Secondary pump	Standard pump	
	Options		
	☐ Module is a consumer within an ETA system		Only select this option if the heat transfer module is a consumer in an ETA heating system. This option may not be selected for stand-alone operation (e.g., as district heating station).
	Sys		System
	Options		
	Outside temperature sensor	via circuit board input	
	Display external fault message on the screen	No	
	Output all fault messages	No	

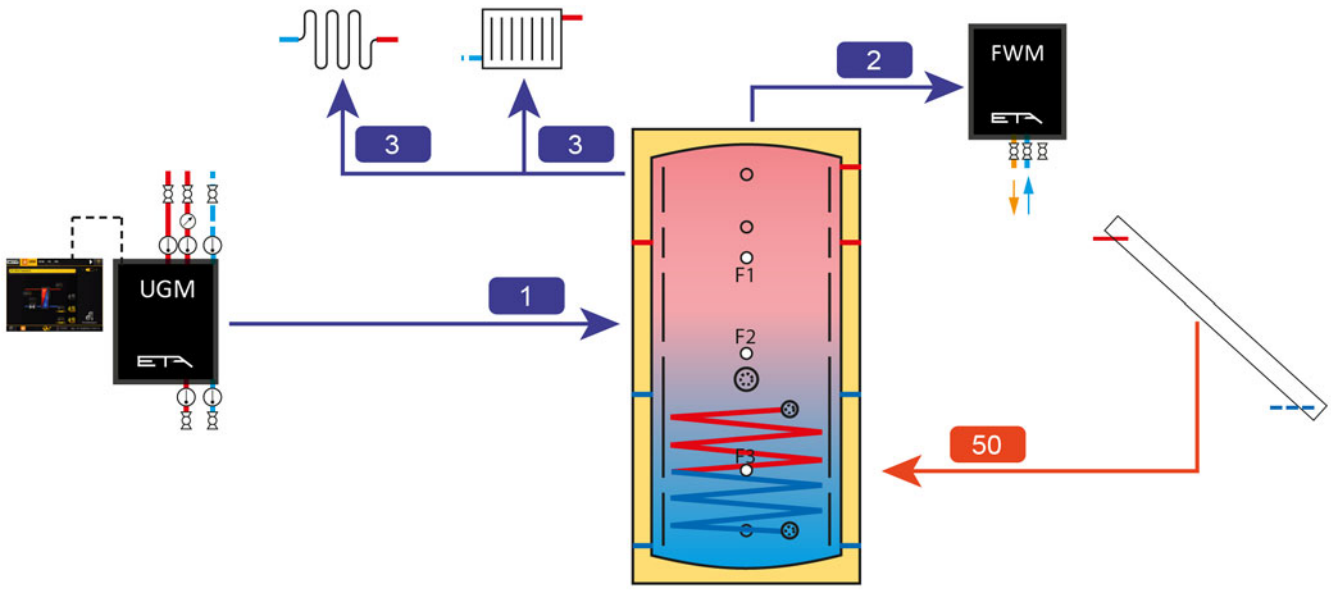
Circuit board [EM-FC 7]

Function blocks			Description
	FWM 2pumps		ETA fresh water module
	Settings		
	Size	1 or 2	

Circuit board [GM-C 1]

Function blocks			Description
	Solar heating system		Solar heating system
	Settings		
	Tank 1	1 coil	
	Tank 2	not available	
	BufferFlex		Buffer storage tank
	Basic settings		
	Temperature sensor number	3	
	Consumer levels	2	
	Solar heating system		
	Solar heating system	1 coil	
	Additional functions		
	Combination tank	No	
	Start relief for log boiler	No	
	Heating circuit		Heating circuit
	Hydraulic environment		
	HC type	Underfloor heating	
	Heating circuit pump	Standard pump	
	Heating circuit mixing valve	3 point control (230 V)	
	Settings		
	Room sensor	Digital	
	Heating circuit		Heating circuit
	Hydraulic environment		
	HC type	Radiator heating	
	Heating circuit pump	Standard pump	
	Heating circuit mixing valve	3 point control (230 V)	
	Settings		
	Room sensor	Digital	

Connections



= type [Heating water]
= type [SolarMedium]

Producers		Consumers	
1	EM-FC 4: HTM: Flow	1	GM-C 1: BufferFlex: .
2	GM-C 1: BufferFlex: Consumer level 1 (top)	2	EM-FC 7: FWM: .
3	GM-C 1: BufferFlex: Consumer level 2	3	GM-C 1: HC: .
		3	GM-C 1: HC2: .
50	GM-C 1: Solar: Tank 1	50	GM-C 1: BufferFlex: Solar

Deleting installed function blocks

In this example, both heating circuits as well as the buffer and solar heating system are connected to the [GM-C] circuit board of the control extension. For this reason, the factory installed heating circuit [HC] and hot water tank [HW] are deleted from the [EM-FC] circuit board. To delete function blocks, select them from the [Selected function blocks] column and delete with the button.

6 Electrical connections

6.1 Requirements

The electrical connections must only be carried out by qualified specialist personnel

WARNING!

Injury risk

Injuries due to electric shock

- ▶ The electrical installation must only be carried out by specialist personnel with the corresponding qualifications.
- ▶ The electrical system must be installed in accordance with the circuit diagram or electrical connection.

Power supply of the module

Power is supplied to the module via the power plug that has already been mounted; this is performed independent of the boiler. However, the power supply can also be securely wired to the electronic distributor.

DANGER!

Electric shock

There are live parts on the circuit boards. If touched, they can cause injury and property damage.

- ▶ Before beginning any work, isolate the system completely from all power sources, ensure that it cannot be switched back on, and verify that it is safely isolated from the power supply.

WARNING!

Damage to circuit boards

Circuit boards can be damaged by electrostatic discharge. Therefore, observe the ESD protection measures when handling the circuit boards.

- ▶ Dissipate electrostatic energy before and while touching circuit boards. Discharge yourself, for example, by touching earthed metallic objects (boiler body, heating pipes). Conductive straps or special ESD work shoes are recommended.
- ▶ Do not bring the circuit board into contact with conductive objects whose electrostatic charge has not yet dissipated.
- ▶ Only touch the circuit board at the outer edges and not at the terminals and solder joints.

CAUTION!

Flexible stranded conductors

If flexible stranded conductors are not used for the wiring, the contacts in the plug connections will be subjected to excessive mechanical strain. In this case, the warranty for the electronics would be invalidated.

- ▶ Only use flexible stranded conductors for the wiring.

Maximum outputs

230 V output	maximale Output
A single output	250 W
Sum of all outputs	700 W

6.2 CAN bus installation

Notes for CAN-Bus cables

The CAN Bus cables must have the following specification:

- As topology in the CAN Bus, only one "line topology" is allowed. A "star topology" is not permitted.
- The maximum total length of all used CAN-Bus cables is 400 m. When laying the cables, make sure the distance between the circuit boards is as short as possible. If the total length is disregarded, proper operation cannot be guaranteed.

  The optional CAN router circuit board [EC-R] can be used to extend the CAN network. For more information, please refer to the instructions for the circuit board [EC-R].
- Only CAT6 cables or higher-quality cables may be used for the CAN-Bus lines.

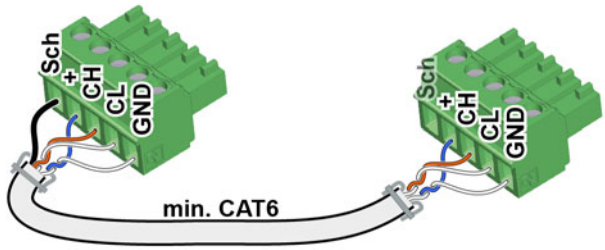


Fig. 6-1: CAN-Bus cable (CAT6 and single-sided shield)

Terminal designation

Sch	Shield
+	Power supply
CH	Data line CH
CL	Data line CL
GND	Earth

Establishing a CAN-Bus connection

Two terminals and the associated cable for establishing the CAN-bus connection to the ETAtouch control panel are included in the delivery scope.

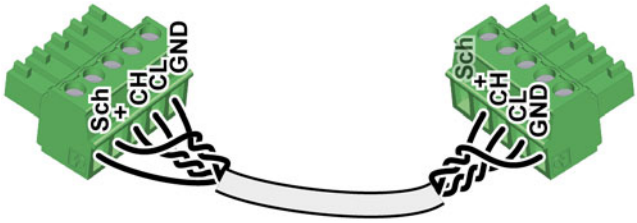
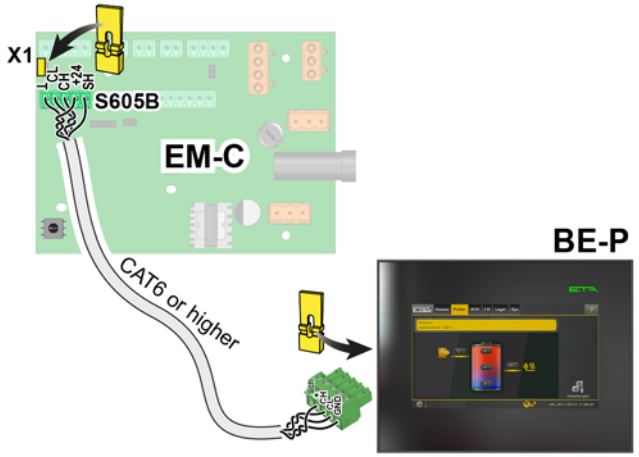


Fig. 6-2: CAN-Bus cable

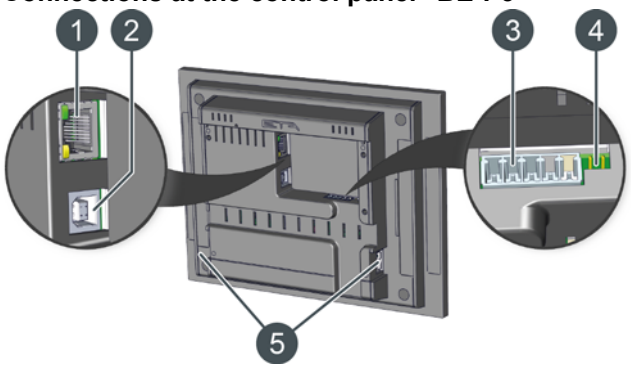
Only clamp the "Sch" shield on one side.

Example: Connection to the circuit board [EM-FC]



A terminal resistor (yellow jumper) must be set at the end of the CAN-Bus. If both CAN-Bus terminals are allocated, the terminal resistor must be removed on this circuit board.
In the example above, the terminal resistor must be set at [X1] on the [EM-FC] circuit board, and also on the ETAtouch control panel.

Connections at the control panel "BE-P3"



1 LAN connection for network cable (e.g. for remote control "meinETA")
2 Socket for data line
3 Socket for CAN bus line
4 Terminal for yellow jumper
5 USB connections (e.g. for software update)

CAN-bus connection for additional modules

For a CAN-bus connection between multiple modules (e.g.: fresh water module, stratified charging module, mixing circuit module), only the "CH" and "CL" wires are connected on both sides and the shield on one side.

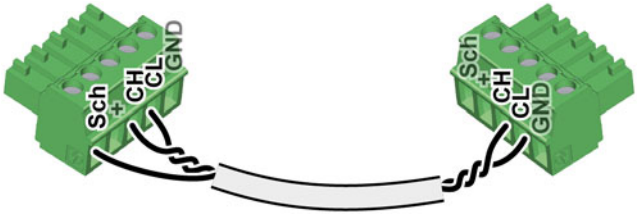
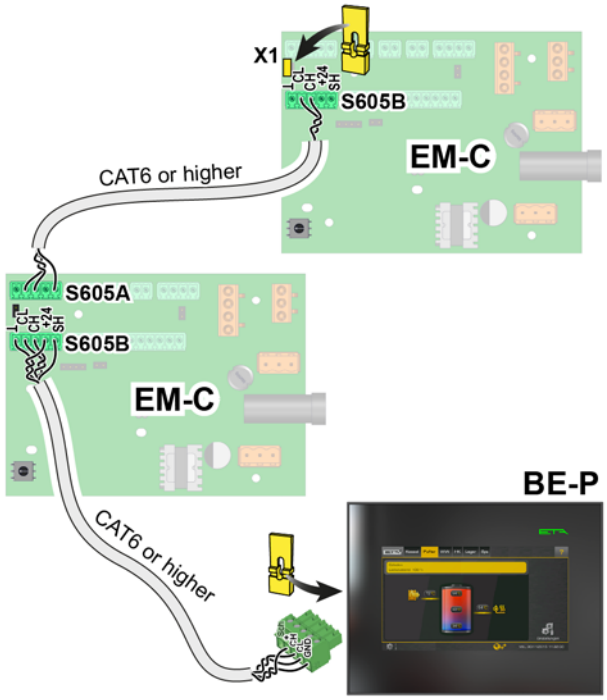


Fig. 6-3: CAN-Bus cable

Only clamp the "Sch" shield on one side. Do **not** connect the "+" and "Gnd" wires.

Example with second module



If multiple modules are installed, the terminal resistors (jumpers) must be checked on all circuit boards and control panels.

Check the node numbers if the circuit boards are the same design

If several identical circuit boards (for example: two [EM-FC]) are connected to each other via CAN-Bus, these circuit boards must have consecutive node numbers. So that these can identified and configured in the CAN-Bus.

Therefore, compare the node numbers of the individual circuit boards of the same design and set them as needed using the node switch.

Several control panels in the system

If further control panels (BE-P) are in the system, all of them must have different node numbers. The node number set for each control panel is displayed in the ETAtouch control system.

On the control panel, open the system settings and switch into the menu [Software]. Press the button [Versions- overview]. The node number set is displayed in the overview.

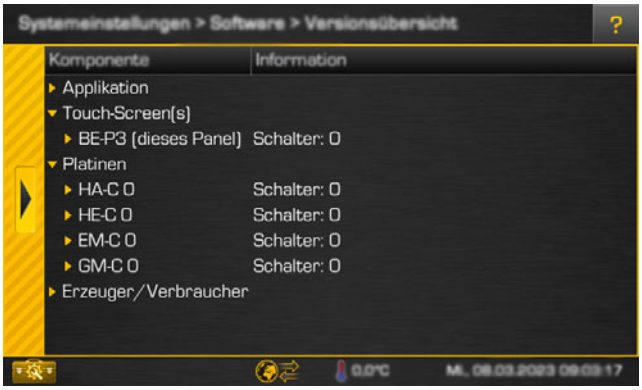


Fig. 6-4: Overview (from X.36.0)

Setting the node number is described in chapter 6.2.1 "Setting node numbers".

6.2.1 Setting node numbers

Set node number on ETAtouch control panel

1. Switch on the entire heating system.
2. On the ETAtouch control panel, increase the authorization level to [Service].
3. Open the menu [System- configuration] and press the button [CAN network]. A window appears where you can enter the desired node number.

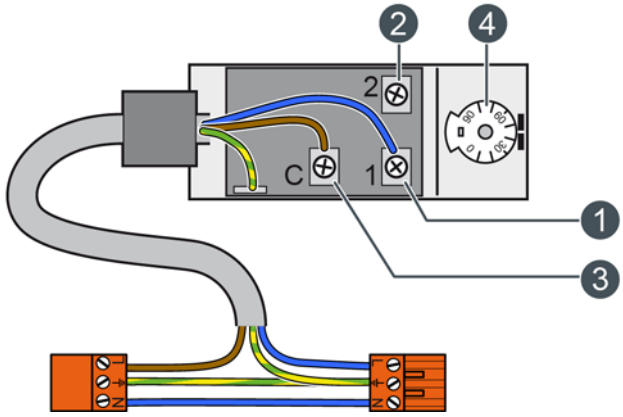
The values "0" to "7" are permitted for the node numbers.

4. Restart the entire heating system. The change will only take effect after the restart.

6.3 Contact thermostat

Contact thermostat as overheating protection

An additional contact thermostat (ready wired) is available for protection of the underfloor and wall heating. It switches off the pump in order to protect the consumer from flow temperatures that are too high.



1 "NC" contact
2 "NO" contact
3 "COM" contact
4 Adjustment dial for activation temperature

The contact thermostat is inserted between the circuit board terminal and the pump.

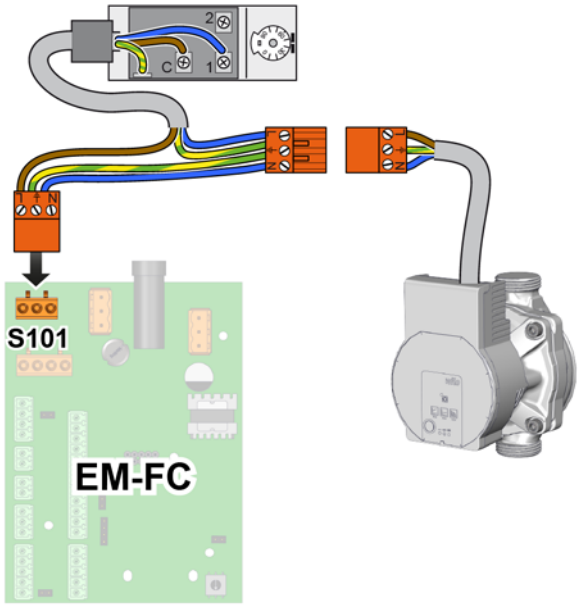
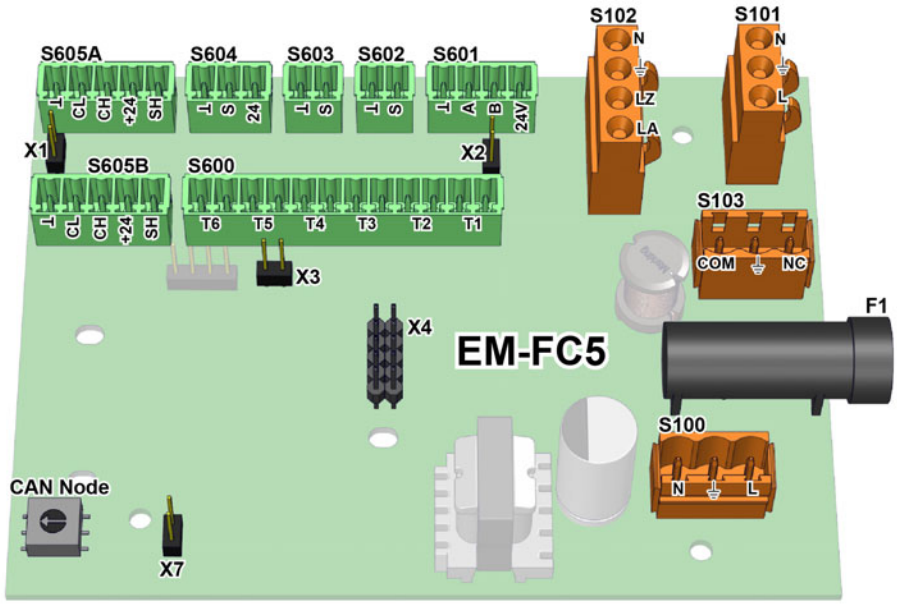


Fig. 6-5: Connection of the contact thermostat

6.4 Circuit board [EM-FC5]



Only use flexible cables, e.g. for: pumps, mixers and temperature sensors. Please note the instructions for wiring, see 6.1 "Requirements" and CAN-Bus lines, see 6.2 "CAN bus installation".

These terminals can be used

Terminal	Function	Minimum cross-section	Standard assignment
S600 T2	Temperature input	2 x 0.5 mm²	Hot water tank
S600 T3	Temperature input	2 x 0.5 mm²	Outside temperature sensor
S600 T4	Temperature input	2 x 0.5 mm²	
S600 T5	Temperature input	2 x 0.5 mm²	
S600 T6	Temperature input	2 x 0.5 mm²	
S601	RS-485 bus	see the room sensor instructions	digital room sensor
S603	PWM output / analogue output	2 x 0.5 mm²	
S604	Analogue, digital, counter input	3 x 0.75 mm²	
S605A	CAN-Bus	see 6.2 "CAN bus installation"	ETAtouch control panel
S605B	CAN-Bus	see 6.2 "CAN bus installation"	

These terminals are already pre-wired at the factory

Terminal	Function	Standard assignment
CAN node	CAN-Bus node switch	Position "4"
F1	Fuse T 3,15 A (Mains power input)	
S100	Supply 230 V	**Mains power input**
S101	230 V output	Secondary pump
S102 LA	230 V output	Diverter valve "open"
S102 LZ	230 V output	Diverter valve "closed"
S103	230 V input	Water shortage switch (bridged)
S600 T1	Temperature input	Secondary side flow temperature
S602	PWM output	Supply for district heating valve (primary valve)
X1	CAN-Bus terminal resistor	
X2	RS-485 bus terminal resistor	
X3	Terminal resistor	To simply delete the configuration the jumper must be set once when restarting.

These terminals are already pre-wired at the factory

Terminal	Function	Standard assignment
X7	Terminal resistor for software X.35.X	The jumper must only be set for operation with the software version up to X.35.X.

Counter inputs or frequency inputs record digital frequencies and are therefore intended for special sensors (e.g. digital flow rate sensors).

6.5 Heat flow meter

Connect heat flow meter

Connect the wiring according to the following illustration.

Connect the M-Bus connection to the circuit board [M-Bus] at terminals [A] and [B]. These wires can be reversed.

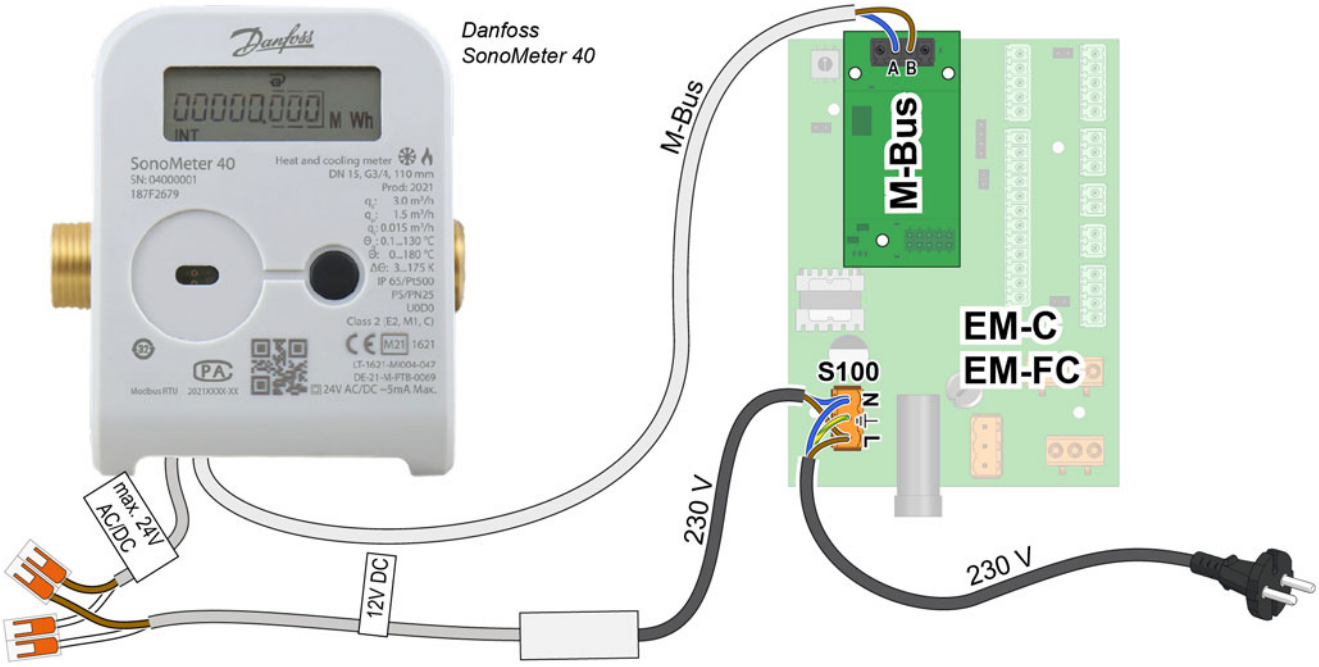


Fig. 6-6: Connect heat flow meter

7 Commissioning

7.1 Filling the heating system

Monitoring the screw joints

Due to vibration and thermal expansion, all screw joints must be inspected and tightened prior to commissioning.

Permissible media

- Heating water according to ÖNORM H 5195-1.

  The permissible water hardness for the heating water can be determined from the table in Section 9 "Water hardness".

  The requirements of ÖNORM H 5195-1 apply as minimum requirements for the heating water. If stricter country-specific regulations exist, they are to be heeded.
- Water/glycol mixtures with a glycol ratio of minimum 20% and maximum of 30%

  Glycol has a higher viscosity than water. When admixing glycol, the pumping data must be corrected according to the mixing ratio. Proper use includes compliance with these instructions as well as the information and labelling on the pump.

Filling and bleeding the heating system

Fill the heating system and take note of the maximum water pressure. Carefully bleed the heating system after filling.

Bleeding before commissioning

There is a bleed screw on the top of the fresh water module for ventilating the primary side.

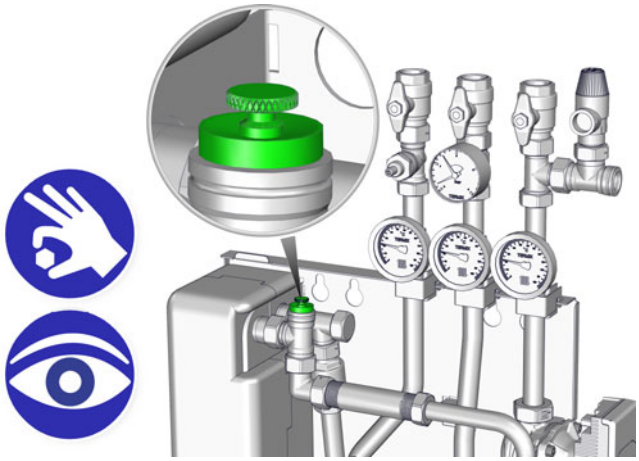


Fig. 7-1: Bleed screw

Bleeding the pump

The heating system must be filled and bled before the pump can be bled. The pump automatically bleeds itself when starting for the first time. If it does not, carry out the following steps.

1. If the pump is not in operation, start it manually. To do this, carry out the following intermediate steps:

   Increase the authorisation to [Service]. Switch to the inputs and outputs menu in the function block of the heating circuit. Tap on the symbol on the heating circuit pump. Use the buttons to switch the pump on or off manually.
2. If the pump is in operation, press the control button on the pump for 3 seconds.

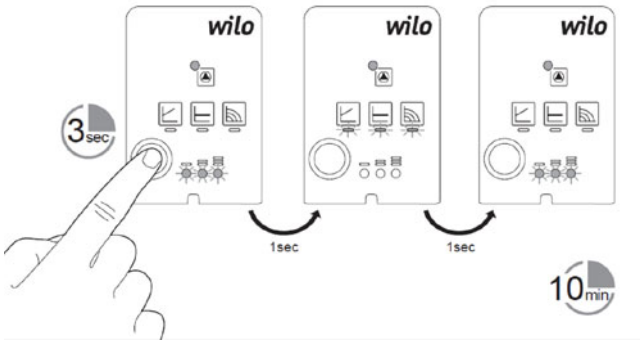


Fig. 7-2: Venting

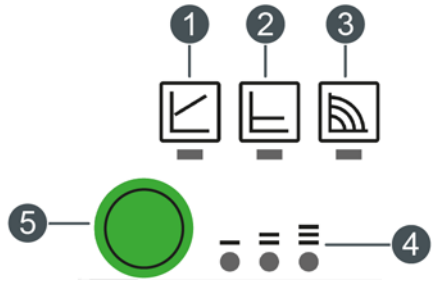
3. The venting function now starts and lasts for 10 minutes. The upper and lower LED rows flash alternately every second.

   To cancel, press the control button again for 3 seconds.

   ⇨*After venting, the LED display shows the operating mode of the pump that was previously set. After bleeding, the operating mode of the pump may need to be adjusted.*

7.2 Setting the pump

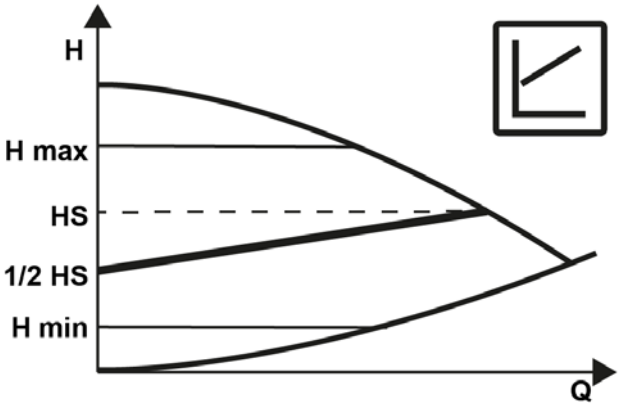
Operating modes of the pump



1 Operation: differential pressure variable (Δp-v)
2 Operation: differential pressure constant (Δp-c)
3 Operation: constant speed
4 Operating phase
5 Operating button for setting the operating mode and operating phase

Differential pressure variable (Δp-v)

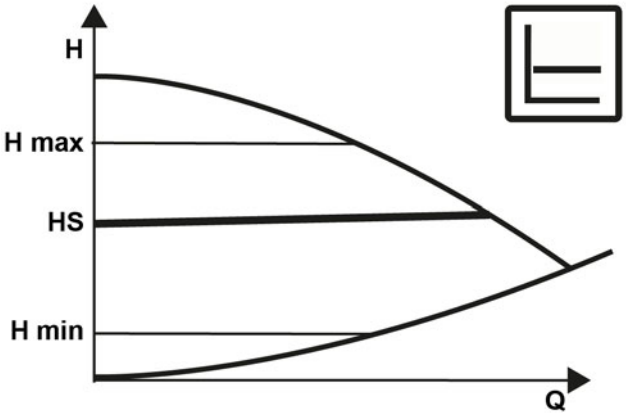
- The differential pressure target value "H" is increased linearly from "½ H" to "H" over the volume flow "Q". The differential pressure produced by the pump is set to the respective differential pressure target value.



This operating mode is recommended for radiators to reduce flow noise at the thermostatic valves.

Differential pressure constant (Δp-c)

- The differential pressure is held constant at the set differential pressure target value "H".



This operating mode is recommended for underfloor heating systems, large pipes and all applications without a variable pipe network characteristic (e.g. hot water charging pumps).
If a buffer tank is installed on the transfer module, also select this operating mode and set the pump to the lowest level.

7.3 Adjusting the continuous reducing valve

Set volume flow for consumers

There is a continuous reducing valve on the flow connection to limit the volume flow for small (or calcified) registers in the hot water tank or buffer tank. By throttling the flow, the return temperature is lowered and the spread is increased.

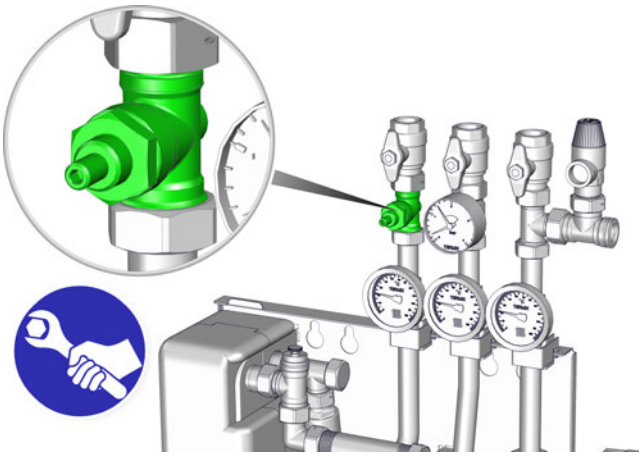


Fig. 7-3: Continuous reducing valve

At commissioning, set the continuous reducing valve so that a reasonable compromise between a low return temperature and a still acceptable charging time of the hot water tank is achieved.
If a buffer tank is connected to the transfer module, a high spread and a low flow rate must be set. See the following description.

Example: Setting the spread and flow rate for the connected buffer storage

1. To adjust the system, the spread of the system in real operation is required, for example:
   [Buffer target] = 65 °C
   [Buffer bottom] = 30 °C
   => results in a spread of 35 °C (=65 °C - 30 °C)
2. Check the operating mode set for the pump on the transfer module, see chapter 7.2 "Setting the pump".

   If a buffer storage is connected, select the operating mode "Differential pressure constant (Δp-c)" at the lowest level.
3. Start the buffer charge e.g. with the [Immediately charge buffer] key in the buffer function block. This opens the primary valve in the transfer module.
4. If the primary valve is fully open (=maximum flow), then manually close the continuous reducing valve until the calculated spread (e.g. 35 °C) between the flow and return is reached.

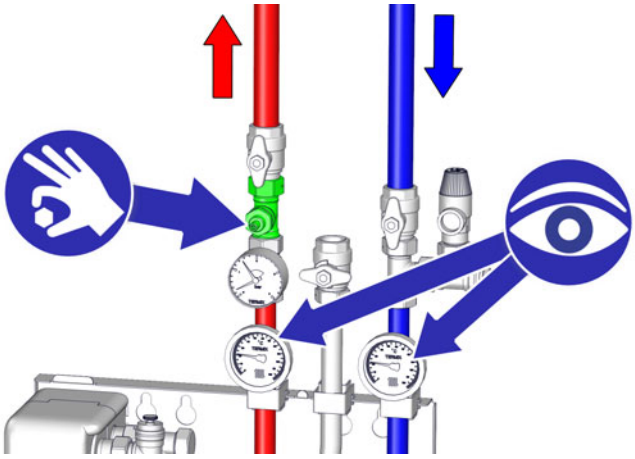


Fig. 7-4: Adjust spread

7.4 Concluding activities

Mounting the plastic cover

Reattach the plastic cover after commissioning. Pull off the protective film and affix the ETA logo in the corresponding recess.

8 Cleaning and maintenance

Regularly cleaning strainers

The strainer must be cleaned annually. To do this, carry out the following steps.

1. Close the ball valves for flow and return of the primary side in order to limit the water leakage.
2. Remove the cap on the strainer and catch the escaping water with a towel.

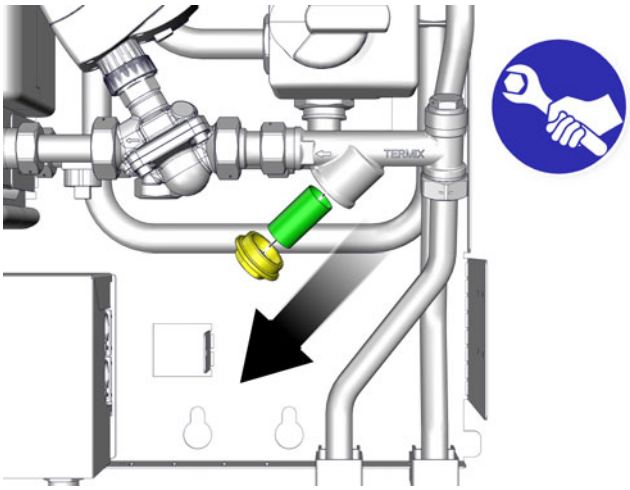


Fig. 8-1: Cap

3. Clean the filter cartridge and then reinsert it.

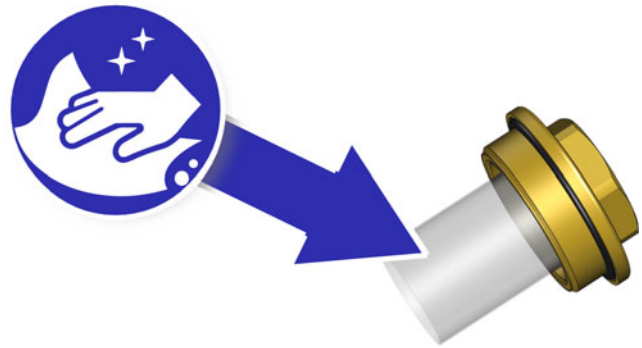


Fig. 8-2: Clean the filter cartridge

4. Mount the cap and open the ball valves of the flow and return.
5. Vent the primary circuit after cleaning. A bleed screw for bleeding is located on the top side.

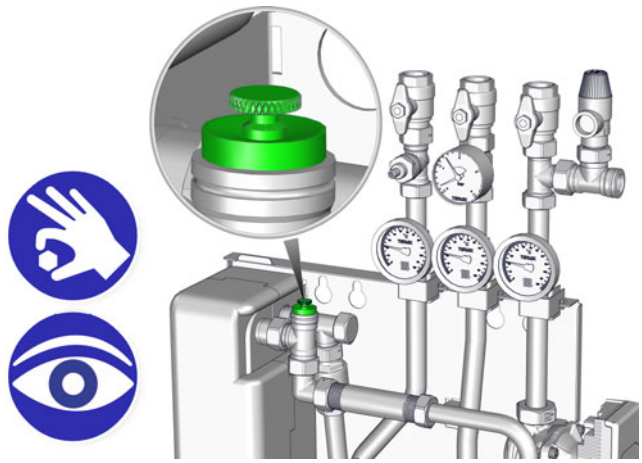


Fig. 8-3: Bleed screw

9 Water hardness

Determine permissible water hardness for the heating water according to ÖNORM H 5195-1

Specific water content (litres/kW)		Table 1 Heat producer with large (> 0.3 l/kW) water content			Table 2 Heat producer with small (≤ 0.3 l/kW) water content		
		< 20 l/kW	≥ 20 /kW < 50 l/kW	≥ 50 l/kW	< 20 l/kW	≥ 20 l/kW < 50 l/kW	≥ 50 l/kW
Total output of the heat producer	≤ 50 kW	16.8 °dH	11.2 °dH	5.6 °dH	11.2 °dH	5.6 °dH	0.6 °dH
	> 50 kW ≤ 200 kW	11.2 °dH	5.6 °dH	2.8 °dH	5.6 °dH	2.8 °dH	0.6 °dH
	> 200 kW ≤ 600 kW	5.6 °dH	2.8 °dH	0.6 °dH	2.8 °dH	0.6 °dH	0.6 °dH
	> 600 kW	2.8 °dH	0.6 °dH	0.6 °dH	0.6 °dH	0.6 °dH	0.6 °dH

Instructions for determination:

1. Determine the water content of the heat producer (in litres) and divide by its output (in kW). If the result is larger than 0.3 l/kW, Table 1 applies. If the value is smaller or equal to 0.3 l/kW, Table 2 applies.
2. Divide the total heating water volume (in litres) by the output (in kW) of the smallest heat producer. The result is the specific water content and this determines the column within the previously calculated table.
3. Read the data for the permissible water hardness from the respective line using the total output of the heat producer.

Example: A module with a 45 kW boiler and 1000 litre total water volume

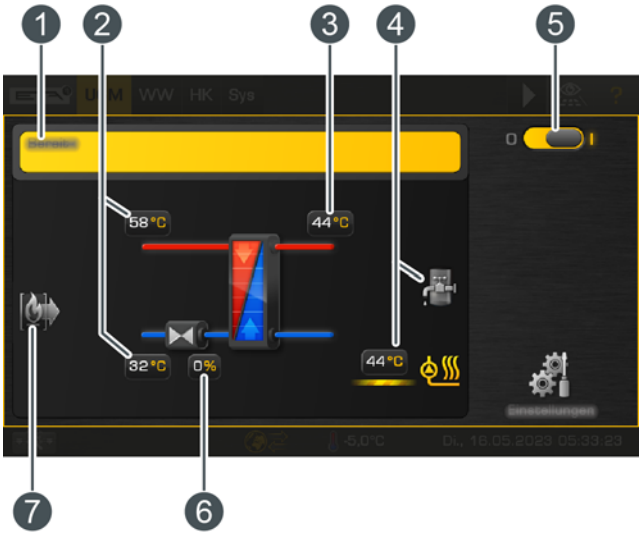
1. For the module, the ratio of water content to output is less than 0.3 l/kW => Table 2.
2. The maximum output of the module is 45 kW. With a total heating water volume of 1,000 litres, for example, a specific water content of 22.2 l/kW results => average column in Table 2.
3. The total output of the module is 45 kW; therefore, only the data from the first line (≤ 50 kW) are relevant.

⇨ *The permissible water hardness in this example is 5.6 °dH.*

10 ETAtouch controller

10.1 Function block [handover module]

Overview of the heat transfer module



1 Operating condition and information.
The description of the operating conditions can be found in the integrated help with the ? button.

2 Flow and return temperatures on the primary side (heat producer).
These temperatures are only displayed if they are installed and configured.

3 Flow temperature of the secondary side (consumer, heat consumer)

4 Heat transfer module consumer.
If a consumer is loaded, a line appears, the flow temperature and the symbol are shown in yellow.

5 On/off switch for the heat transfer module
= switched on
= switched off

6 Position of the district heating valve (100% = open)

7 Producer of the heat transfer module.
Is only displayed if the heat transfer module is configured as a consumer in an ETA heating system.

Function

The heat is released from the primary side heat producer (e.g.: district heating network) via the heat exchanger to the secondary side consumer. The flow from the heat producer to heat exchanger is regulated with the district heating valve (primary valve), which regulates the heat volume.

The consumers, for example a heating circuit and a hot water tank, are supplied with heat from the separately regulated pump and the changeover valve on the heat transfer station.

The primary valve opens as soon as there is a demand from the consumers. The secondary pump starts after the set delay has expired and supplies the consumers with heat. If there is no demand, the secondary pump is shut down and the primary valve closes.

To protect the consumers, a maximum flow temperature as well as a frost protection limit can be set. Frost protection is also in effect if the module is switched off with the On/Off switch .

10.1.1 Text menu - Adjustable parameters

Settable parameters

Inputs
► Heat meter
  ► Read out interval

Heat meter
► Serial no.

A detailed description of the parameters is provided below.

Explanation of [Read out interval]

The interval for reading out the data of the M-bus meter is entered with this parameter.

Too short an interval can trigger an error message on the M-bus meter. Refer to the M-bus meter operating instructions for the shortest interval to be set.

Explanation of [Serial no.]

With this parameter, the serial number of the M-bus meter is entered. This is needed for identification of the connected M-bus meter (heat flow meter as well as electric meter), so that the function block can read the corresponding data of the meter.

If in the serial number are letters, the serial number must be rotated while entering. Details to this can be found in the manual of heat flow meter. example: 1234 0A5678 => 56781234

11 Operation with software version up to X.35.X

The following steps are only required for use with software versions up to X.35.X

The ETA module is delivered from the factory with software 3.56.3 and can therefore not be operated immediately with an ETAtouch control system up to software version X.35.X. Therefore, the following steps are only necessary if:

- the ETA module is connected via CAN-Bus in a heating system with the ETAtouch control system
- and in addition the heating system is used with software up to version X.35.X

If the ETA module is operated without a CAN-Bus connection (if possible), i.e. standalone, then these steps can be skipped.

Install software X.35.17 (or above)

In order to install the X.35.17 (or later) software, the factory-installed X.56.3 software must first be deleted from the circuit board.

Before carrying out the following steps, first disconnect the power supply to the ETA module (e.g.: fresh water module, stratified charging module or others). If there is already a CAN-Bus connection between the ETA module and the heating system, this must also be disconnected.

1. Download software version X.35.17 (or above) and save it on a USB drive. Then update the software of the heating system to this version.

   The required files for the software update can be found in the login area on the website www.eta.co.at and also on www.meinETA.at.

2. Remove the covers on the ETA module to access the circuit board. Set a jumper at terminal [X3] so that the factory-installed software is deleted after switching on.

   Only necessary for the [EM-FC] circuit board: Set another jumper at terminal [X7] so that the [EM-FC] is recognised in the CAN-Bus.

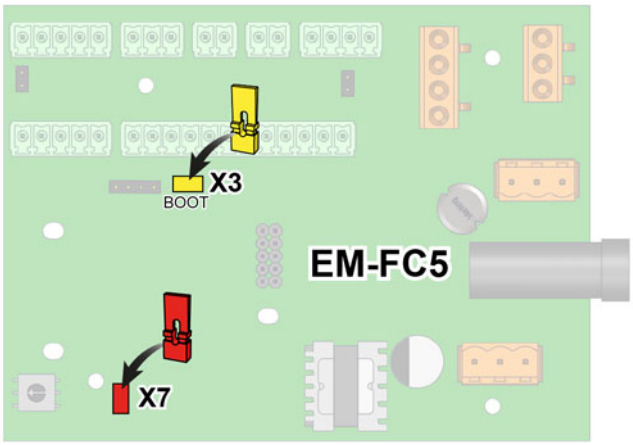


Fig. 11-1: Setting the jumper

3. Restore the power supply and also the CAN-Bus connection from the ETA module to the heating system. After switching on the power supply, a software update is performed on the circuit board.

   Approximately 10 seconds after switching on, remove the jumper from terminal [X3].

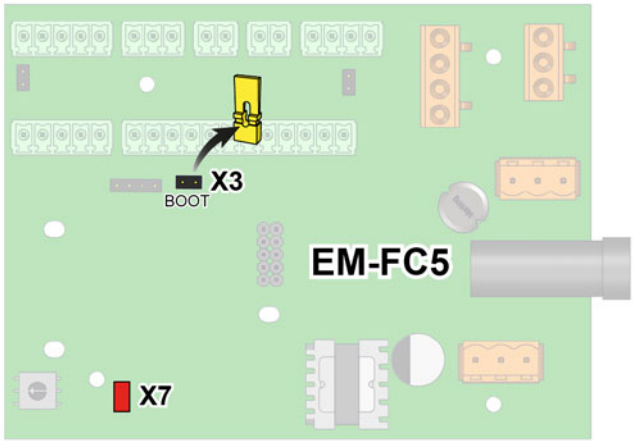


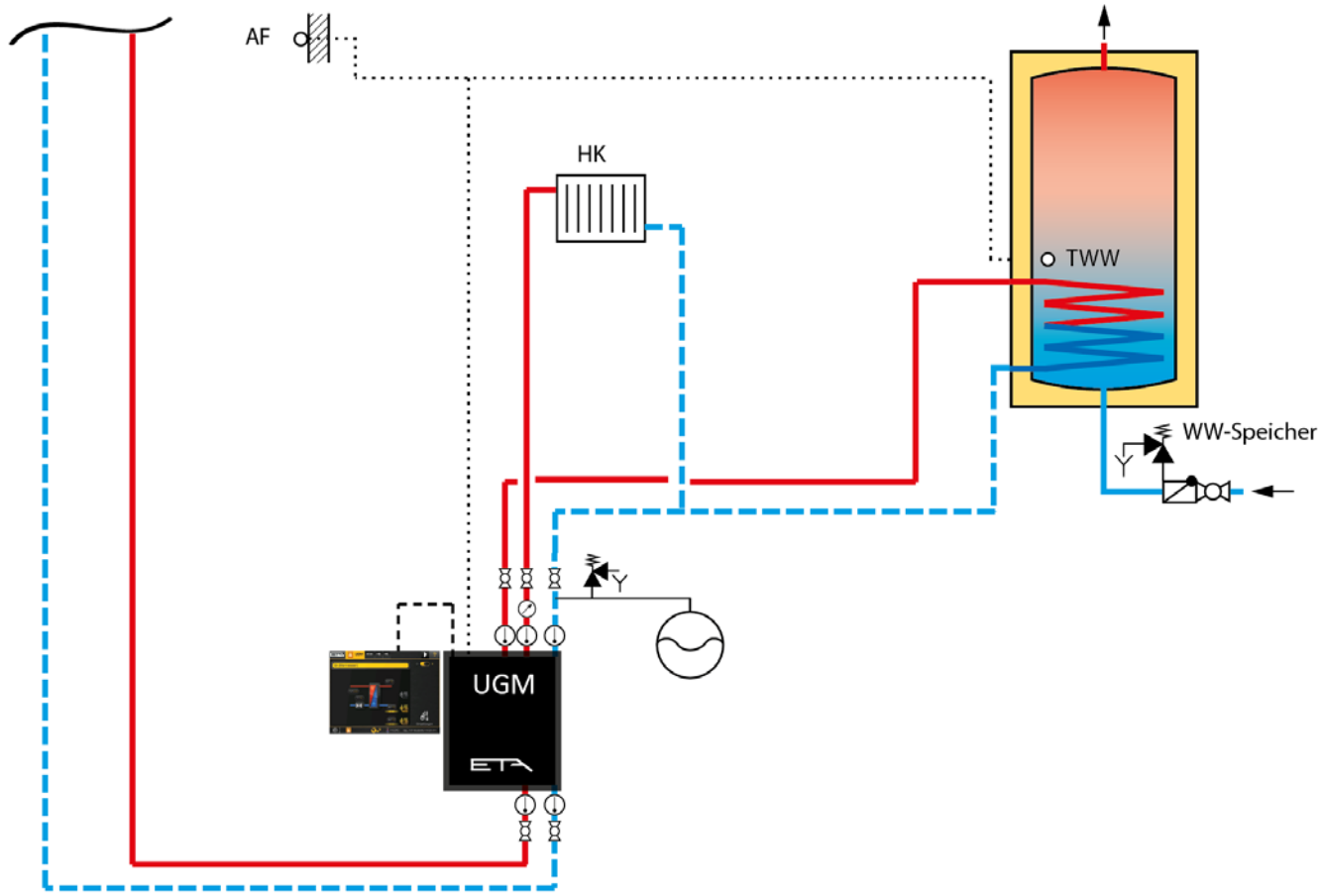
Fig. 11-2: Removing the jumper from [X3]

⇨ *As soon as the software update is complete, start the configuration wizard. See the steps below for this.*

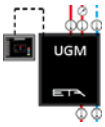
11.1 Configuration

The following description shows the configuration with the circuit board [EM-FC].

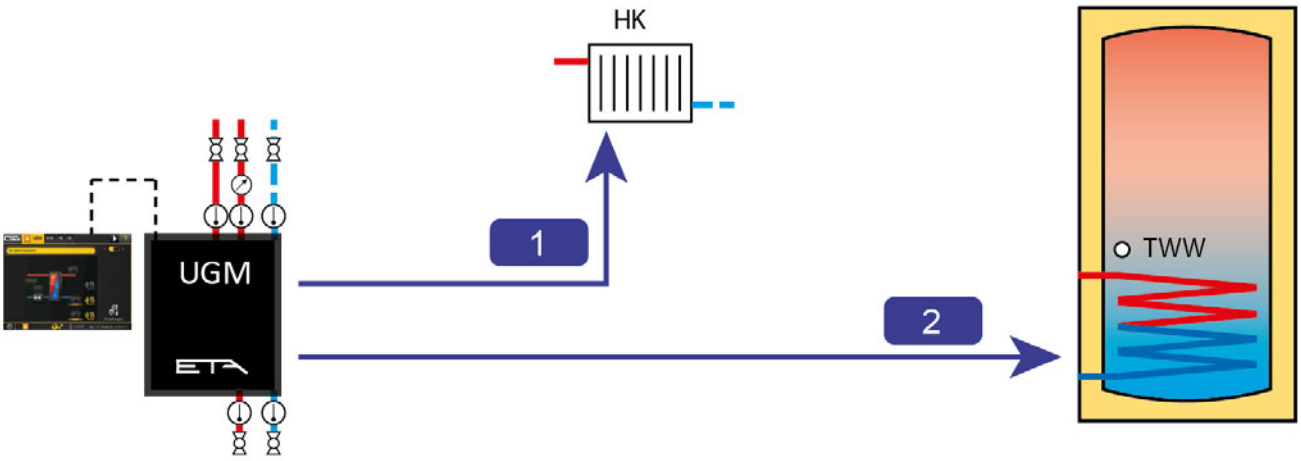
Hydraulic schematic



Circuit board [EM-FC 4]

Function blocks			Description
	Heat Transfer Module		Heat transfer module
	☐	Module is a consumer within an ETA system	Only select this option if the heat transfer module is a consumer in an ETA heating system. This option may not be selected for stand-alone operation (e.g., as district heating station).
	HWT		Hot water tank
	Heating circuit		Heating circuit
	Sys		System
	☑	Outside temperature sensor	

Connections



= type [Heating water]

Producers		Consumers	
1	EM-FC 4: HTM: Flow	1	EM-FC 4: HC: .
2	EM-FC 4: HTM: HW (rapid charge)	2	EM-FC 4: HW: .

Continue installation

Continue the installation from chapter 6 "Electrical connections".

www.eta.co.at

www.meineta.at