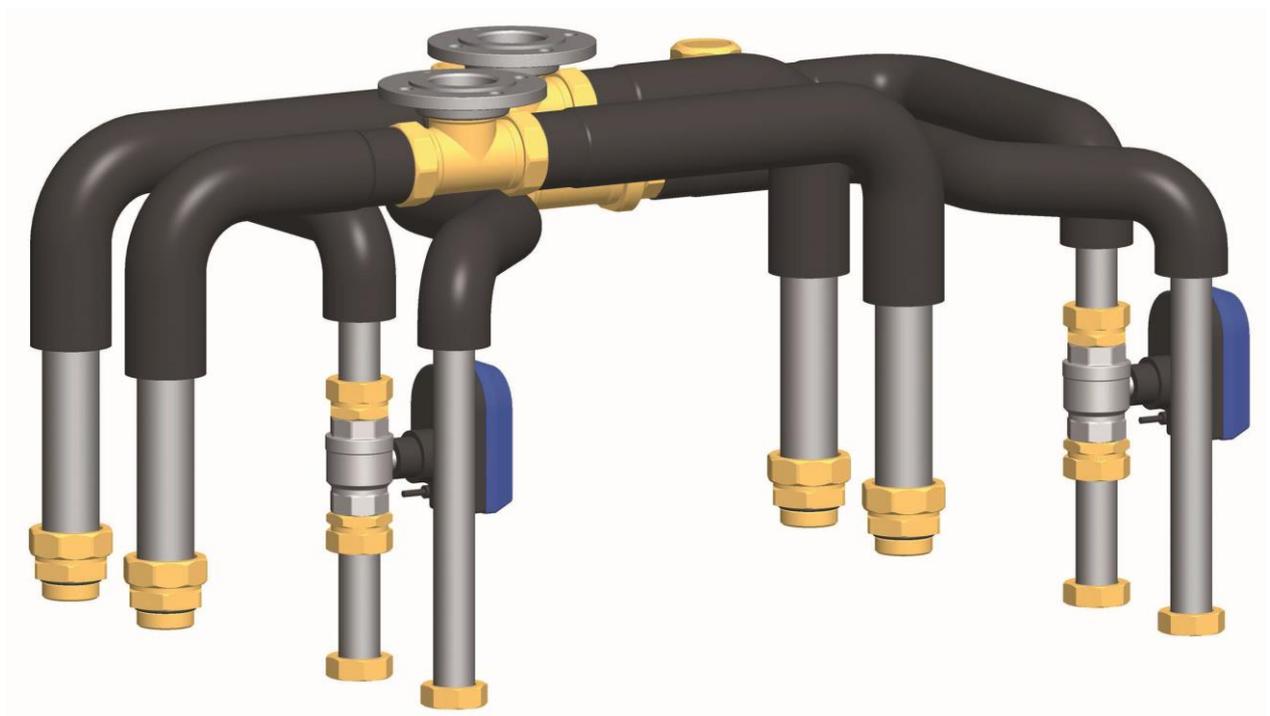




Installation Instructions

Connection set for FriwaMega-Kaskade

DN 32



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1 General Information



Carefully read these instructions before installation and commissioning.
Save these instructions in the vicinity of the installation for future reference.

1.1 Scope of these instructions

These instructions describe the assembly and installation of the connection set for the FriwaMega-Kaskade. The chapters called [specialist] are intended for specialists only. For other components of the installation, such as the domestic hot water modules, storage tanks, controllers and pumps, please observe the instructions of the corresponding manufacturer.

1.2 About this product

With the connection set, two domestic hot water modules FriwaMega can be cascaded.

1.3 Designated use

The connection set must only be used for the external installation on two domestic hot water modules FriwaMega. The technical limit values specified in these instructions must be observed.

Only use PAW accessories with the connection set.

Improper usage excludes any liability claims.

The wrapping materials are made of recyclable materials and can be disposed of with recyclable materials.

2 Safety instructions

The installation and commissioning as well as the connection of electrical components require technical knowledge commensurate with a recognised vocational qualification as a fitter for plumbing, heating and air conditioning technology, or a profession requiring a comparable level of knowledge [specialist].

The following must be observed during installation and commissioning:

- relevant local and national regulations
- accident prevention regulations of the professional association
- instructions and safety instructions of this manual

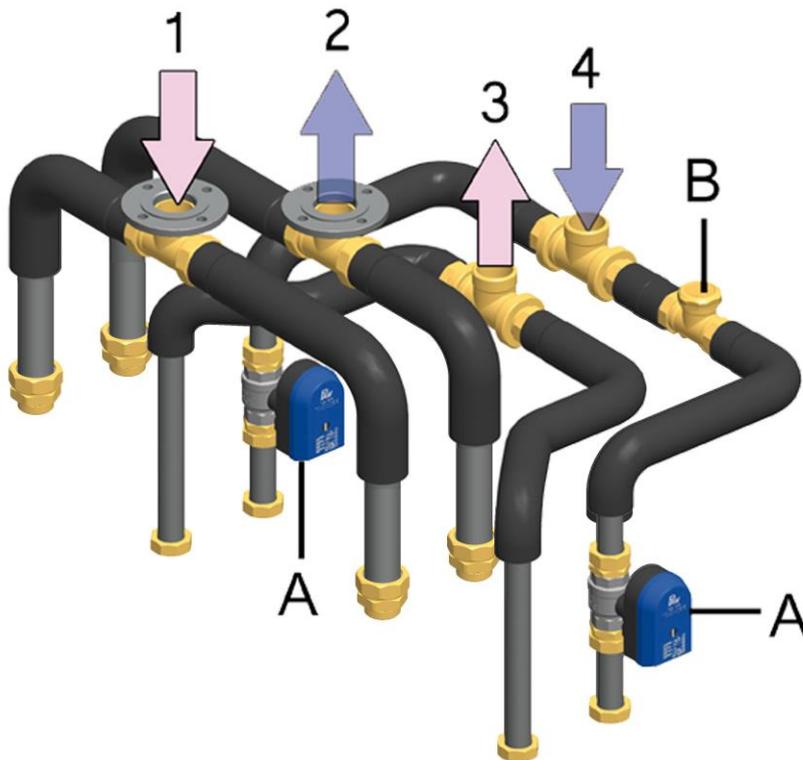
NOTICE

Material damage due to mineral oils!

Mineral oil products cause lasting damage to seals made of EPDM, whereby the sealant properties get lost. We do not assume liability nor provide warranty for damage to property resulting from sealants damaged in this way.

- It is imperative to avoid that EPDM gets in contact with substances containing mineral oils.
- Use a lubricant based on silicone or polyalkylene and free from mineral oils, such as Unisilikon L250L and Syntheso Glep 1 of the Klüber company or a silicone spray.

3 Product description



Connections

- 1 Primary side:
Flow from the buffer tank
- 2 Primary side:
Return to the buffer tank
- 3 Secondary side:
Hot water outlet
- 4 Secondary side:
Cold water inlet

Equipment

- A 2-way zone valve
- B Connection for circulation,
with cap

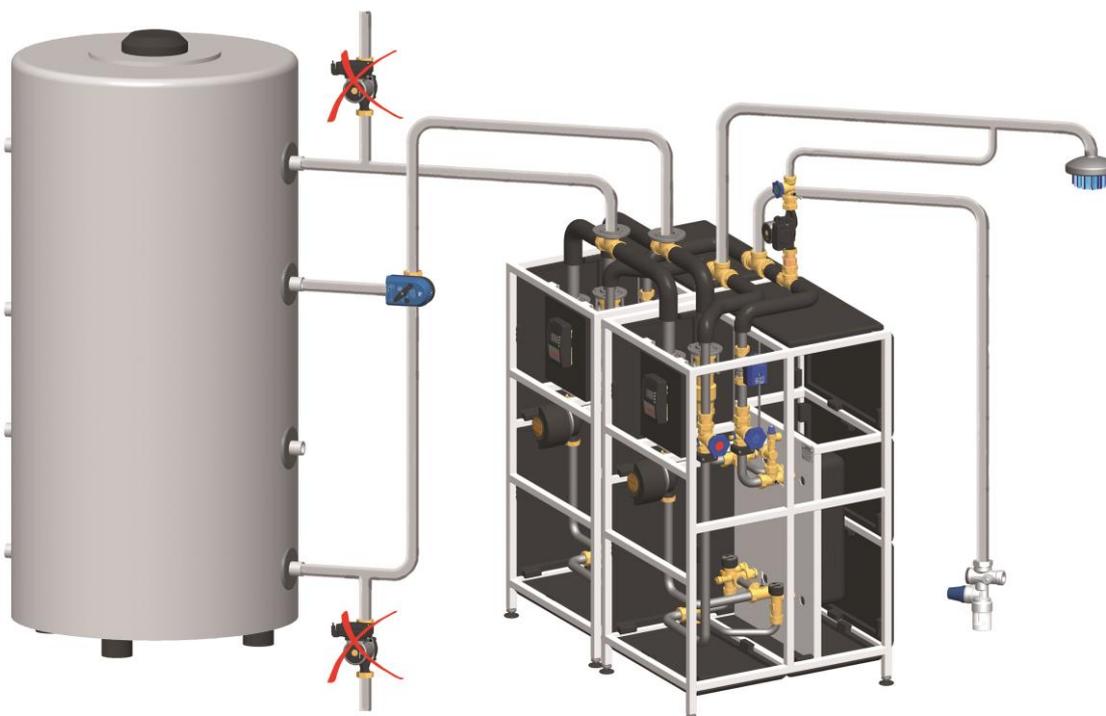
4 Dimensioning and planning

The FriwaMega is a domestic hot water module operating on the principle of a flow-type water heater.

The FriwaMega will only work flawlessly if the installation meets certain requirements. Please take some time to plan the installation.

	 WARNING
<p>Danger of scalding due to hot water!</p> <p>Undesirable circulation of water in the primary circuit can cause the exit of water of up to 90 °C at the withdrawal point.</p> <ul style="list-style-type: none"> ➤ External pumps must not be installed between the domestic hot water module and the buffer tank. ➤ The domestic hot water module must not be connected to a distribution manifold of a heating circuit. 	

Mounting example : Connection set FriwaMega-Kaskade



FriwaMega-Kaskade with optional circulation set (additionally required, item no. 6404136GH7, 6404136GH10, 6404136GH12) and optional return distribution set (item no. 6404244)

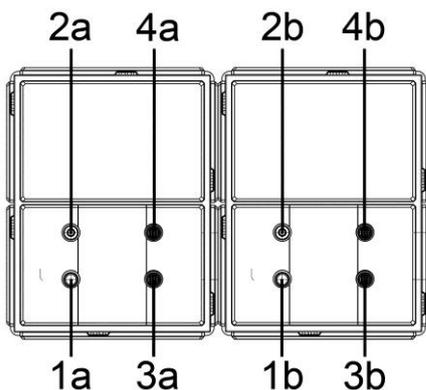
5 Assembly and installation [specialist]

	 WARNING
	<p>Risk to life and limb due to electric shock!</p> <ul style="list-style-type: none"> ➤ Prior to commencing electrical work on the controller, pull the mains plug! ➤ Only after completing all installation work, plug the mains plug of the controller into a socket. An unintentional start of the motors is thus avoided.

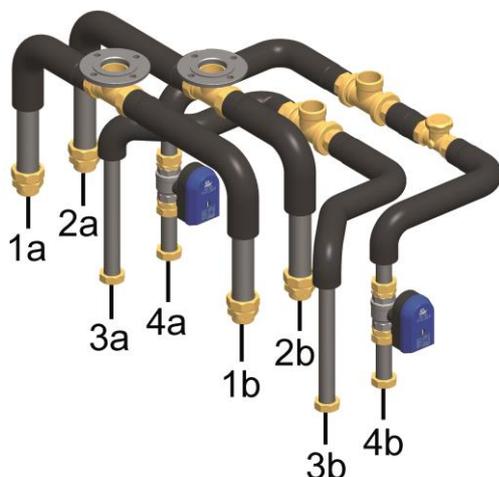
NOTICE

Damage to property!

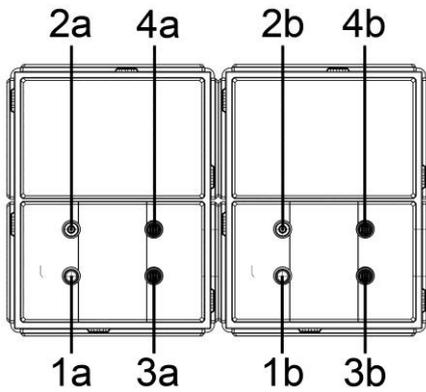
The location of installation must be dry, load-carrying and frost-proof to prevent material damage to the installation.



1. Determine the mounting location of the cascade near the buffer tank.
2. Position both FriwaMega modules side by side.
Note: The insulation between the frames remains mounted!
3. Remove the upper insulation at the connections of the domestic hot water modules.

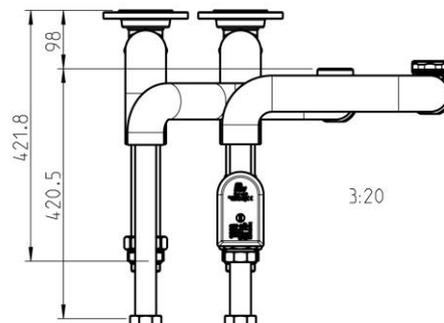
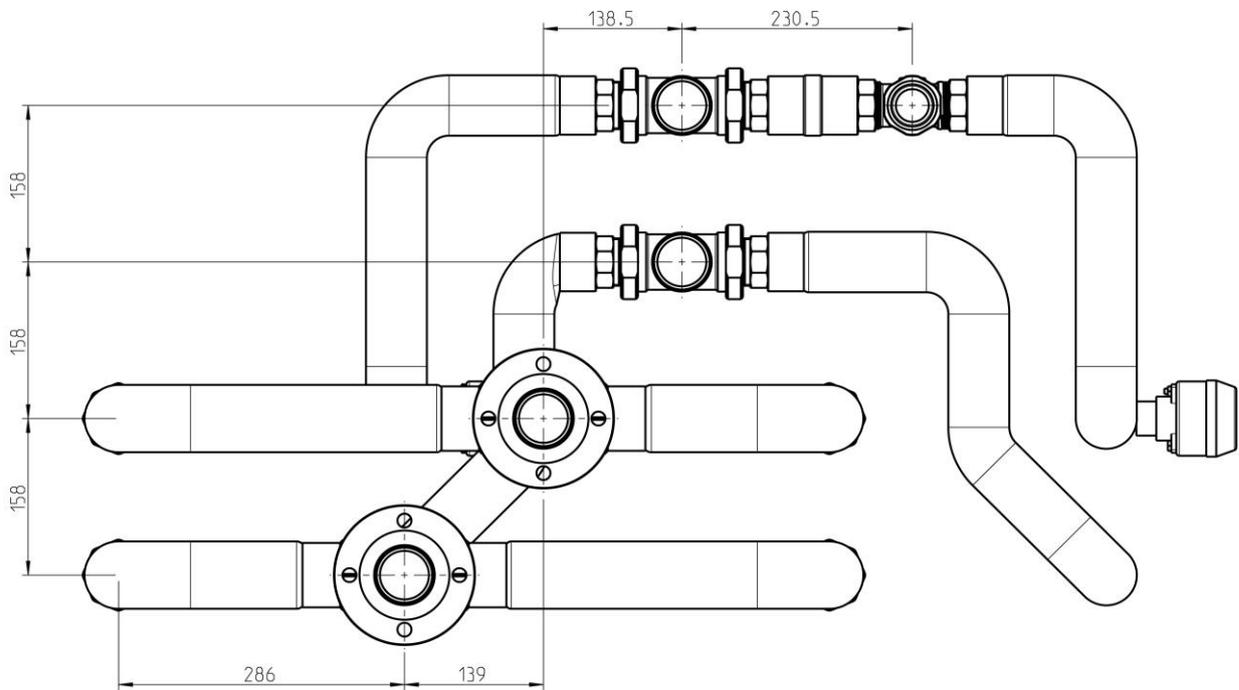


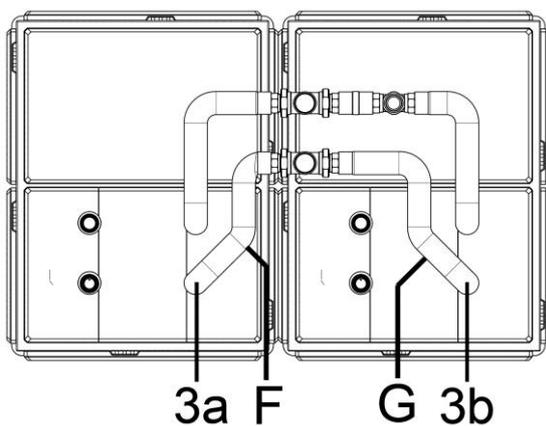
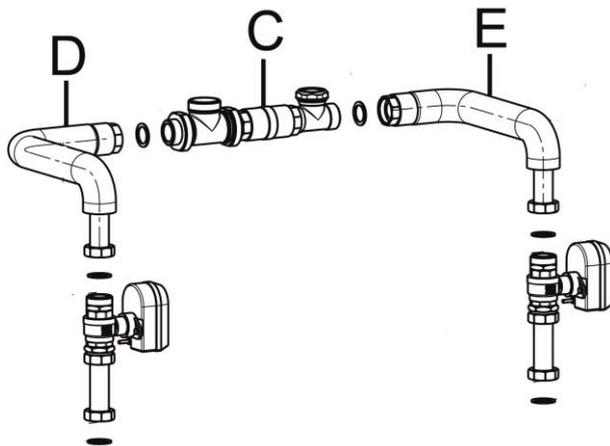
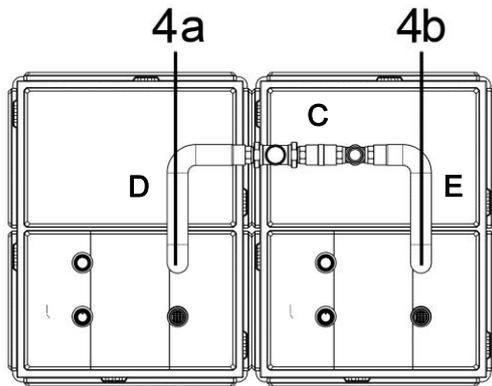
- 1a, 1b Primary side:** Flow from the buffer tank, connection 2" external thread or flange DN 50 piping on site at least DN 50, 54 x 2 mm, recommended 64 x 2 mm
- 2a, 2b Primary side:** Return to the buffer tank, connection 2" external thread or flange DN 50 piping on site at least DN 50, 54 x 2 mm, recommended 64 x 2 mm
- 3a, 3b Secondary side:** Hot water outlet, connection 2" external thread, flat sealing
- 4a, 4b Secondary side:** Cold water inlet, connection 2" external thread, flat sealing



4. Mount the pipe set in the following order:

- Cold water inlet (4a and 4b)
- Hot water outlet (3a and 3b)
- Return to the buffer tank (2a and 2b)
- Flow from the buffer tank (1a and 1b)





5.1 Secondary side

Cold water inlet with 2-way zone valves to 1½" external thread:

1. Mount the pipe sections with the 2-way zone valves on the cold water connections (4a and 4 b) in the domestic hot water modules.
2. Mount the pipes (D) and (E) and the connection pipe. Adjust the pipes and screw them manually. Use the 1½" gaskets for this purpose.

Please note: The connections for the circulation line and the cold water flow can be interchanged.

The circulation connection is closed with a cap.

Hot water outlet to 1½" external thread:

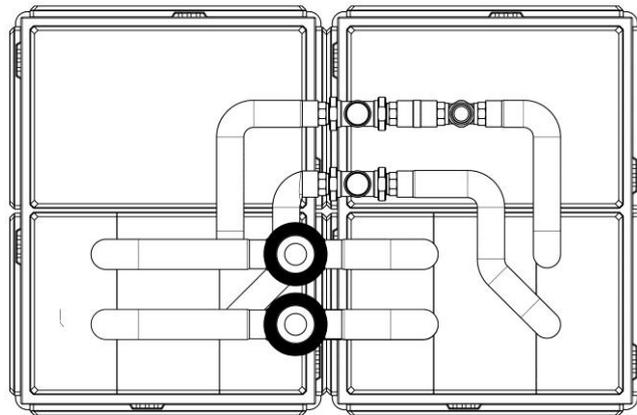
1. Connect the connection pipes (F) and (G) with the T-piece. Use the 1½" gaskets for this purpose.
2. Put the entire pipe on the hot water connections (3a and 3b) of the domestic hot water modules. Adjust the pipe and screw it manually. Use the 1½" gaskets for this purpose.

Adjust the pipes and modules and then firmly tighten the screw connections.

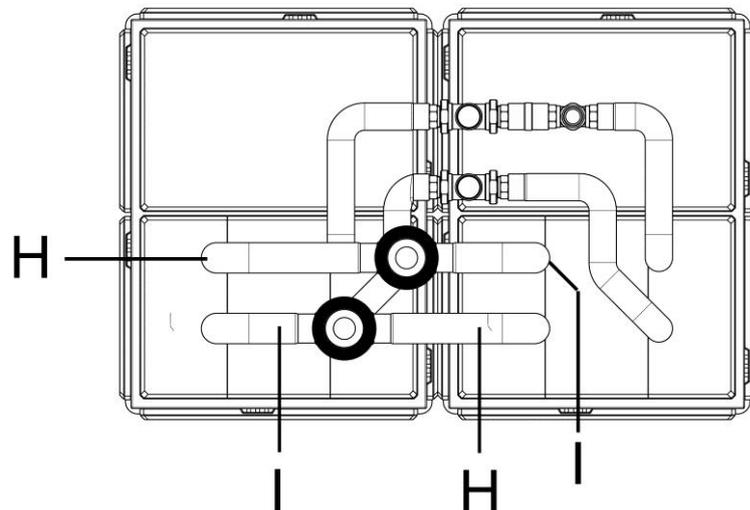
5.2 Primary side

The pipelines for the heating-side connection consist respectively of a long (H) and a short (I) pipe. The connections for the continuing piping can thus be mounted

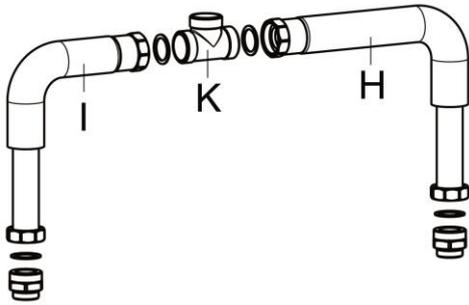
- one behind the other on the right or left:



- in shifted positions (on the left/right or on the right/left):

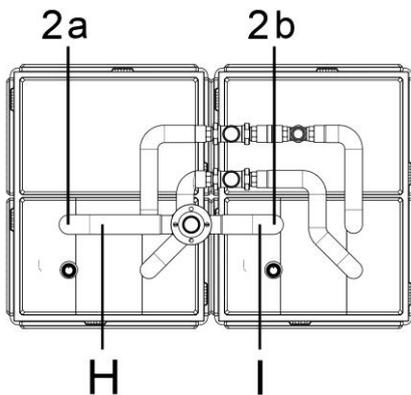


The pipe set for cascade can be screwed directly onto the ball valves.



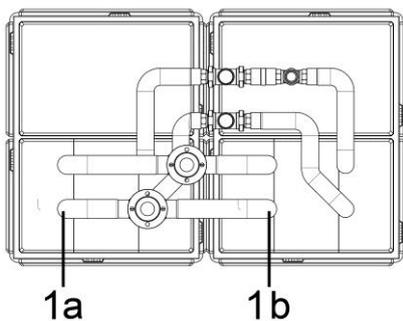
5.2.1 Connection return piping

1. Connect the T-piece (K) with a short (I) and a long (H) pipe. Use the 2" gaskets for this purpose.
2. Mount the reducers 1½" x 2" (with o-ring on the 1½" side) in the heating ball valves of the domestic hot water modules.
3. Mount the connection pipe onto the connections (2a and 2b). Use the flat gaskets for this purpose.
4. Adjust the pipe.
5. Firmly tighten the screw connections.
6. The continuing piping can be connected to 2" external thread or to a flange DN 50. For this purpose, an additional gasket must be added to the flange DN 50 on site.
7. Mount a vent valve at the highest point in the pipeline on site.



5.2.2 Connection flow piping

1. Repeat the steps 1. to 7. for the connection of the flow from the buffer tank (connections 1a and 1b).
2. Connect the piping network on site to the connection set.
3. Fill the installation. Observe the indications in the instructions of the domestic hot water module FriwaMega.
4. Check all connections for tightness.
5. Mount the upper insulating shell of the domestic hot water modules. Make sure that the pipe insulation is flush with the insulation of the domestic hot water module.

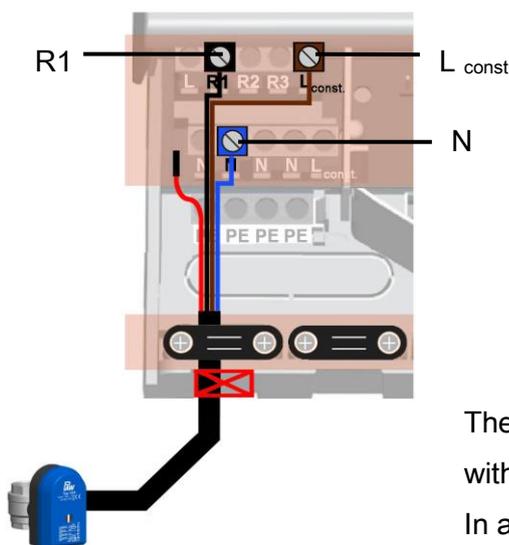


5.3 Connection of the 2-way zone valves to the controller FC3.8

The following figures show how to connect the 2-way zone valves to the controller FC3.8 and how to connect the controllers with each other.

	WARNING
	<p>Risk to life and limb due to electric shock!</p> <ul style="list-style-type: none"> ➤ Prior to commencing electrical work on the controller, pull the mains plug and make sure that a restart is not possible. ➤ Only after completing all installation work, plug the mains plug of the controller into a socket. An unintentional start of the motors is thus avoided.

1. Open the front panel of the controller.



2. Connect the 2-way zone valve to the corresponding controller.

Observe the polarity of the connection:

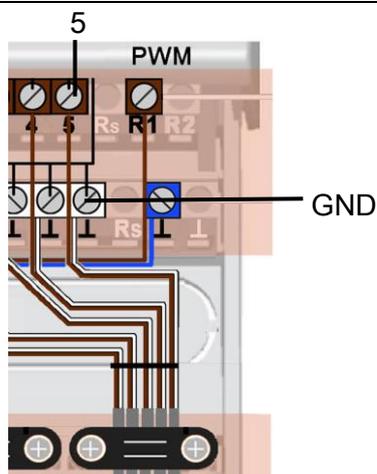
Black: R1

Blue: N

Brown: L const

Red: /

The red wire is an insulated signal line which is supplied with a mains voltage of 230 V when the valve is open. In an insulated state, the red wire stays in the 230 V connection space. Do not clamp the wire!



3. Connect the connection cable to both controllers.

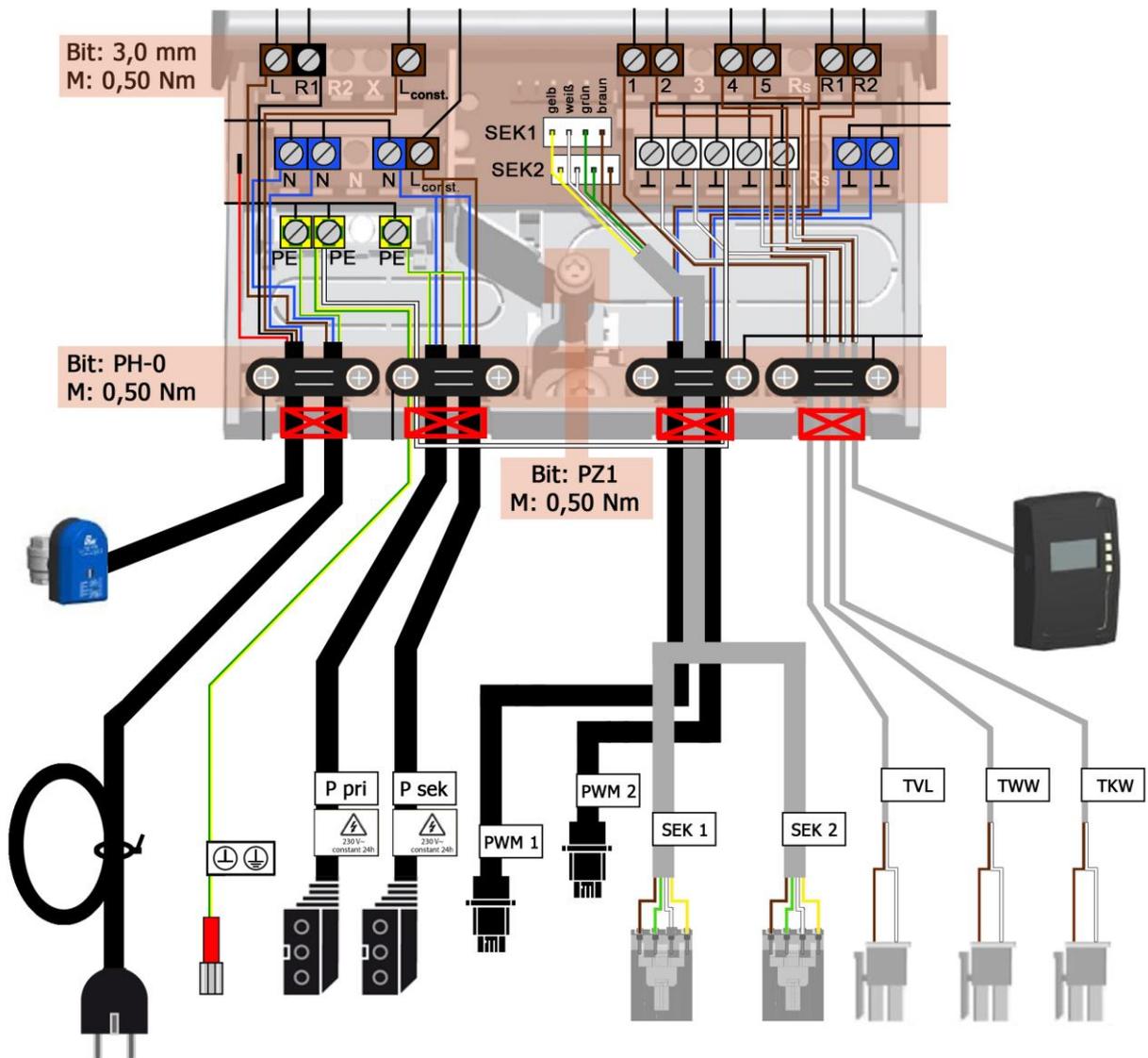
Observe the polarity of the connection:

Brown: 5

White: GND (⊥)

4. Mount the strain reliefs.

5. Set up the power supply of the installation and put the controller into operation according to the controller instructions.



5.4 Operation of the controller

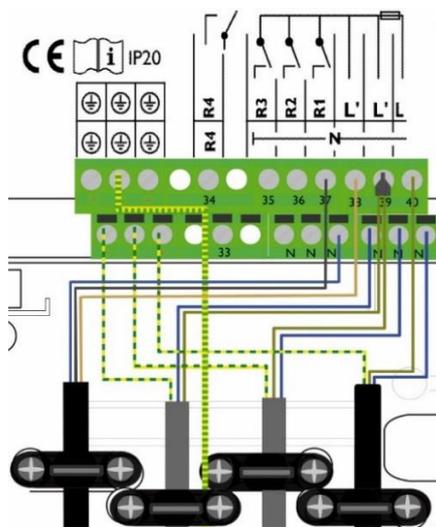
You will find a detailed description of the operation of the controller and its functions in the controller instructions.

1. Activate the cascade operation mode F:09 (on) on both controllers.
2. In the function F:09, set one controller as master (MA) and the other controller as slave (SL).
3. The circulation pump (optional) and the return distribution set (optional) must be connected to the master controller.

5.5 Connection of the 2-way zone valves to the controller FC4.13

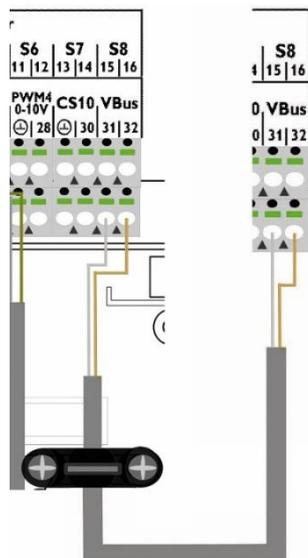
The following figures show how to connect the 2-way zone valves with the controller and how to connect the controllers with each other.

	WARNING
	<p>Risk to life and limb due to electric shock!</p> <ul style="list-style-type: none"> ➤ Prior to commencing electrical work on the controller, pull the mains plug and make sure that a restart is not possible. ➤ Only after completing all installation work, plug the mains plug of the controller into a socket. An unintentional start of the motors is thus avoided.



6. Open the front panel of the controller.
7. Connect the 2-way zone valve to the corresponding controller.

Black: R1
 Blue: N
 Brown: L'



8. Connect all the controllers with each other by using the enclosed connecting lines. Observe the polarity of the connection:
 - Brown: VBus-
 - White: VBus+
9. Mount the strain reliefs.
10. Close the front panel of the controller.
11. Set up the power supply of the installation and put the controllers into operation according to the controller instructions.

You will find a detailed description of the commissioning of the controller in the controller instructions (see page 35 / 36).

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