



# Installation Instructions

## Switch valve set for the three- and fourfold cascade

### FriwaMega



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Translation of the original instructions

We reserve the right to make technical changes without notice!

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

## 1 General Information

### 1.1 Scope of these instructions

These instructions describe the assembly of the switch valve set for the three- and fourfold cascade of the FriwaMega DN 32.

The chapters called [specialist] are intended for specialists only.

The commissioning of the Friwa modules is described in the respective instructions of the domestic hot water modules that are enclosed with the individual modules. For other components of the installation, such as storage tanks, controllers or pumps, please observe the instructions of the corresponding manufacturer.

### 1.2 About this product

The switch valve set for the Friwa-Kaskade contains 2-way zone valves with the corresponding piping for a connection to the FriwaMega as well as the required number of connecting lines. The motor-driven ball valves are DVGW certified and suitable for DHW modules. In the manual mode, the ball valves can be opened and closed manually.

### 1.3 Designated use



The switch valve set is used to cascade three or four **identically constructed** domestic hot water modules. The technical limit values specified in these instructions must be observed. Improper usage excludes any liability claims.

## 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

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

<b>NOTICE</b>
<p><b>Material damage due to mineral oils!</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>➤ It is imperative to avoid that EPDM gets in contact with substances containing mineral oils.</li> <li>➤ Use a lubricant based on silicone or polyalkylene and free of mineral oils, such as Unisilikon L250L and Syntheso Glep 1 of the Klüber company or a silicone spray.</li> </ul>

## 4 Product description

The switch valve set can only be mounted into domestic hot water modules of the type FriwaMega containing the controller FC4.13. For other domestic hot water modules, other assembly sets must be used.

If you have any questions about the spare parts required for your installation, please keep the serial number ready (it is placed in the lower right corner of the support sheet of the module).

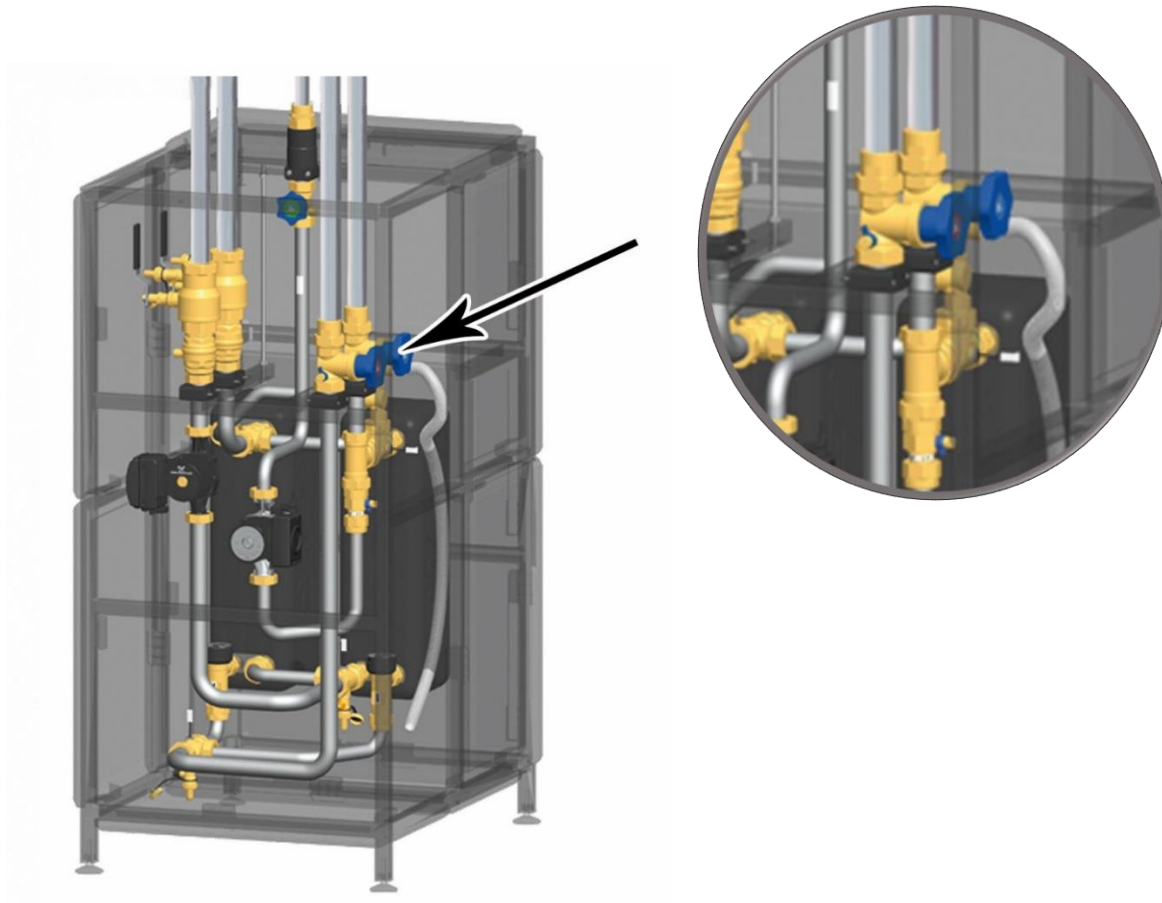
### NOTICE

#### Damage to property!

The location of installation must be dry, load-carrying, frost-proof and protected against ultraviolet radiation, in order to prevent material damage of the installation.

### 4.1 Assembly and installation [specialist]

Remove the upper and lateral isolation cover plate to have access to the cold water inlet (piston valve with blue badge) of the module (see figure).


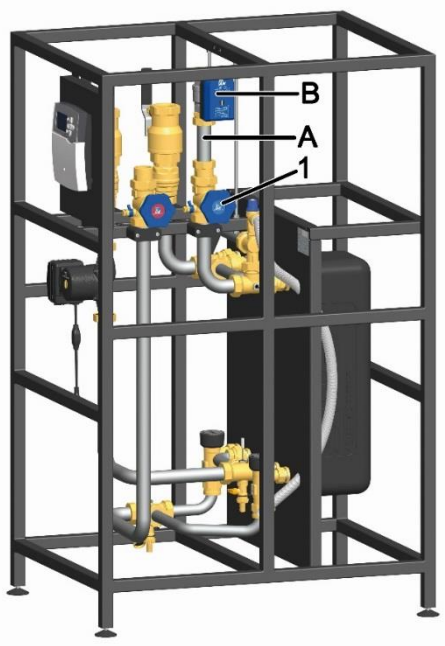


### Procedure for one module:

#### NOTICE


Use the new gaskets included! Screw the thread connections at first manually and adjust the pipes, in order to guarantee a low-tension installation.

1. Mount the straight pipe section (A) on the piston valve (1).
2. Screw the zone valve (B) onto the pipe section (A). Align the valve as shown in the figure on the right.
3. Firmly tighten all screw connections afterwards.
4. Connect the valve to the controller of the module (see page 7 ff.) and activate the automatic operation mode (see the separate instructions of the zone valve).
5. Convert the other Friwa modules in the same way.
6. Connect the controllers of the cascade with the communication cable included (see page 7 ff.).
7. Pipe the domestic hot water modules according to Tichelmann.  
Use at least DN 65 for the common piping of a threefold cascade and at least DN 80 for the common piping of a fourfold cascade.

	
<p style="text-align: center;"><b>FriwaMega</b> without switch valve set</p>	<p style="text-align: center;"><b>Installation of the switch valve set</b> for cascade operation</p>

### 4.3 Controller connection FC4.13

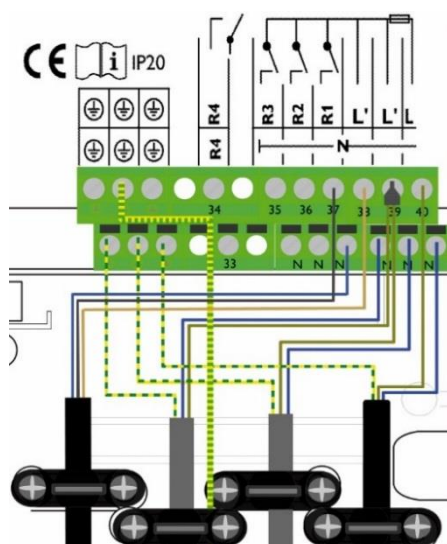
The following figures show how to connect the 2-way zone valves with the controller and how to connect the controllers with each other.



**WARNING**

**Risk to life and limb due to electric shock!**

- 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. This avoids an unintentional start of the motors.

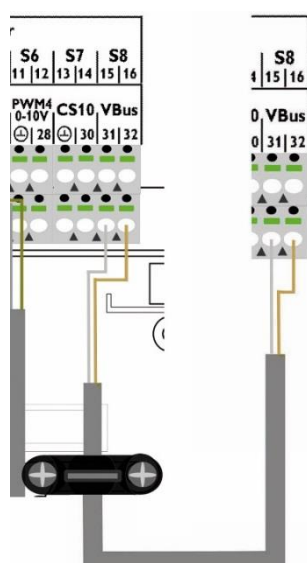


1. Open the front panel of the controller.
2. Connect the 2-way zone valve to the corresponding controller.

Black: R1

Blue: N

Brown: L'



3. Connect all the controllers with each other by using the connecting lines included. Observe the polarity of the connection:

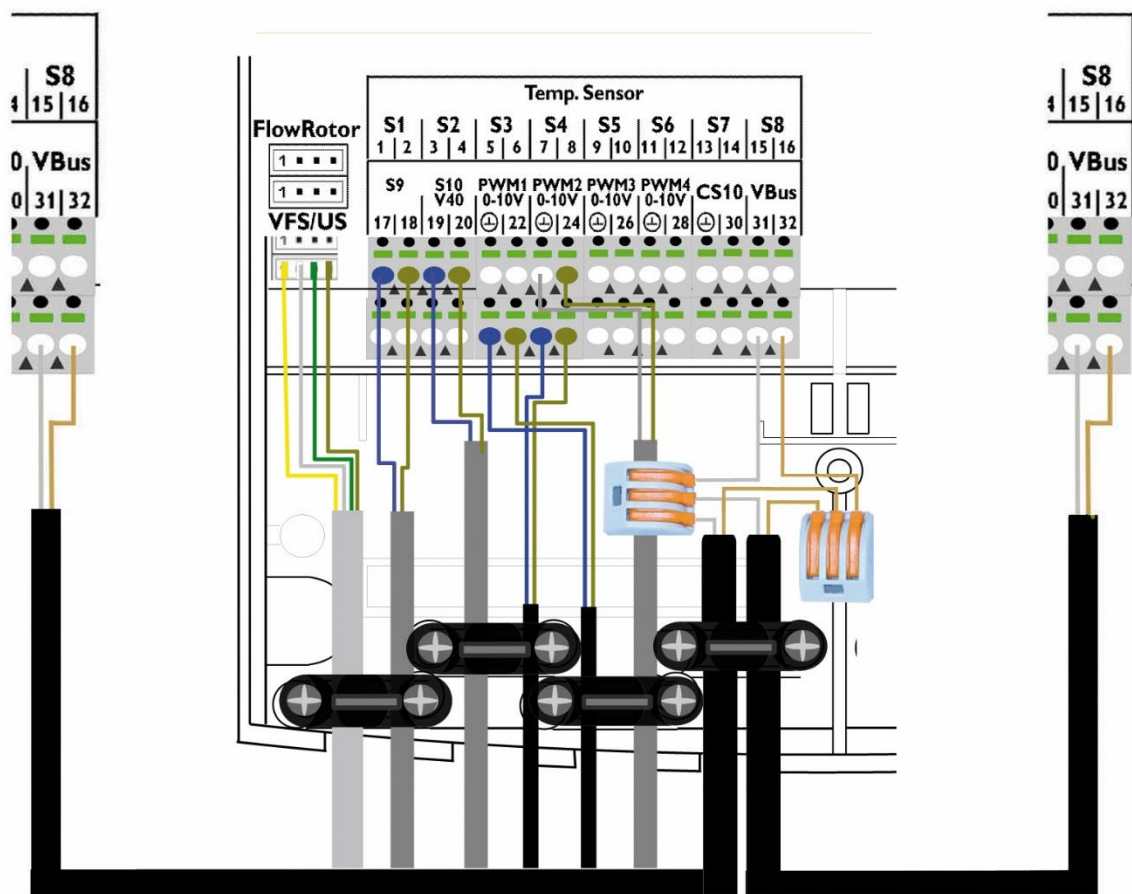
Brown: VBus-

White: VBus+

4. Mount the strain reliefs.
5. Close the front panel of the controller.
6. Set up the power supply of the installation and put the controllers into operation according to the controller instructions.

When installing a three- or fourfold cascade, two VBus lines are brought together at at least one module. To connect the VBus lines of the two adjacent modules to the centre module, it is necessary to duplicate the VBus terminals in the controller. The WAGO terminals included in the accessory bag can be used for this purpose. Put **VBus+** and **VBus-** respectively, by means of the lines included, on a WAGO terminal and connect both VBus lines.

**Observe the polarity!**

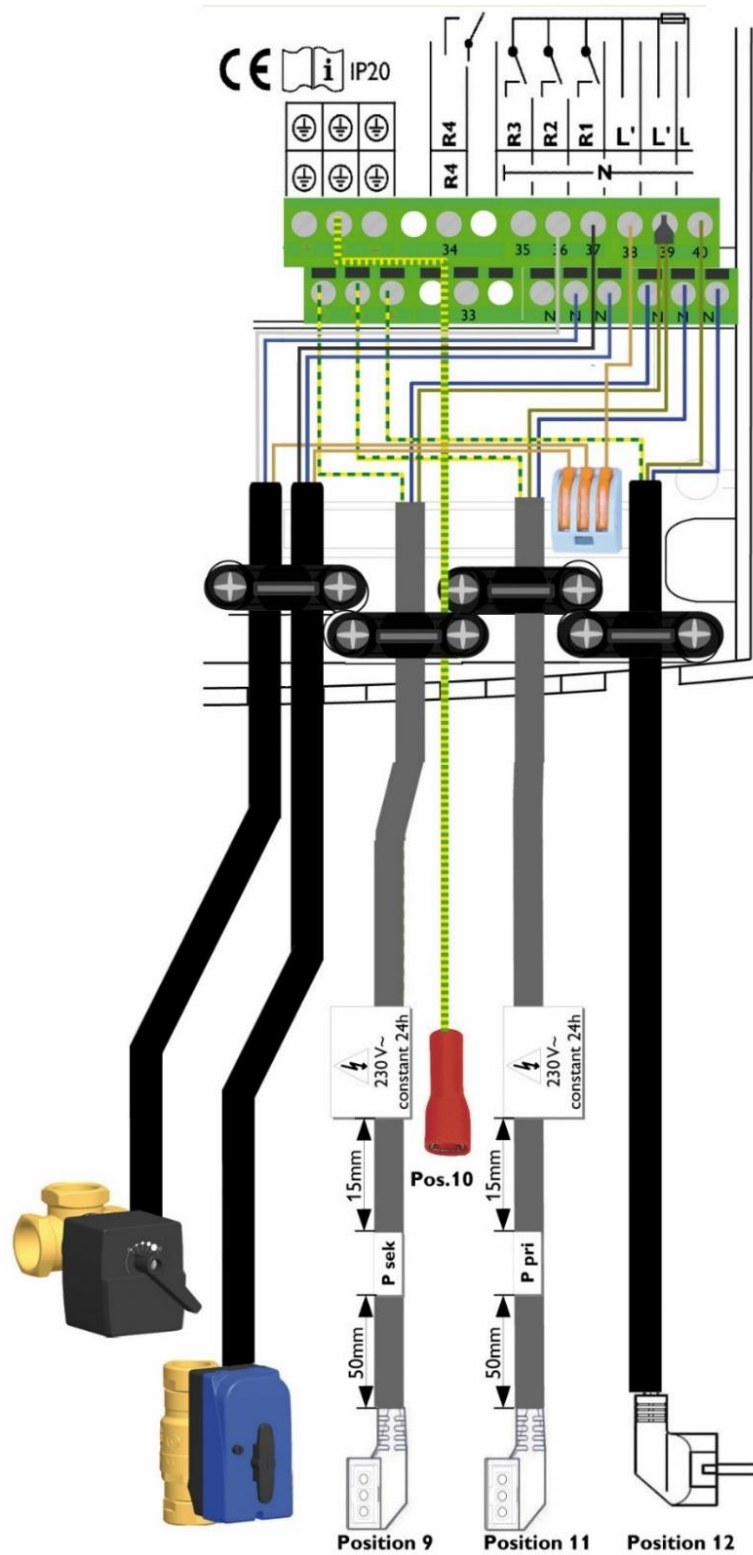


#### 4.4 Operation of the controller FC4.13

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



If not only the switch valve but also the 3-way valve for stratification shall be connected to the Master, then double L' with the help of a WAGO terminal (see example).



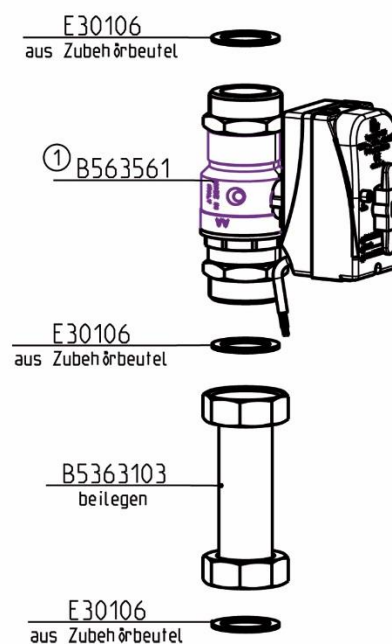
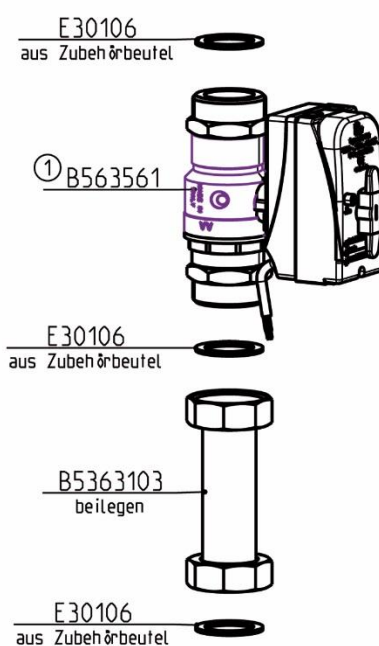
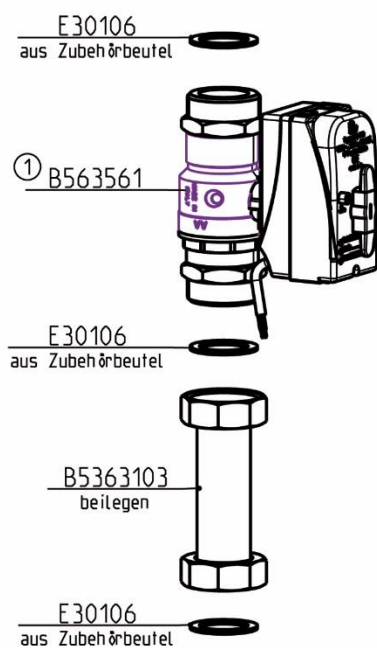
## 5 Scope of delivery

### NOTICE

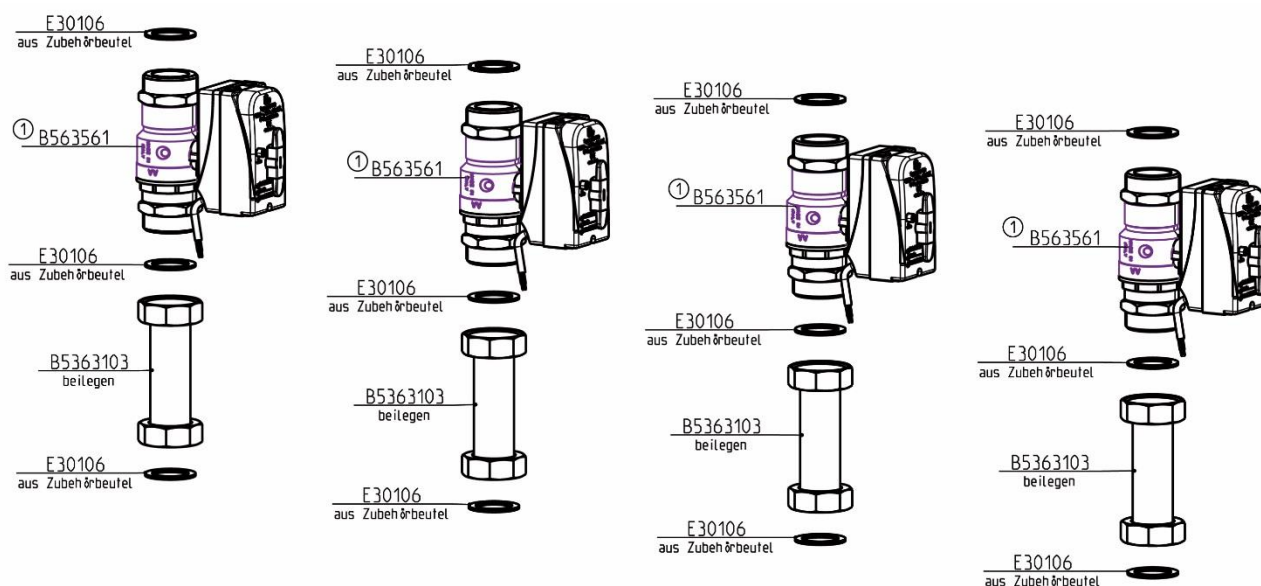
Complaints and requests/orders of spare parts will only be processed with information on the serial number!

The serial number is placed on the short and straight pipe section.

### 5.1 Switch valve set FriwaMega (64042830)

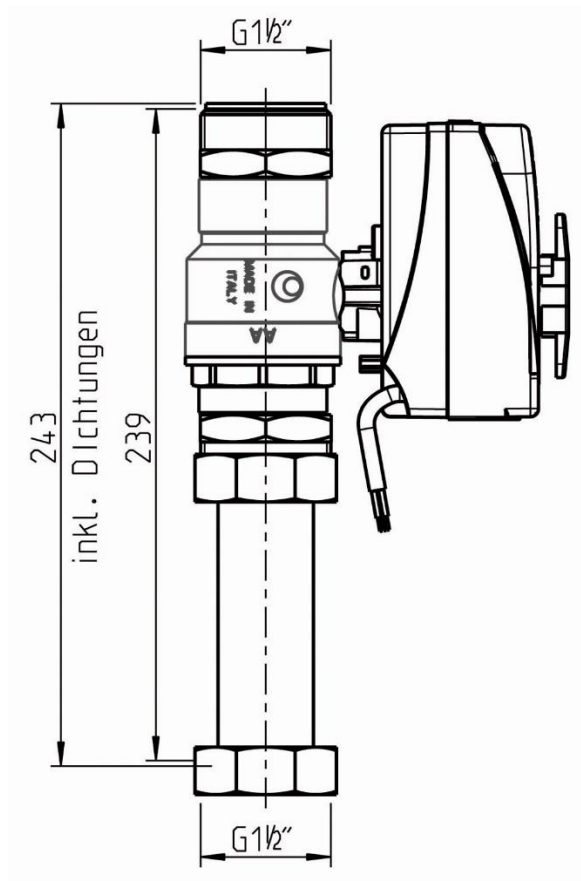


### 5.3 Switch valve set FriwaMega (64042840)



## 6 Technical data 2-way zone valve

Dimensions	Switch valve set FriwaMega
Total height	243 mm
Pipe connections	1½" ext. thread
Operating data	
Degree of protection	IP44 (standard IEC 60529)
Nominal voltage	230 V AC
Nominal pressure	PN 25
Maximum temperature of the fluid	110 °C
Setting time	30 sec / 90°
Materials	
Valve housing	CW617DW
Ball	CW617N
Valves and fittings	Stainless steel, approved for domestic hot water
Gaskets	PTFE G 502, EPDM, Perox, FPM



## 7 Commissioning report

Installation operator

Location of installation

Serial numbers

Valve R1:

Valve R2:

Valve R3:

Valve R4:

Functioning during

manual operation mode

Valve R1:

☐

OK

Valve R2:

☐

OK

Valve R3:

☐

OK (optional)

Valve R4:

☐

OK (optional)

Piping

ø=

mm

l =

m

Equipment

☐

with circulation line

☐

without circulation line

Have all the pipes of the primary and secondary circuit

been checked for tightness?

☐

Checked

Are all cables properly connected?

☐

Checked

Are the controllers set to cascade operation mode?

☐

Checked

Plumbing company

Date, signature





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