

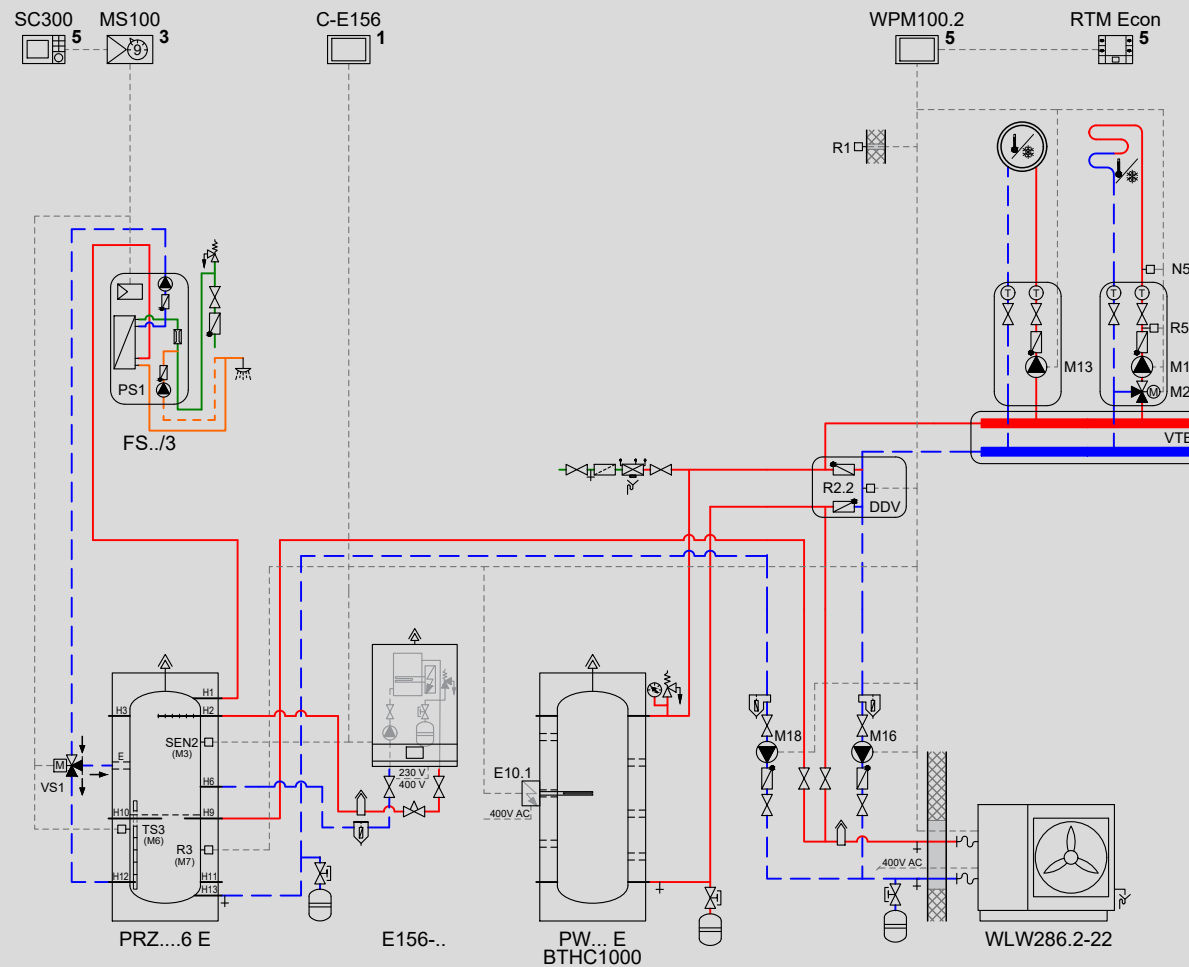
System schematic

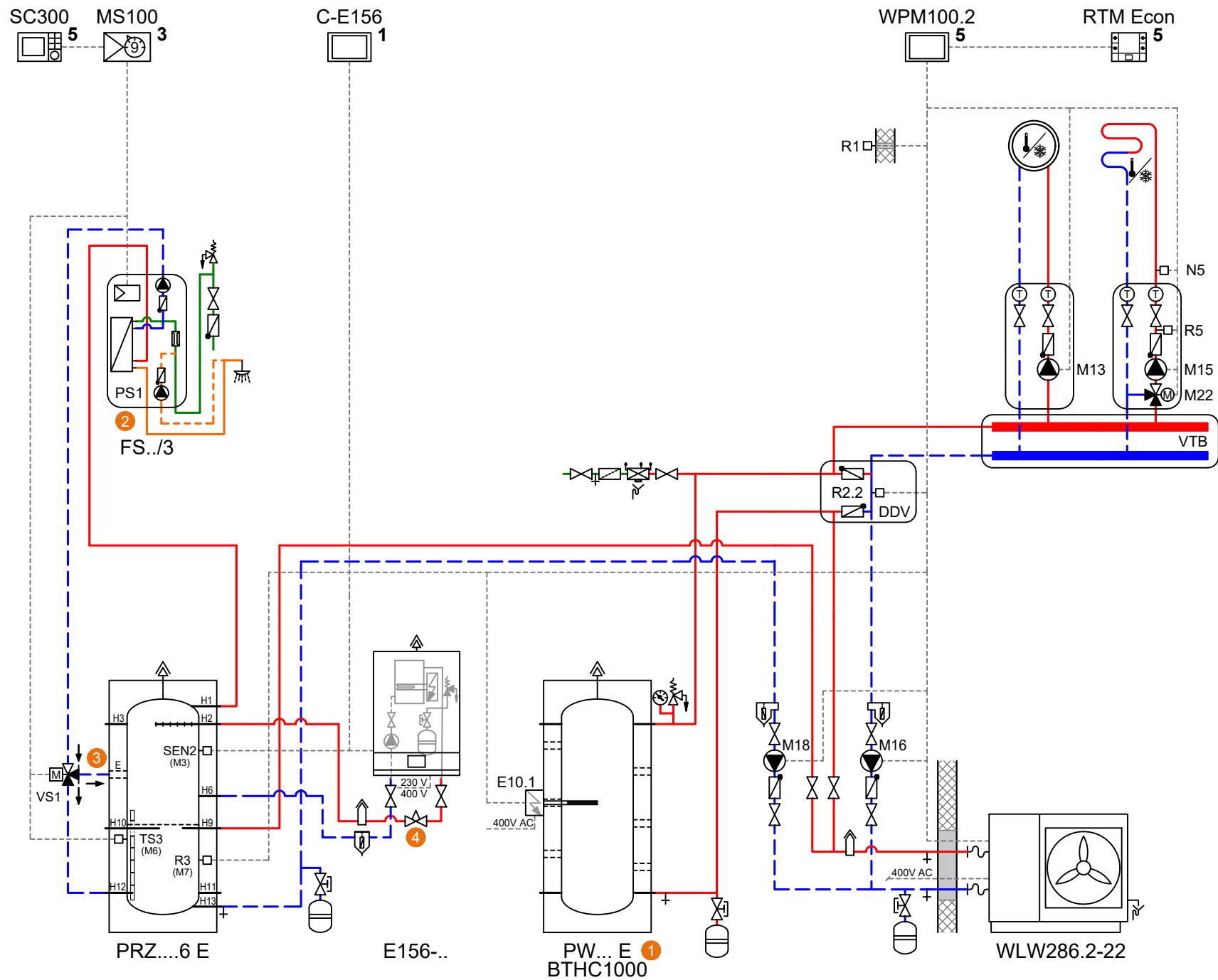
Logatherm WLW286.2 with Logalux fresh water station

Buderus

Hydraulic components:

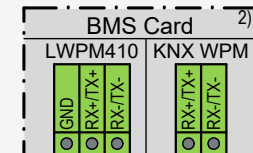
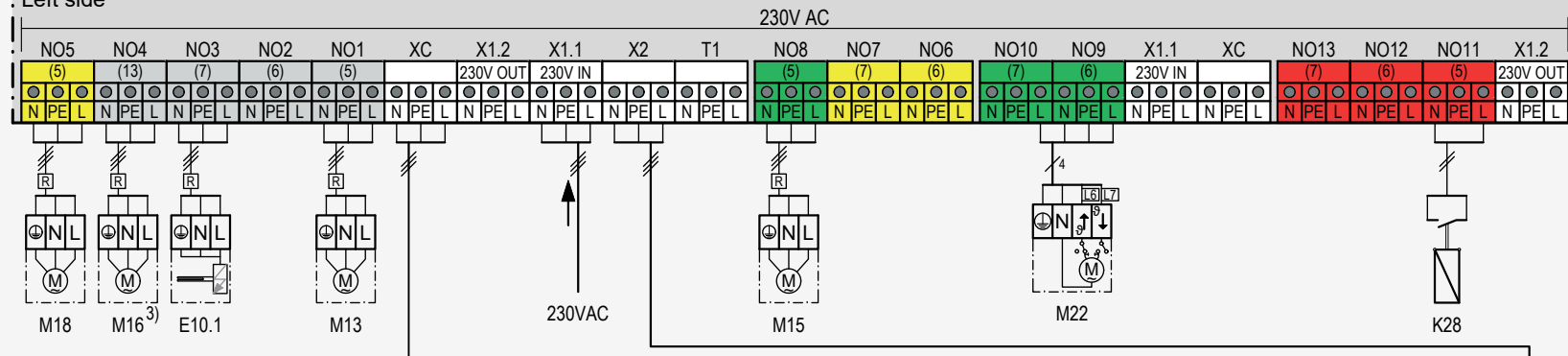
- Air-to-water heat pump
- Electric heater
- Buffer tank
- Fresh water station
- Heating/cooling circuits



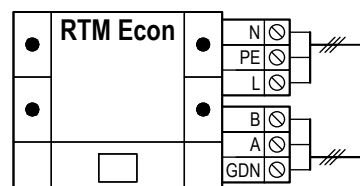
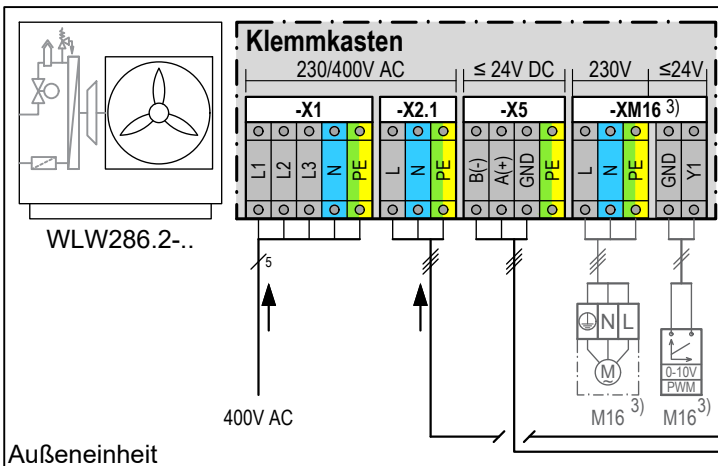
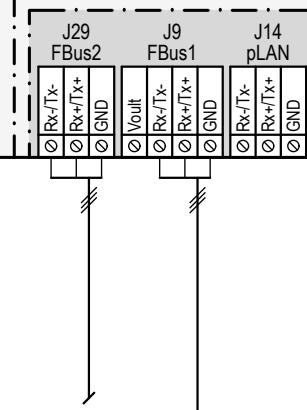
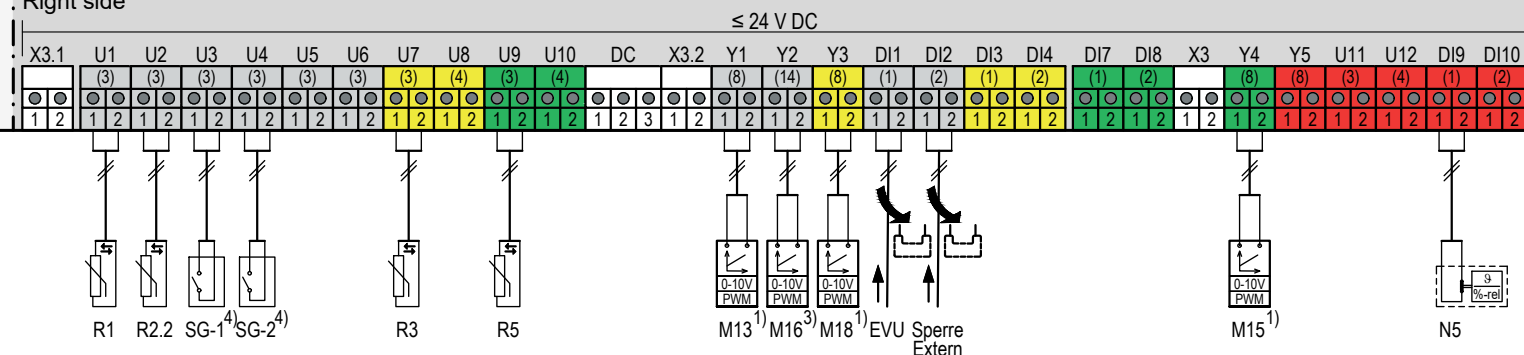


WPM100.2

Left side



Right side



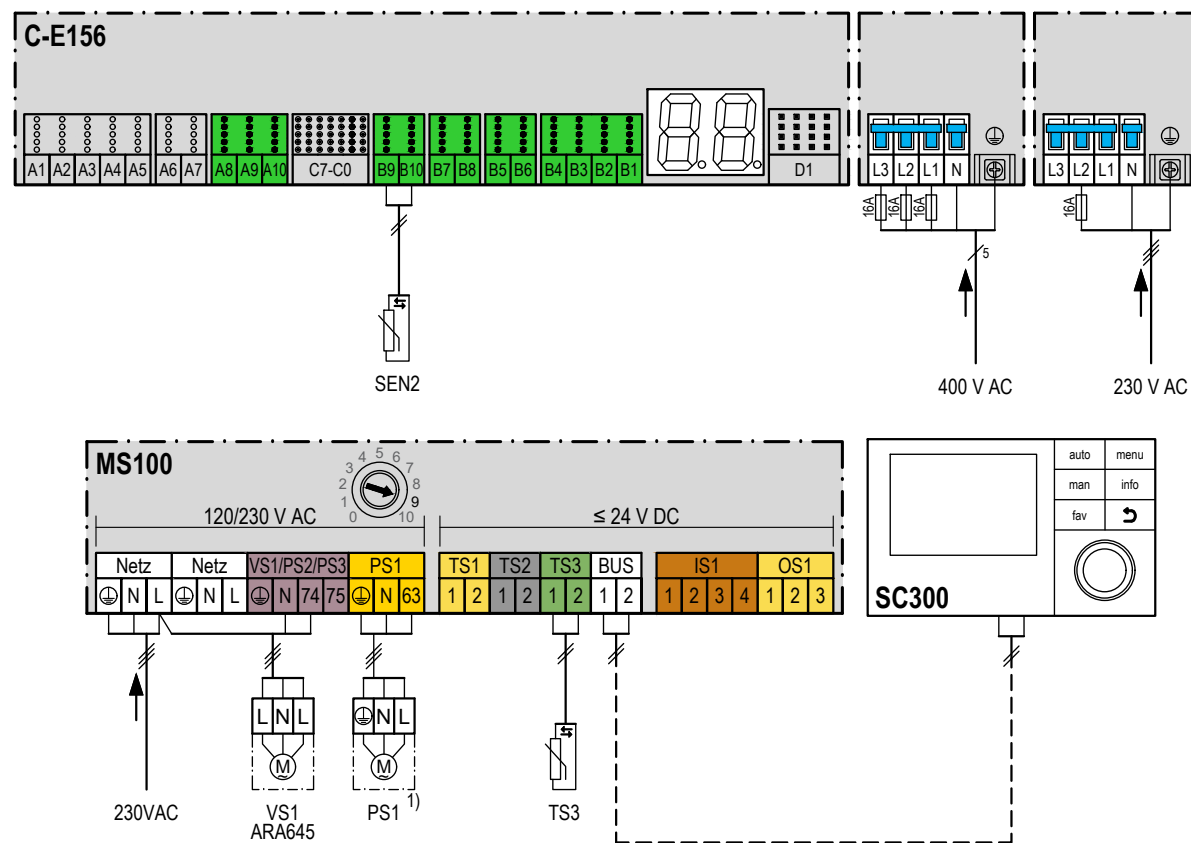
🔊	0		I		II		III		🔊
(1)	DI1	A1/K22	DI3	---	DI7	---	DI9	N5	(1)
(2)	DI2	A2/K23	DI4	---	DI8	---	DI10	---	(2)
(3)	U1	R1	U7	R3	U9	R5	U11	---	(3)
(4)	U2	R2.2	U8	---	U10	---	U12	---	(4)
(5)	NO1	M13	NO5	M18	NO8	M15	NO11	K28	(5)
(6)	NO2	H5	NO6	---	NO9	M22↑	NO12	---	(6)
(7)	NO3	E10.1	NO7	---	NO10	M22↓	NO13	---	(7)
(8)	Y1	M13 ¹⁾	Y3	M18 ¹⁾	Y4	M15 ¹⁾	Y5	---	(8)
(9)	U3	N27.1	Warmwasser domestic hot water eau chaude sanitaire		2. Kreis: gemischt 2. circuit: mixed 2. circuit: mélangé		Kühlen aktiv		(9)
(10)	U4	N27.2					cooling activ		(10)
(11)	U5	---					réfrigérer actif		(11)
(12)	U6	---							(12)
(13)	NO4	M16 ³⁾							(13)
(14)	Y2	M16 ³⁾	+A420		+A411		+A451		(14)

1) Speed control optional

2) Additional equipment - only one card can be installed (LWPM410 or KNX WPM)

3) Alternative connection option for M16: to XM16 in the outdoor unit (voltage and speed control)

4) Optional



1) Circulation pump PS1 optional (accessories)

2) 230 V connection only for electric heaters with a power rating of 4...12 kW

Technical notes

General information

- This configuration is suitable for applications with heating and cooling demand.
- In monoenergetic operation, the heat pump covers the heating and hot water demand.
- A general connection of pumps by means of a coupling relay is recommended.
- Due to the limited volume of the PRZ....6 E hot water tank, this configuration is only suitable for heat pumps with a power rating of ≤ 22 kW.
- An additional heat source must be provided in the hydraulics to ensure the frost protection of the heat pump in all operating conditions.

Hot water preparation

- In order to keep the share of the electric auxiliary heater as low as possible, the heat pump operates with priority.
- For buildings in which a permanent hot water temperature of $\geq 60^\circ\text{C}$ must be ensured, a switch-on value for the electric auxiliary heater of $> 60^\circ\text{C}$ must be selected.
- The electric boiler in the head of the PRZ....6 E hot water tank is set to a fixed value.

Cooling

- The relay K28 can be used externally as a signal for switching between heating and cooling.
- With silent cooling, the water temperature must always be kept above the dew point temperature. For this purpose, at least one room controller (RTM Econ) must be installed in a reference room in order to regulate the min. permissible flow temperature depending on the measured room temperature and humidity. To avoid condensation at critical points in the cooling system, up to 5 dew point sensors (TPF341) in conjunction with a dew point monitor (TPW WPM) can interrupt the cooling operation if necessary.
- With dynamic cooling, all pipes and the buffer tank must be provided with vapor diffusion-proof insulation. The heat pump is switched on and off via the set return temperature. The room temperature control must be taken over by the temperature controllers of the fan convectors.
- 1 ■ If cooling below the dew point is desired, a storage tank with vapor diffusion-proof insulation should also be selected (e.g. BTHC1000). Otherwise, only cooling above the dew point is possible and the system must be monitored by using dew point sensors.

Fresh water station Logalux FS../3

- The FS../3 fresh water stations with stainless steel brazed plate heat exchangers are characterized by their particularly hygienic hot water preparation in continuous flow.
- The FS../3 fresh water stations are available with a tapping capacity of 27...160 l/min.
- The temperature-sensitive return feed function is carried out via the 3-way changeover valve VS1 (catalog accessory: VRG with ARA645 actuator).
- 2 ■ The circulation pump PS1 is an optional accessory.

Technical notes

3 Electrical connection of the 3-way changeover valve at the MS100 function module

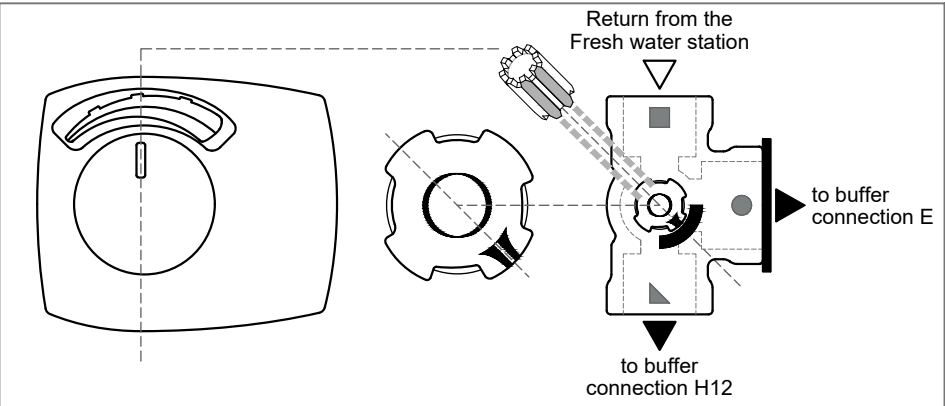
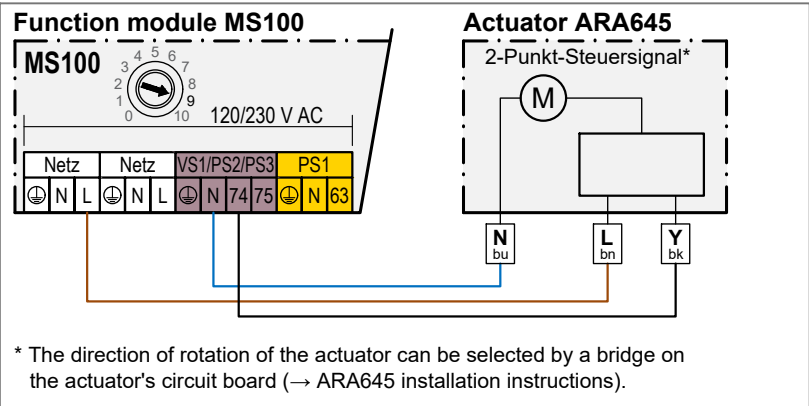


Figure 1: Electrical connection of the ARA645 actuator to the MS100

Figure 2: Installation position of the 3-way changeover valve VRG.../ARA645

- Terminal L = permanent live supply to the MS100 function module and ARA645 actuator
- Terminal 74 de-energized = return to the PRZ....6 E buffer tank bottom (H12)
- Terminal 74 energized= return to the buffer tank PRZ....6 E middle (E)
- Terminal 75 is not assigned and can be used as a fault message output (230V).

Buffer tanks that can be combined with the heat pump

- Heat pump buffer tank matrix

Heat pump	Buffer tank (fresh water station)			Buffer tank (heating)			Buffer tank (heating/cooling)
	PRZ500.6E	PRZ750.6E	PRZ1000.6E	PW200 E	PW500 ER	PW1000 E	BTHC1000
WLW286.2-22	✓	✓	✓	✓	✓	✓	✓
WLW286.2-42	—	—	—	—	✓	✓	✓

Table 1: Selection table for buffer tank

Technical notes

Electric heater Logamax E156:

- The Logamax E156 electric heater is offered with different power ranges from 4...24 kW.
- The electric heater E156 is used exclusively for hot water preparation and is operated as an electric auxiliary heater (no BUS connection to the heating system control).
- The connection on the PRZ....6 E buffer tank is made above the separating plate at connections H2 and H6.
- 4 ■ Volume flow via E156 must be limited to 1,000 l/h to ensure outlet temperature > 60°C.
- For buildings, For buildings in which a permanent hot water temperature of $\geq 60^{\circ}\text{C}$ must be ensured, the switch-on value for the electric heater E156 must be set accordingly. Recommendation for setpoint temperature 61°C .
- A cable for the power supply is already connected to terminal A1 on the E156 electric heater.
- **Caution:** The electric appliance is only used for hot water preparation. Therefore, the heating mode must be deactivated and the hot water mode activated.
- Deactivate heating mode:
 - Press the  button. The  symbol flashes.
 - Use the  button to lower the target temperature until the symbol  appears. (The symbol appears directly after the lowest adjustable value ).
- Activate hot water mode:
 - To access the settings level, press and hold the  and  buttons simultaneously for 10 seconds.
 - In the settings level, select parameter SE09 using the  or  button and confirm with the  button.
 - Use the  or  button to select the value 1 = DHW and confirm with the  button.
 - To exit the settings mode, scroll using the  or  button until the  symbol appears, and confirm with the  button. The modified settings are saved.
- Set the domestic hot water setpoint:
 - Press the button  twice. The hot water symbol  flashes.
 - Set the desired target temperature using the  or  button and confirm with the  button.

Further notes

Legal notices

This circuit diagram is a non-binding schematic representation of a possible hydraulic circuit.

The dimensions and the position of the connections can be found in the respective installation instructions.

The electrical wiring is shown in detail in the circuit diagrams.

The safety devices must be designed in accordance with the currently valid standards and local regulations.

Legend

Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
Regulators and modules position									
	1 at the heat/cooling generator				4 in the station or on the wall				
	2 at the heat/cooling generator or on the wall				5 on the wall (reference room)				
	3 in the station				6 in the control unit				
Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
Piping/Electrical wiring									
	Flow - Heating/Solar		Flow Brine		Domestic hot water		Domestic cold water		Electrical wiring
	Return - Heating/Solar		Return Brine		Domestic hot water circulation		Refrigeration system		Electrical wiring with a break
Actuators/Valves/Temperature Sensors/Pumps									
	Ventil		Revisionsbypass		Balancing valve		Overflow valve		Shout-off valve with dirt trap (with or without magnet)
	Kappenventil		Shut-off valve with actuator		Shut-off valve with therm. thermostatic actuator or anti-freeze valve		Absperrventil, magnetically controlled		Differential pressure regulator
	3-way valve with actuator (mixing)		3-way valve with actuator (distributing)		3-way valve with thermostatic actuator		Pumpe		Check valve
	3-way valve with actuator (switching)		3-way valve with actuator (switching, adjustable)		4-way valve with actuator		Safety valve		Safety group
	Temperature sensor		Safety temperature limiter		Flue gas temperature sensor		Flue gas temperature limiter		Outdoor temperature sensor
Miscellaneous									
	Radio (e.g., Controller, Sensor)		Thermometer		Manometer		Drain funnel with odor trap		Filling/draining valve
	Relay		Automatic/manual air vent		Air separator		Dirt trap		Magnetite/Sludge separator
	Compensator		Domestic hot water outlet		Heat meter		Volumetric flow meter		Collection tank
	Low loss header with sensor		Heat exchanger		System separation according to EN1717		Expansion vessel with cape valve		Immersion heater
	Heating circuit		Underfloor heating circuit		Ventilation heating circuit		Swimming pool heating circuit		Circuit function (Heating/Cooling)