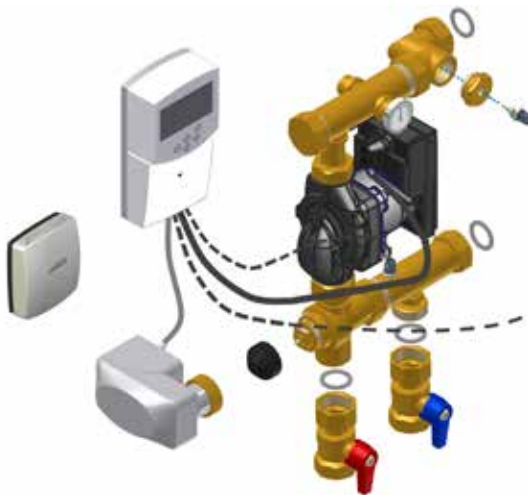


Energy Systems

Roth weather compensation control station with high-efficiency pump

Assembly Instructions



German quality since 1947



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General information

Intended use

Before installation, the fitter or operator must read and understand these instructions.

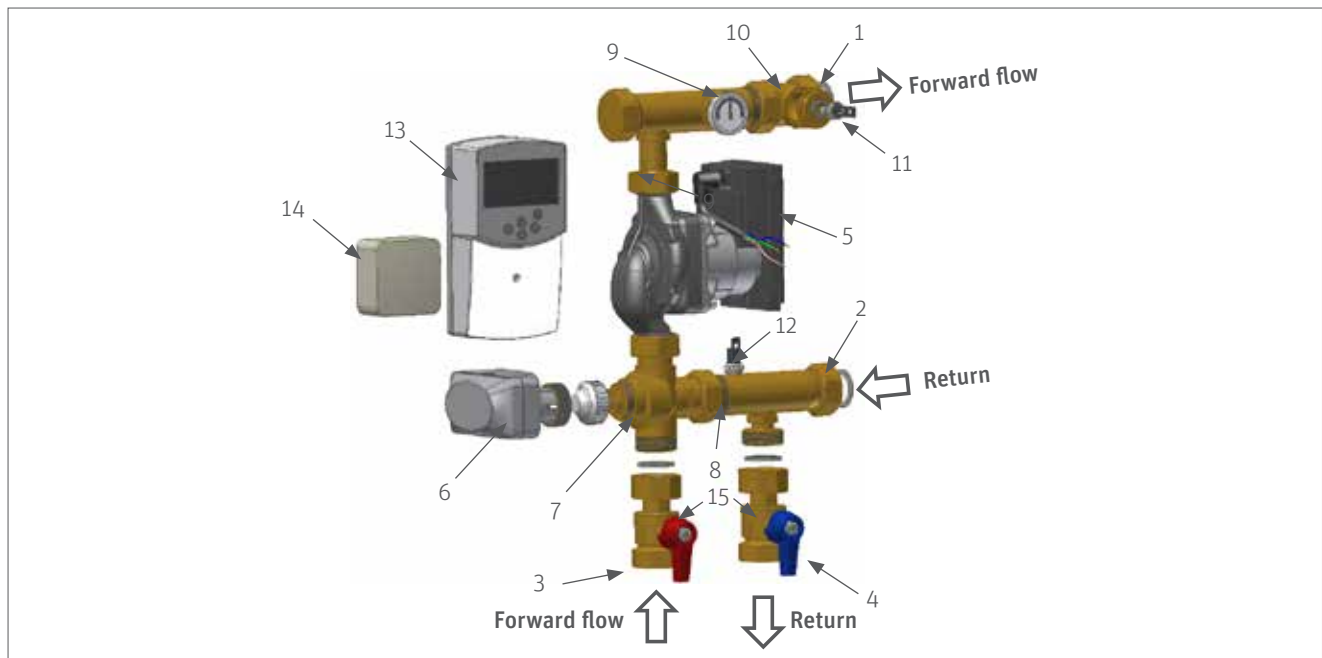
The "weather compensation control station with high-efficiency pump" is used for the load-dependent control of the inlet temperature in panel heating and cooling systems.

The inlet temperature is controlled by the integrated Roth CC-HC climate controller, depending on the outside temperature and using a selectable heating/cooling curve. The control station is ready for direct connection of the Roth manifold and designed for installation in the Roth manifold cabinet. It should only be used in dry rooms in a residential or industrial environment. No other use is authorised.

Benefits

- > Ready for installation for all Roth manifolds with a flowmeter and Roth Universal manifolds
- > Compact design, modern controller with large display
- > Inlet temperature control which can be set individually within a wide range (e.g. min./max. limit)
- > Controller offers day programming with 9 fixed and 4 individual user programs
- > Fitted thermometer displays the current inlet temperature
- > Ball valves included
- > Flat sealing connections throughout
- > Can be installed on the left or right of the manifold, as preferred
- > Suitable up to approx. 14 kW
- > Satisfies energy efficiency class A and compliant with the ERP Directive for 2013 and 2015.

Layout/Components



- | | |
|--|---|
| 1 Panel heating/cooling forward flow pipe (1" union nut) | 9 Forward flow thermometer |
| 2 Panel heating/cooling return pipe (1" union nut) | 10 Eccentric screw fitting with inlet temperature interface |
| 3 Primary forward flow pipe (1" external thread) | 11 Inlet temperature sensor |
| 4 Primary return pipe (1" external thread) | 12 Return temperature sensor |
| 5 Circulation pump | 13 CC-HC climate controller |
| 6 Actuator | 14 Outside temperature sensor |
| 7 3-way mixing valve | 15 Ball valve set 1" forward flow/return |
| 8 Check valve | |

Installation

■ Safety instructions



Always unplug the system at the mains and disconnect the power supply before starting work!



The control station is not splashproof or impervious to dripping water and must therefore only be installed in a dry location!



The appliance may only be connected and put into operation by qualified personnel and in accordance with the local regulations which apply!

■ Installation

The control station is designed to be installed directly onto the Roth manifold.
It can be installed on either the left or the right of the manifold.
This can be achieved by simply turning round the eccentric screw fitting and repositioning the thermometer at the forward flow pipe.

It must be ensured that the forward flow and return pipes are connected correctly. During the installation procedure it must further be ensured that the pump and temperature limiter cables and the sensor capillary tube are not damaged, stretched or buckled. The installation is generally performed in the boiler room or in the Roth manifold cabinet.

■ Manifold cabinet size depending on mounting and number of heating circuits

Roth manifold cabinet width*	with vertical heat meter		with horizontal heat meter
	Maximum number of heating circuits (manifold size)		
550 / 560 mm	–	–	–
700 mm	3	2	–
750 mm	4	3	–
900 mm	7	6	4
950 mm	8	7	5
1.100 mm	11	11	8
1.150 mm	12	12	9
1.300 mm	12	12	12

*Important: Flush-mounted cabinets must be pulled out to a minimum depth of 120 mm!

Electrical connection

■ Electrical connection

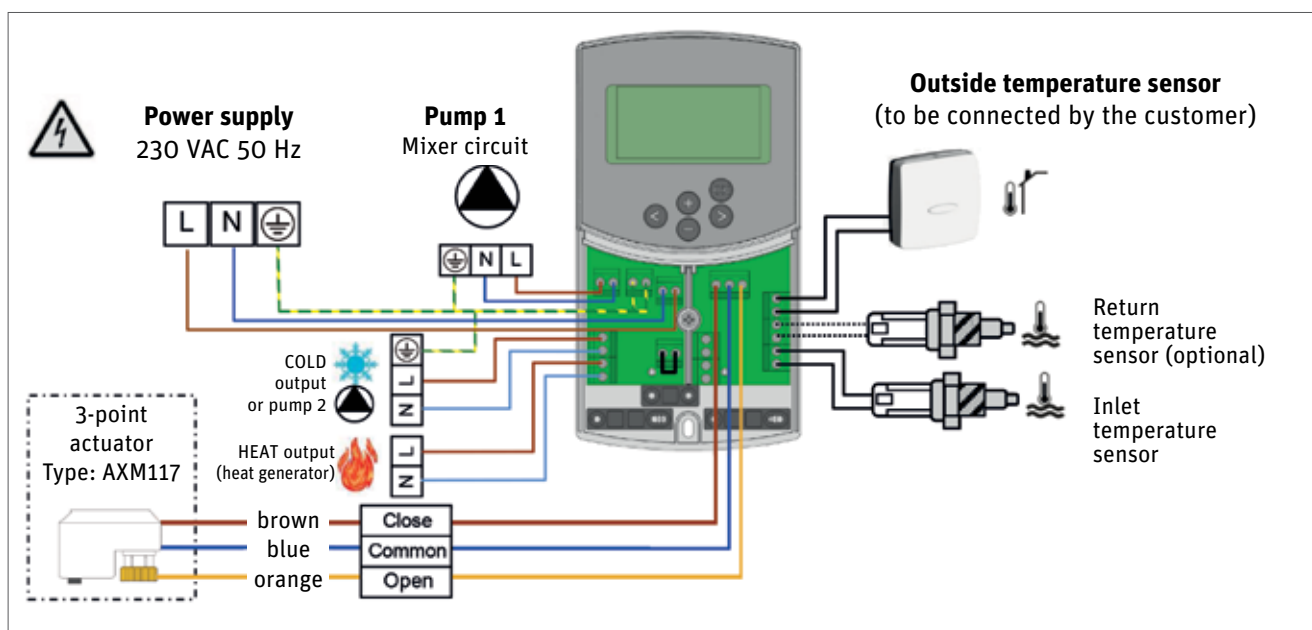


Please refer to the separate installation and operating instructions for the controller!

Connect the power supply to the controller.
Connecting pipe 3 x 1,5 mm².

The pump, actuator and inlet and return temperature sensors are supplied wired ex-works. Fit the outside temperature sensor and connect it to the controller using the 2-wire cable.

L = Phase 230 V (brown)
N = Neutral (blue)
PE = Protective conductor (green/yellow)



■ Note/Option

In order to ensure that the pump is controlled in line with requirements, the pump output of the Roth connection module, which is available separately and which includes a pump control card, or the pump output of the Roth wireless control unit can be connected at the thermostat input In1.

Moreover, if required, the cable bridge which is supplied ex-works can be replaced with the connection (opener contact) of a temperature limiter.

■ Function and setting



Please refer to the controller installation and operating instructions for information about operation and settings!

The inlet temperature is controlled in accordance with the outside temperature and the selected control settings (heating curve). The

inlet temperature is constantly monitored and analysed by the controller. Depending on the requirement, the actuator opens the 3-way valve to the boiler-side primary flow. The injected water is mixed with the return water from the heating circuits and the required inlet temperature is therefore achieved.

Commissioning

■ Commissioning

1. Preparation

Shut off the Roth weather compensation control station to the boiler side, switch off the pump/controller and close all heating circuits at the manifold.

2. Filling the manifold and the control station

First fill the manifold and control station with heating water. To do this, ensure that the heating circuits are closed, then connect the filling hose to the KFE cock at the return branch (Fig. 1_B) and the discharge hose to the KFE cock at the forward flow branch (Fig. 1_A).

Open both KFE cocks and fill the manifold and control station until water emerges at the KFE cock at the forward flow branch. Close both KFE cocks.

3. Filling and rinsing the heating circuits

To fill and rinse the heating circuits, connect the filling hose to the KFE cock at the forward flow branch (Fig.2_A) and the discharge hose to the KFE cock at the return branch (Fig. 2_B).

Open the heating circuit to be rinsed.

Next, open the KFE cocks and flush the heating circuit in the direction of flow until air and any impurities have been completely removed from the circuit. The check valve (C) in the mixer bypass prevents a short circuit during the rinsing process.

Repeat the procedure for all heating circuits.

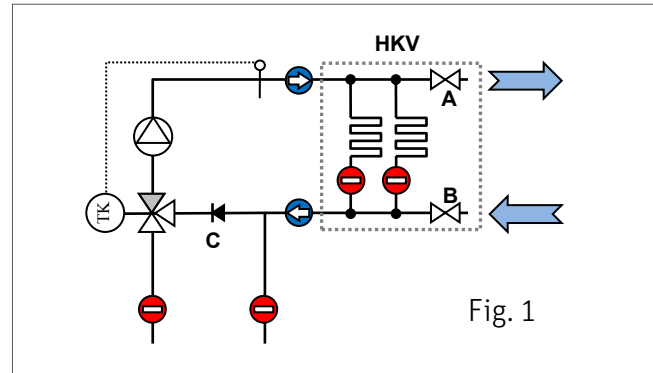


Fig. 1

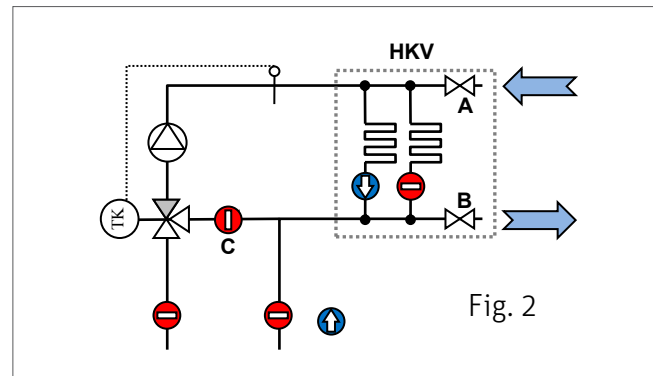





Fig. 2

 Rinsing may only be carried out in the flow direction of the heating circuits, i.e. the water must enter at the forward flow pipe and be discharged at the return pipe!

 The outflow must always be open in order to prevent the high water pressure from damaging the heating system!

 Please read and follow the rinsing instructions in the assembly and operating instructions for the manifold!

Technical data

■ Technical data/Materials

Permissible ambient temperature range	0 - 40 °C ¹⁾
Permissible operating flow temperature range	0 - 80 °C ¹⁾
Maximum operating pressure	6 bar
Inlet temperature setting range	5 - 80 °C
Maximum thermal output	approx. 14 kW
Circulation pump	Wilo Yonos PARA RS 15/6 RKA
Pump installation length	130 mm
Operating voltage	230 V - 50 Hz
Fittings	Brass Ms 58
Pipe parts	Brass Ms 63
Plastics	Impact- and temperature-resistant
Flat packings	AFM 34 or EPDM
O-rings	EPDM

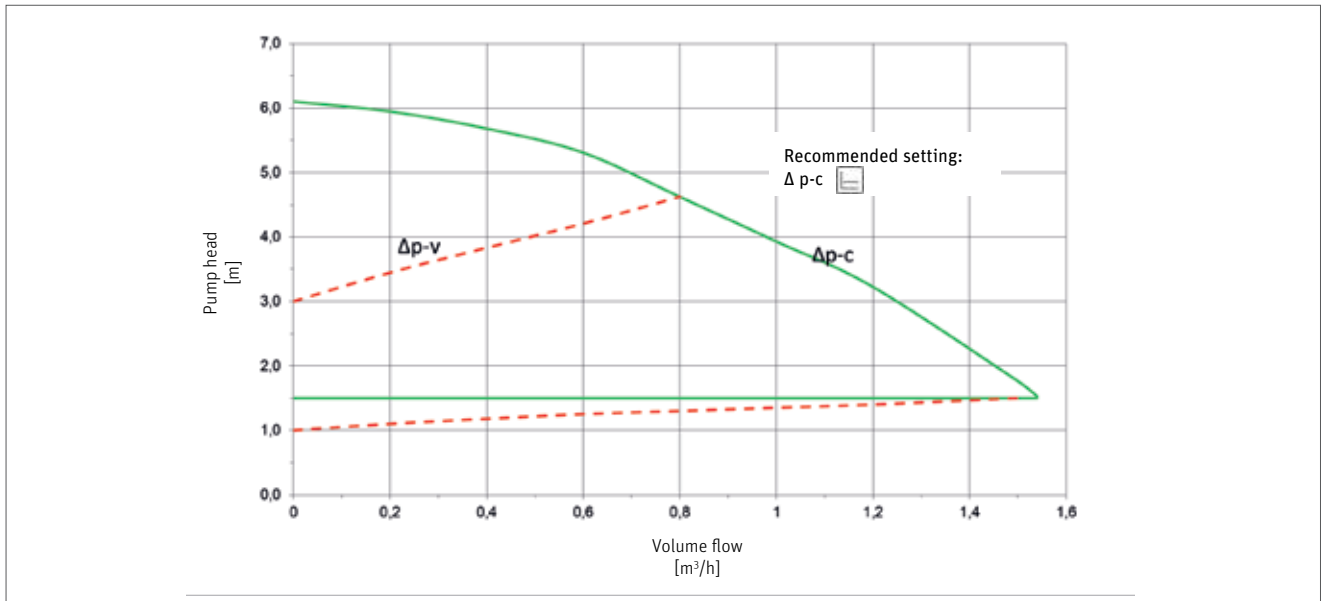
¹⁾ Please also refer to the pump instructions.

Technical data

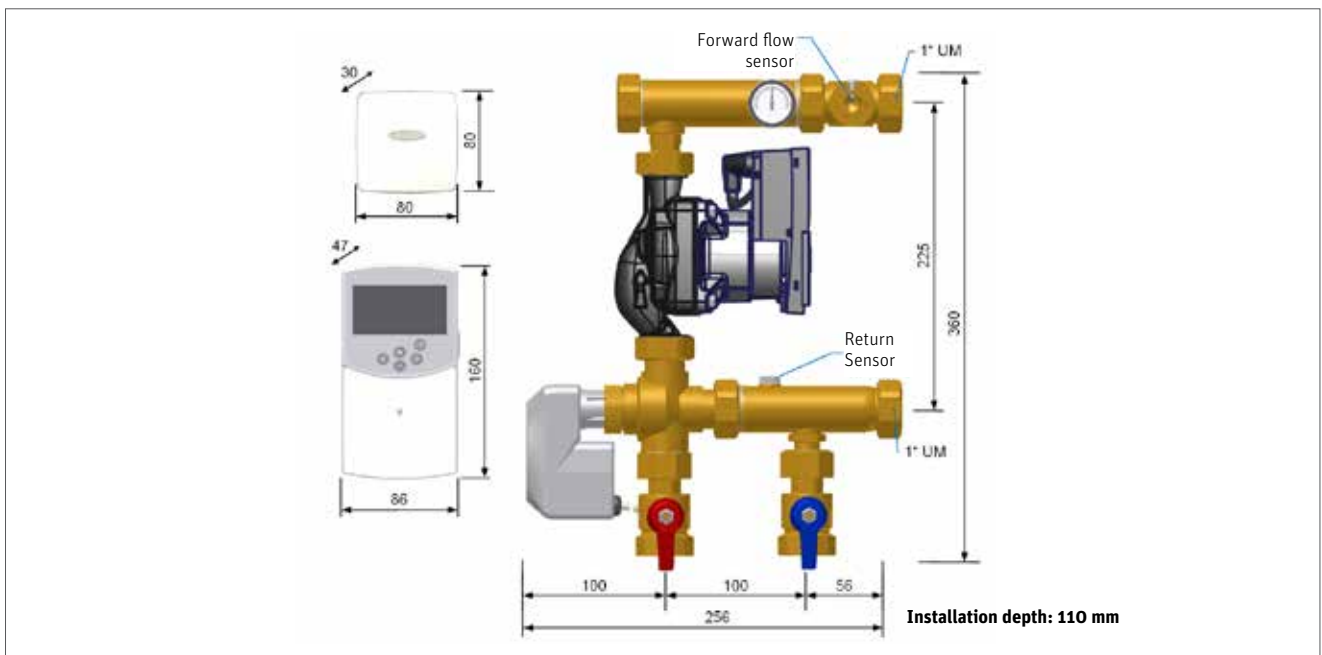
Pump diagram

Characteristic curve with allowance for control station pressure loss for the Wilo Yonos PARA RS15/6 RKA high-efficiency pump.

Satisfies energy efficiency class A and compliant with the ERP Directive for 2013 and 2015.



Dimensions



Troubleshooting

X.	Problem	
X.X	Possible cause	Solution
1.	The heating circuit fails to heat up; pump not operating.	
1.1	The pump has no power supply.	Check the wiring and power supply for the controller and the pump. Check whether the pump symbol is showing on the controller. If not, follow the instructions for the controller.
2.	Inlet temperature cannot be adjusted to the desired value or is subject to major fluctuations.	
2.1	The control station forward flow and return pipes have been connected the wrong way round.	Check that all control station connections are correct. → Fig. 2 and 3
2.2	The pump head / pump stage setting is too low.	Increase the speed or pump head / pump stage. Please refer to the pump instructions.
2.3	The heating load is too high for the control station, i.e. the heat consumption exceeds the rated output of the control station. This state may occur temporarily, e.g. when heating a "cold" floor for the first time.	Check the maximum heat requirement and compare it with the rated output. It may be necessary to distribute the heating circuits to a second control station with a corresponding manifold. If the problem has been caused as a result of the floor heating system heating up for the first time, normal function may be achieved after the initial heating up period (2 – 3 days). This particularly applies in the case of operation within the upper rated output range.



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