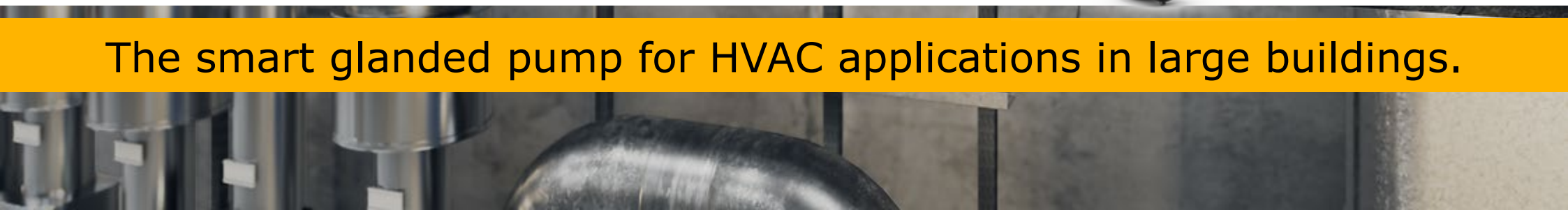
Wilo-Stratos GIGA2.0-I

The smart glanded pump for HVAC applications in large buildings.

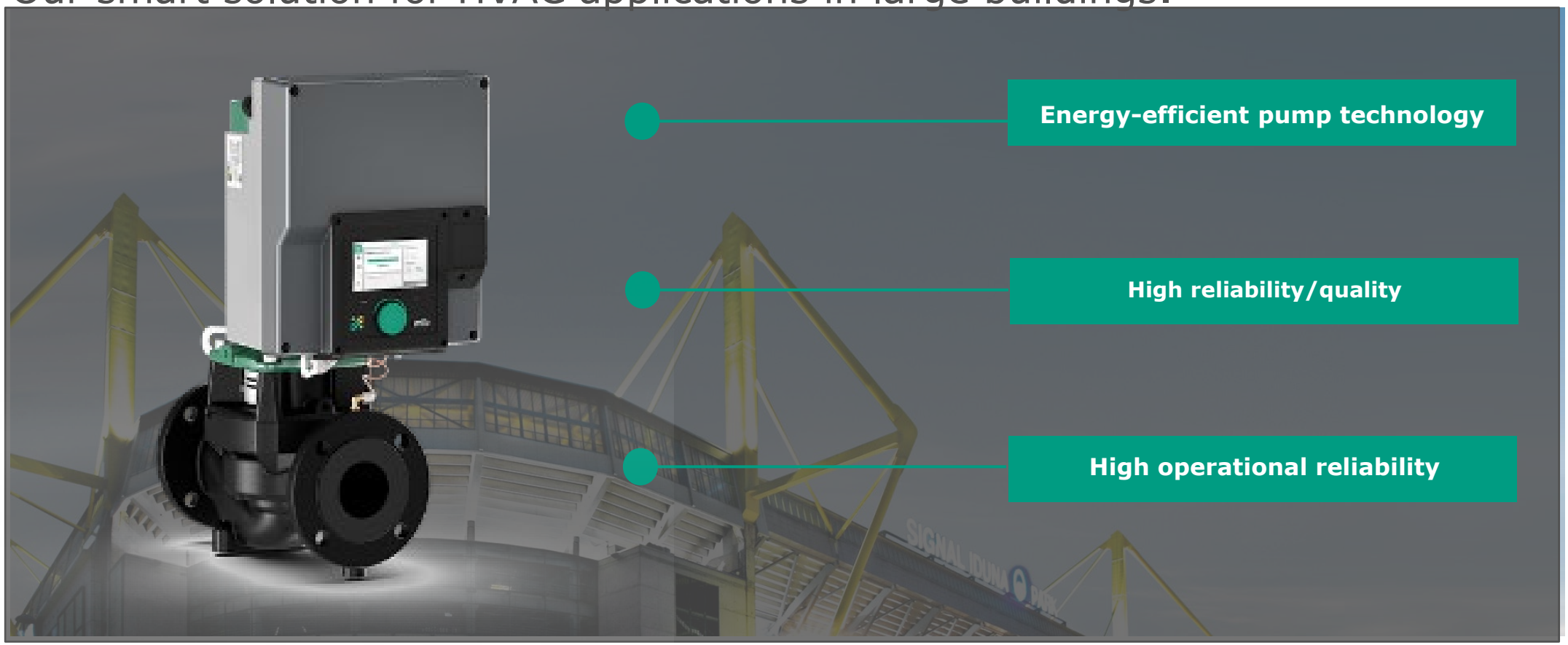


Contents

Challenges for heating, cooling and air-conditioning applications in large buildings for example in an arena

Wilo-Stratos GIGA2.0-I/-D/-B

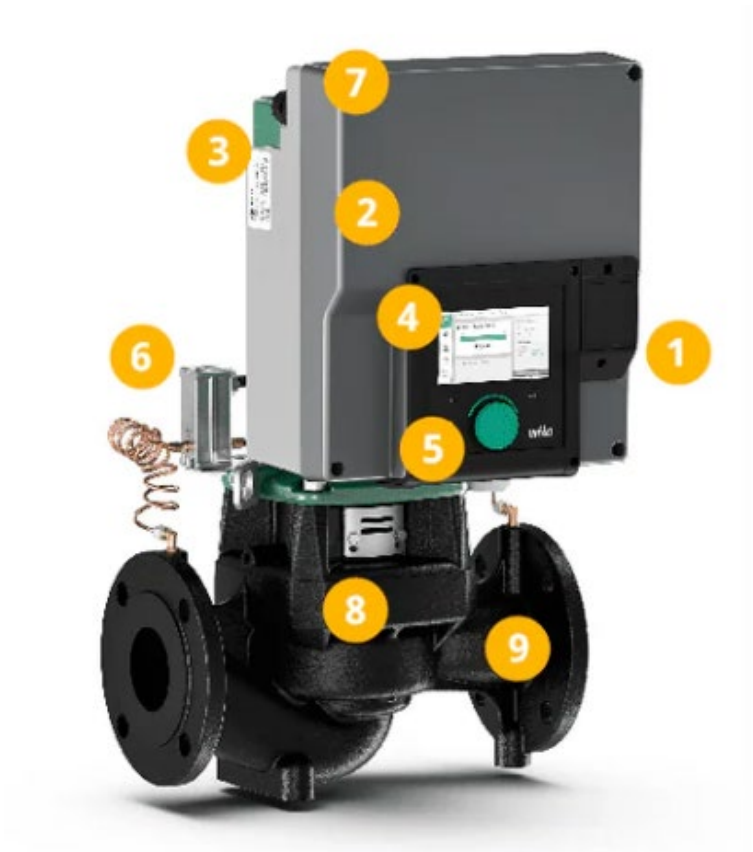
Our smart solution for HVAC applications in large buildings.



Type Key

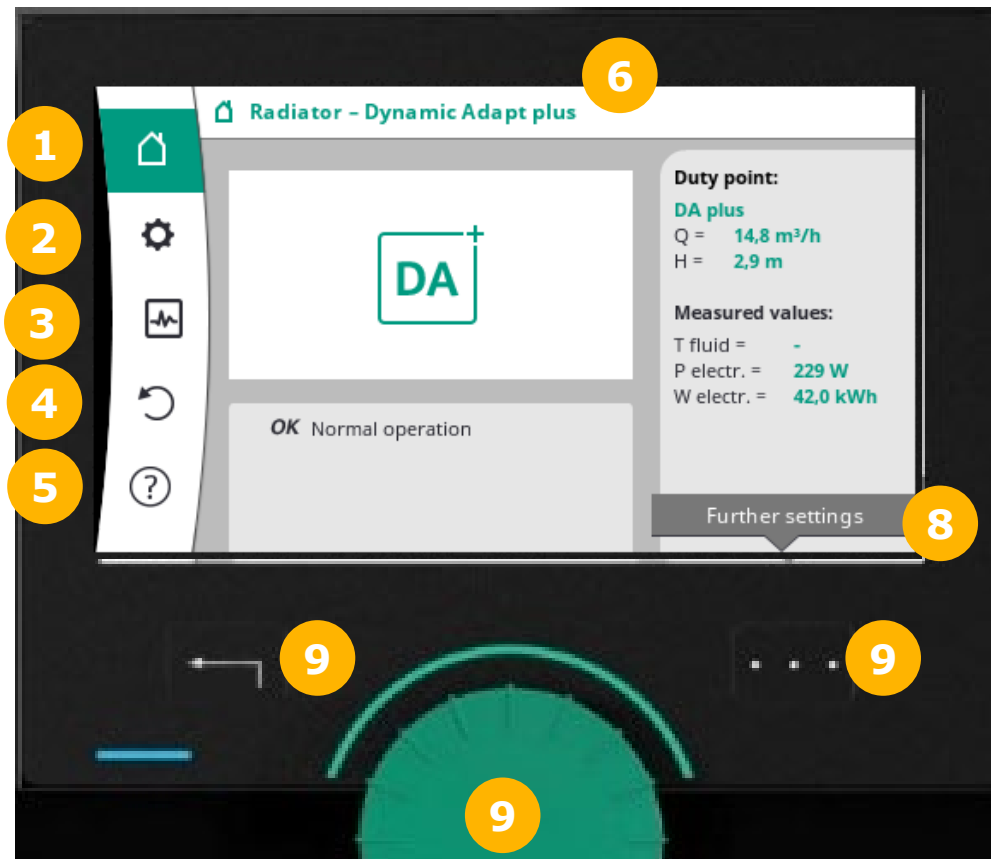
Example: Stratos GIGA2.0-I 2.5/3-125/5.5-xx	
2.0	Second generation
-I	In-line single pump
2.5	2.5-inch flange connection
3-125	Continuously adjustable setpoint height, 3 to 125 ft Minimum delivery head, 3 ft Maximum delivery head, 125 ft at Q = 0 US gpm
5.5	Rated power in hp
-xx	Variant

Product features located



1. Bluetooth interface
2. Interfaces for integration into BA
3. IE5 EC motor technology
4. Setting assistant
5. Gradually (90°) rotatable LED display
6. Differential pressure sensor 2-10 V
7. Easily accessible cable connections and terminals
8. Impeller made of PPS-GF40
9. Pump housing grey cast iron cataphoretic-coated

Convenient commissioning and intuitive operation



1. Home screen
2. Settings
3. Diagnosis and measured values
4. Restore and reset
5. Help
6. Set control mode
7. Current duty point/current measured values
8. Context menu for additional information/settings
9. Green button, back/context button

Control modes/functions

Comparison Wilo-Stratos GIGA

Pressure	Temperature	Flow rate
• Constant pressure Δp-c • Variable pressure Δp-v • Index circuit Δp-c*	• PID control**	• Constant speed n_{const}

+ further options/functions

- Operating data storage
  (readable via IR-stick/ IR-Monitor)

* By connecting a differential pressure sensor at the hydraulic index circuit (without specific control parameters)

** T-const or dT –const are only possible with deep knowledge of PID settings

Control modes/functions

Comparison Wilo-Stratos GIGA with Wilo-Stratos GIGA2.0

Pressure	Temperature	Flow rate
• Constant pressure Δp-c • Variable pressure Δp-v • Dynamic Adapt plus • Index circuit Δp-c	• Constant temp. T-const. • Differential temp. ΔT-const. • Hall temperature T-const.	• Constant speed n_{const} • Constant volume Q_{const} • Multi-Flow Adaptation

+ further options/functions

- Data monitoring (via app)
- Heating/cooling quantity measurement
- No-Flow Stop
- Volume flow limit Q-Limit $_{Min/Max}$
- Input nominal duty point H/Q at Δp-v
- Adjustable gradient of pump curve at Δp-v
- Automatic switchover heating/cooling according to fluid temperature (if T-sensor is installed)
- PID control

Control modes

Standard functions for pressure and flow rate

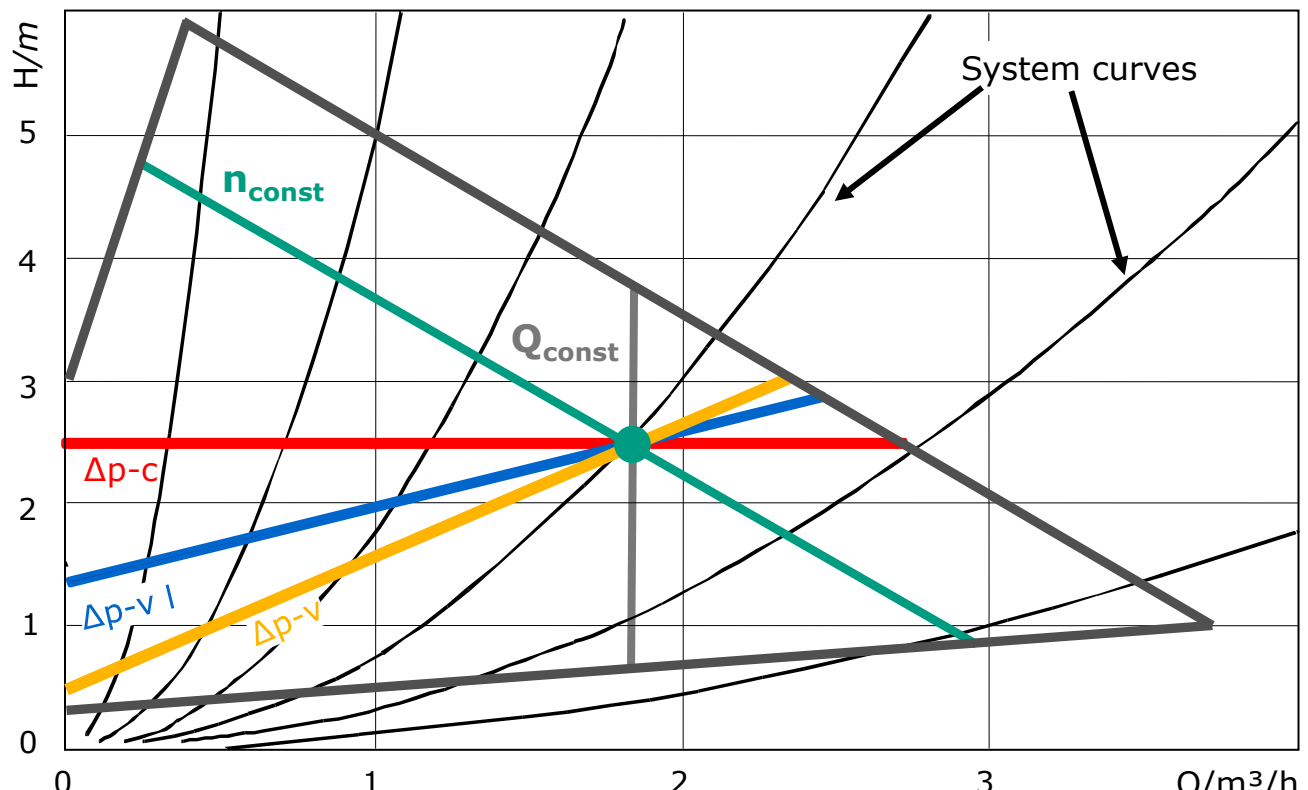
Constant speed **n-const**

Constant volume Q_{const}

Constant pressure Δp-c

Variable pressure Δp-v

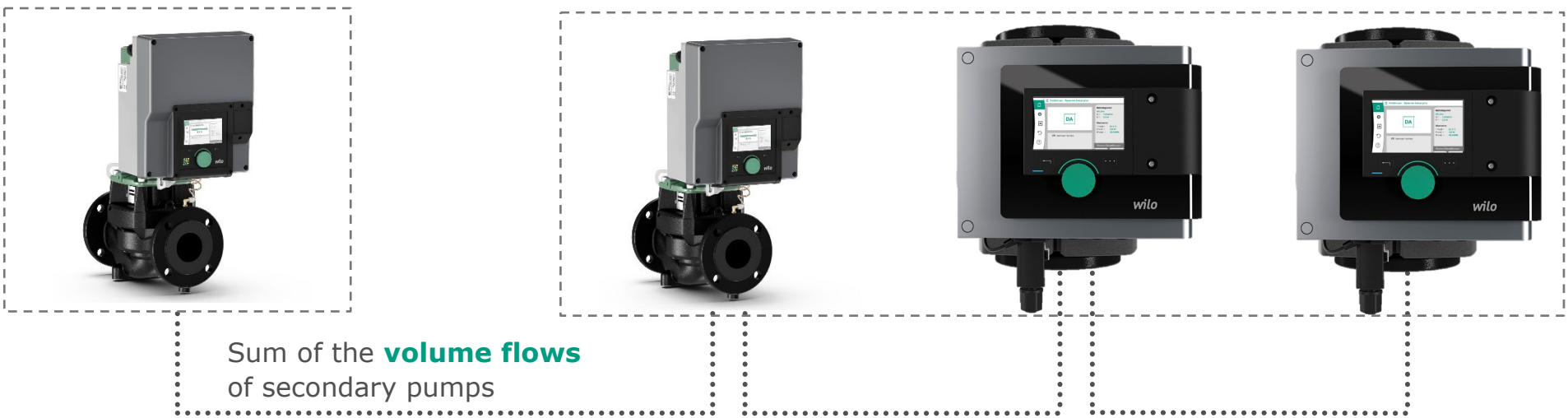
Variable pressure
Δp-v
Adjustable gradient



Control modes
Multi-Flow Adaptation

Feeder pump

Secondary side



Sum of the **volume flows** of secondary pumps

Savings
Electrical pump energy

+

Savings
Primary building energy

=

High system efficiency

More options/functions

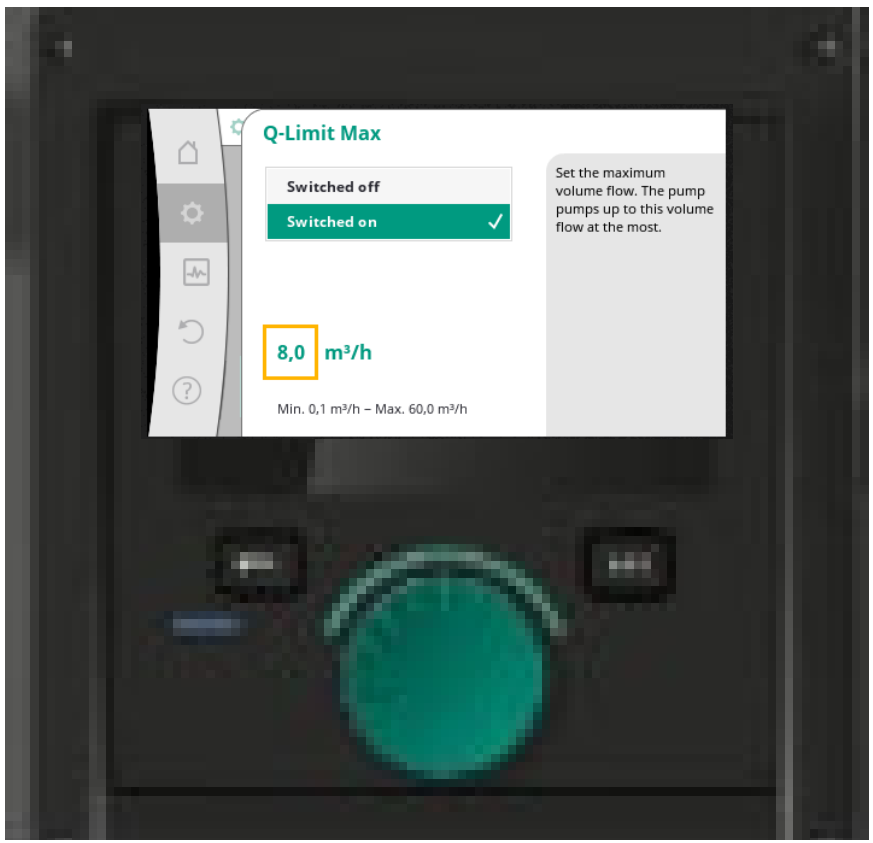
Q-Limit Min/Max

Benefit:

- The specified maximum or minimum flow rate is not exceeded

Benefit:

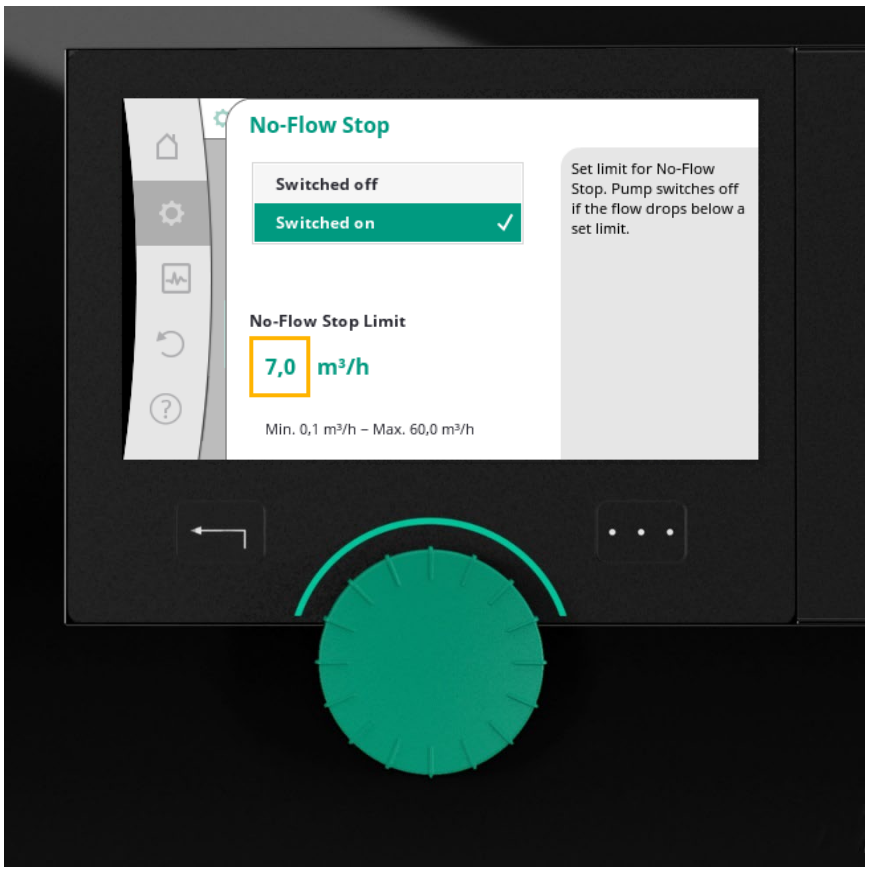
- The pump supplies only as much or as little as required for heating/cooling and does not exceed the maximum or drop below the minimum.



More options/functions
No-Flow Stop

Your benefits:

- Minimum volume flow is adjustable
- Pump automatically deactivates when no flow is detected



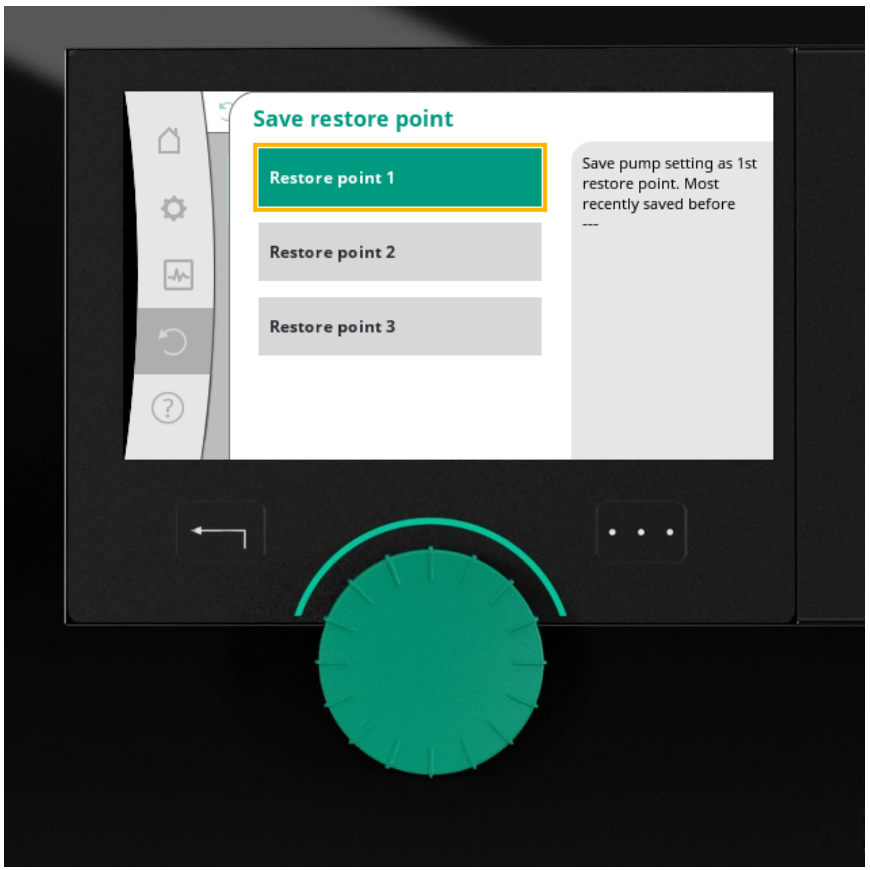
Restore points

Use:

- Up to three different pump settings can be saved as restore points.

Benefit:

- Restoring pump settings from initial commissioning or system optimization
- Restoring operational reliability after unauthorized adjustment.

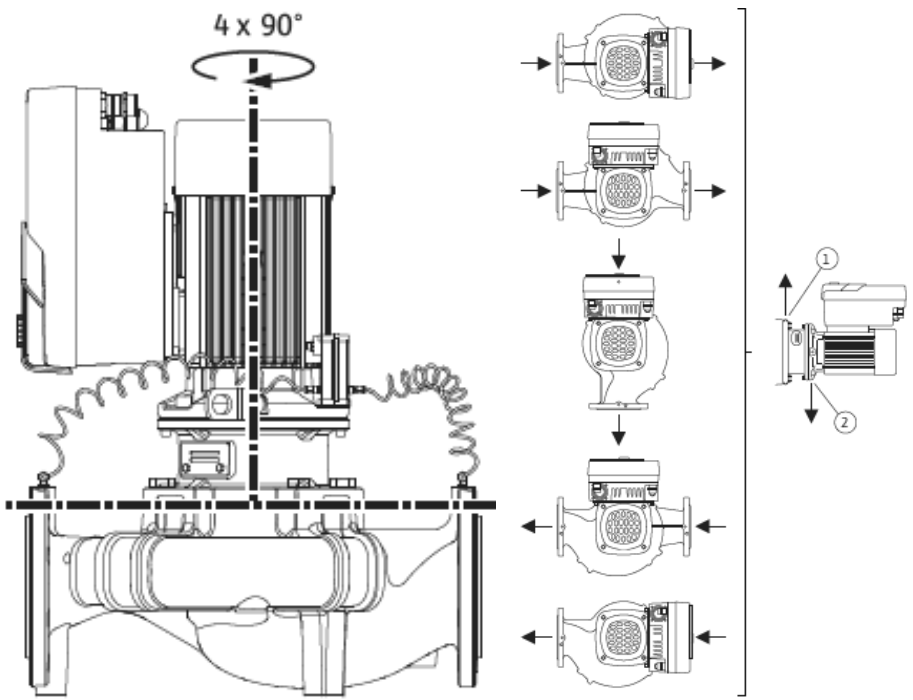


Installation and commissioning

Easy installation
Flexible installation positions

For vertical motor shaft:

- All installation positions except for motor facing down are allowed
- MIU (motor with impeller and electronic module) can be rotated into four positions.

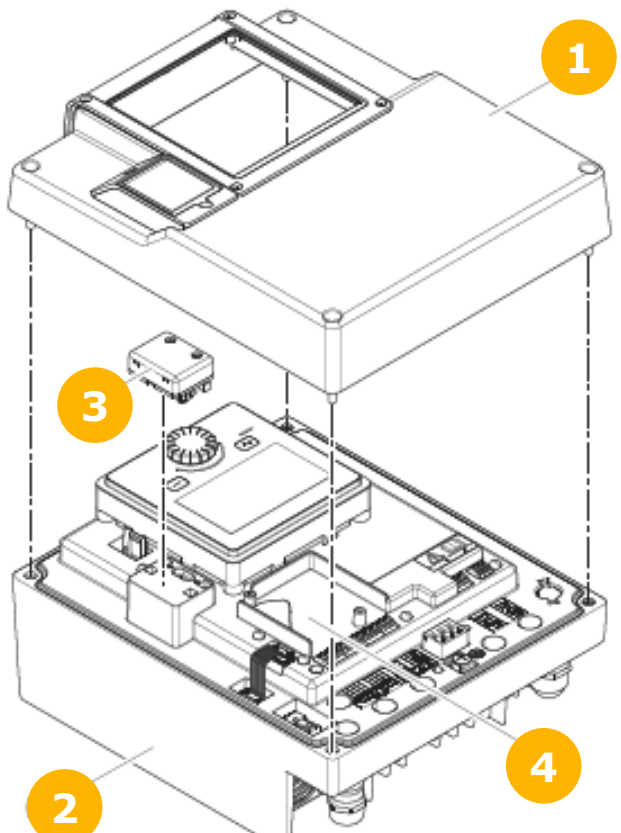


For horizontal motor shaft:

- Electronic module permitted at 0°, -90° or +90°
- Electronic module not permitted at -180° (facing downward)
- Air vent valve (1) on the lantern has to be oriented in the optimal way facing upward
- Condensate is drained through drilled holes (2)

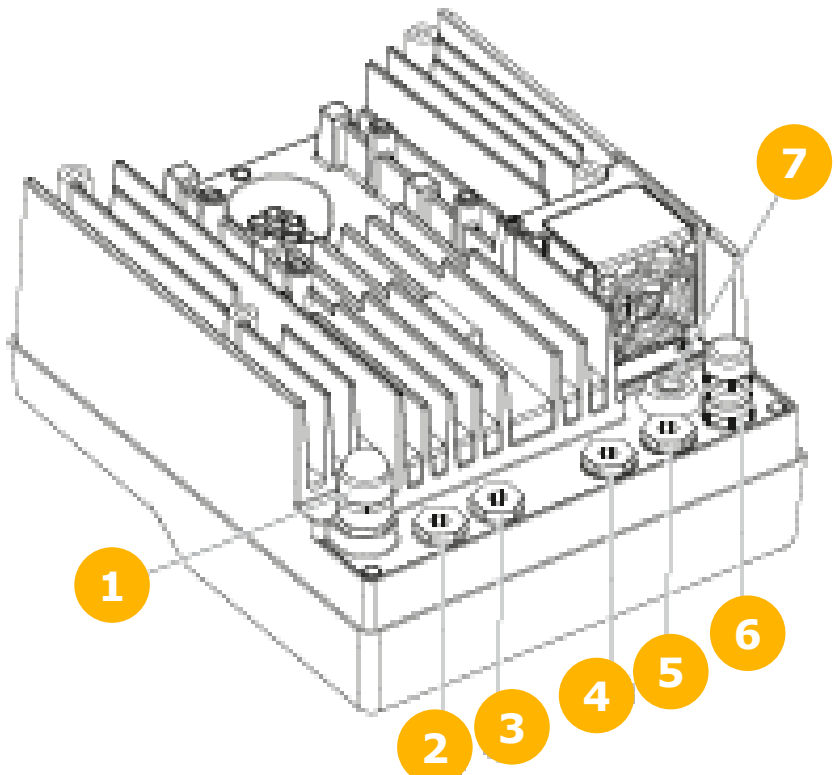
Easy installation
Opening the electronic module

- Loosen the four screws and lift the upper part 1 off the lower part 2
- Turn the graphic display to the desired position in 90° increments. Then simply lift it up and engage it again using the snap-in hooks
- Insert the module into the designated interface 3
- Connect the electrical wiring, then screw on the upper part
- Slot for optional CIF module 4

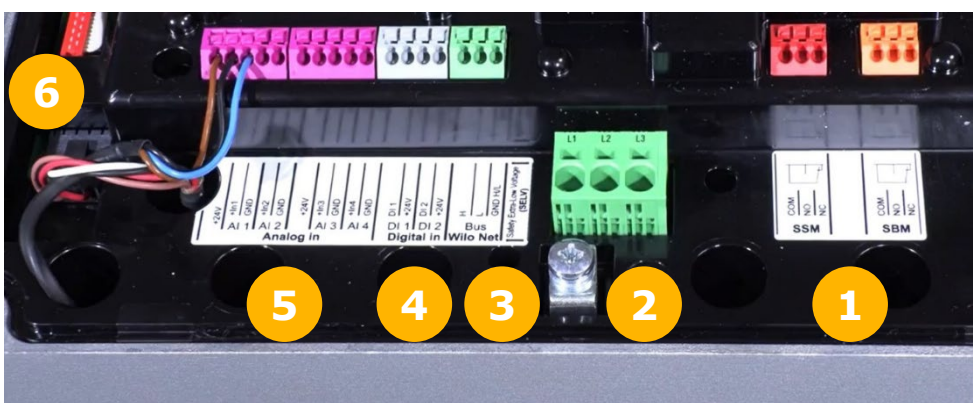


Easy installation
Cable glands

- 6 x cable glands for:
  - electrical mains connection 1
  - SSM/ SBM 2 3
  - sensor and communication cables 4 5 6
- Electrical connection (pre-assembled at the factory) of the fan on the cooling fins 7



Easy installation
Electrical connection



Colour-coding of the terminals

1 SSM (collective/individual fault signal)

SBM (collective/individual run signal)

2 Mains connection and earthing screw

3 Wilo Net bus for double pump communication, Multi-Flow Adaptation

4 Two digital inputs DI1 and DI2

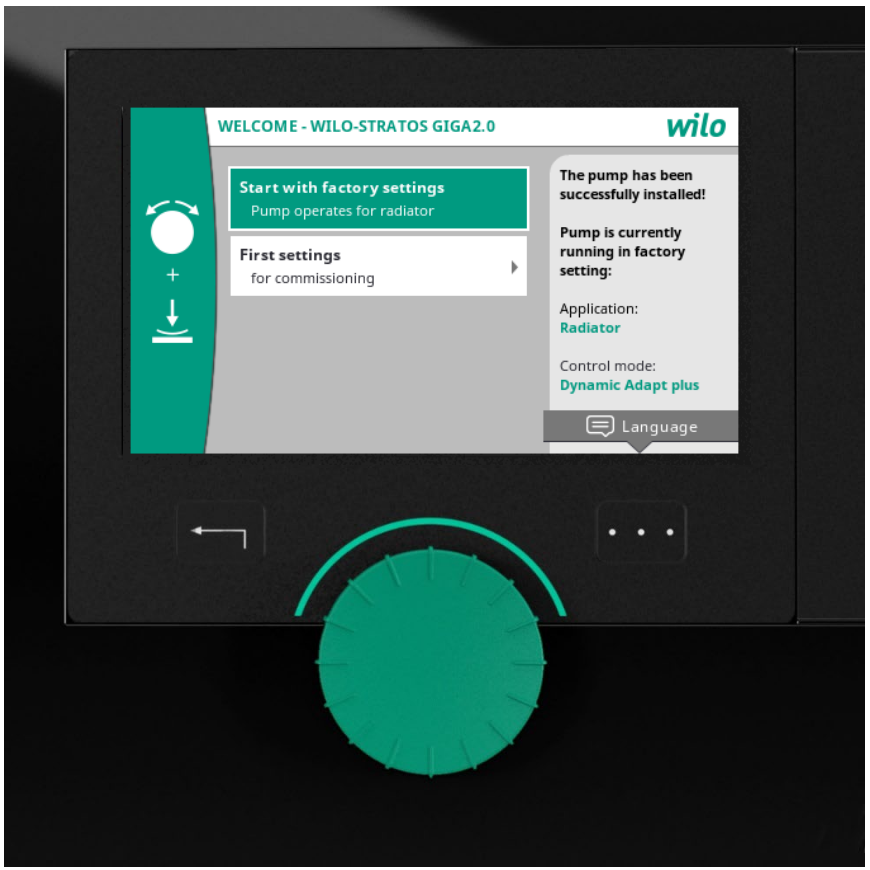
5 Four analogue inputs AI1, AI2, AI3, AI4 for differential pressure sensors, temperature sensors, other external setpoint sensors

6 Fan connection on the cooling fins

Convenient commissioning and intuitive operation

Your benefits in detail

- One-click commissioning with factory settings (Heating – Radiator – Dynamic Adapt plus)
- Setting assistant for an application-based setting of pump function (guided selection of correct control function)



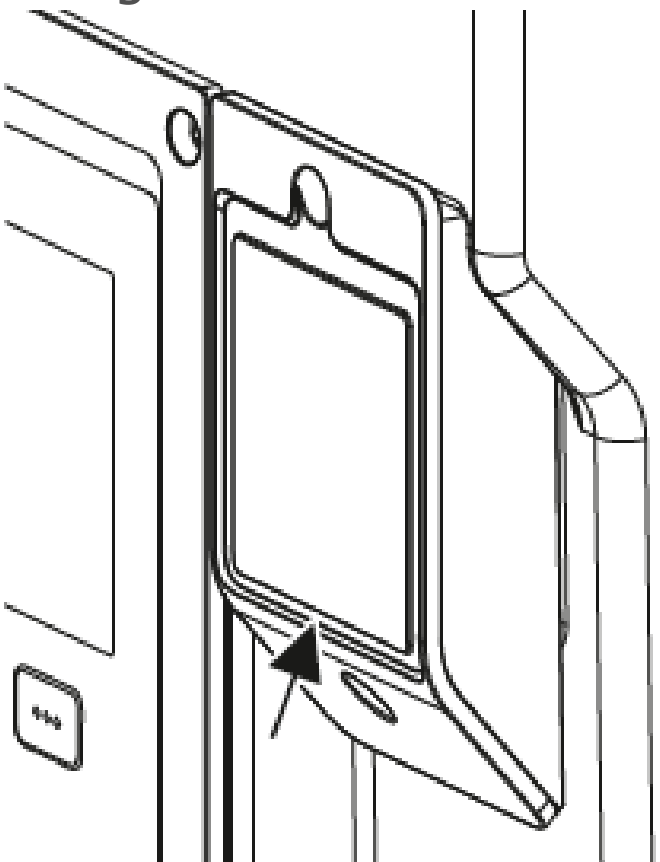
Convenient commissioning

Wilo-Smart Connect module BT for Bluetooth

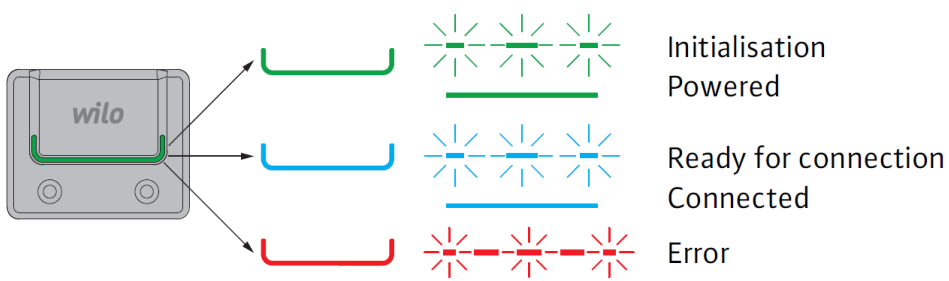
- The Wilo-Smart Connect module BT initialises automatically after it is plugged in and the pump’s power supply is switched on.
- It is located under the cover.
- The Wilo-Smart Connect module BT does not need to be visible for initialisation or to establish a connection with the Wilo-Assistant App.

Easy installation

Checking the Wilo-Smart Connect module BT



1. Open the module covering (the cover does not need to be opened)
2. Loosen the screws
3. Check LED codes:



4. Always screw the module covering firmly back in place after the check to maintain the electronic module’s IP55 protection class.

Design and control

- **Control modes**
- **More options/functions**
- **Building Information Management (BIM)**

Control modes/functions

Comparison Wilo-Stratos GIGA with Wilo-Stratos GIGA2.0

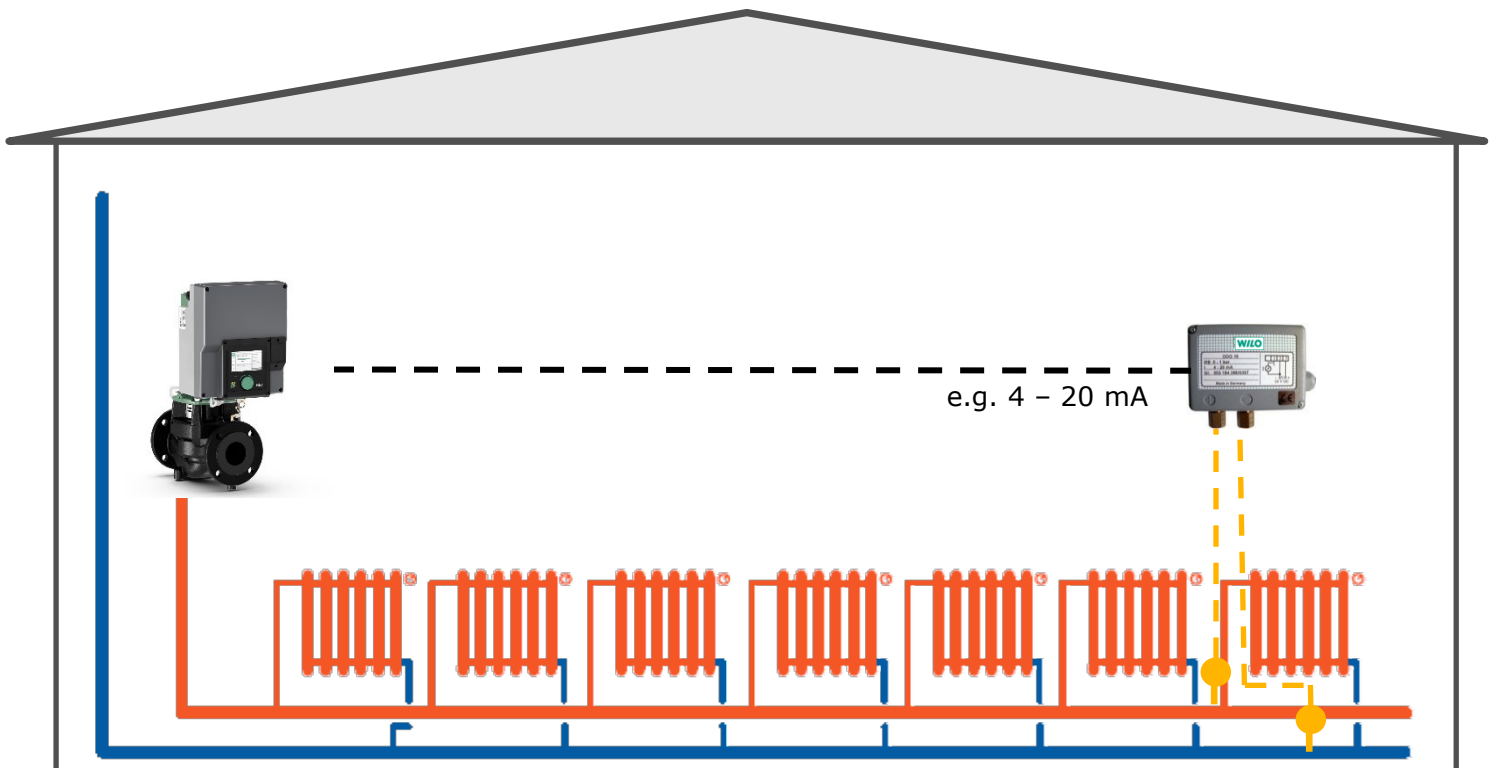
Pressure	Temperature	Flow rate
• Constant pressure Δp-c • Variable pressure Δp-v • Dynamic Adapt plus • Index circuit Δp-c	• Constant temp. T-const. • Differential temp. ΔT-const. • Hall temperature T-const.	• Constant speed n_{const} • Constant volume Q_{const} • Multi-Flow Adaptation

+ further options/functions

- Data monitoring (via app)
- Heating/cooling quantity measurement
- No-Flow Stop
- Volume flow limit Q-Limit $_{Min/Max}$
- Input nominal duty point H/Q at Δp-v
- Adjustable gradient of pump curve at Δp-v
- Automatic switchover heating/cooling according to fluid temperature (if T-sensor is installed)
- PID control

Control modes – Pressure control

Index circuit – Constant pressure Δp-c



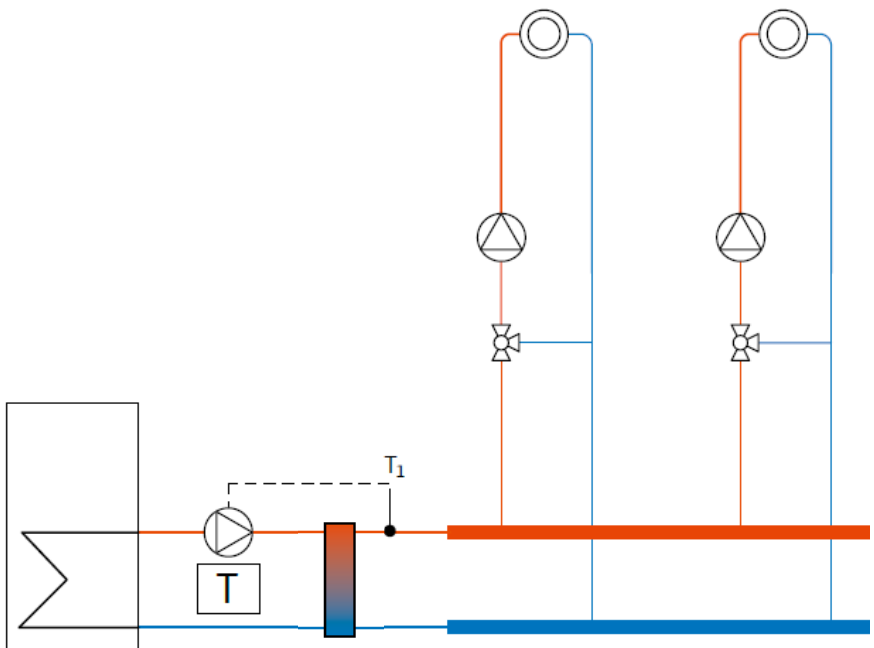
Control modes – Temperature control
Constant temperature – Heating

Setting via setting assistant:

- Secondary feed temperature T_{const}

Temperature control:

- T-const of feeder pump via a hydraulic shunt



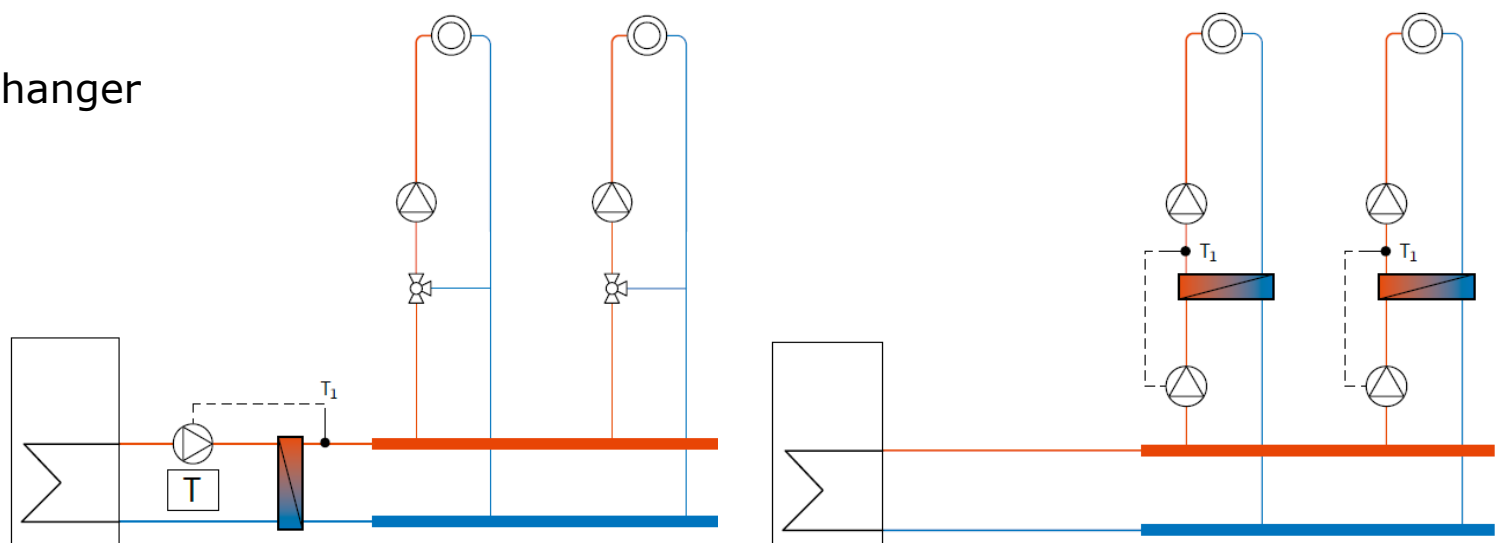
Control modes – Temperature control
Constant temperature – Heating

Setting via setting assistant:

- Secondary feed temperature $T_{const.}$

Temperature control:

- T-const. behind a heat exchanger



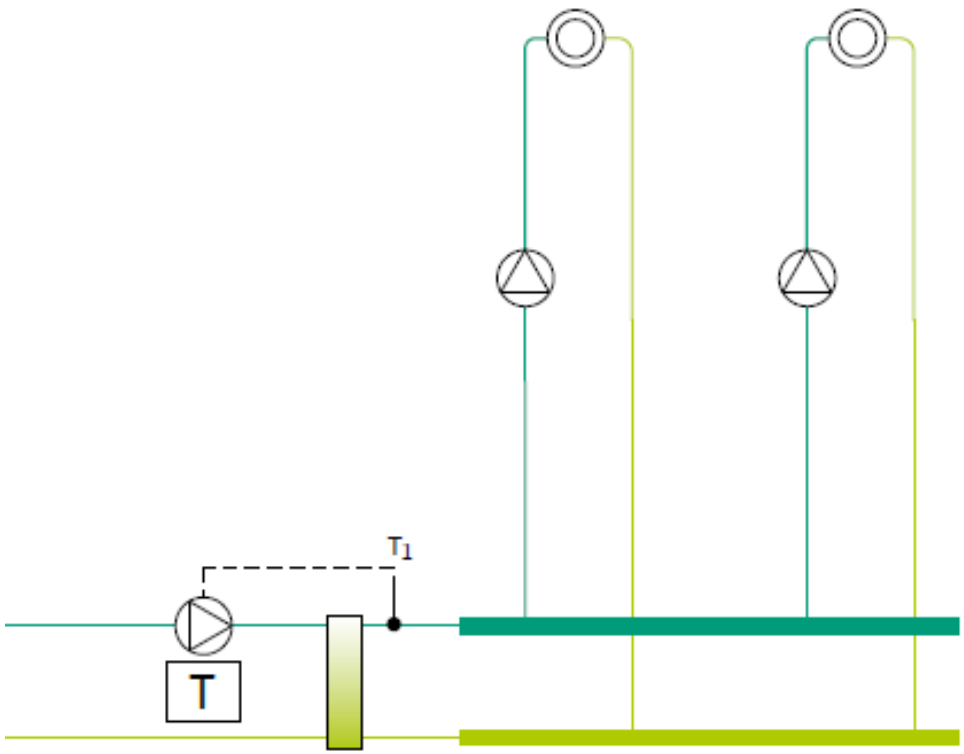
Control modes – Temperature control
Constant temperature – Cooling

Setting via setting assistant:

- Secondary feed temperature T_{const}

Temperature control:

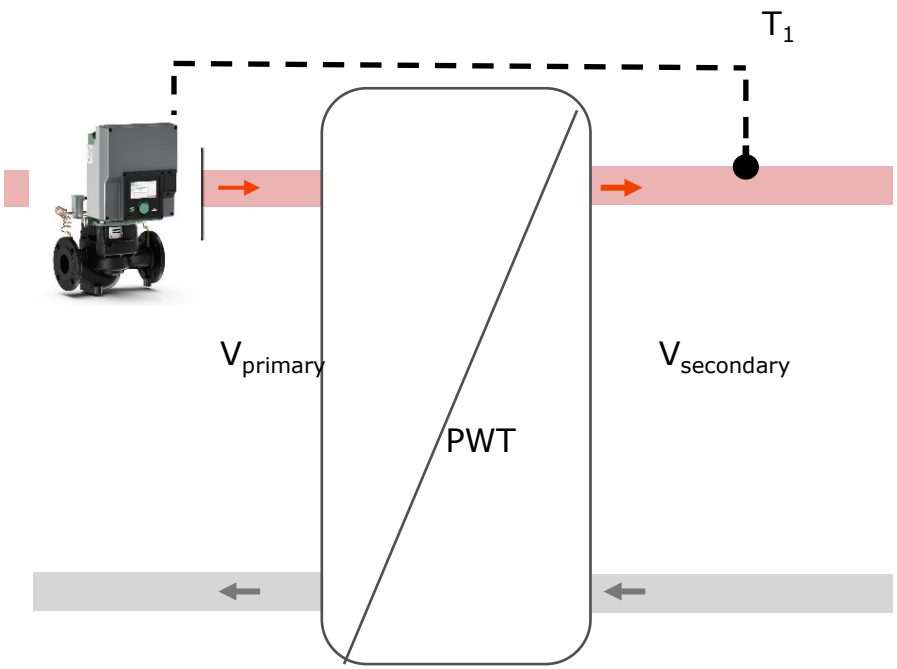
- T-const of feeder pump via a hydraulic shunt



Control modes – Temperature control
Constant temperature – Heating

Setting via setting assistant:

- Secondary feed temperature T_{const}
- Heat exchanger:
  - Sec. feed temperature T-const. for optimized heat exchanger operation

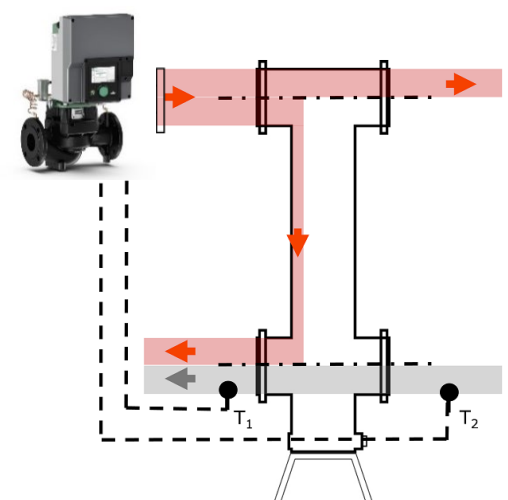


Heat exchanger

Control modes – Temperature control

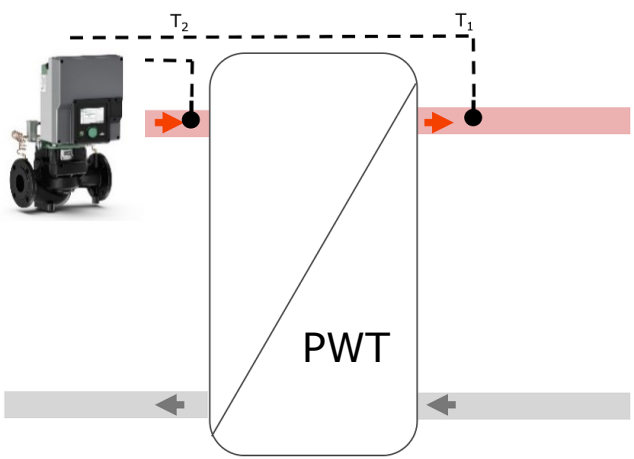
Differential temperature ΔT-const. – Heating

1. Hydraulic shunt



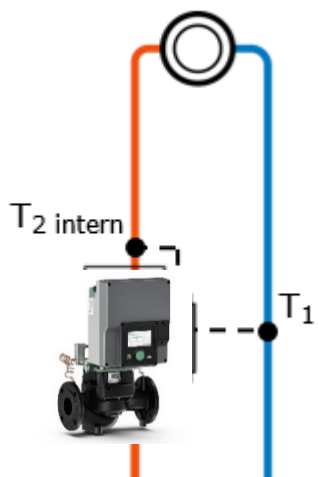
Return ΔT-const

2. Heat exchanger



Feed ΔT-const

3. Heating circuit

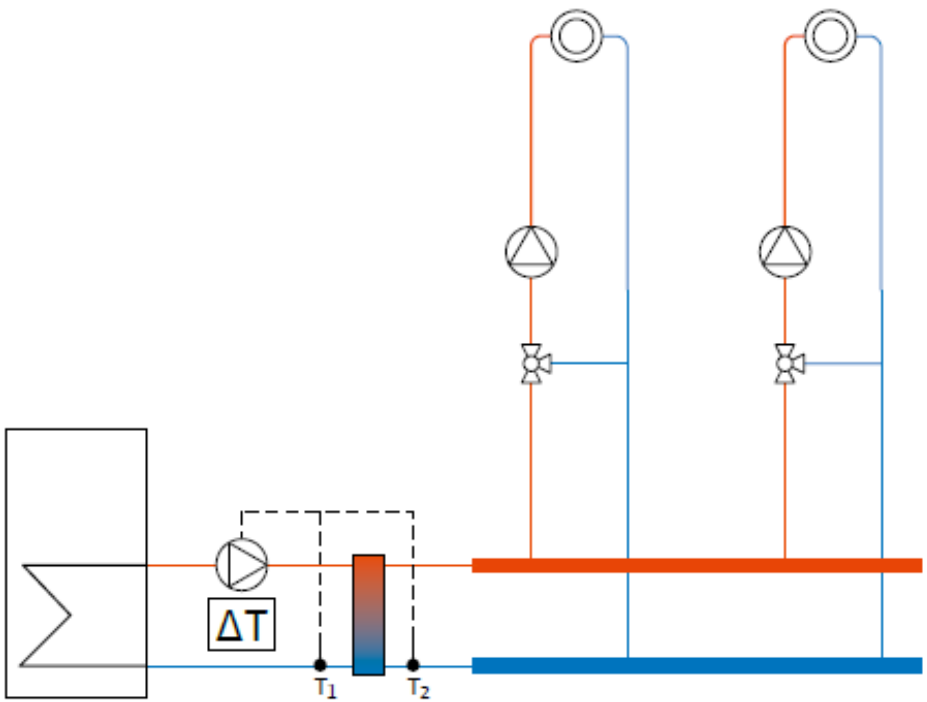


Feed/return ΔT-const

Control modes – Temperature control
Differential temperature ΔT-const. – Heating

1. Hydraulic shunt:

Temperature control ΔT-const. of feeder pump via hydraulic shunt in primary and secondary side **return**

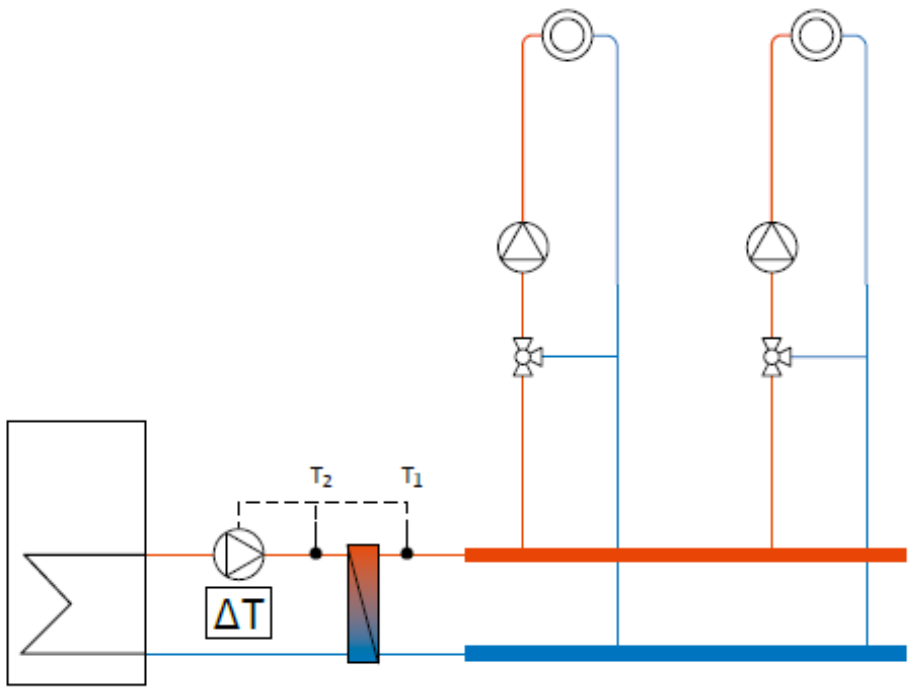


Sensor T_1 = command variable
Sensor T_2 = reference value

Control modes – Temperature control
Differential temperature ΔT-const. – Heating

2. Heat exchanger:

Temperature control ΔT-const. of feeder pump via a heat exchanger



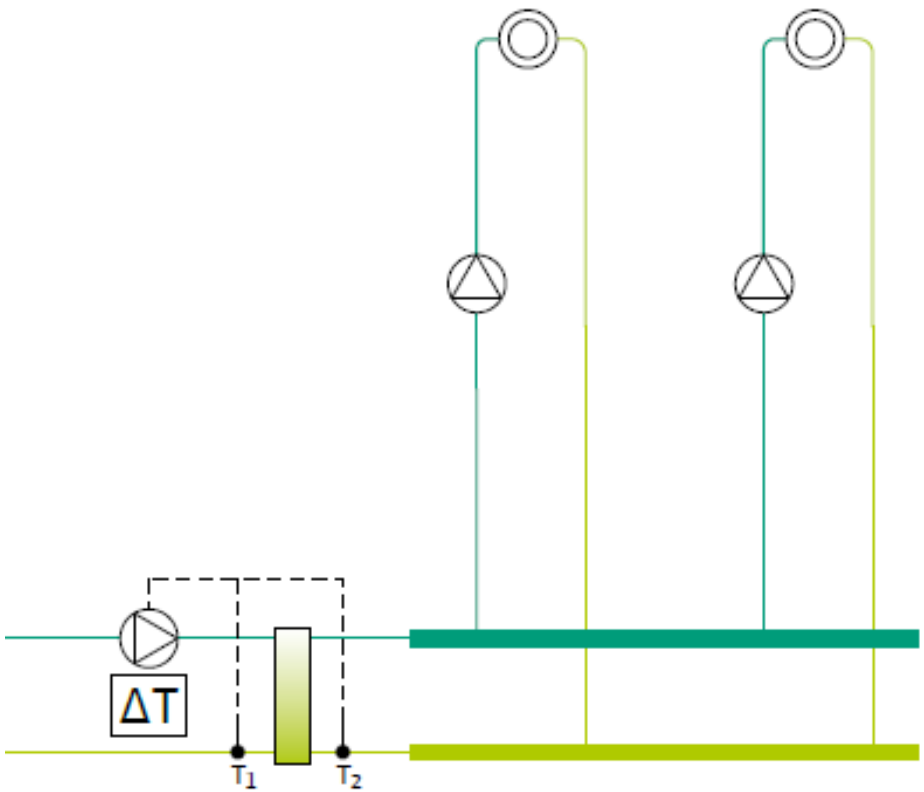
Sensor T_1 = command variable
Sensor T_2 = reference value

Control modes – Temperature control

Differential temperature ΔT-const. – Cooling

1. Hydraulic shunt:

ΔT-const. between primary side **return** and secondary side **return**



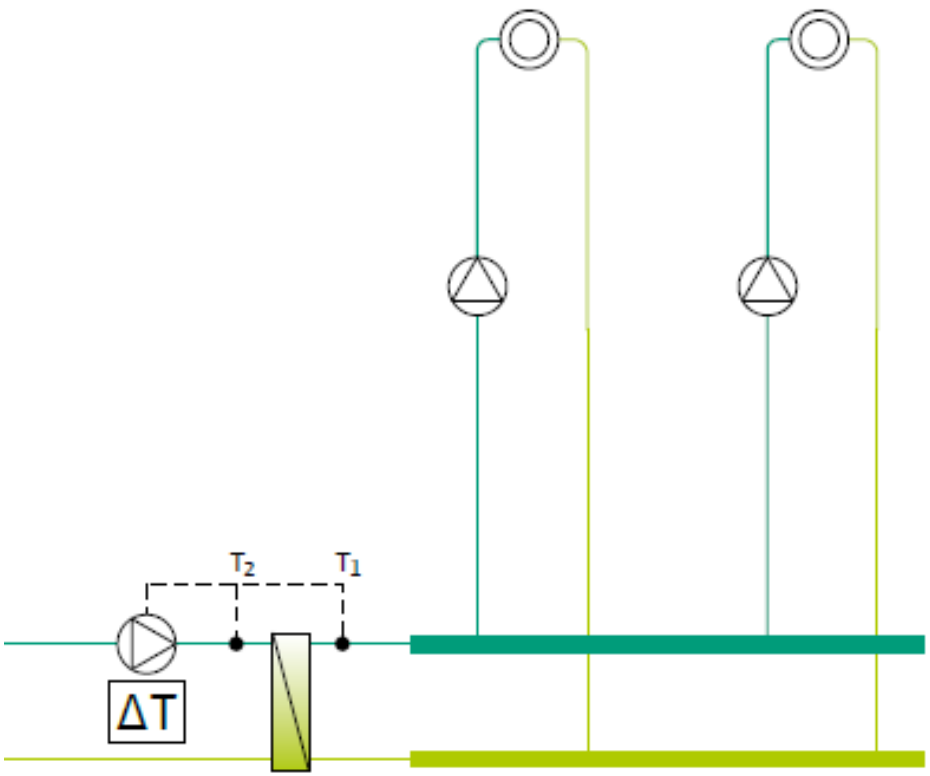
Sensor T_1 = command variable
Sensor T_2 = reference value

Control modes – Temperature control

Differential temperature ΔT-const. – Cooling

2. Heat exchanger:

ΔT-const. between primary side feed and secondary side feed



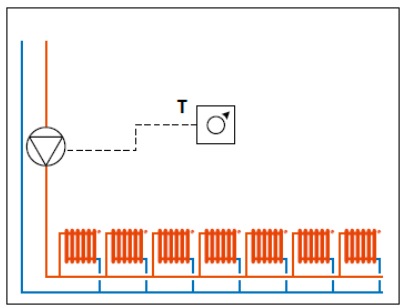
Sensor T_1 = command variable
Sensor T_2 = reference value

Control modes – Temperature control

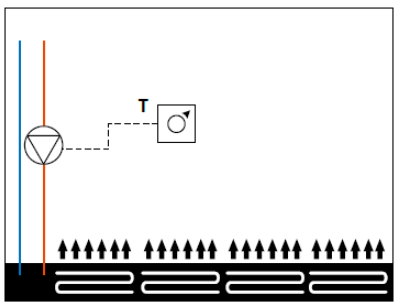
Hall temperature control T-const. – Heating

Room air temperature T_{const} in consumer circuit

- Radiator
- Underfloor heating
- Ceiling heating
- Fan heater



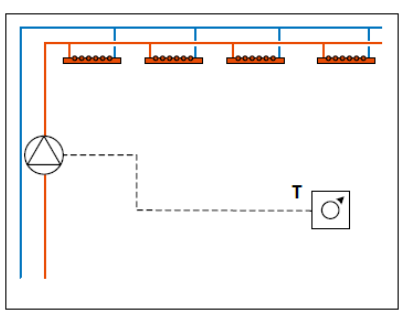
Radiator consumer circuit



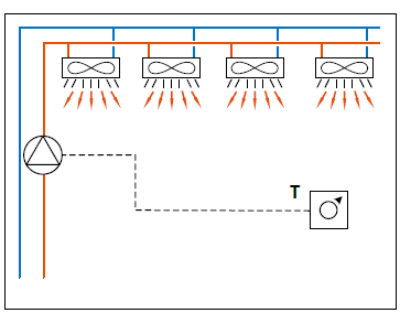
Underfloor heating consumer circuit

Control to desired setpoint using

- Temperature sensor (e.g. PT1000) as actual value calculator
- Room user interface as setpoint and actual value calculator



Ceiling heating consumer circuit



Fan heater consumer circuit

Your benefit:

- No need for control valves

Control modes – Temperature control

Hall temperature control T-const. – Cooling

Room air temperature T_{const} in consumer circuit:

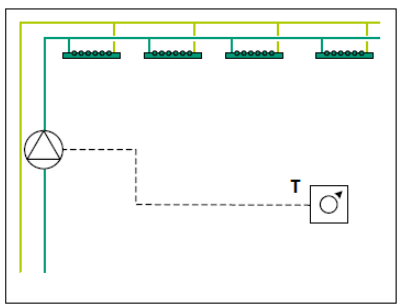
- Ceiling cooling
- Underfloor cooling
- Air-conditioning devices

Control to desired setpoint using

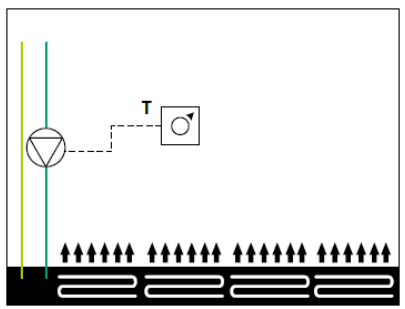
- Temperature sensor (e.g. PT1000) as actual value calculator
- Room user interface as setpoint and actual value calculator

Your benefit:

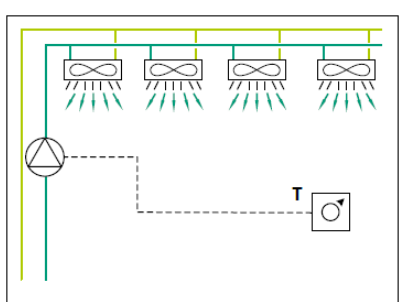
- No need for control valves



Ceiling cooling consumer circuit



Underfloor cooling consumer circuit

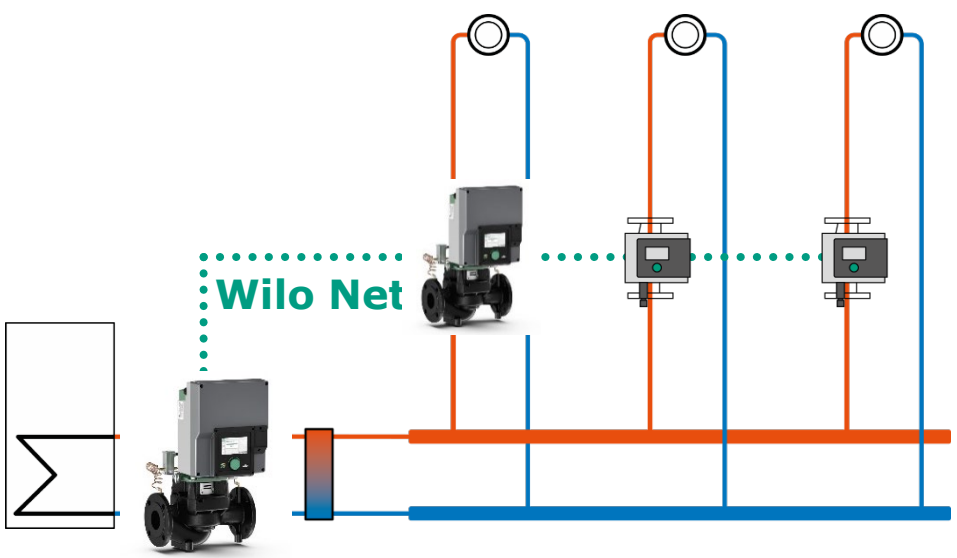


Air-conditioning devices consumer circuit

Control modes – Flow rate
Multi-Flow Adaptation

Your benefits:

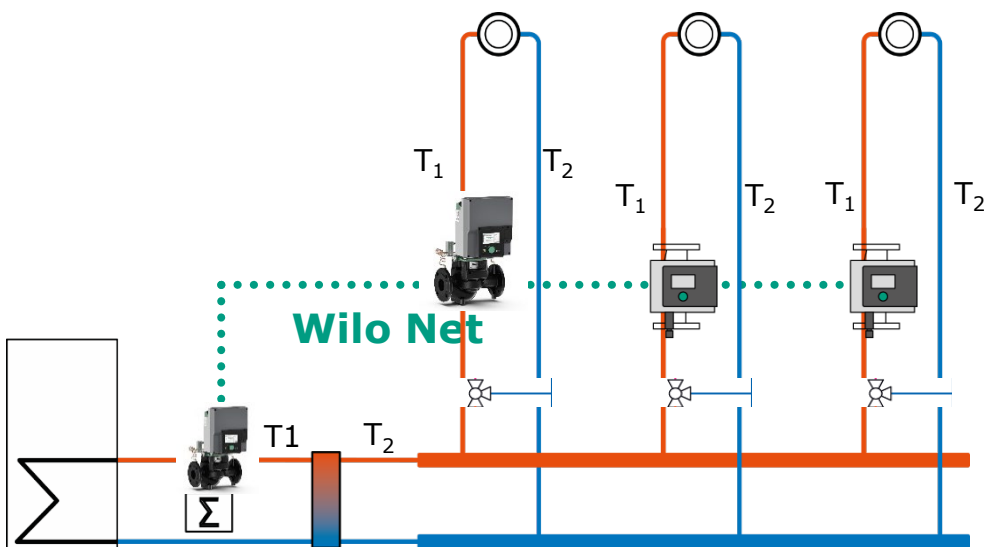
- Simple connection via bus interface “Wilo Net”
- Ongoing reporting of volume flows of individual secondary pumps to the primary pump
- Feeder pump sets the sum of the required volume flows as the setpoint volume flow.



Control modes – Flow rate

Multi-Flow Adaptation (secondary pumps in mixed circuits)

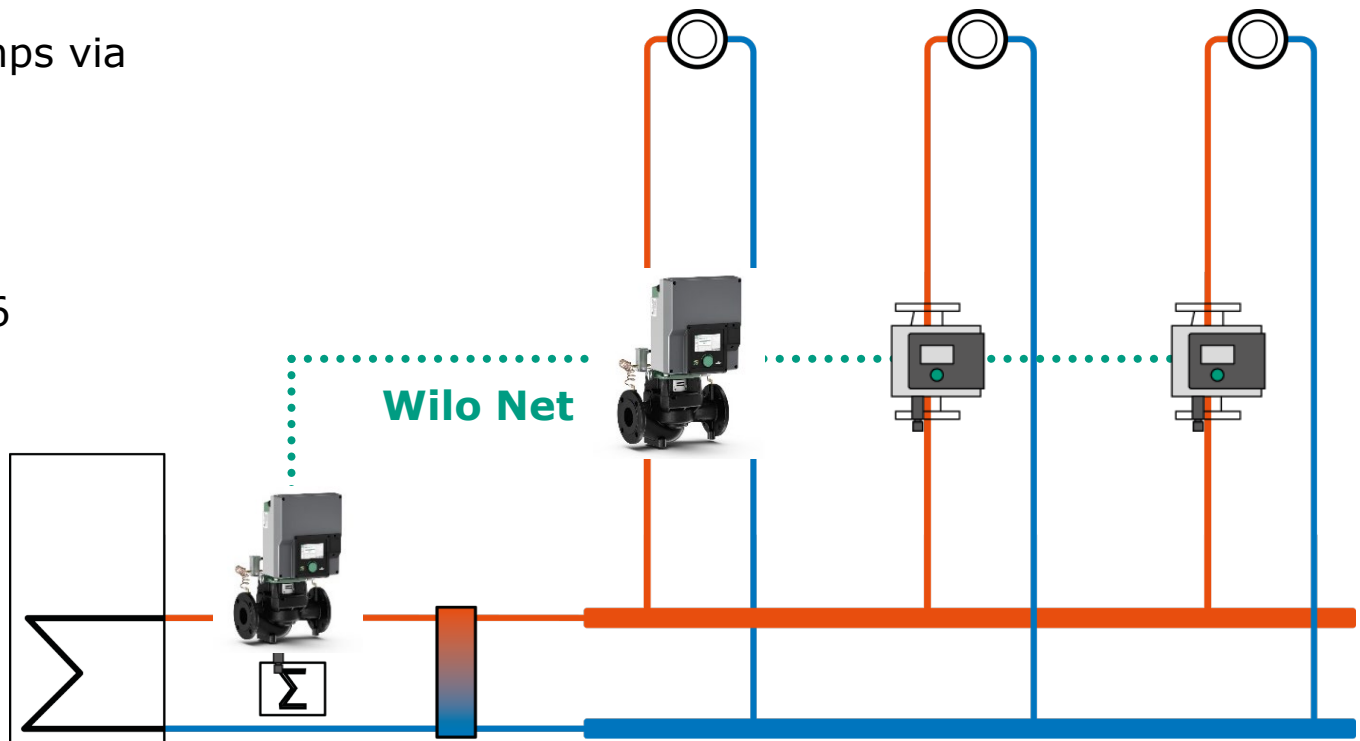
- At secondary pumps with mixers:
  Heat measuring to be activated
- Feeder pump has to detect primary flow temperature T1 and the secondary flow temperature T2
- At Feeder pump the mode Multi-Flow Adaptation with temperature compensation to be activated



Wilo Net

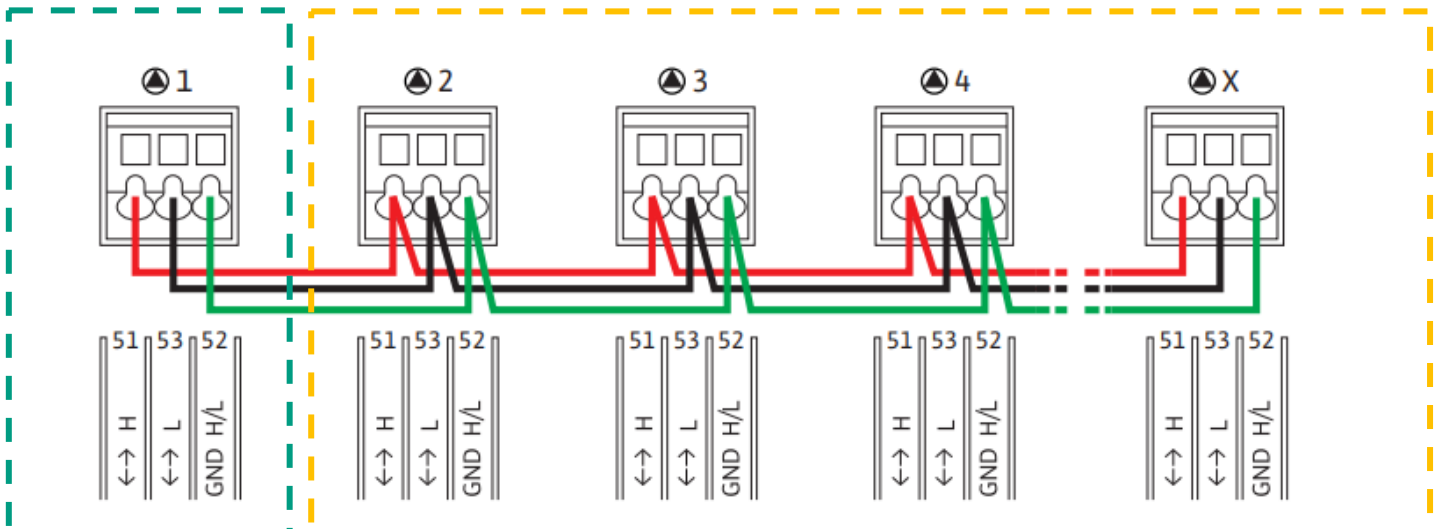
The connection for Multi-Flow Adaptation

- Straightforward connection of pumps via BUS line Wilo Net
- Max. 20 pump partners
- Max. 660 ft. cable length
- Assign Wilo Net addresses 1... 126
- Set termination



Wilo Net

The connection for Multi-Flow Adaptation

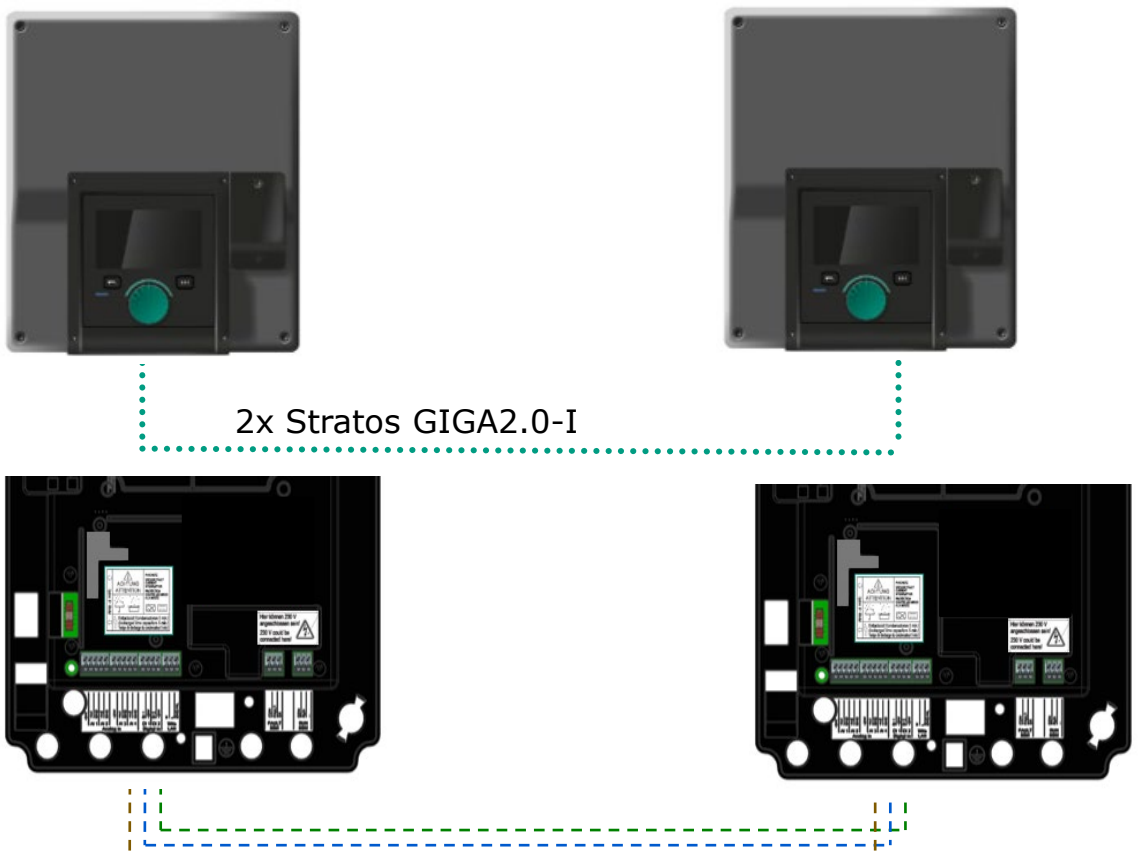


Pumpe	Wilo Net Terminierung	Wilo Net Adresse
Pumpe 1	eingeschaltet	1
Pumpe 2	ausgeschaltet	2
Pumpe 3	ausgeschaltet	3
Pumpe 4	ausgeschaltet	4
Pumpe X	eingeschaltet	X

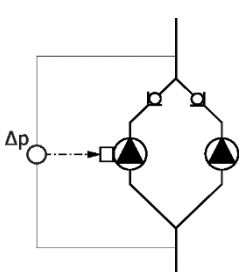
Wilo Net

The bus connection for dual-pump configuration

- Two single pumps (installed in parallel) in y-pipe installation
- Pump 1: Wilo Net ID 1
- Pump 2: Wilo Net ID 2
- Set termination



Note:
A differential pressure sensor is only connected to the main pump. The measuring points of the main pump differential pressure sensor must be on the suction and discharge side of the twin-head pump system in the respective collector pipe.



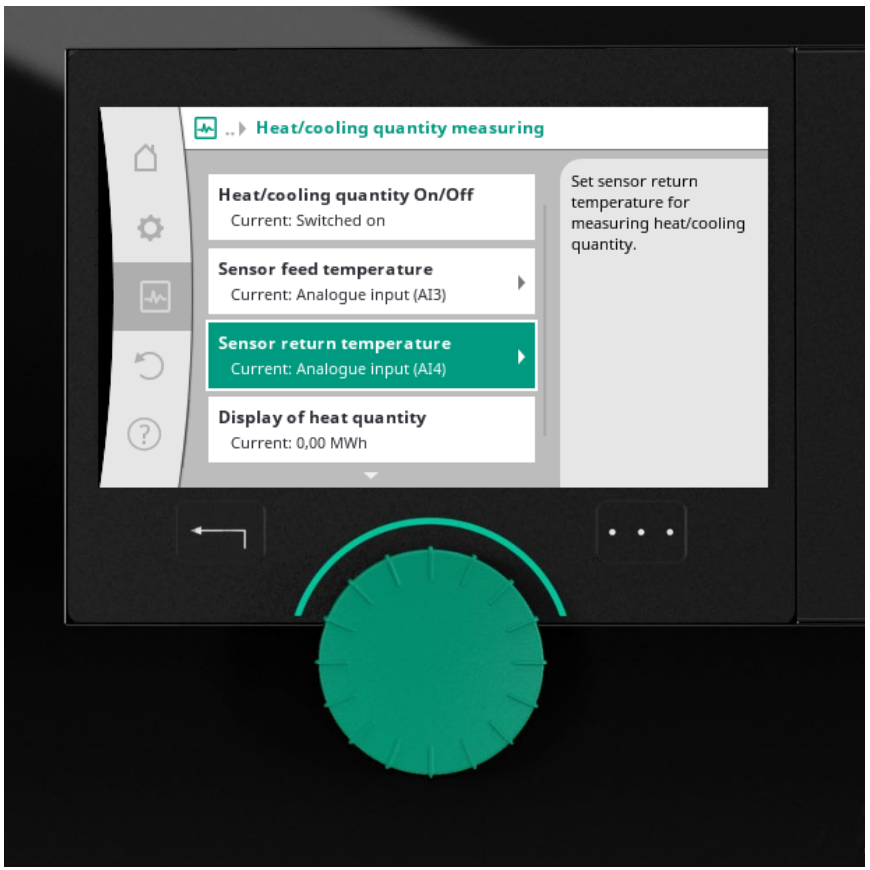
More options/functions
Heating/cooling quantity measurement

Field of application:

- Internal billing of energy flows
- System and energy monitoring
- System optimization

Your benefit:

- Automatic energy recording in the respective correct counter for cooling or heating quantities



More options/functions

Current duty point in the hydraulic duty chart

Field of application:

- Verification of the duty point in the hydraulic duty chart of the pump type.

Your advantage:

- Verification of the operation and efficiency in operation

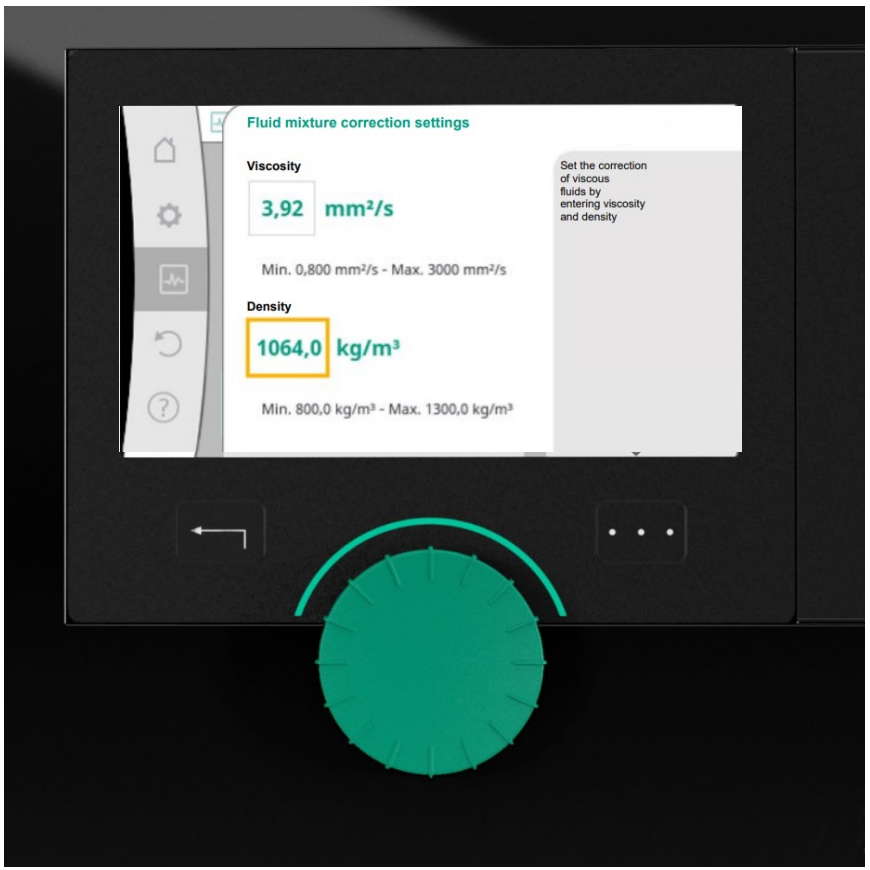
More options/functions
Fluid correction

Field of application:

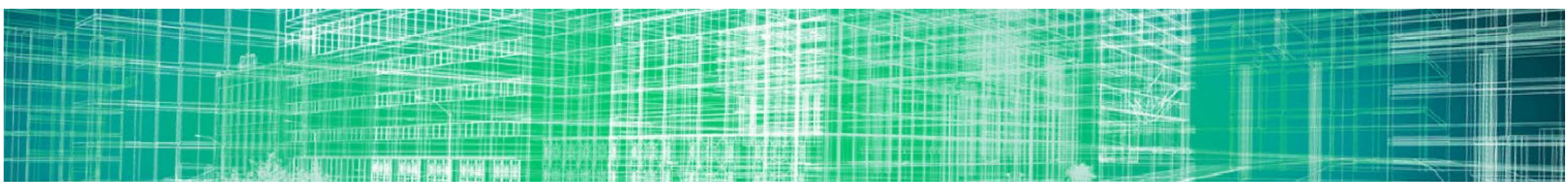
- To improve flow detection for viscous fluid (e.g. water-ethylene glycol mixtures), a fluid correction can be made. The values must be known by the customer.

Your advantage:

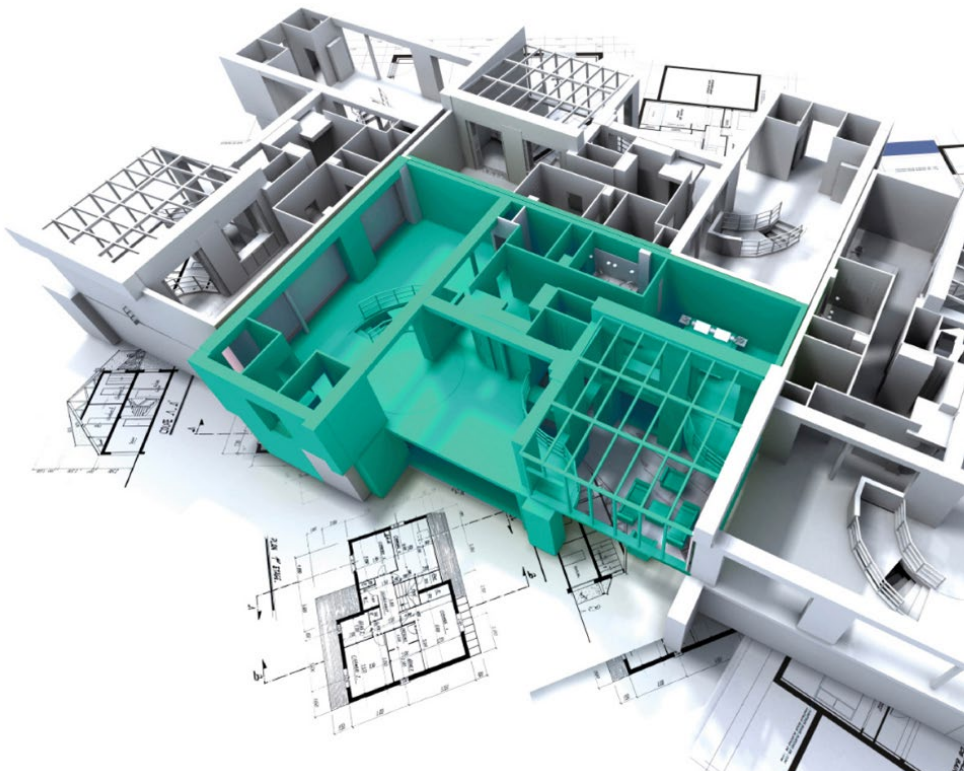
- Volume flow detection is improved as it fits to the medium characteristic



Building Information Management (BIM)



BIM Drawings soon available



- Easy access to Wilo BIM data
  via link in Website.
- Up-to-date data provided by a direct web server connection
- Compact CAD models with small file sizes
- Embedded product information in accordance with international standards
- Ready to provide support throughout the lifetime of building

Supplementary products and accessories, Wilo Service

Pt 1000 AA immersion temperature sensor

Immersion temperature sensor for installation in immersion sleeve with inside diameter 6.5 mm.
Connection to Stratos MAXO and Stratos GIGA2.0 to detect the fluid temperature in the case of temperature-dependent pump control or to detect heating/cooling quantities.

Immersion sleeve

Immersion sleeve with PG 7 clamp bolting and silicone rings.
For admission of Pt 1000 AA immersion sensor for connection to Stratos MAXO and Stratos GIGA2.0.

CIF modules

Interface module as retrofittable plug-in module for extending the communication interfaces of the pump in accordance with various standards and protocol variants according to type key.
BACnet MS/TP, ModbusRTU, Ethernet BACnet IP/ Modbus TCP, CANopen, LON TP/FT-10, PLR

Mounting bracket kit

Mounting brackets for the installation on a base of in-line. The angle brackets ensure secure fastening of the pump to the foundation.
Including fixation material.

Maintenance and repair

- **Reliable:** Guarantee of maximum operational safety
- **Professional:** Professional pump and system inspection
- **Flexible:** Standardised packages or individual solutions
- **Clear:** Documentation of all maintenance work in checklists
- **Carefree:** Proactive 24/7 comprehensive service
- **Optional:** Follow-up guarantee

Commissioning

- **Practice-oriented:** Instructions for operation
- **Clear:** Test run and documentation of the commissioning in the Wilo commissioning report
- **Reliable:** Installation checking
- **Optimized: Setting** of system parameters
- **Personal:** Dedicated contact person for commissioning on-site

Connectivity solutions

Wilo-Stratos GIGA2.0-I

	On-site Connect (local access)	Automation Connect (Building Managment System)
Digital Product	Wilo-Assistant app Smart Connect-Function	(BMS) *(third party)*
Interface	 Wilo-Smart Connect module BT (Accessory in package box of pump)	 Wilo-CIF module (separate accessory)
Product	 Wilo-Stratos GIGA2.0-I	 Wilo-Stratos GIGA2.0-I

In-depth training

Soon, scheduled events for in-depth training sessions will be held that will thoroughly go over tips for best optimization and commissioning. Stay tuned.

Availability

Available to ship from Cedarburg, WI.
in the 4th Quarter.

Launch materials will be ready in a week or two; price book included.

Thank you very much
for your attention.