

Secos

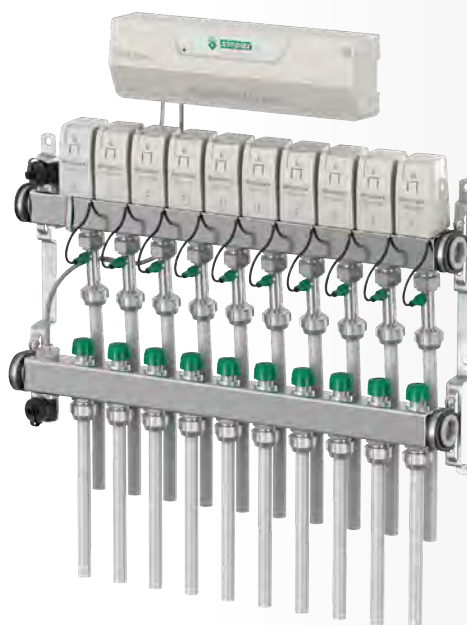
Simplex Energy Control System

for surface temperature management



**Economical with energy.
Extravagant with emotions.**

- Dynamic and fully automatic hydraulic balancing with energy saving effects
- Digital flow rate and temperature measurement in every heating circuit
- Suitable for all common heating surface systems
- BMS interface and smart home options
- Fast installation and simple maintenance



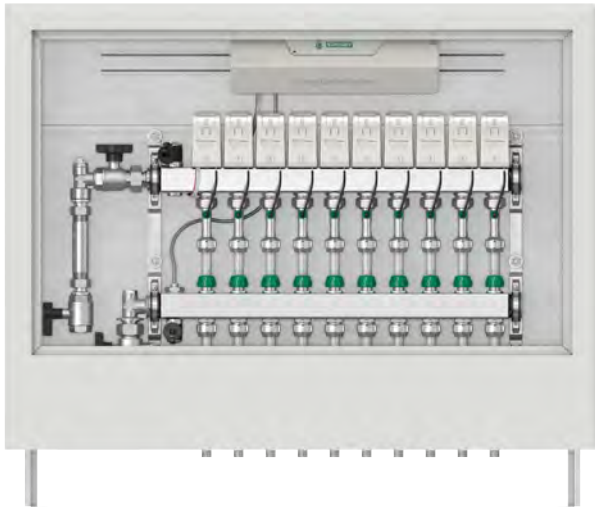
cera
disc valve
technology
⊖ cost ⊕ ecology



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1. Introducing Secos

Secos is a groundbreaking system for surface temperature management in indoor spaces which also continuously records and optimises flow rate and temperature. Secos is ideal for both new buildings and the renovation of older properties.



- **Fully automatic hydraulic balancing**

The Secos multisensor installed in every heating circuit continuously measures flow rate and temperature of the medium. These data points are collated in the Secos energy-saving control system, where they are evaluated and processed. This means that the under- and over-supply of energy in the individual heating zones is excluded.

- **Smart**

The Secos energy saving controller processes all the incoming information and controls the individual heating zones in relation to the needs of the system using the Secos actuators. Interfaces with building management systems and integration options for smart home systems are available.

- **Energy-efficient**

Thanks to the system's optimised hydraulic balancing, you can save up to 25% energy in comparison to a system with poor hydraulic balancing. The Secos actuators consume up to 50% less energy than standard actuators.

If the valve settings remain constant, the savings can be even greater.

- **Geared to the future**

The Secos control system for temperature control in indoor spaces sets a new benchmark with its use of ceramic disc valves. These ceramic disc valves make it possible to adjust flow precisely and with infinite variability. Paving the way to perfect control accuracy.



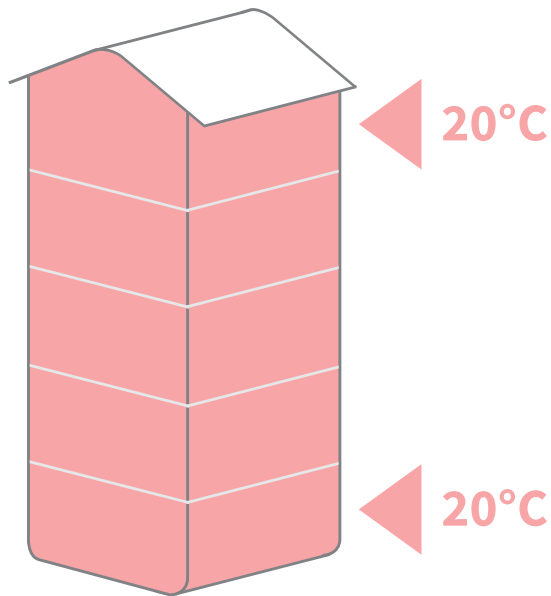
Once a Bluetooth connection has been established using QR Code scanning between the Secos energy saving controller and a mobile device, commissioning can easily be launched from either a tablet or a mobile phone.

All settings, including operating parameters and allocation of heating zones to the various Secos actuators, can easily be adjusted using the Flamconnect app.

Additional functions, such as automatic flushing functions for convenient filling and bleeding, can also be launched using the app.

2. Hydraulic balancing

Indoor surface temperature control is established as a way of warming and/or cooling a wide range of indoor spaces and buildings of all sizes in a manner that is both energy-saving and healthy. But this is impossible without hydraulic balancing.



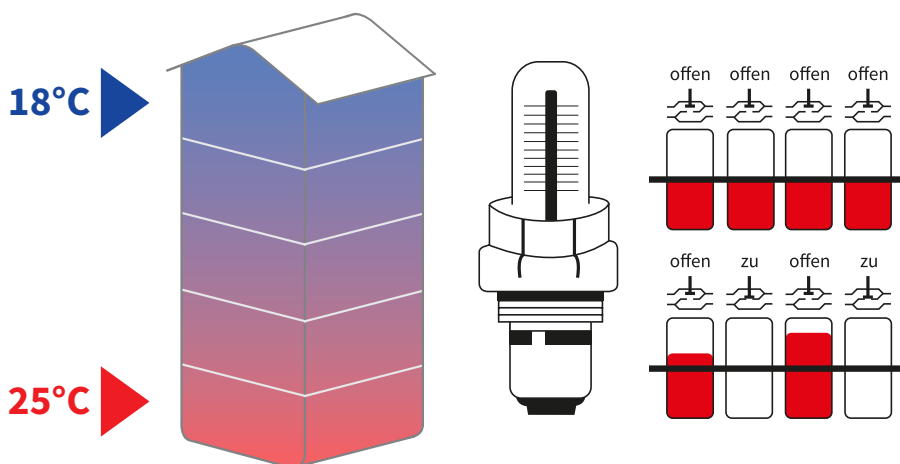
The aims:

- Even and needs-based supply of heat.
- Avoidance of over-/under-supply.
- Optimal energy efficiency.

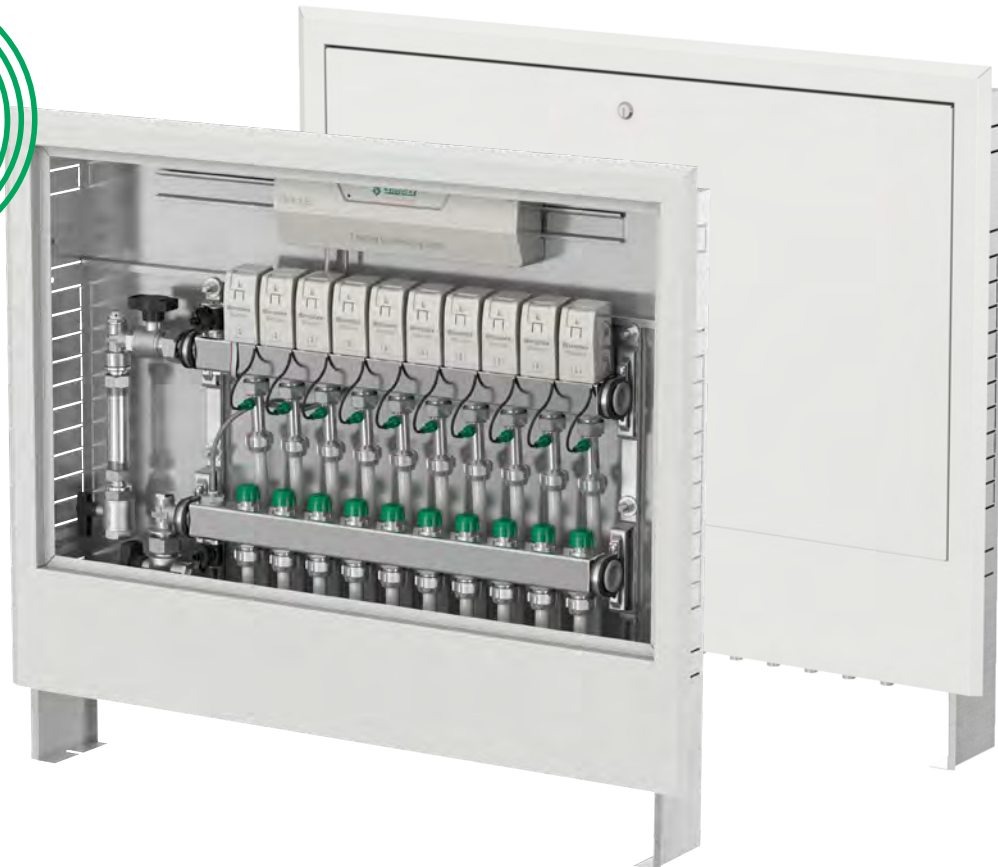


A well-known problem

Hydraulic balancing has massive implications for internal climates and energy efficiency but is only possible to a limited extent in current systems.



- The factory settings of currently available standard systems permit only static balancing.
- In daily practice, flow rates are changed by selecting different valve settings.
- This brings with it the risk of the over- and under-supply of energy to individual heating circuits.
- These systems cannot be balanced efficiently, resulting in increased energy consumption and unnecessary energy costs.



The ideal solution

It's time to say goodbye to poorly balanced systems. And hello to optimal control accuracy, ideal heat distribution and maximum energy saving in a single system.

Simplex Secos is a groundbreaking system of surface temperature control in indoor spaces which also **continuously records and optimises** flow rate and temperature. This also makes it possible to dispense with circuit control valves. Secos is the byword for reduction in energy consumption and positive emotion. It is ideal for both new buildings and the renovation of old properties.

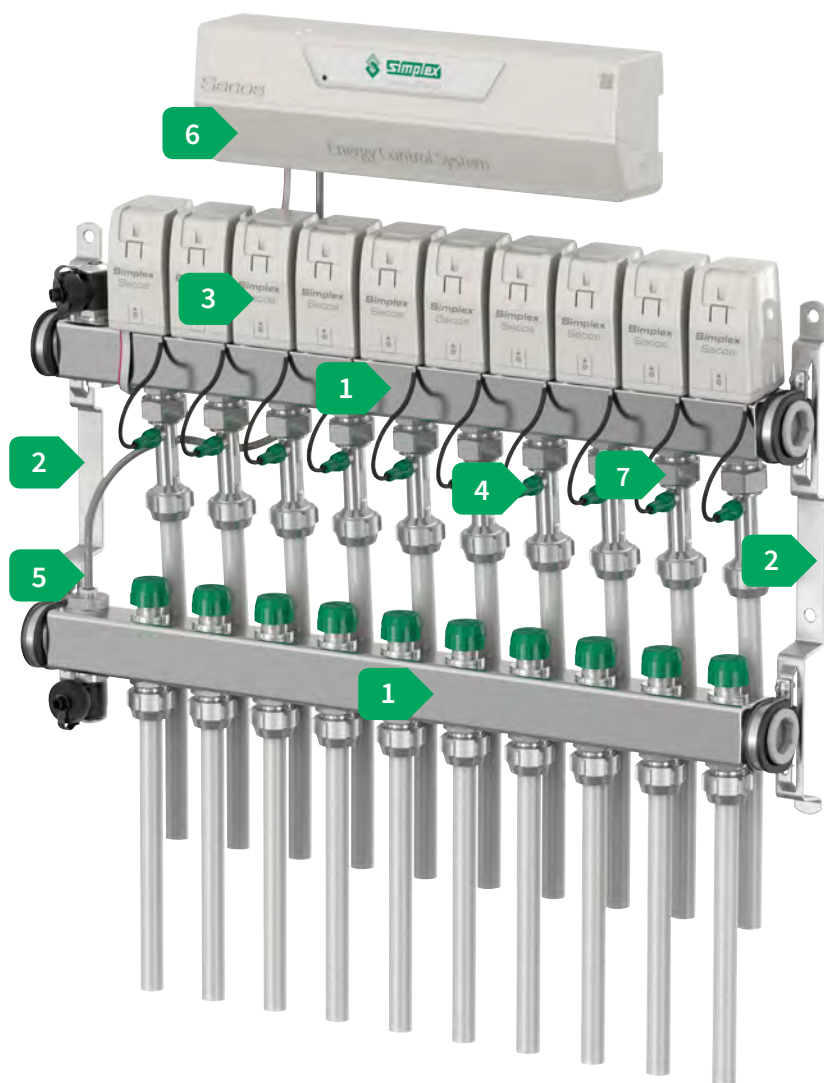
- For heating and cooling.
- Secos - leading the way in installation technology, control performance and comfort.
- Cleverly combining hydraulics and electronics.



Eligibility for funding

Secos satisfies all the technical requirements for Bafa and KfW funding eligibility (as amended in 06/2019)
You can find out more at www.bafa.de or www.kfe.de

3. Design and components



Secos

- 1 Secos System Manifold
- 2 Secos Mounting Bracket
- 3 Secos Actuator
- 4 Secos Multi Sensor
- 5 Secos Flow Temperature Sensor
- 6 Secos Energy Saving Controller
- 7 Secos Disc Valve

1 Secos system manifold

- Supply line and return flow manifold bars made of stainless steel with 1" female thread.
- One filling / draining / flushing / bleeding installation per manifold bar.
- Previously installed snap-on board for the Secos actuator.
- Secos multisensors fitted and pre-wired in at the factory.
- Delivered ready to install on manifold bracket with sound insulation.
- 3/4" Euro cone outlet pieces.
- Including Simplex filling and draining plugs.

2 Secos mounting bracket

- Manifold bracket including sound insulation.
- Installation in manifold cabinet or wall-mounted installation.
- Rigid versions made of galvanised steel.

3 Secos actuator for ceramic valves

- Low energy consumption – energy is consumed only when the valves are in motion.
- Infinite setting possibilities with precise position control.
- Ready-cabled plug connector.
- One single plug for all Secos actuators.
- Snap-on technology for one-click mechanical and electrical connections for error-free and time-saving installation.

4

Secos multi sensor

- To record flow rate and return-line temperature in every heating circuit.
- No moving parts.
- Minimal pressure loss.
- Zero-flow detection.
- Heat quantity measurement possible (consumption analysis, no calibrated values).
- Wired up in the factory.

5

Secos flow temperature sensor

- Records flow line temperature in the system.
- Additional safety feature to monitor maximum permissible flow line temperature.

7

Secos disc valve

Unlike standard systems with globe valves, Secos works with ceramic disc valves which are actuated by rotary motion. These specially constructed ceramic valves permit linear valve opening, in turn ensuring an even valve characteristic curve.

With the aid of the Secos actuators and infinitely variable valve settings, this makes it possible to regulate the flow rate very precisely in all heating circuits.

Spring-loaded globe valve

- Non-linear adjustment range
→ Difficult to control.

Secos disc valve

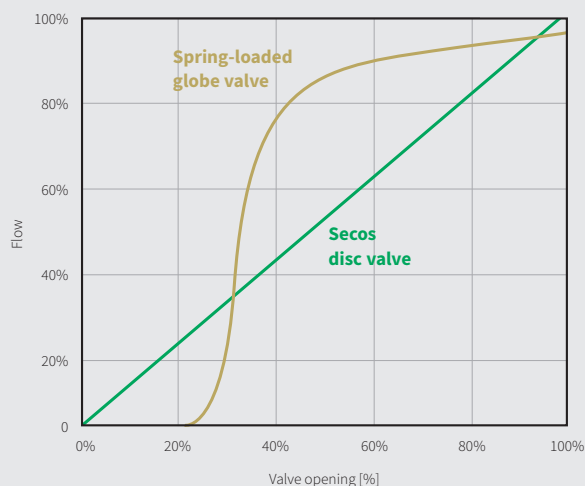
- Linear adjustment range across the entire open range.
→ Very easy to control.

6

Secos energy saving controller

- At the heart of the Secos Energy Control System.
- System data evaluation and automatic needs-based control.
- To control flow and heat output in each heating circuit.
- Suitable for both heating and cooling.
- BUS communication between the energy saving controller and the actuators.
- Up to 8 room thermostats.
- Complete freedom of choice of assignment of the room thermostats to the Secos actuators in the flow line.
- With building management system connection (Modbus).
- Bluetooth connection to Secos-App (Flamconnect).
- External condensation monitor connectable.
- For all other features, please see “Functions and configuration”.

- Disc valve with groundbreaking ceramic technology.
- For heating/cooling applications.
- Wear-free.
- Long service life.
- Infinitely adjustable and precise flow control in combination with Secos actuators.

The Secos disc valve in comparison

4. Functions and configuration



The newly-developed sensor-controlled Simplex valve technology makes it possible for the first time to regulate flow rate for fully automatic, dynamic hydraulic balancing and a precise, need-based heat supply. In a word: everything is perfectly under control.



Everything in one system:

- **Automatic hydraulic balancing.**
Thanks to the smart Secos energy saving controller, flow rate and temperature of the individual heating circuits are permanently recorded and optimally controlled. This means that both under- and over- energy supply of the individually connected heating zones is prevented.
- **Flow volume regulation.**
Avoidance of unnecessary oversupply.
Omission of the differential pressure regulator/circuit regulation valve.
- **Valves with ceramic valve technology.**
Constant equal operation without changes in speed, irrespective of the thermal system used.
- **Heating function.**
- **Cooling function.**
In the Secos energy-saving control, the entire inversion of the room thermostat signals is possible by connecting the changeover. Condensation monitors can be connected to reliably prevent the formation of condensation.
- **Pre-wired snap-on boards for Secos actuators and Secos multisensors.**
Only one Bus cable for actuators and multisensors needed, clarity of cabling layout, high level of installation convenience and time saving.
- **Open system.**
Compatible with standard room thermostats (analogue signal, no Bus-connected room thermostats). Free choice of room thermostats in respect of design, price and configuration. Even some smart home room thermostats can be combined with Secos.



- **Flow rate sensor without moving parts.**
Reliable, wear-free, no extra pressure loss.
Real flow rate recorded.
- **Full pump control.**
230 V mit L,N,PE (e.g. for fixed set-point controller set).
- **Communicates with BMS systems.**
Modbus RTU on board, integration into other BMS systems via gateways.
- **Automatic flushing function.**
Automatic procedure for flushing / bleeding.
Autonomous opening and closing of the individual heating circuits through to complete bleeding.
- **Additional heating as a special function.**
Avoidance of involuntary system heating in the case of bathroom radiators with additional electric heating (comparison RL > FL temperature). Should the return line temperature be higher than the flow line temperature, the Secos actuator will immediately shut the disc valve.
- **Status reports.**
To display operating conditions, error messages, fault alerts.
- **Valve and pump protection function.**
Periodic short actuations reliably prevents valves and pumps from sticking as a result of longer down times.
- **Heating log.**
Documentation of conformity for screed heating against applicable standards.

5. Benefits and added value

**The greatest benefits for all participants in the entire supply chain
– for the entire service life!**

HOW YOU BENEFIT FROM SECOS

YOUR ADDED VALUE WITH SECOS



Step 1 Planning

- The most innovative system on the market for automatic hydraulic balancing.
- Interface Modbus on board for connection to building technology. A wide range of options via gateways.
- It is possible to input different values as a template for balancing. No need to change the design programme.

- The edge in expertise and knowledge
- Flexibility, independence
- Ease of planning, minimisation of errors



Step 2 Administration

- Selection of room thermostats. No tie to manufacturer or design, free choice of price and model, stock products can be used.
- Fewer individual components thanks to complete sets from one supplier. Lower logistics expenditure. Only one contact needed.

- Independence, flexibility
- Time and cost savings



Step 3 Installation

- Entire system uses plug & play principle. Error-free installation / cabling of the components.
- Fewer individual parts (circuit regulation function integrated). Lower installation expenditure.
- Pre-cabled system. Actuators can be installed at the time of commissioning without the need for an electrician.

- Minimisation of errors, time saving
- Reduced expenditure on materials and installation
- Time and cost savings

HOW YOU BENEFIT FROM SECOS

YOUR ADDED VALUE WITH SECOS



Step 4 Commissioning

- Logging of commissioning and screed function.
Evidence of proper execution.
- Automatic flushing function.
Safe bleeding of all individual heating circuits.
- With the adaptation of older buildings, room size can be entered directly per zone.
No calculation of individual heating loads required.

- Safety, time saving
- Operational safety, time saving
- Operational safety, time saving



Step 5 Operation

- Digital flow and temperature measurement without moving parts in every heating circuit.
Readable via app.
No wear to the measuring technology, low pressure loss.
- Automatic, dynamic hydraulic balancing (per unit / overall system).
Continuous regulation to the optimal operating point Low return flow temperatures.
- Connectable to BMS and smart home systems.
Use of different systems is possible
Open communication interfaces.

- Long service life, operational safety
- Gains in convenience, energy saving
- Flexibility, guaranteed fit for future use



Step 6 Service

- All operating conditions displayed in the app and communication with BMS systems.
Quick overview of the function and simplified troubleshooting.

- Expertise, cost savings, customer satisfaction



Conclusion

Secos is the basis for energy saving in any heating system, with unbeatable ease of installation and automatic commissioning, supported by state-of-the-art communication.



→ Tomorrow's technology today

6. Secos in comparison



| Configuration | Current standards | | Secos for the future | | Features |
|--|-------------------|------|----------------------|--|--|
| | 1.0 | 2.0* | Secos | | |
| Basic manifold function for the connection of individual circuits | ● | ● | ● | | |
| Heating mode | ● | ● | ● | | |
| Cooling mode | | ○ | ● | | Change Over (C/O) included, condensation monitor can be connected. |
| Complete package incl. energy saving control, system distributor, Drive units, temperature sensor for flow line, Secos multi-sensors in return and Flamconnect App | – | – | ● | | One “Secos Energy Control System” package per manifold size |
| Control with Bus communication with the actuators (number of actuators does not depend on the number of clamps) | – | ○ | ● | | 1 energy saving controller for up to 8 room thermostats |
| Circuit regulation function | – | – | ● | | Flow rates in all circuits are digitally recorded and controlled. |



| Design and components | 1.0 | 2.0* | Secos | Features |
|--|-----|------|-------|--|
| Simple configuration of the components | – | ○ | ● | Complete system Secos Energy Control System |
| Ceramic disc valves to block flow | – | – | ● | Long-life Secos disc valves |
| Actuators rotated by motors | – | – | ● | Infinitely adjustable with rest positions |
| Digital flow and return flow temperature measurement in every circuit (in place of classic spring-actuated top meters) | – | – | ● | No moving parts in the Secos multisensor |
| Low total pressure loss | – | – | ● | Particularly low thanks to innovative measuring technology |



| Hydraulic balancing | 1.0 | 2.0* | Secos | Features |
|---|-----|--|-------|---|
| Flow rate adjustable for one operating condition | ● | ● | ● | |
| Permanent flow rate reading possible | – | ○ | ● | Ongoing measurement and output in the app, no retrospective contamination of the inspection glasses |
| Perfect automatic comparison at all times with actual measurement values for each circuit | – | ○ in some cases using ancillary solutions | ● | Digital flow rate and temperature measurement, permanent control |
| Permanent energy saving guaranteed | – | ○ | ● | Balancing with return line temperature and flow rate |



| Installation | 1.0 | 2.0* | Secos | Features |
|--|-----|------|-------|--|
| Actuators are simultaneously mechanically and electrically connected when plugged in | – | – | ● | Plug & play installation |
| Actuators can be connected for commissioning without the help of an electrician | – | ○ | ● | No electrician required internally for Secos thanks to BUS and low voltage |
| No cabling required for actuators | – | – | ● | No cable required for the individual actuators, no messy tangle of cables |
| Any number of zones can be assigned to a single room thermostat | – | – | ● | App can be used to assign room thermostats to individual zones |



| Commissioning | 1.0 | 2.0* | Secos | Features |
|---|-----|------|-------|---|
| Allocation of actuators to the control zones via app | – | ○ | ● | Identification by pressing a button on the drive unit. |
| Convenient parameter input for commissioning | – | ○ | ● | Direct input of the required values per space (output per space, flow rate per circuit or specific heating load and area) |
| Automatic flushing function for bleeding | – | – | ● | Individual circuits are automatically opened and closed |
| Screed heating logged | – | – | ● | Important for screed warranty |
| Automatic logging after successful commissioning as evidence of hydraulic balancing (KfW, Bafa / Vdz) | – | – | ● | Export function via app |



| Operation | 1.0 | 2.0* | Secos | Features |
|--|-----|------|-------|---|
| Permanent hydraulic balancing | – | ○ | ● | Customary retrospective fine adjustments and extra journeys redundant |
| Continuous function check | – | ○ | ● | Error messages via app |
| Highest level of energy efficiency at all times | – | ○ | ● | Optimal regulation |
| Flow line temperature monitoring (STB) | – | ○ | ● | Maximum value can be set |
| Any zone without a thermostat is also hydraulically balanced | – | – | ● | Also possible to input heating load for spaces without a room thermostat |
| Permanent readability of flow rates guaranteed | – | – | ● | No moving parts in the measuring technology, no contamination of the inspection glasses |
| Long-term availability of spare parts guaranteed | – | ○ | ● | Simplex as a strong brand – Member of Flamco |



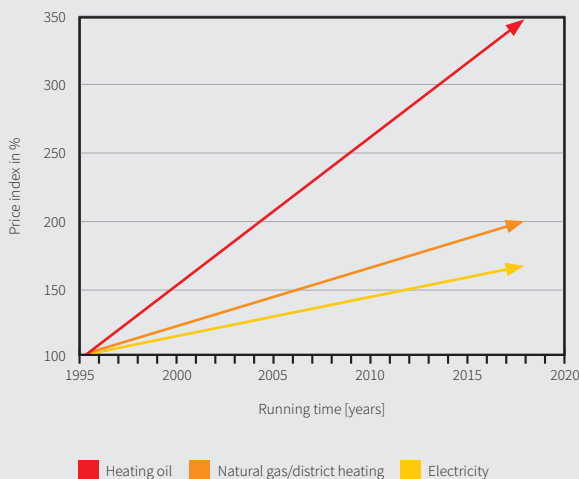
| Connectivity / interfaces | 1.0 | 2.0* | Secos | Features |
|---|-----|------|-------|--|
| Flamconnect App | – | – | ● | Device-specific QR code permits individual Bluetooth connection of Secos energy saving controller to tablet or smart phone |
| Easy to connect to BMS | – | ○ | ● | Integrated Modbus / RTU on board, further BMS via gateways |
| Change Over (C/O) – signal input for cooling function | – | – | ● | Easy inversion (changeover) of the room thermostat signals |
| Export data, read out logs, backup | – | – | ● | Export / import data via app |
| Data security assured | – | ○ | ● | Direct Bluetooth connection |

7. Environment and economical operation

Energy saving and protection of resources coupled with economy of operation and enhanced comfort

- We take responsibility for the careful use of natural resources, thereby reducing the CO₂ footprint.
- We adhere strictly to environmental legislation and guidelines.
- We rely on innovative products to reduce the energy consumption of our customers to maintain a healthy and viable environment and to guarantee positive long-term customer relationships.

Average heating cost trend



Source: Federal Statistical Office

Average heating costs by energy carrier have risen by up to 350% in the last 23 years. The market is characterised by ever shorter cycles of price reduction and massive price increases. As everyone now knows, all the talk is of a constant increase in heating costs.

If heating costs are going to keep increasing, the energy savings which can be achieved with Secos will have an even more important role to play in the future.

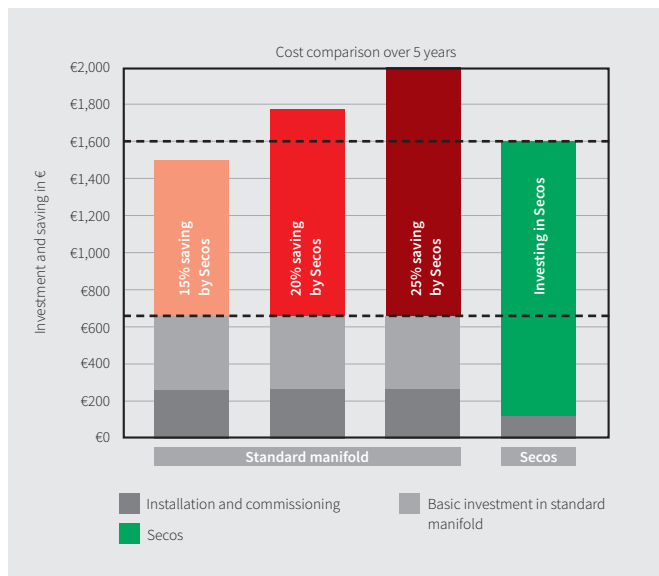


Secos is developing for the future!

Highest levels of energy efficiency and convenient app-based operation combined with the Secos energy saving controller round off this groundbreaking development to perfection.



Amortisation after 5 years

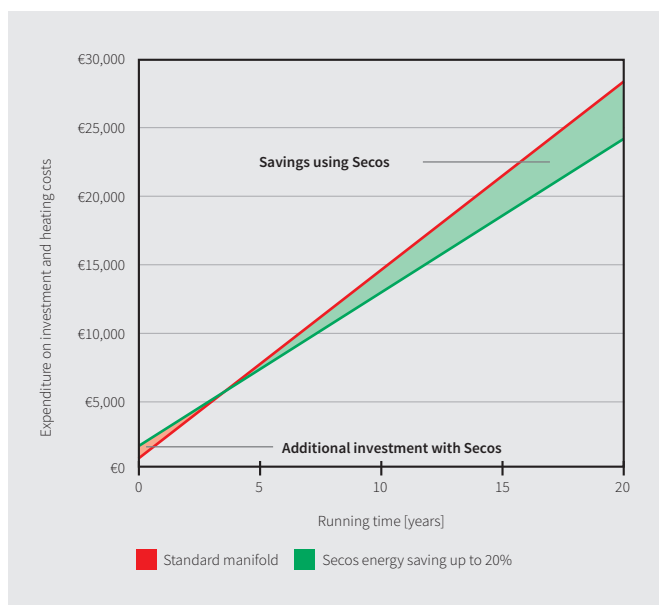


The system with permanent hydraulic balancing makes it possible to save up to 25% in comparison to standard solutions on the market.

The additional costs for the Secos system will be recouped after about 5 years and an assumed energy saving of 20 %.

You will also benefit from faster installation and commissioning and from satisfied customers.

Sustainable investment



Depending on the percentage saved, the capital invested will be multiplied and become available to the owner. The worthwhile investment in Secos will ensure that you are protected to some degree from further increases in heating costs.

Secos satisfies all the technical requirements for Bafa and KfW funding eligibility (as amended in 06/2019)

Bafa funding for existing building stocks will be anything up to 30 % of the net investment costs.

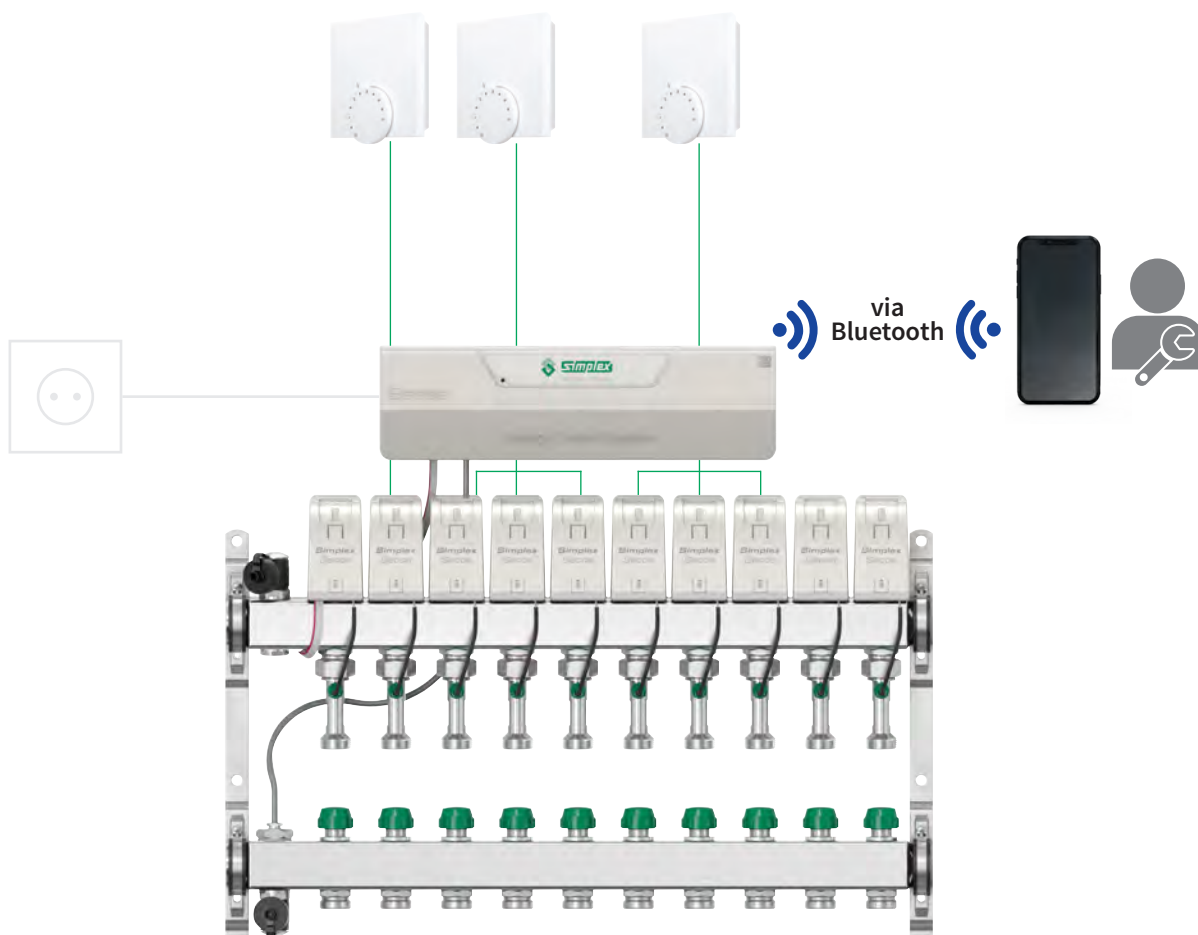
You can find out more at www.bafa.de or www.kfe.de

Note:

Sample calculations based on different sources and assumptions. Results may vary widely depending on user behaviour, building and environment.

8. Commissioning

Hardware



Successful commissioning in just a few steps:

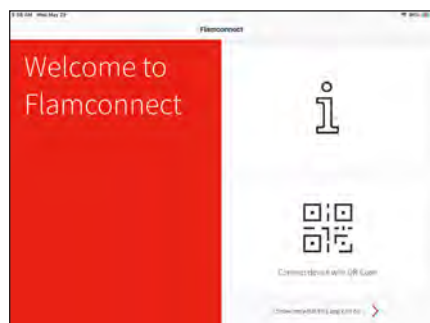
1. Install pre-assembled system manifold.
 2. Fit pipes to the connections and check for leak-tightness.
 3. Clamp Secos energy saving controller to the top-hat rail.
 4. Connect the room thermostats.
 5. Plug in Bus cable and flow line temperature sensor.
 6. Plug in Secos actuators.
 7. 1 x connection to the power supply.
- **The system is ready to go.**
Other settings can be adjusted in the Flamconnect app.
8. Assign room thermostats to the Secos actuators (heating circuits).
 9. Input required heating load per control zone.



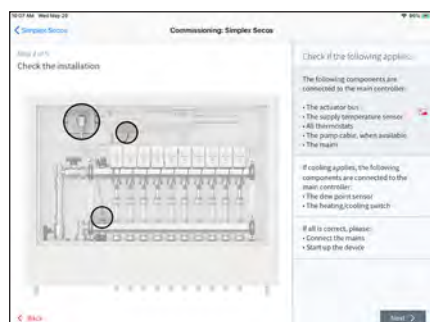
You're all done! → Save energy and enjoy your new-found comfort!

Software and Flamconnect

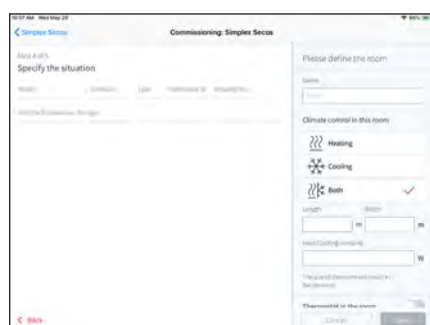
The Secos energy saving controller and your mobile device are connected via Bluetooth. This requires you to scan the device-specific QR code on the energy saving controller in the app.



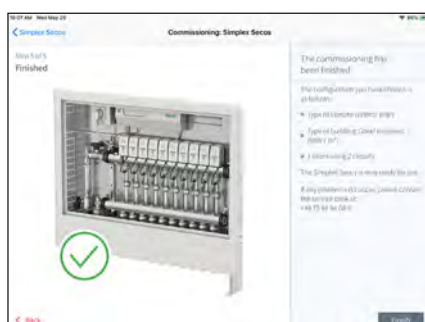
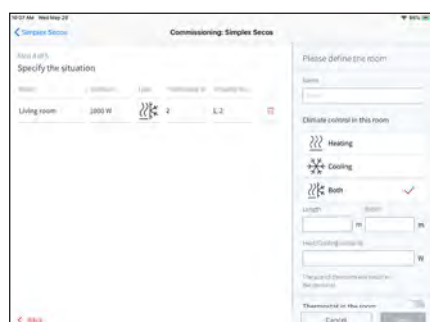
On the home screen you will be asked to scan the QR code of the energy saving controller.



All the required installation work will then be queried. Once this work has been done, the initial set-up can begin.



Now you can start by recording the spaces involved. Here, you will need to assign the room thermostats to the respective spaces. The actuators are then also assigned to the spaces.



All successfully entered information will be displayed in the summary. From this point on, Secos will work independently.

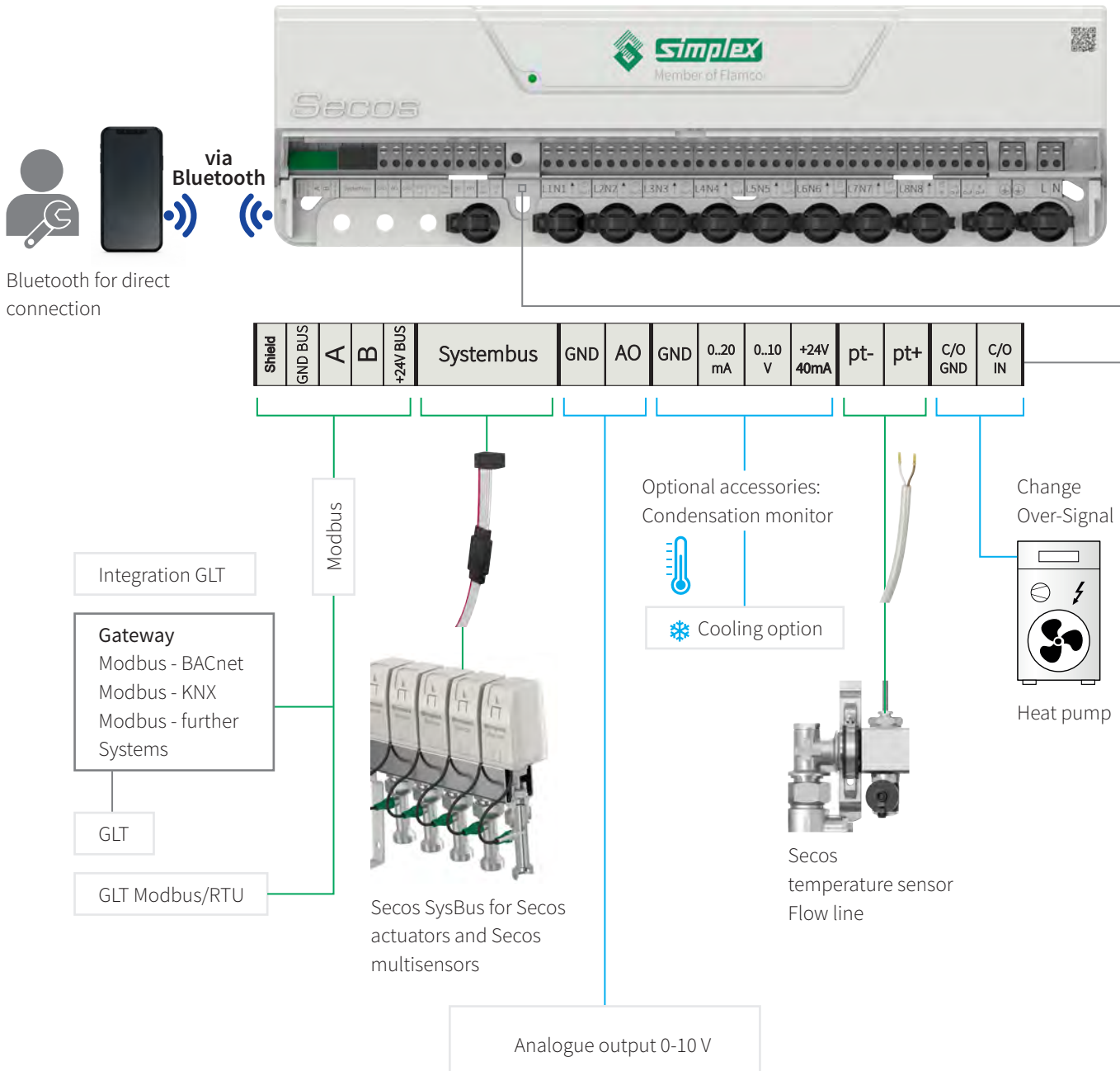


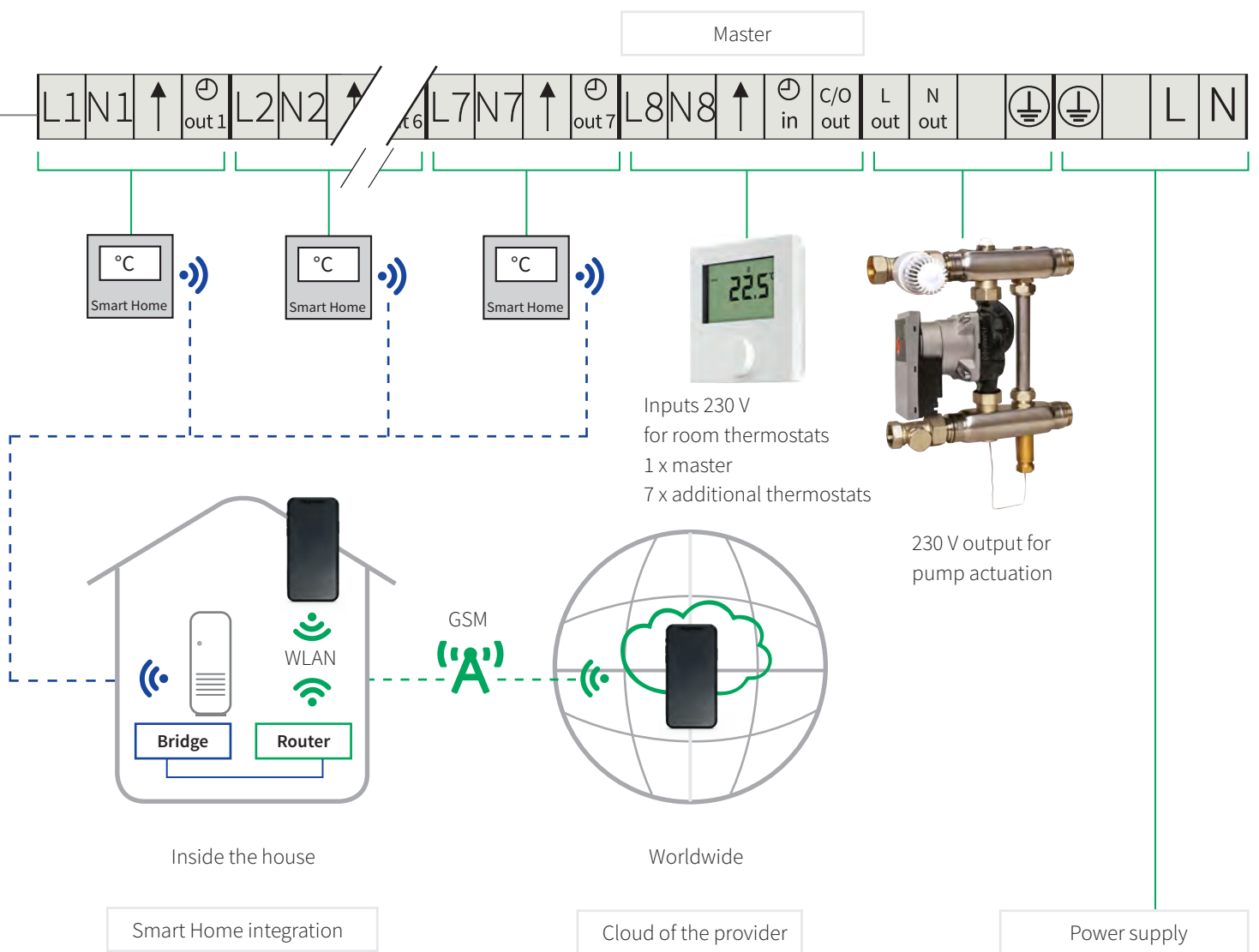
The following functions can easily be launched or changed using the app:

- Automatic flushing and bleeding function
- Spaces without room thermostat function
- Monitoring of external heat sources
- Floor temperature control function
- Flow line temperature limit

9. Interfaces and electrical connections

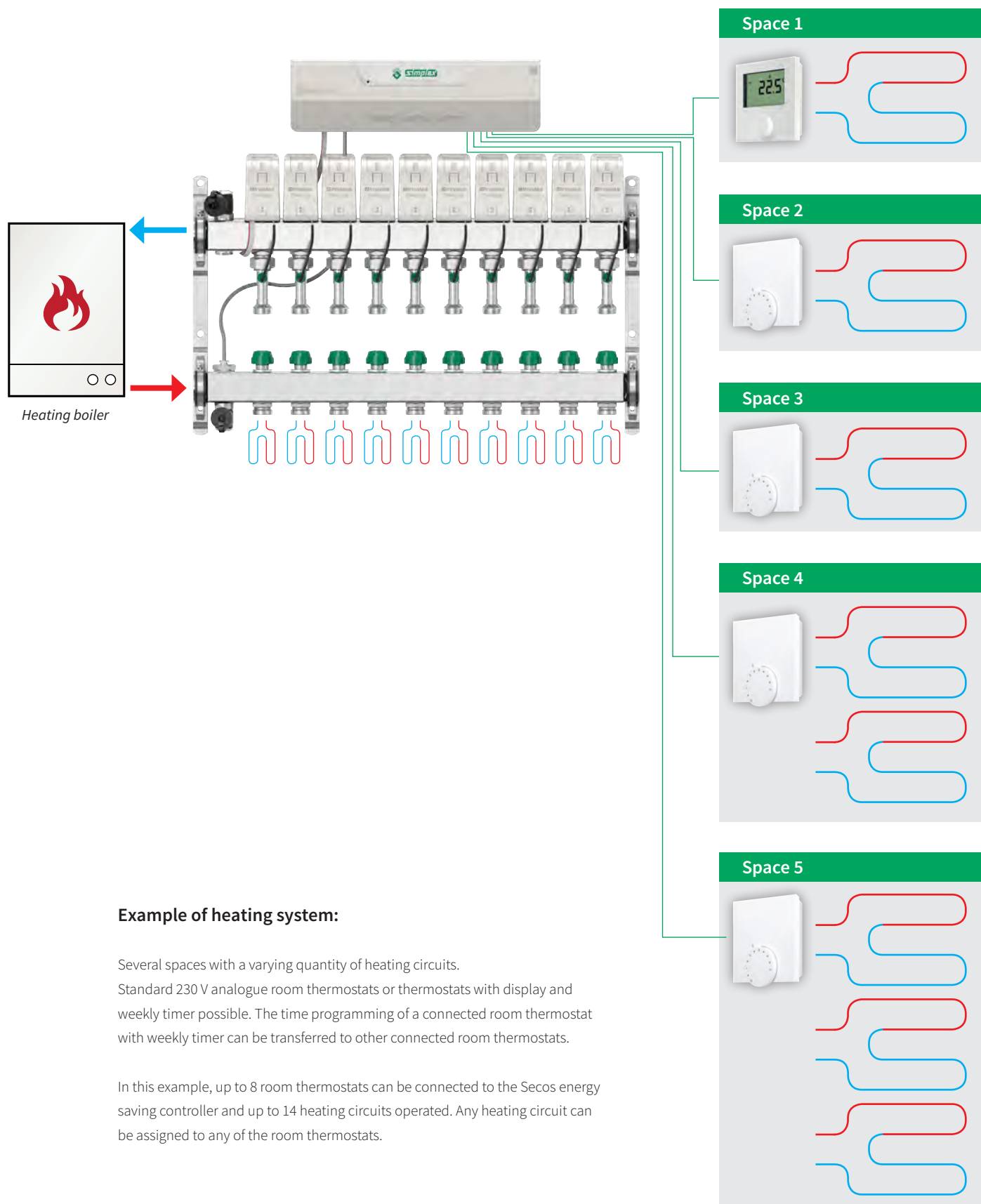
Clamp configuration / Interfaces





10. Application examples

Heating application

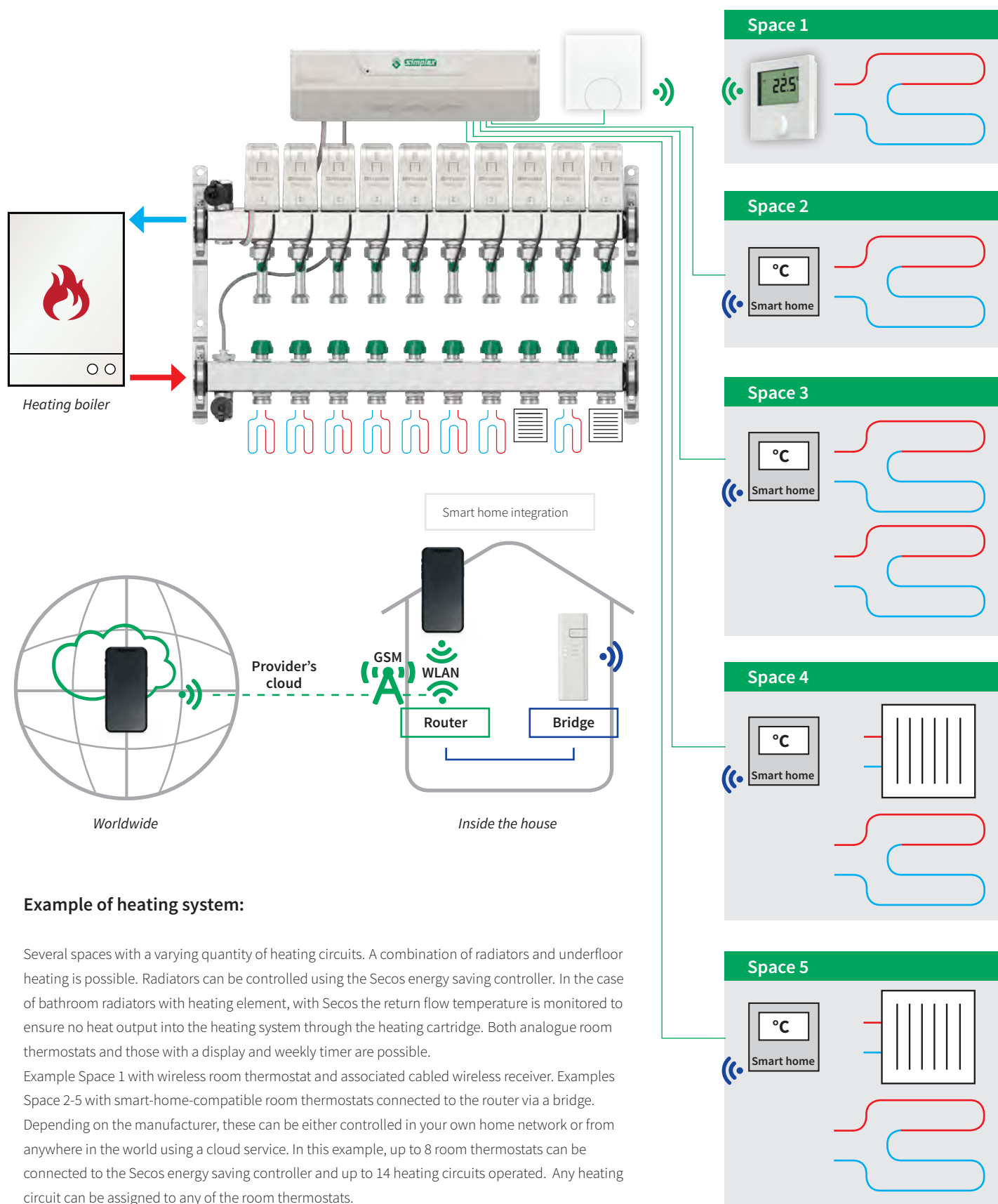


Example of heating system:

Several spaces with a varying quantity of heating circuits.
Standard 230 V analogue room thermostats or thermostats with display and weekly timer possible. The time programming of a connected room thermostat with weekly timer can be transferred to other connected room thermostats.

In this example, up to 8 room thermostats can be connected to the Secos energy saving controller and up to 14 heating circuits operated. Any heating circuit can be assigned to any of the room thermostats.

Heating application – with smart home integration



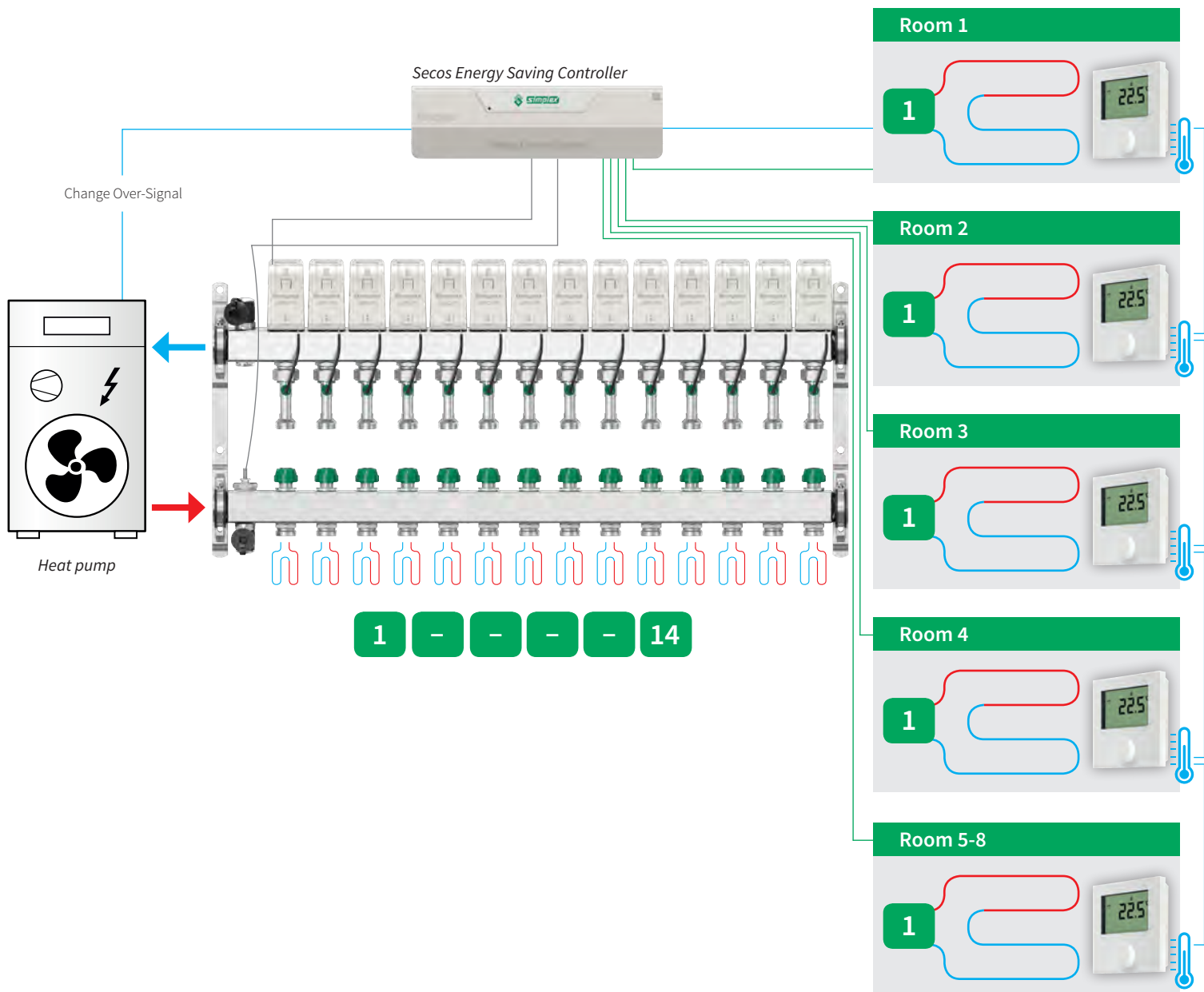
Example of heating system:

Several spaces with a varying quantity of heating circuits. A combination of radiators and underfloor heating is possible. Radiators can be controlled using the Secos energy saving controller. In the case of bathroom radiators with heating element, with Secos the return flow temperature is monitored to ensure no heat output into the heating system through the heating cartridge. Both analogue room thermostats and those with a display and weekly timer are possible.

Example Space 1 with wireless room thermostat and associated cabled wireless receiver. Examples Space 2-5 with smart-home-compatible room thermostats connected to the router via a bridge. Depending on the manufacturer, these can be either controlled in your own home network or from anywhere in the world using a cloud service. In this example, up to 8 room thermostats can be connected to the Secos energy saving controller and up to 14 heating circuits operated. Any heating circuit can be assigned to any of the room thermostats.

10. Application examples

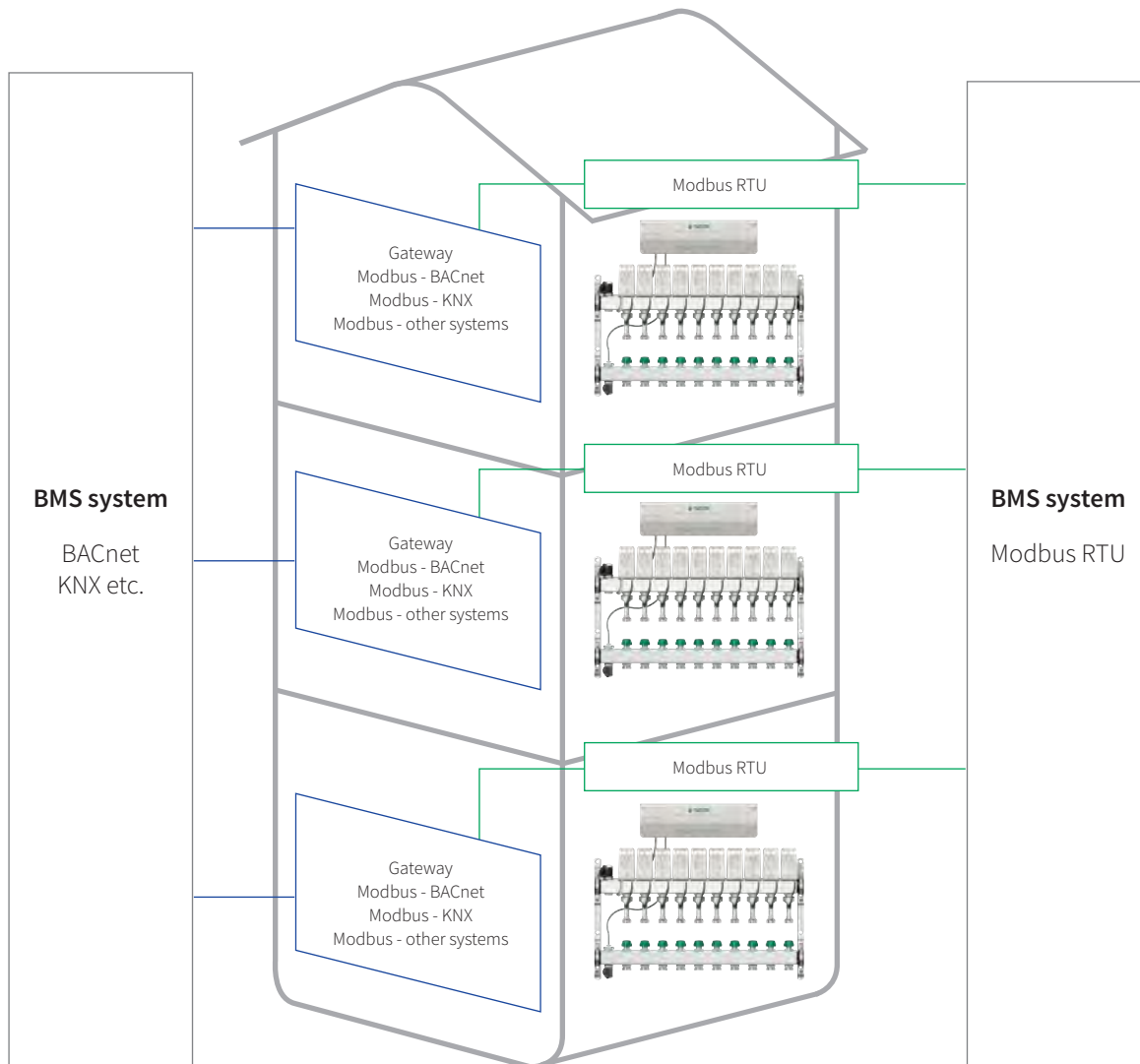
Application Heating and cooling



Example for heating and cooling:

Example with 14 heating circuits and 8 room thermostats which can be freely assigned. Both analogue room thermostats and those with a display and weekly timer are possible. The heating zones are supplied and controlled by the Secos energy-saving control system. The change-over signal required for cooling mode comes from external sources and is simply connected to the energy-saving control. In addition, at least one condensation monitor must be integrated for cooling mode. Several condensation monitors can also be connected in series to the Secos energy-saving control.

Use of Secos in building management system (BMS)








Example of system for integration into a building management system (BMS):

Example with three floors in which the Secos system is connected to a building management system. This building management system can be used to retrieve and process information or warnings at a central point. Integration into this kind of system requires a BUS language. With Secos we provide an interface for communication with the system Modbus RTU. This can be directly connected with the corresponding Modbus RTU building management (illustration right).

With the aid of gateways which function as translators, this interface is compatible with all standard Bus systems such as KNX, BACnet etc. (Illustration left).

11. Room thermostat accessories

In general, standard 230 V-room thermostats with twin-point or PWM* output can be used with Simplex Secos. Room thermostats provided by the customer with 230-V output signals, such as room thermostats fitted beneath plaster from your switch series can also be operated using Secos.

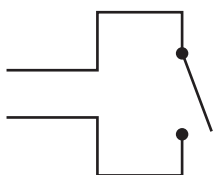
| | Analogue | Comfort | Control | Room thermostat wireless device with display | Wireless base station 1-channel |
|--|---|---|--|---|---|
| Art. no. | F18585 | F18594 | F18635 | F18091 | F18090 |
| Configuration and functions |  |  |  |  |  |
| Flat design & compact dimensions (86 x 86 mm) | ● | ● | ● | | ● |
| Easy to operate with rotary knob with lock-in position | ● | - | - | | - |
| Easy to operate with rotary knob with push/turn function and lock-in position | - | ● | ● | | ● |
| Clear, language-neutral display | - | ● | ● | | ● |
| Background illumination for display | - | ● | ● | | ● |
| User-friendly menu | - | ● | ● | | ● |
| Heating and cooling connected with Secos | ● | ● | ● | | ● |
| Heating and cooling connected with other controllers | - | ● | ● | | ● |
| Display of switching output | - | ● | ● | | ● |
| Adjustable set-back temperature | - | ● | ● | | ● |
| Internal weekly timer | - | - | ● | | ● |
| Smart start/stop function | - | - | ● | | ● |
| Timer output (set-back output to be forwarded to set-back input of other room thermostats) | - | - | ● | | ● |
| Wireless 868 Mhz | - | - | - | | ● |
| Set-back input | ● | ● | - | | - |



Smart home room thermostats

As far as the use of room thermostats is concerned, the system offers a great deal of flexibility. When it comes to the design, price and configuration of your smart home room thermostats, you have complete freedom of choice.

You are not tied to any single manufacturer.



Room thermostat with cabled output for your heating requirement

The large and ever increasing number of smart home room thermostats and the various systems, designs and operating apps that go with them oblige Secos always to be up to date.

The single system requirement is this: The smart home room thermostat provided by the customer requires connecting clamps for a cabled 230-V switched output.

12. Accessories Installation connection

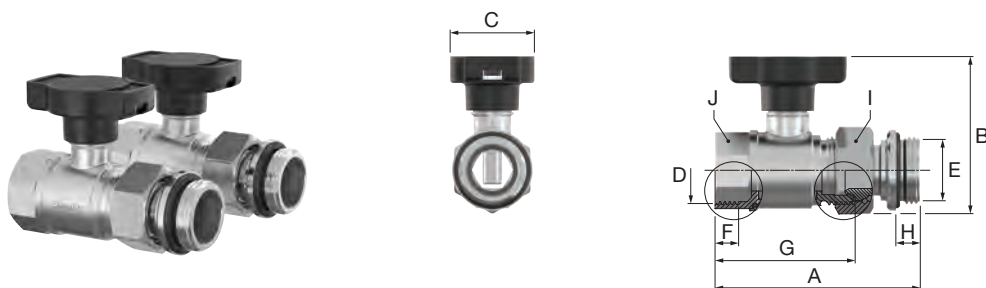
Manifold connection kit, horizontal


PG = 760

For Simplex manifold the kit consists of:

2 ball valves with straight threaded connection with O-ring seal, T-handles and thermometer can be retrofitted.

- Nickel-plated brass components
- Sealing materials: EPDM
- Max. operational temperature: 110°C
- Max. operating pressure: 10 bar



| Type | Connection | |  | Article no. |
|--|------------|--------|---|-------------|
| | D | E | | |
| Manifold connection kit, H, horizontal | G 1" F | G 1" M | 1 | F14022 |

Dimensions

| Type | Dimensions [mm] | | | | | | | |
|--|-----------------|----|----|------|----|------|--------|--------|
| | A | B | C | F | G | H | I (SW) | J (SW) |
| Manifold connection kit, H, horizontal | 99 | 76 | 41 | 12,2 | 67 | 11,5 | 37 | 37 |

12. Accessories Installation connection

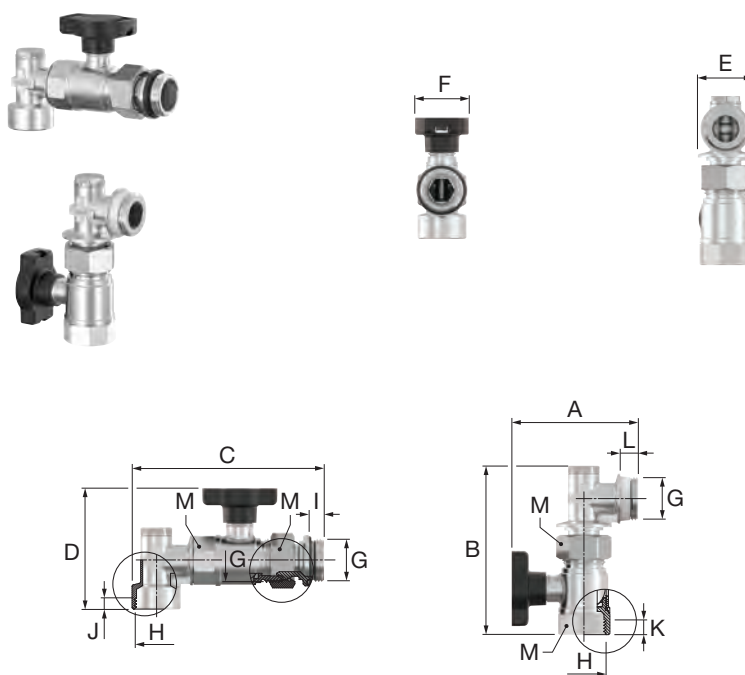
Manifold connection kit, vertical


PG = 760

For Simplex manifolds, the kit consists of:

2 ball valves with threaded connection, with O-ring seal, T-handles and thermometer can be retrofitted,
2 pcs. x 90° angle connection brackets with self-sealing thread for vertically mounting the manifold supply lines.

- Nickel-plated brass components
- Sealing materials: EPDM
- Max. operational temperature: 110 °C
- Max. operating pressure: 10 bar



| Type | Connection | |  | Article no. |
|--------------------------------------|------------|--------|---|-------------|
| | H | G | | |
| Manifold connection kit, V, vertical | G 1" F | G 1" M | 1 | F14023 |

Dimensions

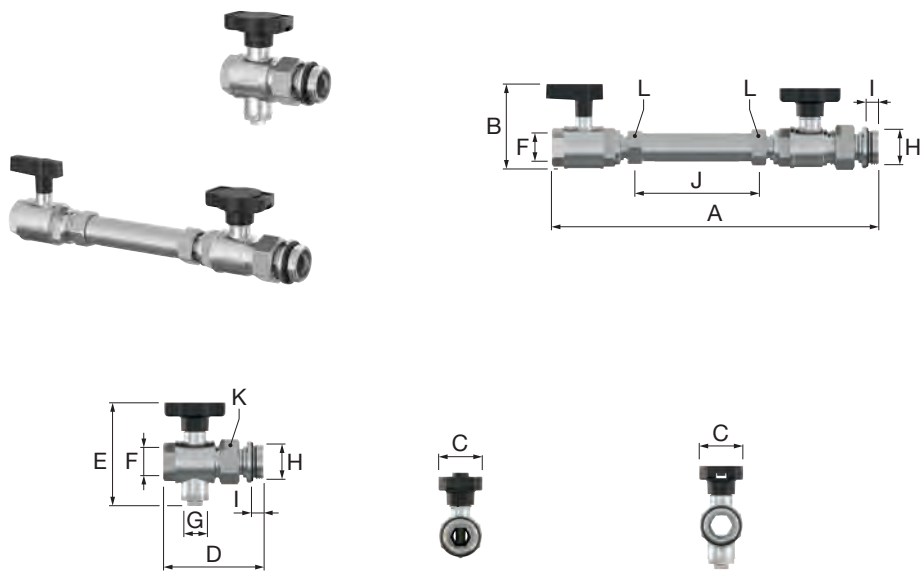
| Type | Dimensions [mm] | | | | | | | | | | |
|--------------------------------------|-----------------|-----|-----|----|----|----|------|----|------|------|--------|
| | A | B | C | D | E | F | I | J | K | L | M (SW) |
| Manifold connection kit, V, vertical | 96 | 128 | 145 | 92 | 42 | 41 | 11,5 | 12 | 12,2 | 13,5 | 37 |


Universal heat meter attachment kit, horizontal

PG = 760

For Simplex manifold, the kit consists of:
3 ball valves with threaded connection with 0-ring seal, T-handles and thermometer can be retrofitted,
1 pcs. heat meter adapter 110 mm, G1" for manifold bar,
ball valves G3/4" F, for heat meters up to 1,5 m³/h
The connection of the flow temperature sensor is located in the ball. This makes the heat meter easy to replace.
Connection of 1/2" and M10x1 sensors are possible.

- Nickel-plated brass components
- Sealing materials: EPDM
- Max. operational temperature: 110 °C
- Max. operating pressure: 10 bar



| Type | Connection | | |  | Article no. |
|--|------------|-------------------------|--------|---|-------------|
| | F | G | H | | |
| Universal heat meter attachment kit, H, horizontal | G 3/4" F | G 1/2" F und M 10 x 1 F | G 1" M | 1 | F14030 |

Dimensions

| Type | Dimensions [mm] | | | | | | | | |
|--|-----------------|------|----|----|----|------|-----|--------|--------|
| | A | B | C | D | E | I | J | K (SW) | L (SW) |
| Universal heat meter attachment kit, H, horizontal | 301,5 | 78,5 | 41 | 93 | 91 | 11,5 | 110 | 37 | 30 |

12. Accessories Installation connection

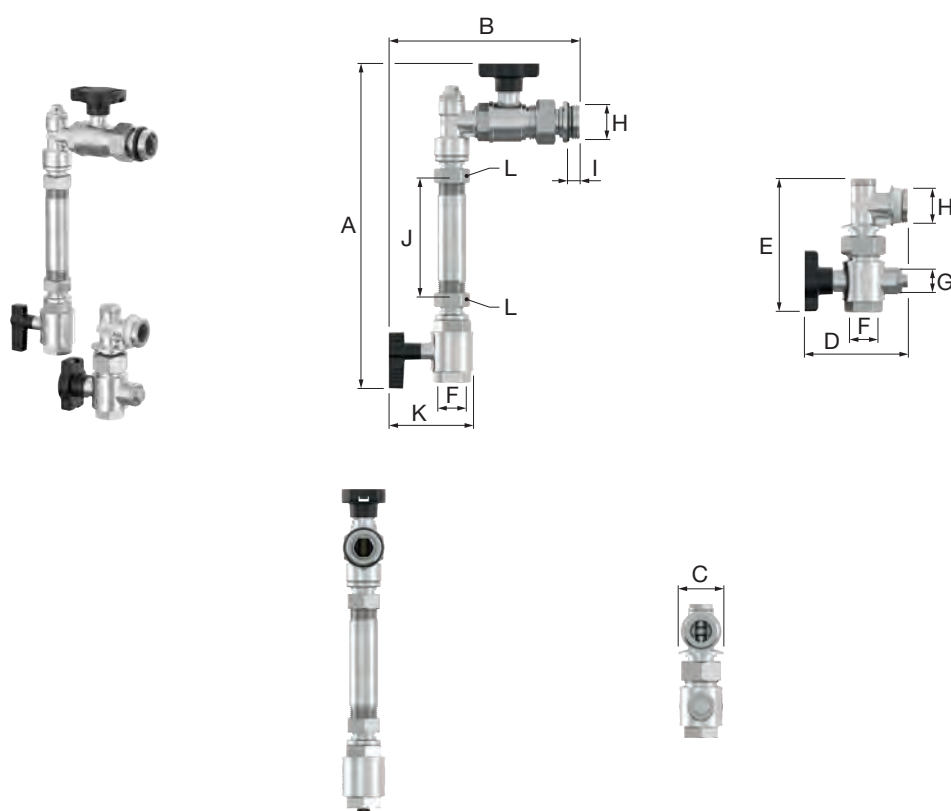
Heat meter attachment kit, universal, vertical


PG = 760

For Simplex manifolds, consisting of:

3 pcs. ball valves with screw connection with O-ring seal, T-handles, thermometer can be retrofitted,
 2 pcs. 90° angle connection with self-sealing thread for vertically mounting the manifold supply lines,
 1 pc. heat meter adapter piece 110 mm, G 1" M for manifold bar,
 ball valves G 3/4" F, for heat meters up to 1.5 m³/h. The connection of the flow temperature sensor is located in the ball. This makes the heat meter easy to replace.
 Connection of 1/2" and M10x1 sensors are possible.

- Nickel-plated brass components
- Sealing materials: EPDM
- Max. operational temperature: 110 °C
- Max. operating pressure: 10 bar



| Type | Connections | | |  | Article no. |
|--|-------------|-------------------------|--------|---|-------------|
| | F | G | H | | |
| Heat meter attachment kit, V, vertical | G 3/4" F | G 1/2" F und M 10 x 1 F | G 1" M | 1 | F14031 |

Dimensions

| Type | Dimensions [mm] | | | | | | | | |
|--|-----------------|-----|----|----|-----|------|-----|--------|--------|
| | A | B | C | D | E | I | J | K (SW) | L (SW) |
| Heat meter attachment kit, V, vertical | 301 | 177 | 42 | 96 | 124 | 11,5 | 110 | 78,5 | 30 |

Fixed set-point controller set F36 with contact sensor

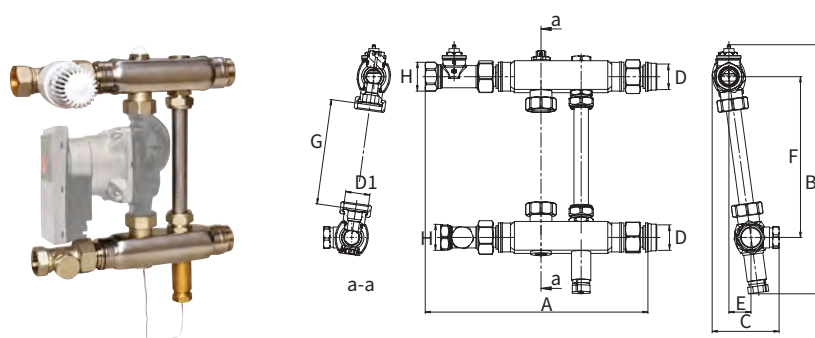
PG = 760


Compact control station of the flow line temperature of surface heating systems up to 15 kW heating requirement, assembled directly to the heating circuit manifold. The connection can occur on the right or left of the manifold. The low installation depth of the unit makes it possible to install in standard manifold boxes.

The controller set consisting of:

Fixed set-point controller set, pump including connection cable, thermostatic head with contact sensor, heat conducting base, straight wall bracket.

- Components made of stainless steel
- Sealing materials: EPDM
- Max. operating temperature: 90 °C
- Max. operating pressure: 10 bar



| Type | Pump | DN | Connections | | |  | Article no. |
|------------|----------------------|-------|-------------|--------|----------|---|-------------|
| | | | D | D1 | H | | |
| FWR-T WILO | WILO high efficiency | DN 20 | G 1" M | G 1" F | G 3/4" F | 1 | F18772 |

Dimensions

| Type | Dimensions [mm] | | | | | |
|--------------|-----------------|-----|----|----|-----|-----|
| | A | B | C | E | F | G |
| FWR-T / WILO | 277 | 310 | 83 | 28 | 200 | 130 |

13. Accessories for manifold cabinets

EXCLUSIV manifold cabinet, wall-mounted

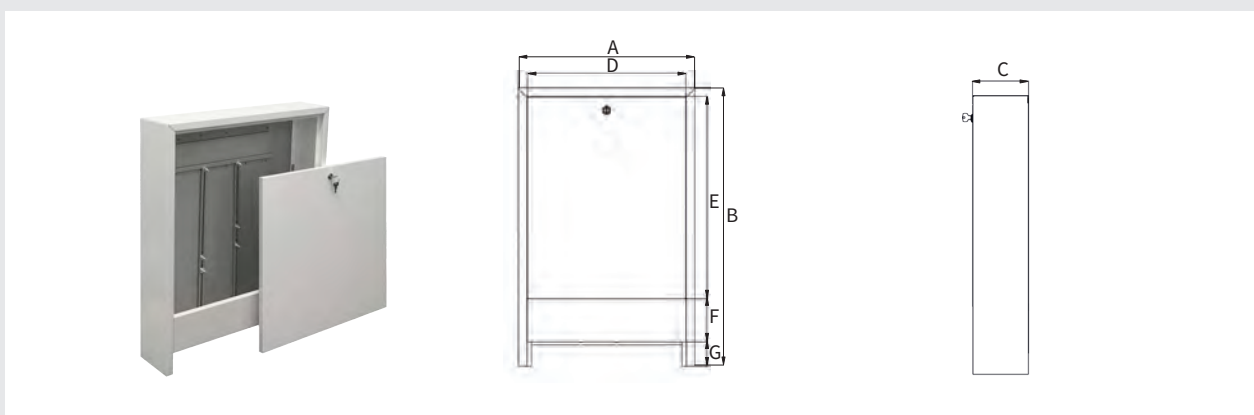
PG = 761


For Simplex manifolds. Characteristics:

- Made of galvanized steel, powder-coated RAL 9016 (traffic white)
- Smooth side parts
- Supply and return connections below
- Manifold mounting rail
- Clip rail for control module bar
- Pipe deflection rail
- Packed in a box
- Easy to assemble due to removable front cover

Attention: cabinets can't be supplied by parcel service.

→ **Other sizes on request.**



| Type | Dimensions [mm] | | | | | | |  | Article no. |
|-------------------|-----------------|-----|-----|------|-----|-----|----|---|-------------|
| | A | B | C | D | E | F | G | | |
| Cabinet E-AP-450 | 450 | 710 | 140 | 406 | 516 | 110 | 62 | 1 | F18550 |
| Cabinet E-AP-550 | 550 | 710 | 140 | 506 | 516 | 110 | 62 | 1 | F18551 |
| Cabinet E-AP-700 | 700 | 710 | 140 | 656 | 516 | 110 | 62 | 1 | F18552 |
| Cabinet E-AP-850 | 850 | 710 | 140 | 806 | 516 | 110 | 62 | 1 | F18553 |
| Cabinet E-AP-1000 | 1000 | 710 | 140 | 956 | 516 | 110 | 62 | 1 | F18554 |
| Cabinet E-AP-1200 | 1200 | 710 | 140 | 1156 | 516 | 110 | 62 | 1 | F18555 |

EXCLUSIV manifold cabinet, flush-mounted

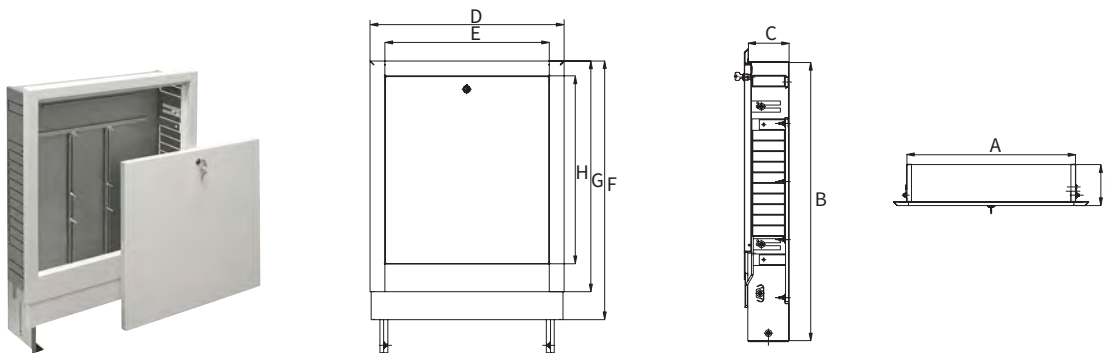
PG = 761


For Simplex manifolds. Characteristics:

- Made of galvanized steel, powder-coated RAL 9016 (traffic white)
- Edge bending at an angle of 45°
- Supply and return connections optionally the left, right or below
- Manifold mounting rail
- Front flap with key lock
- Clip rail for control module bar
- Pipe deflection rail
- Packed in a box
- Easy to assemble due to removable front cover

Attention: cabinets can't be supplied by parcel service.

→ Other sizes on request.



| Type | Dimensions [mm] | | | | | | | | |  | Article no. |
|---------------------|-----------------|-----------|-----------|------|------|-----------|-----|-----|-----------|---|-------------|
| | A | B | C | D | E | F | G | H | I | | |
| Cabinet E-UP - 450 | 450 | 750 - 850 | 110 - 165 | 522 | 442 | 639 - 695 | 620 | 505 | 120 - 175 | 1 | F18556 |
| Cabinet E-UP - 550 | 550 | 750 - 850 | 110 - 165 | 622 | 542 | 639 - 695 | 620 | 505 | 120 - 175 | 1 | F18557 |
| Cabinet E-UP - 700 | 700 | 750 - 850 | 110 - 165 | 772 | 682 | 639 - 695 | 620 | 505 | 120 - 175 | 1 | F18558 |
| Cabinet E-UP - 850 | 850 | 750 - 850 | 110 - 165 | 922 | 842 | 639 - 695 | 620 | 505 | 120 - 175 | 1 | F18559 |
| Cabinet E-UP - 1000 | 1000 | 750 - 850 | 110 - 165 | 1072 | 992 | 639 - 695 | 620 | 505 | 120 - 175 | 1 | F18560 |
| Cabinet E-UP - 1200 | 1200 | 750 - 850 | 110 - 165 | 1272 | 1192 | 639 - 695 | 620 | 505 | 120 - 175 | 1 | F18561 |

Problem solver / Flat design for thin walls

| | | | | | | | | | | | |
|---------------------|------|-----------|----------|------|------|-----------|-----|-----|----------|---|--------|
| Cabinet P-UP - 450 | 450 | 750 - 850 | 80 - 120 | 522 | 442 | 639 - 695 | 620 | 505 | 90 - 130 | 1 | F18070 |
| Cabinet P-UP - 550 | 550 | 750 - 850 | 80 - 120 | 622 | 542 | 639 - 695 | 620 | 505 | 90 - 130 | 1 | F18071 |
| Cabinet P-UP - 700 | 700 | 750 - 850 | 80 - 120 | 772 | 682 | 639 - 695 | 620 | 505 | 90 - 130 | 1 | F18072 |
| Cabinet P-UP - 850 | 850 | 750 - 850 | 80 - 120 | 922 | 842 | 639 - 695 | 620 | 505 | 90 - 130 | 1 | F18073 |
| Cabinet P-UP - 1000 | 1000 | 750 - 850 | 80 - 120 | 1072 | 992 | 639 - 695 | 620 | 505 | 90 - 130 | 1 | F18074 |
| Cabinet P-UP - 1200 | 1200 | 750 - 850 | 80 - 120 | 1272 | 1192 | 639 - 695 | 620 | 505 | 90 - 130 | 1 | F18075 |

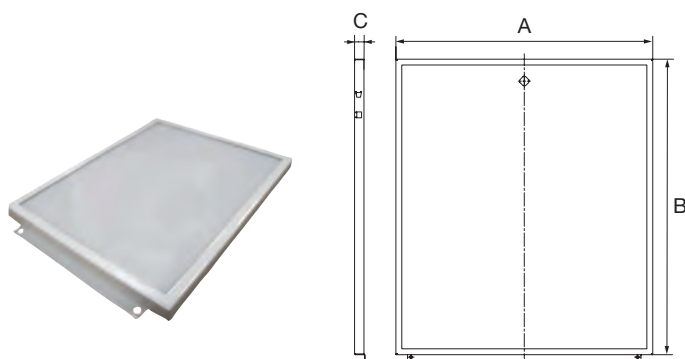
13. Accessories Manifold cabinets


Plastic door for flush-mounted manifold cabinet

PG = 761

For retrofitting for the EXCLUSIV distribution cabinets and problem solvers, for external radio reading.

- Components made of plastic



| Type | Suitable for | Dimensions [mm] | | |  | Article no. |
|---------------------|-----------------------|-----------------|-----|----|---|-------------|
| | | A | B | C | | |
| Door cabinet - 450 | flush-mounted 450 mm | 438 | 504 | 16 | 1 | F18076 |
| Door cabinet - 550 | flush-mounted 550 mm | 538 | 504 | 16 | 1 | F18077 |
| Door cabinet - 700 | flush-mounted 700 mm | 688 | 504 | 16 | 1 | F18078 |
| Door cabinet - 850 | flush-mounted 850 mm | 838 | 504 | 16 | 1 | F18079 |
| Door cabinet - 1000 | flush-mounted 1000 mm | 988 | 504 | 16 | 1 | F18080 |
| Door cabinet - 1200 | flush-mounted 1200 mm | 1188 | 504 | 16 | 1 | F18081 |

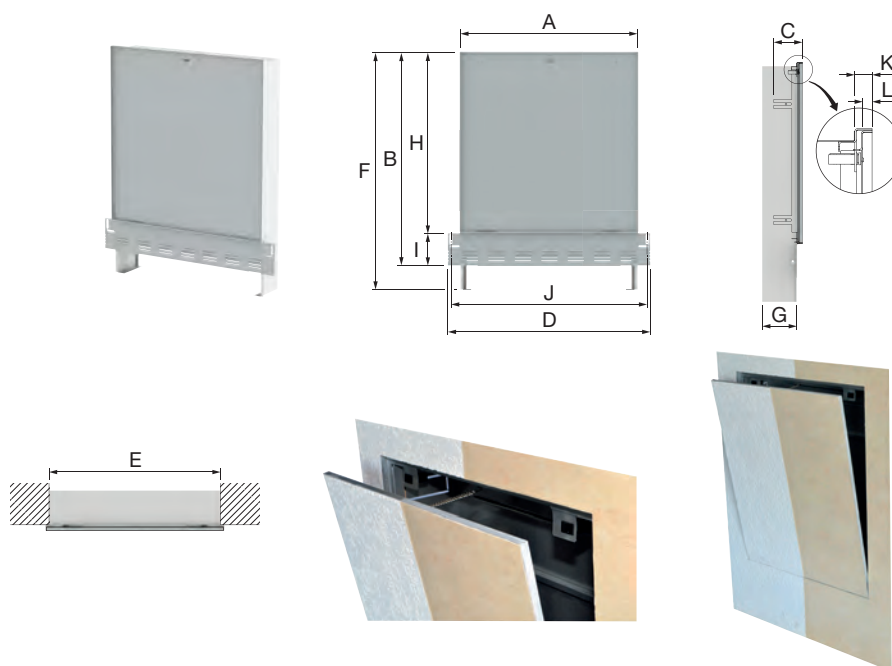
MYDESIGN cover for flush-mounted manifold cabinet


PG = 761

Wall-mounted cover for individual design of the surface, suitable for Simplex manifolds cabinets of the series EXCLUSIV flush-mounted, can be integrated into any wall surface such as tiles, wallpaper, spatula technology and much more. Invisible opening thanks to "push-to-open" technology including safety chain.

Preparation of the subsurface and installation the filler material is provided by the customer.

- Galvanized steel components











| Type | Suitable for |  | Article no. |
|------------------------|--------------------------------|---|-------------|
| MYDESIGN cover, - 450 | flush-mounted EXCLUSIV 450 mm | 1 | F18543 |
| MYDESIGN cover, - 550 | flush-mounted EXCLUSIV 550 mm | 1 | F18544 |
| MYDESIGN cover, - 700 | flush-mounted EXCLUSIV 700 mm | 1 | F18545 |
| MYDESIGN cover, - 850 | flush-mounted EXCLUSIV 850 mm | 1 | F18546 |
| MYDESIGN cover, - 1000 | flush-mounted EXCLUSIV 1000 mm | 1 | F18547 |

13. Accessories for manifold cabinets



Choice of manifold cabinet

The choice of cabinet sizes depends on the number of heating circuits and the connection accessories.

| Connection kit horizontal | Connection kit vertical | HFM kit horizontal ¹ | HFM kit vertical ¹ | Fixed set-point controller set ² | Exclusiv Flush-mounted | Problem solver flush-mounted | Exclusiv Wall-mounted |
|--|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |
| Number of heating circuits per Secos system manifold | | | | | Art. no. | Art. no. | Art. no. |
| 4 | 4 | – | 4 | – | Type / Width 550 mm | | |
| 5 | 5 | – | 5 | – | F18557 | F18071 | F18551 |
| 6 | 6 | – | 6 | – | Type / Width 700 mm | | |
| 7 | 7 | 4 | 7 | 4 | F18558 | F18072 | F18552 |
| 8 | 8 | 5 | 8 | 5 | | | |
| 9 | 9 | 6 | 9 | 6 | Type / Width 850 mm | | |
| 10 | 10 | 7 | 10 | 7 | F18559 | F18073 | F18553 |
| 11 | 11 | 8 | 11 | 8 | | | |
| 12 | 12 | 9 | 12 | 9 | Type / Width 1000 mm | | |
| 13 | 13 | 10 | 13 | 10 | F18560 | F18074 | F18554 |
| 14 | 14 | 11 | 14 | 11 | | | |
| – | – | 12 | – | 12 | Type / Width 1200 mm | | |
| – | – | 13 | – | 13 | F18561 | F18075 | F18555 |
| – | – | 14 | – | 14 | | | |

¹ Minimum depth 85 mm required

² Minimum depth 95 mm required

14. Product configurator for Secos system

| | |
|----------------------|-----------|
| Project name | Name |
| Construction project | Address |
| Company | Tel./fax: |

| SECOS STARTER PACKAGE | | for up to 8 room thermostats | Art. no. |
|--|--|------------------------------|---------------------------------|
| Comprising: <ul style="list-style-type: none"> • Secos system manifold • Secos energy saving controller • Secos actuators | Secos Energy Control System, 4 heating circuits | ✓ | F18804 <input type="checkbox"/> |
| | Secos Energy Control System, 5 heating circuits | ✓ | F18805 <input type="checkbox"/> |
| | Secos Energy Control System, 6 heating circuits | ✓ | F18806 <input type="checkbox"/> |
| | Secos Energy Control System, 7 heating circuits | ✓ | F18807 <input type="checkbox"/> |
| | Secos Energy Control System, 8 heating circuits | ✓ | F18808 <input type="checkbox"/> |
| | Secos Energy Control System, 9 heating circuits | ✓ | F18809 <input type="checkbox"/> |
| | Secos Energy Control System, 10 heating circuits | ✓ | F18810 <input type="checkbox"/> |
| | Secos Energy Control System, 11 heating circuits | ✓ | F18811 <input type="checkbox"/> |
| | Secos Energy Control System, 12 heating circuits | ✓ | F18812 <input type="checkbox"/> |
| | Secos Energy Control System, 13 heating circuits | ✓ | F18813 <input type="checkbox"/> |
| | Secos Energy Control System, 14 heating circuits | ✓ | F18814 <input type="checkbox"/> |

| Accessories for controller | Comment | Art. no. |
|---|---|---------------------------------|
| Secos energy saving controller | | F18840 <input type="checkbox"/> |
| Secos Systembus extension for 2m extension cable | Optional: To extend the connection cable if you are intending to increase the distance from the Secos energy saving controller to the Secos system manifold. | F18854 <input type="checkbox"/> |
| Room thermostat analogue with rotary controller | | F18585 ____ Units |
| Comfort room thermostat with display | | F18594 ____ Units |
| Room thermostat control with display and weekly timer | | F18635 ____ Units |
| Room thermostat wireless device with display | One receiving base station is required for each wireless room thermostat. | F18091 ____ Units |
| Wireless 1-channel base station | Please order as well if you have a room thermostat wireless device with display. | F18090 ____ Units |
| Secos condensation monitor | For cooling applications: Two or more condensation monitor can be added for the decentralised monitoring. | F18855 ____ Units |

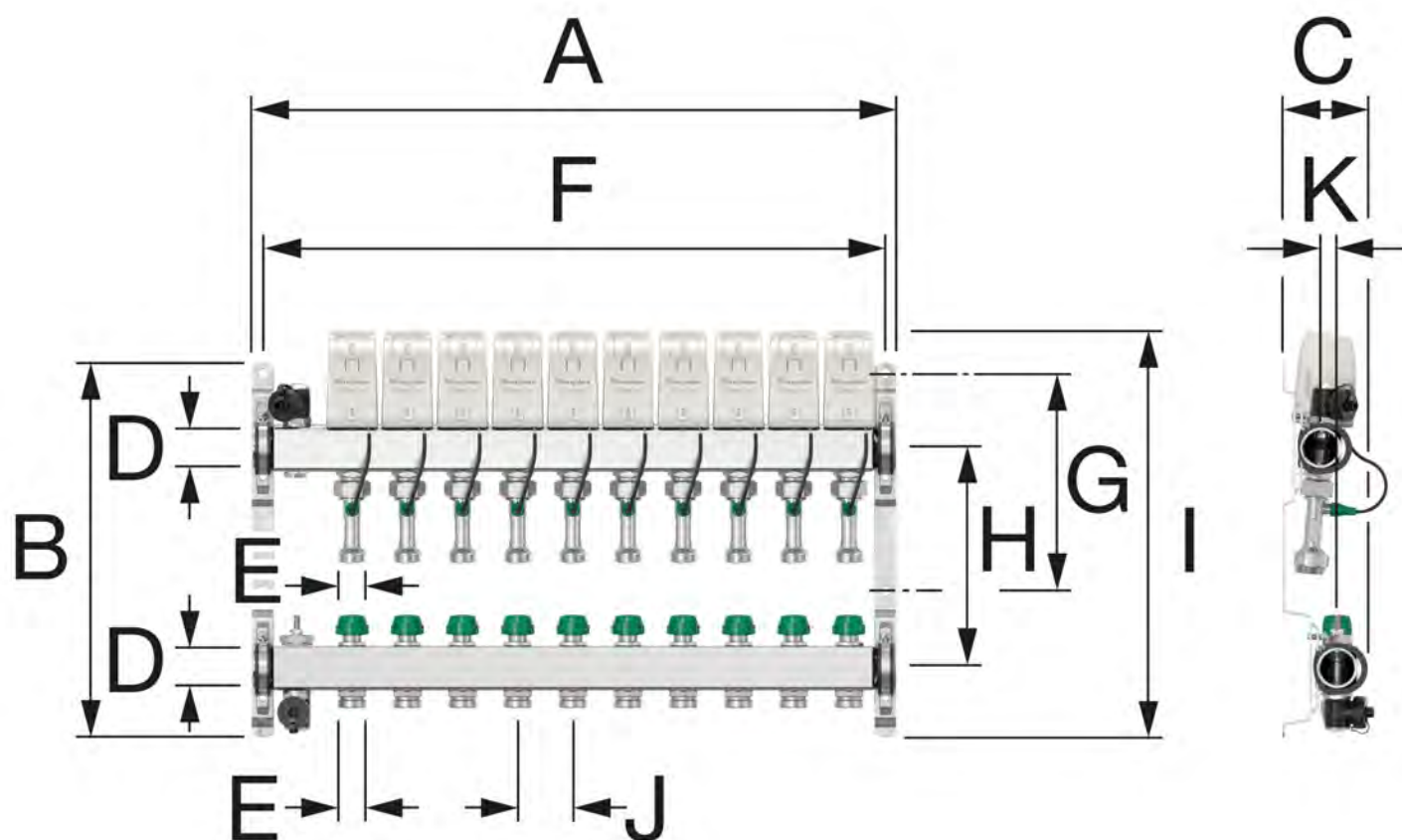
| Accessories for connection | Art. no. |
|--|-------------------------------------|
| Connector set horizontal | F14022 <input type="checkbox"/> |
| Connector set vertical | F14023 <input type="checkbox"/> |
| Heat flow meter adapter kit horizontal | F14030 <input type="checkbox"/> |
| Heat flow meter adapter kit vertical | F14031 <input type="checkbox"/> |
| Fixed set-point controller set | On request <input type="checkbox"/> |

| Cabinet accessories* Type / Width | Exclusiv flush-mounted | Problem solver flush-mounted | Exclusiv wall-mounted |
|--------------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 550 | F18557 <input type="checkbox"/> | F18071 <input type="checkbox"/> | F18551 <input type="checkbox"/> |
| 700 | F18558 <input type="checkbox"/> | F18072 <input type="checkbox"/> | F18552 <input type="checkbox"/> |
| 850 | F18559 <input type="checkbox"/> | F18073 <input type="checkbox"/> | F18553 <input type="checkbox"/> |
| 1000 | F18560 <input type="checkbox"/> | F18074 <input type="checkbox"/> | F18554 <input type="checkbox"/> |
| 1200 | F18561 <input type="checkbox"/> | F18565 <input type="checkbox"/> | F18555 <input type="checkbox"/> |

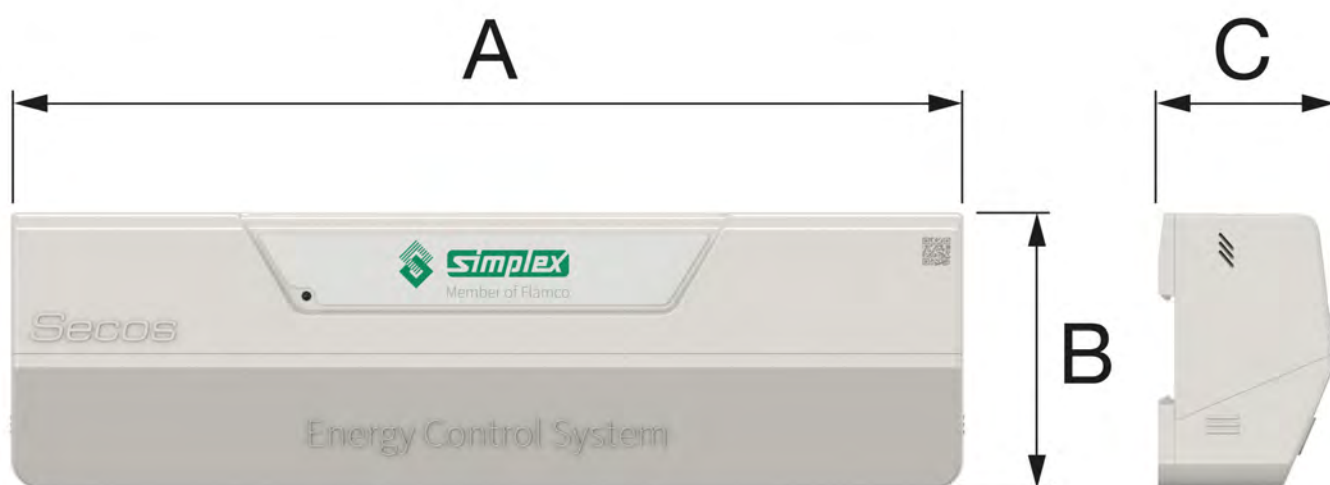
* When it comes to choosing the right manifold cabinet in combination with your connection accessories, the table on p. 34 will be very helpful in your decision-making process.

You can find other information and a template for printing in our Download section at www.simplex-armaturen.de

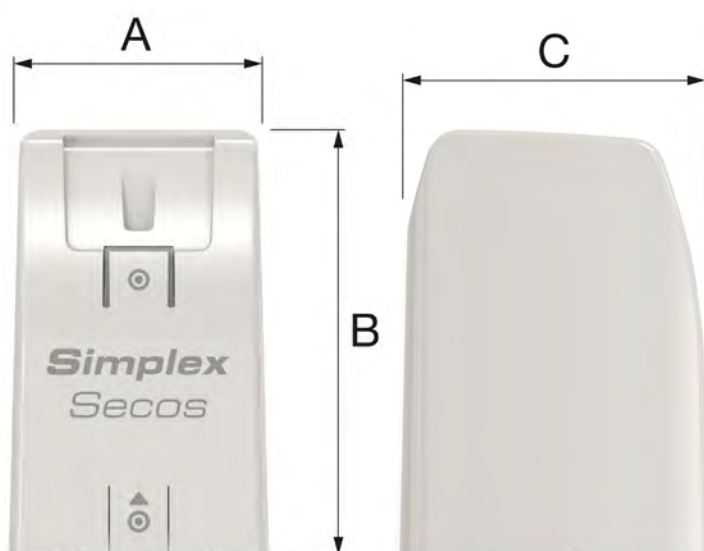
15. Dimensions



| Type | A | B | C | D | E | F | G | H | I | J | K | Order no. |
|---------------------|-----|-----|----|-------|------------|-----|-----|-----|-----|----|----|-----------|
| VT FH Secos – 4 HC | 308 | 340 | 78 | G 1 i | G ¾ a (EK) | 284 | 197 | 200 | 366 | 50 | 15 | F18804 |
| VT FH Secos – 5 HC | 358 | | | | | 334 | | | | | | F18805 |
| VT FH Secos – 6 HC | 408 | | | | | 384 | | | | | | F18806 |
| VT FH Secos – 7 HC | 458 | | | | | 434 | | | | | | F18807 |
| VT FH Secos – 8 HC | 508 | | | | | 484 | | | | | | F18808 |
| VT FH Secos – 9 HC | 558 | | | | | 534 | | | | | | F18809 |
| VT FH Secos – 10 HC | 608 | | | | | 584 | | | | | | F18810 |
| VT FH Secos – 11 HC | 658 | | | | | 634 | | | | | | F18811 |
| VT FH Secos – 12 HC | 708 | | | | | 684 | | | | | | F18812 |
| VT FH Secos – 13 HC | 758 | | | | | 734 | | | | | | F18813 |
| VT FH Secos – 14 HC | 808 | | | | | 784 | | | | | | F18814 |



| A | B | C |
|-----|----|----|
| 328 | 97 | 61 |

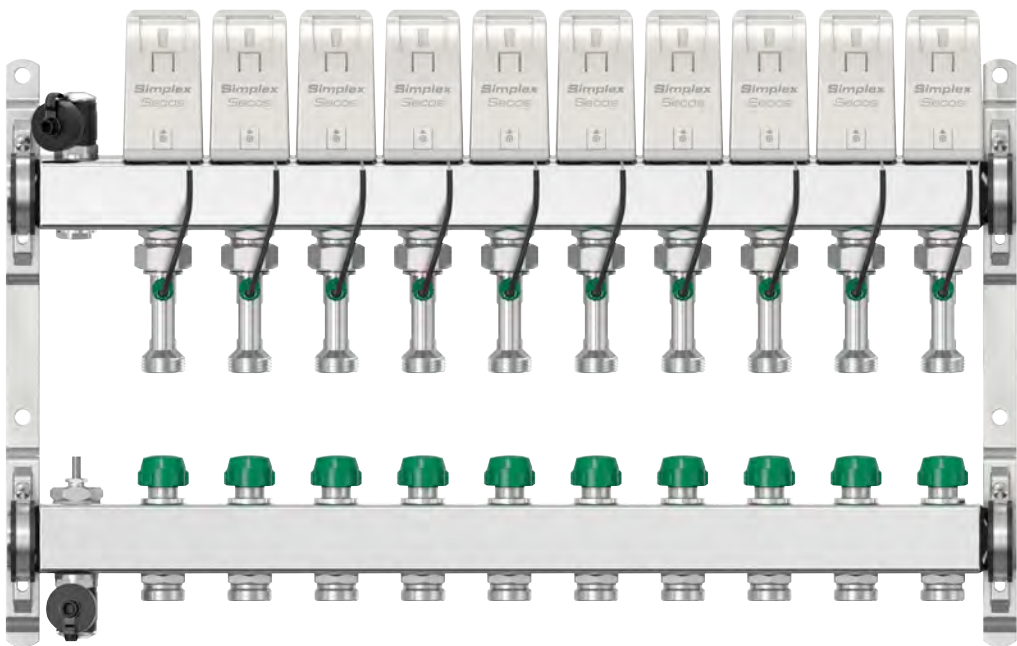
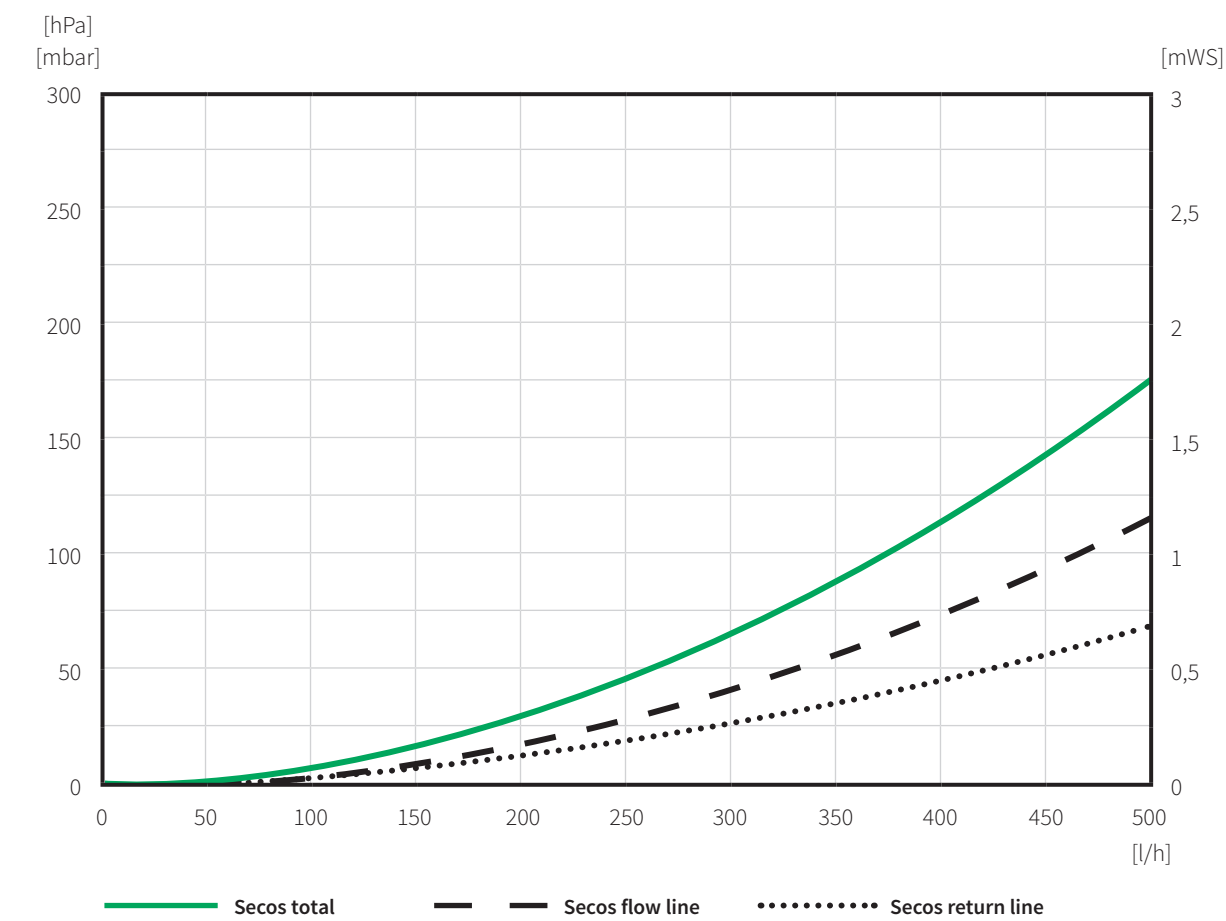


| A | B | C |
|----|----|----|
| 47 | 77 | 57 |

16. Technical data

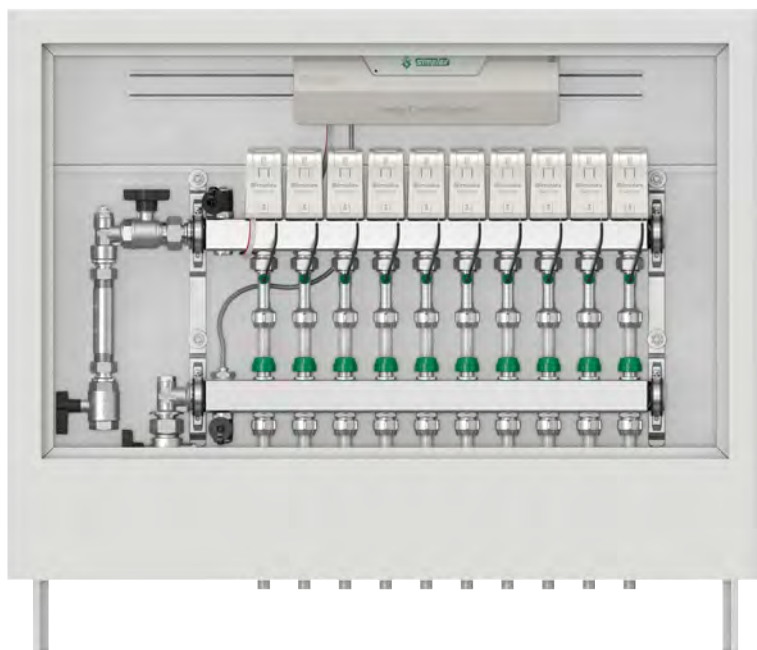
| Technical Data Secos | |
|---|-------------------------------------|
| Max. operating temperature | 95°C |
| Max. operating pressure | 10 bar |
| Pressure loss in system manifold including flow and return line | k_{vs} 1,19 m³/h |
| Flow rate per heating circuit | 0 – 8 l/min |
| Operating medium | Heating water according to VDI 2035 |
| Primary connections | G1"i |
| Secondary connections | G3/4"a Euro cone |
| Number of heating circuits | 4 – 14 heating circuits |
| Number of operable heating circuits per control zone | 1 – 14 heating circuits |
| Number of connectable room thermostats | up to 8 (1 x master, 7 others) |
| Power supply to room thermostat interfaces | 230V~ (± 10 %) / 50 – 60 Hz |
| Output for pump connection | 230V~ (± 10 %) / 50 – 60 Hz |
| Supply voltage | 230V~ (± 10 %) / 50 – 60 Hz |
| Interface for BCT | Modbus/RTU |
| Changeover (C/O) | Potential-free input |

Pressure loss



Get your planning done now and get controlling

Secos, the unique innovative energy control system is the control system for indoor space temperature control that you've long been waiting for.



At a glance:

- Automatic dynamic hydraulic balancing.
- Up to 25% energy savings.
- Long service life thanks to wear-free ceramic disc valves.
- Interfaces to building management and smart home systems.

Visit our microsite:
www.simplex-secos.com to find out more

Would you like to arrange a consultation or get in touch?

We look forward to receiving your request.

Tel.: +49 (0) 7566 9408 0
Mail: secos@simplex-armaturen.de

1. What is Secos?

Secos stands for **S**implex **E**nergy **C**ontrol **S**ystem and is a highly innovative control system for temperature control in indoor spaces.

2. How does Secos work?

Constant flow rate recording and temperature measurements in every heating circuit allow the recorded values to be directly and optimally adjusted for hydraulic balancing.

3. How do I commission the system?

When the Secos energy saving controller is connected to the "Flamconnect" app for the first time, the Commissioning menu is launched automatically. You will then conveniently be guided step by step through the required input fields.

4. Are other settings required?

The hydraulic balancing starts to work as soon as you enter the above-mentioned values. You can however also change the settings retrospectively and set the additional functions to supplement the main ones.

5. Can I use standard room thermostats?

Secos is very flexible and can be used with all 230-V thermostats which emit an analogue signal such as twin-point or PWM signal.

6. Do the valves ever stick?

No, the design and materials used in the ceramic disc valves are meant that the valves have a long service life and remain reliable. In addition, any longer periods during which individual valves do not move are identified and the valves concerned actuated at periodic intervals.

7. How sensitive are the Secos multisensors?

The Secos multisensors contain no moving parts. They are thus wear-free and will continue to function even with contaminated heating water.

8. What happens in the event of a defect or a breakdown?

In this case, the Secos energy saving controller will emit a warning signal. You can then conveniently use the smart phone or tablet which was used to connect to the Secos energy saving controller via the Flamconnect app to make a detailed analysis.

9. How does flushing take place?

There is an automatic flushing programme which can conveniently be launched using the Flamconnect app once, for instance, a flushing station has been attached. The automatic flushing programme flushes the heating circuits separately and autonomously until a reliably constant flow rate has been detected by the Secos multisensors.

10. Can I also isolate heating circuits without using the Secos actuators?

Yes, you can manually open or close the Secos disc valves in the flow and return lines.

11. Is Secos compatible with other laying systems?

Secos is compatible with all standard underfloor heating laying systems such as stapler, castellated-, hook and loop, dry lining, substrate and renovation systems.

12. Can any kind of underfloor heating pipe be used?

All kinds of underfloor heating pipe can be used. These are connected with Euro cone clamp screws to the Secos system manifold.

From Source

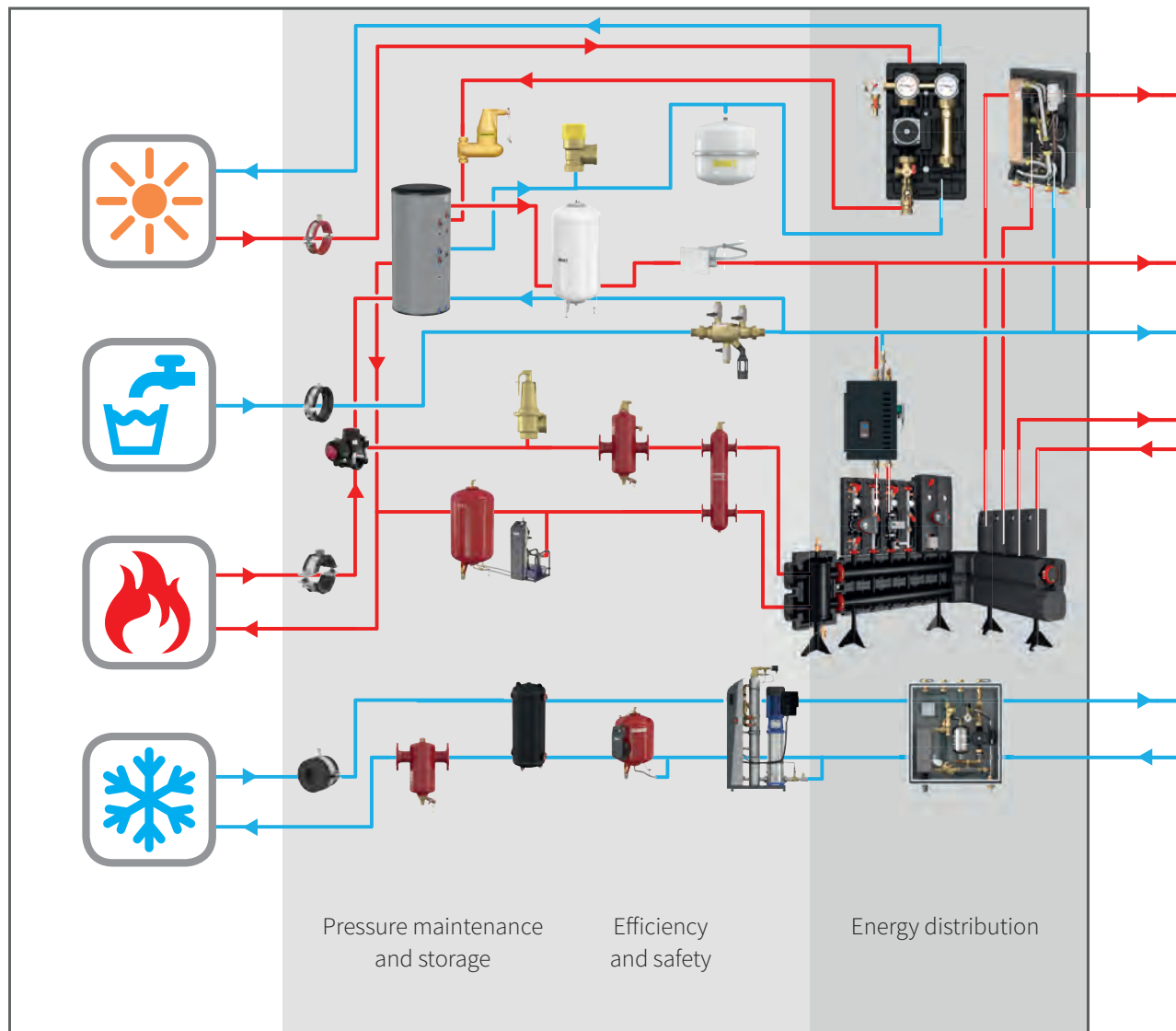


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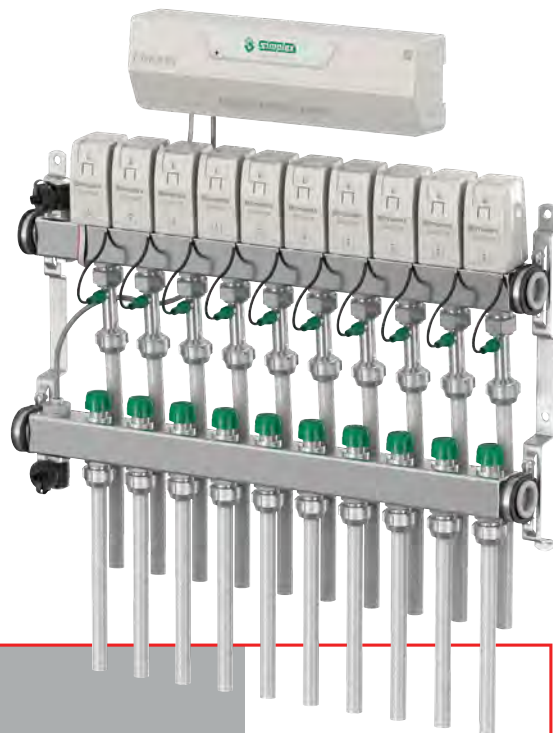
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Under the joint name of Hydronic Flow Control, Flamco, Meibes and Simplex are your partner for the whole process – from the heat source distribution to emitter technologies. You can find out more at www.hydronic-flow-control.com

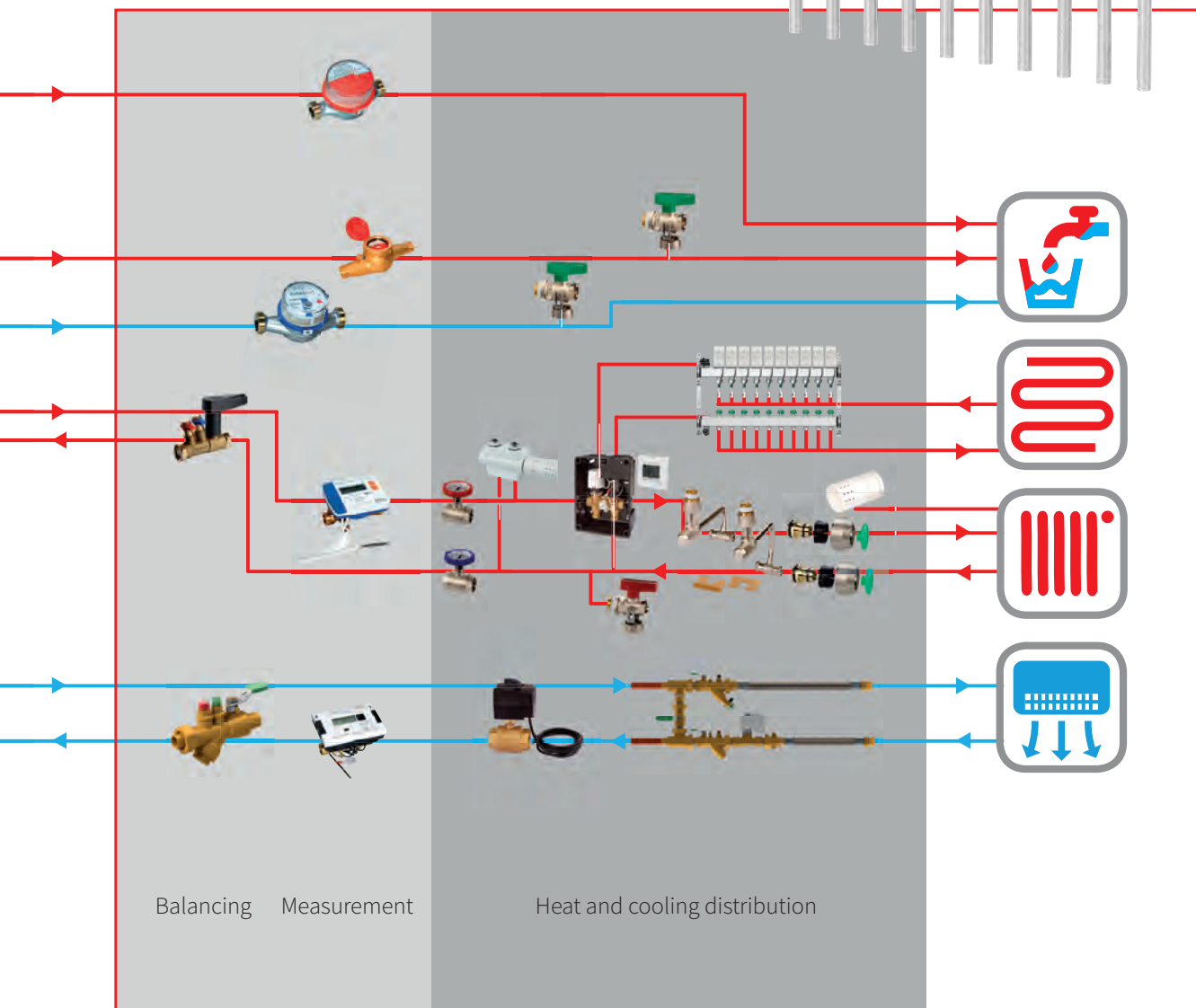
Boiler room



to Emitter



Heat and cooling distribution



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Version 06/2020



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