

reflex

Thinking solutions.

Reflex Greenbox

Complete system for water treatment and hydraulics



Compact and easy-to-install complete solution

Modern solution for your daily business

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Reflex Greenbox –
Saves time, money,
space and nerves.



- All components for system water treatment, degassing and hydraulics in one box
- Compatible with all heat generators
- Space-saving design with harmonised components
- Easy installation and convenient operation via app control

One box ...

... for every system

The Reflex Greenbox contains all single components for system water treatment, degassing and hydraulics in one space-saving box.

Whether for new builds or renovations, the Reflex Greenbox fits into any heating and cooling system for small to medium-sized installations and can be combined with all heat generators.

... with lots of benefits

- Different variants for various system requirements
- Easy installation
- Integrated commissioning assistant
- Harmonised components simplify planning, procurement and on-site installation instead of integrating individual components
- Pre-tested system ensures high operating safety

... for safe and easy handling

- Smart controller for quick installation and maintenance
- Option for simple app-based operation of Reflex Greenbox
- Integrated commissioning assistant automatically detects faults
- Reliable functionality thanks to harmonised components
- Closed box saves space and creates a clean look in installation rooms

The reflex Greenbox get things in line and creates safty and additional room for further storage.



Key benefits

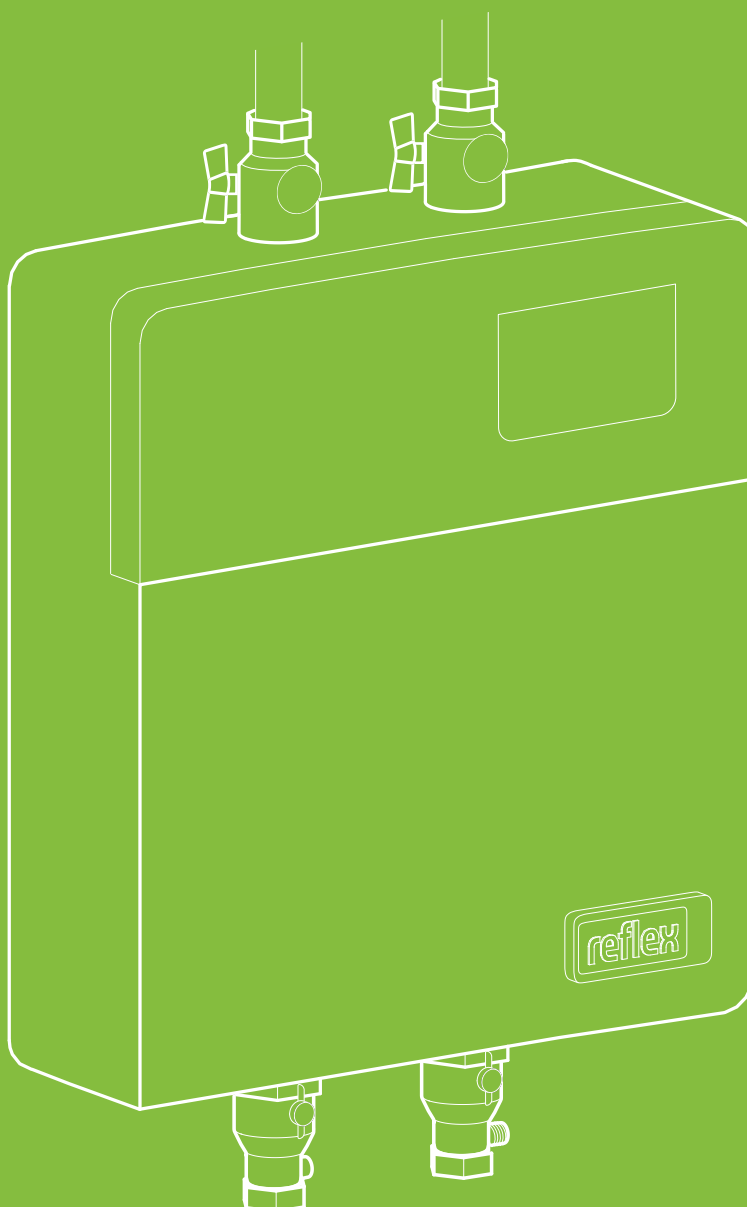
Convenient and safe

- Lightweight design for easy installation
- Simple app-based operation
- Pre-assembled system for safe installation and operation
- Entire system pre-tested

Saves time and effort

- Simplified project planning with a complete system solution
- Quick installation in just a few steps
- Easy maintenance and troubleshooting via app control
- Fast modular component replacement when needed

→ One box for all your needs



Composition



Reflex Greenbox S1

Performance range

1. Automatic water make-up (with built-in system separator)

Over time, natural losses can cause a drop in system pressure. The automatic water make-up function ensures that the optimal operating pressure—critical for operating safety and smooth operation—is maintained. If a leak occurs, it is automatically detected, and the water make-up is stopped to minimise potential damage.

2. Pump group connection

To simplify its connection into the overall system, a pump group can be mounted directly onto the top flow and return connections (125 mm pipe spacing, flow on left). If multiple heating circuits are required, up to four pump groups can be installed using a SINUS manifold.

3. Air, microbubble, dirt, and magnetite separation

For optimal system water quality, sludge, magnetite, free air and (in the variant without degassing) micro-bubbles are removed from the water. Unlike filters, the separator keeps pressure losses to a minimum, ensuring uninterrupted system performance.

4. Water treatment (softening/demineralisation)

To prolong the system's service life and comply with VDI 2035 requirements, water make-up water can be either softened or demineralised using standard Fillsoft or Fillsoft-Zero cartridges.

5. Vacuum spray tube degassing

Vacuum spray tube degassing removes dissolved gases from the water, preventing corrosion and reducing the build-up of dirt and sludge. The result: improved heat transfer, increased system efficiency and a longer service life of the overall system. Parameters such as the number of degassing cycles, scheduled interval degassing, or continuous degassing can be easily set using the app.

6. Controller with Troubleshooting Wizard and history

The smart controller and many functions of the Reflex Control Smart app simplify the commissioning (guided commissioning via Set-Up Wizard) and support tradespeople with maintenance and troubleshooting (Maintenance and Troubleshooting Wizard).

7. Connection for static pressure maintenance

A connection for a static pressure maintenance system of any size is located beneath the Reflex Greenbox at the return-side ball valve, allowing for easy integration of a membrane expansion vessel tailored to the system's specification.

8. Water meter and conductivity sensor

A combi sensor (water meter + conductivity sensor) tracks water make-up volume and monitors conductivity in demineralisation mode. These measurements help assess the residual capacity of the treatment cartridge and detect potential errors and leakages.

9. Temperature and pressure measurement

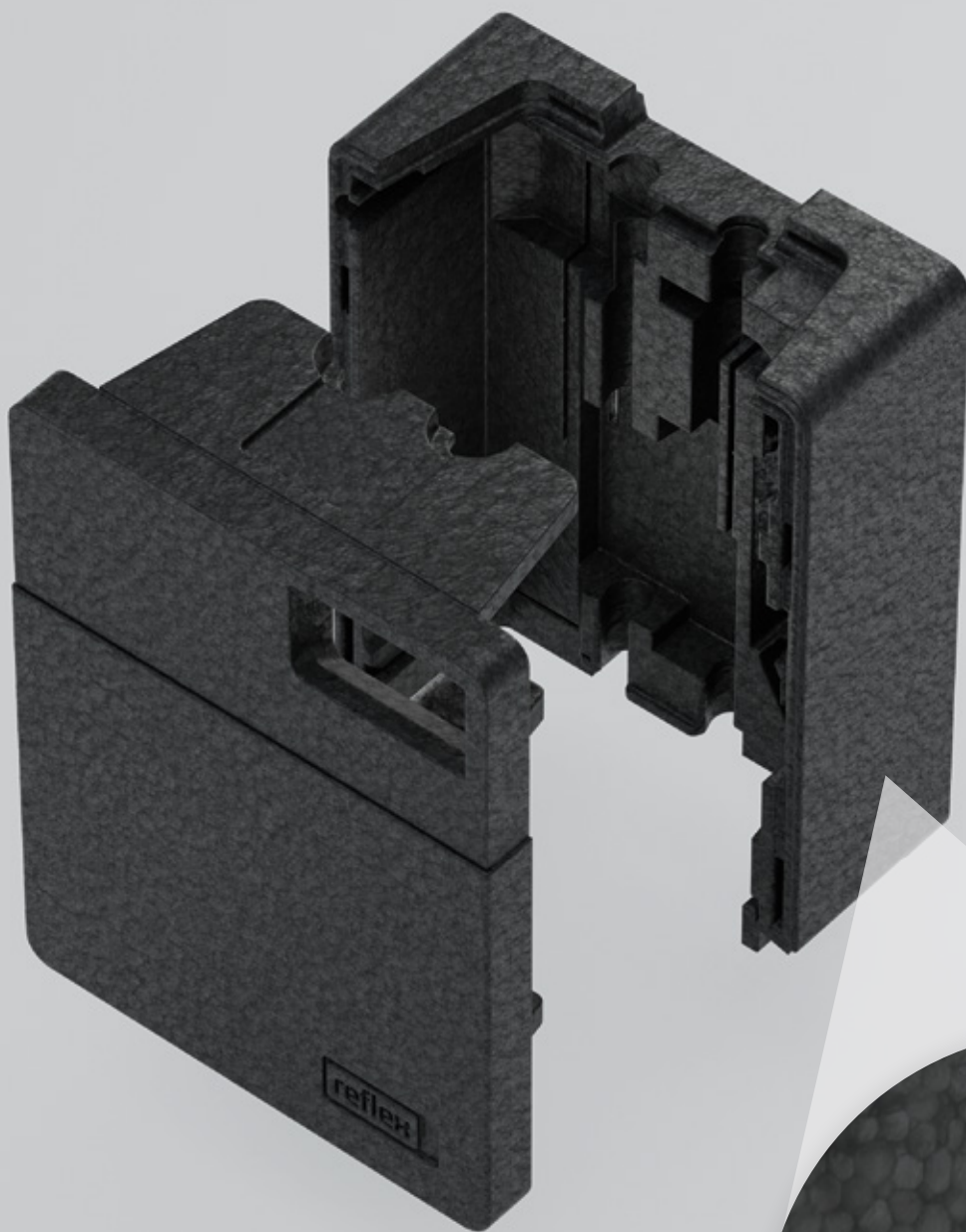
Analogue thermometers for flow and return provide real-time temperature readings, while a pressure sensor continuously monitors system pressure and is coordinated with the controller logic.

10. Ball valves with shut-off

User-friendly ball valves with integrated shut-off function allow the Greenbox to be isolated as a complete unit. This simplifies service and maintenance and makes it easier to replace components.



Depending on the variant, the Reflex Greenbox integrates water make-up, separation technology, water treatment and degassing.



Casing

The EPP casing is insulated to ENEC standards. To work in accordance with VDI 6023, the water make-up is separately insulated, ensuring that the required temperature of 25 °C is not exceeded.

Since EPP consists of 96 % air, the casing is extremely lightweight, making the overall weight of the box light as well. Additional benefits: the material is free of harmful substances, completely recyclable and designed for easy maintenance — the front cover can be quickly removed for maintenance. Plus, other sound-absorbing materials inside the casing provide additional sound insulation.

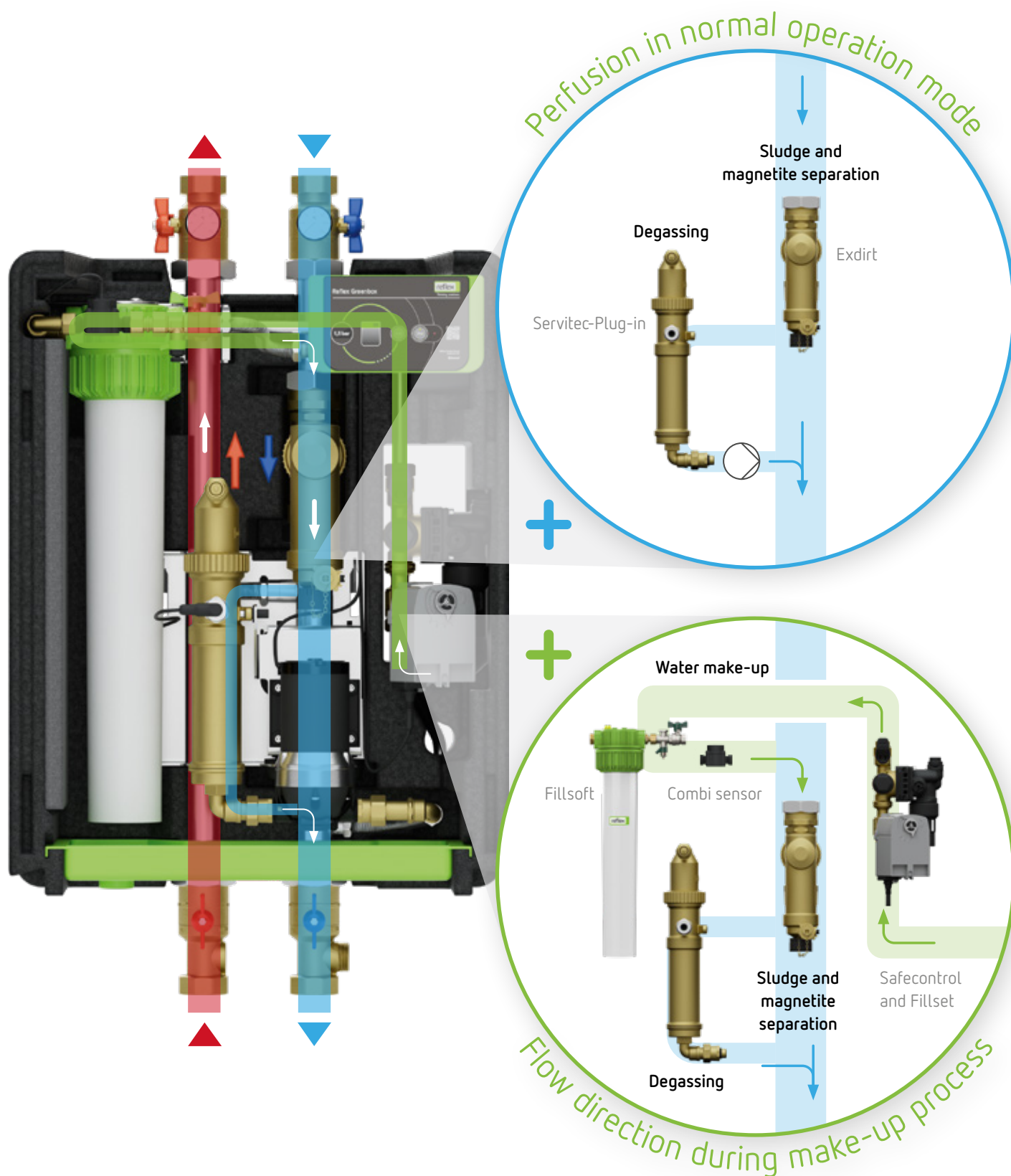
Control Smart controller

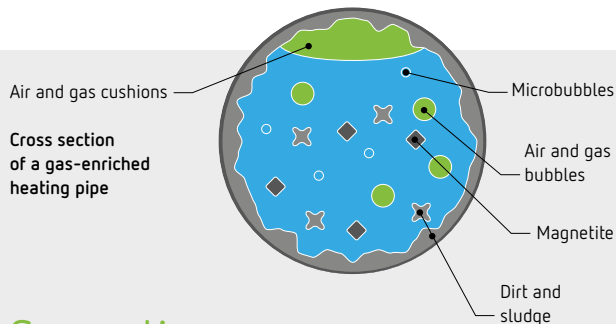
The intelligent Reflex Greenbox controller ensures maximum ease of use. It features a commissioning assistant as well as a p_0 assistant. An RS-485 interface and Modbus RTU are included as standard.

Monitoring of water make-up quantity helps to detect potential faults. The integrated troubleshooting assistant detects system faults and pinpoints faulty components.



Operation principle





Separation

Through separation, gas bubbles (with installed Extwin), dirt, sludge, and magnetite particles are reliably removed from the system, significantly improving water quality. This results in greater operating safety, a longer service life, less amount of maintenance and more efficient energy transfer.

Degassing

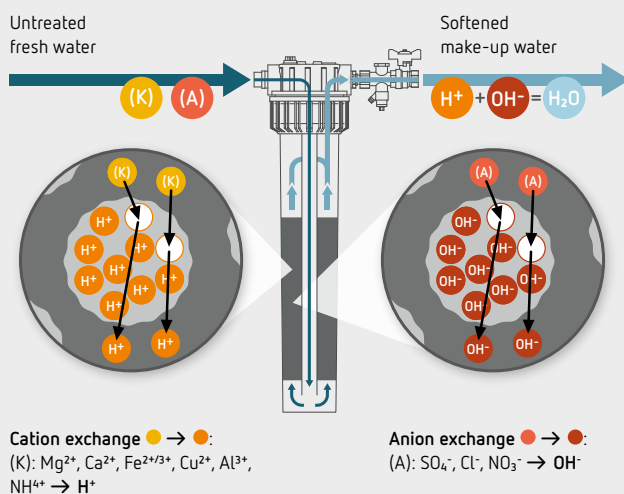
Degassing systems like the vacuum spray tube degassing system (Servitec) offer a centralised means of removing virtually all gas bubbles as well as undissolved and dissolved gases from the system water. To achieve this a partial flow of water in the system is extracted, then degassed in the Servitec under vacuum, and fed back into the system virtually gas-free.

This results in optimised system hydraulics with a gas-free heat transfer medium for more efficient heat transfer and a longer service life of heating and cooling systems.

Water make-up

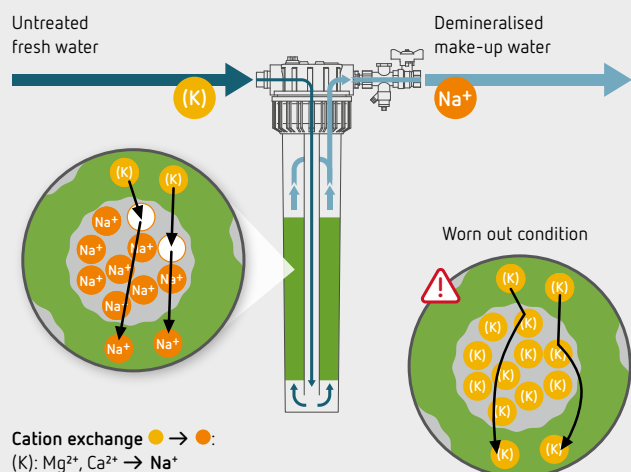
Softening with Fillsoft

Softening (reduction of water hardness °dH) takes place according to the cation exchange principle. Hard fresh water is fed over an exchanger column. Hardness-forming magnesium and calcium ions are replaced by sodium ions from resin beads and the water becomes soft. When the sodium ions are depleted, the cartridge needs to be replaced. The pH values and conductivity are not affected by the process.



Demineralisation through Fillsoft Zero

Demineralisation is based on the principle of ion exchange of cations and anions. Fillsoft Zero enables demineralisation of filling and make-up water. All minerals are absorbed by the cartridge. If conductivity and thus the number of ions, increases, then the cartridge's capacity decreases and the cartridge needs to be replaced. The current conductivity of the water make-up water is detected by the combination sensor and can be accessed via the controller.

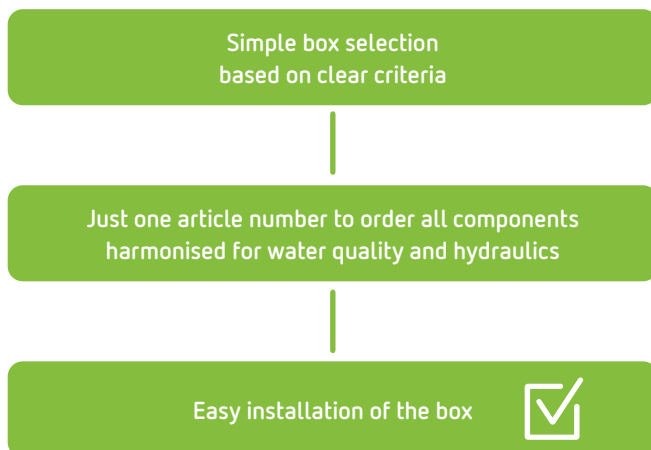


Installation and commissioning

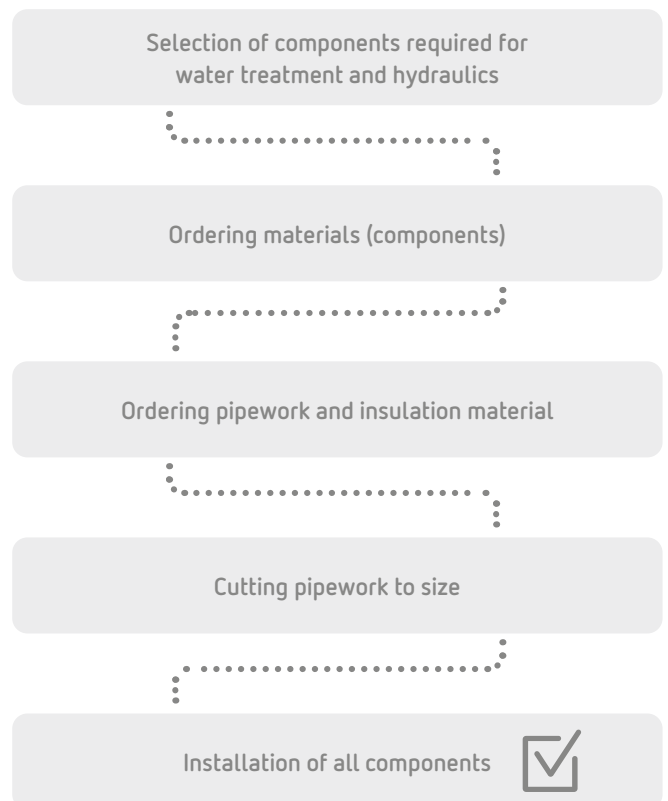
Fast, convenient and safe to the finalised complete system

- **The Reflex Greenbox saves valuable time for installers**
The work of only one person is needed — from pick-up at wholesale side to full installation, plus saving valuable installation time. Thanks to Plug & Play the box can be easily mounted on the wall, floor standing or straight onto the buffer tank in just a few simple steps.
- **A smart choice for planners too**
Just one article number to order all components, the entire hydraulics and the water treatment of the heating system.
- **The box frees up space for additional storage**
Die Reflex Greenbox is much smaller than a dishwasher and frees up space for additional storage in technical rooms.
- **Working with the Reflex Greenbox is simple**
From mounting and installation to commissioning and maintenance, the Reflex Greenbox is well conceived and designed for convenience. The commissioning assistant guides you step by step through the menu. An additional advantage: all components are easily replaceable without time-consuming disassembling of individual system components.
- **Smooth installation**
Harmonised, pre-installed and tested components guarantee a secure and smooth installation. A direct drain connection prevents excess system water discharge and water leaking during maintenance.

Installation of Reflex Greenbox



Standard installation



Overview of Reflex Greenbox

- Reliable selection of compatible components
- Quick and straightforward installation
- Time- and cost-efficient solution for reliable heating and cooling systems (compatible with all heat generators)



Installation of Reflex Greenbox



Standard installation

The four variants



S1



S2

- **Reflex Greenbox Basic unit:**

- Greenbox casing

- Pressure measurement

- Connection for static pressure maintenance (MAG)

- Analogue temperature display

- Sludge & magnetite separation

- Connection for a pump group

- Water treatment (Fillsoft/Fillsoft Zero)

- Water make-up (Fillset)

- Degassing (Servitec Plug-in)

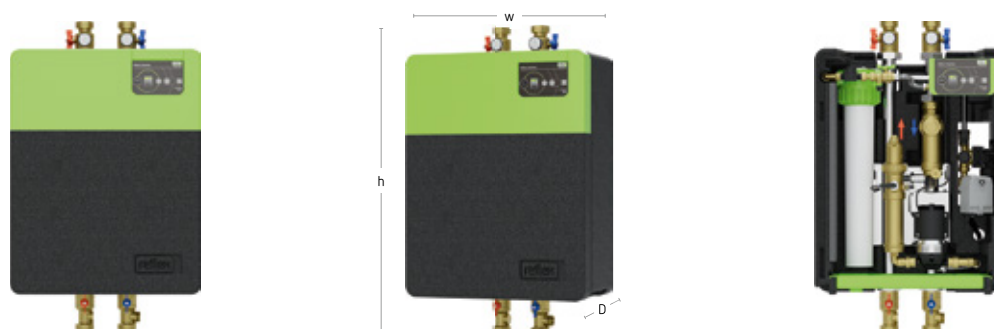
- Water make-up (Fillset)

- Degassing (Servitec Plug-in)



- Water treatment (Fillsoft/Fillsoft Zero)
- Degassing (Servitec Plug-in)
- Water treatment (Fillsoft/Fillsoft Zero)
- Water make-up (Fillset)

Reflex Greenbox



Reflex Greenbox S1

Technical Features

- for closed heating and cooling systems
- max. volume flow 4.3 m³/h
- permissible flow/return temperature 90/70 °C
- max. working pressure 4.5 bar
- pipe diameter 39 mm
- type of protection IP X4
- power supply 230 V
- sound pressure level at max. loads ≤52 dB(A)
- thermal insulation according to EnEV
- 100 % factory-checked for leak tightness
- expansion vessel connection male thread 1"
- controlled water make-up
- optional softening or demineralization of the make-up water
- standardised 125 mm connection to manifold and pump groups with 1½" union nuts, flow on the left
- **Control Smart controller:**
 - simplified commissioning via commissioning wizard
 - integrated p₀ wizard for fault-free commissioning
 - RS-485 interface and factory-fitted Modbus RTU
 - operating wizard for troubleshooting, commissioning, service and maintenance
- stopcock connections:
 - top 1½" union nut
 - bottom 1½" female thread

Type	Art. No.	DG	System volume V _A up to [m ³]	Electric connection	Height h [mm]	Width w [mm]	Depth D [mm]	Weight [kg]
S1	8311100	0016	3.5	230 V/50 Hz	890	550	318	25.00
S2	8311200	0016	3.5	230 V/50 Hz	890	550	318	24.00
S3	8311300	0016	3.5	230 V/50 Hz	890	550	318	23.00
S4	8311400	0016	–	230 V/50 Hz	890	550	318	22.00

The Fillsoft Cartridge 6811800 for softening or Fillsoft Zero cartridge 9125662 for demineralisation must be ordered separately.

Commissioning

- **7945725:** Reflex commissioning Cat. 3 for Reflexomat Silent Compact/Reflexomat XS/Servitec Mini/Servitec S with one compressor/one pump or Reflex Hydroflow freshwater station and Reflex Greenbox
- **7945726:** Reflex commissioning add. Cat. 3 for each additional system at the same location and on the same day – one compressor/one pump



Type	Art. No.	DG	Weight [kg]
Commissioning Cat. 3	7945725	0095	–
Commissioning add. Cat. 3	7945726	0095	–

Areas of Application

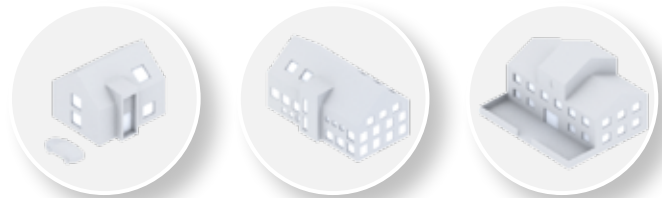
One box for different needs

Whether a one-family house, a kindergarden or a café at the next corner: the Reflex Greenbox is broadly applicable.

It can be combined with up to four heating circuits and thus ensures the best living comfort.

The four variants reflect specific requirements, and the modular design allows a customised application.

The following table gives orientation about the four versions.



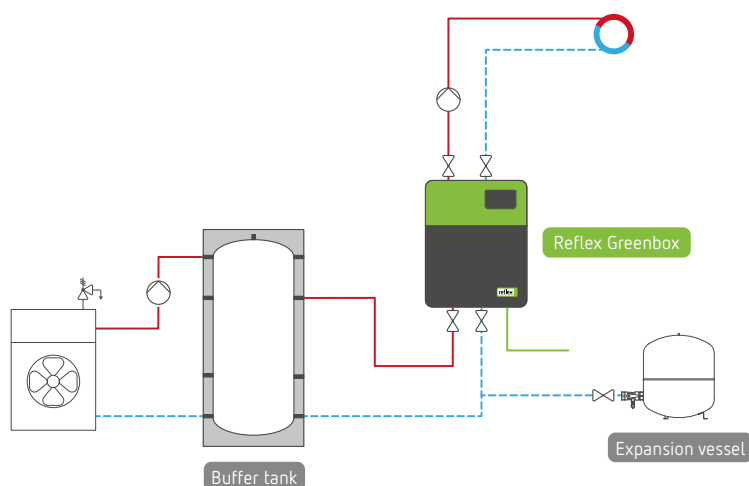
		S1	S2	S3	S4
Variable components depending on requirements	Automatic water make-up and system separation Fillset (system separator according to fluid category 4 of DIN EN 1717, controlled water make-up in accordance with DIN 1988)	✓	✓	×	✓
	Water treatment Fillsoft/Fillsoft Zero – including conductivity measurement & water metering function (in accordance with VDI 2035)	✓	×	✓	✓
	Vacuum spray tube degassing system Servitec Plug-in (contributes to oxygen reduction, as recommended in VDI 2035)	✓	✓	✓	×
	Venting Microbubble separator in the variant without degassing (contributes to oxygen reduction, as recommended in VDI 2035)	×	×	×	✓
Reflex Greenbox Basic unit	Greenbox casing	✓	✓	✓	✓
	Pressure measurement	✓	✓	✓	✓
	Connection for static pressure maintenance (secured against unintended closing according to DIN EN 12828)	✓	✓	✓	✓
	Analogue temperature display	✓	✓	✓	✓
	Sludge & magnetite separation (in accordance with VDI 2035)	✓	✓	✓	✓
	Connection for a pump group	✓	✓	✓	✓

Installation examples

Reflex Greenbox with a pump group

Simple and space-saving installation option for one heating circuit.

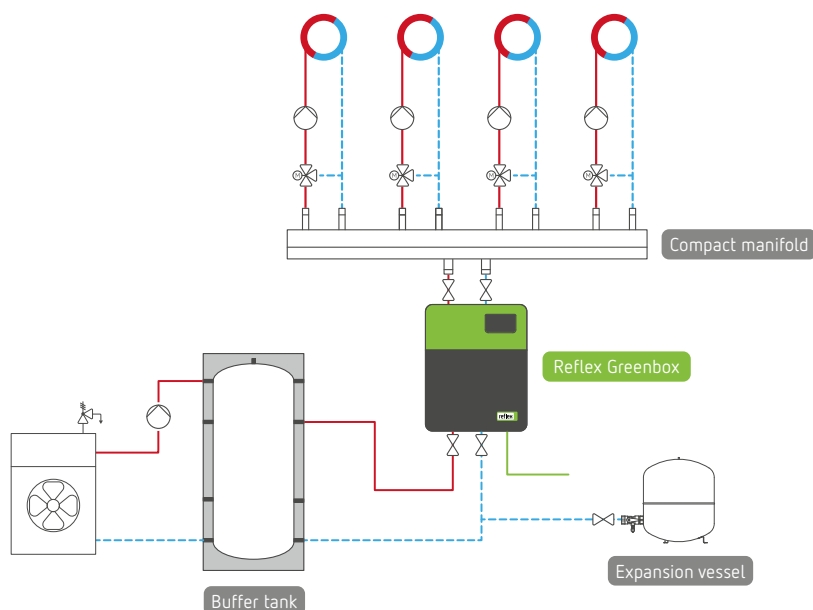
The Reflex Greenbox is wall-mounted and the pump group is connected to the top connections. The expansion vessel is connected to the lower return-side ball valve. The pipework to the heat generator and buffer tank can now be completed.



Reflex Greenbox with four pump groups

If up to four heating circuits are required, a Sinus manifold can be mounted on the top connections of the Reflex Greenbox. Up to four pump groups can be connected.

The rest of the pipework can be done similar as for installations with one pump group.



The diagrams merely illustrate the different connections. They have to be adapted to local conditions and detail added.

Reflex added value

Our digital services— Reflex Solutions Pro



Reflex Solutions Pro — complete product solutions quickly and easily

The next generation of the proven configuration tool allows products from the entire Reflex portfolio to be individually compiled and configured to suit a specific system,

irrespective of size — from a single-family home to residential buildings and industrial premises. Whether a single product or a complete system, just choose the application, then enter the relevant system parameters, Reflex Solutions Pro works out the appropriate configuration quickly and precisely. With one click, you can download the complete documentation such as product data, tender texts and BIM data.

Start designing your configuration now for free:



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Our performance promise — Reflex After Sales & Service

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- Expertise and many years of experience with all Reflex products
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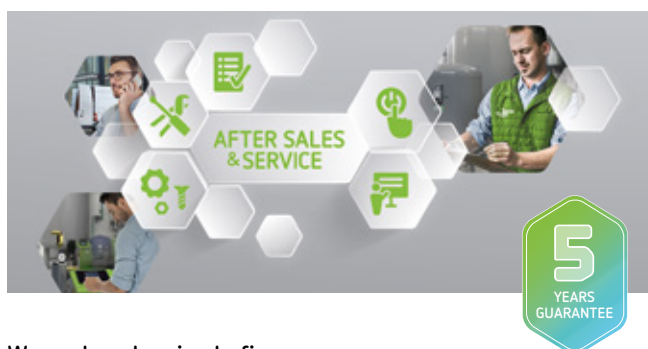
Commercial processing
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Reflex Training— expertise gives us the edge

Close to our headquarters in Ahlen, professional craftsmen, planners and operators gear up to meet the challenges posed by heating and hot water supply in modern building technology. From installation and planning to consulting and technical operation, the Reflex Training Centre and its team aligns its programme to those partners who want to learn more about technology, standards and service from the horse's mouth. Newly acquired expertise is put into practice, refined and experienced straight away on Reflex systems in a former manor house that has been refurbished to modern-day standards in the German region of Westphalia. Realistic simulations and a comprehensive portfolio of systems help to put the content learned to practical use, skilfully combining theory with practical aspects. The Reflex4Experts training courses are now also available online, for example, as webinars for PC, tablet or smartphone, and include short, interesting learning units on current and exciting topics that can be easily followed in the office, at home or on the road.

More information is available at www.reflex4experts.com/en



Warranty extension to five years

From now on, you can register your system after it has been commissioned by us or by a service partner certified by us. If you enter into a maintenance contract at the same time, you are entitled to a warranty extension to five years. Take advantage of this opportunity easily at www.reflex-winkelmann.com/en/services/after-sales-and-service/warranty on our home page or simply use the sticker on your product to access registration. Registration is not only possible at the time of commissioning but is also valid for all systems with a manufacturing date of up to six months from the year of manufacture 2020.

Always up to date

Further product literature and materials can be
downloaded at or hard copies ordered from

www.reflex-winkelmann.com/en/services/documents-and-videos

RE2502en / 9149921 / 02-2025
Subject to technical changes



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