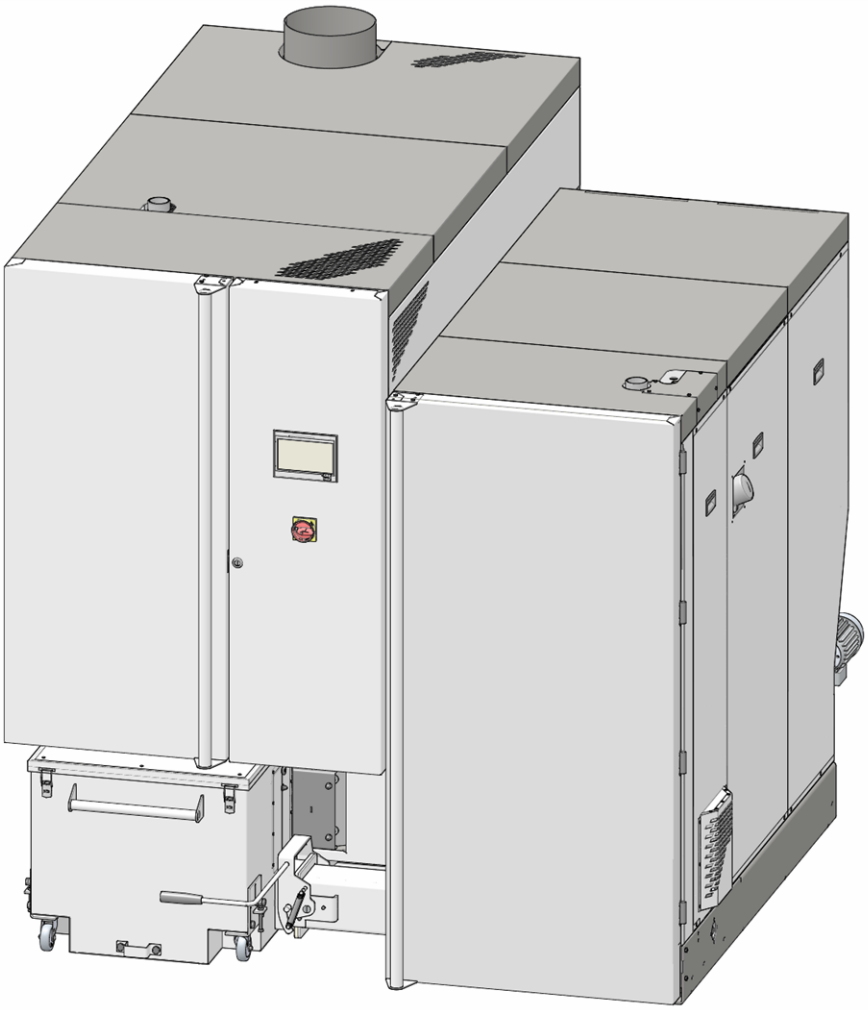

Commercial boiler **maxi**mus

Operation manual for the system operator

Read carefully before operating.

DR-0159-EN / v5-201904

Content

1 About this manual

Dear customer,

To ensure reliable and efficient operation of your boiler, the following points are extremely important:

- Professional planning and installation of the heating system.
- Training of customers in starting up the heating boiler.
- Regular maintenance by the operator.
- Regular maintenance by qualified personnel.
- Comply with the specifications and instructions in this manual.

Software version for control unit

The guide describes the software version 19.040 of the control**eco**manager-*touch* ; *Main screen of the control unit* > 14

Language

The language of the original manual is German. All other language versions of this manual are translations of the original.

Storage

Keep the manual for the entire service life of the product and ready to hand. The manual must be passed on to the new owner when the product is dismantled/reused. If the manual is lost or destroyed, request a new copy from the manufacturer.

Tips and Warnings

The tips used in this manual are highlighted with symbols and signal words. The signal word indicates the level and nature of the danger and how to avert it.

ⓘ Indicates information for correct handling of the product.

! **CAUTION** - Failure to comply with this instruction could result in damage to property.

⚠ **DANGER** - Failure to comply with this instruction poses a danger to people.

Manufacturer

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Technical questions about our products

- Service-Hotline
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  service@solarfocus.at

Safety devices

- Never disengage the safety equipment > 5 of the heating system. In case of failure, arrange for immediate repair.

Maintenance and repair

- Perform maintenance activities at the specified intervals. No or incorrect maintenance leads to inefficient operation, higher failure risk of the boiler and increased potential for hazards.
- Have repairs done by qualified personnel only Improper repairs can lead to risks for the user and impaired operation
- Store hot ashes only in metal containers. Never put hot or warm ash in the dustbin. There is a great danger of fire.
- For repairs use only original spare parts or parts approved by the manufacturer (e.g. standard parts).

Damage to the system

- If the electrical insulation on cables, plugs, switches becomes damaged, switch off the voltage supply and have the insulation repaired.
- In the case of visible damage (e.g. thermal deformation, mechanical damage) the operation of the system must not be continued. The system may only be operated if it is in perfect technical condition.

2 Safety information

Qualification of personnel

- The work procedures described in this manual must be carried out by qualified specialist personnel.
- Work on electrical components must be performed by trained electricians and in accordance with the relevant laws and directives.

Installation and commissioning

- System may only be serviced and put into operation by certified qualified personnel (SOLARFOCUS service technician or SOLARFOCUS service partner.

Keep unauthorized persons and children away

- Danger of burns due to hot lines and hot components, risk of injury from mechanically moving parts. Keep unauthorised persons away, do not leave children unattended, and control access to the boiler room and fuel storage room.

3 Warranty, guarantee, liability

For warranty and warranty claims (with conclusion of a maintenance contract) observe the following points.

- The warranty begins at the time at the time of handover (delivery note, commissioning form).
- The warranty period is calculated from the date of initial commissioning.
- The warranty periods are based on the relevant regulations.
- We must be notified promptly and accurately of any damage incurred, so that the cause can be clarified.
- The supply air into the boiler must not contain any aggressive substances (such as chlorine or fluorine compounds, used in cleaning agents, solvents, adhesives, etc.). These can cause corrosion in boiler and fireplace.
- If the system has defects despite correct installation (in compliance with the technical documentation), we grant a warranty provided that the system has been examined by the plant customer service (commissioning form).

- The guarantee applies to technical, construction-related faults and faults in the manufacture of the system that prevent correct and problem-free usage.
- We shall not be liable for components that we have not manufactured; however, we will be prepared to transfer our rights to claim against the manufacturer of defective components to the purchaser.
- In fulfilling the warranty/guarantee services, we shall cover only the assembly time and the materials used, but not any travel or accommodation costs necessary for the fitters/engineers or any return transport costs.
- SOLARFOCUS GmbH assumes no liability for any consequential costs of damages.
- The repair and/or warranty replacement shall be carried out on site or in the SOLARFOCUS factory at our discretion.
- The company SOLARFOCUSwill determine whether such work requires a repair or whether the parts are to be replaced free of charge.

Expiry of maintenance, warranty and guarantee services:

The maintenance, warranty and guarantee services expire if one of the following points applies:

- Non-observance of information in the planning, installation and operation manual.
- Faults that occur due to use of unsuitable fuels > 5.
- Commissioning and maintenance carried out by non-certified companies.
- Undocumented commissioning and maintenance checklist
- Incorrect operation and failure to perform maintenance and cleaning as prescribed.
- Damage due to force majeure (water, fire, etc.).
- Damage during transport.
- Wilful damage.
- Insufficient energy or water, fault in the hydraulics.
- No functioning return booster module installed.
- No claims can be accepted under the warranty if unauthorised intervention (or action that has not been explicitly approved by us) has been carried out. In addition, the goods must be paid for within the specified payment timeframe.
- It is almost impossible to produce flawless painted parts; for this reason, slight defects that do not adversely affect proper use shall not be deemed as grounds for complaint.

Limitation of liability

SOLARFOCUS GmbH assumes no liability for injury or material damage resulting from:

- Failure to observe the instructions in this manual.
- Use of the product for any purpose other than for its intended use > 5.
- Deployment of unqualified personnel.
- Use of non-approved spare parts.
- Technical modification of the product by the system operator.

4 Product information

4.1 Proper use

- The heating boiler **maxi**^{mus} is intended for heating up water in closed heating systems.
- Only use fuel as specified in the next chapter *Fuel*.
- The maximum running time per year is 3000 full-load hours.

4.2 Fuel

Pellets

Use wood pellets only in accordance with these specifications:

- Pellets according to the ISO 17225-2 standard, class A1.
- Pellets that meet the additional ENplus certification.
- Pellets that meet the additional DINplus certification.

Wood chips

Use wood chips only in accordance with these specifications:

- Wood chips according to the EN ISO 17225-4:2014 standard
- Classes A1, A1, A2, B1
- Sizes P16S and P31S
- Moisture content maximum 40%(M40)

Product view

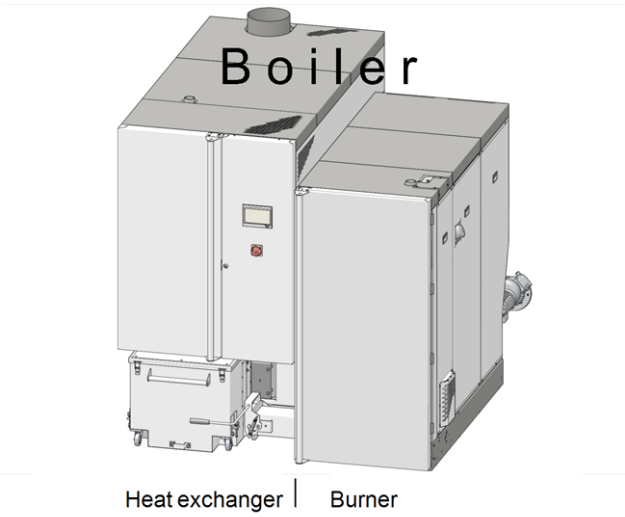


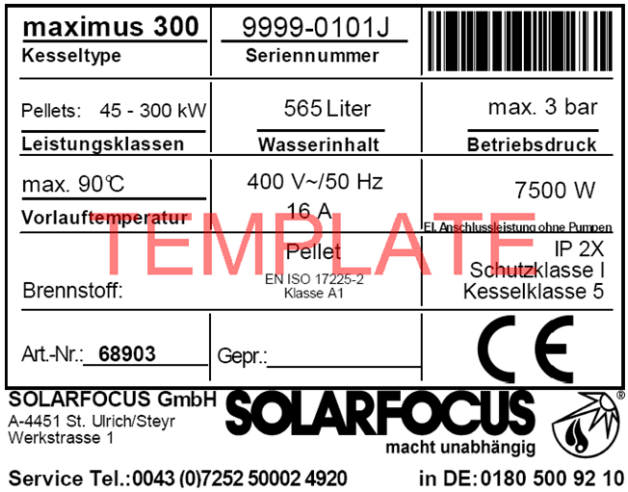
Fig. 2-1

4.3 Spare parts

For repairs use only original spare parts or parts approved by the manufacturer (e.g. standard parts).

The manufacturer cannot accept any liability for damage caused by spare parts not authorised by the manufacturer.

4.4 Type plate



4.5 CE declaration of conformity

The conformity of the produce is declared by the manufacturer in accordance with the Machinery Directive 2006/42/EC; the documents are available for inspection at the manufacturer.

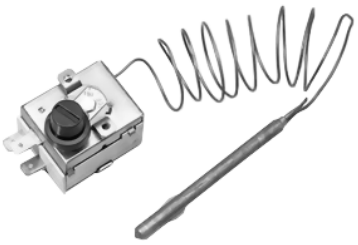
The product corresponds to Directive 2011/65/EU (RoHS 2) and does not use any materials containing asbestos. The product does not contain any PCB or mercury.

4.6 Safety devices

Heat dissipation

- This function of the boiler control is a safety device that prevents overheating of the boiler.
- Functioning: If the boiler temperature exceeds the set *Heat dissipation maximum boiler temperature* (in the service menu - *General Settings*), all pumps relating to the energy consumer units (e.g. heating circuit, DHW tank, buffer tank, etc.) will be switched on and the heating circuit mixer opened. In this way, energy is drained from the boiler and it may be possible to prevent other safety devices tripping.
- If the boiler temperature falls below the set *Heat dissipation maximum boiler temperature* minus 1°C again, the pumps and mixers will be operated in standard mode again.

Overtemperature reset (OTR)



The safety temperature limiter (STL) is a safety device that prevents overheating of the boiler.

Functioning: The STL stops the heating process at a boiler temperature ~95°C (exclusively electrical function; fuel and air supply are interrupted).

After tripping, the STL must be manually released again by unscrewing the black sealing cap *1* and pressing the button as soon as the boiler temperature falls below 60°C.

If the safety overtemperature reset trips, this is indicated in the boiler control display.

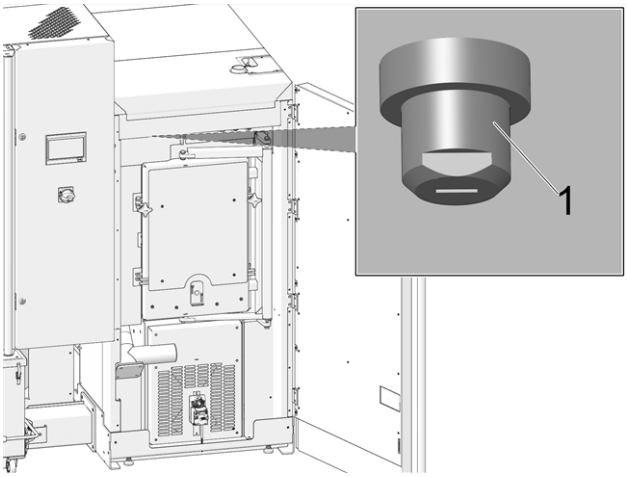


Fig. 2-2: Unscrew the closure cap

Thermal overload protection

- The thermal overload protection prevents an uncontrolled increase in temperature and pressure of the boiler.
- Functioning: At a boiler water temperature > 95°C, the valve opens and directs cold water through the two series-connected safety heat exchangers. This lowers the temperature of the boiler and avoids the need for further safety precautions or equipment damage.

Safety valve (to protect against excess pressure in the system)

- The safety valve *1* is a safety device for protecting against overpressure in the water circuit of the heating system.
- Functioning: The valve opens when the system pressure exceeds 3 bar. Water/steam are discharged into an open drain via a discharge line, which avoids consequential damage to the heating system. The valve is closed during normal operation.
- For normative specification see EN 12828.

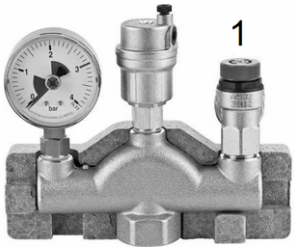


Fig. 2-3: Safety valve integrated into boiler safety group

EMERGENCY OFF switch

- The EMERGENCY OFF switch is a manually operated safety device. The burner and the fuel supply to the boiler are stopped. Circulation pumps remain in operation to dissipate heat and cool the boiler.
- The switch must be installed outside the heating room in a safe place that is easy to access.

Temperature monitor in the fuel storage room (TM)

- Required according to guideline TRVB 118 H for wood chips, depending on system design, heating capacity and fuel storage quantity.
- Functioning: On the channel of the fuel delivery auger, a temperature sensor of a protected design must be installed in the area of the wall penetration (inside the storage room). When a temperature of about 70°C is exceeded, the warning device is (optically or acoustically)triggered.
- Art. No.: 6565 and 6567

Automatically triggered extinguishing device (ATED)

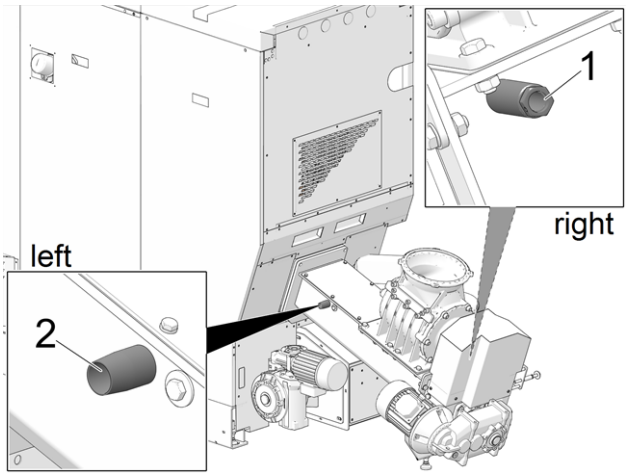


Fig. 2-4

1 Pocket sleeve for temperature sensor
2 Connection for water discharge

- Functioning: If at the temperature sensor *1* the temperature exceeds 50°C (direct extraction) or 95 °C (downpipe extraction), the valve *2* opens and floods the feeder channel with water.
- This extinguishing device serves to automatically suppress burn-back within the feeder. Due to the proper nature and location of the fire detection element, burn-back must be reliably detected and the extinguishing device must be triggered instantaneously and automatically (this must be ensured even in the event of a power failure).
- The extinguishing device must be connected either directly to a pressurised water supply or to a water reservoir (Note: Domestic waterworks may also be affected in case of power failure).
- The water supply must be equal to three times the volume of the feeder equipment, but at least 20 litres. The container must be equipped with a fill level monitor, including connection to the warning device (temperature monitor > 6). The extinguishing water inlet opening in the feeder is to be arranged and executed so that blockage by delivery operation is not possible and this can easily be checked at any time. The routing of the extinguishing system must be made as a non-combustible version.
- Art. No.: 63260 and 6553
- Specification yes/no see TRVB 118 H

Manually triggered extinguishing device (MTED)

- This extinguishing device is used to combat a fire source in the fuel storage room, or fuel storage in the area of the extraction/delivery line. The triggering must be done manually.
- This device consists of an empty pipe with a minimum nominal size of DN 20 and is to be installed in the fuel storage as specified by the manufacturer of the firing system directly above the delivery line in front of the wall or ceiling passage in such a way that the greatest possible success can be achieved in extinguishing. The empty piping must be connected directly to a pressurized water supply and provided with a shut-off valve arranged in the boiler room. Mark this valve with a sign "Extinguisher - Fuel Storage Room".
- The execution of the extinguishing system must be done so that damage during fuel feed or from the extraction device is not possible. In addition, make sure that the fuel supply to the delivery line is not affected.
- Specification yes/no see TRVB 118 H.

Rotary valve

The rotary valve fulfils all normative requirements for the approved fuels regarding fire protection, burn-back safety, backflow of gases:

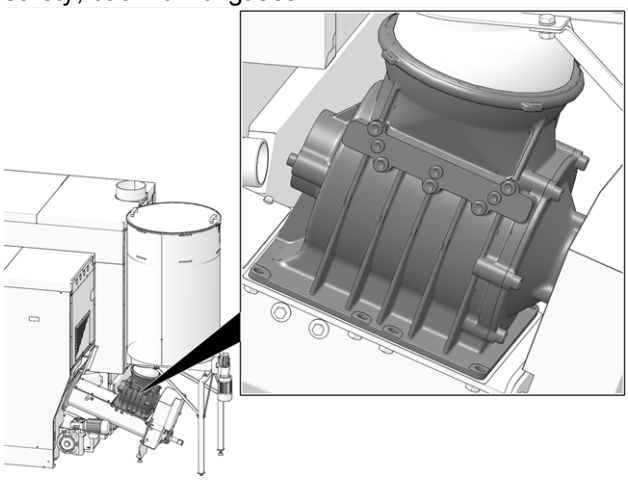
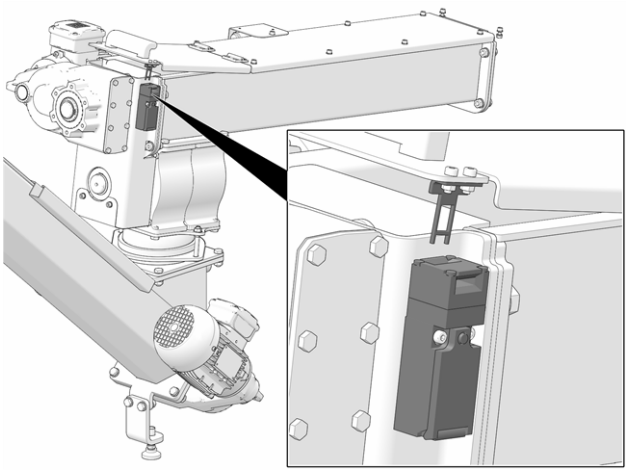


Fig. 2-5: Rotary valve

- Complies with requirements regarding burn-back protection devices (BPD) according to TRVB 118 H.
- Prevents backflow of flammable products of combustion into the fuel supply or into the intermediate store (according to EN 303-5).
- Prevents spreading of fire into the fuel supply or into the intermediate store (according to EN 303-5).

Safety switch on the channel cover



Opening the channel cover interrupts the power supply to the motor of the extraction auger.

4.7 Efficient and low-emission operation

Please note the following recommendations from the EU Energy Efficiency Directive:

Use of a buffer tank

Since maximum combustion is possible only in standard operation of the boiler, and greater losses and higher emissions occur during the warm-up and burn-out phases, use of a buffer tank is recommended.

This tank stores the water heated by the boiler, allowing the connected devices (e.g. heating circuit, DHW tank, fresh water module, etc.) to access it as required. This ensures sufficiently long, uninterrupted combustion periods for the boiler.

Use of high-efficiency heating pumps

When using external heating pumps (e.g. return temperature rise, heating circuit pumps, etc.), high-efficiency pumps with energy efficiency class A should preferably be used.

This delivers savings potential of up to 80 % in drive energy (compared to conventional heating pumps) with identical feed results.

4.8 Functional components, combustion principle

Burner

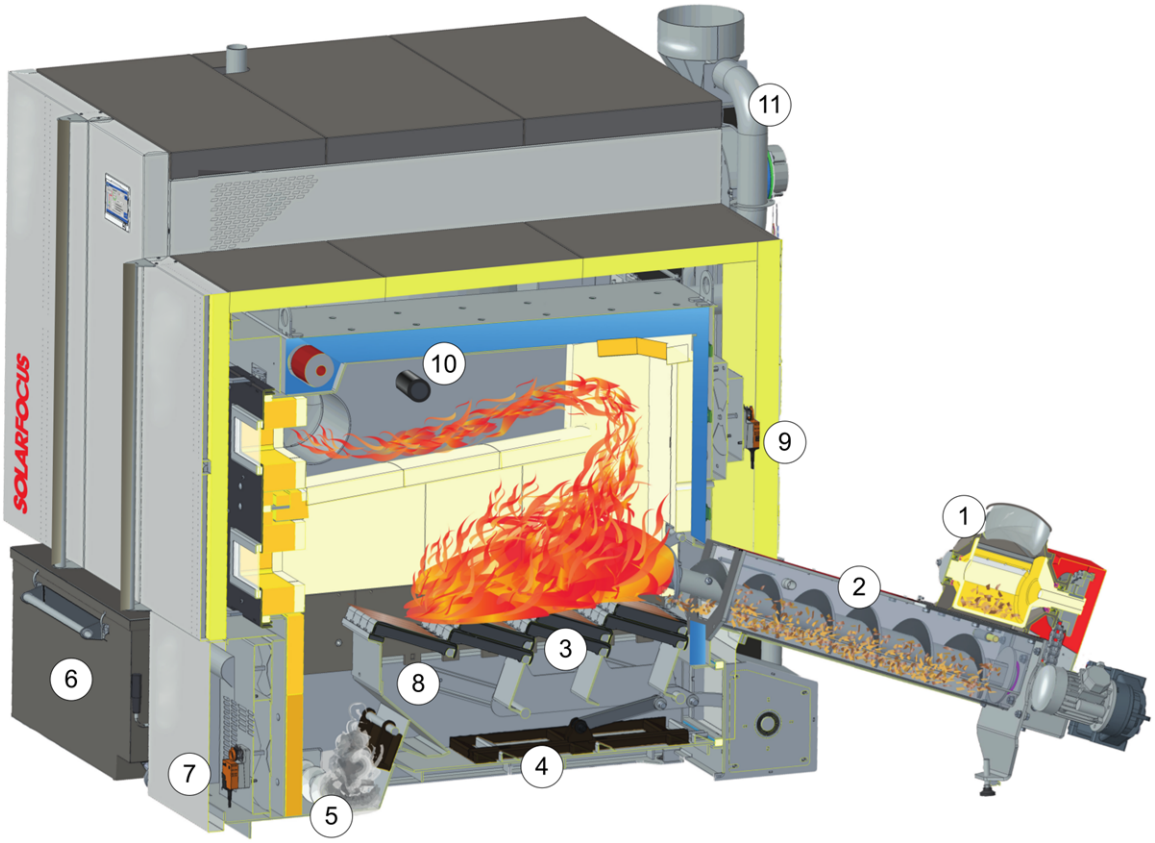


Fig. 2-6

Functional components

1	Rotary valve	5	Ash auger burner	9	Rotary drive for secondary air
2	Feeder unit	6	Ash container	10	Combustion chamber temperature sensor
3	Push grate	7	Rotary drive for primary air	11	Flue gas recirculation line
4	Ash scraper	8	Primary air outlet		

Fuel path

- The fuel falls through the rotary valve *1* into the channel of the feeder unit *2*. The auger delivers the fuel to the feed grate *3*.
- During combustion, the fuel is transported on the feed grate, and the resulting ash falls down through the grate.
- The ash pusher *4* push the ashes to the ash auger *5*, and auger takes over the transport into the ash box *6*.

Airflow

- Primary air is sucked in at the opening *7*, forwarded in a space on the left and right side of the boiler; at the holes *8* the primary air openings under the combustion grate, and makes it through the feed grate into the combustion chamber.
- Secondary air is sucked in at the opening *9* , and passes through openings in the fire brick (left, right, back) above the combustion grate in the combustion chamber.
- Flue gas recirculation: If the sensor measures *10* too high a combustion chamber temperature, then flue gas from the flue gas pipe *11* is introduced here and added to the primary air. This leads to the cooling of the feed grate and the combustion chamber and thus to lower stress on the components.

Heat exchanger

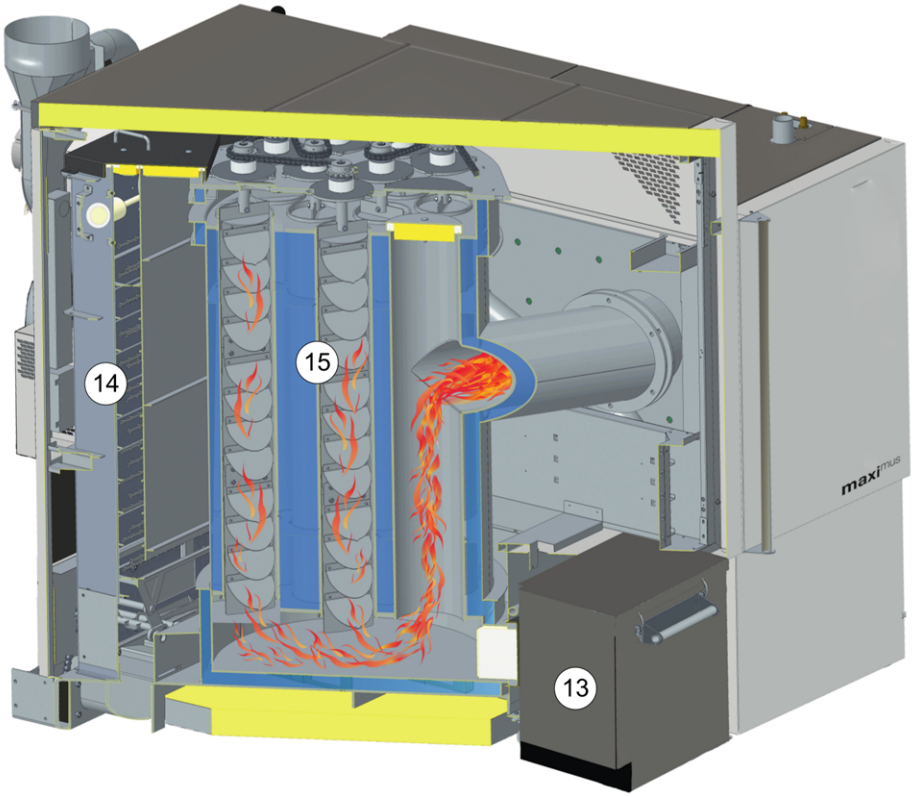


Fig. 2-7

Functional components

13 Ash container

14 Electrostatic dust collector

15 Heat exchanger

De-ashing

- The ashes falling on the feed grate are transported from the transverse ash auger into the ash container *13*.
- The ashes falling on electrostatic dust separator *14* are transported forward by the ash auger 15 into the ash container.

Flue gas guide

- The flue gas from the combustion chamber flows past the heat exchanger *15*, on the electrostatic dust separator into the flue gas pipe and into the chimney.

4.9 Technical specifications

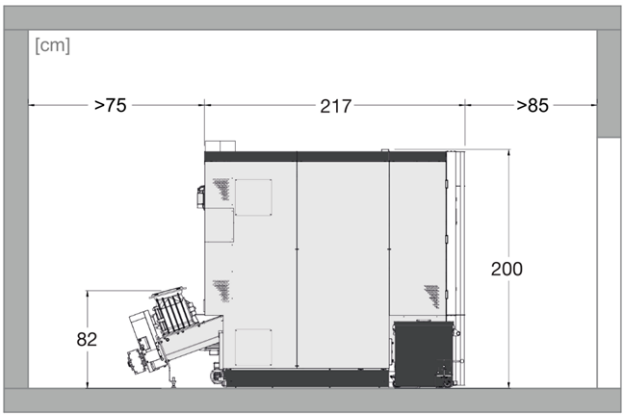
maximus		**150**	**200**	**250**	**300**
Wood chips output	[kW]	149	201	240	-
Pellets output	[kW]	149	201	250	299
Boiler class (acc. to EN 305:5 2012)		5	5	5	5
Dimensions					
Width	[cm]	189	189	189	189
Height incl. adjustable feet [1]	[cm]	207	207	207	207
Depth with ID fan	[cm]	222	222	222	222
Burner insertion dimension (width)	[cm]	90	90	90	90
Heat exchanger insertion dimension (width)	[cm]	110	110	110	110
Minimum room height [2]	[cm]	275	275	275	275
Weight					
Burner weight	[kg]	700	700	700	700
Hat exchanger weight	[kg]	950	950	950	950
Total weight	[kg]	1650	1650	1650	1650
Water side					
Water content	[l]	565	565	565	565
operating temp.	[°C]	70 - 90	70 - 90	70 - 90	70 - 90
Maximum permissible temperature	[°C]	90	90	90	90
Max. permissible operating pressure	[bar]	3	3	3	3
Min. return flow temperature	[°C]	60	60	60	60
Connection Boiler inflow/Boiler return flow	[“]	G 2“ OT	G 2“ OT	G 2“ OT	G 2“ OT
Drain connection	[“]	1”	1”	1”	1”
Connection for thermal overload protection	[“]	G 1/2“ OT	G 1/2“ OT	G 1/2“ OT	G 1/2“ OT
Electrical systems					
Electrical connection		400 V AC, 50 Hz, 16 A, 3P+N+PE	400 V AC, 50 Hz, 16 A, 3P+N+PE	400 V AC, 50 Hz, 16 A, 3P+N+PE	400 V AC, 50 Hz, 16 A, 3P+N+PE
Fuel					
Fuel - wood chips		Wood chips in accordance with EN ISO 17225-4, classes A1, A2, B1, B2; sizes P16S and P31S; water content max. 40% (M40) > 5			
Fuel - wood pellets		Wood pellets according to EN ISO 17225-2 > 5			
Flue gas side					
Flue gas pipe diameter	[cm]	25	25	25	25
Height of flue gas pipe [1]	[cm]	207	207	207	207
Minimum draught requirement [3]	[Pa]	5	5	5	5
Maximum flue gas temperature [4] full load	[°C]	140	140	140	140

maximus		150	200	250	300
Emissions according to test report: *Wood chips*					
Flue gas value [5] from test report: Test institute / test report no.		18-IN-AT-UW-OÖ-EX-205/3 TÜV Austria	Interpolation according to EN 303-5	18-IN-AT-UW-OÖ-EX-205/4 TÜV Austria	-
CO full load	[mg/m³]	19	30	38	-
CO Partial load	[mg/m³]	20	20	20	-
NO_X full load	[mg/m³]	120	120	115	-
NO_X partial load	[mg/m³]	93	93	93	-
Org. C full load	[mg/m³]	2	2	2	-
Org. C partial load	[mg/m³]	2	2	2	-
Dust content full load	[mg/m³]	9.5	11.6	13.8	-
Dust content partial load	[mg/m³]	6.5	6.5	6.5	-
Flue gas mass flow full load	[g/s]	97.9	130.5	156.7	-
Flue gas mass flow partial load	[g/s]	29.4	39.2	47.0	-
Emissions according to test report: *Pellets*					
Flue gas value [5] from test report: Test institute / test report no.		18-IN-AT-UW-OÖ-EX-205/1 TÜV Austria	Interpolation according to EN 303-5	Interpolation according to EN 303-5	18-IN-AT-UW-OÖ-EX-205/2 TÜV Austria
CO full load	[mg/m³]	<3	3	3.6	3.6
CO Partial load	[mg/m³]	29	29	29	29
NO_X full load	[mg/m³]	112	112	113	113
NO_X partial load	[mg/m³]	83	83	83	83
Org. C full load	[mg/m³]	2	2	2	2
Org. C partial load	[mg/m³]	2	2	2	2
Dust content full load	[mg/m³]	6.5	8	8.7	10.2
Dust content partial load	[mg/m³]	5	5	5	5
Flue gas mass flow full load	[g/s]	94.5	126.0	157.6	189.1
Flue gas mass flow partial load	[g/s]	28.4	37.8	47.3	56.7

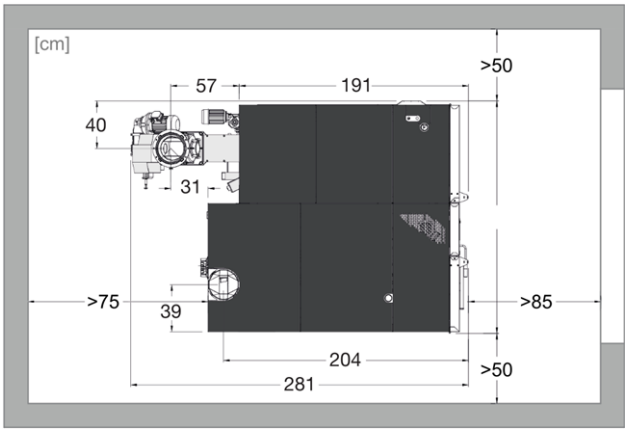
[1] Adjustable feet at maximum depth of thread
[2] The minimum room height is required for maintenance work
[3] A draught stabiliser must be fitted if the specified draught of 15 Pa is exceeded
[4] Flue gas temperature can be adjusted electronically.
[5] Flue gas values in mg/m^3 are based on 13% O_2 of the volume flow

4.10 Dimensions

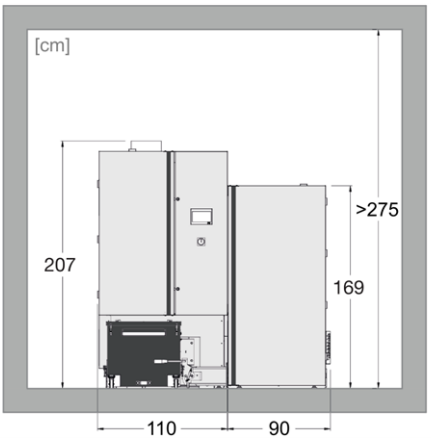
Side view



Top view



Front



5 Use and operation

Touch display for operation

If the boiler is supplied with a mains power supply, the boiler control starts**eco**manager-*touch*. The control is started up to show the main screen.

> Operate the touch display with your fingers, do not use any hard objects.

If no inputs are made for 5 minutes (factory setting), the display will switch to standby mode.

Tapping the display again restarts the display with the main screen.

Buffer battery in operating element

A replaceable buffer batter (CR2032) ensures that data (time, settings) are retained in the operating element when the supply voltage is switched off.

5.1 Main screen of the control unit

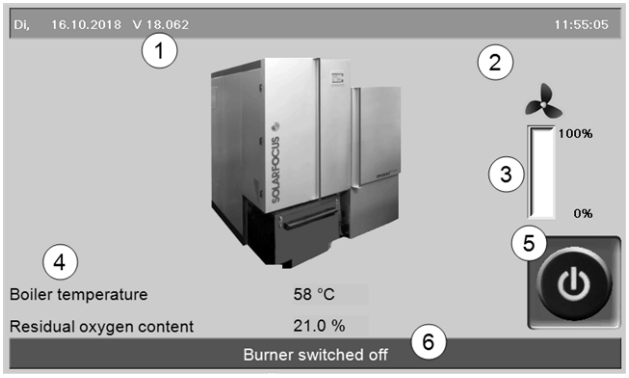
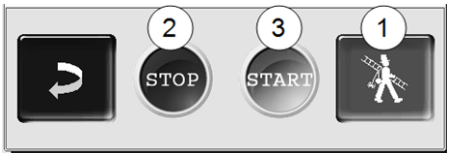


Fig. 2-8: Main screen

1 Software version for control unit
2 outside temperature
3 Boiler output (rotational speed of induced draught fan)
4 Boiler temperature and residual oxygen content in flue gas
5 Operating mode > 14
6 Status line

Tapping the main screen changes to the *Selection menu* > 14

5.2 Boiler operating mode



1 **Chimney sweep function** 

This function is used to perform the emission measurements prescribed by law.

► Perform emissions measurement > 36

2 **STOP** 

The burner is switched off. No heating requirements of the consumers are fulfilled.

> **!** **WARNING** - The burner must not start! Only the automatic start-up of the heating circuit pump is active to protect against frost.

3 **START** 

After pressing the *START* button, the burner is in the selected operating mode and ready for operation, and is able to fulfil heating requests from the consumers. The burner goes into standby as soon as a heating request is fulfilled, or the time release > 15 is no longer available.

5.3 Selection menu

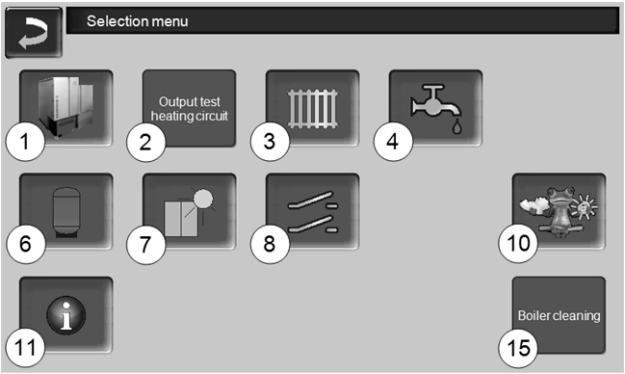


Fig. 2-9: Selection menu

1 Customer menu > 15
2 Heating circuit output test > 15
CAUTION, only to be undertaken by qualified personnel.
3 Heating circuit > 20
4 Domestic hot water heating > 24
5 Circulation control (optional) > 25
7 Solar system (optional) > 28
8 Temperature difference, charge control (optional) > 28
10 Weatherman function (optional) > 32
11 Information
15 Boiler cleaning > 34

5.3.1 Heating circuit output test

The available outputs can be switched on/off directly using the button. Can be used to test function of individual components.

> **!** **CAUTION** - Only to be undertaken by qualified personnel.

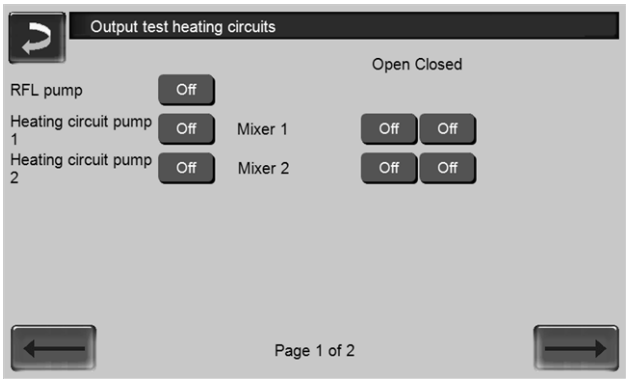


Fig. 2-10

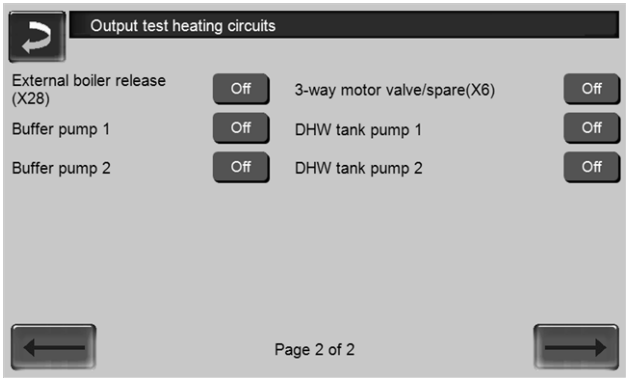


Fig. 2-11

5.4 Customer menu

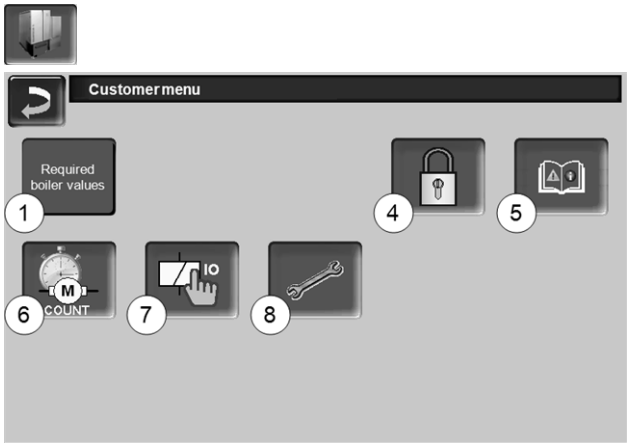


Fig. 2-12: Customer menu

1 Required boiler values > 15
4 User lock > 16
5 Message log [2] Record alarm and notifications > 17
6 Operating hours counter > 17
7 Output test boiler (CAUTION, only to be undertaken by qualified personnel).
8 Qualified personnel menu > 17

[2] Button is only visible if a message is active.

5.4.1 Required boiler values

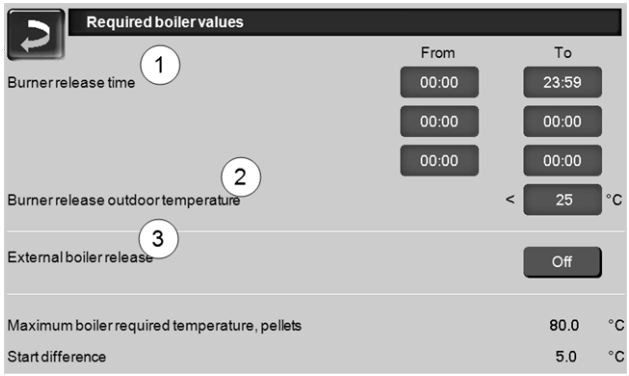


Fig. 2-13: Required boiler values

Burner release time *1*

The burner can start within the release times; outside of these times, starting does not take place and/or the burner is stopped. A release time from 00:00 to 23:59 means that no restriction is pending and the burner can start at any time.

> **!** **CAUTION** - In order to protect against frost, only automatic start-up of the heating circuit pump is active outside time release.

Domestic hot water heating in summer

If the boiler s used for heating domestic hot water, then the required chimney pull of 5 Pa may not be present in the summer months (or outside the heating period). This may result in smoke escaping in the heating room.

Reason: High temperature on the chimney head (greater than 30°C); as a result the cooler air does not rise (~ 20°C air temperature when the burner starts) in the chimney.

Remedy: Set the burner time release from 00:00 to 07:00 or from 21:00 to 23:59.

Burner release outdoor temperature *2*

The burner may not start if the outside temperature exceeds this value.

External boiler release *3*

On switches the function to standby. I.e. a connected external boiler may only start when it receives the release from the SOLARFOCUS boiler (e.g. on the basis of a lack of fuel, operating fault).

5.4.2 User lock

Fig. 2-14: Main screen with active user lock

The function serves as protection against unauthorised modification of the control parameters. When the user lock is active, the parameters of the individual screens are displayed but cannot be changed. The active user lock is indicated by the padlock icon *1* in the screens.

User lock **screen**

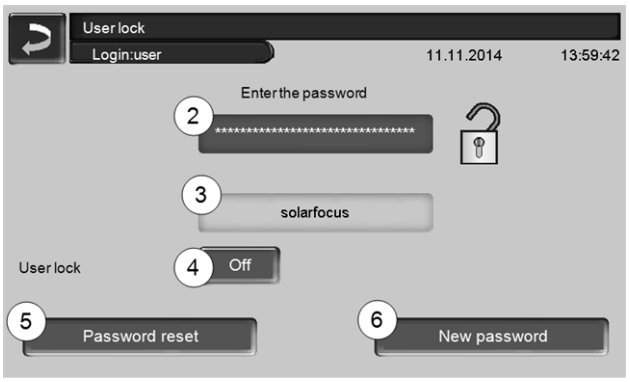


Fig. 2-15: *User lock* screen

Enter the password *2*

To define a new password (maximum 20 characters).

Password *3*

The currently valid password is displayed.

User lock *4*

Off: The user lock is switched off.
On: Switches on the user lock function. If the display is not touched for one minute, the user lock is active in the screens.

Password reset *5*

The current password is reset to the value *solarfocus*.

Accept as new password *6*

Enter a new password in the input field and press the button. Note on screen keyboard; Confirm input with the button.

5.4.3 Message log

Fig. 2-16: Message log

Every fault message which has occurred in the control unit is recorded here, with the time that it began and ended. The message with the highest priority is highlighted in red, acknowledged messages are highlighted in green.

Press the *2* button to quit messages. Button *1* opens the power failure log.

5.4.4 Operating hours counter

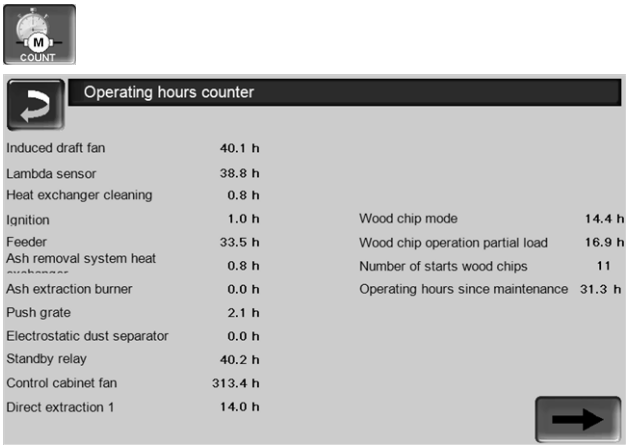


Fig. 2-17: *Operating hours counter* screen

5.4.5 Qualified personnel menu

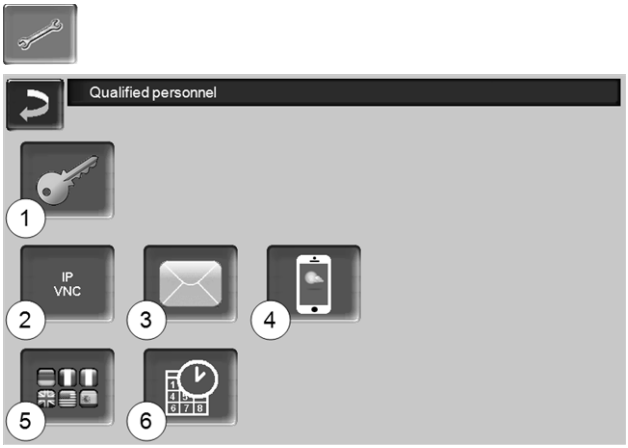


Fig. 2-18: Qualified personnel menu

1 Service menu > 17
2 IP VNC (for remote access) > 17
3 Sending emails > 19
4 mySOLARFOCUS-App > 29
5 Language selection > 20
6 Date and time > 20

5.4.5.1 Service menu

In the*Service menu* there are technical (factory predefined) settings for an optimum combustion process in the boiler. These can only be accessed by qualified personnel (code input required).

5.4.5.2 IP VNC (for remote access)

The control unit **eco**manager-*touch* allows access to the control unit screens from a PC or mobile device (e.g. smartphone). This is effected via *VNC* (Virtual Network Computing) software. The control has an integrated VNC server, while the *VNC Viewer*, which is available free of charge on the Internet, is required for remote access.

A cable connection is required on site for the connection of the control unit to the router. Use the Ethernet socket (type RJ45) on the rear of the control panel (Touch display).

> Installation and configuration of this function must be performed by the customer (i.e. not included in the commissioning, service and support activities).

The following points are helpful for setting up a PC/-router to control the VNC server, which requires knowledge of networking technology.

IP configuration

► To access the *IP-VNC* icon, select it in the control
  – *Selection menu* screen
  – *Customer menu* screen
  – Trained qualified personnel button 
► Enter the data for your router. Recommend process:
  – Select *DHCP ON*.
  ↳ The IP address is determined.
  – Select the *DHCP OFF + Apply button* .

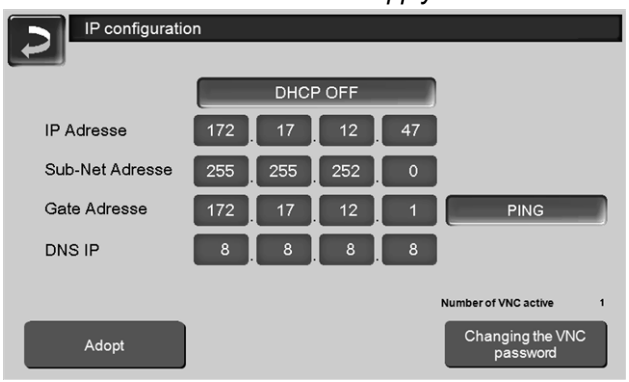
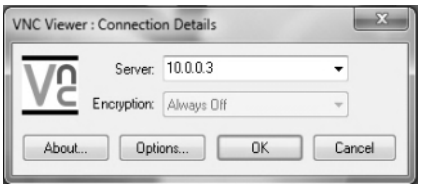


Fig. 2-19.

– The IP address must be unique in each Ethernet network and is dependent on the other network components (PC, modem/router, etc.).
– Recommendation: Set a fixed IP address (=*DHCP OFF*), i.e. the control unit has a constant IP address.

Version 1: Installation of VNC viewer for access from a local PC (PC in the home network)



► Download the free VNC Viewer from the Internet, install it on the PC and start the application.
► Enter the previously defined IP address of the control.
  – As soon as the VNC Viewer is able to access the control unit, a password must be entered.
  – The password predefined by the manufacturer is *solarfocus*
  – After login, the screen view of the control unit is available.

Changing the VNC password

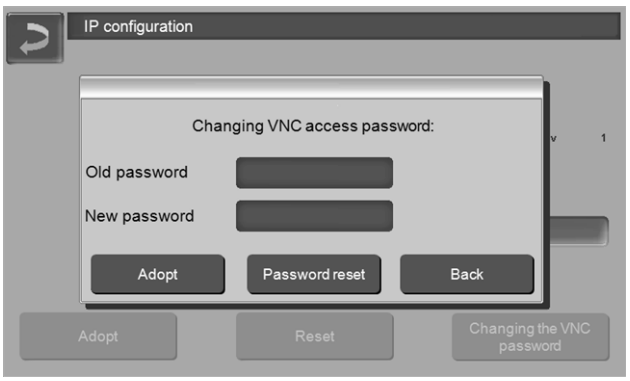


Fig. 2-20

► Press the *Change VNC password* button on the *IP setup* view.
► To change it, first enter the old password, then the new password, then press the *Accept* button.
► The new password must be used to log on after restarting the VNC Viewer on the local PC.
► Press the *Reset password* button to reset the password to the default password *solarfocus*.

Version 2: Installation of VNC viewer for access from an external PC (PC outside the home network)

– The user's local router does not always have the same IP address on the Internet (it is allocated by an *Internet Service Provider – ISP*).
– Nevertheless, Dynamic Domain Name Systems, also referred to as *DynDNS* or *DDNS*, allows access to the router.
– These systems allow a unique host name to be assigned on the Internet; the unique name is then also entered in the router. If the router is then assigned a different address by the ISP, it enters the updated IP address as the defined host name on the DynDNS server. The router and therefore the home network can then be reached using this host name.
– To create a connection with the control unit, a **port diversion** is required from the external port of the router[1] to the IP address and to VNC port 5900 of the control unit.

[1] Port 5950 is recommended

Avoid any **port forwarding** from external port 5900 of the router to IP address and VNC port 5900 of the control.

5.4.5.3 Sending e-mails

Function: The boiler control **eco**manager-*touch* automatically sends status e-mails and alarm e-mails (to predefined addresses) if required.

Status e-Mail: An automatic e-mail (e.g. sent daily) provides information on the current boiler status.

Alarm email: a message is sent when a fault occurs.

Installation and configuration of this function must be performed by the customer (i.e. not included in the commissioning, service and support activities).

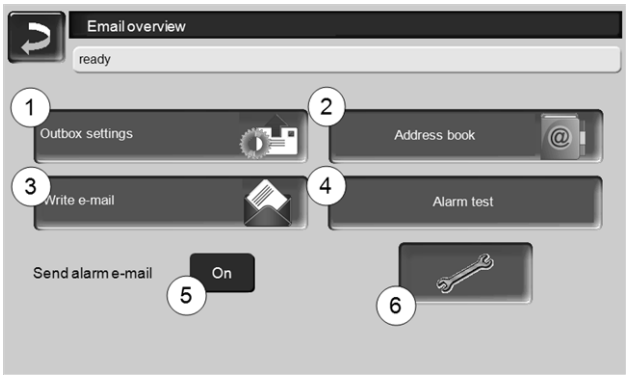


Fig. 2-21

Outgoing mail server *1*

Enter the access data for the e-mail server you use.

Fig. 2-22

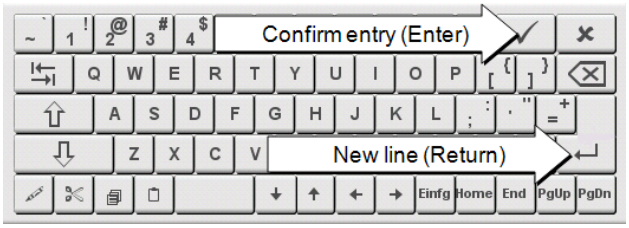
Use SSL: Select if the e-mail server uses a TLS/SSL encryption protocol.

Address book *2*

A maximum of 10 contacts can be added. If there are several addresses for a contact, these should be comma-separated.

Write e-mail *3*

Used to manually send e-mails. The recipient's address can be selected from the address book using *To* and *CC* or manually entered in the recipient line.



Alarm test *4*

Used to test the e-mail settings. Pressing the button sends an e-mail to the *Recipient status email.*

Send alarm email *5*

Activates/deactivates the automatic sending of alarm e-mails. The sending of status e-mails is not affected by this.

Alarm configuration *6*

Settings for the alarm e-mails to be sent automatically.

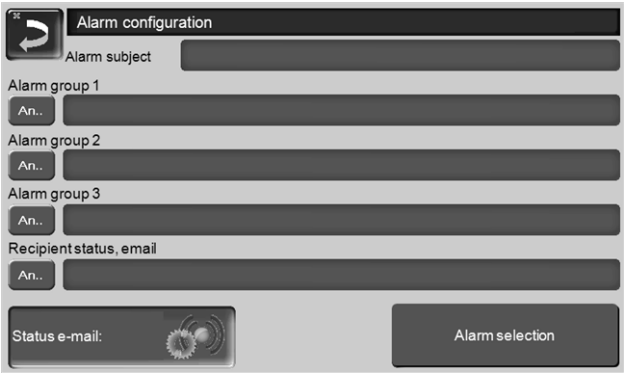


Fig. 2-23

Alarm subject: is used for all alarm e-mails and status e-mails, therefore it should be as meaningful as possible (e.g. boiler type / name of system operator; 40 characters available).

Alarm groups: For prioritisation of the alarm messages (e.g. Alarm group 1 receives all messages, Alarm group 2 receives only non-critical messages, such as information on necessary maintenance, boiler cleaning, etc.).

Status e-Mail: Set time at which the status e-mail is sent. The automatically generated content of the status e-mail is:

- Current status of the heating system
- Fault present, and which

Alarm selection: This is where you define which alarm group is reported for which event.

5.4.5.4 mySOLARFOCUS app

Pressing the button displays the screen with information relating to online registration for the *mySOLARFOCUS app* (serial number, PIN, status, etc.) > Abb. 2-41, page 30

Detailed information on using the *mySOLARFOCUS app* > 29

5.4.5.5 Language selection

Fig. 2-24

5.4.5.6 Date and time

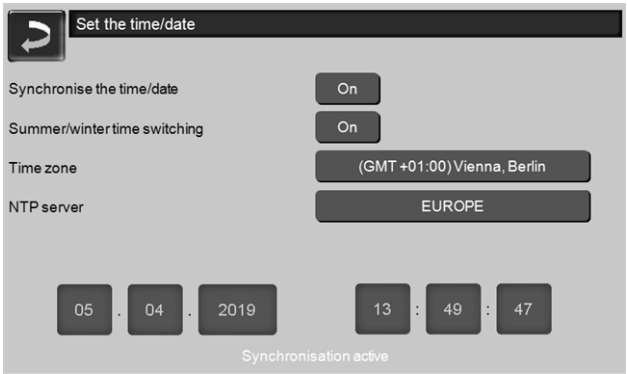


Fig. 2-25

switchover from summer/winter time is made automatically when the *Switchover Summer-Winter 1* parameter has the value Europe. Switchover takes place on the last Sunday of the months of March and October. If *America* is set, the clock is changed to summer time on the first Sunday in April.

6 Heating circuit

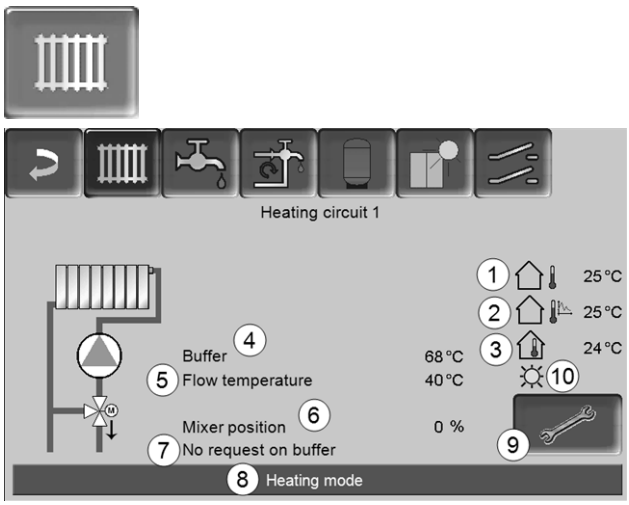


Fig. 2-26

1 outside temperature
2 Average outside temperature
3 Room temperature (optional)
4 Temperature of the energy source, (e.g.boiler, buffer)
5 Flow temperature of the heating circuit
6 Position of the heating circuit mixer
0 % - the mixer is closed, the heating circuit is supplied from the heating circuit return.100% - the mixer is open, the heating circuit is supplied from the heating boiler flow.
7 Info line: Heating requirement (Yes/No) to the energy source.
8 Status line of the heating circuit
9 Heating circuit settings > 21
10 Display of the heating circuit operating mode set on the optional room temperature controller (Art. no. 6160)

6.1 Heating circuit settings

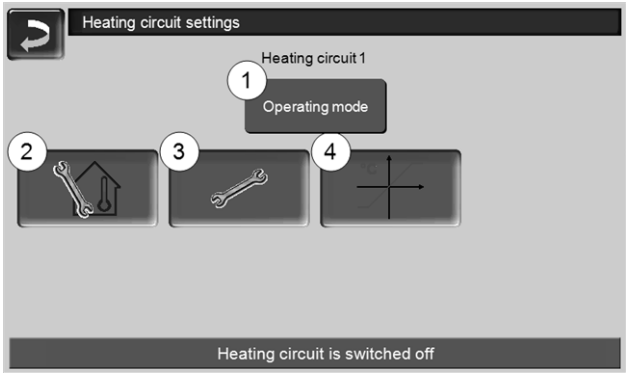


Fig. 2-27

1 Heating circuit operating mode > 21
2 Room settings
(Button is only visible when the *Room effect* parameter is set to *On* or *Sliding*; this can be found in the *Specialist personnel system parameters)*
3 General settings > 21
4 Heating curve > 22

6.1.1 Heating circuit operating mode

Heating mode 

The heating circuit pump is activated. A shutdown occurs whenever

- the *external shutdown temperature for heating mode* is reached
- when a room temperature sensor is used and where *room nominal temperature for heating mode* has been reached.

The heating circuit is supplied with the *calculated inlet nominal temperature* > Fig. 2-28.

Reduced mode 

Heating circuit pump is activated. A shutdown occurs whenever

- the *external shutdown temperature for reduced mode* is reached.
- a room temperature sensor is used and where *room target temperature for reduced mode* has been reached.

The heating circuit is provided with the reduced temperature, i.e. *calculated inlet nominal temperature* minus *reduction*; > Fig. 2-28.

Time switching 

In this operating mode, the timed switch-over between *Heating mode* and *Reduced mode* is defined. You can enter the times for heating mode *Daily* or *In blocks*.

Usage example: *Heating mode* should be active during the day, but be changed to *reduced mode* at night.

Switch off heating circuit 

The heating circuit pump and heating circuit mixing valve are switched off. The anti-freeze function for the heating circuit is enabled (i.e. the heating circuit pump is switched on whenever the ambient temperature drops below the *anti-freeze temperature*).

Holiday mode 

Holiday mode deactivates the active operating mode for the entered duration.

 activates the frost protection mode for the heating circuit for the duration of the holiday.

 activates the reduced mode for the heating circuit for the duration of the holiday.

 This icon indicates an activated holiday mode in the *heating circuit* screen.

6.1.2 General settings

Cutoff temperature

If the outdoor temperature exceeds the value set here, the heating circuit pump is switched off and the heating circuit mixer closes.

Cutoff temperature for heating mode: 18°C

Cutoff temperature for reduced mode: 5°C

> This means: the heating circuit is normally automatically switched off during the summer month due to the outdoor temperature.
> You can also switch the heating circuit off manually (=operating mode: Switch off heating circuit).

Anti-freeze temperature

If the outdoor temperature drops below the value set here, the heating circuit pump is switched on.

Buffer difference

starts when the *tank temperature top* falls below the *required flow temperature* minus the *buffer difference*.

Example:
- Current flow required temperature = 50°C
- Buffer difference = 5°C
starts as soon as *tank temperature top* < 45°C.

A negative buffer difference value is added, i.e. starts earlier.

Example:
- Current flow required temperature = 50°C
- Buffer difference = - 5°C
starts as soon as *tank temperature top* < 55°C.

Outdoor temperature delay

The delay set here is used to determined an average value for the outdoor temperature (= Average outdoor temperature).

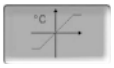
The heating circuit pump switches on if the Average temperature and the Current outdoor temperature fall below the cutoff temperature (within the heating period), or below the reduced mode cutoff temperature (outside the heating period).

The heating circuit pump switches off again as soon as the current outdoor temperature rises above the value of the cutoff temperature.

Heating circuit name

Individual naming of the heating circuit is possible.

6.1.3 Heating curve



The heating circuit flow temperature is controlled by the heating circuit operating mode > 6.1.1 and by the outdoor temperature. The heating curve represents the relationship between these two temperatures. I.e. the control unit uses the outdoor temperature to calculate the temperature (=calculated nominal flow temperature) with which the heating circuit is supplied.

In *heating mode* the heating curve for heating mode *4* (red) is used.

In *reduced mode* the heating curve for reduced mode *5* (= heating curve for heating mode minus *reduction*) is used.

The heating curve must be adapted to suit each building and its heating system.

2-point heating curve

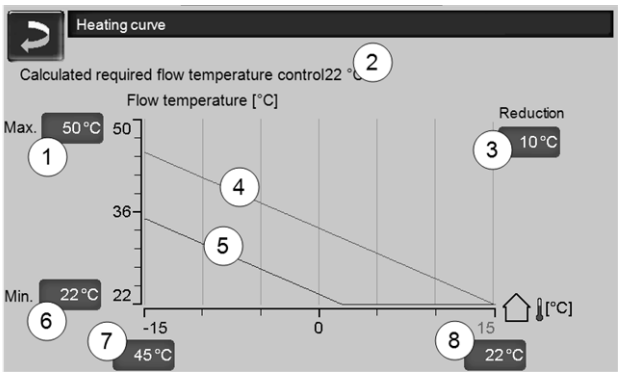


Fig. 2-28

1 Maximum heating circuit flow temperature[1]
2 Calculated required flow temperature
3 Reduction (the value by which the reduced temperature is lower than the heating temperature)
4 Heating curve for heating mode (shown in red)
5 Heating curve for reduction mode (blue)
6 Minimum heating circuit flow temperature[1]
7 Flow temperature at outside temperature -15°C
8 Flow temperature at outside temperature +15°C

! [1] **CAUTION** - This temperature is system-specific and must be agreed with the heating engineer. Only to be set by qualified personnel.

The desired heating circuit nominal flow temperature in heating mode is set for an outside temperature of -15°C *7* and +15°C *8*. Between these outside temperatures, the nominal flow temperature is calculated from the characteristics of the heating curve (interpolated).

Example for calculation of nominal flow temperature (see the following illustration):
Flow temperature at outside temperature of -15°C = 45°C
Flow temperature at outside temperature of +15°C = 22°C
Current external temperature = -5°C

In the heating circuit operating mode *Heating mode,* this applies:
> The computed flow nominal temperature (**Pos.9**) is 37.4°C
> The heating circuit is supplied with 37.4°C.

In the heating circuit operating mode *Reduced mode,* this applies:
Reduction = 10°C
> The computed flow nominal temperature (**Pos.10**) is 27.0°C
> The heating circuit is supplied with 27.0°C.

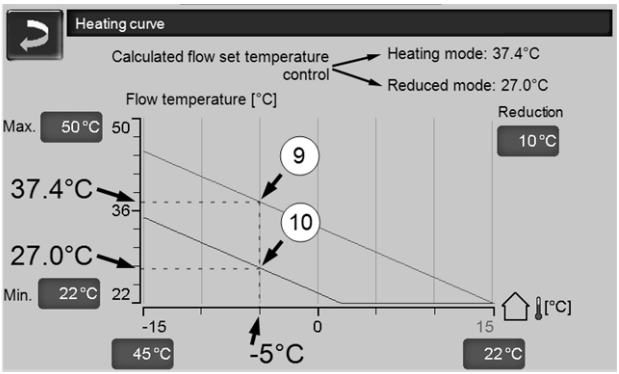


Fig. 2-29

Adaptation of the 2-point heating curve (in *heating mode*)

Note the currently set temperature before you change the values.

A change in heating curve cannot be felt immediately. Instead, this depends largely on the kind of heat distribution system (e.g. underfloor heating) and the building standard (brick, lightweight construction etc.). It is advisable to adapt the heating curve in small increments (+/- 2°C) with corresponding pauses (1 to 2 days). Depending on the current outside temperature, different adjustments need to be made.

Current outside temperature	Perceived room temperature	Recommended adaptation of heating curve
-15°C to -5°C	too cold	Increase temperature value at *7*
	too hot	Reduce temperature value at *7*
-5°C to +5°C	too cold	Increase temperature value at *7* and *8*
	too hot	Reduce temperature value at *7* and *8*
+5°C to +15°C	too cold	Increase temperature value at *8*
	too hot	Reduce temperature value at *8*

3-point heating curve

Function must be activated by qualified personnel.

Depending on the standard of building and insulation, it is advisable to change over from the 2-point to a 3-point heating curve. In contrast to the 2-point heating curve, it is possible to stipulate a third temperature *11*, i.e. the heating curve can include a sharp deflection or bend.

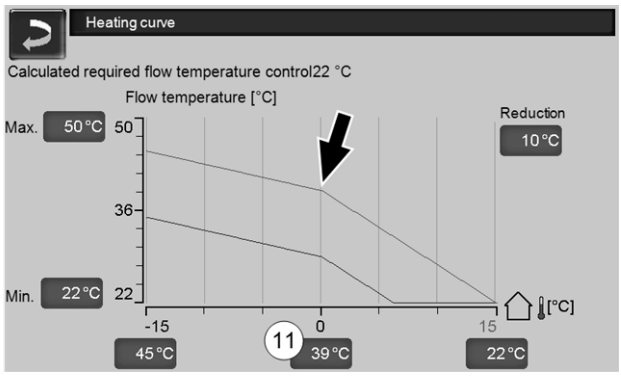


Fig. 2-30

Adaptation of the 3-point heating curve (in *heating mode*)

Note the currently set temperature before you change the values.

Current outside temperature	Perceived room temperature	Recommended adaptation of heating curve
-15°C to -5°C	too cold	Increase temperature value at *7*
	too hot	Reduce temperature value at *7*
-5°C to +5°C	too cold	Increase temperature value at *11*
	too hot	Reduce temperature value at *11*
+5°C to +15°C	too cold	Increase temperature value at *8*
	too hot	Reduce temperature value at *8*

7 DHW heating

DHW can be heated up in two ways:

- With a *DHW tank* > 24
  (The energy source of the fresh water module is a buffer tank[1])
- With a *fresh water module* > 25
  (The energy source of the fresh water module is a buffer tank[1])

[1]DHW area in the buffer tank

Warm water rises and collects in the uppermost area of the buffer tank (= thermal stratification). The DHW tank or the fresh water module draws the required energy for DHW heating from this uppermost area. Therefore, this (held at an adjustable temperature level) area in the buffer tank is also referred to as the *DHW* area.

7.1 Domestic hot water tank

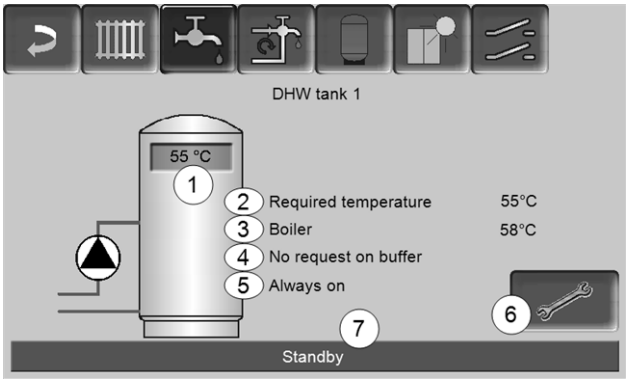


Abb. 2-31_05-002-01

1 DHW tank temperature
2 Required DHW tank temperature
3 Temperature of the energy source (e.g. boiler, buffer tank)
4 Info line: Charging requirement (Yes/No) to the energy source.
5 DHW tank operating mode > 25
6 DHW tank settings > 24
7 Status line DHW tank

7.1.1 DHW tank settings

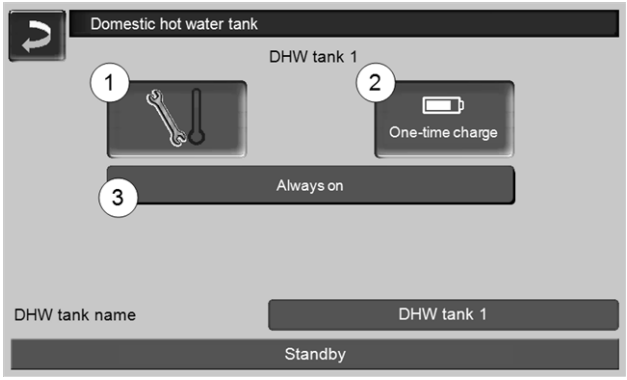


Abb. 2-32_16-076-02

1 Temperatures and hystereses *1*
2 One-time charge *2*
3 DHW tank operating mode *3*

Temperatures and hystereses *1*

Required temperature / hystereses

The DHW (or the domestic hot water area in the buffer tank) is charged when required until the set *Required temperature 1* is reached. A new charge starts when the DHW tank temperature falls to the value *Required temperature 1* less *Hysteresis*.

Example
- Required temperature 1 = 55°C
- Hysteresis = 10°C

The DHW charge starts when the DHW temperature falls to 45°C (requirement: The temperature of the energy source is 5°C above 45°C).

One-time charge *2*

Is used to perform one-off re-heating of the DHW tank (e.g. if no release times are defined or the operating mode *Always Off* is set). By pressing the button, the DHW tank is recharged as soon as a charging request is made by the DHW tank.

DHW tank operating mode 3

Always off: The DHW tank charge pump is switched off permanently.

Exception for frost protection mode: The DHW tank charging pump is activated if

- the outside temperature is <2°C, and

- the DHW tank temperature goes to <10°C.

Always on: The DHW tank charge pump is switched on permanently. The pump is controlled taking the parameters *Required temperature 1, Minimal temperature* and *Hysteresis* into account.

Time switching (*Monday-Sunday, daily*,…): different time ranges can be set, in which the DHW tank charge pump is switched to *ON*.

> The operating mode *Monday - Sunday* and is not available if you are using the *mySOLARFOCUS app* > 29.

7.2 Fresh water module - FWM (optional)

A fresh water module heats domestic hot water in the continuous flow principle. The circulation pump of the fresh water module starts if a DHW output point (also called a *tapping point* e.g. shower or batch, etc.) is opened. The energy for heating up domestic hot water is taken from the upper area (called the *DHW area*) of the buffer tank.

1 Buffer tank temperature
2 Required DHW temperature
3 Speed of the fresh water module pump
4 Recirculation temperature [1](only visible if a recirculation sensor is connected).
5 Start recirculation pump [1](serves for immediate start of the recirculation pump)
6 Circulation pump settings [1] > 26
7 Fresh water module settings > 25
8 Fresh water module status line

1) Recirculation control is an optional additional function.

Fresh water module settings 7

Pump control

Always off: The fresh water module pump is permanently switched off; no domestic hot water is heated up.

Always on: (= manual mode); the fresh water module pump is always switched on.

Automatic (= default setting), the fresh water module pump starts when a flow is detected in the pipework by an electronic sensor (e.g. the tap is opened at a consumer).

Required drinking water temperature

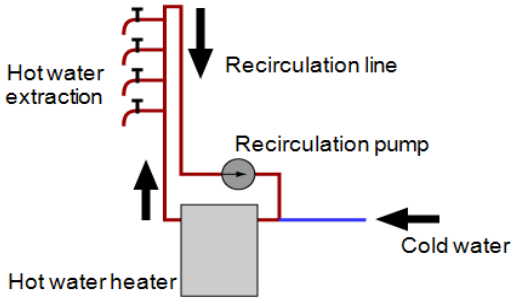
This parameter is only active in the case of release type *Automatic*. The fresh water module regulates the temperature at which the connected hot water devices receive water.

8 Recirculation control


(optional additional function)

A recirculation line means that hot water can be quickly available at the extraction points (also called tapping points, e.g. basin, shower, bath, ...), even with long supply pipes.

Recirculation control is possible with a fresh water module or for a DHW tank.



Recirculation screen

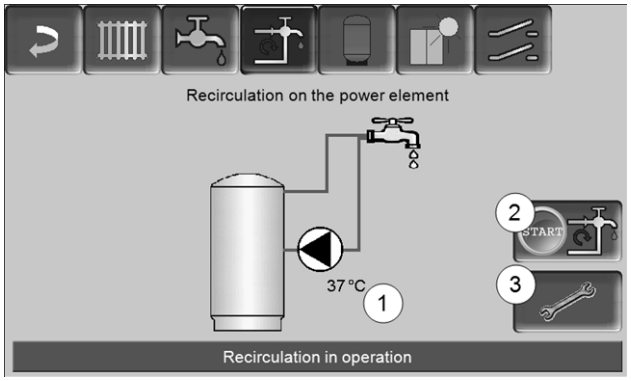


Abb. 2-33_07-002

1 Recirculation temperature (only visible if a recirculation sensor on the boiler power element is connected).
2 Start recirculation pump (serves for immediate start of the recirculation pump).
3 Circulation settings

8.1 Circulation settings

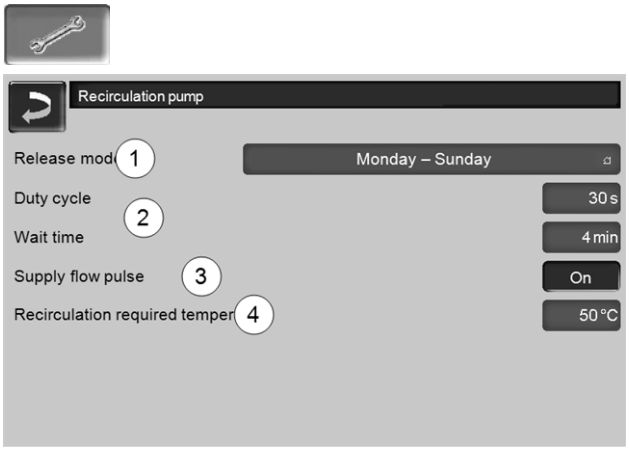


Abb. 2-34_07-003

Release mode *1*

Always off: The recirculation control is switched off permanently.

Always on: The recirculation control is switched on permanently. The recirculation pump is only triggered in consideration of the parameters *Switch-on duration* and *Hold-on time*.

Time switching (*Monday-Sunday, in blocks,* ...): In this respect, time releases can be set for recirculation control.

Switch-on duration / Hold-on time *2*

Depending on the recirculation control selected, the pump is cycled in consideration of these two parameters, i.e. alternation between *Switch-on duration* and *Hold-on time*.

Recirculation required temperature *4*

Is the required temperature in the recirculation line (only displayed when a recirculation sensor is connected).

8.2 Recirculation control - Options

In order to be able to make use of the following controls, time switching (*Monday-Sunday, in blocks,* etc.) must be selected for the parameter *release type*.

Time-controlled recirculation

In the event of time-controlled recirculation, the recirculation pumps are triggered on a cycled basis if a time release (see parameter *release type* 1) is present. Cycling (i.e. switching between control/no control) is conducted in accordance with the *Switch-on duration* and *Hold-on time* parameters.

Example:
- Release type = *Monday-Sunday,*
- The recirculation control currently has, for example, a time release of 06:00 to 08:00
- Switch-on duration = 30 seconds
- Hold-on time = 4 minutes

The recirculation pump runs for 30 seconds. After this, the pump pauses for 4 minutes in order to then run for 30 seconds again. This repeats in a time release from 06:00 to 08:00. Outside the time release, the pump is not triggered.

Temperature- and time-controlled recirculation

Temperature-controlled recirculation is only available if a temperature sensor is connected for the recirculation temperature. The control takes the recirculation temperature (*required recirculation temperature*) into account within the time release. This means that the pump is only cycled if the recirculation temperature is below the *required recirculation temperature* of minus 5°C.

Example:
- Release type = *Monday-Sunday*
- The recirculation control currently has, for example, a time release of 06:00 to 08:00
- Switch-on duration = 30 seconds
- Hold-on time = 4 minutes
- Required recirculation temperature = 50°C
- Recirculation temperature = 48°C

The recirculation pump is not triggered as the recirculation temperature (48°C) is above the *required recirculation temperature* of minus 5°C (50°C minus 5°C = 45°C). If the recirculation temperature goes below 45°C, the recirculation pump is triggered for 30 seconds. After this, the pump pauses for 4 minutes in order to then run for 30 seconds again. This repeats until the recirculation temperature reaches the *required recirculation temperature*. Outside the time release, the pump is not triggered.

Extension of recirculation by means of a flow impulse

Recirculation being controlled by a flow impulse *3* is only possible in fresh water modules > 25, and is used as an extension of the control options previously named.

In order to activate this function, the *Flow Impulse* *3* parameter must be set to *on*. When a hot water extraction point is opened briefly, an electronic sensor detects the pressure drop in the line. The recirculation pump is triggered even if there is no time release.

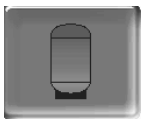
Exception: If a temperature sensor for the recirculation pump (=recirculation sensor) is connected and the recirculation temperature us sufficient (see *Temperature- and time-controlled recirculation*), then the recirculation pump is not triggered.

Exception: If a temperature sensor for the recirculation pump (=recirculation sensor) is connected and the recirculation temperature us sufficient (see *Temperature- and time-controlled recirculation*), then the recirculation pump is not triggered.

Example:
- Release type = *Monday-Sunday*
- No time release has been set.

As soon as DHW is drawn, the recirculation pump is triggered.

9 Buffer tank



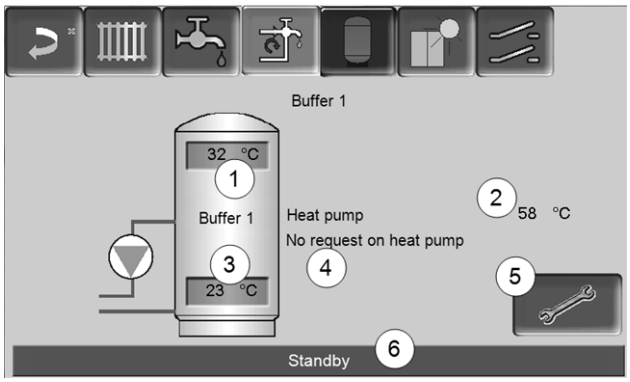


Abb. 2-35_09-002-03

1 Buffer cylinder temperature Top
2 Temperature of the energy source
3 Buffer cylinder temperature bottom
4 Info line: Heating requirement (Yes/No) to the energy source.
5 Buffer tank settings
Button is only visible when *Timer* is selected as the buffer cylinder operating mode; may be adjusted by qualified personnel only.
6 Buffer tank status line

Set buffer tank temperatures

Min. buffer temp. top

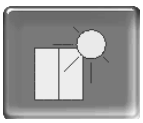
When *Buffer cylinder temperature top* falls below this value, the energy source for the buffer cylinder starts (e.g. boiler) and the buffer cylinder is re-charged (upon time release).

Max. buffer cylinder temp. bottom

The buffer tank is charged until the *Buffer tank temperature bottom* has reached this value.

In order to ensure optimum and efficient use of the buffer tank, the difference between these two temperatures should be > 15°C.

10 Solar system


(optional additional function)

The solar yield is loaded into a solar tank. This tank can be a buffer tank or a DHW tank.

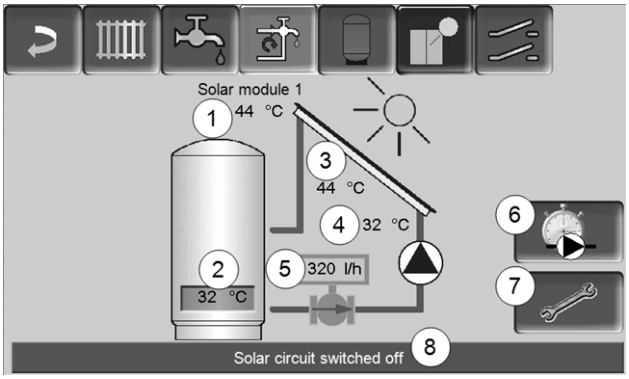


Abb. 2-36_10-005

1 Collector temperature (measured at the collector sensor)
2 Tank temperature bottom
3 Collector flow temperature
4 Collector return temperature
5 Solar circuit flow rate
6 Operating hours counter
7 Solar circuit settings
8 Solar circuit status line

Additional information on the solar functions, for which a charge is due, (e.g. boiler control of two or three solar circuits) will be provided in a separate manual upon purchase, DR-0007.

The solar yield is displayed in the *mySOLARFOCUS app* > 29 (prerequisite: A solar system controlled by the control**eco**manager-*touch*, including thermal unit counter).

11 Temperature difference charge control


(optional additional function)

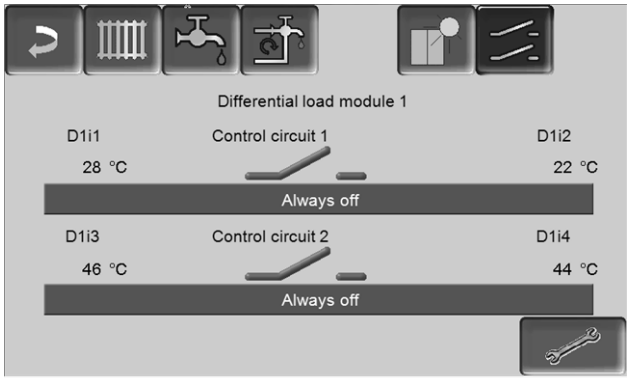


Abb. 2-37_11-002

– This function expands the control **eco**manager-*touch* with two (independent) differential control circuits. Suitable, for example, for charge pump control systems, for (rapid) tank charge, or return-stratification in the tank.
– The components of this charging circuit (e.g. circulation pump, motor valve, etc.) can be regulated by means of temperature differences between sensors.

Further information can be obtained in a separate set of instructions when you purchase this function, DR-0014.

12 mySOLARFOCUS app

Function: The *mySOLARFOCUS app* allows you to use your smartphone to access specific control **eco**manager-*touch* functions:

- Setting the room temperature and heating circuit flow temperature, including heating times.
- Hot water programs, with one-time hot water tank loading.
- Display of the solar yield of your solar power system.

Installation and configuration of this function must be performed by the customer (i.e. not included in the commissioning, service and support activities).

12.1 Requirements for use

- The control must be connected to the internet.
- Smartphone with Apple IOS 7.0 or Android OS 4.4

12.2 Connecting the control to the internet

Create a network connection between the router and the

Use the following socket (RJ45) on the rear of the display:

IP configuration

► To access the *IP-VNC* icon, select it in the control
  - *Selection menu* screen
  - *Customer menu* screen
  - Trained qualified personnel button 

► Enter the data for your router. Recommend process:
  - Select *DHCP ON*.
  - ↳ The IP address is determined.
  - Select the *DHCP OFF + Apply button* .

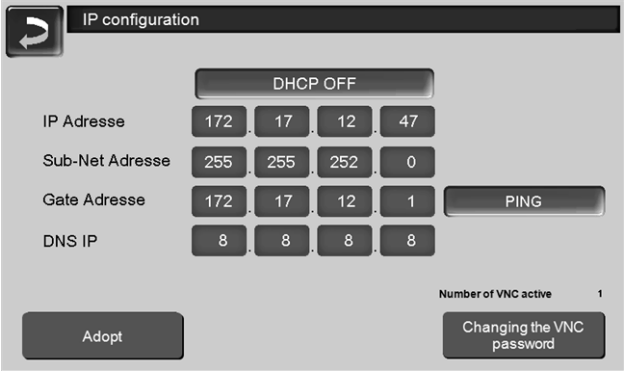


Fig. 2-38.

- The IP address must be unique in each Ethernet network and is dependent on the other network components (PC, modem/router, etc.).
- Recommendation: Set a fixed IP address (=*DHCP OFF*), i.e. the control unit has a constant IP address.

12.3 Register on the web server

The touch display must be registered on the SOLARFOCUS Web server:

► Press the app button

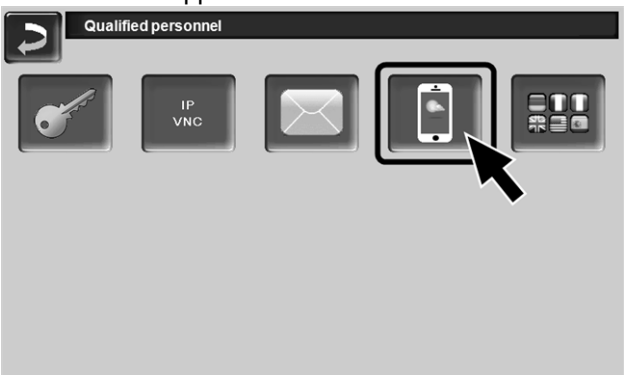


Abb. 2-39_01-126-05

► Continue by pressing *Accept*

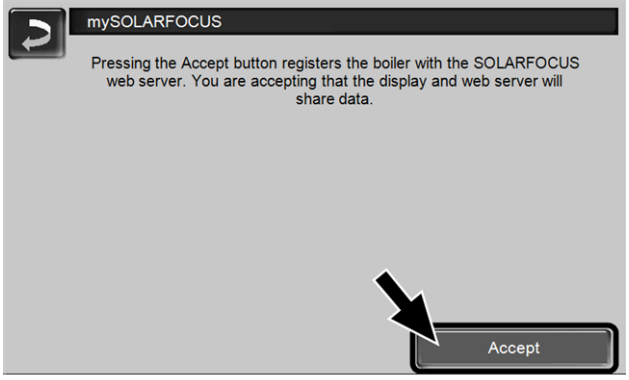


Abb. 2-40_01_127

► Note the serial number and PIN
► Switch the *Send data parameter* to *Yes*.

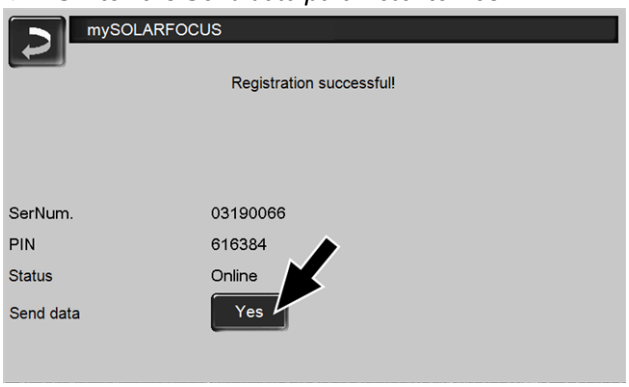


Abb. 2-41_01_129

If the connection is faulty, possible causes include:
► Check the connection from the display to the router.
► Check the IP addresses you have entered.
► Check your network router (e.g. status, etc.).

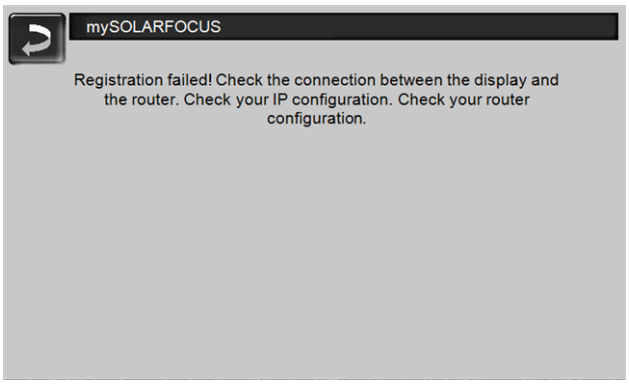


Abb. 2-42_01_128

12.4 Install app, register user

The *mySOLARFOCUS app* is available in the Apple Store and Google Play Store.
► Download, install and start the app.

► Press the *Register new user* button.

Abb. 2-43_01_130sn

► Enter the information required and press the *Register* button.
  ↳ An email will be sent to the email address you provided.
► Open the email and click on the *Confirm account* link.
  ↳ You can now sign into the app (to sign in, enter your email address and password).

12.5 Add system

  ☑ You have successfully signed into the app.
► Press the *Add new system* button.

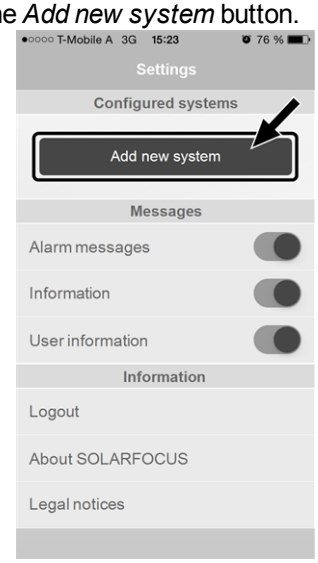


Abb. 2-44_15_002

► Enter the data for your heating system (serial number and PIN).

ⓘ The weather forecast data for the weatherman function are sent to the boiler control on the basis of the Postcode and Location fields.

As an alternative to the app, you can also add systems on the website: https://www.mysolarfocus.com

Important: In principle only *one* user may access a system. If additional users wish to access a system, then they must be approved in advance *Approve additional users* > 31.

12.6 Use of the mySOLARFOCUS app

The app icon indicates that the parameter has been changed on the basis of an entry in the app; e.g.

- in the *heating circuit* screen: If *short-term mode* has been activated in the app.
- in the *heating circuit* screen, in *room settings*
- in the *heating curve* screen

Changes using the app:

- In the heating circuit screen, only *Daily time switching* is available in heating circuit mode, and not *In blocks*.
- In the *heating domestic hot water* screen, the time switches Monday - Sunday and *In blocks* are not available for DHW tank mode.

12.7 Approve additional users

You can enable access to your control for additional users, for example heating engineers.

Issuing approval.

► Select the *Approval* menu item.

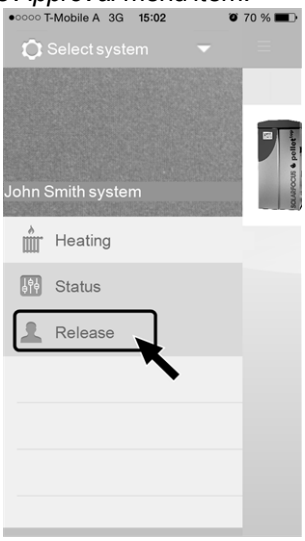


Abb. 2-45_15_005

► Enter the user's email address and select the *Invite* button.

↳ The invited user will receive an email with an approval code for the system. He can use this to add the system to his app account.

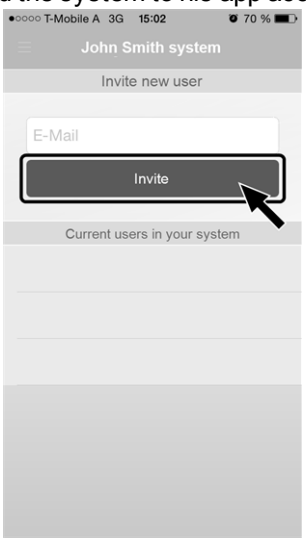


Abb. 2-46_15_006

13 Weatherman function

Function: The control **eco**manager-*touch* receives current weather forecast data on an ongoing basis. If good weather is forecast, then the control delays starting the burner when there is a heating request.

The requirements for using the weatherman function are as follows:

- The software version of the control is ≥ V 15.080; for **octo** plus, **pellet** elegance, **pellet** top, Central control **eco**manager-*touch*.Central control **eco**manager-*touch*
- Registration of the heating boiler on the web server SOLARFOCUS, or in the *mySOLARFOCUS app*, > 29.

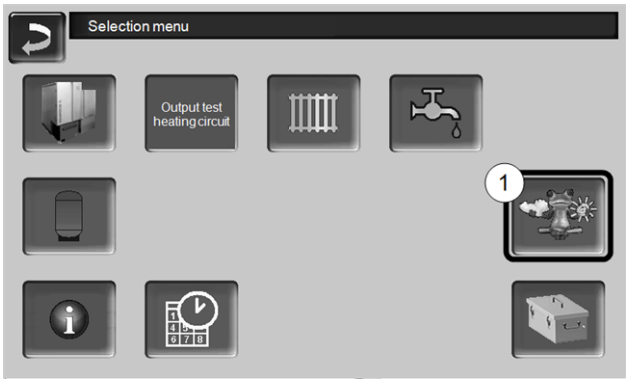


Abb. 2-47_01-132mm-01

Press the button *1* to access the weatherman menu.

If you cannot see the button, check the following (see *mySOLARFOCUS app*, > 29).

- Has your heating system been correctly registered on the SOLARFOCUS web server?
- Is the connection status between the control and the SOLARFOCUS web server *online*?
- Is the *Send data parameter* set to *Yes*?

13.1 Information

The *weatherman information* menu visualises the current weather forecast.

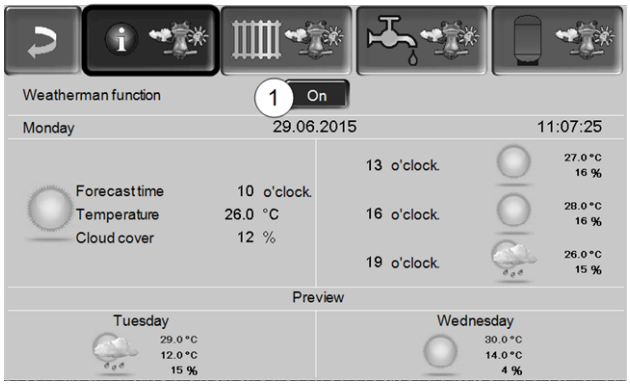


Abb. 2-48_01_121

Weatherman function 1

Off: The weather forecast is shown in the display, but does not influence the control at all.

On: The weather forecast influences the behaviour of the control in the menus

- Heating circuit
- DHW heating
- Buffer tank

The following applies for three menus: The level of influence can be set using the plus/minus buttons on the bars, in 10 % steps,

- 0% means that good weather being forecast has no influence on the control of the heating circuit/domestic hot water/buffer tank charging.
- 100% means a maximum level of influence.

13.2 Heating circuit

This menu *1* is only visible when a heating circuit in the boiler control is enabled.

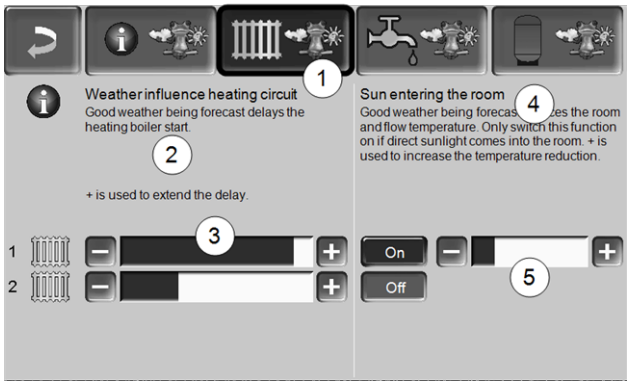


Abb. 2-49_01-122ke

Weather influence heating circuit 2

This area is only visible when the heating circuit obtains its energy from a buffer tank enabled in the control.

Activate the *weather influence heating circuit function* only if the buffer tank is connected to a solar power system.

Good weather being forecast delays the start of the burner in the event of a request from the heating circuit. The bar 3 can be used to set the duration of the request delay for each heating circuit individually.

0% = no delay to burner start.
100% = maximum delay to burner start in the event of good weather being forecast.

If the function delays burner start due to good weather being forecast, then the weatherman icon appears in the main heating circuit menu.

The green column indicates the delay. When 100% is reached, the burner starts.

Solar yield in the room 4

Activate this function only if solar radiation directly influences the heating circuit (e.g. solar radiation through a glass panel).

Good weather being forecast means that

- the flow temperature of the heating circuit is reduced (within the heating period),
- the room temperature is reduced (if the *Room influence* parameter is activated in the heating circuit menu).

The bar 5 can be used to set the temperature reduction for each heating circuit individually.

0% = no reduction in the heating circuit flow temperature, or the room temperature.

100% = maximum reduction in the heating circuit flow temperature, or the room temperature, in the event of good weather being forecast.

Within the heating period, the heating circuit flow temperature is reduced by a maximum of the *reduction* set in the *heating curve* screen.

Within the heating period, the inside setpoint temperature is reduced as a maximum to the inside setpoint temperature reduced mode set in the heating circuit room settings screen.

If the *Solar yield in the room* reduces the temperature (s) due to good weather being forecast, then the weatherman icon appears in the main heating circuit menu.

13.3 Domestic hot water

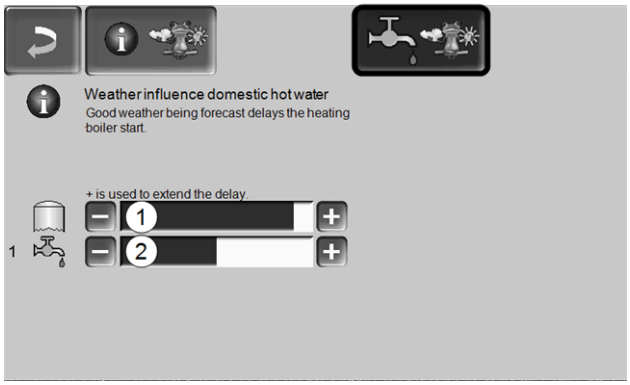


Abb. 2-50_01-123ke

1 DHW range for the boiler **octo** plus
2 DHW tank / domestic hot water area 1 to 4

Activate the *weather influence domestic hot water* function only if the DHW tank/domestic hot water area is heated by a solar power system, or is charged from a buffer tank that is heated by a solar power system.

Good weather forecast delays the start of the burner in the event of a request from the DHW tank/domestic hot water area.

The bar can be used to set the duration of the request delay for each DHW tank/domestic hot water area individually.

0% = no delay to burner start.

100% = maximum delay to burner start in the event of good weather being forecast.

If the function delays burner start due to good weather being forecast, then the weatherman icon appears in the main domestic hot water menu.

The green column indicates the delay. When 100% is reached, the burner starts.

13.4 Buffer tank loading

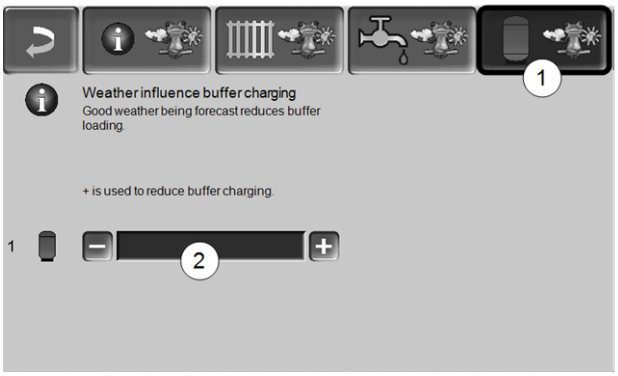


Abb. 2-51_01_124

This menu *1* is only visible when a buffer control in the boiler control is enabled.

In the event of good weather being forecast, the buffer tank is charged for a shorter time within the time release.

The bar *2* can be used to set the level of influence for each buffer tank individually.

0% = if the burner has started and the buffer tank is within a time release, the buffer tank is completely charged. The charge request is fulfilled when the *buffer temperature, lower,* has reached the *maximum buffer temperature, lower* (in the buffer tank main menu).

100 % = if the burner has started and the buffer tank is within a time release, the buffer tank is not completely charged. The charge request is already fulfilled when the *buffer temperature, lower,* has exceeded the *minimum buffer temperature, upper* (in the buffer tank main menu).

14 Maintenance and cleaning

Regular maintenance and cleaning of the heating system are a prerequisite

- for permanently reliable functioning of the boiler,
- for energy-saving and environmentally friendly operation of the boiler,
- for a long service life of the boiler.

Activities required

The implementation responsibility of the maintenance activities is defined according to type and extent (system operator *SO* or qualified personnel *QP*).

Activity	Interval	AB	FP
Empty ash container > 34	upon notification message	X	
Check system pressure > 35	monthly	X	
Clean flue gas pipe > 35	yearly	X	
Check safety valve > 35	yearly	X	
Replace pellet suction turbine > 36	After approx. 1200 operating hours		X
Maintenance by qualified personnel > 36	yearly		X
Perform emissions measurement > 36	as per regional regulations		X

Empty ash box

Information on required emptying of the ash box:

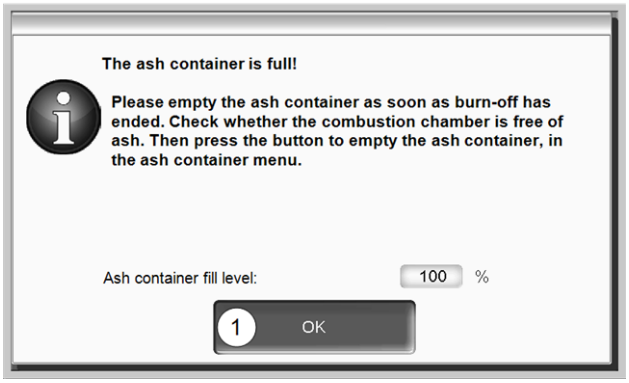


Fig. 2-52

► Wait until the burner switches off (the burner still fulfils its heating requirements, i.e. this can take longer).
► Turn lever *1* to the right until the stop and remove the ash box towards the front.

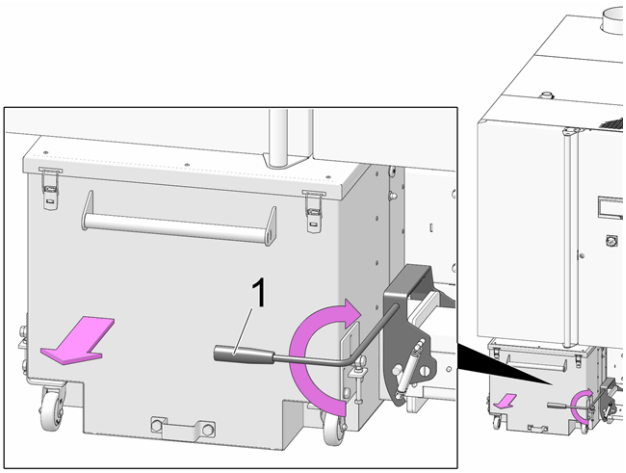


Fig. 2-53

► To avoid ash escaping, loosen the knurled nut *1* and move the slide downwards.
► Open the 4 locking brackets *2* and remove the lid *3* upwards.

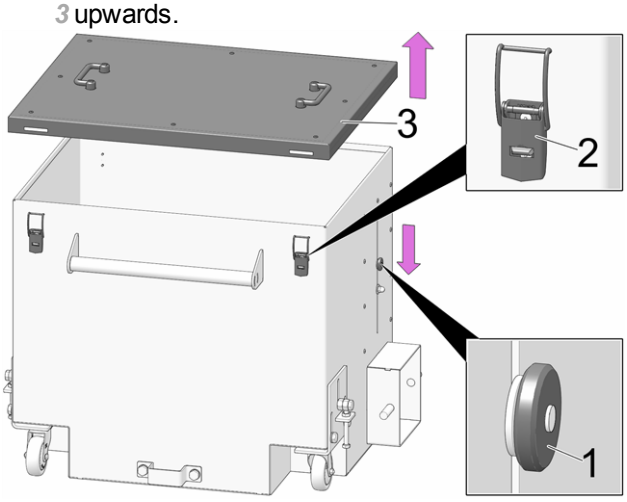


Fig. 2-54

► Empty the ash box.

⚠ **DANGER** - risk of fire due to hot ash self-igniting. Only store removed ash in metal containers with a lid.

► After replacing the emptied ash box, lock the bar again by pulling it forwards.
► Confirm the information message on the display with OK *1*> Fig. 2-52

► Press the *Ash box emptied* *2* button (in the selection menu,ash box button).

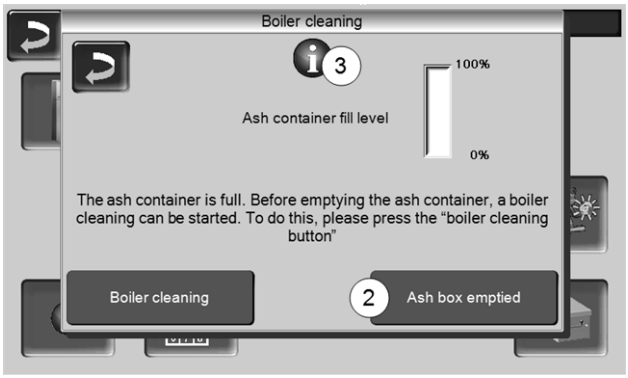


Fig. 2-55

↳ The counter for the ash box fill level is reset to zero.

Note: Press button *3* to open the *Boiler cleaning statistics* screen (shows the time of the last 5 boiler cleanings).

Check system pressure

The water pressure in the heating system can be read on the pressure gauge. As a rule of thumb (for buildings of up to three storeys), the pressure should be 1 to 2 bar for a cold system and 1.5 to 2.5 bar for a hot system.

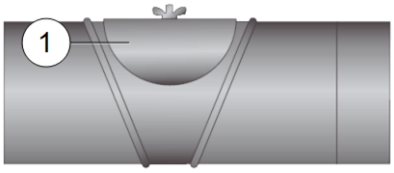
It is important that the pressure remains constant at all times. A constant fall in pressure requires the addition of extra water and indicates a fault in the system (e.g. a leak).

ⓘ TIP: Make a note of the set system pressure during initial commissioning.

Clean exhaust gas duct

The flue pipe is located between boiler and chimney.

► Remove cover *1* in the flue gas pipe.



► Remove combustion deposits (e.g. dust, fly ash) from the pipe.

Check safety valve

Carry out a visual check for leaks at the valve (inspect around outlet of dump hose). Turning the valve cap is not recommended, as the valve may not seal completely afterwards.

Information on safety valve > 6

Replace pellet suction turbine

The suction turbine for conveying the pellets is a wearing part. Depending on the degree of soiling [1] of the suction turbine, the service life of the suction motor carbon brushes is around 450 operating hours for the initial equipment, and another 450 operating hours for the replacement carbon brush set. After approx. 1200 operating hours, we recommend replacing the suction turbine.

[1] The cleaner the working air (air in the pellet hose) and cooling air (ambient air sucked in from the room), the longer the service life of the brushes will be.

Maintenance by qualified personnel

Depending on the operating hours (in each case after 1800 hours, fixed value) or a defined duration (in months), the control shows an indication of the necessary professional maintenance of the boiler.

Contact your heating engineer or the SOLARFOCUS *Service Hotline* > 3

Conclude maintenance contract

By purchasing a boiler maintenance agreement, SOLARFOCUS will manage the annual appointment and contact you directly when a maintenance appointment is due.

15 Perform emissions measurement

- The emissions measurement at the boiler is a legal requirement and must be performed by qualified personnel on a regular basis.
- Contact the competent chimney sweep and your heating installer for more information.
- When performing the emission measurement, the chimney sweep function of the boiler control must be used.

Chimney sweep measurement release

The chimney sweep function is available in the boiler operating mode screen > 14

Notes on chimney sweep measurement release

- May only be performed by qualified personnel.
- Do not open the boiler door during the measurement.
- Ensure sufficient heat removal for the boiler (e.g. energy removal to buffer store or heating circuit).
- The removal of heat is increased by opening the heating circuit mixer and by switching on the heating circuit pumps.

Start of the chimney sweep measurement release

► Press the  button.

↳ The prerequisites for a measurement release are tested.

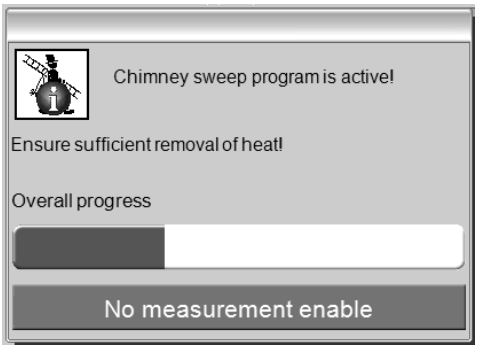


Abb. 2-56_01_101sn

► As soon as *Measurement enable* appears in the status bar, the measurement can be started.

- The chimney sweep measurement release remains active for a period of 40 min., and before this period expires, a message allowing extension of the period by increments of 30 min in each case is displayed.
- To abort the function prematurely, switch to a different boiler mode.

15.1 Emission measurement for external boilers

If necessary, use the menu *output test heating circuit* > 15 to carry out the emission measurement on an external boiler. In this menu, the electrical outputs for the remote boiler, 3-way motor valve as well as for the heating circuit pump and heating circuit can be switched on/off manually.

16 Filling the pellet store

Switch off the boiler before filling

For safety reasons, switch off the boiler 15 min. before filling (blowing in) the pellet store.

By use of the item *House connection box for pellet filling* (item no. 6678) this is done automatically.

17 Troubleshooting

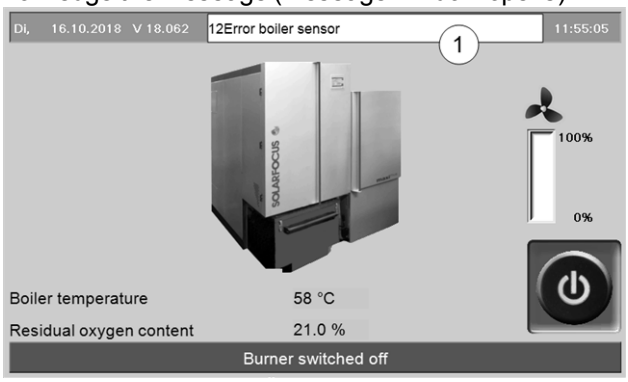
Faults that occur are displayed in an information window in the control and each message is save in the *message log* > 17.

Fig. 2-57: Note window Fault

Handling of messages

- Button *1*: Close window, change to main screen. The fault message remains active, i.e. the burner may not start depending on the type of message.
- Button *2*: Switch to the *message log*
- Button *3*: Acknowledge the message.
  An acknowledgement is only possible if the cause of the fault has been rectified; the burner may then restart after a heating request is received.

An alarm message is visible at the top edge of the main screen until it is acknowledged *1*. Press to acknowledge the message (message window opens)



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Alarm symbol


This symbol indicates an alarm message: The boiler is no longer ready for operation if such a message occurs.

Note symbol:


This symbol indicates an alarm message: The boiler is still ready for operation.

Possible messages:

No.	Message
1	Error in internal memory
2	Feeder sensor short circuit
5	Flue gas temperature too low
	Flue gas sensor interruption
7	Flue gas sensor shows wrong measured value
8	Feeder sensor interruption
9	Flue gas sensor short circuit
10	Factory settings loaded
11	ID fan error
15	Feeder sensor shows the wrong measured value
16	Lambda sensor faulty
17	Boiler sensor defective
19	Extraction auger is blocked
20	First ignition attempt failed
23	SSUE module communication error
24	Overtemperature reset or safety chain has been triggered
25	Power failure detected
26	Mains fuse defective
27	Triac fuse defective
30	Feeder is blocked
31	Heat exchangers are blocked
32	Heat exchangers are blocked
33	Line interruption to feeder motor
35	CAN bus interruption
36	Fuse at fresh water module defective
37	Fuse on module defective
38	Commissioning settings loaded
41	Fuse F1 or F8 defective
46	The ash box is full and must be emptied
47	Note: Maintenance - inspection
51	Battery in operating element is dead
900	Blockage of ash extraction heat exchanger
901	No current flow to ash extraction heat exchanger
902	Blockage of ash extraction burner
903	Electrostatic dust collector warning
904	Thermal contact insertion
905	VFD communication error
906	Primary air damper communication error
907	Secondary air damper communication error
908	Recirculation pump communication error
909	ID fan communication error
910	AC module 1 communication error
911	AC module 2 communication error
912	Supplemental module communication error
913	No extraction current flow 1

No.	Message
914	Extraction 1 blockage
915	Storage room may be empty
916	Relay error AC module 1
917	Filling level sensor error
918	No extraction current flow 2
919	Extraction 2 blockage
920	Relay error AC module 2
921	AGT booster flap communication error
922	Primary air damper blockage
923	Secondary air damper blockage
924	Recirculation flap blockage
925	AGT booster flap blockage
926	Ash extraction heat exchanger end position
927	Combustion chamber sensor interruption
928	Combustion chamber sensor incorrect reading
929	System pressure too high
930	System pressure too low
931	Warning system pressure too low
932	Pressure sensor error
933	Filling level sensor 2 error
934	Direct extraction 1 safety chain
935	Direct extraction 2 safety chain
936	Ignition not possible

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