HARGASSNER
HACKGUT-PELLETS-HEIZTECHNIK MIT ZUKUNFT
A - 4952 Weng OÖ
Tel: +43/7723/5274-0
Fax:+43/7723/5274-5
office@hargassner.at
www.hargassner.at

INSTRUCTION MANUAL

No.31

PELLET BOILERS type Classic 9, 12, 14, 15, 22

with

LAMBDA - HATRONIC from EPROM V 4.0fc

Fuel extraction systems RAS, RAD, RAPS, GWT

HARGASSNER - HEIZTECHNIK - "time tested performance"

A SYSTEM COMBINING THE COMFORT OF OIL HEATING WITH UNMATCHED EFFICIENCY

Inhaltsverzeichnis

Einbaurichtlinien

1. electrical installation:

- The electrical installation must be carried out by a specialist (authorized by the VDE or VOE) and according to the enclosed plan.
- The power must be supplied by a 230VAC/16A polarity proof connector plug (in accordance with machinery safety regulations - MSV). Furthermore, the main switch must be situated in accordance to the buildung code and equipped with a pre-fuse having a max. 16A.

Caution : - Power connectors **L** and **N** must be in proper phase. (see connection scheme)
- Suction hoses have to be earthed. (see sticker)

2. Chimney dimensioning :

- The chimney dimensioning is based on **calculations** (for flue gas parameters see the table)
- For the **initial layout,** a thermally insulated chimney according to DIN 18160 T1 (thermal resistance group 1) or appropriate, authorized and moisture resistant flue gas systems must be used.

PLANT	TYPE	Power KW	Flue gas temp °C	CO^2 %	Mass flow kg / sec	Chimney draught boil. Pa	max. draught Pa	Fire tube diam. m
HARGASSNER	Classic 12	12,00	150	14	0,0066	5	3 - 10	0,130
HARGASSNER	Classic 14	14,90	150	14	0,0079	5	3 - 10	0,130
HARGASSNER	Classic 15	16,80	150	14	0,0081	5	3 - 10	0,130
HARGASSNER	Classic 22	22,00	150	14	0,0121	5	3 - 10	0,130

Standard values for the chimney diameter: (from 6m effective height)
HSV15 = Diameter of 140mm HSV22 = Diameter of 160mm

3. Fire tube design:

The fire tube should be as short as possible, tightly sealed and ascend towards the chimney Moreover, cleaning lids have to be available, in case of longer tubes - thermally insulated.
Draught controller inside the fire tube or chimney (Blowback flap according to building code)
Set-point: 0,1 mbar

4. Installation and set up instructions:

- The Hargassner HSV boilers meet the standards of class 3 systems according to **ÖNORM EN 303-5** as well as the demands of the **15a BVG agreement**. (tested by BLT Wieselburg)
- The commissioning of the heating boiler must be performed in accordance with local building and fire protection regulations as well as general standards and safety regulations for central heating boilers. Moreover, the supply of a sufficient amount of fresh air must be guaranteed (at least 300cm2).
- The fire protection guideline applied in Austria is **TRVB H118 supplemental sheet 029**. The heating systems are subsequently tested in accordance with this guideline (test report #12679). Due to this high standard, there is **no need for a TMS** - temperature monitoring system in the fuel storage room of these heating systems.
- Due to its classification as a "fast shutdown" system (tested by BLT Wieselburg), and in accordance with ÖNORM B 8131 and DIN 4751, it is not necessary **to install a thermal discharge safety device**.
- If the boiler is run without a thermal buffer storage or without a long distance heating pump, the bypass (between flow and return) has to be equipped with a return temperature augmentation pump. If run with a buffer storage, a return mixer or thermal valve has to be installed.
- The hydraulic connection must be installed as shown in the enclosed scheme.

Einbaurichtlinien

5. Safety Guidelines:

- **Caution:** Risk of burns ! Internal parts of the boiler may be hot! (>50°C)
- **Caution:** Risk of being injured by rotating parts! - **cut power supply** before opening the right door or cleaning lids!
- **Caution:** Beware of electrical accidents! - **cut power supply** before opening the switchboard lid or other electrical components.

For safety reasons, the power supply has to be cut before any kind of maintenance work is started, before any sort of covering and plating of electrical and rotating parts is removed, and before entering the fuel extraction area (rotating parts)!

6. Pellets

According to ÖNORM M 7135, pellets are densified shavings from untreated wood.

Heating Value	**4,8kWh/kg**
Density	**650kg/m³**
Water content	**ca.7%**
Ash content	**0,01%**
Diameter	**6mm**
Length	**20 - 40mm**
Dust content	**max.10%**
Space requirement	**0,9m³/kW HL**

Important quality criteria:

- smallest possible dust content
- hard and shiny surface
- made from untreated wood

Caution: Make sure that pellets you buy or receive meet the quality standards as specified in ÖNORM M 7135 or DIN-Plus.

7. Storage Room Requirements:

- absence of humidity
- minium floor space dimensions of 2 x 3m (or larger depending on the heat output)
- injection and extraction couplings for air injection of pellets
- a deflection mat covering the wall that is opposite the injection coupling
- **Caution:** The boiler must be shut down while pellets are being loaded (the mode switch is set to "Off").

Inbetriebnahme

As soon as the boiler has been installed appropriately and all safety systems have been checked, commissioning can be performed using the checklist shown below.

1. Test the function of all electrical devices. Further information regarding this step can be found in chapter: "Manual operation"!

2. With the mode switch set to "Manual", start the automatic pellet delivery by pushing the + button (display No.7 in case of a suction unit (RAS), display No.7a in case of a direct auger (RAD)). The system will deliver pellets to the intermediate bin until it is switched off by the level indicator.

3. Remove the left casing lid, remove the ash box and insert the control sheet instead of the ash box. Now use the + button while display no. 4 is shown in Manual operation mode to deliver pellets until they fall onto the control sheet. Then replace the control sheet with the ash box.

4. With the mode switch either set to "Auto", "HWS" or "Off", you may enter the menu for commissioning settings by simultaneously pushing the + and - buttons. Adjust the settings as described in the corresponding chapter "Commissioning settings".

5. Now turn the mode switch to "Auto" or "HWS". The systen will automatically start up and run according to the chosen mode. Note that the ignition will be delayed for approx. 3 minutes.

default air supply settings: (slide valves above the ash box)

Type HSV 12, 14, 15	- one row of holes is open
Type HSV 22	- all rows of holes are open

CAUTION:

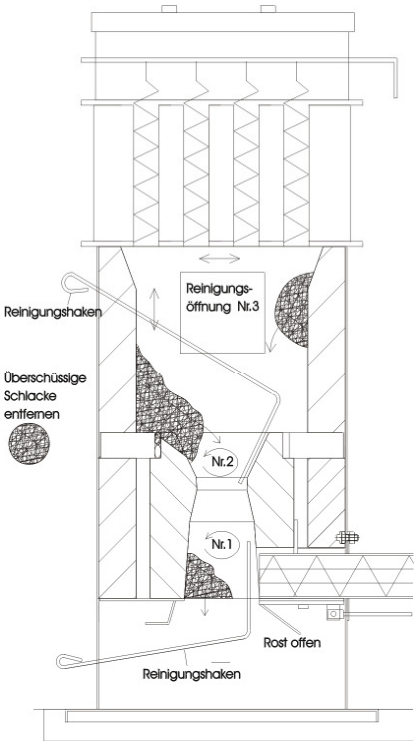
Commissioning must be performed by a technician with a commissioning certificate. Do not forget to return the completed commissioning checklist to company Hargassner within 30 days after commissioning. Note that failing to do so voids all warranty claims!

Wartung und Reinigung

Caution: Safety notice!

For safety reasons, the power supply must be cut before any kind of maintenance work is started, before any sort of covering and plating of electrical and rotating parts is removed, and before entering the fuel extraction area (rotating parts)! Mind protection clothing as the boiler or respective parts of the boiler may still be hot!

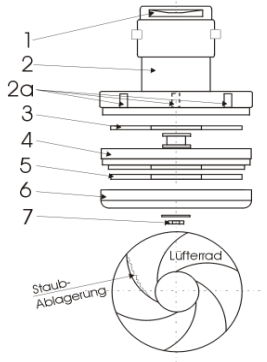
Your boiler is equipped with automatic systems for ash removal and boiler cleaning. All you have to do is to empty the ash box at regular intervals. The control display however will let you know whenever the ash box is almost full. If you forget to remove the ash, the boiler will be switched off after approximately one week and "ash box full" will be displayed. After emptying the ash box, you can clear the fault by pushing Enter.

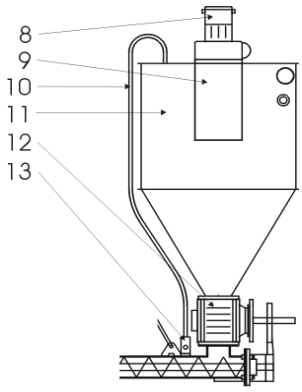


1. After emptying the ash box, open the pusher grate using the + button (in Manual mode while display no. 2 is shown) and use the included cleaning hook to remove slag from the combustion chamber (see no.1 in the illustration) The degree of slagging depends on the pellet quality and chimney draught.
2. Furthermore, use the eyehole to check if the flame is burning out properly. If the combustion chamber outlet (no.2) or the secondary combustion chamber are heavily clogged by slag, unscrew the 4 cap nuts of the front cleaning lid (no. 3) and clean the outlet and the secondary combustion chamber. The degree of slagging depends on the pellet quality and chimney draught.
3. Check the fire tube for slag or clogging material twice per heating season and remove where needed.
4. Even under normal operating conditions, the formation of cracks in the fireclay concrete of the combustion chamber will occur. These cracks are caused by tension and lead to expansion joints. The high combustion temperature sometimes causes particles to be detached from the surface of the secondary combustion chamber. Both of these processes are normal and do not affect the function of the boiler. For this reason neither of them is subject to warranty.

<u>Cleaning the pellet suction turbine</u>: (if present)

Remove the suction turbine no.8 and clean out any dust clogging the grid no.9 at least once a year, depending on the pellets' dust content.
A noisy or sparking turbine usually indicates that the fan wheels (no.3 and 5) are dirty. In this case, the turbine has to be removed, dismantled and cleaned. Doing this should solve the problem.





1. Remove draught fan (no.8) from the cyclone container (no.11) and remove mounting nut no.7. (while holding up fan wheel no.1)
2. Remove both covers no6 and no.4 from the suction turbine casing (no.2). To do so, loosen the covers at all three fixing points no.2a using a screwdriver and remove them.
3. Pull the two covering pieces no.4 and no.6 apart. (loosen them by tapping)
4. Clean deposited white dust off the fan wheels (no. 3 and no. 5)
5. Clean deposited white dust off the grid (no.9)
6. If you find any brown deposits of tar covering either the fan wheel or grid, the reason might be that:
   - suction valve no. 13 is malfunctioning
   - hose no. 10 for the suction valve is not connected
   - the rotary feeder no.12 is leaky

   Replace the defective component or contact our service department.

Jahreswartung / Wartungsvertrag

To allow for best possible performance of your boiler, it is necessary to perform comprehensive maintenance once a year. An appropriate yearly maintenance is guaranteed by closing a

Maintenance Contract:

If you decide to close this contract with us you will benefit from:
EXTENDED WARRANTY, SAFETY, CONSERVATION OF VALUE and REDUCED HEATING COSTS

Your benefits in detail:

- Warranty is extended to **three years** (also covering electric parts).
- Yearly maintenance performed by specialists which will the life time of your heating system far beyond the warranty time.
- monthly inspection of all safety systems in accordance with the fire protection department's guideline TRVB H118, supplemental sheet 29, is necessary unless **yearly inspection is performed by the manufacturer**.
- **Safe operation** during the entire heating season.
- optimized combustion and selective cleaning lead to optimized combustion efficiency and thereby **reduce heating costs**.

Services contained in the contract:

- control and cleaning of the automated boiler cleaning system and the fire tube
- cleaning of the combustion chamber and the primary and secondary airduct
- cleaning of the ignition unit and the fan
- cleaning of the pellet suction turbine and the turbine's grid (if there is one)
- maintenance and lubrication of all drive units
- inspection and adjustment of the pusher grate
- inspection of all safety systems such as the rotary airlock with vacuum valve
- inspection and recalibration of the lambda sensor (if necessary)
- testing for leaks
- if necessary, optimization of control parameters according to special needs of the customer or to used fuel

- inspectios of wear parts
- operation test of the boiler followed by adjustment to reach maximum efficiency using flue gas measurement

Further information and the possibility to obtain a maintenance contract will be provided at commissioning. If not, please order a copy of the maintenance contract from our local representative.

Steuerung - Display

DISPLAY

neues Bild 2

KEYBOARD

Button is used to scroll the display up

Button is used to scroll the display down

Button is used to scroll up a setting or raise the value of a parameter such as time, temperature etc. In manual mode: motors are rotating in forward direction, mixing motors are opened, pumps are switched on, etc.

Button is used to scroll down a setting or lower the value of a parameter such as time, temperature etc. In manual mode: motor are rotating in backward direction, mixing motors are closed, pumps are switched off, etc.

Button is used to show the default display.

Button is used to confirm all parameters after adjustment and to acknowledge errors after troubleshooting.

Button is used to move the cursor left (when setting time and date)

Button is used to move the cursor right (when setting time and date)

Button is used to enable and disable "Manual" mode.

Button is used to check the safety thermostat.

MODE SWITCH

Automatic mode
(for heating circuits and HWS)
The boiler controls heating and domestic hot water demands according to the preset time program and outdoor temperature.

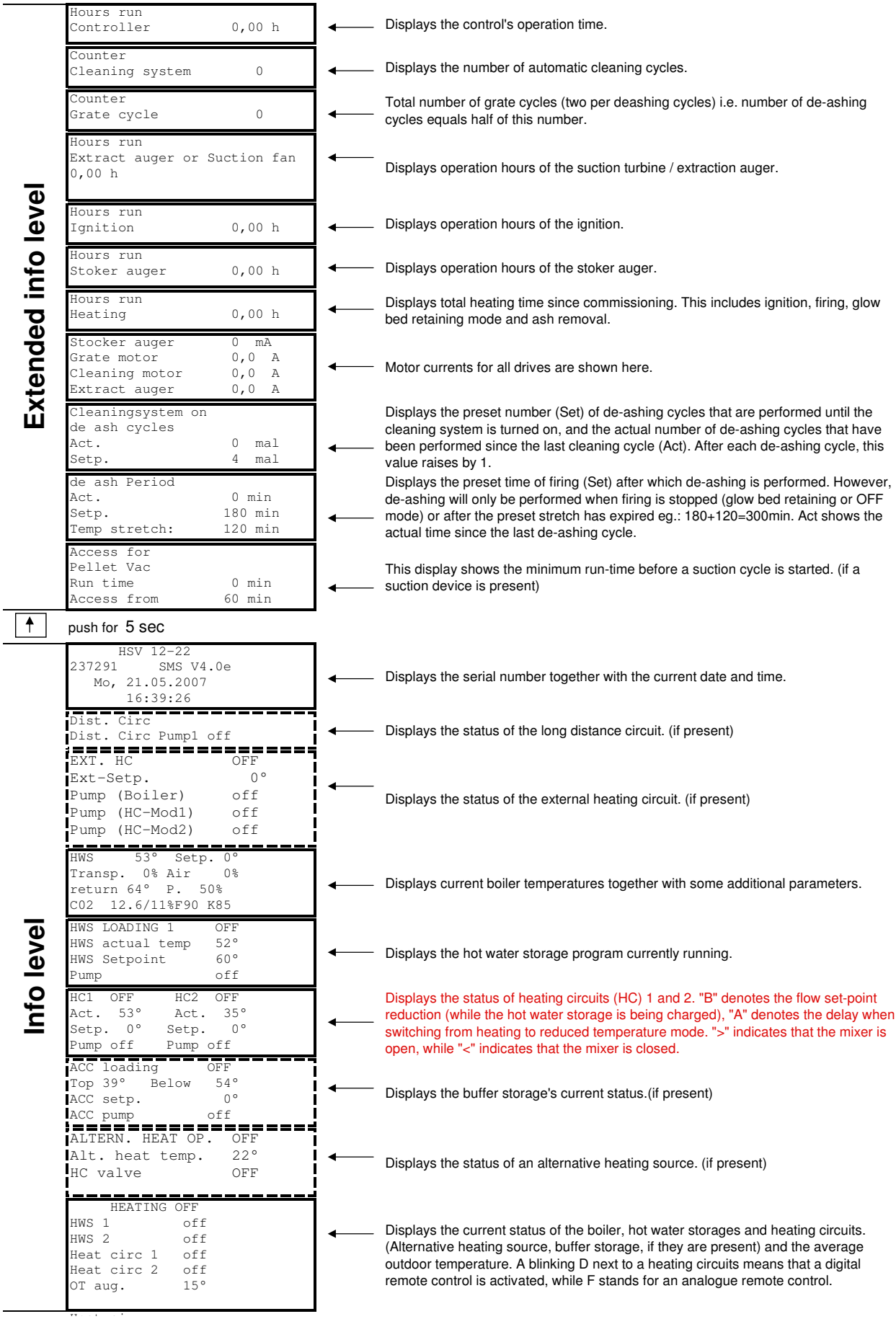
HWS (Hot water storage)
The boiler only controls domestic hot water storage according to the preset time program.

Off
Heating is shut down, frost protection remains active.

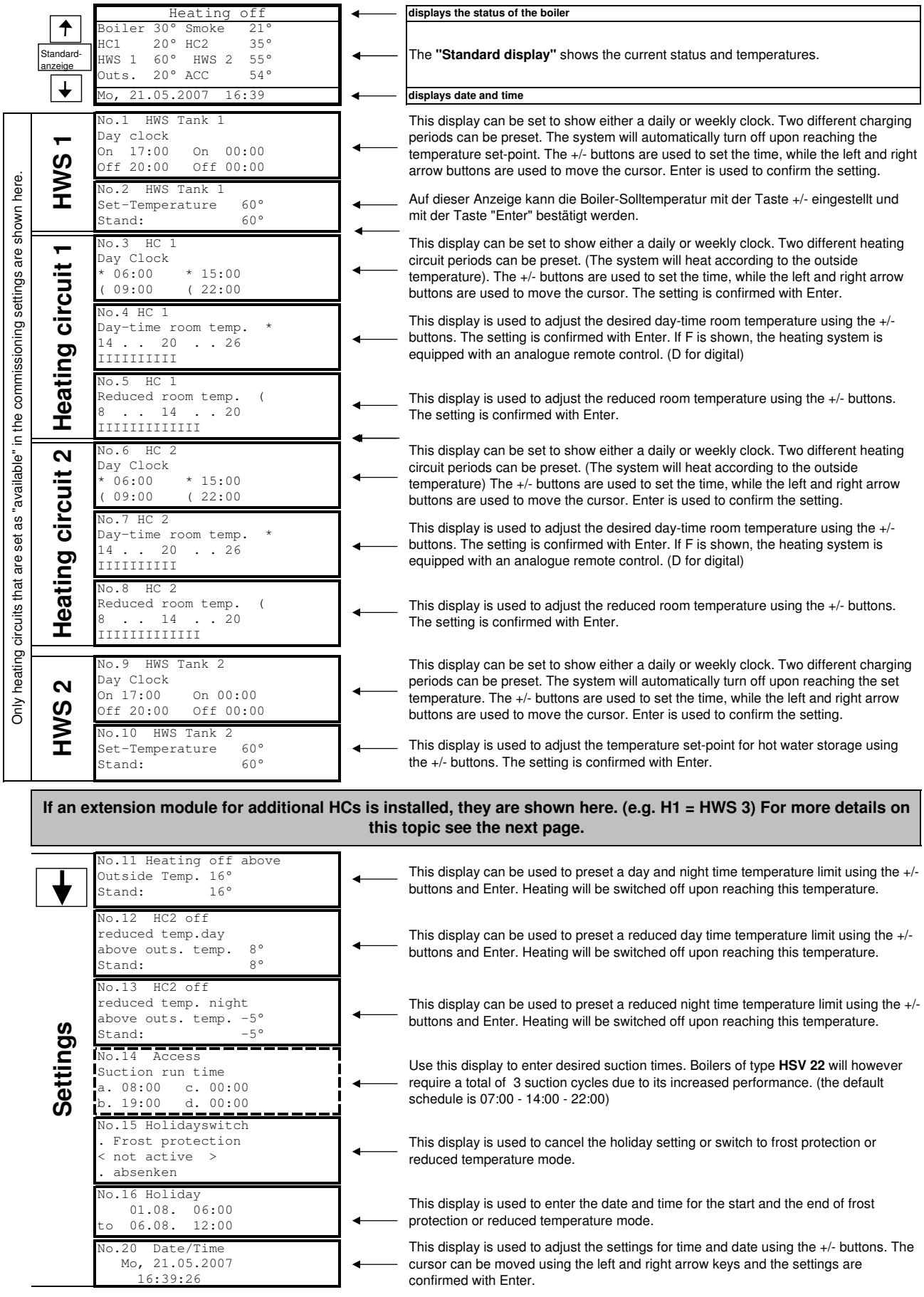
Manual mode
This setting allows for the performance of tests for all electric functions and to manually operate all drives in the case of cleaning, troubleshooting or maintenance.
(See pages 10 and 11)

Adjustment of the display contrast
To increase the display contrast, simultaneously push the + button and the button below the down arrow button. Simultaneously pushing the - button and the button below the down arrow button conversely results in a decrease in contrast. Holding the buttons while increasing the contrast will result in switching to minimum contrast, once the maximum contrast has been reached and exceeded. The same applies for holding the buttons to decrease the contrast. After the minimum setting has been reached, the display will jump to maximum setting. This is to assure that pressing and holding any of the two buttons, + or -, will always make the display readable.

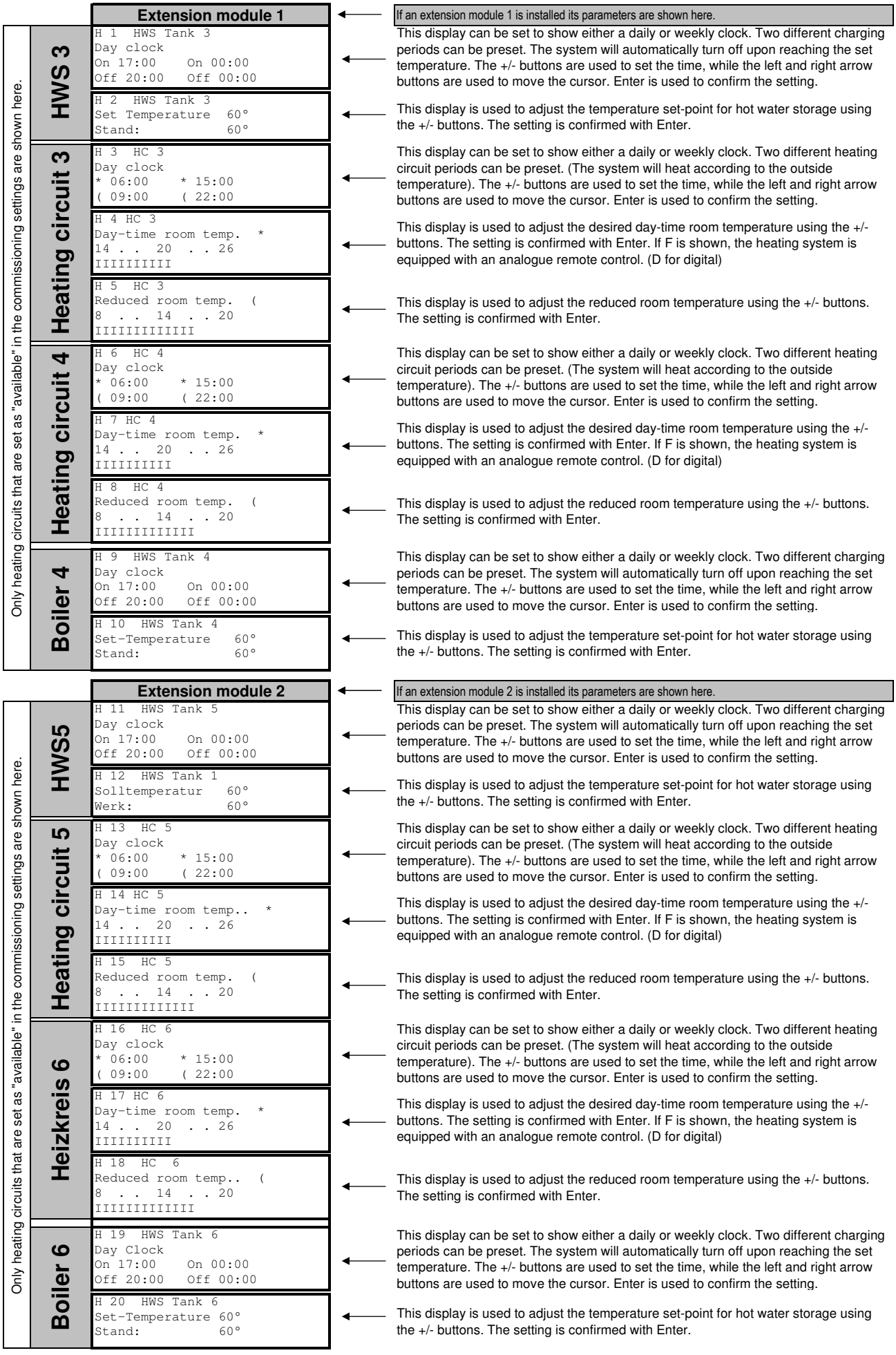
Kunden-Einstellungen



Kunden-Einstellungen



Kunden-Einstellungen



Wahlschalter-Hand

This setting fascilitates the performance of tests for all electrical functions and to manually control all drives in case of cleaning, troubleshooting or maintenance!

Use the up and down arrow buttons to adjust settings!
All functions will only be performed as long as the + or - buttons are pressed.

Manual Operation	**this line will show manual operation.**
No.1 Manual 0,0 A Grate 1x open/Clo. + Key	After cleaning the boiler, perform de-ashing using the pusher grate. Pressing the + button will lead to one pushing cycle of the grate whereby the ash will be pushed into the ash box.
No. 2 Manual 0,0 A Grate Open + Key Closed - Key	Display for testing the function of the pusher grate. Manually move the grate into opened and closed position using the + and - keys.
No.3 Manual 0,0 A Cleaning System Start + Key	Used to test the function of and manually operate the cleaning system. **Caution:** Keep the + button pressed until the grate has fully opened, then cleaning motor starts. When the + button is released, the cleaning motor will proceed to it's final position and the grate closes automatically!
No.4 Manual 0 mA Stoker auger Forward + Key Back - Key	Used to test the function and rotating direction of the stoker auger motor. Manually turn the auger in the forward and backward directions using +/-. Used for filling the auger, the grate will open to avoid overload. **Caution:** Backwards operation will only be possible for a short time!
No.5 Manually Exh. fan Filling levelfull on + Key	Used to test the function of the pellet suction turbine. (if present)
No.6 Manual 0,0 A Extract auger Forward + Key Back - Key	Used to test the function and rotating direction of the extraction auger motor. Manually turn the auger in the forward and backward directions using +/- if stuck or jammed by debris **Caution:** Backwards operation will only be possible for a short time!
No.7 Manual 0,0 A Ex. Auger & Exh. Fan Filling levelfull on + Key	Used to refill the intermediate bin after full restart. **Caution:** The level indicator will turn off the auger automatically. To manually turn it off press the - key. Be aware of the suction turbine's lag! (if it is present)
Nr.7a Hand 0,0 A Direktschnecke füll. Füllstand leer/voll ein + Taste	Used to refill the extract auger manually after a full restart. **Caution:** The level indicator will turn off the auger automatically! To manually turn it, off press the - key. (if there is a direct auger)
No.8 Manually Ignition Heat & Fan + Key Ign fan only - Key	Used to test the function of the ignition fan and heating element. If the fan doesn't start upon pressing the - key, check the connection of the fan following the connection scheme. (Connections might be interchanged)
No.9 Manually Exhaust gas fan on + Key	Used to test the function of the exhaust gas fan. (…induced draught fan)

Wahlschalter-Hand

This setting fascilitates the performance of tests for all electrical functions and to manually control all drives in case of cleaning, troubleshooting or maintenance!

Use the up and down arrow buttons to adjust settings!
All functions will only be performed as long as the + or - buttons are pressed.

No.10 Manually HWS Pump 1 (AT Valve) on + Key	Used to test the function or manually operate hot water storage pump 1. If the heating system is equipped with a thermal buffer storage and intergrated hot water storage, the buffer valve is also connected to this oulet. (See heating circuit scheme)
No.11 Manually HWS Pump 2 Ext/Distr.Heat. Pump on + Key	Used to test the function or manually operate hot water storage pump 2. Optionally, an external pump or district heating pump can be connected or tested here. (See heating circuit scheme)
No.12 Manually HC Pump 1 on + Key	Used to test the function or manually operate heating circuit pump 1.
No.13 Manually Mixing valve 1 Open + Key Closed - Key	Used to test if mixing valve 1 opens when the + button is pressed and closes when the - button is pressed.
No.14 Manually HC Pump 2 on + Key	Used to test the function or manually operate heating circuit pump 2.
No.15 Manually Mixing valve 2 Open + Key Closed - Key	Used to test if mixing valve 2 opens when the + button is pressed and closes when the - button is pressed.
Extension module 1 ←	Can only be tested if extension module 1 is installed!
No.16 Manually HWS Pump 3 on + Key	Used to test the function or manually operate hot water storage pump 3. **Caution:** This outlet is connected with extension module 1. If this module is not connected, the message "extension module 1 not connected/defective" will be displayed.
No.17 Manually HWS Pump 4 on + Key	Used to test the function or manually operate hot water storage pump 4. **Caution:** This outlet is connected with extension module 1. If this module is not connected, the message "extension module 1 not connected/defective" will be displayed.
No.18 Manually HC Pump 3 on + Key	Used to test the function or manually operate heating circuit pump 3. **Caution:** This outlet is connected with extension module 1. If this module is not connected, the message "extension module 1 not connected/defective" will be displayed.
No.19 Manually Mixing valve 3 Open + Key Closed - Key	Used to test if mixing valve 3 opens when the + button is pressed and closes when the - button is pressed. **Caution:** This outlet is connected with extension module 1. If this module is not connected, the message "extension module 1 not connected/defective" will be displayed.
No.20 Manually HC Pump 4 on + Key	Used to test the function or manually operate heating circuit pump 4. **Caution:** This outlet is connected with extension module 1. If this module is not connected, the message "extension module 1 not connected/defective" will be displayed.
No.21 Manually Mixing valve 4 Open + Key Closed - Key	Used to test if mixing valve 4 opens when the + button is pressed and closes when the - button is pressed. **Caution:** This outlet is connected with extension module 1. If this module is not connected, the message "extension module 1 not connected/defective" will be displayed.

Wahlschalter-Hand

This setting fascilitates the performance of tests for all electrical functions and to manually control all drives in case of cleaning, troubleshooting or maintenance!

Use the up and down arrow buttons to adjust settings!
All functions will only be performed as long as the + or - buttons are pressed.

Extension module 2 ← Can only be tested if extension module 2 is installed!

No.22 Manually HWS Pump 5 on + Key	Used to test the function or manually operate hot water storage pump 5. **Caution:** This outlet is connected with extension module 2. If this module is not connected, the message "extension module 2 not connected/defect" will be displayed.
No.23 Manually HWS Pump 6 on + Key	Used to test the function or manually operate hot water storage pump 6. **Caution:** This outlet is connected with extension module 2. If this module is not connected, the message "extension module 2 not connected/defective" will be displayed.
No.24 Manually HC Pump 5 on + Key	Used to test the function or manually operate heating circuit pump 5. **Caution:** This outlet is connected with extension module 2. If this module is not installed, the message "extension module 2 not connected/defective" will be displayed.
No.25 Manually Mixing valve 5 Open + Key Closed - Key	Used to test if mixing valve 5 opens when the + button is pressed and closes when the - button is pressed. **Caution:** This outlet is connected with extension module 2. If this module module is not installed, the message "extension module 2 not connected/defective" will be displayed.
No.26 Manually HC Pump 6 on + Key	Used to test the function or manually operate heating circuit pump 6. **Caution:** This outlet is connected with extension module 2. If this module is not connected, the message "extension module 2 not connected/defective" will be displayed.
No.27 Manually Mixing valve 6 Open + Key Closed - Key	Used to test if mixing valve 6 opens when the + button is pressed and closes when the - button is pressed. **Caution:** This outlet is connected with extension module 2. If this module is not connected, the message "extension module 2 not connected/defective" will be displayed.
No.28 Manually Boiler circulation or AT Pump on + Key	Used to test the function and manually operate the return shunt pump or buffer storage pump.
No.29 Manually HC valve on + Key	Used to test the function or to manually operate the heating circuit valve for switching from boiler to buffer storage or from boiler to an alternative heat source.
No.30 Manually Fault light / Ex./Distr.Heat.Pump on + Key	Used to test the function or manually operate the fault light. An external or long distance heating pump can be connected and tested here as well. (See heating circuit scheme)
No.34 Manually Lambda Sen. 70.0mV Boiler cold Test Start + Key	Used to test the function of the lambda sensor. (only for boilers with a lambda sensor) When the + button is pushed, the displayed current should reach a value of around -10mV within approximately 5 minutes. Values between -5 and -15 mV will be okay. If the values are not within this range, a malfunction or incorrect connection of the sensor will be indicated. In the case of a calibrated sensor, the correction value will be displayed. Caution: the boiler needs to be cold (exhaust temp. < 50°C)

ausgebrende t

Wahlschalter-Hand

This setting fascilitates the performance of tests for all electrical functions and to manually control all drives in case of cleaning, troubleshooting or maintenance!

Use the up and down arrow buttons to adjust settings!
All functions will only be performed as long as the + or - buttons are pressed.

```
No.40  Manually
Boiler sensor      64°
Exh. Gas sensor   148°
External Sensor    -4°
```

Used to test the function of the temperature sensors by comparing the displayed values to actual values.
Display: blank indicates the sensor is not connected
Display: - - - indicates the sensor sensor is short circuited

```
No.41  Manually
AT/alt. Heat.   54°
HWS 2/Buffer     2
or ATW     Off
```

Used to test the function of the temperature sensors and the exhaust temperature sensor by comparing the displayed to actual temperature.
Display: blank indicates the sensor is not connected
Display: - - - indicates the sensor is sensor short circuited
The bottom line either shows the temperature of HWS 2, Buffer 2 or the exhaust temperature sensor, while On indicates closed and Off indicates open.

```
No.43  Manually
HWS sensor 1   52°
HWS senosr 2   48°
```

```
No.44  Manually
HC1-sensor      53°
HC2-sensor      35°
```

Used to test the function of the temperature sensors by comparing the displayed values to actual values.
Display: blank indicates the sensor is not connected
Display: - - - indicates the sensor is sensor short circuited

```
No.45  Manually
Remote cont. 1
Remote cont. 2  18°
```

Used to test the function of the remote control system. In the case of a **digital remote control**, the status (Off, Night (Moon), Auto or Day (Sun)) is shown. In the case of an **analogue remote contro**l with room sensor, the displayed temperature can be compared to the actual temperature
Function check of an **analogue remote control w/o room sensor** Display: 21° indicates being set to a fixed resistance valuet
Display: blank indicates the sensor is not connected
Display: - - - indicates the sensor sensor is short circuited
Caution: if the FR25 remote control is used, the mode switch has to be set to "clock".

Extension module 1 ← Can only be shown if extension module 1 is installed!

```
No.46  Manually
HWS sensor 3   52°
HWS sensor 4   48°
```

```
No.47  Manually
HC3-sensor      53°
HC4-sensor      35°
```

Used to test the function of the temperature sensors by comparing the displayed and actual temperatures.
Display: blank indicates the sensor is not connected
Display: - - - indicates the sensor sensor is short circuited

```
No.48  Manually
Remote cont. 3  22°
Remote cont. 4  18°
```

see description no. 45 about testing the remote control's function

Extension module 2 ← Can only be shown if extension module 2 is installed!

```
No.49  Manually
HWS sensor 5   52°
HWS sensor 6   48°
```

```
No.50  Manually
HC5-sensor      53°
HC6-sensor      35°
```

Used to test the function of the temperature sensors by comparing the displayed and actual temperatures.
Display: blank indicates sensor is not connected
Display: - - - indicates sensor sensor is short circuited

```
No.51  Manually
Remote cont. 5  22°
Remote cont. 6  18°
```

see description no. 45 about testing the remote control's function

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

Commissioning level Param. Acc.to Heating schematic and instruction man start from No 11 ↓ o the parameters	You've now accessed the commissioning level setting. Before commissioning the boiler, all values have to be approved by a certified installer and adjusted in agrrement to the according heating scheme. To do so, use the down arrow button to change the parameter display, then adjust values using the + and - buttons and confirm with Enter.
No.A1 HC 1 pump only < with mixer motor > on motherboard	3 available settings: Heating circuit not available Heating circuit with pump only Heating circuit with pump and mixer Parameters A2 -A9 are not shown, if the "not available" option has been
No.A2 HC 1 Inclination 1.60 Stand: 1.60	Adjustment range: 0,2...3,5 Describes the relationship between the change of flow tempreature and the change of outside temperature. (see heating characteristics). Recommended settings: Floor heating 0,3...1,0 Radiation heating 1,2..2,0 Convection heating 1,5...2,0 The adjustment should only be carried out in small steps and over a long period of time.
No.A3 HC 1 Flow Temperature Minimum 30° Stand: 30°	Adjustment Range: 1...80°C Lower limit for the flow temperature of heating circuit 1.Lower limit for the flow temperature of heating circuit 1.During heating or reduced temperature periods the flow temperature won't fall below this limit.
No.A4 HC 1 Flow Temperature Maximum 70° Stand: 70°	Adjustment Range: 1...95°C Upper limit for the flow temperature of heating circuit 1. During heating or reduced temperature periods the flow temperature won't exceed this limit. **Be cautious when using floor heating systems!** To avoid overheating, a special electro-mechanical thermostat capable of cutting the power supply of the according heat circuit pump has to be installed!
No.A5 HC 1 Run-time mixer 90s Stand: 90s	Adjustment Range: 10...300s The actual mixer run-time - that is the period between the closed and opened state - has to be adjusted here. (check the type plate)
No.A6 Remote HC1 FR30 remote contr. < not available > FR25 roomsensor	4 available settings - digital remote control FR30 - heating circuit without remote control - heating circuit with remote control FR25 but without a room temperature sensor (therefore no temperature adjustment - use clamps 1 and 3 for wiring) - heating circuit with remote control FR25 and a room temperature sensor (automatic temperature adjustment - use clamps 1 and 2 for wiring)

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

```
No.A7 HC 1
 <no dist. pump>
  with dist.Heat. 1
```

You may specify here, if there is a long distance heating pump. However, the long distance heating pump will only work if one of it's associated pumps is running.

```
at solar ACC
No.A8 HC 1

<Summer heating off>
 Summer heating on

at switch HWS
```

Activate the (summer time) solar heating mode for the respective heating circuit. The heating circuit will be switched on (in accordance with a specified time scheme), as soon as the buffer storage's temperature exceeds a certain level. Caution: This will only work if a solar buffer storage is present and the mode switch is set to "HWS".

```
Floor drying func.
No.A9 HC 1

<Floor heating off>
 Floor heating on

Switch HWS/Auto
```

Activate the floor dry-out heating mode using this option. After this option is set to "Floor dry-out on", a number of additional options (A9a-A9f) can be adjusted. When done, set the mode switch to "Auto" or "HWS" to start the program.

parameters A9a - A9f are not shown when this option is set to "off"

```
No.A9a  HC 1
Flow setp. Start/stop
                20°
Stand:          20 °
```

Adjustment range: 10-30°C

Start and end temperature for the floor dry-out program.

```
No.A9b HC 1
Flow setp. increase
                 5°
Stand:           5°
```

Adjustment range: 1-10°C

Temperature rise after the period specified in A9c has expired.

```
No.A9c Incr../Reduce
< Every day >
 after 2 days
 after 3 days
 after 4 days
 after 5 days
```

The flow temperature will be raised by the amount specified in A9b after the period chosen here has expired. While cooling down, the temperature will be decreased by the amount specified in A9f during this period.

```
No.A9d HC 1
Flow set point max.
                45°
Stand:          45°
```

Adjustment range: 25-60°C

Upper limit for the flow temperature.

```
No.A9e  HC 1
Flow set point max.
Holding temp.        1T
Stand:  1T
```

Adjustment Range: 0-20 days.

Specify the period during which the maximum flow temperature specified in A9e will be held.

```
No.A9f  HC 1
Flow setp. Reduct.
                10°
Stand:          10°
```

Adjustment range: 1-10°C

Temperature reduction after the period specified in A9c has expired.

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

No.A11 HC 2 pump only with mixer motor on motherboard	3 available settings: Heating circuit not available Heating circuit with pump only Heating circuit with pump and mixer Parameters A2 -A9 are not shown, if the "not available" option has been chosen.
No.A12 HC 2 Inclination 1.60 Stand: 1.60	Adjustment range: 0,2...3,5 Describes the relationship between the change of flow tempreature and the change of outside temperature. (see heating characteristics). Recommended adjustment: Floor heating 0,3..1,0 Radiation heating 1,2..2,0 Convection heating 1,5.. 2,0 The adjustment should only be carried out in small steps and over a long period of time.
No.A13 HC 2 Flow Temperature Minimum 30° Stand: 30°	Adjustment Range: 1...80°C Lower limit for the flow temperature of heating circuit 1. During heating or reduced temperature periods the flow temperature won't fall below this limit.
No.A14 HC2 Flow Temperature Maximum 70° Stand: 70°	Adjustment Range: 1...95°C Upper limit for the flow temperature of heating circuit 1. During heating or reduced temperature periods the flow temperature won't exceed this limit. **Be cautious when using floor heating systems!** To avoid overheating, a special electro-mechanical thermostat, capable of cutting the power supply of the according heat circuit pump has to be installed!
No.A15 HC 2 Run-time Mixer 90s Stand: 90s	Adjustment Range: 10...300s The actual mixer run-time - that is the period between closed and opened state - has to be adjusted here. (check the type plate)
No.A16 Remote HC2 FR25 no room sensor FR25 room sensor	4 available settings - digital remote control FR30 - heating circuit without remote control - heating circuit with remote control FR25 but without a room temperature sensor (therefore no temperature adjustment - use clamps 1 and 3 for wiring) - heating circuit with remote control FR25 and a room temperature sensor (automatical temperature adjustment - use clamps 1 and 2 for wiring)
No.A17 HC 2 <no dist. pump> with dist.Heat. 1	You may specify here if there is a long distance heating pump. However, the distance heating pump will only work if one of it's associated pumps is running.

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

at Solar ACC No.A18 HC 2 <Summer heating off> Summer heating on at switch HWS	see HC1
Floor drying func. No.A19 HC 2 <Floor heating off> Floor heating on Switch HWS/Auto	see HC1
No.A21 HC 3 <not available > pimp only with mixer motor on HC module 1	see HC1 This option is only available if extension module 1 has been installed. (if not, an error message will tell you that a extension module is not available) Parameters A22 -A29 are not shown, if the "not available" option has been chosen.
No.A31 HC 4 <not available > pump only with mixer motor on HC module 1	see HC1 This option is only available if extension module 1 has been installed. (if not, an error message will tell you that a extension module is not available) Parameters A32 -A39 are not shown, if the "not available" option has been chosen.
No.A41 HC 5 <not available > pump only with mixer motor on HC module 2	see HC1 This option is only available if extension module 2 has been installed. (if not, an error message will tell you that a extension module is not available) Parameters A42 -A49 are not shown, if the "not available" option has been chosen.
No.A51 HC 6 <not available > pump only with mixer motor on HC module 2	see HC1 This option is only available if extension module 2 has been installed. (if not, an error message will tell you that a extension module is not available) Parameters B52 -B59 are not shown, if the "not available" option has been chosen.
No.B1 HWS Tank 1 <available > not available on motherboard	Set this option to not available if hot water storage 1 is not installed. Control for hot water storage 1 will be locked. Parameters B2 - B7 are not shown, if the "not available" option has been chosen
No.B2 HWS Tank 1 HWS Temperature Switch Differ. 6° Stand: 6°	Adjustment range: 1...40° Start of charging: When the temperature falls below the specified value (minus tolerance level). End of charging: As soon as the temperature reaches the set limit (customer setting). However, charging will only take place during specified periods (customer setting)
No.B3 HWS Tank 1 HWS Temperature Minimum 40° stand: 40°	Adjustment range: 1...80° If during the time specified in B9, the temperature falls below this level, the hot water storage tank will be charged, regardless of the according time program.

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

Legionaire prot B1 No.B4 HWS Tank 1 <Leg. Protect. off> Leg. Protect.on	Activation of legionella protection. See options B5 and B6.
Legionaire prot B1 No.B5 HWS Tank 1 Leg. Protect. Set-Temperature 70° Stand: 70°	Adjustment range: 10-75°C A date and time for running the legionella protection heating program (T=70°C as set in B5) may be specified with parameter B6. Make sure to choose the heating period matching the charging times. **Caution:** Make sure not toset the temperature level too high, so as to avoid long heating periods and risk of burning if warm water is let out.
Legionaire prot B1 No.B6 Start-Time B1 Mo -- -- -- -- -- -- a. 17:00 c.00:00 b. 00:00 d.00:00	
No.B7 HWS Tank 1 <no dist.pump> with dist.Heat.1	You may specify here if there is a long distance heating pump. However, the distance heating pump will only work if one of it's associated pumps is running.
No.B11 HWS Tank 2 available < not available > External pump Distr. Circ.pump 1 on motherboard	The default setting for this option is "not available" for systems without a second hot water storage tank. If instead of a second tank an external pump or long distance heating pump is installed instead, this has to be specified here. Parameters B11 or C7 are available for the external pump or long distance heating pump, depending on which of the outlets is not in use. Parameters B12 - B17 are not shown, if the "not available" option has been chosen
No.B21 HWS Tank 3 available < not available > on HC module 1	see HWS tank 1 This option is only available if extension module 1 has been installed. (if not, an error will tell you that an extension module is not available) Parameters B22 - B27 are not shown, if the "not available" option has been chosen
No.B31 HWS Tank 4 available < not available > on HC module 1	see HWS tank 1 This option is only available if extension module 1 has been installed (if not, an error will tell you that an extension module is not available) Parameters B32 - B37 are not shown, if the "not available" option has been chosen
No.B41 HWS Tank 5 available < not available > on HC module 2	see HWS tank 1 This option is only available if extension module 1 has been installed. (if not, an error will tell you that an extension module is not available) Parameters B42 - B47 are not shown, if the "not available" option has been chosen
No.B51 HWS Tank 6 available < not available > on HC module 2	see HWS tank 1 This option is only available if extension module 1 has been installed. (if not, an error will tell you that an extension module is not available) Parameters B52 - B57 are not shown, if the "not available" option has been chosen
No.B90 Access all HWS temp. minimum On 06:00 Off 22:00	If during this time the temperature of the hot water storage falls below a specified level (default=40°C), it will be charged to that level, regardeless of the preset time program.

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

```
No.C1 Pump select
  Kessel Zirk. Pumpe
< not available>
  Buffer pump + 1 sens.
  Buffer pump + 2 sens.
```

3 available settings in accordance with the **HEATING SCHEME**
Set to **not available** if neither a Circulation pump nor a buffer pump are installed. (default setting)

A boiler circulation pump is **not needed** for pellet boilers of type Classic 9-22!

Buffer pump + 1sens.: Necessary in the case of a system according to buffer scheme HP3 including a buffer discharging control.

Buffer pump + 2sens.: Necessary in the case of a system according to buffer scheme HP4 including a buffer discharging and charging control.

(see heating and buffer scheme)

```
No.C2 ACC/ext. Heat.
< not available >
  ACC HWS integrated
  ACC HWS external
  Ext. Heat sol.fuel.
  Ext. Heat Oil/Gas
```

4 available settings in accordance with the **HEATING SCHEME**
Set to **not available** if neither a thermal buffer storage nor external heating are being used. (default)

set to **ACC + HWS** integrated if a buffer storage with an integrated hot water storage is installed. (internal heating coil or external heat exchanger)

set to **ACC+ HWS external i**f a buffer storage with a separated hot water storage is installed. (set to ACC+HWS-int. if the buffer and hot water storage are connected with a differential control)

set to **Ext. heat solid** if the alternative heat source is a solid fuel boiler.

set to **Ext. heat oil/gas** if the alternative heat source is an oil/gas boiler.

```
No.C4 ACC loading
ACC
Set-Temperature  60°
Stand:   60°
```

Only shown if C1 is set to ACC pump + 2 sens.
Adjustment range: 20-80°C
In case of an ACC with 2 sensors, the buffer will always be charged to temperature set here. In this case C4=60°C, i.e. the lower temperature limit represented by sensor 2.

```
No.C5 ACC-
loading time
ON  00:00  On  00:00
Off 00:00  Off 00:00
```

Used to specify a constrained charging period during which the temperature specified in C4 will be held. Can be used to cover peak demands, for example in the morning. (e.g. 04:00 - 10:00).

```
No.C6  Boiler
ext. Heating Circuit
Set-Temperature   60°
Stand:            60 °
```

Adjusting range: 1°...84°
Set-point boiler temperature during times when the external heating circuit is active. If this value is being adjusted, the corresponding service level parameter no.L5 (ext. Heating pump access temp.; default=60°C) has to be adjusted accordingly.

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

```
No.C7
 <Faul light>
  External pump
  dist.Circ. Pump 1
```

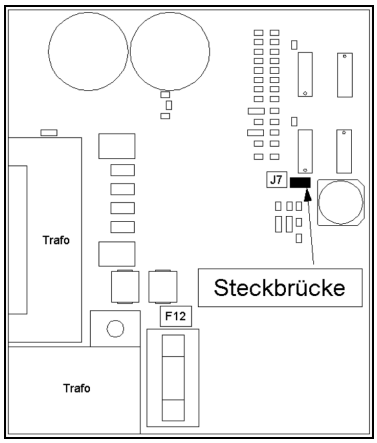
By default, this outlet is assigned to the fault light. Parameters B11 (HWS 2) or C7 (Fault light) are available for an external or long distance heating pump, depending on which of the both is not used.

1.Fault Light: Is lit when any sort of error occurs.

2.External HC Pump:
(Remove plug J7 from the board, see scheme)
Using the port for "external heating circuit", the boiler will be heated until the temperature specified in C6 (default=60℃) is reached.
The pump for the external heating circuit will switch on when the boiler temperature matches the release value (L5), which is 50℃ by default.

3.Long distance heating pump:
(Remove plug J7 from the board, see scheme)
The distance heating pump will operate when one of the heating circuit or HWS pumps assigned to "long distance circuit" are running.

Skizze Steckbrücke :



An "EXTERNAL HC" can be used without assigning a pump for it.
To do so, connect clamps 19 and 21 to the external contact point. When initially connected, the external HC display will come up automatically.

```
No.C8 External HC
 <no dist. pump>
  with dist.Heat. 1
```

Shows if the long distance heating pump is assigned to the external heating circuit.
The pump will only operate however, if one of the assigned pumps is running.

```
No.D1  Operat. mode
Auger directly
<single pt. suctiono>
Auger+ resevoir
```

Used to choose between different modes of pellet loading
= intermediate bin loaded manually
= intermediate bin loaded by extraction auger and suction turbine
= plant loaded by a direct extraction auger
= intermediate bin loaded using punctual suction
= intermediate bin directly loaded by the extraction auger

```
No.D2  Frost protect
Pump on below
Outside temp.     1°
Stand:   1°
```

Value range: -30°...+20°
If the outside temperature falls below this value, all HC pumps will be started and and heating circuits with a mixer will be adjusted to the temperature specified in E2.

```
No.D3  Frost protect  Flow-
Set-Temperature    7°
Stand:   7°
```

Value range: 1°...30°
If the mode switch is set to Off or HWS and either the flow temperature (in the case of a heating circuit or mixer) or boiler temperature under-run this value by 3℃, the frost protection program will start automatically.

```
No.D4
< without Lambda  >
   with Lambda
```

Choose if the boiler will be operated with or without a lambda sensor. (This can be useful if the lambda sensor is defective)

```
No.D5  Changeover
Daytime temp.reduct.
On 06:00
Off 22:00
```

Specifies the times when changeover from day time to reduced temperature mode will be performed.

Installateur-Einstellungen

commissioning Settings: simultaneously press the [+] and [-] buttons for 3 sec.

No.D6 Access De-ash/clean On 06:00 Off 22:30	Used to specify during which time de-ashing and automatic cleaning will be performed. (to avoid irritation by noise)
No.D7 HC 1-6 Summer shutdown delay tine 120min Stand: 120min	Value range: 0...240 min Summer shutdown: Heating will be shut down if the outside temperature under-runs the corresponding value (Nr.11) for the duration specified here. Delay time = time before the temperature reduction phase starts.
No.D8 Summer time no switch over <autom. Switch over>	Choose if summer time switchover should be performed automatically.
No.D9 day/week time <day clock> Weekly clock HC+HWS Week clock	Choose whether a day clock or weekly clock are shown in the customer level interface. Use + and - to choose an option and confirm the setting with Enter. **Day clock:** HCs and HWS set to day clock **Weekly clock:** HCs set to weekly clock, HWS to daily **HC+HWS week clock:** Both circuits set to weekly clock
No.D10 Number of blocks Weekly clock 2 Stand: 2	Value range 1...7 Choose how many different blocks for the weekly clock can be specified by the customer. z.B.. HC1 using 2 blocks : 3a.Heating Circuit 1 — 3b. Heating Circuit 1 MO TU WE TH FR SA -- — --- --- --- --- --- --- SU * 06:00 * 15:00 — * 06:00 * 00:00) 09:00) 22:00 —) 22:00) 00:00 Block a will be active monday to saturday from 6:00 to 9:00 and 15:00 to 22:00 while block b will be active on sundays from 6:00 to 22:00. The left and right keys are used to browse through the weekdays. Weekdays can be enabled with + and disabled with -. To choose between times, again use the left and right keys and perform adjustment of the values using + and -. Confirm settings with Enter.
No.E1 Language < german > French Italian	Specify your language here.

Finish by pressing the Standard button when finshed with all settings adjustements.

Installateur-Einstellungen

DESCRIPTION OF CONTROLS

CHARGING OF THE HWS TANK

Charging of the hot water storage (HWS) will only be active when the mode switch is set to HWS or Auto and the respective HWS has been set to "available" in the commissioning level settings. Furthermore there is a distinction between normal charging during the specified period and minimum charging. During normal mode, charging will be controlled and started when the set temperature (default = 60°C) taking into account a certain tolerance range (zB. : 60-6=54°C) is being under-run. It makes sense to charge the HWS only once a day, eg. to choose a charging time in the morning or evening. If it turns out that a single loading cycle does not cover the hot water demand, additional charging cycles should be added. The minimum charging will however avoid that no warm water is available by starting HWS charging when the minimum temperature set-point (default = 40°C) is being under-run. . Moreover, charging will be started in chimney sweep mode and will be inactive during holiday periods. If no further heating circuit is active after charging, excess heat will be used in the HWS.

LEGIONELLA PROTECTION

If the legionella protection program is active, day and temperature levels for every HWS can be defined separately, using the paramater "legionella protection". By default, legionella protection at a temperature of 70°C will be performed on Mondays at 17:00. Make sure not to set the temperature level too high, so as to avoid long heating periods and risk of burning if warm water leaks from the HWS.

HEATING CIRCUIT CONTROL

Heating circuit control will only be active in "Auto" mode when the respective heating circuit has been set to "available" in the commissioning level. Several different modes (heating, reduced temperature, off) will be run depending on the outside temperature, the necessity of frost protection and the time programs specified in the commissioning settings. In addition, to that all, heating circuits will be active in chimney sweep mode and will be inactive during holiday periods.

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Heating: In this mode, the flow temperature will be calculated based on the oustide temperature, desired room temperature in heating mode and inclination (see flow temperature calculation). The boiler will perform heating until the calculated temperature has been reached. In case of a heating circuit with a mixer, the set-point will be raised by a certain amount. (default=10℃)

Reduced Temperature: In this mode, the flow temperature will be calculated based on the outside temperature, desired room temperature in reduced temperatur mode and inclination.

Changeover from heating to reduced temperature: In this mode, the flow temperature will be reduced gradually from heating mode to reduced temperature mode.

Outside temperature shutdown: There are three different modes for outside temperature shutdown, depending on the active heating program and the time.

During heating mode, heating will be stopped when the averaged outside temperature exceeds the setpoint specified as no.11=16℃.

During daytime reduced temperature mode, heating will be stopped when the averaged outside temperature exceeds the set-point specified as no.12=8℃.

During nightime reduced temperature mode, heating will be stopped when the averaged outside temperature exceeds the set-point specified as no.13=-5℃. aus. Summer shutdown:

Even if the averaged outside temperature falls below the set-point for summer shutdown, heating will only be restarted if the limit is under-run for a specified time (D7=120min)

DAYTIME ROOM TEMPERATURE

Installateur-Einstellungen

(Customer settings No.4,7, H4, H7, H14,H17) This display is used to adjust the desired day time room temperature between 14 and 26℃. The centre position means a setpoint of 20℃. To allow for a consistent room temperature - regardless of the outside temperature conditions - an accurate adjustment of the heating characteristics and appropriate dimensioning of the heating system in accordance with the underlying heat demand calculation are needed.This set-point is valid for directly controlled heating circuits and additional mixed circuits. Adjustments of this set-point should only be carried out in small steps and after an interval of 2-3 hours.

Default setpoint = 20℃

Installateur-Einstellungen

REDUCED TEMPERATURE SET-POINT

(Customer settings no.5, 8, H5, H8, H15 and H18) These displays can be used to adjust the desired room temperature during reduced temperature mode. Values may range between 8 and 20°C. To allow for a consistent room temperature - regardless of the outside temperature conditions - an accurate adjustment of the heating characteristics and appropriate dimensioning of the heating system in accordance with the underlying heat demand calculation are needed. The reduced temperature set-point is valid for directly controlled circuits as well as additional mixed circuits. It is important that adjustments of this value are performed stepwise and over along period.

EXCESS HEAT FUNCTION

When heating circuits are inactive, the boiler will be shutdown, while pumps and mixers will continue to operate to ensure that excess heat will be utilized until the limit set as M2=36°C is being under-run.

HOT WATER STORAGE PRIMACY

During HWS charging the HWS will be prioritised, resulting in a reduction of the heating circuit's temperature set-point. When charging is finished, the heating circuit's temperature set-point will be reset to its previous value.
This however only applies for mixed circuits. In the case of a pumped circuit, the pump will simply be inactive during charging.

HOLIDAY SHUTDOWN

Available settings for holiday shutdown (no.15) are "inactive", "frost protection" and "reduced temperature". If holiday shutdown is enabled and the specified date and time (no.16) are reached, all heating circuits will operate according to the chosen program ("frost protection" or "reduced temperature") during the set period.

HEIZKREIS BEI KESSELÜBERTEMPERATUR

If the boiler temperature exceeds the safety limit specified as (M1=83°C), all heating circuits will be activated and operated in accordance with an outside temperature (M1a) of -10°C. This temporary mode of operation is necessary to remove the excessive heat from the boiler. As a result the blinkin text "safety control" will be shown in the topmost line of the display.

Installateur-Einstellungen

FROST PROTECTION FUNCTION

The frost protection function will be enabled when the outside temperature falls below the limit specified in D2=1°C. As a result, heating circuit pumps will be switched on. If the boiler or flow temperature fall below the limit D3=7°C, the boiler will be activated.

BLOCKING PROTECTION

To prevent blocking, heating circuits pumps will be activated and mixers will be opened for one minute on monday at 12:00.

FLOOR DRY-OUT

The procedure will be discribed for Heating circuit 1 (Note that other HCs correspond to different parameters).
To initially start the dry-out program, the corresponding parameter A9 (Floor dry-out on/off) must be set to "ON". Then the initial and terminal temperature set-point for the flow temperature has to be specified as parameter A9a (flow setp.start/stop=20°C). After the period specified in A9c (Incr./Reduce=daily) has expired, the flow temperature will be raised by the amount A9b (Flow setp. increase=5°C). When the maximum temperature as set in A9d (Flow set point max.) has been reached, the temperature will be held for the period specified in A9e (Flow set point max. holding time). After that, the flow temperature will be reduced by the amount specified in A9f (Flow setp.reduct.=10°C) according to the period specified in A9c (Incr./Reduce=daily) until the temperature A9a (flow setp.start/stop=20°C) is reached. The heating circuit will then take up normal operation and automatically set A9a to "Off".

REMOTE CONTROL FR 25

with room sensor

Connect using clamps 1 and 2
In addition to the actual sensor this remote control is equipped with a a rotation disk that allows fine adjustment of the room temperature set-point by +/- 2-3°C. The mode switch can be used to choose between the functions "permanent day time mode", "permanent reduced temperature mode" or "automatic".
Caution: The remote control type has to be specified in the commissioning settings.

Installateur-Einstellungen

Site of installation

Note that the site of installation must be carefully chosen. It's important that the remote control is not directly exposed to sunlight nor in an area affected by breeze. Furthermore, the control should not be close to a fireplace or radiator to ensure that the temperature measured by the sensor is representative of the actual room temperature. It makes sense to install the remote in the room that is used most commonly (like the living or dinning room). However the room must not contain additional heating devices (like a tile stove). If there is a radiator with a thermostat valve, it must be adjusted to a higher temperature than the set-point in the control, to avoid an influence on the room sensor. (Such an influence could lead to temperature changes in the flow and ultimately to other rooms being warmer or colder than expected) However radiators in all other rooms except the one where the remote is installed should have a thermostat valve.

REMOTE CONTROL FR 25

without room sensor

Connect using clamps 1 and 3

In addition to the actual sensor this remote control is equipped with a a rotation disk that allows fine adjustment of the room temperature setpoint by +/- 2-3°C. The mode switch can be used to choose between the functions "permanent day time mode", "permanent reduction mode" or "automatic".

Caution: The remote control type has to be specified in the commissioning settings.

Site of installation

If clamps 1 and 3 are used, the room sensor is inactive. Therefore the remote control can be installed in any room. Radiators should be equipped with thermostatic valves.

Remote control fixing:

The remote control should be fixed on the same level as lightswitchs are. To do so remove the front button, loosen the screw and take off the casing.

Fault light:

The remote control is fitted with a red LED that can be connected with the boiler. It will then show any error or alert that may occur.

Connection:

2-pin cable (2 x 0,75) with fault light LED
4-pin cable (4 x 0,75) without fault light LED (Clamps: 4=plus und 5=minus)

Installateur-Einstellungen

DIGITAL REMOTE CONTROL
FR30

The digital remote control can be used for remote control from a neighbouring building or installed directly in the living space. (there is no room sensor). A maximum of one FR 30 can be used per boiler, while there can be up to two FR 30s per extension module. (Connected with the CAN-Bus) The handling is in accordance with the boiler's control and the same options for programming heating circuits, manual testing and assigning the mode switch to a heating circuit are available.

Mode switch:
"HEATING" means permanent day time operation
"REDUCED TEMPERATURE" means permanent reduced temperature mode
"AUTO" means operation following the time program
"OFF" means that the heating circuit is shut down (the frost protections is active nevertheless)

Caution: The remote control type has to be specified in the commissioning settings.

Site of installation:
The remote control can be installed in the heating room (neighbouring building containing the extension module) or directly inside the living space (there is no room sensor).

EXTENSION MODULES 1 AND 2

To extend both the heating and boiler circuits, up to two extension modules can be connected. The modules are connected to the boiler's board using BUS cables (CAN-BUS). The extension module's adress switch has to be set to 1, which is the default setting. (extension module 1 = HC 3+4 and boiler circuit 3+4)

Installateur-Einstellungen

BUFFER CONTROL

Solar buffer control HP1 with integrated hot water storage:

The buffer tank is only heated by the solar collector and not by the boiler. First of all it is checked if the solar buffer contains enough heat to cover the flow's assesed demand. If that is the case, the HC valve is brought to the A - AB position (buffer operation), until the temperature falls below the HC set-point. As soon as this happens, the boiler is restarted and the HC valve is reset to the B - AB position (boiler operation). The temperature of the HWS is checked during charging periods and heating is applied by the boiler if needed. During HWS charging cycles, the HWS charging pump will also bring the buffer valve to the A - AB position. The buffer tank is only charged in the area of the HWS, while the remaining area is reserved for the solar heating system.

Parameter setting: C2 set to " Buffer HWS int. "

Solar buffer control HP2 with external boiler

The thermal buffer storage is only loaded by the solar collector. First of all it is checked if the solar buffer contains enough heat to cover the flow's assesed demand. If that is the case, the HC valve is brought to the A - AB position (buffer operation), until the temperature falls below the HC set-point. As soon as this happens the boiler is started again and the HC valve is reset to the B - AB position (boiler operation). The temperature of the HWS is checked during HWS charging time and heating is applied if needed. A differential regulation is needed to allow for HWS charging from the solar buffer.

Parameter setting: C2 set to " Buffer HWS ext. "

Solar buffer regulation HP3 with integrated or external boiler

The thermal buffer storage is heated by a solar collector and a boiler. The heating circuits will drain heat from the buffer until the buffer temperature falls below the heating circuit temerature limit. As a result heating will be turned on and the buffer storage will be charged. In case of an external boiler a differential regulation will be needed to allow for boiler loading from the solar buffer.

Parameter setting: set to

C2 set to " Buffer HWS int." and no.C1 auf "Buffer pump+1sens."
C2 set to " BufferHWS ext." and no.C1 auf "Buffer pump+1sens."

Installateur-Einstellungen

Solar buffer control HP4 with integrated or external boiler

The boiler will charge the thermal buffer storage until the temperature set-point specified in no. C4 = 60°C is reached (sensor 2). Upon reaching this limit the pellet boiler will shut down and excess heat mode will be activated. The heating circuits will drain heat from the buffer until the specified temperature limit is under-run (sensor 1). The plant will be restarted and the buffer storage will be recharged. In addition the HWS temperature will be checked and charging cycles will be applied if necessary. A differential regulation is needed to allow charging of an external boiler using the buffer storage. Charging the HWS will also lead to the buffer storage being loaded up to the limit specified by sensor 2.

Constrained charging:

Can be used to cover spike demands or selectively charge the thermal storage. Parameter no.C5 is used to specify an interval (this could be 06:00-10:00) during which constrained charging will be performed. Charging will be performed up to the limit specified by sensor 2. (no.C4=60°C)

Parameters: set to

No.C2 set to " Buffer HWS int. " & no. C1 auf "Buffer pump+2sens."
No.C2 set to " Buffer HWS ext" & no. C1 auf "Buffer pump+2sens."

Summer time bathroom heating

(with a solar solar buffer tank)

This program allows to heat bathrooms (by the means of floor heating or radiators) solely with heat from the solar buffer. To allow this, the mode switch must be set to "HWS" and the corresponding heating circuit's parameter "Summer time bath heating" must be set to "ON".

Installateur-Einstellungen

EXTERNAL HEATING SOURCE SOLID FUEL OR OIL/GAS

Solid fuel: Check whether the external heating source has reached it's temperature set-point (O10=60℃). If that is the case, the HC valve will be brought to the A - AB position (external heating mode) while the pellet boiler is shut down. In external heating mode, the mode switch position "Auto" will activate all heating circuits as well as the HWS circuit, while "HWS" will only activate the HWS circuit. As soon as the external heating circuit's temperature underruns the set-point temperature minus tolerance range No.O11=2℃ (60-2 = 58℃), the pellet boiler will be restarted after the period specified in No.O12=15min has expired. Accordingly, the HC valve is brought back to the B - AB position (boiler operation). The mixer control will react based upon the averaged outside temperature, unless a safety temperature level (M1=83℃) is being over-run. In that case, the outside temperature will be temporarily set to M1a -10℃

Oil/gas: Generally speaking, the procedure corresponds with what has been said for solid fuels whereby the control will work in accordance with the usual timed and outside temperature shutdown programs.

Flue gas temerature monitor: Should both boilers be connected to the same chimney, the pellet boiler will be shut down by the external boiler's flue gas temperature monitoring system (connected to clamps 86 and 87). The HC valve will however remain in the B-AB position (pellet boiler) until the external source takes over. The rest of the procedure works in accordance to what has been said above.

EXTERNAL HEATING CIRCUIT

Clamps 19 and 21 have to be connected with the external contact point (potential-free) if an additional external heating circuit is needed. Upon initial connection, the customer setting display for external heating circuits will be automatically brought up. If an external pump is needed, it can either be assigned using the commissioning level parameter B11 (if HWS 2 or a distance heating pump are not needed) or C7 (if a fault light is not needed).

The boiler's temperature set-point - while the external heating circuit is active - can be set in commissioning level setting C6 (default=60℃). If an external pump is assigned and this value has been adjusted, it is necessary to also adjust the external pump's release temperature parameter L19 (service-settings, default=64℃). This value should be approximately 5-10℃ lower than the boiler's temperature set-point.

Installateur-Einstellungen

EXTERNAL SENSOR (picture)

The external sensor should be installed at about one third of the total building height (however at least 2 meters above the ground) and on the coldest side of the building (north or north-east side). Note that any source of heat (from a chimney, direct sunlight, etc.) could lead to wrong temperature values and must therefore be thoroughly avoided. Also make sure that the cable outlet is directed towards the ground to prevent water from intruding into the sensor. Use a 2-wired cable for the electrical installation. (for the minimum diameter see the connection scheme)

BOILER-, HOT WATER TANK SENSOR

FLOW-, BUFFER-, EXT. HEATING- SENSOR
(depending on the heating scheme) (picture)

All of the sensors are immersion sensors, connected with cast on cables. An immersion sleeve is available for the hot water tank-, buffer- and ext. heating sensors. The flow sensor should be placed 50cm after the circulation pump. The sensor can be tightly attached using the included brass casing and tightening strap. Before attaching the casing, apply the included heat-conductive paste to the contact point. Furthermore make sure to avoid buckling of the sensor cables. If the cables are too short, you can extend them (for minimum diameters see the connection scheme).

Resistance values

Boiler sensor **Hot water storage sensor** **Flow sensor** **Return sensor**		Remote Control FR25
in °C	in Ohm	resistences measured in Automatic mode (clock symbol) with the switch is in middle position should be within the range of 3340 - 3650 Ohm (independent from room temperature)
-20	922	
-10	960	
0	1000	
10	1039	
15	1058	
20	1077	
25	1097	
30	1116	
35	1136	
40	1155	
45	1174	
50	1193	
55	1213	
60	1232	
65	1252	
70	1270	
75	1290	
80	1309	
85	1328	
90	1347	
95	1366	
100	1385	

CHIMNEY SWEEP BUTTON

This is a button that allows the chimney sweeper to manually turn on and shut down the boiler when performing an emissions check.
Operating with this button disables all the other programs. Heating will be performed with full load and assuming a very low outside temperature while the heating circuits distribute as much heat as possible. To allow this, control- and thermostat valves have to be opened manually. This function will automatically terminate after 2 hours.

SAFETY THERMOSTAT CHECK

All heating circuit and boiler pumps are inactive during this check. Press the TÜV-button until the safety thermostat is being cut out.

Installateur-Einstellungen

Diagramm Heizkennlinie

Reduced temperature mode:
During reduced temperature operation, the HC pump will remain active in accordance with the scheduled program. The flow temperature will be assessed using reduced heating chracteristics (which correspond to the lowered temperature level). However, the minimal flow temperature set-point will not be undercut.

Economy mode:
If the outdoor temperature exceeds the set-point values specified in no.12 and no.13 during reduced temperature operation, all heating circuits will automatically be shut down. Reduced temperature mode is subdivided in day time and night time mode and both phases can be specified separately.
1. A time for the change from day time to night time has to be specified in D5.
2. Outside temperature levels for automatic shutdown can be separately specified for day and night. Shutdown will be performed when the temperature level (no.11) is reached.

Heating characteristics
(Inclination)

The proportion between a change of flow temperature and a change of outside temperature is given by the heating characteristics and can be separately adjusted for every heating circuit. The curves in the left chart are based on the assumption of a room temperature set-point of 20°C (and assume that the remote control's switch is in middle position). For different room temperature set-points, the curves can be shifted in parallel.

For example:
An assumed HC with the following characteristics:
Inclination: 1,5
Room temperature setpoint: 20°C
Outside temperature: 0°C
Boiler is in heating mode
Applying the characteristics for this example leads to a flow temperature of 50°C.

Adjustments of the heating characteristics must only be carried out in small steps and over a long period.

An accurate adjustment of the heating characteristics will lead to a constant room temperature (at the set-point level) that is unaffected by the outside temperature.

Remote control FR25 not installed
The desired room temperature can be specified separately for each HC in the customer settings.

Remote control FR25 installed
There are two modes of operation:

<u>With a room sensor</u>
The actual room temperature will be automatically adjusted to match the set-point. In addition, the temperature can be manually adjusted by 2-3°C using the rotation disk on the remote control.

<u>Without a room sensor</u>
This mode must be chosen if the room contains an additional heat source (such as a tiled stove). Again, the temperature can be manually adjusted by 2-3°C using the rotation disk on the remote control.

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	**Origin**	**Reason/Problem**	**Solution** (when done solving the problem push the Enter button)
Display is blank	and none of the green lights on the I/O board are lit	Fuse F16 is broken or connection (clamps1,3) could be interrupted; level indicator or STB defective.	Change fuse F16 (see the according scheme) or check the connection at clamps 1 and 3; check level indicator and STB connections!
- " -	and green light H3 is not lit (while H4-H6 are)	Fuse F10 or control panel are broken	Change fuse F16 (see the according scheme), check the ribbon cable that connects the board and the control panel, contact the service department if those measures can't remove the problem.
- " -	and green light H3 is glowing	Ribbon cable isn't correctly connected or control panel is broken.	Check the ribbon cable or replace the cable or the control panel.
- " -	2 black bars shown on the display	EPROM is missing or plugged in incorrectly, control panel is broken	Plug in an EPROM at the backside of the control panel (according to the scheme on the guard plate) ; replace EPROM if it was plugged in incorrectly or replace the control panel.
- - - -	Display light not lit	Display light is broken	contact the service department, replace the control panel.
- - - -	Fault light doesn't work	Fuse F17 destroyed by short circuit or fault light not connected	fix the short circuit; correctly connect D40 or fault light.
001	Safety thermostat (STB)	Over temperature at boiler or STB connection jammed	Cool down the boiler below 90°C; remove STB protection cap and press the button, otherwise have STB connection checked by an electrician; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
002	Overcurrent stoker auger	Combustion chamber jam-packed, stoker auger clogged by slag or debris jamming rotary gate valve	While mode switch is set to "Manual" - open the pusher grate (no.2), where required remove jam-packing or slag. - check stoker auger, if the motor doesn't work correctly there most likely is debris stuck in the rotary gate valve; unscrew lid and remove pellets and debris. -contact the service department if the motor still doesn't work properly.
003	Overcurrent extraction auger	Extraction auger motor not connected properly or defective (Capacitor); Extraction auger jammed (water or humidity in the storage room); Level indicator defective or not adjusted properly; Debris stuck in the extract auger; If there is a pellet suction turbine, a jammed or defect turbine may be the origin of the problem.	Unscrew the extraction auger's maintainance lid and remove jamming pellets, check the storage room for water leaks or humidity. Try to run the motor into both directions while the mode switch is set to "Manual". Check the auger's direction of rotation by pressing the + and - buttons. If no jamming parts can be found check or replace the motor and capacitor. While the mode switch is in "Manual" position and either display no.7 or no. 7a is shown, check the level indicator and it's orange diode like this: - if the display shows "empty" and the level indicator diode is lit while the intermediate bin is jam-packed, replace the level indicator. If there is a suction turbine perform the following steps while in "Manual" mode: - briefly rotate extract auger (no.6) backwards, remove both hoses, remove jam-packing and empty the hoses. - start the suction turbine (no.5) and check it for free pass, where required clean the turbine. Contact the service department if you find brown disposal.
004	Thermal protection extraction auger	Extraction auger rough-running, jam-packed or jammed by debris; auger motor (capacitor) defective.	Treat like error no. 003; indication for this fault if the motor has been rough-running for a while or fault no. 003 happens repeatedly.
005	Ash box to be emptied	Ash box 3/4 full, pusher grate rough-running; the boiler will continue operation but will soon be affected by error no.006 and stop operation if the ash box is not emptied.	Empty the ash box - thenn press Enter; if the ash box is not full, check if the pusher grate is rough running by pressing the + button while the mode switch is set to Manual and display no.2 is shown. (motor current must not exceed 0,9A), otherwise contact the service department;
006	Ash box full	Aschenlade zu voll, oder Schieberost schwergängig.	see no. 005
007	Pusher grate won't open	Neither the open end position nor the closed end position have been correctly reached.	In "Manual" operation mode check if the pusher grate can be fully opened/closed using the +/- buttons; If it can't contact the service department;
008	Pusher grate won't close	The closed end position hasn't been reached correctly (while the open end position has).	see no. 007
009	Overcurrent cleaning device	Cleaning device is rough-running	In "Manual" operation mode, check if the cleaning device is rough running. If the current is close to or above 5A contact the service department;
0010	Flue gas sensor connected incorrectly	Reverse polarity (can only happen when commissioning the boiler) or I/O board defective.	Have connection polarity checked by an electrician, otherwise replace the sensor or the I/O board;

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	**Solution** (when done solving the problem push the Enter button)
0011	Flue gas sensor interrupted	Sensor not connected or connection interrupted.	Connect sensor or replace connection; check clamps and make sure that plugs 74 and 75 are connected firmly, otherwise replace sensor or I/O board;
0012	Boiler sensor short circuited	Sensor or connection short circuited.	Have sensor and connection checked by an electrician (see resistance values in chapter commissioning settings); replace the sensor with another sensor, if there's a different error replace the sensor. If the same erroris shown, replace the I/O board;
0013	Boiler sensor interrupted	Sensor not connected or connection interrupted.	Connect sensor, or change connection/check clamps, make sure that clamps 72-73 are connected firmly; replace the sensor with another sensor, if there's a different error replace the sensor. If the same fault is shown, replace the I/O board;
0014	HWS tank sensor short circuited	Sensor or connection short circuited.	see no. 0012; this error can be bypassed by pressing Enter, however it will remain on the display to remind the customer that it needs to fixed;
0015	HWS tank sensor interrupted	Sensor not connected or connection interrupted.	see no. 0012; this fault can be by passed by pressing Enter, however it will remain on the display to remind the customer that it needs to fixed;
0016	Outside sensor short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0017	Outside sensor interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0018	Flow sensor HC1 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0019	Flow sensor HC1 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0020	Flow sensor HC2 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0021	Flow sensor HC2 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0022	Remote control HC1 short circuited	Remote control or connection short circuited.	see no. 0012 and no. 0014
0023	Remote control HC1 interrupted	Remote control not connected or connection interrupted.	see no. 0013 and no. 0015
0024	Remote control HC2 short circuited	Remote control or connection short circuited.	see no. 0012 and no. 0014
0025	Remote control HC2 interrupted	Remote control not connected or connection interrupted.	see no. 0013 and no. 0015
0026	Ignition time over-run	The flue gas temperature rise didn't exceed the set-point value specified in P11 during the period specified in P5 (in the service level settings); Reason may be that there is no sufficient fuel supply, the ignition is defective, the flue gas sensor isn't situated in the flue gas tube or that the burning chamber is clogged by slag or contains too much ash.	**While in "Manual" operation mode check if:** - the stoker auger (no.4) is running smoothly and delivering pellets - the ignition device (no.7) is working properly - the pusher grate (no.2) can be opened and closed completely - the combustion chamber is clogged by slag - the flue gas sensor is installed correctly
0027	Flue gas temperature under-run	While firing, the flue gas temperature under-runs the temperature specified in K8 during the period specified in K7 in the service level settings; Reasons may be that there is too little or no fuel at all, that there is too much ash or that the combustion chamber is clogged by slag.	**While in "Manual" operation mode check if:** - the stoker auger (no.4) is running smoothly and delivering pellets - the pusher grate (no.2) can be opened and closed completely - the burning chamber is clogged by slag - the flue gas sensor is installed correctly
0028	Allowed CO2 stop time overrun	contact error of the lambda sensor, lambda sensor or I/O board defective.	Lambda sensor is dirty, clean the lambda sensor and check its function in "Manual" operation mode (no.34); have clamps and plugs checked by an electrician, otherwise replace lambda sensor; the boiler can be run without a lambda sensor (commissioning settings, D4) until the sensor has been replaced;
0029	Combustion malfunction	Combustion failed due to missing fuel supply; ignition doesn't work.	Firing can't be started; See combustion malfunction no. 0029 at the end of the error description;
0030	Batteries empty, change batteries	Batteries powering date/time memory are close to being empty.	Change batteries during operation to avoid loss of the date and time setting; When changing batteries while the boiler is shut down, you have to redo the time/date settings. However other settings won't be lost;
0031	Lambda sensor defective	Contact error of the lambda sensor, lambda sensor or I/O board defective.	see no. 0028; this error can only occur in "Manual" mode after checking (no.34) or calibrating (no.60) the sensor;

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
0032	Maximum time for filling over-run	Pellet delivery not working properly.	Check pellet transport from the storage room; make sure that the storage room contains enough pellets, otherwise remove the extraction auger's maintenance lid and check if the auger is delivering pellets; Check if bridging occured inside the storage room;
0033	Cleaning device not in rest position	The cleaning device's motor doesn't return to its rest position; the motor could be connected incorrectly or the I/O board could be defekt.	Connect the motor correctly (plugs 29-32) or check the connection between the motor and the I/O board; contact the service department personell if you can't fix the problem on your own or replace the motor or I/O board;
0034	Buffer sensor 1 / Ext. Heat sensor short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0035	Buffer sensor 1 / Ext. Heat sensor shortinterrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0036	Buffer sensor 2 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0037	Buffer sensor 2 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0038	Over current pusher grate	Pusher grate rough-running	In "Manual" operation mode check if the pusher grate is rough-running by pressing the + and - keys; contact the service department if the current exceeds 0,9A;
0039	HWS tank sensor 2 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0040	HWS tank sensor 2 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0062	GSM-module interrupted	Ribbon cable or GSM-connection or power supply interrupted.	Check the ribbon and GSM- cable and replace where required; Check the power supply (230VAC) or replace the GSM module;
0063	GSM-module, internal error	Internal connection between the GSM-control module and GSM-sending module defective.	Check connection or replace the GSM module;
0064	GSM-module, SIM card missing	The sending module doesn't contain a SIM card or the PIN query hasn't been removed.	Insert a SIM card or disable the PIN query;
0065	GSM-module, no signal	The GSM-module couldn't send a text message because the SIM card's credit is depleted or a connection to the service provider could not be established.	Recharge your SIM card or have it unlocked by the service provider; use a mobile phone from the same service provider to test if you can get a signal. Also try repositioning or enhancing the antenna;
0066	GSM-Modul, wrong software version	The Eprom-software of the GSM module and the boiler control unit don't match.	Replace the GSM-module or update the software accordingly;
0067	Incorrect parameters	Internal error in the parameter memory.	Check parameters, and make adjustments where necessary; change the boiler control unit if the error persist despite the changes;
0100	Data transmission EM 1	No connection with extension module 1.	Set the extension module's adress switch to "1"; check HC's connection and bus wiring as well as fuse F23 (see board scheme); replace extension module 1;
0101	ADC-Fault in EM 1	Extension module 1 thermometry defect.	Replace extension module 1;
0102	Zero-point error ext. module 1	Control of outlets in extension module 1 defect	Replace extension module 1;
0103	HWS tank sensor 3 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0104	HWS tank sensor 3 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0105	HWS tank sensor 4 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0106	HWS tank sensor 4 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0107	Flow sensor 3 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0108	Flow sensor 3 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0109	Flow sensor 4 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0110	Flow sensor 4 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0111	Remote control HC3 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0112	Remote control HC3 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031
0113	Remote control HC4 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0114	Remote control HC4 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
0120	Data transmission EM 2	No connection with extension module 2.	Set the extension module's adress switch to "2"; check HC's connection and bus wiring as well as fuse F23 (see board scheme); replace extension module 2;
0121	ADC-error in EM 2	Extension module 2 thermometry defect	Replace extension module 2;
0122	Zero-point error ext. module 2	Control of outlets in extension module 1 defect	Replace extension module 2;
0123	HWS tank sensor 5 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0124	HWS tank sensor 5 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0125	HWS tank sensor 6 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0126	HWS tank sensor 6 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0127	Flow sensor 5 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0128	Flow sensor 5 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0129	Flow sensor 6 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0130	Flow sensor 6 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0131	Remote control HC5 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0132	Remote control HC5 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031
0133	Remote control HC6 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0134	Remote control HC6 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031
0200	Wrong software version	Software verswions of the boiler control unit and digital remote control	Update the boiler control's and remote control's sofware accordingly; (matching EPROM softwares)
0201	Boiler module not assigned or CAN interrupted	No connection with the boiler.	Boiler control unit not assigned; check power supply and BUS wiring or replace the remote control;
0202	Interfering BUS-configuration of two control modules	Two or more remote controls assigned to the same heating circuit.	Correct parameter Z2 of the digital remote control;
0211	Digital remote control 1 not connected	No connection with HC1's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0212	Digital remote control 2 not connected	No connection with HC2's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0213	Digital remote control 3 not connected	No connection with HC3's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0214	Digital remote control 4 not connected	No connection with HC4's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0215	Digital remote control 5 not connected	No connection with HC5's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0216	Digital remote control 6 not connected	No connection with HC6's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
4010..4017	Extraction auger motor	Extraction auger motor control defective	contact the service department; replace I/O board (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4020..4027	Extraction auger motor	Extracion auger motor not connected or connection interrupted; if there is no extract auger, check the corresponding parameter D1 and readjust accordingly; motor or I/O board defective.	Fix the extraction auger's connection, check plugs no. 4 and 7 (clamp 7 must be connected) as well as the wiring; Readjust parameter D1 in the commisioning level settings accordingly; contact the service department or replace the motor or I/O board if the above procedure doesn't fix the problem; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4030..4037	Extraction auger motor	Extraction auger motor short circuited	Fix the short circuit. Change fuse F15 (see board scheme) and check plugs no. 4 and 7 as well as the wiring; contact the service department or an electrician or replace the motor or I/O board if the above procedure doesn't fix the problem;
4110..4117	Suction turbine	Suction turbine control defective	contact the service department; replace I/O board (short term emergency operation is possible, see "operation without hardware test" at the end of error description)

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
4120..4127	Suction turbine	Suction turbine not connected or connection interrupted; if there is no suction turbine, check the corresponding parameter F1 and readjust accordingly; motor or I/O board defective.	Fix the suction turbine's connection, check plugs no. 11 - 13 as well as the wiring; readjust parameter D1 in the commisioning level settings accordingly; contact the service department or replace the I/O board if the above procedure doesn't fix the problem; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4130..4137	Suction turbine	Suction turbine short circuited.	Fix the short circuit. Change fuse F21 (see board scheme) and check all plugs and clamps as well as the wiring; contact the service department or an electrician or replace the I/O board if the above procedure doesn't fix the problem; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4210..4217	Heating circuit control	Heating circuit-, boiler-, buffer- or circulation pump or mixer affected by separate source voltage or I/O board defective.	Check clamps 35 - 61 for separate source voltage or defective components; contact the service department or an electrician or change the I/O board. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4220..4227	Heating circuit control	HC pump 1, HC pump 2, HC 1 mixer, HC 2 mixer, boiler-, buffer- or circulatuion pump short circuited.	Fix the short circuit, check fuse F13 (see board scheme) and the wiring. contact the service department or an electrician or change the I/O board if the problem persists;
4310..4317	Stoker auger	Stoker auger motor control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4320..4327	Stoker auger	Stoker auger not connected; motor or I/O board defective.	Check the motor's connection (clamps no. 22-25) and wiring; contact the service department or replace the motor or I/O board if the problem persists; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4330..4337	Stoker auger	Stoker auger motor short circuited.	Fix the short circuit, check fuse F18 (see board scheme) and clamps 22-25 as well as the wiring; contact the service department or an electrician or replace the motor or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4410..4417	Draught fan	Draught fan control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end oferror description)
4420..4427	Draught fan	Draught fan not connected or connection interrupted; fan or I/O board defective.	Check the fan's connection (clamps no. 8-10) and wiring; contact the service department or an electrician or replace the fan or I/O board if the problem persists; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4430..4437	Draught fan	Draught fan or I/O board short circuited.	Fix the short circuit, check fuse F20 (see board scheme) and clamps 8-10 as well as the wiring; contact the service department or an electrician or replace the fan or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4510..4517	HC valve / ext. pump	HC valve/ext. pump control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the
4520..4527	HC valve / ext. pump	HC valve/ext. pump control not connected or defective.	Check the clamps (80-82) and wiring for both components. contact the service department or an electrician or replace thecomponents or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4530..4537	HC valve / ext. pump	HC valve/ext. pump short circuited.	Fix the short circuit, check fuse F14 (see board scheme) and clamps 80-82 as well as the wiring of both components. contact the service department or an electrician or replace the defective component or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4610..4617	Ignition fan	Ignition fan control defective.	contact the service department or change the I/O board. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
4620..4627	Ignition fan	Ignition fan not connected; ignition fan or I/O board defective.	Check the fan's connection (clamps no. 26-28) and wiring. contact the service department or an electrician or replace the fan or I/O board if the problem persists. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4630..4637	Ignition fan	Ignition fan short circuited.	Fix the short circuit, check fuse F19 (see board scheme) and clamps 26-28 as well as the wiring. contact the service department or an electrician or replace the fan or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4710..4717	Ignition heater	Ignition heater control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4730..4737	Ignition heater	Ignition heater not working.	Check fuse F19 (see board scheme) and clamps 26-28 as well as the wiring; contact the service department or an electrician or replace the ignition unit or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4810..4817	Cleaning device	Cleaning device not connected or short circuited.	Check fuse F11 (see board scheme) and clamps 29-32 as well as the wiring; contact the service department or an electrician or replace the motor or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end oferror description)
4820..4827	Cleaning device	Cleaning device not working.	Check the cleaning device's connection with the I/O board (clamps 29-32) and the wiring. contact the service department or an electrician or replace the motor or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4830..4837	Cleaning device	Cleaning device not connected correctly or motor defective.	Fix the cleaning device's connection with the I/O board (clamps 29-32). contact the service department or an electrician or replace the motor or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4910..4917	Lambda sensor heating	Lambda sensor not connected or sensor or I/O board defective.	Fix the lambda sensor's connection and check the wiring and clamps 76-79. contact the service department or an electrician or change the I/O board if the problem persists. Reassign parameter D4 in the commissioning level settings to "without lambda sensor" until the sensor has been replaced. CAUTION: The commissioning level settings can only be accessed after the boiler has been relaunched and hardware tests have been disabled as described at the end of error description.
4920..4927	Lambda sensor heating	Lambda sensor or sensor heating short circuited or defective.	Check the wiring and connection of the sensor (clamps 76-79); replace fuse F22 where needed; contact the service department or an electrician or change the I/O board if the problem persists; reassign parameter D4 in the commissioning level settings to "without lambda sensor" until the sensor has been replaced; CAUTION: The commissioning level settings can only be accessed after the boiler has been relaunched and hardware tests have been disabled as described at the end of error description;
5020..5027	Pusher grate	Pusher grate not connected or I/O board defective.	Check the pusher grate's connection (clamps 33-34); contact the service department or an electrician or replace the I/O board.if the problem persists (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
6001 6002	Defective data transmission between boards.	Fuse F12 defect, flat ribbon connection interrupted, I/O board or control unit defective.	Green lights H5 and H6 are not lit. Change fuse F12 (see board scheme). contact the service department or an electrician or replace the I/O board or ribbon cable if the problem persists;
6101-6102	Wrong software I/O board	I/O board not compatible with the software.	contact the service department or replace the I/O board.
0	Initializing error buffer, only load default settings	Not an actual error, but logged in the error buffer.	Contact an electrician if this message is shown repeatedly; (Might be caused by power failure or loose contact)
1000	Hardware restart	Not an actual error, but logged in the error buffer.	Contact an electrician if this message is shown repeatedly; (Might be caused by power failure or loose contact)

Short term emergency operation "no hardware test": If the error is clearly caused by a defect on the I/O board, meaning that all connected components are working properly, the control can be run in emergency operation without hardware test for a short term (until service technician arrives) 1. Disconnect the control from the grid (plug or main switch) (display is dark). 2. Press the lower left "Space" button while restarting the power supply. The 4th line of the display will show the message "no hardware test". Once the message appears you can release the button. System selftests are now disabled, but only until power supply is cut off again. Make sure to check all potentially defective components in "Manual" operation mode to ensure that no other errors persist.

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	**Origin**	**Reason/Problem**	**Solution** (when done solving the problem push the Enter button)
Display is blank	and none of the green lights on the I/O board are lit	Fuse F16 is broken or connection (clamps1,3) could be interrupted; level indicator or STB defective.	Change fuse F16 (see the according scheme) or check the connection at clamps 1 and 3; check level indicator and STB connections;
Display is blank	and green light H5 is not lit (while H4 is)	Ribbon cable connecting the board and control panel defective; Control panel or GSM module defective	Check the ribbon cable between I/O board and control panel; otherwise contact the service department;
Display is blank	and green light H5 is lit	Ribbon cable not properly connected or control panel defective	Check the ribbon cable's connection or replace the cable or the control panel;
Display is blank	2 black bars shown on the display	EPROM is missing or plugged in incorrectly, control panel is broken	Plug in an EPROM at the backside of the control panel (according to the scheme on the guard plate) ; replace EPROM if it was plugged in incorrectly or replace the control panel;
- - - -	Display light not lit	Display light is broken	contact the service department; replace the control panel;
- - - -	Fault light doesn't work	Fuse F17 destroyed by short circuit or fault light not connected	fix the short circuit; correctly connect the fault light or replace fuse F17 (see board and fuse scheme);
001	Safety thermostat (STB)	Over temperature at boiler or STB connection jammed	Cool down the boiler below 90°C; remove STB protection cap and press the button, otherwise have STB connection checked by an electrician; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
002	Overcurrent stoker auger	Combustion chamber jam-packed, stoker auger clogged by slag or debris jamming rotary gate valve	While mode switch is set to "Manual" - open the pusher grate (no.2), where required remove jam-packing or slag; - check stoker auger, if the motor doesn't work correctly there most likely is debris stuck in the rotary gate valve; unscrew lid and remove pellets and debris; -contact the service department if the motor still doesn't work properly;
003	Overcurrent extraction auger	Extraction auger motor not connected properly or defective (Capacitor); Extraction auger jammed (water or humidity in the storage room); Level indicator defective or not adjusted properly; Debris stuck in the extract auger; If there is a pellet suction turbine, a jammed or defect turbine may be the origin of the problem.	Unscrew the extraction auger's maintainance lid and remove jamming pellets, check the storage room for water leaks or humidity; try to run the motor into both directions while the mode switch is set to "Manual"; check the auger's direction of rotation by pressing the + and - buttons; if no jamming parts can be found check or replace the motor and capacitor; While the mode switch is in "Manual" position and either display no.7 or no. 7a is shown, check the level indicator and it's orange diode like this: - if the display shows "empty" and the level indicator diode is lit while the intermediate bin is jam-packed, replace the level indicator; If there is **a suction turbine** perform the following steps while in "Manual" mode: - briefly rotate extract auger (no.6) backwards, remove both hoses, remove jam-packing and empty the hoses; - start the suction turbine (no.5) and check it for free pass, where required clean the turbine; Contact the service department if you find brown disposal;
004	Thermal protection extraction auger	Extraction auger rough-running, jam-packed or jammed by debris; auger motor (capacitor) defective.	Treat like error no. 003; indication for this fault if the motor has been rough-running for a while or fault no. 003 happens repeatedly;
005	Ash box to be emptied	Ash box 3/4 full, pusher grate rough-running; the boiler will continue operation but will soon be affected by error no.006 and stop operation if the ash box is not emptied.	Empty the ash box - thenn press Enter; if the ash box is not full, check if the pusher grate is rough running by pressing the + button while the mode switch is set to Manual and display no.2 is shown. (motor current must not exceed 0,9A),otherwise contact the service department;
006	Ash box full	ash box overfilled or pusher grate rough running	see no.005
007	Pusher grate won't open	Neither the open end position nor the closed end position have been correctly reached.	In "Manual" operation mode check if the pusher grate can be fully opened/closed using the +/- buttons; if it can't contact the service department;
008	Pusher grate won't close	The closed end position hasn't been reached correctly (while the open end position has).	see no. 007
009	Overcurrent cleaning device	Cleaning device is rough-running	In "Manual" operation mode, check if the cleaning device is rough running; if the current is close to or above 5A contact the service department;

Nach Fehlerbehebung ENTER-Taste drücken !

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Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	**Solution** (when done solving the problem push the Enter button)
0010	Flue gas sensor connected incorrectly	Reverse polarity (can only happen when commissioning the boiler) or I/O board defective.	Have connection polarity checked by an electrician, otherwise replace the sensor or the I/O board;
0011	Flue gas sensor interrupted	Sensor not connected or connection interrupted.	Connect sensor or replace connection; check clamps and make sure that plugs 74 and 75 are connected firmly, otherwise replace sensor or I/O board;
0012	Boiler sensor short circuited	Sensor or connection short circuited.	Have sensor and connection checked by an electrician (see resistance values in chapter commissioning settings); replace the sensor with another sensor, if there's a different error replace the sensor; If the same erroris shown, replace the I/O board;
0013	Boiler sensor interrupted	Sensor not connected or connection interrupted.	Connect sensor, or change connection/check clamps, make sure that clamps 72-73 are connected firmly; replace the sensor with another sensor, if there's a different error replace the sensor. If the same fault is shown, replace the I/O board;
0014	Hot water tank sensor short circuited	Sensor or connection short circuited.	see no. 0012; this error can be bypassed by pressing Enter, however it will remain on the display to remind the customer that it needs to fixed;
0015	Hot water tank sensor interrupted	Sensor not connected or connection interrupted.	see no. 0012; this fault can be by passed by pressing Enter, however it will remain on the display to remind the customer that it needs to fixed;
0016	Outside sensor short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0017	Outside sensor interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0018	Flow sensor HC1 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0019	Flow sensor HC1 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0020	Flow sensor HC2 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0021	Flow sensor HC2 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0022	Remote control HC1 short circuited	Remote control or connection short circuited.	see no. 0012 and no. 0014
0023	Remote control HC1 interrupted	Remote control not connected or connection interrupted.	see no. 0013 and no. 0015
0024	Remote control HC2 short circuited	Remote control or connection short circuited.	see no. 0012 and no. 0014
0025	Remote control HC2 interrupted	Remote control not connected or connection interrupted.	see no. 0013 and no. 0015
0026	Ignition time over-run	The flue gas temperature rise didn't exceed the set-point value specified in P11 during the period specified in P5 (in the service level settings); Reason may be that there is no sufficient fuel supply, the ignition is defective, the flue gas sensor isn't situated in the flue gas tube or that the burning chamber is clogged by slag or contains too much ash.	**While in "Manual" operation mode check if:** - the stoker auger (no.4) is running smoothly and delivering pellets - the ignition device (no.7) is working properly - the pusher grate (no.2) can be opened and closed completely - the combustion chamber is clogged by slag - the flue gas sensor is installed correctly
0027	Flue gas temperature under-run	While firing, the flue gas temperature under-runs the temperature specified in K8 during the period specified in K7 in the service level settings; Reasons may be that there is too little or no fuel at all, that there is too much ash or that the combustion chamber is clogged by slag.	**While in "Manual" operation mode check if:** - the stoker auger (no.4) is running smoothly and delivering pellets - the pusher grate (no.2) can be opened and closed completely - the combustion chamber is clogged by slag - the flue gas sensor is installed correctly
0028	Allowed CO2 stop time overrun	contact error of the lambda sensor, lambda sensor or I/O board defective.	Lambda sensor is dirty, clean the lambda sensor and check its function in "Manual" operation mode (no.34); have clamps and plugs checked by an electrician, otherwise replace lambda sensor; the boiler can be run without a lambda sensor (commissioning settings, D4) until the sensor has been replaced;
0029	Combustion malfunction	Combustion failed due to missing fuel supply; ignition doesn't work.	Firing can't be started; See combustion malfunction no. 0029 at the end of the error description;
0030	Batteries empty, change batteries	Batteries powering date/time memory are close to being empty.	Change batteries during operation to avoid loss of the date and time setting; When changing batteries while the boiler is shut down, you have to redo the time/date settings; However other settings won't be lost;

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Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
0031	Lambda sensor defective	Contact error of the lambda sensor, lambda sensor or I/O board defective.	see no. 0028; this error can only occur in "Manual" mode after checking (no.34) or calibrating (no.60) the sensor;
0032	Maximum time for filling over-run	Pellet delivery not working properly.	Check pellet transport from the storage room; make sure that the storage room contains enough pellets, otherwise remove the extraction auger's maintenance lid and check if the auger is delivering pellets. Check if bridging occured inside the storage room;
0033	Cleaning device not in rest position	The cleaning device's motor doesn't return to its rest position; the motor could be connected incorrectly or the I/O board could be defekt.	Connect the motor correctly (plugs 29-32) or check the connection between the motor and the I/O board; contact the service department personell if you can't fix the problem on your own or replace the motor or I/O board;
0034	Buffer sensor 1 / Ext. Heat sensor short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0035	Buffer sensor 1 / Ext. Heat sensor shortinterrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0036	Buffer sensor 2 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0037	Buffer sensor 2 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0038	Over current pusher grate	Pusher grate rough-running	In "Manual" operation mode check if the pusher grate is rough-running by pressing the + and - keys; contact the service department if the current exceeds 0,9A;
0039	HWS tank sensor 2 short circuited	Sensor or connection short circuited.	see no. 0012 and no. 0014
0040	HWS tank sensor 2 interrupted	Sensor not connected or connection interrupted.	see no. 0013 and no. 0015
0062	GSM-module interrupted	Ribbon cable or GSM-connection or power supply interrupted.	Check the ribbon and GSM- cable and replace where required; Check the power supply (230VAC) or replace the GSM module;
0063	GSM-module, internal error	Internal connection between the GSM-control module and GSM-sending module defective.	Check connection or replace the GSM module;
0064	GSM-module, SIM card missing	The sending module doesn't contain a SIM card or the PIN query hasn't been removed.	Insert a SIM card or disable the PIN query;
0065	GSM-module, no signal	The GSM-module couldn't send a text message because the SIM card's credit is depleted or a connection to the service provider could not be established.	Recharge your SIM card or have it unlocked by the service provider; use a mobile phone from the same service provider to test if you can get a signal. Also try repositioning or enhancing the antenna;
0066	GSM-Modul, wrong software version	The Eprom-software of the GSM module and the boiler control unit don't match.	Replace the GSM-module or update the software accordingly;
0067	Incorrect parameters	Internal error in the parameter memory.	Check parameters, and make adjustments where necessary; Change the boiler control unit if the error persist despite the changes;
0100	Data transmission EM 1	No connection with extension module 1.	Set the extension module's adress switch to "1"; check HC's connection and bus wiring as well as fuse F23 (see board scheme); replace extension module 1;
0101	ADC-Fault in EM 1	Extension module 1 thermometry defect.	Replace extension module 1;
0102	Zero-point error ext. module 1	Control of outlets in extension module 1 defect	Replace extension module 1;
0103	HWS tank sensor 3 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0104	HWS tank sensor 3 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0105	HWS tank sensor 4 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0106	HWS tank sensor 4 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0107	Flow sensor 3 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0108	Flow sensor 3 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0109	Flow sensor 4 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0110	Flow sensor 4 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0111	Remote control HC3 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0112	Remote control HC3 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031

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Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
0113	Remote control HC4 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0114	Remote control HC4 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031
0120	Data transmission EM 2	No connection with extension module 2.	Set the extension module's adress switch to "2"; check HC's connection and bus wiring as well as fuse F23 (see board scheme); replace extension module 2;
0121	ADC-error in EM 2	Extension module 2 thermometry defect	Replace extension module 2;
0122	Zero-point error ext. module 2	Control of outlets in extension module 1 defect	Replace extension module 2;
0123	HWS tank sensor 5 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0124	HWS tank sensor 5 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0125	HWS tank sensor 6 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0126	HWS tank sensor 6 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0127	Flow sensor 5 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0128	Flow sensor 5 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0129	Flow sensor 6 short circuited	Sensor or connection short circuited.	see no.0020 - 0031
0130	Flow sensor 6 interrupted	Sensor not connected or connection interrupted.	see no.0020 - 0031
0131	Remote control HC5 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0132	Remote control HC5 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031
0133	Remote control HC6 short circuited	Remote control or connection short circuited.	see no.0020 - 0031
0134	Remote control HC6 interrupted	Remote control not connected or connection interrupted.	see no.0020 - 0031
0200	Wrong software version	Software verswions of the boiler control unit and digital remote control	Update the boiler control's and remote control's sofware accordingly (matching EPROM softwares)
0201	Boiler module not assigned or CAN interrupted	No connection with the boiler.	Boiler control unit not assigned; check power supply and BUS wiring or replace the remote control;
0202	Interfering BUS-configuration of two control modules	Two or more remote controls assigned to the same heating circuit.	Correct parameter Z2 of the digital remote control;
0211	Digital remote control 1 not connected	No connection with HC1's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0212	Digital remote control 2 not connected	No connection with HC2's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0213	Digital remote control 3 not connected	No connection with HC3's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0214	Digital remote control 4 not connected	No connection with HC4's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0215	Digital remote control 5 not connected	No connection with HC5's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
0216	Digital remote control 6 not connected	No connection with HC6's digital remote control	Check parameter Z2 and the BUS wiring; check fuse F23 (see board scheme); replace the digital remote;
4010..4017	Extraction auger motor	Extraction auger motor control defective	contact the service department; replace I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4020..4027	Extraction auger motor	Extracion auger motor not connected or connection interrupted; if there is no extract auger, check the corresponding parameter D1 and readjust accordingly; motor or I/O board defective.	Fix the extraction auger's connection, check plugs no.4 and 7 (clamp 7 must be connected) as well as the wiring; readjust parameter D1 in the commisioning level settings accordingly; contact the service department or replace the motor or I/O board if the above procedure doesn't fix the problem; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4030..4037	Extraction auger motor	Extraction auger motor short circuited	Fix the short circuit. Change fuse F15 (see board scheme) and check plugs no.4 and 7 as well as the wiring. contact the service department or an electrician or replace the motor or I/O board if the above procedure doesn't fix the problem;

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Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
4110..4117	Suction turbine	Suction turbine control defective	contact the service department; replace I/O board (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4120..4127	Suction turbine	Suction turbine not connected or connection interrupted; if there is no suction turbine, check the corresponding parameter F1 and readjust accordingly; motor or I/O board defective.	Fix the suction turbine's connection, check plugs no. 11 - 13 as well as the wiring. Readjust parameter D1 in the commisioning level settings accordingly; contact the service department or replace the I/O board if the above procedure doesn't fix the problem; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4130..4137	Suction turbine	Suction turbine short circuited.	Fix the short circuit; Check the wiring as well as the suction turbine's connection; contact the service department or replace the I/O board if the above procedure doesn't fix the problem; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4210..4217	Heating circuit control	Heating circuit-, boiler-, buffer- or circulation pump or mixer affected by separate source voltage or I/O board defective.	Check clamps 35 - 61 for separate source voltage or defective components; contact the service department or an electrician or change the I/O board. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4220..4227	Heating circuit control	HC pump 1, HC pump 2, HC 1 mixer, HC 2 mixer, boiler-, buffer- or circulatuion pump short circuited.	Fix the short circuit, check fuse F13 (see board scheme) and the wiring; contact the service department or an electrician or change the I/O board if the problem persists;
4310..4317	Stoker auger	Stoker auger motor control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4320..4327	Stoker auger	Stoker auger not connected; motor or I/O board defective.	Check the motor's connection (clamps no. 22-25) and wiring; contact the service department or replace the motor or I/O board if the problem persists; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4330..4337	Stoker auger	Stoker auger motor short circuited.	Fix the short circuit, check fuse F18 (see board scheme) and clamps 22-25 as well as the wiring; contact the service department or an electrician or replace the motor or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4410..4417	Draught fan	Draught fan control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the
4420..4427	Draught fan	Draught fan not connected or connection interrupted; fan or I/O board defective.	Check the fan's connection (clamps no. 8-10) and wiring. contact the service department or an electrician or replace the fan or I/O board if the problem persists; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4430..4437	Draught fan	Draught fan or I/O board short circuited.	Fix the short circuit, check fuse F20 (see board scheme) and clamps 8-10 as well as the wiring. contact the service department or an electrician or replace the fan or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4510..4517	HC valve / ext. pump	HC valve/ext. pump control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the
4530..4537	HC valve / ext. pump	HC valve/ext. pump short circuited.	Fix the short circuit, check fuse F14 (see board scheme) and clamps 80-82 as well as the wiring of both components. contact the service department or an electrician or replace the defective component or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4610..4617	Ignition fan	Ignition fan control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4620..4627	Ignition fan	Ignition fan not connected; ignition fan or I/O board defective.	Check the fan's connection (clamps no. 26-28) and wiring; contact the service department or an electrician or replace the fan or I/O board if the problem persists; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4630..4637	Ignition fan	Ignition fan short circuited.	Fix the short circuit, check fuse F19 (see board scheme) and clamps 26-28 as well as the wiring; contact the service department or an electrician or replace the fan or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)

Nach Fehlerbehebung ENTER-Taste drücken !

Störungs - Nummer Erklärung

Vor Störungsbehebung unbedingt Euro-Stecker herausziehen !

Report no.	Origin	Reason/Problem	Solution (when done solving the problem push the Enter button)
4710..4717	Ignition heater	Ignition heater control defective.	contact the service department or change the I/O board; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4730..4737	Ignition heater	Ignition heater not working.	Check fuse F19 (see board scheme) and clamps 26-28 as well as the wiring. contact the service department or an electrician or replace the ignition unit or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4810..4817	Cleaning device	Cleaning device not connected or short circuited.	Check fuse F11 (see board scheme) and clamps 29-32 as well as the wiring. contact the service department or an electrician or replace the motor or I/O board if the problem persist. (short term emergency operation is possible, see "operation without hardware test" at the end oferror description)
4820..4827	Cleaning device	Cleaning device not working.	Check the cleaning device's connection with the I/O board (clamps 29-32) and the wiring. contact the service department or an electrician or replace the motor or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4830..4837	Cleaning device	Cleaning device not connected correctly or motor defective.	Fix the cleaning device's connection with the I/O board (clamps 29-32). contact the service department or an electrician or replace the motor or I/O board if the problem persist; (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
4910..4917	Lambda sensor heating	Lambda sensor not connected or sensor or I/O board defective.	Fix the lambda sensor's connection and check the wiring and clamps 76-79; contact the service department or an electrician or change the I/O board if the problem persists; Reassign parameter D4 in the commissioning level settings to "without lambda sensor" until the sensor has been replaced; CAUTION: The commissioning level settings can only be accessed after the boiler has been relaunched and hardware tests have been disabled as described at the end of error description;
4920..4927	Lambda sensor heating	Lambda sensor or sensor heating short circuited or defective.	Check the wiring and connection of the sensor (clamps 76-79); replace fuse F22 where needed; contact the service department or an electrician or change the I/O board if the problem persists; reassign parameter D4 in the commissioning level settings to "without lambda sensor" until the sensor has been replaced. CAUTION: The commissioning level settings can only be accessed after the boiler has been relaunched and hardware tests have been disabled as described at the end of error description;
5020..5027	Pusher grate	Pusher grate not connected or I/O board defective.	Check the pusher grate's connection (clamps 33-34); contact the service department or an electrician or replace the I/O board; if the problem persists (short term emergency operation is possible, see "operation without hardware test" at the end of error description)
6001 6002	Defective data transmission between boards.	Fuse F12 defect, flat ribbon connection interrupted, I/O board or control unit defective.	Green lights H5 and H6 are not lit. Change fuse F12 (see board scheme); contact the service department or an electrician or replace the I/O board or ribbon cable if the problem persists;
6101-6102	Wrong software I/O board	I/O board not compatible with the software.	contact the service department or replace the I/O board;
0	Initializing error buffer, only load default settings	Not an actual error, but logged in the error buffer.	Contact an electrician if this message is shown repeatedly; (Might be caused by power failure or loose contact)
1000	Hardware restart	Not an actual error, but logged in the error buffer.	Contact an electrician if this message is shown repeatedly; (Might be caused by power failure or loose contact)

Short term emergency operation "no hardware test": If the error is clearly caused by a defect on the I/O board, meaning that all connected components are working properly, the control can be run in emergency operation without hardware test for a short term (until service technician arrives) 1. Disconnect the control from the grid (plug or main switch) (display is dark). 2. Press the lower left "Space" button while restarting the power supply. The 4th line of the display will show the message "no hardware test". Once the message appears you can release the button. System selftests are now disabled, but only until power supply is cut off again. Make sure to check all potentially defective components in "Manual" operation mode to ensure that no other errors persist.

Nach Fehlerbehebung ENTER-Taste drücken !

Verbrennungsstörung Nr.0029

CAUTION: Only for boilers with a lambda sensor!

Your pellet boiler will automatically control the ignition process using the lambda sensor. Combustion malfunctions will be triggered if the CO_2 emission sinks below a safety limit of 5% (no. S4) during a period of 5 minutes (no. S5) or longer. This indicates that either the pellet delivery is interrupted or the ignition procedure failed. "Error no. 0029 - combustion malfunction" will be shown on the display.

Possible reasons that could cause the malfunction:

- The Intermediate bin is empty.....	Level indicator defective (insufficient suction periods in the case of a suction turbi
- Bridging occured in the intermediate bin.....	Debris or excessive dust in the intermediate bin
- The stoker auger is running backwards.....	Stoker auger defective (capacitor)
- The combustion chamber is overfilled.....	Ignition defective

Follow these instructions to fix the problem:

1. Remove the ash box and insert the control sheet.
2. Acknowledge the error by pressing "Enter" (the displayed message should be blinking now). While in "Manual" operation mode (and display no.2 is shown) press the + button until the pusher grate is fully opened. Check if the combustion chamber is overfilled and proceed with the **corresponding procedure** if
3. While in "Manual" operation mode (no.4), press the + button until the stoker auger starts (and the pusher grate is being opened) and check if pellets are being delivered.

if no pellets are being delivered:

a. **Check if the intermediate bin contains pellets:**
In the case of a **suction turbine,** this can be checked by tapping the intermediate bin or using the syphols contained in the lid. Check the level indicator (the indicator light is lit when the bin is full) if the bin is empty. Then refill the bin and the stoker auger. (as described in c.)

In the case of a **direct auger**, remove the maintenance lid and check if the transition piece is empty. If that is the case, check if the orange diode light is lit and if the display shows the message "full" when the intermediate bin is filled. The absence of either of these two signals indicates a defective level indicator. Check clamps 14 and 15 and the connection cables to ensure that the device is correctly connected. If you can't find any sign of an incorrect connection, try replacing the level indicator. Refill the extraction and stoker augers when done. (as described in c.)

b. If **no pellerts are being delivered** while **the intermediate bin is filled** and all components of the delivery system are running, the bin might be jammmed. This can be caused by debris or accumulated dust. Open the lid of the bin and remove all pellets and debris or dust to manually fix the problem. (If you find dust to be the cause of the problem, you might want to discuss the high dust content with the pellet supplier) Refill the extraction- and stoker augers when done. (as described in c.)

c. **Filling:** While in "Manual" operation mode (no.7/7a), start the automatic refill of the intermediate bin by pressing the + button. Then use the + button (no.4 active) to deliver pellets (with the stoker auger) until they fall onto the control sheet. (this takes up to 3 minutes) Then set the mode switch to "Auto" and restart the boiler.

if pellets are being delivered:

Start up the boiler in "Auto" mode and check if the stoker motor is rotating in the forward direction. If there are phases of backward rotation, the motor must be replaced as soon as possible.

Combustion chamber overfilled:

Remove the green heating device (after loosening the attachement screw) and check the function of the device using the + button while in "Manual" operation mode (no.8). Replace the heating element if the emitted air is cool, or replace the device if no air is emitted at all.

If the problem is solved or no problem was found, restart the system in "Auto" mode, press Enter or shortly cut the system from power supply. CAUTION: Check no.2 must be performed to allow start up of the boiler.

siehe Corel-Draw "Platinenplan"

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Parameter-Liste

Scheme	Date:			
No.	EPROM:			
.....	Signature:			

Customer Settings

Menu	Description	Default	Customer set-point I	Customer set-point II
No. 1	Hot water storage 1 day clock	ON 17:00 00:00 OFF 20:00 00:00		
see parameter "Weekly clock" (No. D9 in the commissioning settings)				
No. 1a	Hot water storage 1	Mo Tu We Th Fr Sa Su ON 17:00 00:00 OFF 20:00 00:00		
No. 1b	Hot water storage 1	off		
No. 2	Hot water storage 1 set-point temperature	60°		
No. 3	Heating circuit 1 day clock	ON 6:00 15:00 OFF 9:00 22:00		
see parameter "Weekly clock" (No. D9 in the commissioning settings)				
No. 3a	Heating circuit 1	Mo Tu We Th Fr Sa ... ON 06:00 15:00 OFF 09:00 22:00		
No. 3b	Heating circuit 1	.....Su ON 06:00 00:00 OFF 22:00 00:00		
No. 4	HC1 daytime room temp. set-point	20°		
No. 5	HC1 daytime reduced room temp. set-point	16°		
No. 6	Heating circuit 2 day clock	ON 06:00 15:00 OFF 09:00 22:00		
see parameter "Weekly clock" (No. D9 in the commissioning settings)				
No. 6a	Heating circuit 2	Mo Tu We Th Fr Sa ... ON 06:00 15:00 OFF 09:00 22:00		
No. 6b	Heating circuit 2	.....Su ON 06:00 00:00 OFF 22:00 00:00		
No. 7	HC2 daytime room temp. set-point	20°		
No. 8	HC2 daytime reduced room temp. set-point	16°		
No. 9	Heating circuit 2 day clock	ON 17:00 00:00 OFF 20:00 00:00		
No. 10	Hot water storage 2 temperature set-point	60°		

Extension module 1				
H 1	Hot water storage 3 day clock	ON 17:00 00:00 OFF 20:00 00:00		
H 2	Hot water storage 3 temperature set-point	60°		
H 3	HC3 day clock	ON 06:00 15:00 OFF 09:00 22:00		
H 4	HC3 daytime room temp. set-point	20°		
H 5	HC3 daytime reduced room temp. set-point	16°		
H 6	HC4 day clock	ON 06:00 15:00 OFF 09:00 22:00		
H 7	HC4 daytime room temp. set-point	20°		
H 8	HC4 daytime reduced room temp. set-point	16°		
H 9	Hot water storage 4 day clock	ON 17:00 00:00 OFF 20:00 00:00		
H 10	Hot water storage 4 temperature set-point	60°		

Extension module 2				
H 11	Hot water storage 5 day clock	ON 17:00 00:00 OFF 20:00 00:00		
H 12	Hot water storage 5 temperature set-point	60°		
H 13	HC5 day clock	ON 06:00 15:00 OFF 09:00 22:00		
H 14	HC5 daytime room temp. set-point	20°		
H 15	HC5 daytime reduced room temp. set-point	16°		
H 16	HC6 day clock	ON 06:00 15:00 OFF 09:00 22:00		
H 17	HC6 daytime room temp. set-point	20°		
H 18	HC6 daytime reduced room temp. set-point	16°		
H 19	Hot water storage 6 day clock	ON 17:00 00:00 OFF 20:00 00:00		
H 20	Hot water storage 6 temperature set-point	60°		
No. 11	Heating off above outside temp.	16°		
No. 12	Heating off during day time reduced temp.	8°		
No. 13	Heating off during night time reduced temp.	-5		
No. 14	Autom. filling and suction time	21:00 Uhr		
No. 15	Holiday mode	inactive		
No. 16	Holiday	from … to …		
No. 20	Date / Time			

* only for systems with suction turbine

Parameter-Liste

Commissioning settings (access by simultaneously pressing + und -)

Menu	Description	Default	Set-point		
A 1	**Heating Circuit 1**	with mixer			
A 2	HC1 inclination	1,60			
A 3	HC1 flow temp. min.	30°			
A 4	HC1 flow temp. Max.	70°			
A 5	HC1 mixing time	90s			
A 6	Remote control HC1	not avail.			
A 7	HC1 dist. heating circuit	not avail.			
A 8	HC1 summertime bathroom heat.	off			
A 9	HC1 floor dryout	off			
A 9a	HC1 floor dryout fl. sp. start/stop	20°			
A 9b	HC1 floor dryout fl. setp. incr.	5°			
A 9c	HC1 floor dryout incr./red.	daily			
A 9d	HC1 floor dryout fl. setp. max	45°			
A 9e	HC1 floor dryout dwell time	one day			
A 9f	HC1 floor dryout fl. Setp. Red.	10°			
A 11	**Heating circuit 2**	not avail.			
A 12	HC2 inclination	1,60			
A 13	HC2 flow temp. min.	30°			
A 14	HC2 flow temp. Max.	70°			
A 15	HC2 mixing time	90s			
A 16	Remote control HC2	not avail.			
A 17	HC2 dist. heating circuit	not avail.			
A 18	HC2 summertime bathroom heat.	off			
A 19	HC2 floor dryout	off			
A 19a	to 19f HC2 floor dryout param.	default			
A 21	**Heating circuit 3**	not avail.			
A 22	HC3 inclination	1,60			
A 23	HC3 flow temp. min.	30°			
A 24	HC3 flow temp. Max.	70°			
A 25	HC3 mixing time	90s			
A 26	Remote control HC3	not avail.			
A 27	HC3 dist. heating circuit	not avail.			
A 28	HC3 summertime bathroom heat.	off			
A 29	HC3 floor dryout	off			
A 29a	to 29f HC3 floor dryout param.	default			
A 31	**Heating circuit 4**	not avail.			
A 32	HC4 inclination	1,60			
A 33	HC4 flow temp. min.	30°			
A 34	HC4 flow temp. Max.	70°			
A 35	HC4 mixing time	90s			
A 36	Remote control HC4	not avail.			
A 37	HC4 dist. heating circuit	not avail.			
A 38	HC4 summertime bathroom heat.	off			
A 39	HC4 floor dryout	off			
A 39a	to 39f HC4 floor dryout param.	default			
A 41	**Heating circuit 5**	not avail.			
A 42	HC5 inclination	1,60			
A 43	HC5 flow temp. min.	30°			
A 44	HC5 flow temp. Max.	70°			
A 45	HC5 mixing time	90s			
A 46	Remote control HC5	not avail.			
A 47	HC5 dist. heating circuit	not avail.			
A 48	HC5 summertime bathroom heat.	off			
A 49	HC5 floor dryout	off			
A 49a	to 19f HC5 floor dryout param.	default			
A 51	**Heating circuit 6**	not avail.			
A 52	HC6 inclination	1,60			
A 53	HC6 flow temp. min.	30°			
A 54	HC6 flow temp. Max.	70°			
A 55	HC6 mixing time	90s			
A 56	Remote control HC6	not avail.			
A 57	HC6 dist. heating circuit	not avail.			
A 58	HC6 summertime bathroom heat.	off			
A 59	HC6 floor dryout	off			
A 59a	to 19f HC6 floor dryout param.	default			

Menu	Description	Default	Set-point		
B 1	**HWS 1**	available			
B 2	HWS 1 temp. tolerance	6°			
B 3	HWS 1 temp. minimum	40°			
B 4	Legionella protection	OFF			
B 5	Legionella protection temp setp.	70°			
B 6	Legionella protection scheduled time	Mo-17:00			
B 7	HWS 1 dist. heating circuit	not avail.			
B 11	**HWS 2**	available			
B 12	HWS 2 temp. tolerance	6°			
B 13	HWS 2 temp. minimum	40°			
B 14	Legionella protection	OFF			
B 15	Legionella protection temp setp.	70°			
B 16	Legionella protection scheduled time	Mo-17:00			
B 17	HWS 2 dist. heating circuit	not avail.			
B 21	**HWS 3**	available			
B 22	HWS 3 temp. tolerance	6°			
B 23	HWS 3 temp. minimum	40°			
B 24	Legionella protection	OFF			
B 25	Legionella protection temp setp.	70°			
B 26	Legionella protection scheduled time	Mo-17:00			
B 27	HWS 3 dist. heating circuit	not avail.			
B 31	**HWS 4**	available			
B 32	HWS 4 temp. tolerance	6°			
B 33	HWS 4 temp. minimum	40°			
B 34	Legionella protection	OFF			
B 35	Legionella protection temp setp.	70°			
B 36	Legionella protection scheduled time	Mo-17:00			
B 37	HWS 4 dist. heating circuit	not avail.			
B 41	**HWS 5**	available			
B 42	HWS 5 temp. tolerance	6°			
B 43	HWS 5 temp. minimum	40°			
B 44	Legionella protection	OFF			
B 45	Legionella protection temp setp.	70°			
B 46	Legionella protection scheduled time	Mo-17:00			
B 47	HWS 5 dist. heating circuit	not avail.			
B 51	**HWS 6**	available			
B 52	HWS 6 temp. tolerance	6°			
B 53	HWS 6 temp. minimum	40°			
B 54	Legionella protection	OFF			
B 55	Legionella protection temp setp.	70°			
B 56	Legionella protection scheduled time	Mo-17:00			
B 57	HWS 6 dist. heating circuit	not avail.			
B 90	Access all boile rtemp. min.	06:00-22:00			
C 1	**Return bypass- or buffer-pump**	nicht vor.			
C 2	Buffer- oder ext. heat. mode	not avail.			
C 4	Buffer temperature set-point	60°			
C 5	Constrained charging / day clock	00:00			
C 6	Temp set point ext HC	69°			
C 7	Fault light / ext.-/ dist. circuit pump	fault light			
C 8	ext. HC with dist. heat. pump	not avail.			
D 1	**Operation mode**	varying			
D 2	Frost protection ON below	1°			
D 3	Frost prot flow temp. setp.	7°			
D 4	with / without Lambda sensor	without			
D 5	Cangeover daytime/temp.reduction	06:00-22:00			
D 6	Access deashing/cleaning	06:00-22:30			
D 7	HC 1-6 summer shutdown delay	120min			
D 8	Summer shutdown switchover	autom.			
D 9	Day- / weekly clock	day clock			
D 10	Number of blocks week clock	2			
E 1	Language	english			

Run time counter found in the extended INFO LEVEL (Access by pushing the ↑ key for 2 seconds)

Info	Description	Value	Value
	Operation hours heating		
	Operation hours stoker auger		
	Operation hours ignition		

Info	Description	Value	Value
	Op. hours extraction a. + suc. Turb.		
	Counter grate cycles		
	Counter cleaning device		
	Counter control		

Parameter-Liste

Service settings

Values in brackets valid for Classic 22

Menu	Description	Default	Set-point		
K1	Boiler: minimum firing rate	30%			
K2	Boiler: minimum temperature	72°			
K3	Boiler: maximum temperature	73°			
K4	Boiler: chimney sweep temp. setp.	70°			
K4a	Boiler: chimney sweep run time	120min			
K5	Boiler: temp. tolerance	6°			
K6	Boiler: temp. set-point increase	4°			
K7	Boiler: flue gas error below	70°			
K8	Boiler: flue gas error period	15min			
K9	Boiler: fan rundown period	7min			
K10	Boiler: fan min. rotation speed	0%			
K11	Boiler: fan max. rotation speed	100%			
L11	Dist. line pump 1: access temperature	62°			
L12	Dist. line pump 2: access temperature	62°			
L13	Pump HC1: access temperature	62°			
L14	Pump HC2: access temperature	63°			
L15	Pump HC3: access temperature	63°			
L16	Pump HC4: access temperature	63°			
L17	Pump HC5: access temperature	63°			
L18	Pump HC6: access temperature	63°			
L19	Pump ext. HC: access temperature	63°			
L20	Pump HWS 1: access temperature	63°			
L21	Pump HWS 2: access temperature	63°			
L22	Pump HWS 3: access temperature	63°			
L23	Pump HWS 4: access temperature	63°			
L24	Pump HWS 5: access temperature	63°			
L25	Pump HWS 6: access temperature	63°			
M1	HC1-6: pumps on above boiler temperature	83°			
M1a	HC1-6: outside. temp. for safety control	-10°			
M2	HC1-6: Excess heat used to	40°			
M3	HC1-6: Boiler increase after flow temp	10°			
M4	HC1: remote control roomtemp. factor	1			
M5	HC2: remote control roomtemp. factor	1			
M5a	HC3: remote control roomtemp. factor	1			
M5b	HC4: remote control roomtemp. factor	1			
M5c	HC5: remote control roomtemp. factor	1			
M5d	HC6: remote control roomtemp. factor	1			
M6	Outside temperature shutdown	alle HK			
M7	HC1-6: temp. reduction delay	15min			
M8	HC1: min. mixer runtime	0,3sec			
M9	HC2: min. mixer runtime	0,3sec			
M9a	HC3: min. mixer runtime	0,3sec			
M9b	HC4: min. mixer runtime	0,3sec			
M9c	HC5: min. mixer runtime	0,3sec			
M9d	HC6: min. mixer runtime	0,3sec			
M10	External heating circuit	ohne AT			
M11	Proportional coefficient	100%			
M12	HC1-6: mixer differential temperature	1°C			
M20	HC1-6: mixer reduction access temperature	0°C			
M21	HC1-6: mixer reduction factor	0,0			
N1	HWS 1-6: pump on at plant temp. above	80°			
N2	HWS 1-6: temp. diff. HWS pump	1°			
N3	HWS 1-6: flow reduction factor	2			
N4	HWS 1-6: Post-operation excess heat	5°			
N5	HWS 1-6: Legionella increase	5°			
O1	Buffer: HC temp. increase set-point	5°			
O2	Buffer: differential gap HC temp. set-point	5°			
O3	Buffer: boiler temperature increase	5°			
O4	Buffer: differential gap boiler temp	1°			
O5	Buffer charging: buffer socketemperature	60°			
O6	Buffer charging: temperature difference	5°			
O7	Buffer charging: pump on tolerance	5°			
O10	External heat: access temperature	60°			
O11	External heat: tolerance	2°			
O12	External heat: blocking time	15min			
P1	Ignition stop time, failed ignition	15min			
P2	Idle ignition flue gas temp.- increase	90min			
P3	Ignition: shutdown flue gas temp.	120°			
P4	Ignition: primary air supply	80%			
P5	Ignition: flue gas temp. Increase	8°			
P6	Ignition: minimum run time	3min			
P7	Ignition: feed time	4min			
P8	Ignition: maximum feed rate	70%			
P9	Ignition: hold time	120sec			
P10	Ignition: minimum feed rate	60%			
P11	Ignition: test time	12min			
Q1	De-ashing: firing runtime	180min			
Q2	De-ashing: firing runtime increase	120min			
Q3	De-ashing: fan shut down time	10min			
Q4	De-ashing: minimum shut down rate	40%			
Q5	De-ashing: motor cycles	2			
Q6	De-ashing over current warning at	0,9A			
Q7	De-ashing: over current shutdown at	1,5A			
Q8	De-ashing: runtime for opening to 3/4	4sec			
Q12	Cleaning device: cycles after de-ashing	4mal			
Q13	Cleaning device: runtime	20sec			
Q14	Cleaning device: motor overcurrent limit	5,0A			
R0	Stoking motor type	asynchron			
R1	Stoking motor synchronal oscillation	10mal			
R1a	Stoking motor synchronal oscillation range	5mA			
R1c	Stoking max. motor current asynchron	120mA (130mA)			
R1d	Stoking asynchronal power – filter	50%			
R2	Stoking backward time	10sec			
R3	Stoking cycle	10sec			
R4	Stoking min. feed rate	0%			
R5	Stoking max. feed rate without lambda s.	55%(60%)			
R10	Extraction auger RAS nominal motor current	2,0A			
R11	Extraction auger RAS max. motor current	3,2A			
R12	Extraction auger runback time RAS+RAD	1sec			
R13	Extraction auger feed rate RAS+RAD	100%			
R14	Extraction auger delay at suction cycles	5sec			
R20	RAS filling: min. auger run time at suct. per.	60min			
R21	RAS filling: max. feed time	20min			
R22	RAS filling: fan after run time	10sec			
R23	RAS filling: draught speed rate while feeding	70%			
R24	RAS filling: level indicator delay	5sec			
R30	Extract. auger RAD: nominal motor current	0,75A			
R31	Extract. auger RAD: max. motor current	1,6A			
R32	RAD filling: max. feed time	10min			
R33	RAD filling: extract. Auger after run time	15sec			
R34	RAD filling: level indicator delay	5sec			
S1	CO2 Set-point	12% (13,5%)			only f. boilers with a lambda sens
S1a	Chimney sweep CO2 Set-point	12%			
S2	CO2-stop-difference	2%			
S3	d_CO2_s	4%			
S4	CO2 -shutdown below	5%			
S5	CO2 -shutdown after	5min			
T1	Flue gas control: min. temperature	80°			
T2	Flue gas control: max. temperature	240°			
T3	Firing control: max. load	100%			
T4	Fan output adjustment	-15% (0%)			
T4a	Fan output adjustment chimney sweep mode	-15%			
T5	Flue gas control: temp. adjustment at 300°	-30°			
T6	Control b_kor	50			
T7	Control qc_ko_ymax	100			
T8	Control qc_ko_ymin	10			
T9	Control qc_ko_kp	0,05			
T10	Control qc_ko_Tn	1000,0			
T11	Control tc_k_kp	6,0			
T12	Control tc_k_Tn	1200,0			
T13	Control tc_k_Tv	90,0			
T14	Control tc_k_T1	100,0			
T15	Control tc_k_z	0,0			
T16	Control tc_k_xw_exp	1,5			
T17	Control tc_ag_kp	1,0			
T18	Control tc_ag_Tn	250,0			
T19	Control qc_co2br_kp	2,0			
T20	Control qc_co2br_Tn	100,0			
T21	Control tau_co2_verz	600s			
T22	Control faktor_co2_verz	0,05			
T50	Max. runtime in Manual mode	2 min			
Z1	Boiler type	Classic 9-15			
		(Classic 22)			