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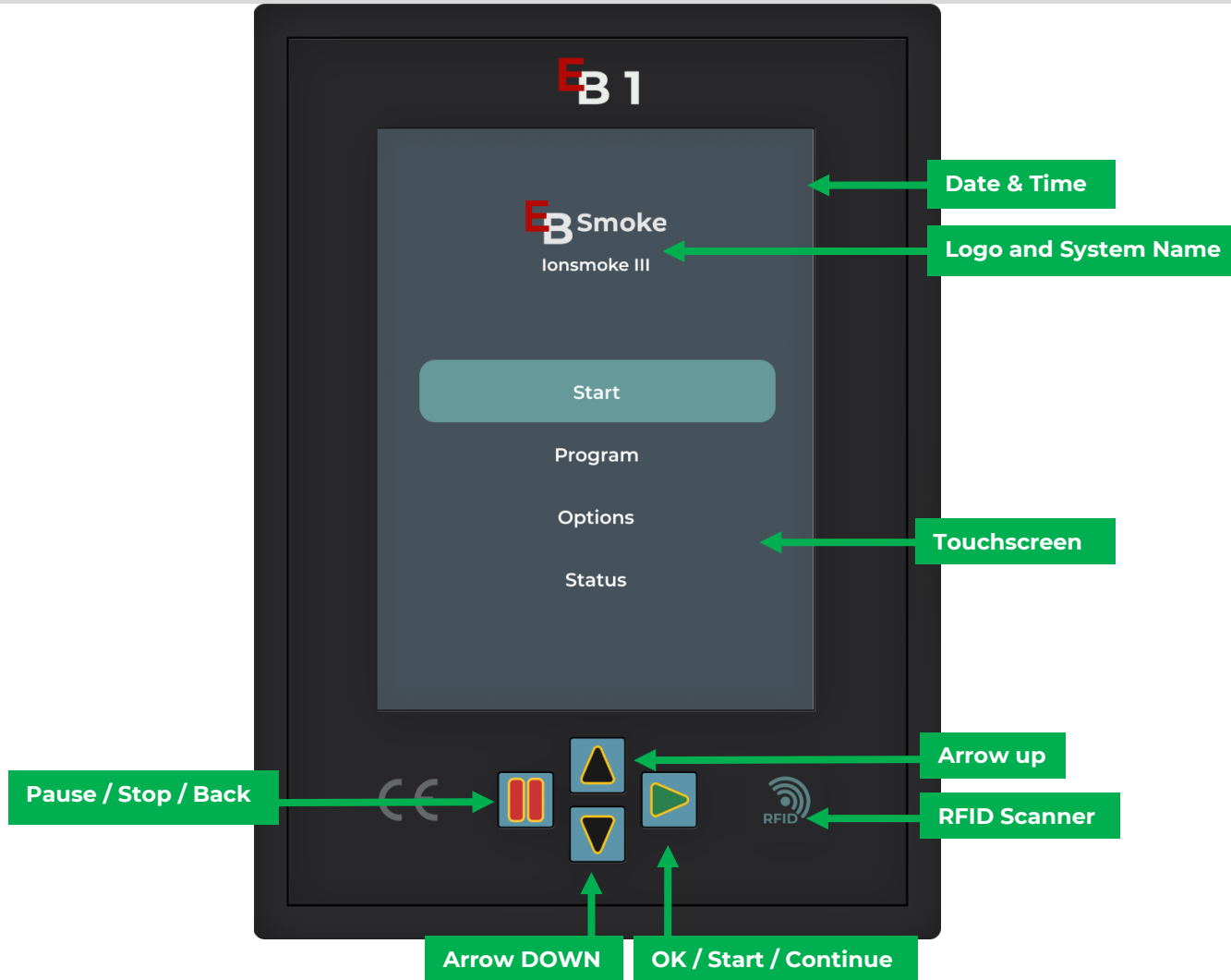
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OPERATION EB1

Frontpanel

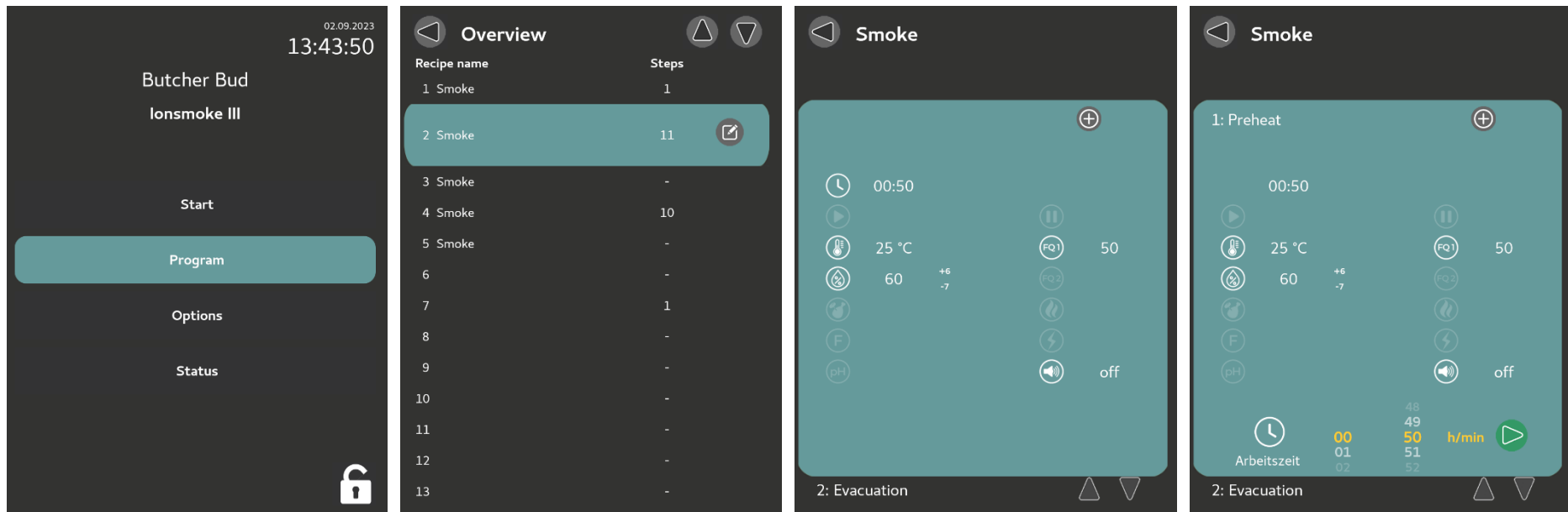


PROGRAMMING AND OPERATION

Programming

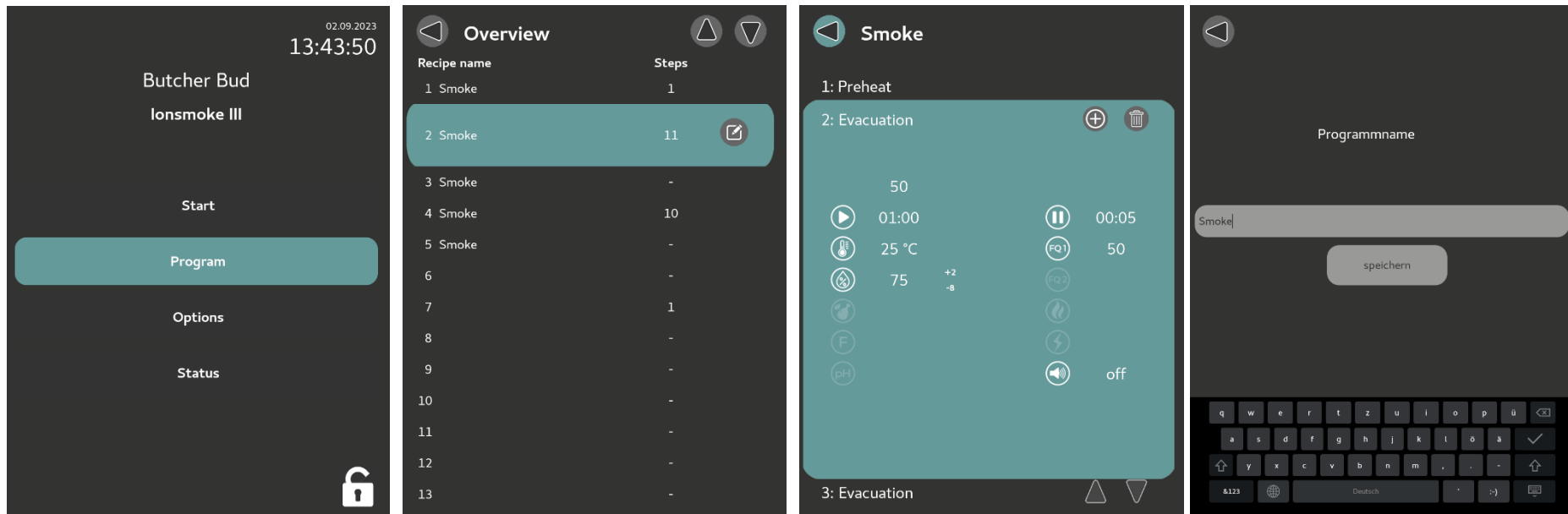
1. Click on **Program** in the main menu (or click the physical down arrow key until Program is colored. Then confirm with green arrow key.)
2. Choose **Program** with help of arrows or touchscreen
3. Select **process code**
4. Define **values by clicking on the symbol** (greyed symbols are not available on that step)

Attention: If you want to set a target core temperature you must set working time to 0h 0min. Otherwise it will be greyed out.



Change Program Name

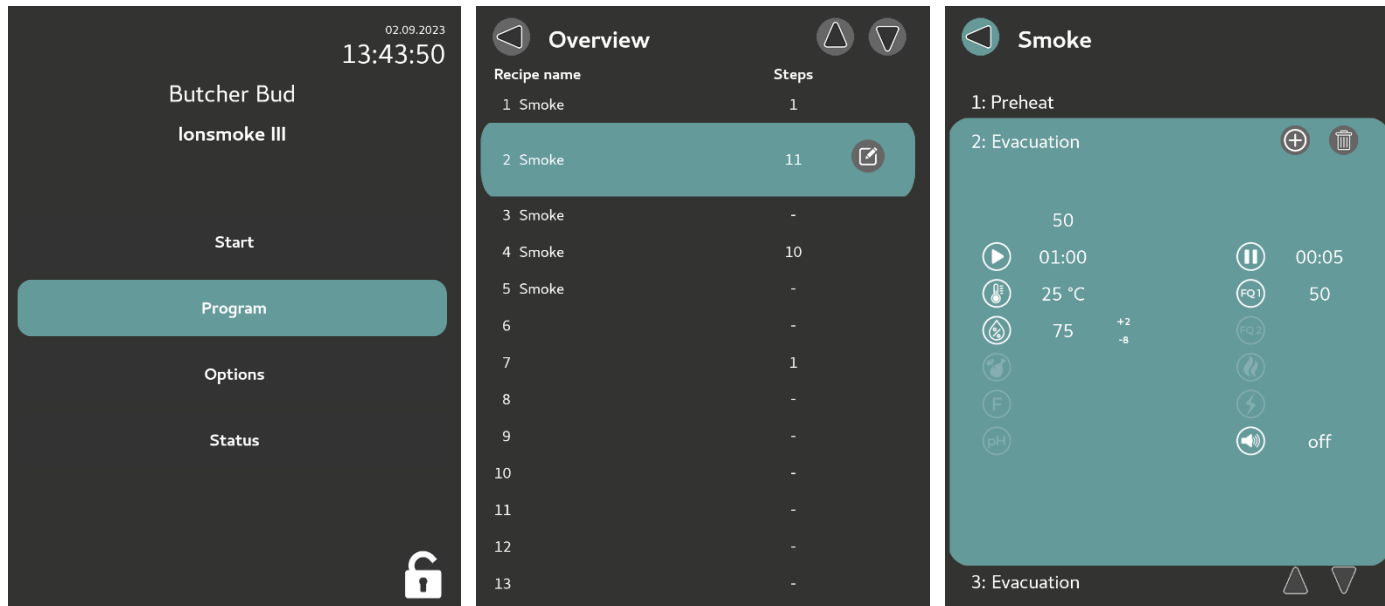
1. Click on **Program** in the main menu (or click the physical down arrow key until Program is colored. Then confirm with green arrow key.)
2. Select the **program number** via the touchscreen or arrow keys and confirm with the green arrow key.
3. Use the touchscreen to click on the **name** at the top (i.e. “Smoke”).
4. Keyboard appears, enter **name** and save.



Delete Program Step

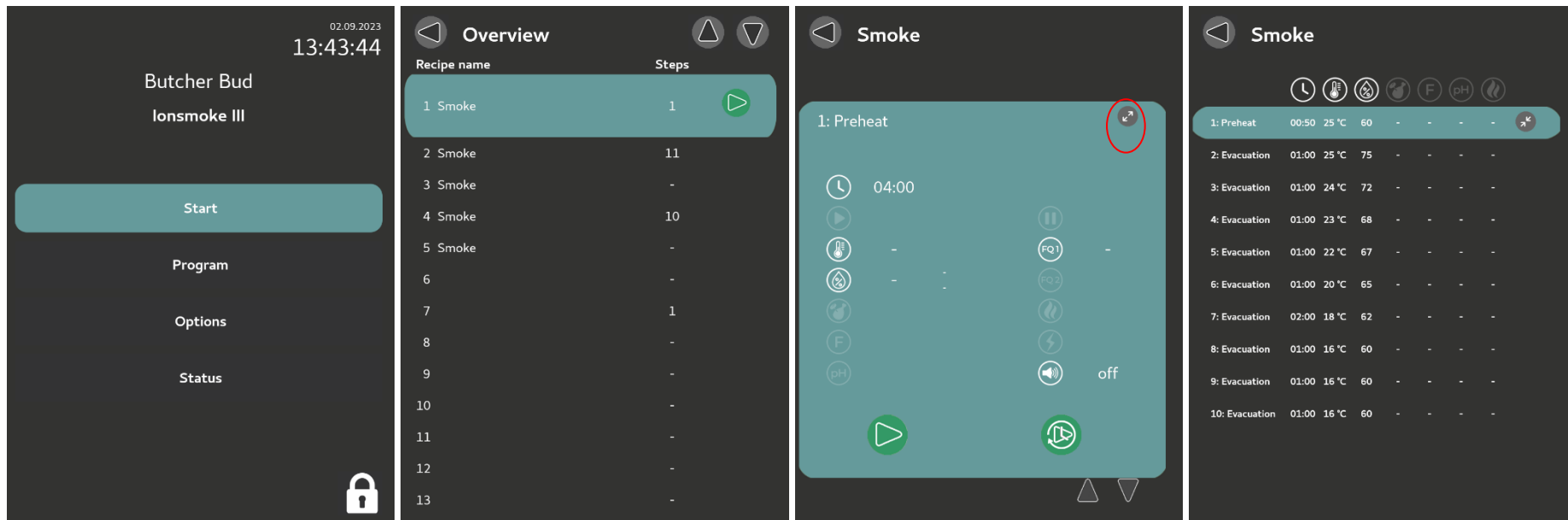
1. Click on **Program** in the main menu (or click down with the physical arrow key until Program is colored).
Then confirm with green arrow key).
2. Select **program number** via touch screen.
3. Select **process code**.
4. Click on the **recycle bin** at the top right.

Attention: The first step can only be deleted at the end. First delete all other steps.



Read Program

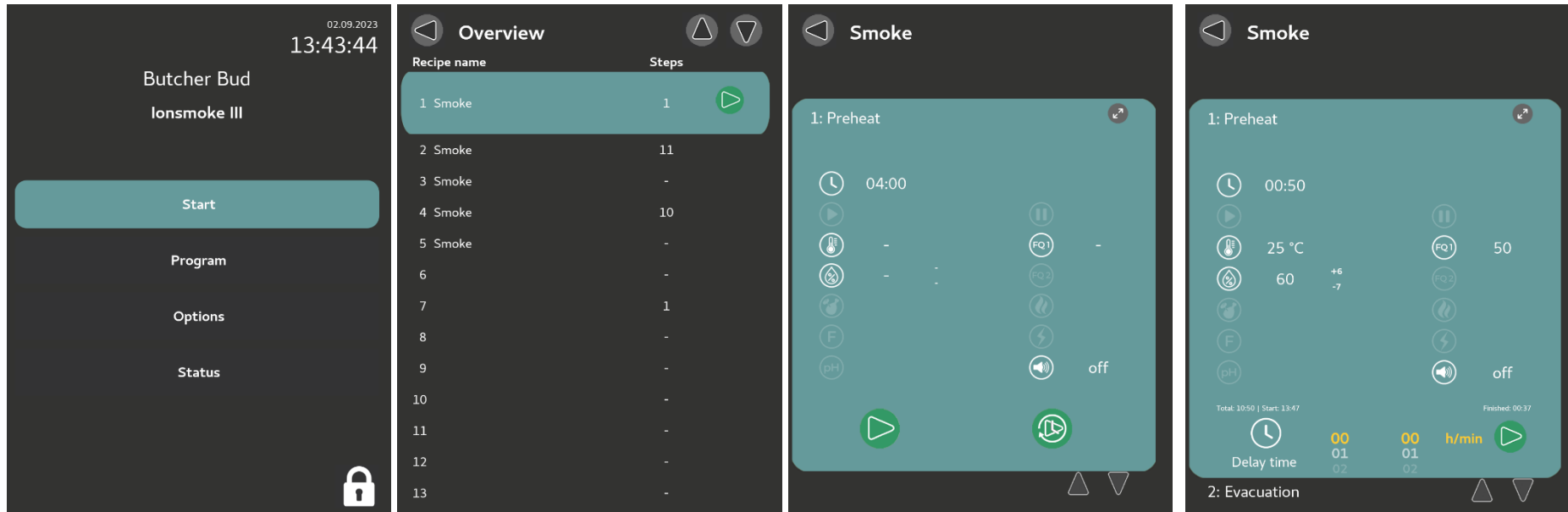
1. Click on **Start** in the main menu (or click down with the physical arrow key until Start is colored. Then confirm with green arrow key).
2. Select the **program number** via the touch screen or arrow keys and confirm with the green arrow key.
3. Click **expanding arrows** on top right to see the detailed program.



Start Program

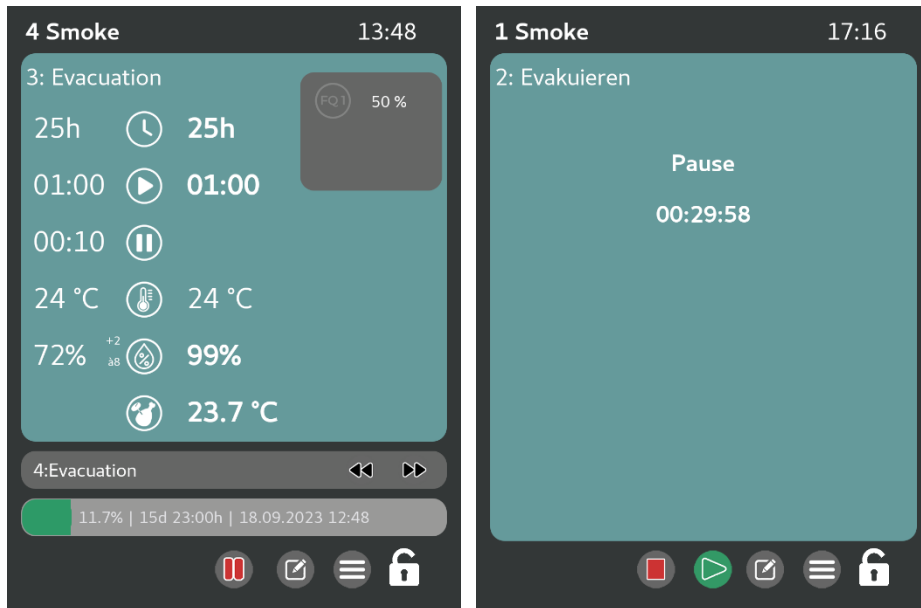
1. Click on **Start** in the main menu (or click down with physical arrow keys until Start is colored. Then confirm with green arrow key).
2. Select the **program number** via the touch screen or arrow keys and confirm with the green arrow key.
3. Use the arrow keys to select the **step** in which you want to start.
4. **Start** directly with green arrow key, or enter a preset time with arrow key + time.

In the **display settings**, it can be set that the **green keyboard key** is used to start directly - without a pre-selection time.



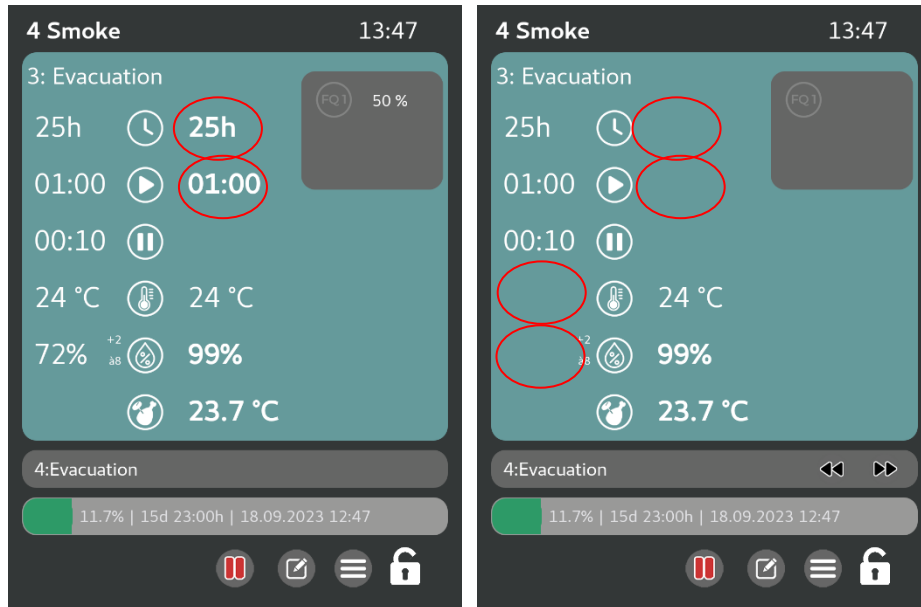
In the Running Program- „Pause / Exit“

Stop program with red "Pause" key. Program goes into pause mode. Continue clicking the red "Stop" key to end the program prematurely.



In the Running Program- „ Change Remaining Time “

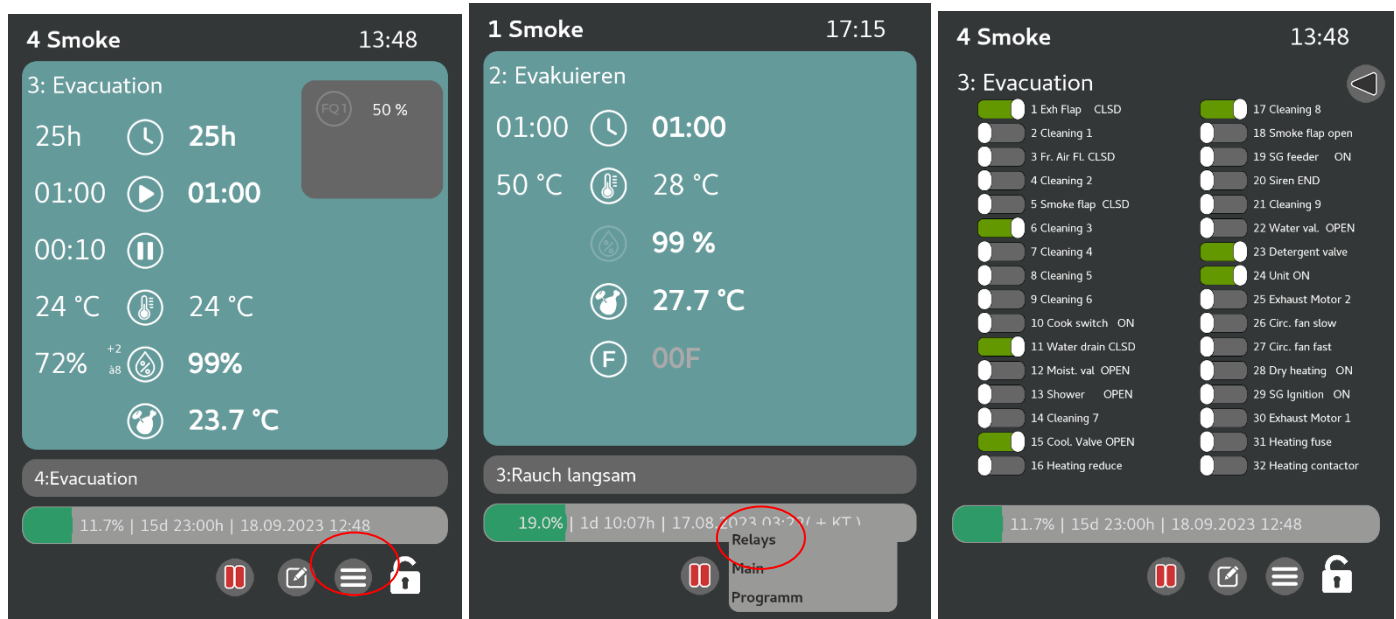
Click the pencil  in the running program. Changeable values light up (red circled values flash).



In the Running Program - " View Active Relays"

In the running program click on the **menu** – then **"active relays"**. There you can see which relays are currently switched on.

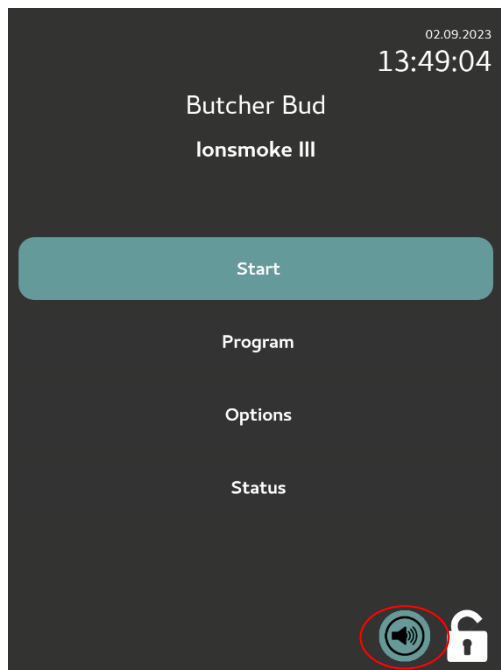
Attention: Update only about every second.



Stop the Horn after Program End

When a program ends, the **signal** starts. To cancel this prematurely, either click the "**Pause**" button on the keyboard or press the **signal symbol** that appears automatically on the start screen.

The signal duration can be set in **service variable «03»**.



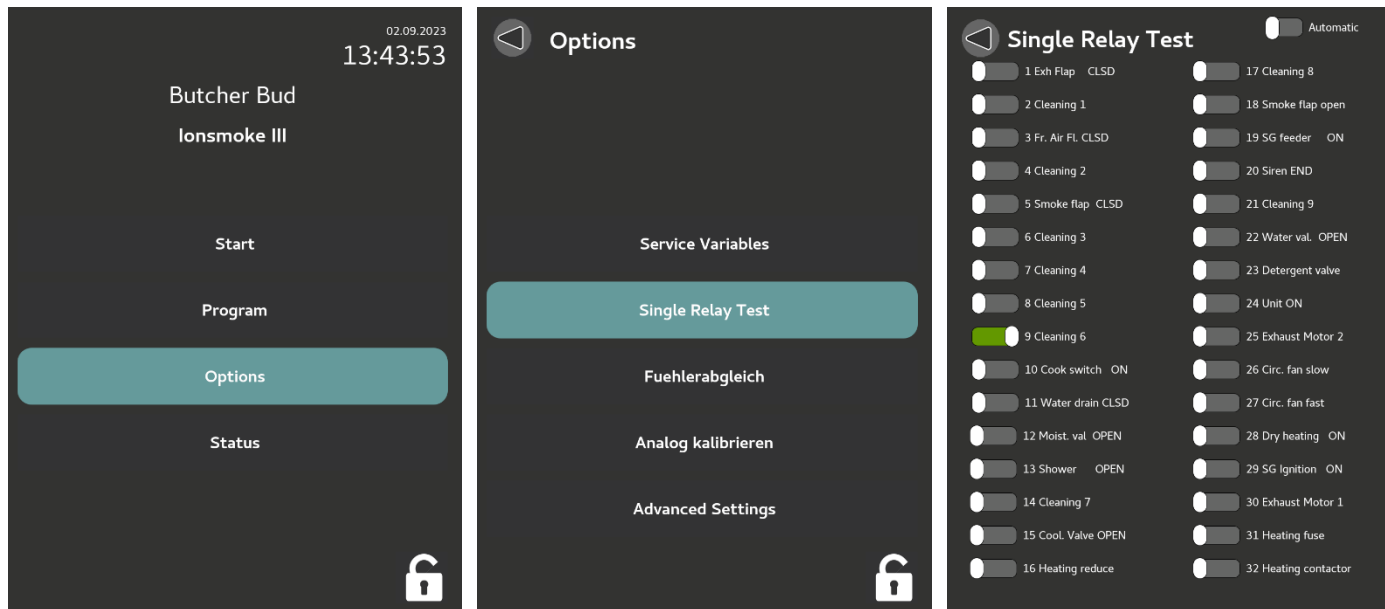
SERVICE PROGRAMS

Single Relay Test

Options > Single Relay Test

Then activate or deactivate the desired **relay** with the touch button.

Attention: Only one relay can be active at a time.



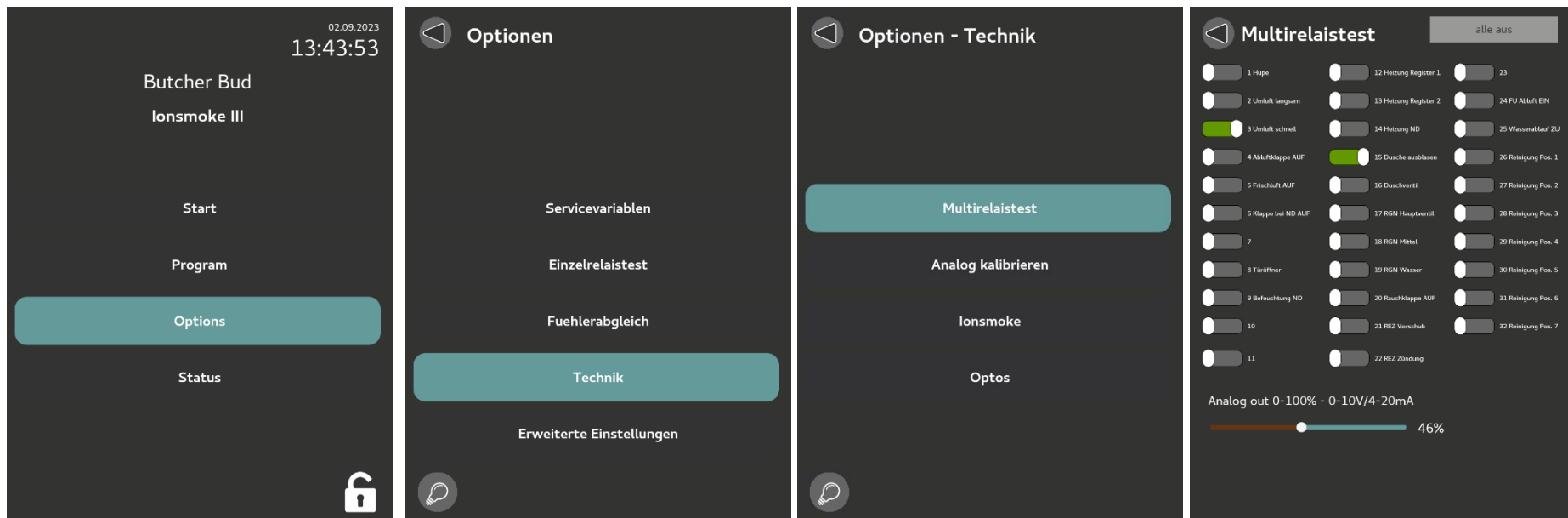
Multirelays

Optionen > Maintenance > Multirelaytest

Then activate or deactivate the desired relay with the touch button.

Analogue outputs can be switched on from 0-100% using the lower slider. **Attention:** at least one relay must be active for this.

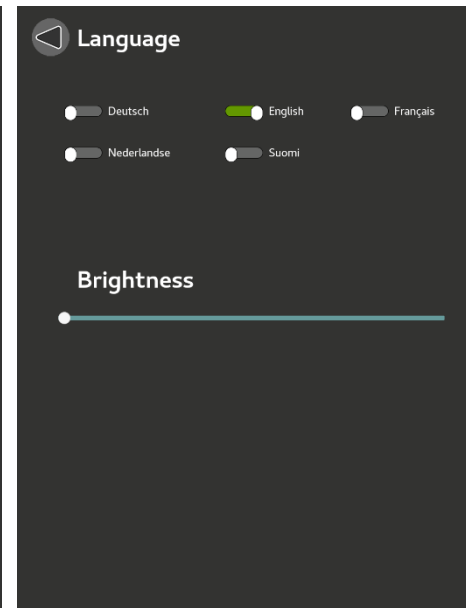
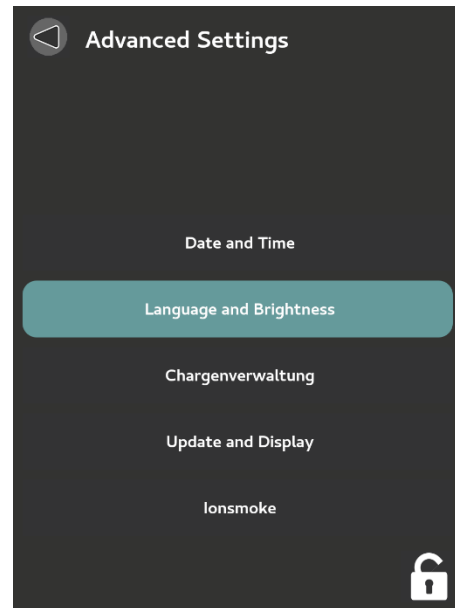
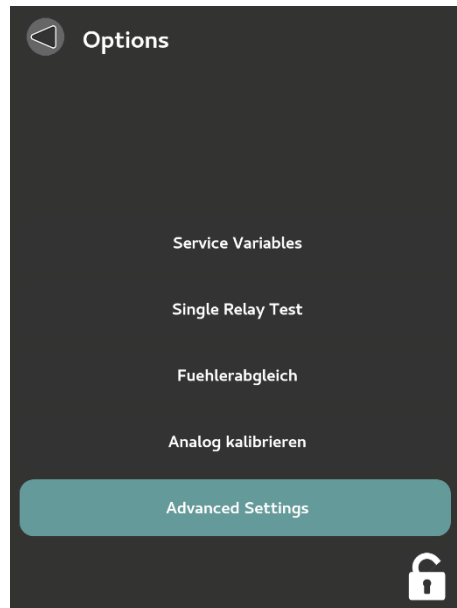
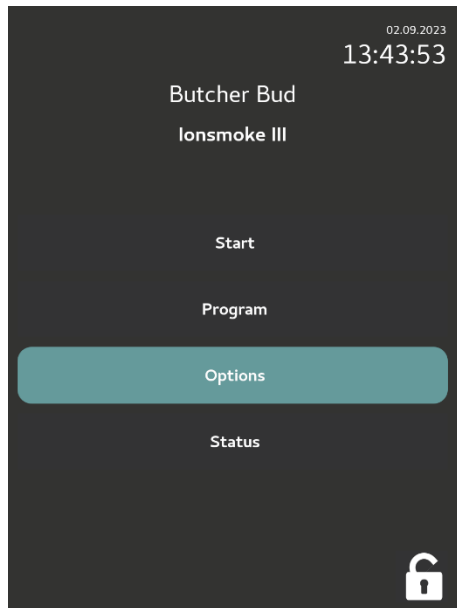
Attention: Only to be used by trained specialists. Risk of short circuit in the switch cabinet.



Language

Options > Advanced Settings > Language and Brightness

Select desired language there.

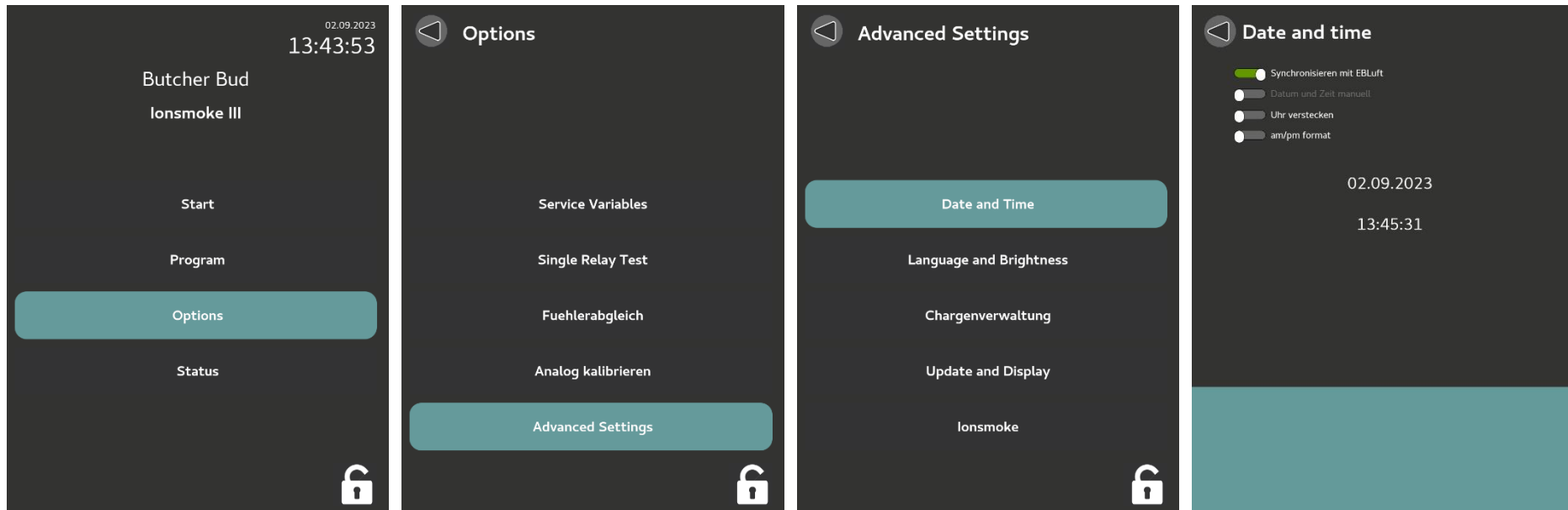


Date and Time

Options > Advanced Settings > Date and Time

Select desired option there.

Attention: Offline recording when there is no connection to the database only works when "Synchronization with EBLuft" is active. If this is active and there is a network failure, the controller stores data itself for up to two weeks and then writes it automatically to the data recording as soon as the connection is re-established.

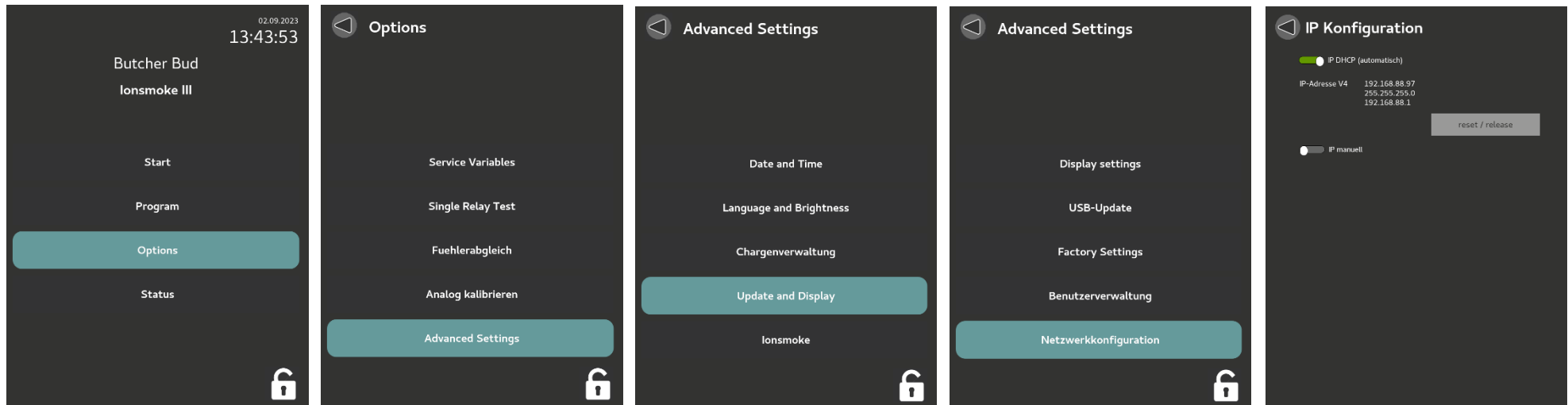


Network Configuration

Options > Advanced Settings > Network Configuration

Select desired option there.

Network tries to connect via **DHCP** by default. If you want to assign your own **fixed IP** - you can do this either via the MAC address (status screen) or via the network settings. "IP manual".

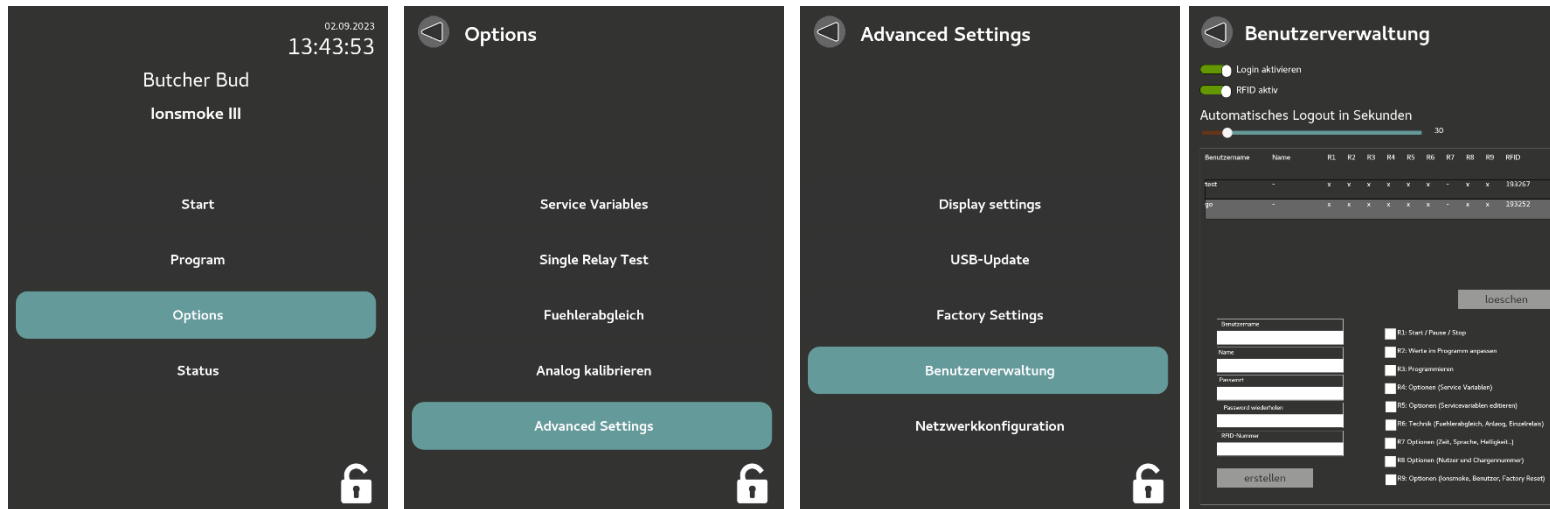


User Administration

Options > Advanced Settings > User Administration

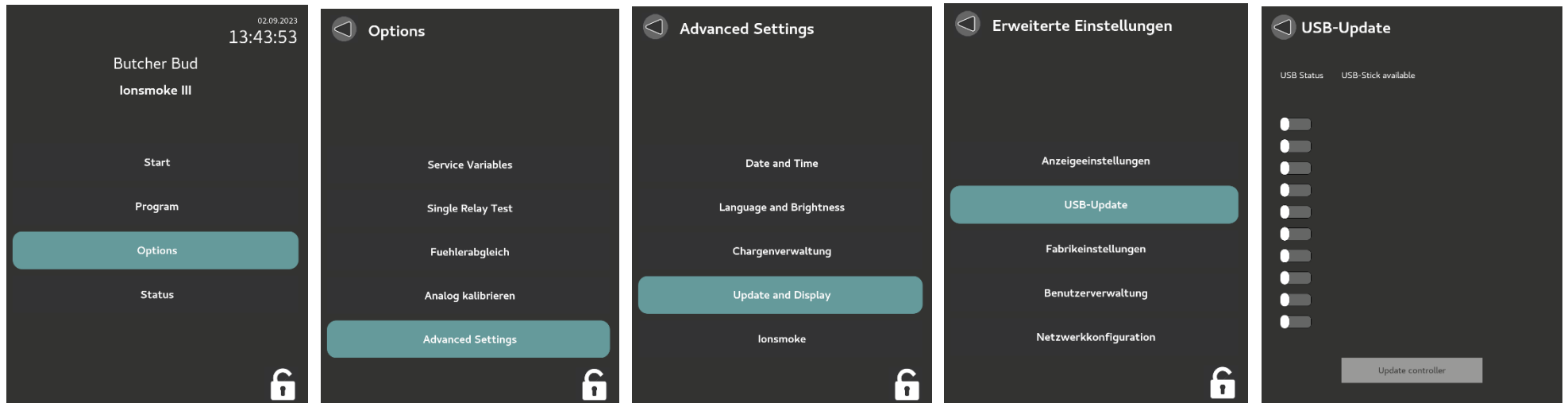
Select desired option there.

Note: RFID is not built in as standard.
Ask us for your personal RFID chips or integration into your existing system.



USB Update

1. USB stick with FAT32 formatting.
2. Create a main USB folder called "Update" - put the file "EB1Update.zip" into it.
3. Insert USB stick into **EB1**.
4. Go to **Options > Advanced settings > USB update**.
5. When the USB folder is loaded, you should be able to click on the "Update" folder.
6. Then click "Update controller"
7. **IMPORANT:** wait for 3 minues, while the update is performed.
8. Then turn off the power and restart (power cycle). ⚡
9. if the update has been carried out correctly, a 'Watchdog Error' or 'Checksum Error' occurs when starting up.

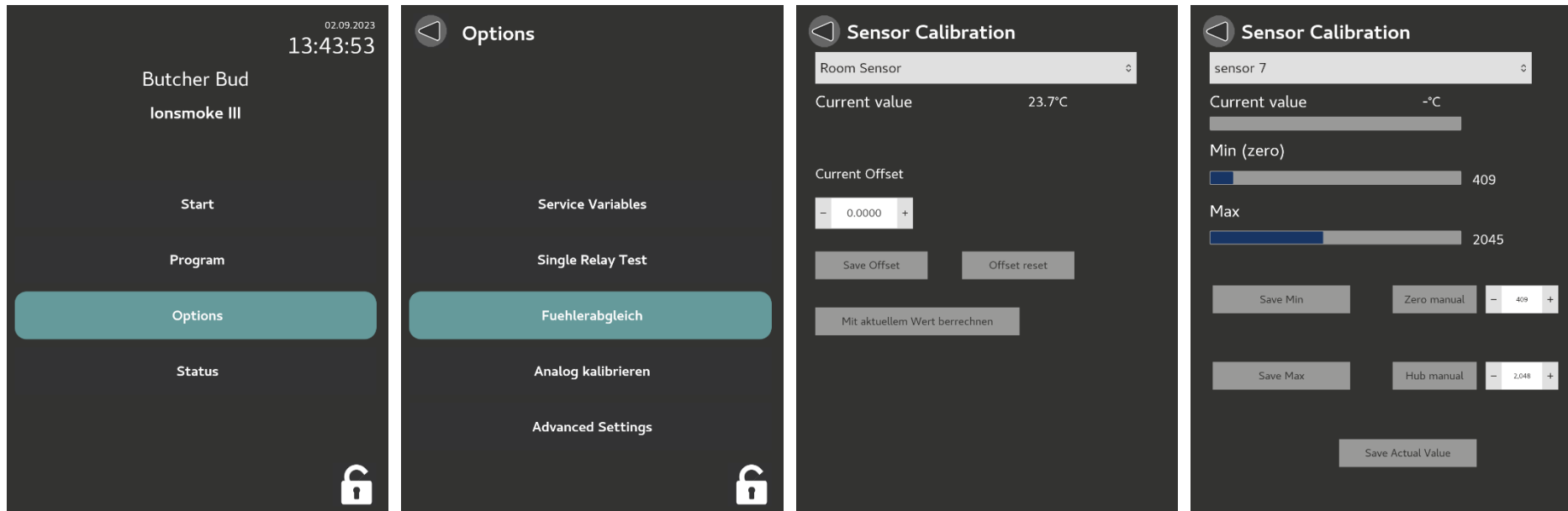


Sensor Calibration

Options > Sensor Calibration

The current temperature value appears at "**Current value**". The corresponding offset value is saved with "**Save offset**".

Attention: Sensors must be checked with a reference sensor at regular intervals.
 Correct sensor calibration according to instructions "**EB1 Sensor Calibration**" under www.ebsmoke.com/downloads



Calibrate Analog Outputs (CAUTION!)

Options > Anlaog Calibration

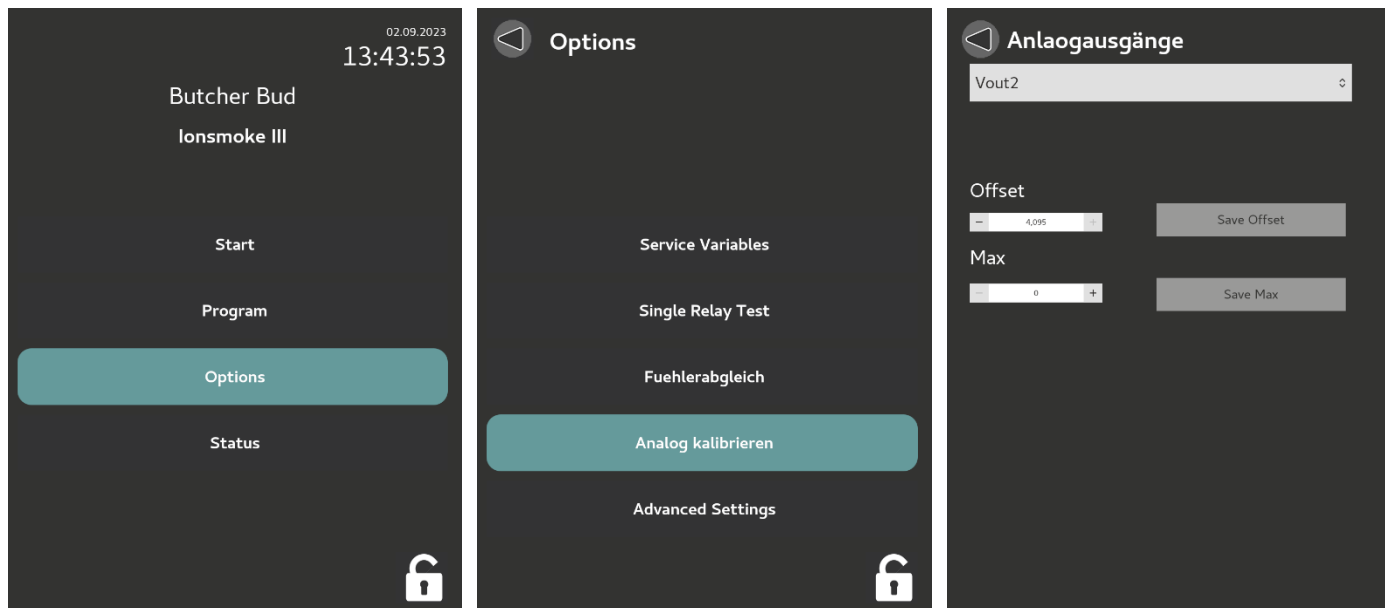
At "**Offset**" the momentary value appears.

For Vout1 to Vout4: Offset 0 and Max 1000

For lout1 to lout4: Offset 409 and Max 2048

The corresponding offset value is saved with "**Save offset**" and "**Save Max**".

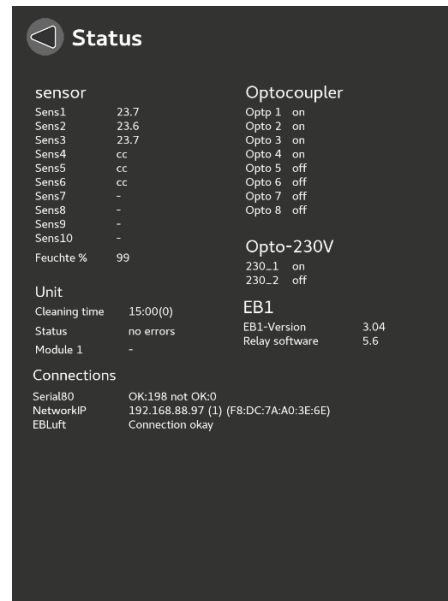
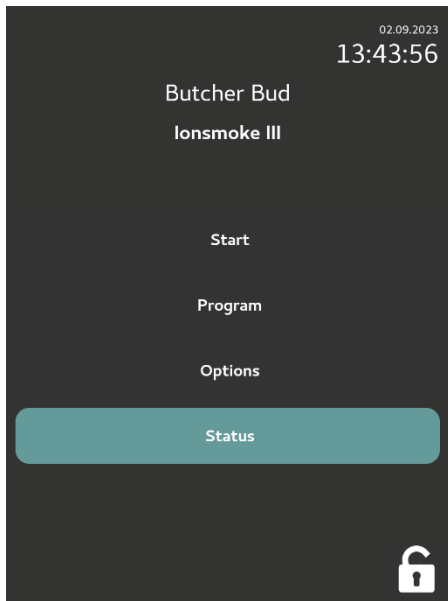
Note: This can be used to calibrate the analog outputs of the controller. Special measuring devices are required for this purpose. This service program may be performed only by the technical personnel.



Status

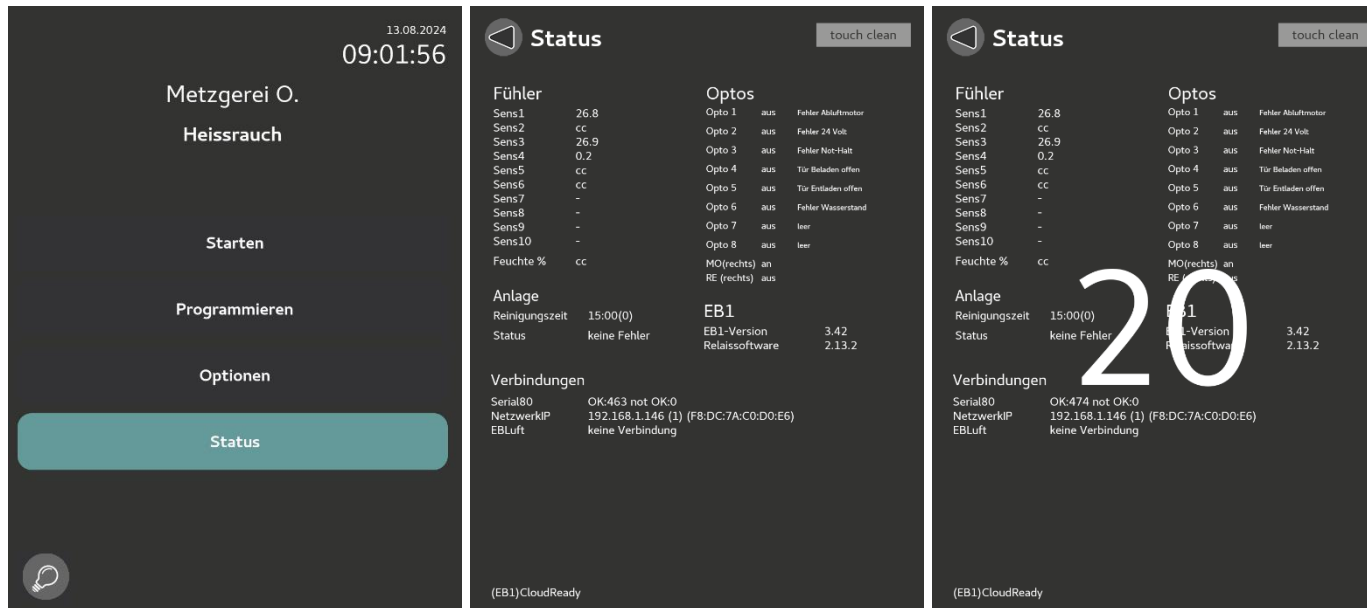
View **status screen**.

Note: If NetworkIP brackets show (0) – it means no Network Cable is plugged in. Check health of cable then.



Touch Clean

Open Status Screen einsehen.
Click touch clean.



Controller does not respond to touch inputs for 20 seconds.

Dirt can accumulate on the touch and this can then stop a programme by itself, for example.

We recommend cleaning the touch with a damp cloth at least every fortnight.

Opto-Auto Advance

Options > Technology > Optos

Special setting for switching with a waiting time until the desired opto has reached 24V.

Attention: Use only by trained specialists.

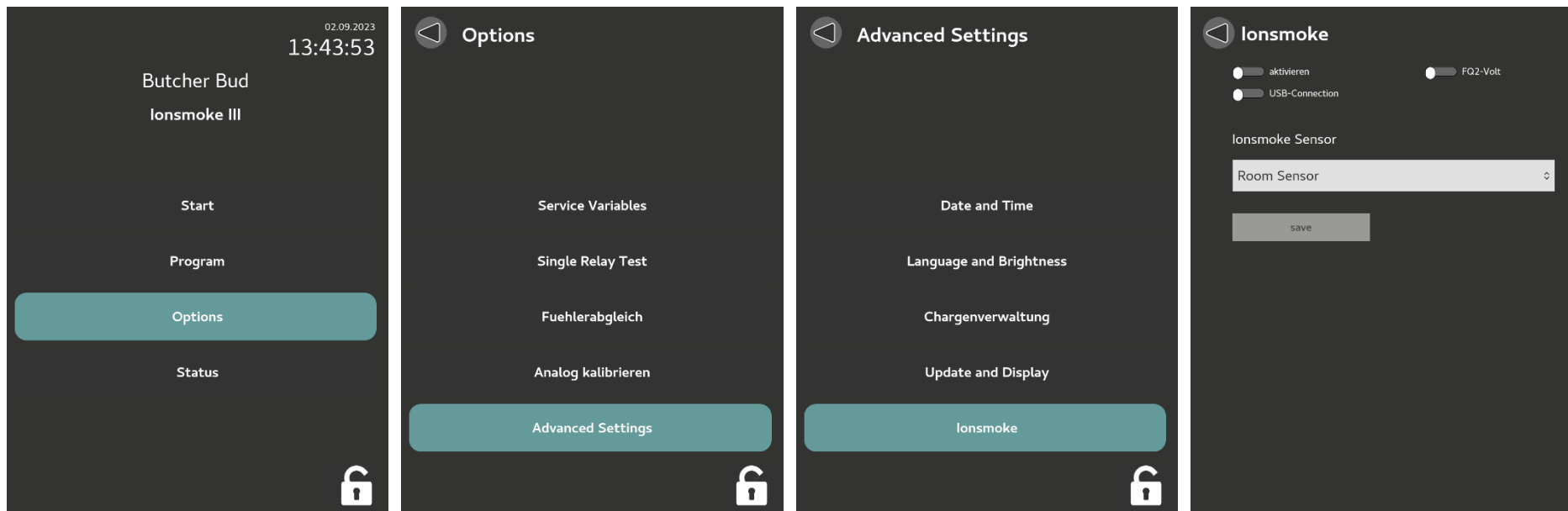


Activate Ionsmoke

Options > Advanced Settings > Ionsmoke

For the **Ionsmoke function** to work, it can be activated via the options. Ionsmoke is controlled via USB in 99% of cases. This means that "**activated**" must be selected and "**USB connection**". After that, the controller should be restarted to reinitialize the USB connection to Ionsmoke.

Ionsmoke is not installed by default. Ask us or visit our website:
www.ionsmoke.com

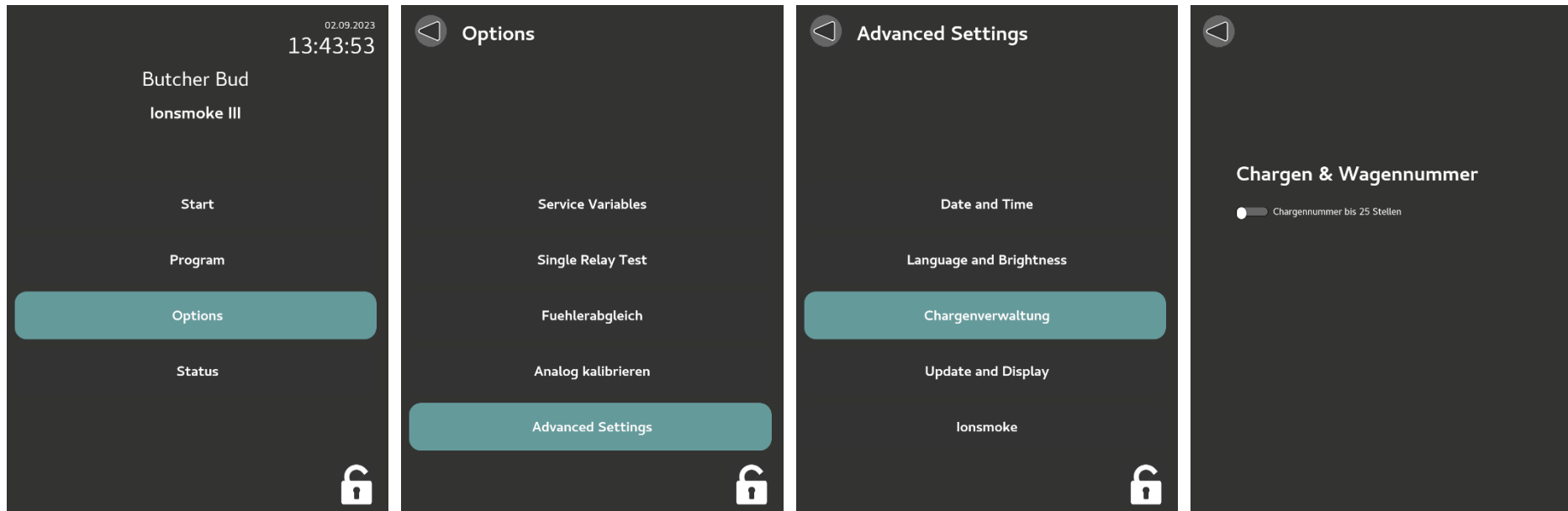


Activate Batch number

Options > Advanced Settings > Batch Numbers

Here you can select the input for batch number and carriage number.

When starting a program, a batch number with max. 25 digits and the carriage numbers can be entered.



Display Settings

Options > Advanced Settings > Update and Display > Display Settings

Various settings can be made here, e.g. "Large clock when control is at standstill".

The sequence of screenshots shows the following steps:

- Main Menu:** Shows the device name 'Butcher Bud', model 'Ionsmoke III', and a large digital clock '13:43:53'. Buttons for 'Start', 'Program', 'Options', and 'Status' are visible.
- Options:** A list of menu items including 'Service Variables', 'Single Relay Test', 'Fehlerabgleich', 'Analog kalibrieren', and 'Advanced Settings'.
- Advanced Settings:** A list of menu items including 'Date and Time', 'Language and Brightness', 'Chargenverwaltung', 'Update and Display', and 'Ionsmoke'.
- Advanced Settings (sub-menu):** A list of menu items including 'Display settings', 'USB-Update', 'Factory Settings', 'Benutzerverwaltung', and 'Netzwerkkonfiguration'.
- Anzeigen (Display Settings):** A screen for configuring display options such as 'Zusaetzlicher Fehler' (Additional Error), 'Raumtemperatur' (Room Temperature), 'Feuchtetemp' (Humidity Temp), and 'Anlagenname' (Plant Name).

A blue callout box with an arrow points to the final 'Anzeigen' screen, containing the text: "This screen appears after about 30 seconds of inactivity when no program is running and the controller is in the main menu."

The final screenshot shows the 'Ionsmoke' main display screen with the date 'Dienstag, 15. August 2023' and a large digital clock '17:12'. At the bottom, three temperature indicators are shown: 27.9, 27.8, and 27.8.

SETTING THE SERVICE VARIABLES

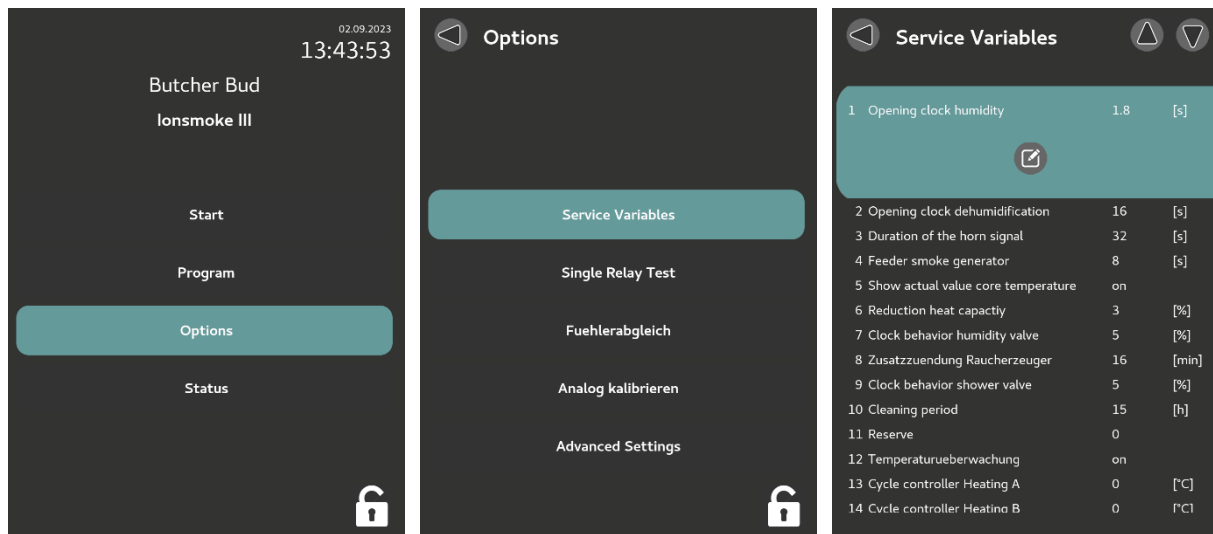
The controller has various service programs with which some **variables** can be determined. These programs are described below.

The values are set by the supplier during commissioning. It is nevertheless important that the operator of the plant has an idea of these possibilities, since in some malfunctions the variables must be reset.

The service variables screen can be accessed as follows:

Options > Service Variables

Then select the desired variable with arrow key or touch and change the values with pencil button



Select one of the variables numbers 1-52 from the list here.

Note: some of the variables are only optionally available. Please discuss these with your supplier.

Variable 01 – Opening Time Humidity

This determines the **opening time** of the **humidification** valve. Values between 0.1 seconds and 9.9 seconds are permitted.

The value corresponds to the **BF humidification valve** in the EBCloud.

If BF is set, a '+' can be selected for the humidity setting during recipe programming.
The correspondingly set humidification valve is opened every X seconds for the entered value.

This works as follows:

- +9 = every 50 seconds
- +8 = every 100 seconds
- +7 = every 150 seconds
- +6 = every 200 seconds
- +5 = every 250 seconds
- +4 = every 300 seconds
- +3 = every 350 seconds
- +2 = every 400 seconds
- +1 = every 450 seconds

Special feature: In combined smoking, cooking and intensive cooling systems, this variable is set to the value 1 second per digit and is used for humidification in the cooling phase.

Variable 02 – Opening Time Dehumidifying

This determines the **opening time** of the **dehumidification valve**. Values between 1 second and 99 seconds are permitted.

The value corresponds to the **EF dehumidification** valve in the EBCloud.

If EF is set, a '-' can be selected for the humidity setting during recipe programming. The set valves or dampers are opened every X seconds for the entered value.

This works as follows:

- 9 = every 50 seconds
- 8 = every 100 seconds
- 7 = every 150 seconds
- 6 = every 200 seconds
- 5 = every 250 seconds
- 4 = every 300 seconds
- 3 = every 350 seconds
- 2 = every 400 seconds
- 1 = every 450 seconds

Variable 03 – Signal

This defines the duration of the horn signal at the end of the programme. Values between 1 second and 99 seconds are permitted. By default in seconds.

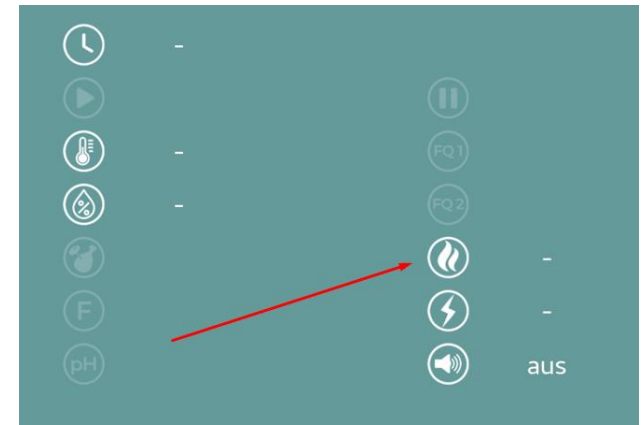
The value corresponds to **the signal** relay function in the EBCloud.
In the EBCloud, you can set whether the value runs in seconds or minutes.

Variable 04 – Feeder Smoke Generator

This defines the time during which the gearbox should run for the **smoking material transport**. Values between 1 second and 99 seconds are permitted.

The value corresponds to the **Feeder Relay function** in the EBCloud.

Value	Pause (s)	Value	Pause (s)	Value	Pause (s)	Value	Pause (s)	Value	Pause (s)	Value	Pause (s)	Value	Pause (s)
99	7	89	77	79	147	69	217	59	287	49	357	39	427
98	14	88	84	78	154	68	224	58	294	48	364	38	434
97	21	87	91	77	161	67	231	57	301	47	371	37	441
96	28	86	98	76	168	66	238	56	308	46	378	36	448
95	35	85	105	75	175	65	245	55	315	45	385	35	455
94	42	84	112	74	182	64	252	54	322	44	392	34	462
93	49	83	119	73	189	63	259	53	329	43	399	33	469
92	56	82	126	72	196	62	266	52	336	42	406	32	476
91	63	81	133	71	203	61	273	51	343	41	413	31	483
90	70	80	140	70	210	60	280	50	350	40	420	30	490



The feed rate can be set from 30 - 99.
Where: 99 = every 7 seconds. One feed.

Please note: The feed should always make a full rotation. For pneumatic feeds, we recommend 3-4 seconds.

Alternative: The cycle intervals can also be required for a regular feed for all programmes

Variable 05 – Always show actual core temperature

This activates the display for the actual value of the core temperature, even if no setpoint has been programmed. It is possible to choose between 'on' and 'off'.

Please note: This is active by default in newer versions.

Variable 06 – Reduction Heat Capacity

This sets the **duration** of the heating cycle for **delta cooking processes**. It is possible to choose between a number '01' to '10'. The assigned value refers to ten times the value in %

Therefore, 10 = 100 % If 100% switch-on time corresponds to 60 seconds, then 50% is 30 seconds ON and 30 seconds OFF

This variable should only be selected for cooking processes with low-pressure steam.

Variable 07 – Clock behavioral Humidity valve

This determines the duration of the **cycle for the humidity valve**, from humidification via the humidity controller. Values between 10% and 100% (1 - 10) are permitted.

The value corresponds to **FT humidity cycle** in the EBCloud.
The initial value is 20 seconds.

With 20 seconds opening time (standard), the following values are included:

- 1 = 2 seconds on, 18 seconds off.
- 2 = 4 seconds on, 16 seconds off.
- 3 = 6 seconds on, 14 seconds off.
- 4 = 8 seconds on, 12 seconds off.
- 5 = 10 seconds on, 10 seconds off.
- 6 = 12 seconds on, 8 seconds off.
- 7 = 14 seconds on, 6 seconds off.
- 8 = 16 seconds on, 4 seconds off.
- 9 = 18 seconds on, 2 seconds off.
- 10 = 20 seconds on, 0 seconds off.

Please note: The humidity cycle is switched until the ACTUAL humidity reaches the SET value. To do this, a SET humidity must be entered.

Variable 08 – Additional Ignition smoke generator

This determines the duration of the **post-ignition** time for the **smoke generator**. Values between 1 minute and 49 minutes are permitted.

The value corresponds to **ignition REZ** in the EBCloud.
ZZ' must still be activated in the process in the ignition relay.

Please note: Once the smoke generator is glowing, the auxiliary ignition does not have to be permanently on in the smoke step. With vapour smoke generators, the ignition can be set to static.

Variable 09 – Clock behavioral shower valve

This determines the **duration of the cycle for the shower valve**. Values between 10% and 100% (1 - 10) are permitted.

The value corresponds to the **shower cycle** in the EBCloud.
The initial value is 40 seconds.

With 40 seconds opening time (standard), the following values are included:

- 1 = 4 seconds on, 36 seconds off.
- 2 = 8 seconds on, 32 seconds off.
- 3 = 12 seconds on, 28 seconds off.
- 4 = 16 seconds on, 24 seconds off.
- 5 = 20 seconds on, 20 seconds off.
- 6 = 24 seconds on, 16 seconds off.
- 7 = 28 seconds on, 12 seconds off.
- 8 = 32 seconds on, 8 seconds off.
- 9 = 36 seconds on, 4 seconds off.
- 10 = 40 seconds on, 0 seconds off.

Variable 10 – Cleaning interval

This determines how many hours the system may be used for smoking until the next cleaning should take place. It is possible to choose between 1 and 99 digits. The assigned value refers to 1 hour per digit. The cleaning time is only reset if 'Cleaning action' runs for 15 minutes without interruption.

CLN must be activated in the EBCloud for cleaning to be reset.
The time counts down if **RH smoke** is activated in the process.
The 15 minutes is a standard value that can be changed in the EBCloud.

Variable 11 - Reserve

Leer

Variable 12 – Temperature monitoring

This determines whether **temperature monitoring** should be active or inactive. It is possible to choose between 'on' and 'off'.

Please note: Once the smoke generator is glowing, the auxiliary ignition does not have to be permanently on in the smoke step. With vapour smoke generators, the ignition can be set to static.

Variable 13 – Proportional Heating A

This determines how many degrees C before the programmed setpoint the heating controller A should start the cycle behaviour. It is possible to choose between 0°C and 50°C.

The value corresponds to **heating PA** in the EBCloud.

During the heating process, the temperature is heated directly to 0°C and then the heating switches off.

With relay heaters (On / Off)

For values between 1°C - 50°C, the heating is switched off before the setpoint is reached and then only switched on at proportional intervals.

With analogue heaters (0-10V or 0-20mA)

At 1°C - 50°C, the heating is slowly closed from 100%-0%. Or opened.

Please note: For electric, gas or oil heating with pure on-off relays, we recommend setting the variable to 0. The same applies to cooking (low-pressure steam).
The value can be adjusted individually for high-pressure steam dry heaters.

Variable 14 – Proportional Heating B

This determines how many degrees C before the programmed setpoint the heating controller B should start the cycle behaviour. It is possible to choose between 0°C and 50°C.

The value corresponds to **heating PB** in the EBCloud.

During the heating process, the temperature is heated directly to 0°C and then the heating switches off.

With relay heaters (On / Off)

For values between 1°C - 50°C, the heating is switched off before the setpoint is reached and then only switched on at proportional intervals.

With analogue heaters (0-10V or 0-20mA)

At 1°C - 50°C, the heating is slowly closed from 100%-0%. Or opened.

Please note: For electric, gas or oil heating with pure on-off relays, we recommend setting the variable to 0. The same applies to cooking (low-pressure steam).
The value can be adjusted individually for high-pressure steam dry heaters.

Variable 15 – Heating with minimum on/off time

Due to the legally prescribed safety regulations for oil and gas heating systems regarding ventilation of the system before and after operation, it is necessary to provide a minimum time for these heating systems during which the heating remains active or inactive. The specified time is defined in the programme and cannot be changed by the operator. However, it is possible to switch this mode on or off.

The minimum ON/OFF can be adjusted in the EBCloud.

It is permissible to choose between 'on' and 'off'.

Variable 16 – Feeder clocks at ignition time

This determines the number of feeds to be made during pre-ignition. It is permissible to choose between a number '1' and '9'.

A **feeder relay** must be set for the EBCloud. In addition, the **RZ** code must be activated in the process before the smoke.

Please note: The feeds are continuous. This means that a pneumatic feed does not switch 9x - but only 1x but for 9x the original time (service variable 4)

Variable 17 – Temperature limit Relay 1

The limit of safety temperature 1 can be set here. Permissible is between 1°C and 201°C.

Safety temperature 1 can be selected in any sensor position in the EBCloud under Sensor. There you can define which relays must be switched off and which must be switched on when the temperature is reached.

Please note: The function is often used to intercept an overtemperature in a smoke generator and then extinguish the smoke generator using a water valve.

Variable 18 – Temperature limit Relay 2

The limit of safety temperature 2 can be set here. Permissible is between 1°C and 201°C.

Safety temperature 2 can be selected in any sensor position in the EBCloud under Sensor. There you can define which relays must be switched off and which must be switched on when the temperature is reached.

Please note: The function is often used to intercept an overtemperature in a smoke generator and then extinguish the smoke generator using a water valve.

Variable 19 – Temperature limit Relay 3

The limit of safety temperature 3 can be set here. Permissible is between 1°C and 201°C.

Safety temperature 3 can be selected in any sensor position in the EBCloud under Sensor. There you can define which relays must be switched off and which must be switched on when the temperature is reached.

Please note: The function is often used to intercept an overtemperature in a smoke generator and then extinguish the smoke generator using a water valve.

Variable 20 – Temperature limit Relay 4

The limit of safety temperature 4 can be set here. Permissible is between 1°C and 201°C.

Safety temperature 4 can be selected in any sensor position in the EBCloud under Sensor. There you can define which relays must be switched off and which must be switched on when the temperature is reached.

Please note: The function is often used to intercept an overtemperature in a smoke generator and then extinguish the smoke generator using a water valve.

Variable 21 – Enthalpy control

This determines whether the control unit should work with the de-alpha controller or not. It is possible to choose between 'on' and 'off'.

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 22 – Enthalpy Bandwidth

This determines the difference from the room temperature (actual value) at which the outside air is used. It is permissible to choose between a number '0' and '9'.

This is a special variable that cannot be defined in the EBCloud for the time being.

The following applies for '0' = 0°C temperature band and for '9' = 9°C temperature band.

Variable 23 – Enthalpy Proportion

This determines the distance from the setpoint for the room temperature up to which the fresh air damper remains fully open. It is permissible to choose between a number '0' and '20'.

This is a special variable that cannot be defined in the EBCloud for the time being.

Dabei gilt für "0" = 0°C Proportionalband und für "20" = 20°C Proportionalband.

Variable 24 – Enthalpy Bandwith 2

This determines the difference to the humidity (actual value) from which the outside air is used. It is permissible to choose between a number '0' and '9'.

This is a special variable that cannot be defined in the EBCloud for the time being.

The following applies for '0' = % moisture band and for '9' = 9% moisture band

Variable 25 - Entalphyregler Proportion 2

This determines the distance to the setpoint value for the humidity up to which the fresh air damper remains fully open. It is permissible to choose between a number '0' and '20'.

This is a special variable that cannot be defined in the EBCloud for the time being.

The following applies for '0' = 0% proportional band and for '20' = 20% proportional band.

Variable 26 – Additional Core temperature mode

This determines whether the control unit should work with additional core temperature sensors or not. It is possible to choose between 'on' and 'off'.

If a second **core temperature sensor** is defined in the EBCloud under Sensors and this option is activated, the control system always waits for both sensors in a core temperature-controlled process.

Variable 27 - Temperature in °F Fahrenheit

This determines whether the temperature display should be shown in °C or °F. It is possible to choose between 'on' and 'off'.

Please note: °C is still used in the sensor calibration.

Variable 28 - leer

Please note: This function can be found in the options under 'Batch number'.

Variable 29 – Time for second core temp sensor

This determines how long the system should continue cooking after a second core temperature sensor when this value is reached. It is possible to choose between a number '1' and '59'.

If a second **core temperature sensor** is defined in the EBCloud under Sensor, this option is activated.

For '1' = 1 minute additional cooking time and for '59' = 59 minutes additional cooking time.

Variable 30 – Humidity monitoring

This determines whether the additional humidity monitoring is active (time during which the humidity in the process was above 90% as a % of the total time). It is possible to choose between '**on**' and '**off**'.

Please note: This is a special version and we recommend that you contact the manufacturer before using this function.

Variable 31 – Always show actual humidity

This determines whether the actual humidity should always be displayed. It is possible to choose between 'on' and 'off'.

Note: With a functioning humidity station, it is worth seeing how much the humidity is reduced when drying or how high the humidity gets when cooking.

Variable 32 – Outside Air for Delta-T cooling

This defines the outside air temperature (core temperature minus Delta-T) up to which the outside air should be used. It is permissible to choose between a number '0°C' and '20°C'.

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 33 – Maximum Temp for outside air

This defines the outside air temperature up to which this is used. It is permissible to choose between a number '0°C' and '40°C'.

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 34 – Damper Position 1

This determines how long position 1 remains set.
For '0' = no time and for '99' = 99 seconds.

The reversible damper has two different relays and four different positions.
In the EBCloud, you can define relay **reversing flap 1** and **reversing flap 2**.

Note: There are four positions: (variables 34, 35, 36 and 48)
34: off / off, 35: on / off, 36: off / off, 48: off / on

Variable 35 - Damper Position 2

This determines how long position 2 remains set.
For '0' = no time and for '99' = 99 seconds.

The reversible damper has two different relays and four different positions.
In the EBCloud, you can define relay **reversing flap 1** and **reversing flap 2**.

Note: There are four positions: (variables 34, 35, 36 and 48)
34: off / off, 35: on / off, 36: off / off, 48: off / on

Variable 36 - Damper Position 3

This determines how long position 3 remains set.
For '0' = no time and for '99' = 99 seconds.

The reversible damper has two different relays and four different positions.
In the EBCloud, you can define relay **reversing flap 1** and **reversing flap 2**.

Note: There are four positions: (variables 34, 35, 36 and 48)
34: off / off, 35: on / off, 36: off / off, 48: off / on

Variable 37 – Analog Humidity Band

This determines when an analogue-controlled damper is opened 100%. It is possible to choose between the numbers '0' and '50'.

For '0' = no humidity band and for '50' = 50% above the programmed humidity setpoint.

This also makes it possible to control a damper with two positions. The set value means 100% and a specific relay is switched when this value is exceeded. If 50% is exceeded, another relay switches.

Variable 38 - Delta-T Cooking

This determines how many degrees above the core temperature the maximum room temperature is allowed. It is permissible to choose between a number '0' and '50'.

Delta cooking must be activated on the EBCloud here.
From version 2.13.1, the Delta-T can be selected individually for each programme step. This variable is then cancelled.

The following applies for '0' = no temperature spread and for '50' = 50°C above the measured core temperature value.

Please note: The control unit works with Smart Delta cooking. This requires the **time**, **core temperature** and **maximum temperature** to be programmed.

<https://www.ebsmoke.com/post/smart-delta-cooking>

Variable 39 – Relais Switching time RSE

This determines how many minutes before the end of the step a relay switches off. It is permissible to choose between a number '0' and '99'.

The end circuit must be set here on the EBCloud under **Delays**.

For '0' = no time and for '99' = 99 minutes before the end of the step, a specific relay is switched off.

Example: A water drain valve must be opened two minutes before the end of the cooking step.

Variable 40 – Recording Interval

This defines the interval at which the data is to be saved in offline mode. Values between 1 second and 99 seconds are permitted.

Please note: This is only relevant if the EBLuft data acquisition system is installed and configured.
<https://www.ebsmoke.com/ebluft>

If the control unit loses the connection to the data acquisition system, it saves up to 30,000 data records and reads them back automatically when the connection to the data acquisition system is re-established.

Time synchronisation between the control unit and EBLuft must be activated for this.

Variable 41 – Remote Activation

This determines whether the remote switch-on is active. It is permissible to choose between 'on' and 'off'.

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 42 - Taktintervall bei Code „TAK“

Please note: The function was taken over from service variable 53 - 58

Variable 43 - leer

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 44 - leer

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 45 - leer

This is a special variable that cannot be defined in the EBCloud for the time being.

Variable 46 – Fan minimum during ripening

This determines the minimum % with which the fan is controlled via the FI. It is permissible to choose between a number '0' and '99'.

The fan must be connected analogue and the tyre process must be active in the EBCloud. When the correct values are reached, the system switches to the minimum speed.

Here, '0' = no output to the FI and '99' = 99% of the output to the FI.

Variable 47 – Display Degree Hour Value

This determines whether the degree/hours value should be displayed. It is possible to choose between 'on' and 'off'.

Note: The degree hours are displayed as an additional value in the diagram in the EBLuft data acquisition.

Variable 48 – Damper Position 4

This determines how long position 4 remains set.
For '0' = no time and for '99' = 99 seconds.

The reversible damper has two different relays and four different positions.
In the EBCloud, you can define relay **reversing flap 1** and **reversing flap 2**.

Note: There are four positions: (variables 34, 35, 36 and 48)
34: off / off, 35: on / off, 36: off / off, 48: off / on

Variable 49 – Temperatur Offset

This defines the maximum temperature difference before an error message is issued (in conjunction with variable 50). The temperature difference works upwards and downwards.

Where '1' = 1°C and '99' = 99 °C.

Variable 50 – Temperatur Timeout

This determines how long the maximum temperature difference may be before an error message is issued (in conjunction with variable 49). The temperature difference works upwards and downwards.

Where '0' = no time and '99' = 99 Minutes

Variable 51 – Sensor Configuration

This determines which sensor configuration is active.

Technical data and connection diagram for configurations 0-4:

https://www.ebsmoke.ch/downloads/EB1_sensor-connection_EN.pdf

A restart is required after changing the variable.

0	=	6 x PT100 three-wire
1	=	4 x PT100 four-wire A
2	=	4 x PT100 four-wire B
3	=	4 x PT100 four-wire C
4	=	4 x PT100 four-wire D

Variable 52 – Smoke Flap Surveillance

This determines whether the interval of the smoke generator lower air flap should be monitored. It is permissible to choose between 'on' and 'off'.

EBCloud must have a feed defined and if this is active, the power must be interrupted.

An der Steuerung ist das der Input **RE**. Der Fehler löst aus, sobald dort der Strom weg ist.

Variable 53 – Tact 1 Phase A

This determines how long the clock relay A is active.

In the EBCloud, the relays and **interval times** can be defined under Intervals. **Interval 1** (TAK 1) must then be activated in the **process code menu**.

The cycle works as follows:

:Start:

Tak A time

Bar Pause Time

Bar B time

Bar Pause Time

End:

Variable 54 – Tact 1 Phase B

This determines how long the clock relay B is active.

In the EBCloud, the relays and **interval times** can be defined under Intervals. **Interval 1** (TAK 1) must then be activated in the **process code menu**.

The cycle works as follows:

:Start:

Tak A time

Bar Pause Time

Bar B time

Bar Pause Time

End:

Variable 55 – Tact 1 Pause

This determines how long the pause is active.

In the EBCloud, the relays and **interval times** can be defined under Intervals. **Interval 1** (TAK 1) must then be activated in the **process code menu**.

The cycle works as follows:

:Start:

Tak A time

Bar Pause Time

Bar B time

Bar Pause Time

End:

Variable 56 – Tact 2 Phase A

This determines how long the clock relay A is active.

In the EBCloud, the relays and **interval times** can be defined under Intervals. **Interval 2** (TAK 2) must then be activated in the **process code menu**.

The cycle works as follows:

:Start:

Tak A time

Bar Pause Time

Bar B time

Bar Pause Time

End:

Variable 57– Tact 2 Phase B

This determines how long the clock relay B is active.

In the EBCloud, the relays and **interval times** can be defined under Intervals. **Interval 2** (TAK 2) must then be activated in the **process code menu**.

The cycle works as follows:

:Start:

Tak A time

Bar Pause Time

Bar B time

Bar Pause Time

End:

Variable 58 – Tact 2 Pause

This determines how long the pause is active.

In the EBCloud, the relays and **interval times** can be defined under Intervals. **Interval 2** (TAK 2) must then be activated in the **process code menu**.

The cycle works as follows:

:Start:

- Tak A time
- Bar Pause Time
- Bar B time
- Bar Pause Time

End:

Variable 59 – Glycol cooling (analog) on / off

General variable to activate or deactivate glycol cooling.

If the glycol controller is active, it requires a special sensor, otherwise the system will always start with 'Sensor error'.

Variable 60 – Glycol Polarity

Defines the following: Is 0V 100% open. Or 10V 100% open.

Variable 61 – Glykol Min Lead Temp

Minimum flow temperature.

Variable 62 - Glycolregler Delta-T cooling

This determines the delta T to the room temperature with which the flow temperature of the glycol circuit is to be regulated. It is permissible to choose between a number '1' and '20'.

Example: Set Delta-T = 15. If the room temperature is greater than 15°C, the setpoint for the flow temperature is 0°C. If the room temperature is less than 15°C, the flow temperature is controlled with room temperature minus 15°C. The minimum value is set to -7°C.

The following applies for '1' = 1°C Delta-T and for '20' = 20°C Delta-T

Variable 63 – Glykol Temperature surveillance on / off

Temperature alarm if the flow temperature deviates too much.

Variable 64 – Glykol Temperature monitoring

Temperature monitoring in °C when the temperature alarm should be triggered.

Variable 65 – Glycol cooling interval time

This determines after how many measurements the status of the mixing valve should be changed. It is possible to choose between a number '1' and '20'.

For '1 ' = change of state every 6 seconds and for '20' = change of state every 120 seconds.

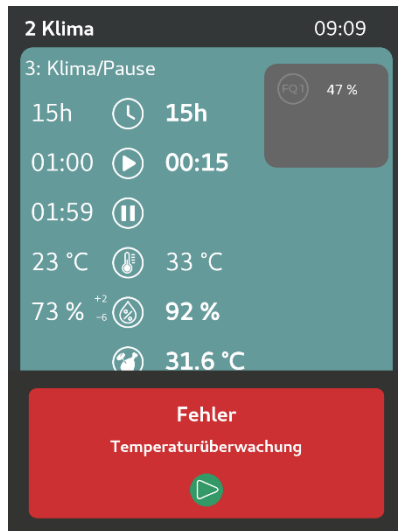
Variable 66 – Ignition time smoke generator

This determines the pre-ignition time of the smoke generator.

Ignition must be active in the EBCloud and **RZ** must be active in the process code.
A feed is also made during pre-ignition.

Further service variables are added as required in the controllers. Please request the description available for this from the manufacturer.

ERROR CODE EXPLANATIONS



Example of an error message.

RAM Errors

The computer has detected changed data in the RAM due to the cross sum calculation and control. The program(s) in which the error was found has/have been deleted.

ACKNOWLEDGE ERROR.

The EB1 goes to the home position.

Reprogram the program and start it again. If the error remains, the RAM is defective and must be replaced.

COMPLETION BY SERVICE CENTER

Restart Error

The computer was not able to save the current data when a voltage drop occurred and therefore could not pick up where it left off in the program.

ACTION: Acknowledge error.

The EB1 goes to the home position.
Program must be restarted. If possible, always at the position where the power was interrupted.

SOLUTION: Self-disposal.

Sensor Error

The temperature sensor used for measurement has an interruption or short circuit. The computer cannot work with it and therefore has interrupted the program sequence.

ACTION: Acknowledge error.

The EB1 shows the program status in which the error occurred. In addition, the display on which the defective sensor operates shows three or two small "u" or "c".

"u" stands for sensor short circuit.
"c" stands for sensor break.

SOLUTION: Self-disposal.

Ignition Error

The EB1 did not measure a return signal at the start of the ignition process of the smoke generator. If the function of the ignition rod is monitored by a current monitoring relay, this means that the smoke generator could not ignite. The EB1 interrupts the current program.

ACTION: Acknowledge error.

The EB1 shows the program status in which the error occurred.

SOLUTION: Contact service center.

Error 5

The computer has set all functions.

ACTION: Acknowledge error.

The EB1 is without display.

SOLUTION: Contact service center.

Timer defective

The timer installed in the device is defective. The device can no longer operate.

ACTION: Acknowledge error.

SOLUTION: Contact service center.

Temperature Control

This error is displayed when the operating temperature actual value is 10°C or more (depending on the system also 5°C) away from the setpoint and does not approach it during 4.5 minutes (optionally other time possible).
Further conditions are: The process must allow heating and cooling. The process must not be assigned an interval. The process is not occupied with NTH or NTL, which means that it can basically be monitored.

ACTION: Acknowledge error.

The EB1 shows the program status in which the error occurred.

SOLUTION: Usually done by yourself with the help of the electrician, heating or cooling specialist.

Cross Sum Error

This error only appears if the controller has been completely reconfigured.

ACTION: Acknowledge error.

The EB1 goes into the home position.

Service Variable

If the <Smoke generator feed> service variable was not set before the first start of the controller, this error appears.

ACTION: Acknowledge error.

The EB1 goes to the home position.
Check and set service variable 4.

SOLUTION: Self-disposal.

Feeder Error

This error is only displayed if the smoke unit is a closed system and the safety program is activated in the software. See variable 52. If this error occurs, it indicates that the feed behavior or the function of the material feed is not OK.

ACTION: Acknowledge error.

The EB1 shows the program status in which the error occurred.

SOLUTION: Do it yourself with the help of the electrician.

Glycol-Temp. Alarm

This error is displayed if the glycol temperature setpoint is not reached for more than 10 minutes.

ACTION: Acknowledge error.

The EB1 shows the program status in which the error occurred.

SOLUTION: Usually done by yourself with the help of the electrician, heating or cooling specialist.

Relay Error

This error is displayed when the software switches on a relay, but it does not work.

ACTION: Acknowledge error.

SOLUTION: Contact service center.

OPTO 1

This error is displayed if no 24V is applied to optocoupler 1 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 2

This error is displayed if no 24V is applied to optocoupler 2 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 3

This error is displayed if no 24V is applied to optocoupler 3 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 4

This error is displayed if no 24V is applied to optocoupler 4 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 5

This error is displayed if no 24V is applied to optocoupler 5 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 6

This error is displayed if no 24V is applied to optocoupler 6 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 7

This error is displayed if no 24V is applied to optocoupler 7 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.

OPTO 8

This error is displayed if no 24V is applied to optocoupler 8 within a preset time in seconds.

ACTION: Confirm error.

The opto error texts can be seen in the **status screen** at the top right.

Any relay can be selected for monitoring in the EBCloud under **Optos**.

EB1 shows the programme status at which the error occurred.