



BAUER

FOR A GREEN WORLD

EN



IRRIGATION

Ecostar 6000

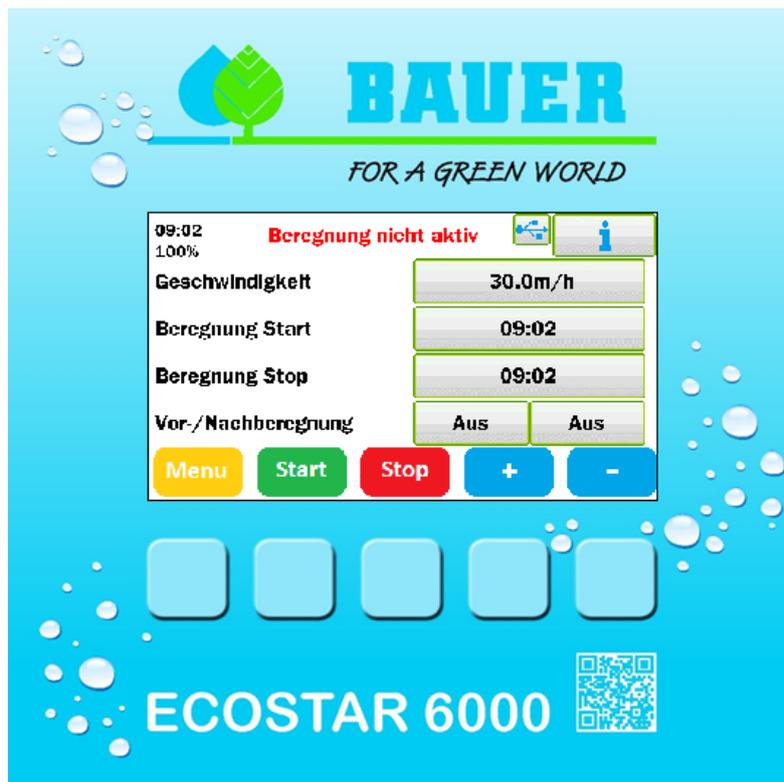




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1 OPERATION AND INPUT

The ECOSTAR is operated with the **touchscreen**. In addition, the ECOSTAR 6000 **also has five physical buttons** that can be used for operation. These physical buttons perform the same function as the button on the screen that is shown directly above each physical button.

Each menu contains a **“back”** button in the lower left corner. Pressing this takes you back to the previous menu. Pressing the back button for three seconds will take you back to the main screen.

The buttons  and  move between the pages within a menu. These arrows are only shown if there is a next or previous page in the respective menu.

1.1 SLEEP MODE

The Ecostar enters into sleep mode after a certain length of time (configurable). In sleep mode, the display and the electronics themselves are largely deactivated. To restart the Ecostar, press the touchscreen. Pressing a physical button will not reactivate the Ecostar.

1.2 DIALOG WINDOW

The dialog window opens every time you would like to change a value or select an option. It appears after you press the value that you would like to change and serves for entering a value or selecting an option.



A numerical value can be entered in the left dialog window with the number block.

Entered numbers can be deleted with the  button.

In the right dialog, you can select from among multiple options. When an option is pressed, it appears in the provided field and can then be confirmed.

To confirm the entry, press the  button; or to cancel the entry, press the  button.

1.3 KEYBOARD

The keyboard opens every time you want to change a value that is entered as text. The keyboard appears after you press the value that you would like to change.

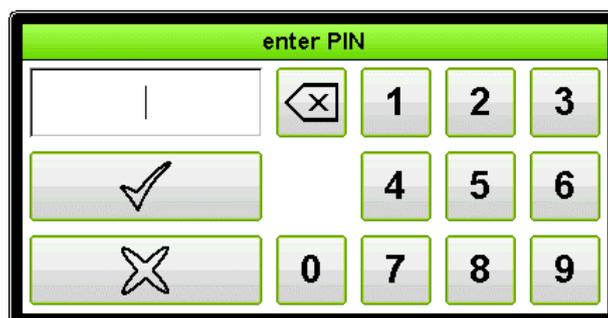


The  button closes the keyboard without saving the input.
The “BS” (Backspace) button deletes individual letters.
The “DEL” button deletes the entire entry.
Use the “OK” button to close the keyboard and save the entry.

1.4 ENTERING THE PIN

The PIN code for the individual menus is set at the factory to 8570 and can be changed in the software at any time.

Before opening a menu, you will be asked to enter a PIN code. Every menu offers the option of changing the PIN code for the respective menu. There is also a master PIN code that allows you to access every menu.

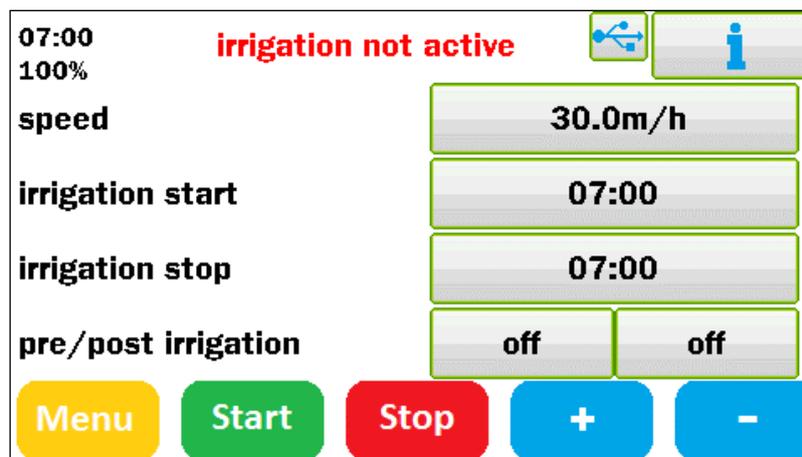


2 MAIN SCREEN

In the **main screen**, you can **start and stop the irrigation**. The desired **speed** (irrigation amount) for the retraction can be configured here. You can also configure a **pre- or post-irrigation** or set a time when the irrigation should start automatically.

In the top line next to the time, the **current irrigation status** or an **error message** is displayed in color. If an error occurs, the info button  begins to flash red in addition to the error message.

The current battery status is shown under the time. At less than 50%, this display is yellow; at less than 30% it is red. At less than 20%, the display flashes red. During an active download, the download progress is also shown here.



Buttons:

Menu: Takes you to the menu

Start: The irrigation is started immediately as long as no start time or stop time is configured

Stop: The irrigation is stopped immediately. If the irrigation has already ended before the button is pressed, the ECOSTAR executes the shutdown sequence (turbine closes).

+ / - : Increases / decreases the retraction speed without opening a dialog window

Info button: In order to obtain more information about the current irrigation activity and any error messages, press the Info button  in the upper right corner. This takes you to the Info screen, which will be described in more detail later.

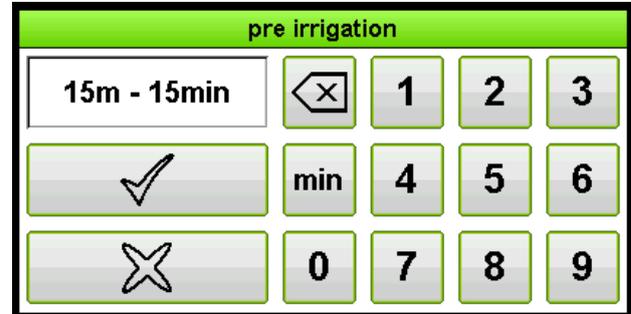
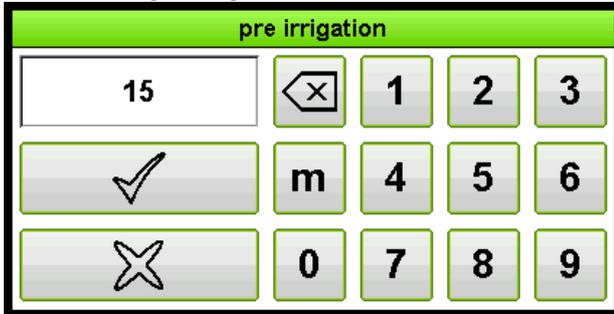


Pre/post irrigation:

A pre/post-irrigation is **activated** by pressing the button **once briefly**. The left button is for pre-irrigation and the right button for post-irrigation. To **deactivate** the pre/post-irrigation, the button must be **pressed again once briefly**.

If pre/post-irrigation is activated, the button turns green and displays the text “on”.

To **configure** the pre/post-irrigation, the button must be **pressed and held for three seconds**, which opens the following dialog window:



In this dialog window, you **first enter the distance** after which the pre-irrigation should be started, then press the **m** button (left). For post-irrigation, first enter the desired distance of the arm to the machine then confirm this with the **m** button.

Next, enter the time in minutes for which the machine should irrigate in place and then press the **min** button.

Start time:

To activate a start time, briefly press the button next to start time. To configure a time, the button must be held down. You can then enter a time at which the machine should start automatically. If the start button is pressed now, the machine switches to the status “waiting to irrigate” and the irrigation will start at the configured time.

Stop time:

The stop time calculated based on the configured speed is shown in the button next to the stop time. Pressing this button will also switch from display of the stop time to the irrigation duration. Press it again or restart the control to display the stop time again.



2.1 INFO SCREEN

Various information about the irrigation is displayed in the Info screen. The configured and current speed (target / actual) as well as the currently extended length and the calculated stop time are displayed. It is also possible to configure a sprinkler and a signal lamp here. This is done by pressing the corresponding button once briefly to open the menu of the sprinkler or the signal lamp. If the button is lit green, the sprinkler and/or the signal lamp is active. When deactivated, the button is gray.

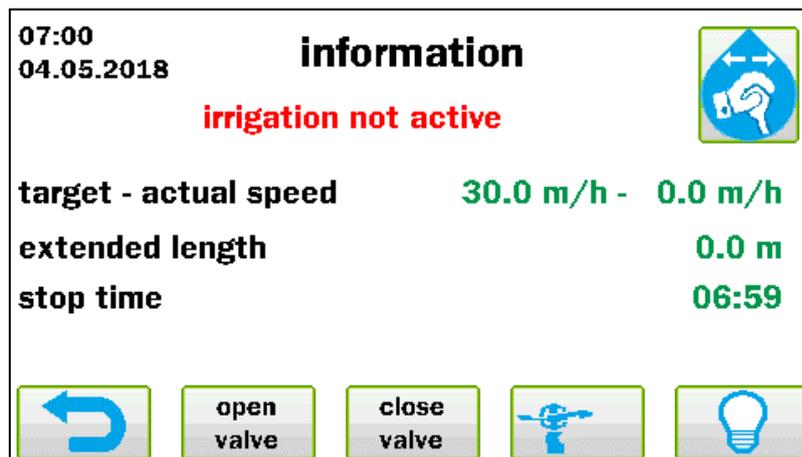
Pressing the  button with the **arrow** takes you to the **logs**.

The value for the pressure is only shown if the pressure sensor option is activated in the base settings.

The Open and Close Valve buttons can be used to manually open or close the valve. This is useful for blowing out the machine, for example.

Gear shift:

With the **gear shift button** in the upper right corner, it is possible to lower the turbine speed to change the gear. The turbine slows its speed for as long as the button is pressed or until the speed is 0.





2.1.1 SPRINKLER



There are a number of different options for programming the sprinkler.
It is only ever possible to select and program one option.

sprinkler

status

after 10 min for 100.0 m

as from 300.0 m rest length

at 10:00 for 20 min

Status: The sprinkler is activated or deactivated here.

Option 1: x minutes after the start, for x meters over which the sprinkler is retracted, the sprinkler is activated.
Based on this example: 10 minutes after the start, the irrigation is activated and remains activated until the sprinkler has been retracted 100 meters.

Option 2: Once only x meters of pipe is still deployed, the sprinkler is activated up until the end of the irrigation.
Based on this example: At a remainder of 300 meters deployed pipe, the sprinkler valve is activated until the end.

Option 3: At hh/mm, the sprinkler switches on for x minutes.
Based on this example: At 10:00, the sprinkler switches on for 20 minutes.



2.1.2 SIGNAL LAMP



The **signal lamp** serves to give a visual signal during **extension** of the machine when a certain length has already been extended.

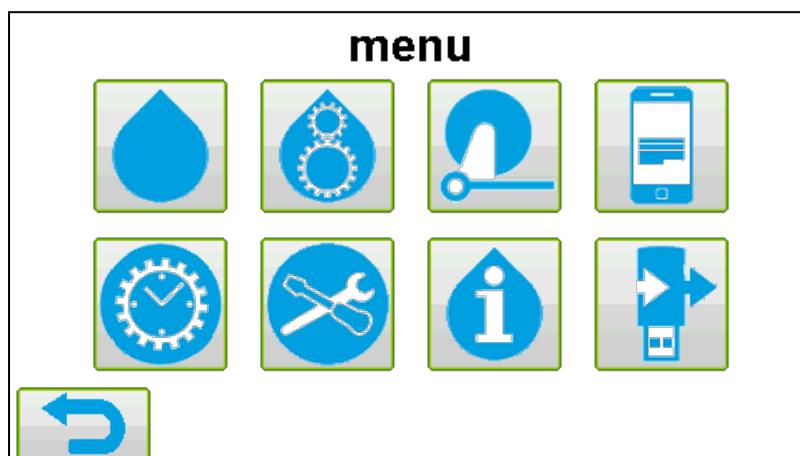
To activate the signal lamp function, select the option **activated** in the first line (status) after pressing the adjacent button. Under **distance**, specify how many meters of extension should cause the signal lamp to light / flash. The **duration** specifies how long the signal lamp should light / flash.

signal lamp

| | |
|-----------------|--|
| status | <input type="button" value="deactivated"/> |
| distance | <input type="button" value="0.0 m"/> |
| duration | <input type="button" value="0 s"/> |

3 MAIN MENU

From the main menu, it is possible to navigate to any other menu.



| | | |
|---|-----------------|---|
|  | Irrigation menu | Irrigation programs are selected and created here |
|  | Base settings | Various settings of the machine as well as the extended pipe length can be found here |
|  | Machine data | Machine parameters are configured here Protected by PIN code |
|  | SMS/Modem | Telephone numbers and SMS settings are configured here |
|  | System settings | Settings at the system level, such as the date / time and the language, are found under system settings Protected by PIN code |
|  | Service | Information that is required for troubleshooting the machine can be found here. Protected by PIN code |
|  | Info | The operating hours, the water consumption and the battery voltage are displayed here |
|  | Backup | In the backup menu, you can reset the ECOSTAR to the factory settings as well as save or load parameter sets Protected by PIN code |



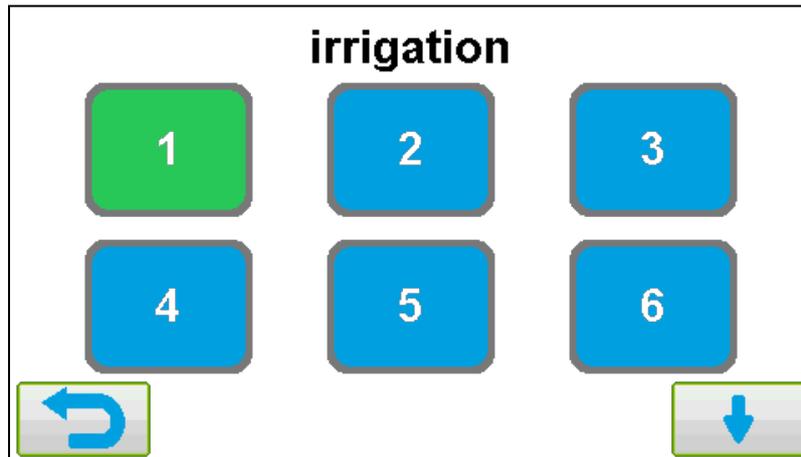
3.1 IRRIGATION MENU



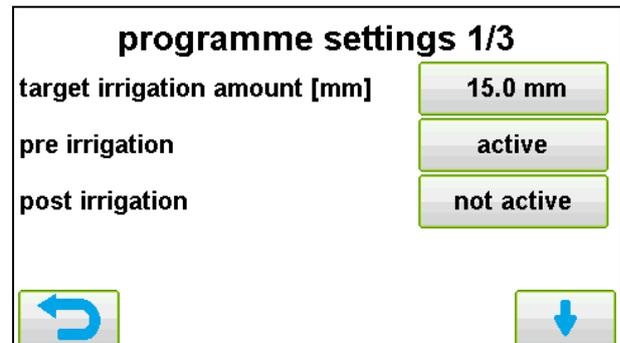
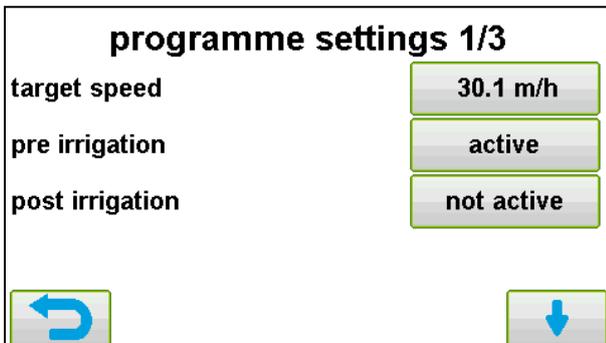
The irrigation menu offers the option of precisely adapting the irrigation to the respective field. With the **zone settings**, you can set a different retraction speed or irrigation amount for a specific section. The ECOSTAR 6000 offers the ability to divide the field up into 4 different sections.

Depending on the unit of the retraction speed, the irrigation amount is shown in mm or the retraction speed in m/h on the irrigation menu.

Up to **12 different programs** can be configured and then easily selected.



A long press of the button (3 seconds) opens the program configuration. A program can be activated or deactivated by pressing the button briefly.



Target irrigation amount [mm]:

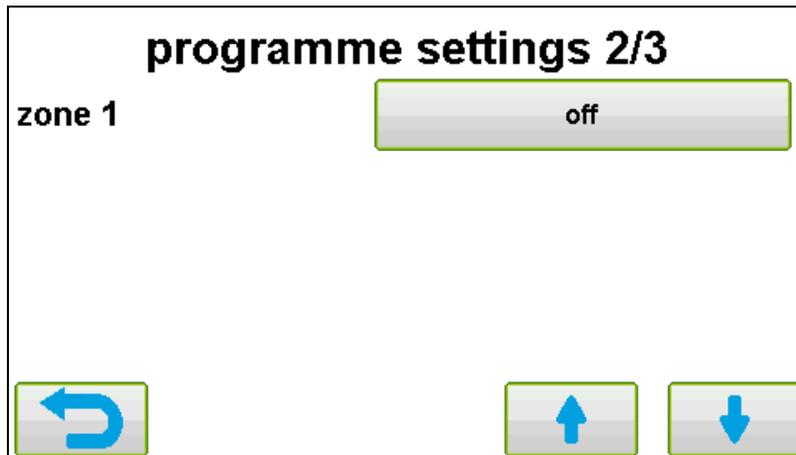
The irrigation amount for the program is configured here. This setting is only used when no zones have been created.

Pre irrigation:

Pre-irrigation for this program can be configured here.

Post irrigation:

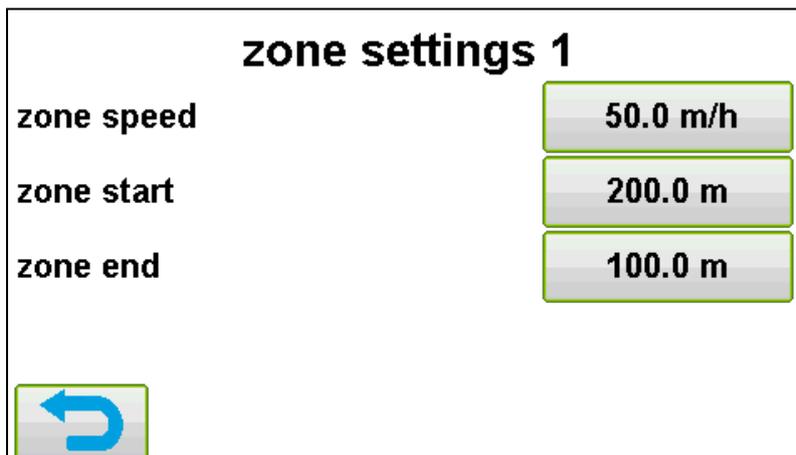
Post-irrigation for this program can be configured here.



Zone settings:

Up to 4 zones can be configured. For each zone, you can set the zone start (distance of the arm to the machine), speed / irrigation amount and zone end. To configure only 2 or 3 zones, the last desired zone must end at 0 m.

During irrigation, the current zone is shown in the main screen as a number next to the speed.



Zone speed: The retraction speed or irrigation amount (setting in m/h or mm) for the zone is configured here.

Zone start: Distance from the sprinkler to the machine at the start of the zone

Zone end: Distance from the sprinkler to the machine at the end of the zone



programme settings 2/3

| | |
|--------|---------------------------|
| zone 1 | 200.0m - 50.0m/h - 100.0m |
| zone 2 | 100.0m - 40.0m/h - 50.0m |
| zone 3 | 50.0m - 35.0m/h - 0.0m |

Example:

Zone 1: Between 200 m and 80 m distance between the sprinkler and the machine, retraction takes place at 50 m/h.

Zone 2: When there is less than 80 m distance, the retraction speed is reduced to 40 m/h.

Zone 3: As of a remaining pipe length of 50 m, the retraction speed should be 35 m/h.

programme settings 3/3

| | |
|-----------------|-------|
| start time | 00:00 |
| pause | 00:00 |
| length of pause | 0 min |

- Start time:** Time at which the irrigation will be started automatically
00:00 means that the automatic start time is deactivated
In addition, the start button must also be pressed in the home screen to switch the ECOSTAR 6000 to the “waiting to irrigate” mode
- Pause:** Time at which the irrigation will be paused / stopped
00:00 means that the pause is deactivated
- Length of pause:** Specifies the length of the pause



3.2 BASE SETTINGS



base settings 1/4

| | |
|------------------------------|------------------------|
| switch off | over-pressure |
| extended length | 93.7 m |
| monitoring time [min] | 20 min |
| pressure monitoring | pressure switch |
| | |

Switch off:

Here you can select the switch-off method:

Low pressure shut-off: The shut-off valve opens for the configured time during shut-off and then closes again

Over-pressure shut-off: The shut-off valve closes during shut-off

None: The shut-off valve is not actuated

Extended length:

Here you can change or input the currently extended length.

Monitoring time [min]:

Time after which the ECOSTAR should stop the irrigation if an error occurs or the configured speed is not achieved

Pressure monitoring:

Here you can select whether pressure monitoring is present by means of a pressure switch or pressure sensor

base settings 2/4

| | |
|-------------------------------------|----------------|
| pressure mode | monitor |
| monit. time (pressure) [min] | 2 min |
| min.pressure [bar] | 5.0 bar |
| unit [mm - m/h] | m/h |
| | |



- Pressure mode:** Select whether the pressure switch/sensor is needed for starting or monitoring. With monitoring, the start function is also activated. During measuring (only possible with pressure sensor), only the value in the Info menu is displayed.
- Monit. time (pressure) [min]:** Time after which the ECOSTAR responds to the pressure switch/sensor (pressure fluctuations)
- Min. pressure [bar]:** If the connection pressure falls below this value, the irrigation is stopped (pressure sensor)
- Unit [mm-m/h]:** Select whether the retraction speed is entered as an irrigation amount (mm) or a speed (m/h).



To use this function, the nozzle values must be set on page 4 as well as the strip width on page 3!!!

base settings 3/4

| | |
|---|--|
| low pressure start | no action |
| flow impulse [lit/imp] | 100.0 lit/imp |
| flow [m³/h] | 0.0 m ³ /h |
| strip width [m] | 80.0 m |
|  |   |

- Low-pressure start:** With the setting “Open valve”, the valve opens upon pressing of the start button or if pressure is low or entirely absent.
- Flow impulse [lit/imp]:** This setting is used by the water consumption meter. The value to be entered here is shown on the water meter, if present.
- Flow:** If the flow is known, it is entered here.
However, if the flow is not precisely known, enter 0 here. Otherwise the speed is calculated based on the flow.
In this case, the following parameters must be entered: Nozzle diameter, nozzle pressure, nozzle characteristics alpha and strip width.
- Strip width:** The strip width can be found in the conversion table on the RAINSTAR



base settings 4/4

| | |
|-------------------------------------|----------------|
| nozzle diameter | 18.0 mm |
| nozzle pressure | 5.0 bar |
| nozzle characteristics alpha | 0.91 |

↶

↑

Nozzle diameter: Diameter of the endgun nozzle
Nozzle pressure: Nozzle pressure
Nozzle characteristics alpha: The nozzle characteristics value can be found on the manufacturer table (standard setting = 0.92)

3.3 MACHINE DATA



You can reach the machine data menu by pressing the machine data button in the main menu



This menu contains all data concerning the machine and may only be modified by trained persons!

machine data 1/5

| | |
|---------------------------|----------------|
| pipe length [m] | 650 m |
| pipe diameter [mm] | 120 mm |
| reel core diameter | 1800 mm |
| rot./position | 11.54 |

↶

↓

Page 1

Pipe length [m]: PE pipe length of the machine in meters
Pipe diameter [mm]: Internal diameter of the PE pipe in millimeters
Reel core diameter: Diameter of the reel core in millimeters
Rot./position: Rotations per position



machine data 2/5

| | |
|-----------------------|------|
| number of teeth big | 240 |
| number of teeth small | 9 |
| number of magnets | 4 |
| pipe ovality [%] | 89 % |

↶

↑

↓

Page 2:

- Number of teeth big:** Number of large teeth on the reel sprocket
- Number of teeth small:** Number of small teeth on the reel sprocket
- Number of magnets:** Number of magnets on the magnet disk (used for speed measurement)
- Pipe ovality [%]:** Ovality of the pipe (always set at the factor to 89%)

machine data 3/5

| | |
|----------------------------|---------|
| first impulse to the motor | 4500 ms |
| short impulse to the motor | 150 ms |
| time between impulses [s] | 3 s |
| number of short impulses | 25 |

↶

↑

↓

Page 3

- First impulse to the motor [ms]:** Duration of the first impulse to the shut-off valve during closing
- Short impulse to the motor [ms]:** Duration of the subsequent impulses to the shut-off valve (should be coordinated with the number of impulses)
- Time between impulses [s]:** Time between the short impulses to the valve
- Number of short impulses:** Number of short impulses to the shut-off valve



machine data 4/5

| | |
|------------------------------|---------------------------------------|
| closing the valve | <input type="button" value="8 s"/> |
| closing at low pressure | <input type="button" value="16 s"/> |
| first impulse to the turbine | <input type="button" value="8 s"/> |
| service settings | <input type="button" value="modify"/> |

Page 4

- Closing the valve:** Shut-off delay
- Closing at low pressure:** Low pressure shut-off only: Time for which the shut-off valve remains open during shut-off.
- First impulse to the turbine:** Length of the first impulse to the turbine
- Service settings:** Settings related to regulation are defined here

machine data 5/5

| | |
|--------------------------|---------------------------------------|
| PIN for this level | <input type="button" value="modify"/> |
| master-pin | <input type="button" value="modify"/> |
| set default machine data | <input type="button" value="save"/> |
| open valve slowly | <input type="button" value="off"/> |

- PIN for this level:** The PIN code for the machine data menu is set here
- Master PIN:** The PIN code that opens every menu is set here
- Set default machine data:** The currently configured machine data is accepted as the default settings for this ECOSTAR.



Factory settings for the machine data are overwritten / replaced!

- Open valve slowly:** Opens the valve slowly using the settings for closing the valve.



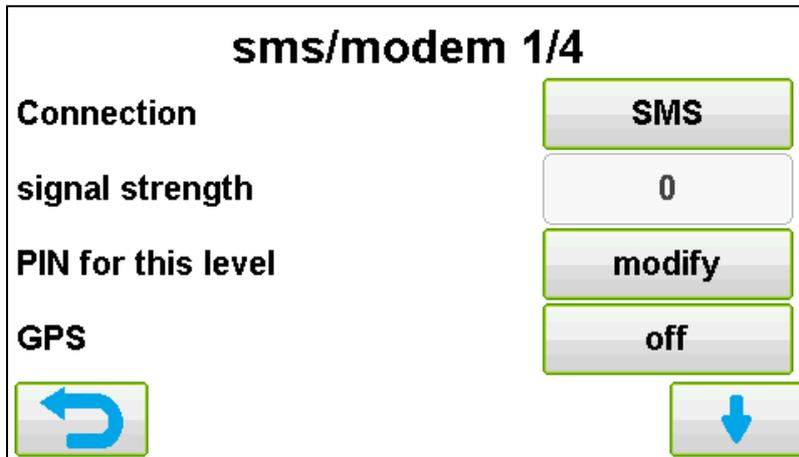
3.4 SMS/MODEM MENU



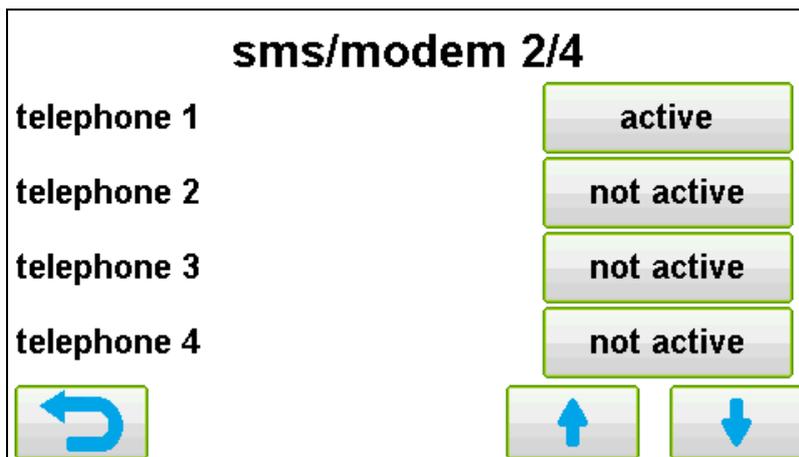
The settings for the SMS function and visualization are found in the SMS/modem menu.



A mini SIM card is required for the SMS function of the ECOSTAR 6000. The SIM card must be SMS-capable, and the PIN code must be deactivated!



- Connection:** The connection setting for the ECOSTAR (OFF/SMS/DATA) is set here
- Signal strength:** The current signal strength is displayed
- PIN for this level:** The PIN code for this menu can be changed here
- GPS:** Switches the GPS function on or off



- Telephone 1-4:** One or more telephone numbers can be set and configured here



telephone setting 1

| | |
|----------------------|---------------|
| telephone number | +436641234567 |
| number active | activated |
| error message active | activated |



This menu is opened by selecting a telephone.

Telephone number: The telephone number is entered here



The number must always begin with the country code (+xx).

Number active: If this setting is activated, this telephone is able to send commands to the ECOSTAR

Error message active: If this setting is activated, the ECOSTAR sends error messages to this telephone number

sms/modem 3/4

| | |
|-------------|--------------|
| server IP | 212.227.4.43 |
| server port | 44444 |
| address | |







Server IP: IP address of the SmartRain server

Server port: Port of the SmartRain server

Address: Address assigned to the ECOSTAR for SmartRain



sms/modem 4/4

| | |
|-----------------------|--|
| Internet / APN | <input type="text" value="public4.m2minternet.com"/> |
| username | <input type="text"/> |
| password | <input type="text"/> |
| pingtime | <input type="text" value="120"/> |

| | |
|------------------------|--|
| Internet / APN: | APN of the SIM card network provider |
| Username: | Username for internet connection (depends on network provider) |
| Password | Password for internet connection (depends on network provider) |
| Ping time: | Time after which the Internet connection is reestablished |

3.4.1 SMS COMMANDS AND MESSAGES

Commands

| | |
|-----------------------|--|
| START-CMD | Irrigation is started immediately |
| STOP-CMD | Irrigation is stopped immediately |
| STATUS-CMD | Status of the machine is loaded (current speed, stop time and extended length) |
| SPEED-CMD xx | Current retraction speed is set to xx m/h (e.g. SPEED-CMD 20) |
| RAIN-CMD xx | Current irrigation is set to xx mm (e.g. RAIN-CMD 15) |
| START-CMD hhmm | Irrigation is started at hhmm (e.g. START-CMD 1445) |

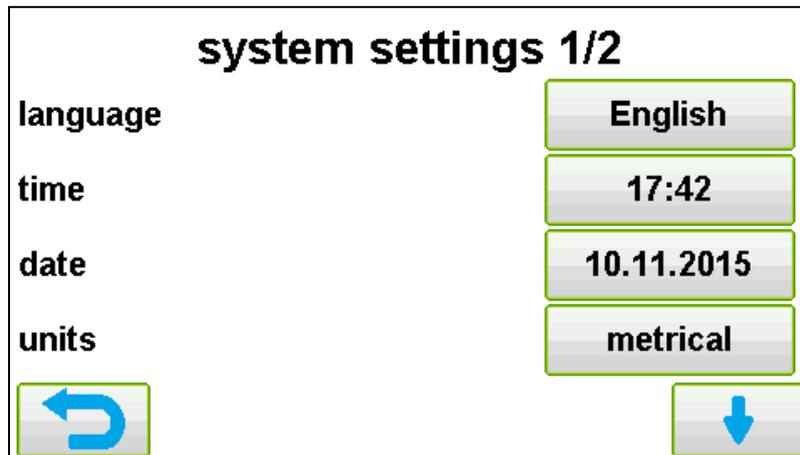
Messages

The ECOSTAR 6000 sends messages in the following cases:

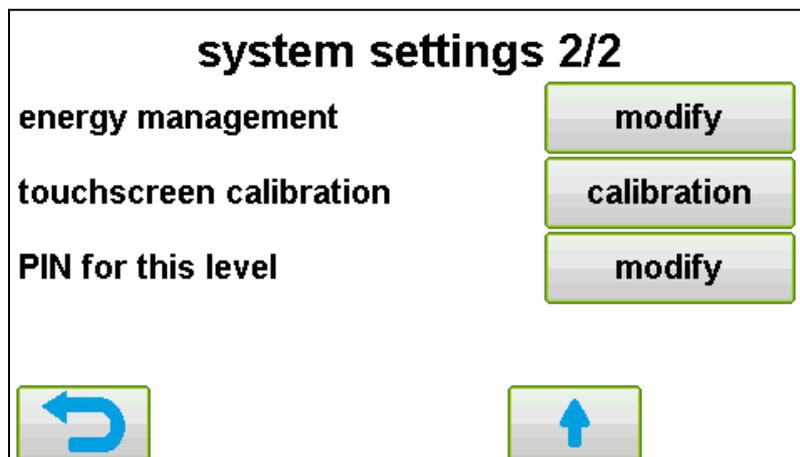
- Battery voltage is low
- Irrigation was stopped manually
- Irrigation finished
- Target speed not achieved (speed too high or too low)
- Stop sensor triggered too early



3.5 SYSTEM SETTINGS

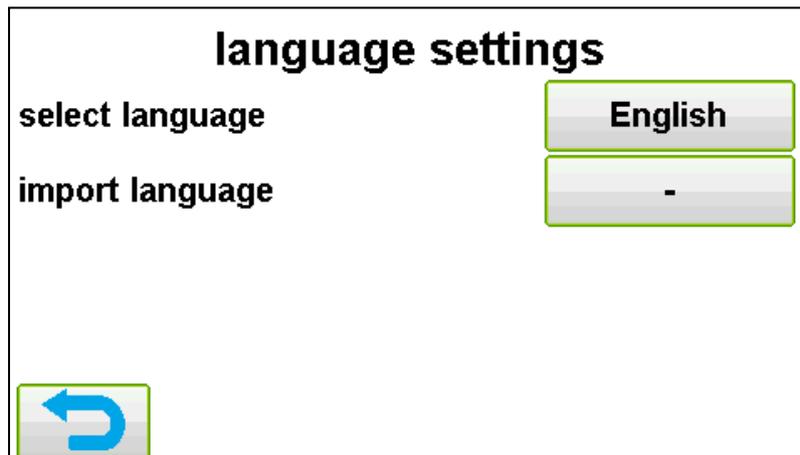


- Language:** In the language menu, you can select the language or import additional languages. The current language files can also be updated (update)
- Time:** Sets the current time
- Date:** Sets the current date
- Units:** Select the unit system, metric or imperial



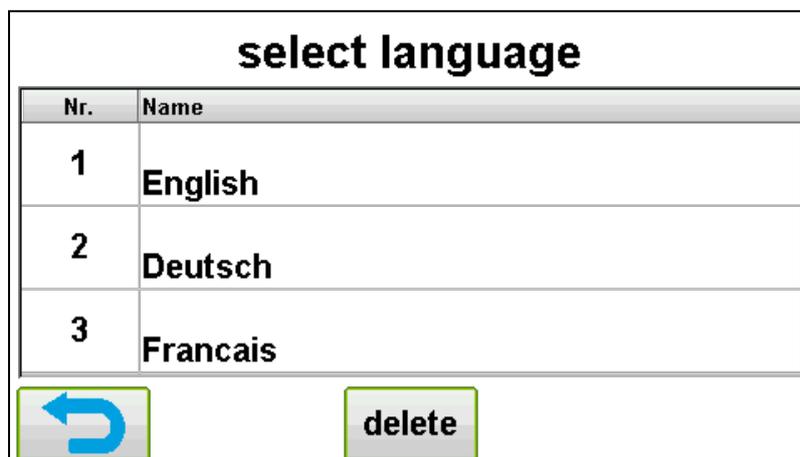
- Energy management:** The display brightness as well as the time before dimming and before switching off the display can be set here
- Touchscreen calibration:** The touchscreen can be recalibrated. During calibration, you must touch four points on the touch display in sequence.
- PIN for this level:** The PIN code for this menu is set here

3.5.1 LANGUAGE MENU:



Select language:

All languages installed on the ECOSTAR are shown under this menu. When you select a language (press it), a “select” button appears in the lower right corner. Pressing this button activates this language for the ECOSTAR.





Import language:

Languages can be imported or updated here using a USB stick. To do this, load the ECOSTAR language file (Eco_xxx.csv) onto a USB stick and plug this into the ECOSTAR. All languages on the USB stick will then be displayed and can be imported. To import a language, first select it. An “import” button then appears in the lower right.

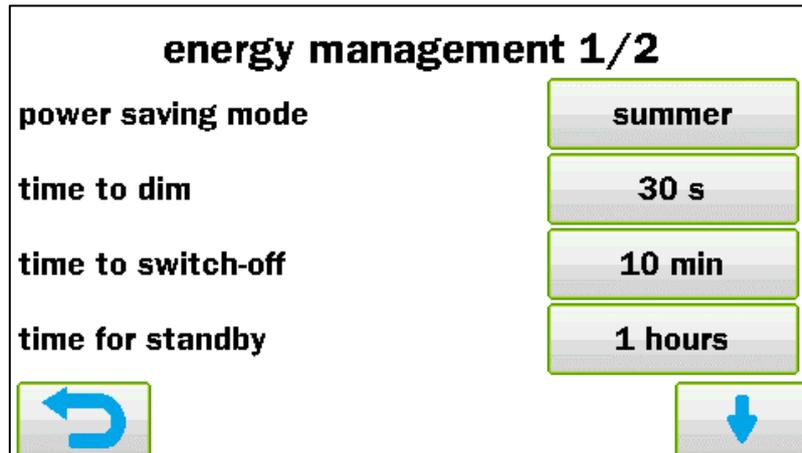


The USB stick must be inserted before opening the language settings menu.

import language

| Nr. | Name |
|-----|-------------|
| 4 | ECO_FRA.CSV |
| 5 | ECO_HUN.CSV |
| 6 | ECO_NED.CSV |

3.5.2 ENERGY MANAGEMENT



Power saving mode: The following power saving modes are available:

Permanent: In this mode, the Ecostar remains permanently active and connected to SmartRain or reachable via SMS. It can only enter sleep mode if the battery status has fallen below the value under "Stop irrigation".

Summer: This mode is intended for normal operation.

Summer save: A more economical version of the summer mode, in which the power saving function is triggered earlier by default.

Winter: This mode is intended for storage of the machine in the winter. In this mode, the Ecostar does not automatically wake up from sleep mode.

The following settings can be configured separately for each mode.

Time to dim: Time after which the display is dimmed

Time to switch-off: Time after which the Ecostar enters sleep mode if no irrigation is active. In the power saving mode "Permanent", the Ecostar can only enter sleep mode if the battery status has fallen below the value under "Stop irrigation".

Time for standby: Time after which the Ecostar independently wakes again from sleep mode. In power saving mode "Winter", the Ecostar does not wake up independently.





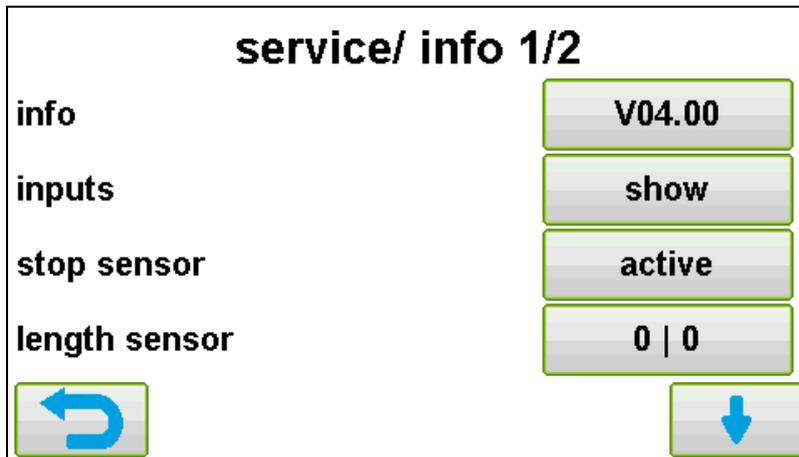
- Disable communication:** If the battery status remains below this value for a prolonged period of time, the communication via SMS or SmartRain is deactivated and the modem is switched off. If the Ecostar is configured for SMS, a notification is sent first.
- Increase control tolerance:** If the battery status remains below this value for a prolonged period of time, the tolerance of the speed control is increased. If the Ecostar is configured for SMS and the communication is still active, a notification is sent first.
- Stop irrigation:** If the battery status remains below this value for a prolonged period of time, the irrigation is ended if it is active. In this case, the Ecostar can enter sleep mode even in power saving mode "Permanent". If the Ecostar is configured for SMS and the communication is still active, a notification is sent first.
- Screen brightness:** The display brightness can be configured here. The brightness is independent of the power saving mode.



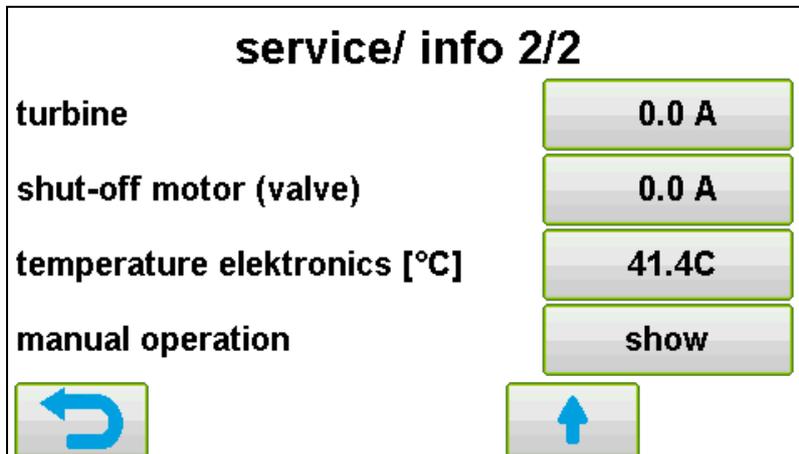
3.6 SERVICE MENU



Important information for troubleshooting the machine or the ECOSTAR 6000 is provided in the service menu.



- Info:** Displays information about the software version and the ECOSTAR
- Inputs:** Inputs can be checked
- Stop sensor:** Displays whether the stop sensor is active
- Length sensor:** Sensor for entering the speed



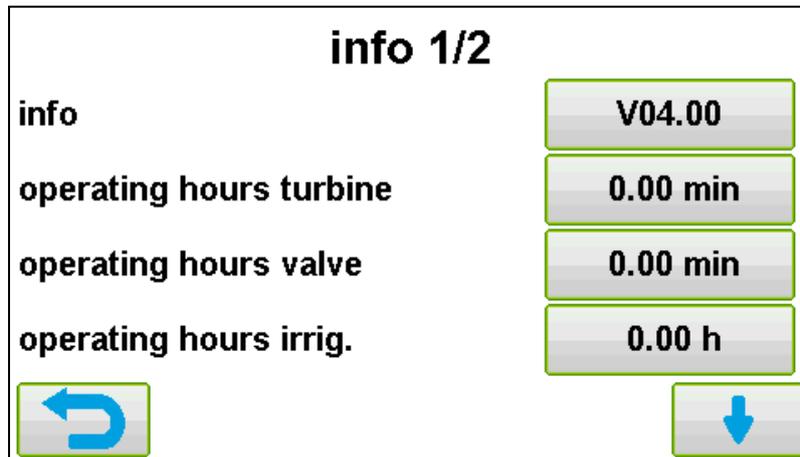
- Turbine:** Last received current of the turbine
- Shut-off motor (valve):** Last received current of the shut-off valve
- Temperature electronics [°C]:** Displays the current temperature of the control
- Manual operation:** All outputs of the ECOSTAR can be manually switched on and off



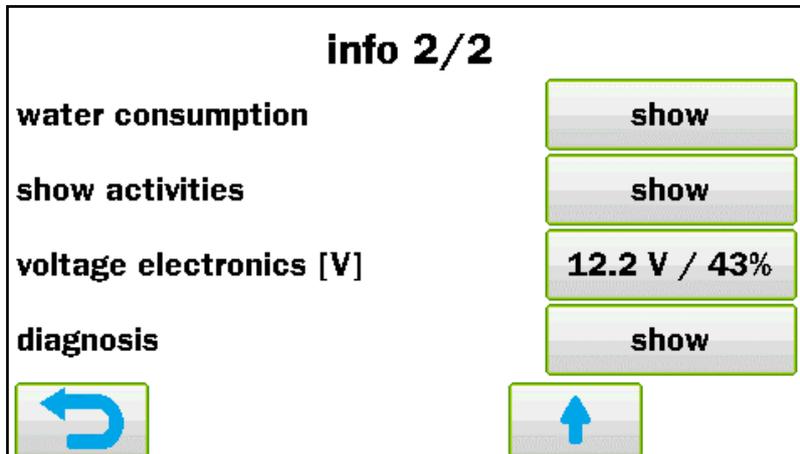
3.7 INFO



No parameters can be changed or settings configured in this menu. It serves exclusively for information and troubleshooting purposes.



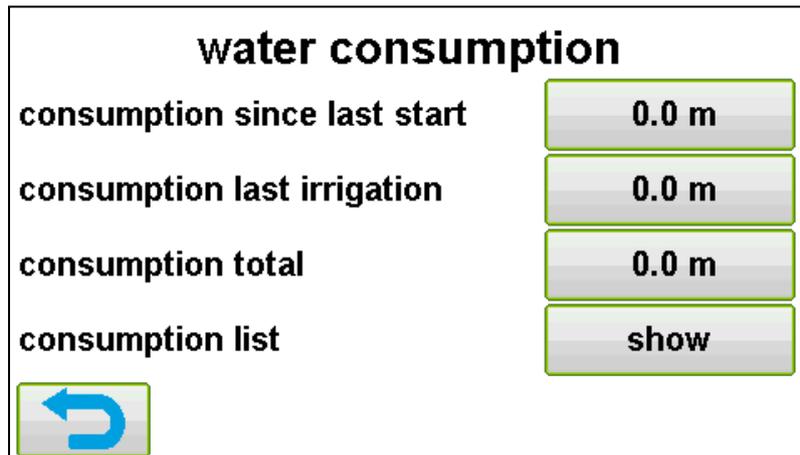
- Info:** Displays information about the software version and the ECOSTAR
- Operating hours turbine:** Time for which the turbine has been active in minutes
- Operating hours valve:** Time for which the shut-off valve has been active in minutes
- Operating hours irrig.:** Time for which the irrigation has been active



- Water consumption:** Data about the water consumption is displayed here
- Show activities:** Loads logs
- Voltage electronics [V]:** Displays the voltage of the electronics and the charge state of the battery
- Diagnosis:** This takes you to the Diagnosis menu



3.7.1 WATER CONSUMPTION



Consumption since last start: Displays the water consumption of the current irrigation

Consumption last irrigation: Displays the water consumption of the last irrigation

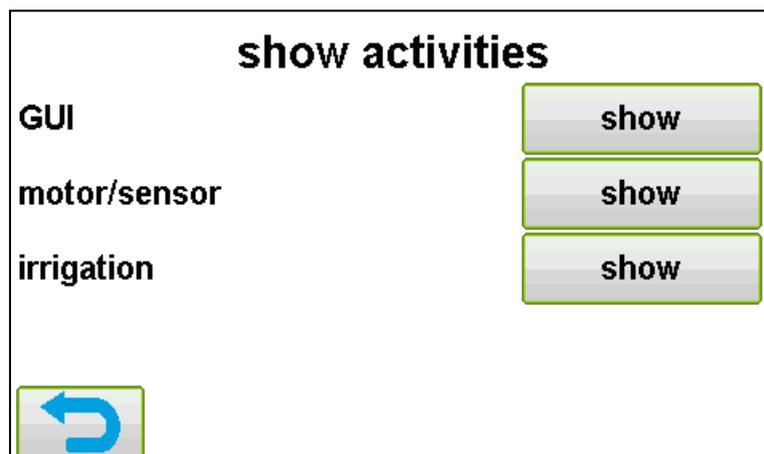
Consumption total: Displays the total water consumption (can be changed)

Consumption list: Displays a detailed list of the consumption of all irrigations, which can be exported to a USB stick

3.7.2 SHOW ACTIVITIES

The **GUI log** records information about **operations**. The **motor / sensor log** contains information about the **inputs and outputs** of the ECOSTAR. The **irrigation log** records information about the **irrigation** as well as **error messages**.

To view the log files more closely, press the “show” button next to the desired log.



Pressing the show button will now take you to the following menu:



GUI

| ID | Scr. | Time / Date | Note |
|----|------|-----------------------|------------------------------------|
| 1 | 0 | 08:53:53 - 12.05.2015 | started into homescreen |
| 2 | 0 | 08:53:53 - 12.05.2015 | IR IN AC IDLE 0.0 0 0 0 0 0 |
| 3 | 1 | 08:54:02 - 12.05.2015 | toggled pre-irrigation state |
| 4 | 1 | 08:54:04 - 12.05.2015 | long-pressed pre-irrigation button |
| 5 | 1 | 08:54:12 - 12.05.2015 | changed pre-irrigation |
| 6 | 1 | 08:54:14 - 12.05.2015 | long-pressed pre-irrigation button |


delete
export

Here you will see a table containing the last 40 entries in the log file with date and time of the entry. Pressing the “Delete” button will delete the log file. The “export” button can be used to export the file to a USB stick.



The export button only appears when a USB STICK is plugged into the ECOSTAR 6000.

3.8 BACKUP MENU



The ECOSTAR can be reset to factory settings in the backup menu. You can also export the current machine data and settings to a USB stick. Data exported in this way can be loaded onto the ECOSTAR 6000 again at a later time from a USB stick. Icons are imported in the backup menu and can also be deleted there.

backup 1/2

| | |
|-------------------------|---------------|
| save parameters | save |
| load parameters | load |
| factory settings | load |
| import icons | import |




Save parameters:

Saves machine parameters and settings to a USB stick

Load parameters:

Loads machine parameters and settings from a USB stick

Factory settings:

Resets the ECOSTAR to the factory settings

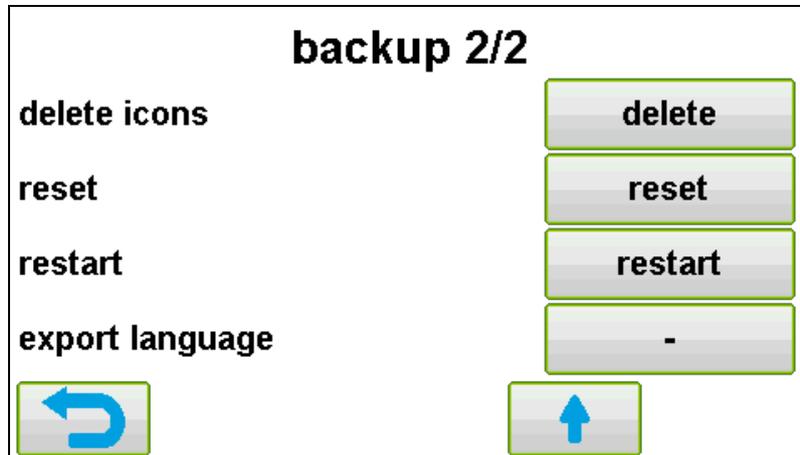
Read icons:

Icons are imported from a USB stick



This process takes 5-20 seconds, during which the ECOSTAR will not respond to the touchscreen.

After the import, the ECOSTAR 6000 must be power cycled (restarted) in order for the changes to take effect.



Delete icons:

Deletes icons

This process takes 5-20 seconds, during which the ECOSTAR will not respond to the touchscreen.

After the import, the ECOSTAR 6000 must be power cycled (restarted) in order for the changes to take effect.

Reset:

All settings are reset

Restart:

The ECOSTAR 6000 is restarted (power on/off)

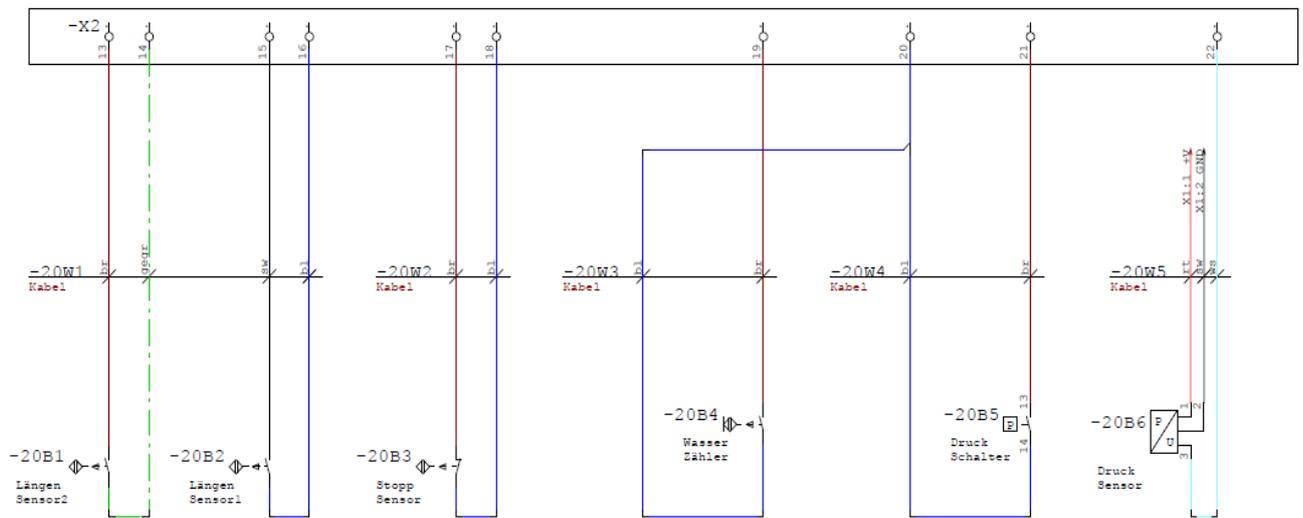
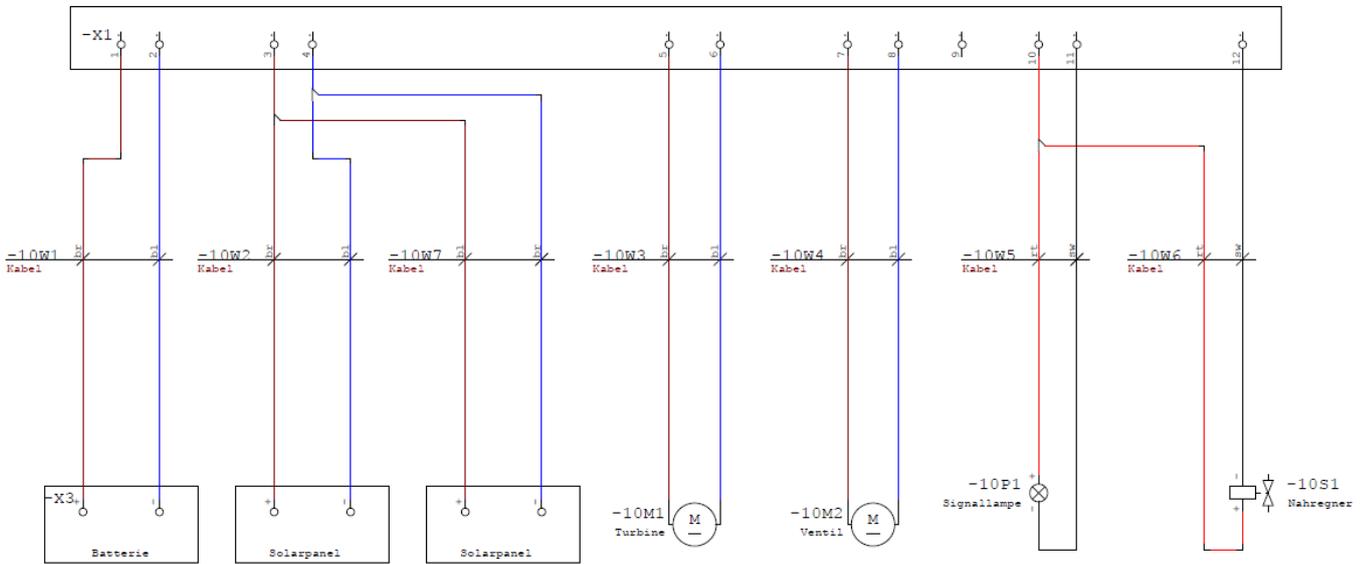
Export language:

The current language file can be exported here



4 CONNECTION PLAN

| Connection | Name | Wire color |
|------------|----------------------------------|-----------------|
| 1 | + Battery Pressure sensor + | Brown Red |
| 2 | - Battery Pressure sensor - | Blue Black |
| 3 | + Solar module | Brown |
| 4 | - Solar module | Blue |
| 5 | Regulating motor | ----- |
| 6 | Regulating motor | ----- |
| 7 | Shut-off motor | ----- |
| 8 | Shut-off motor | ----- |
| 9 | Not assigned | |
| 10 | + Signal lamp + Sprinkler | Red |
| 11 | - Signal lamp | Black |
| 12 | - Sprinkler | Black |
| 13 | Speed sensor 2 | Yellow/green |
| 14 | Speed sensor 2 | Brown |
| 15 | Speed sensor 1 | Black |
| 16 | Speed sensor 1 | Blue |
| 17 | Stop sensor | Blue or brown |
| 18 | Stop sensor | Blue or brown |
| 19 | Water meter | Brown |
| 20 | Pressure switch Water meter | Blue Blue |
| 21 | Pressure switch | Brown |
| 22 | Pressure sensor | White |





5 BUTTON COMBINATIONS

Touchscreen calibration:

In order to recalibrate the touchscreen in an emergency, there is a button that must be pressed and held while the ECOSTAR is starting.

First the ECOSTAR must be de-energized for about 5 seconds. To do this, unplug the 12-pin plug from the circuit board for 5 seconds. Then the plug must be reinserted and the **middle of the 5 buttons** on the front of the ECOSTAR 6000 must be pressed.

The ECOSTAR now starts in the calibration menu. Now press the points on the touchscreen in order (as instructed on the screen).



The points must be pressed precisely, for example with a pen

Resetting the ECOSTAR:

To completely reset the ECOSTAR to the standard settings, the two outermost buttons on the front of the ECOSTAR must be pressed at the same time and held for 20 seconds. After 10 seconds, the ECOSTAR will beep for the first time. After another 5 seconds it will emit a longer beep, and after yet another 5 seconds an even longer one at another pitch. After the ECOSTAR has beeped for the third time, the ECOSTAR has been reset to the standard values.

Screenshot:

To take a screenshot of the current display, a USB stick must be inserted into the ECOSTAR 6000 and then the two buttons 2 and 4 (counting from left to right) must be pressed at the same time.. The ECOSTAR will beep and the screenshot process will be started. If the ECOSTAR beeps again after a few seconds in the same pitch, the screenshot was successful. If it does not beep the same as the first time, the screenshot failed.

6 SOFTWARE UPDATE

Step 1: Preparing the USB stick

Download the current version (.zip file) from the website. Unpack this file and copy the four files contained onto an empty USB stick:

-  Bios.inf
-  Ecostar.bin
-  EEPROM.BAK
-  SPIFLASH.BAK

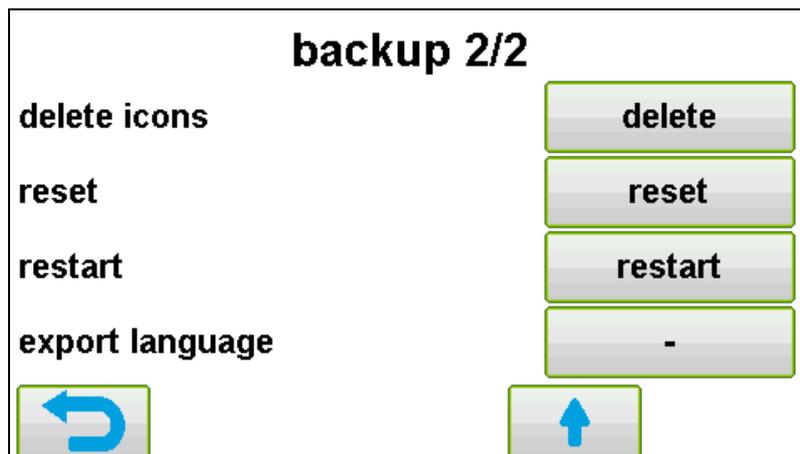
Step 2: Inserting the USB stick

Insert the USB stick into the USB port on the back side of the Ecostar6000.



Step 3: Backup menu

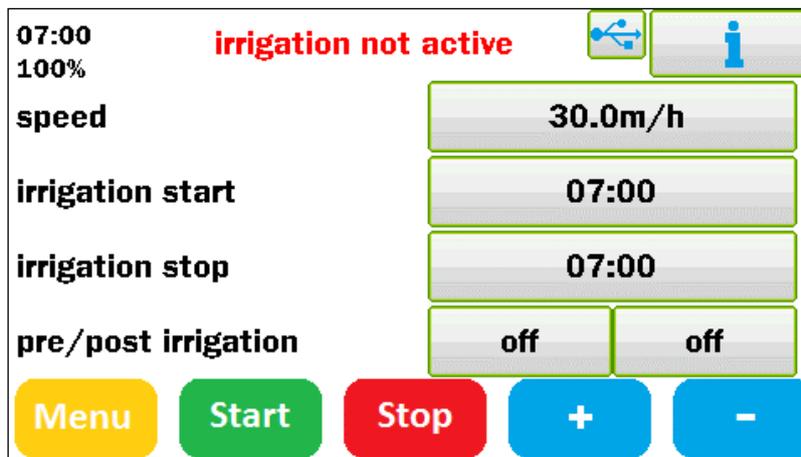
Press “Menu” and open the “Backup” menu with the PIN code “8570”. Switch to the second page.



Press Restart. A signal melody is played, and the update is started. The screen is inactive during the update, and three LEDs on the back side should flash.

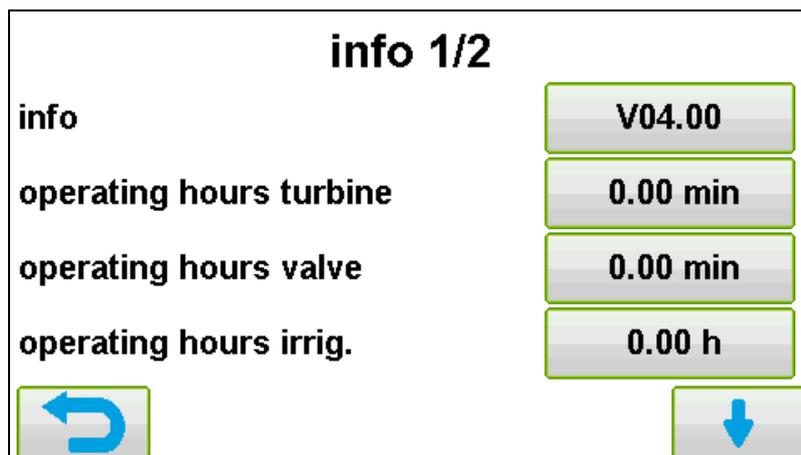


When the update is finished, the main screen appears again on the display.



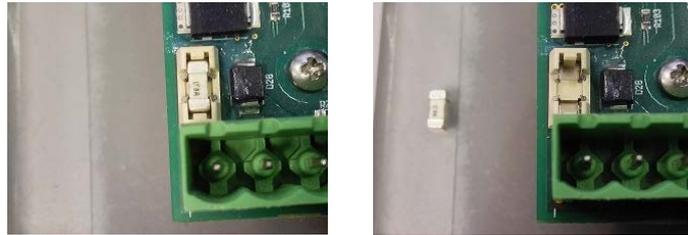
Step 4: Checking the software version

Remove the USB stick. Check whether the correct version is installed. This information can be found at "Menu" -> "INFO" -> "Info".



7 REPLACING A FUSE

Remove the defective fuse from the holder.



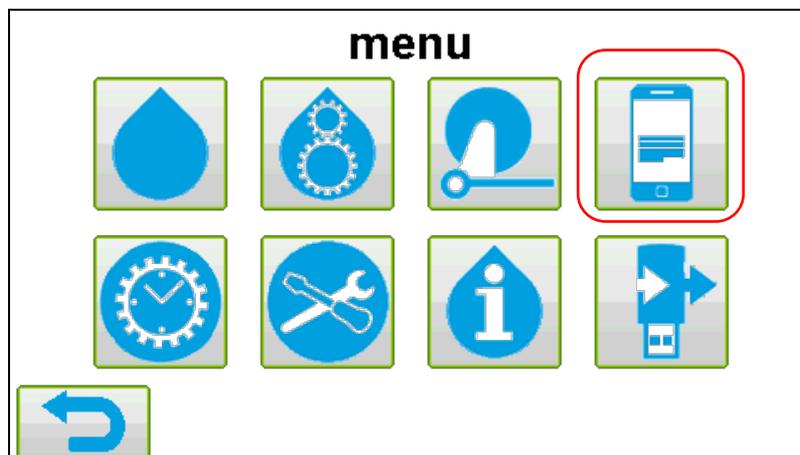
Take the replacement fuse out of its holder and insert it into the holder on the device.



8 ACTIVATING SMARTRAIN

To activate SmartRain on your Ecostar 6000, please follow these instructions:

Step 1. Open the Modem menu



Step 2. Set "Connection" to "DATA" and "GPS" to "On".



sms/modem 1/4

| | |
|--------------------|--------|
| Connection | SMS |
| signal strength | 0 |
| PIN for this level | modify |
| GPS | off |

Step 3. Make certain that the server IP and server port are configured as shown in the image. The address is a unique number and is important for identification of the machine on the server. Typically it is a combination of the serial number of the Ecostar 6000 and a consecutive number. Customers receive the address for each Ecostar 6000 from Bauer GmbH.

sms/modem 3/4

| | |
|-------------|--------------|
| server IP | 212.227.4.43 |
| server port | 44444 |
| address | |

Step 4. If you have received a SIM card from BAUER, you should leave the factory settings on this page unchanged. If you do not have a Bauer SIM card, these settings differ based on the mobile network. Contact the network provider for the information, then enter it here.

sms/modem 4/4

| | |
|----------------|-------------------------|
| Internet / APN | public4.m2minternet.com |
| username | |
| password | |
| pingtime | 120 |



9 ERROR SOURCES AND SOLUTIONS

? Display is blank

Cause/remedy:

- Power supply from the battery interrupted. The fuse in the box may be blown. This happens when the battery is connected incorrectly.
- Display brightness is set to 0%. In this case, press the button combination for resetting the ECOSTAR.
- Ecostar is in sleep mode and must be woken with the touchscreen and not with the buttons

? The turbine does not start when "Start" is pressed

Cause/remedy:

- The magnet at the stop sensor is not in the correct position or the sensor or its cable is damaged. Check the stop sensor input in the menu **Service/Info 1**. If the stop sensor shows "active", the stop sensor is currently being tripped or it is defective.

? The distance is measured incorrectly and the speed is not correct

Cause/remedy:

- Check whether the cable or sensor is damaged. Check the length sensor input in the menu **Service/Info 1**. In the length sensor display when the pipe is extended, the left number must always change to 1 first and then the right number must change to 1. Shortly after this, the numbers must change to 0 again, with the left number changing to 0 first.

? Other errors

Cause/remedy:

- In the case of any other errors, check on the website whether the Ecostar has the newest software version. If this is not the case, you can download the software at www.bauer-at.com in the customer section.

10 TECHNICAL DATA AND DETAILS

| | |
|-------------------|-----------------|
| Size (H x W x D): | 170 x 140 x 100 |
| Voltage: | 10-15V DC |
| Fuse: | 8 A (fast) |