

# **Instructions for using the WEB application**

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### *Abbreviations explanation:*

*SP - Solar panels*

*DC - Direct circuit*

*MC - Mixed circuit*

*SW - Sanitary water*

*MS – Main source*

*HP – Heat pump*

Log in with the acquired username and password on the website <http://deq.si> (Figure 1). If you don't have own username and password, you can sign up as a guest (username: test, password: test).

If you want to change the communication language, click on the appropriate flag.

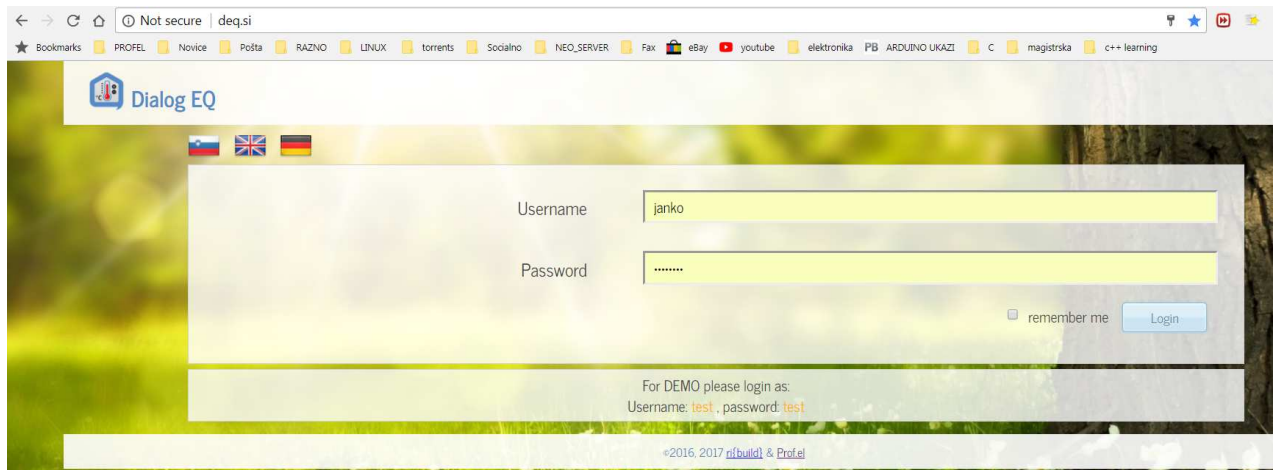


Figure 1: Log in to the WEB application

At login, a window with the name of your DEQ controller opens, which looks approximately as shown in Figure 2:



Figure 2: WEB application main menu

Welcome to the graphical interface of DEQ controller.

In individual windows you can see basic temperature data. Desired temperatures are displayed in the brackets, while the current measured temperatures are displayed in larger numbers. The water temperatures are displayed in blue.




The lower gray part of the window shows the auxiliary temperatures and the marked outputs for the actuators. They are black when the output is turned on. When they are gray the output is turned off.

Simply click on the appropriate window to view or change the settings. If you want to review the flow of temperatures, click on the symbol of the graph icon that you find in each window (module).









Click on a specific window to select which settings you want to manage or control. To view the temperatures of each module, click on the graph icon, which is located on the top left of each module.

On the left part of the window you can see an icon that informs you about the state of operation (off, heating, cooling, by time program, party program). A list and description of all the symbols are shown in the following 4 tables.








Icons on the left upper side-next to the house

Icon figure	Icon name	Description
	Settings	The name of the controller, the name of the heating/cooling circuits or the switching on/off of each circuit can be changed by clicking on <b>Settings icon</b>
	Info	The <b>Info icon</b> shows parameters information that are intended for developers
	Help	By clicking on the <b>Help icon</b> there are instructions how to use the Web application







Following table applies to a direct circuit, mixed circuit 1 and mixed circuit 2.




DC, MC1,MC2	Icon figure	Description
1.Symbol		We are <b>inside heating interval</b>
		We are <b>out of heating interval</b>
		Party mode is <b>active</b>
2.Symbol		This heating/cooling circuit is <b>OFF</b>
		This heating/cooling circuit is <b>set to heating</b> and the circuit is currently <b>heating</b>
		This heating/cooling circuit is <b>set to heating</b> , but the circuit is currently <b>not heating</b>
		This heating/cooling circuit is <b>set to cooling</b> and the circuit is currently <b>cooling down</b>
		This heating/cooling circuit is <b>set to cooling</b> , but the circuit is currently <b>not cooling down</b>

Following table applies to sanitary water

SW	Icon figure	Description
<b>1.Symbol</b>		We are <b>inside interval</b> for heating sanitary water
		We are <b>outside interval</b> for heating sanitary water
		Party mode is <b>active</b>
		Disinfection program is <b>active</b> (antilegionella program)
<b>2.Symbol</b>		The sanitary water heating is turned <b>OFF</b>
		Manual SW heating operation is <b>set to ON or automatic</b> and the water is currently <b>heating</b>
		Manual SW heating operation is <b>set to ON or automatic</b> , but the water is currently <b>not heating</b>

Following table applies to main source

GV	Icon figure	Description
<b>1.Symbol</b>		Main source is <b>OFF</b>
		The operation of the main source is <b>set to heating</b> and currently <b>heating</b> of any circuit or sanitary water is <b>active</b>
		The operation of the main source is <b>set to heating</b> , but <b>heating</b> of any circuit or sanitary water is <b>inactive</b>
		The operation of the main source is <b>set to cooling</b> and currently <b>cooling is active</b>
		The operation of the main source is <b>set to cooling</b> , but currently <b>cooling is inactive</b> .
		The operation of the main source is <b>set to passive cooling</b> and currently <b>passive cooling is active</b>

2.Symbol – Other source		Manual operation of other <b>source is turned ON or set to automatically</b> and the other source is <b>active</b> (condition: the other source must be installed)
		Manual operation of other <b>source is turned ON or set to automatically</b> , but currently <b>heating is inactive</b> (condition - the other source must be installed)
		Other source is <b>OFF</b>

## 1. Solar panels (SP) (random source)

Using this window you can regulate circulation pumps of solar panels, but it can also be used to regulate a fireplace pump or similar random sources (Figure 3):

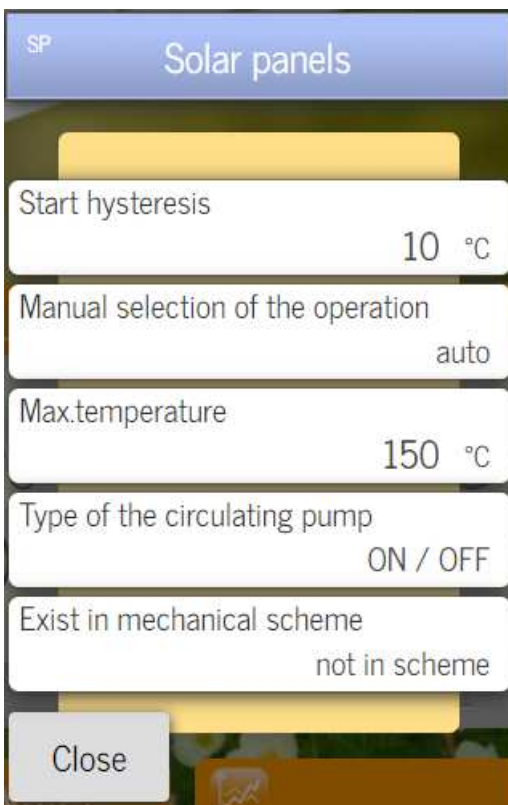
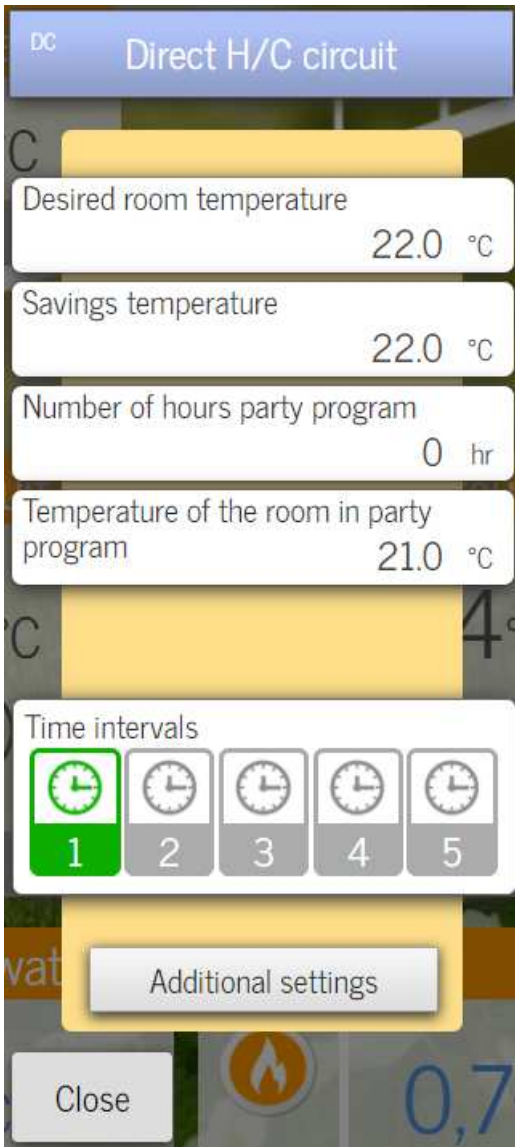


Figure 3: Solar panels basic window

- 1.) Set the desired temperature difference (collector - boiler) when the pump is switched on.
- 2.) **Off** – Turn pump off  
**On** – Turn pump on  
**Auto** - the pump is operating automatically according to the set conditions (*start hysteresis + max. temperature* of solar panels).
- 3.) The information about the maximum permissible temperature of the solar panels can be found on panels themselves.
- 4.) **ON/OFF** – classic pump  
**0-10V** – pump with controled input for setting the intensity of operation.
- 5.) **Not in scheme** – the pump is not connected  
**Heating SW** – only sanitary water is heated  
**Heating SW + tank** – sanitary water and water tank are heated  
**Fireplace**- the source of heat is a water fireplace.

## 2. Direct circuit (DC)

Using this window you can regulate circulating pumps in the direct heating/cooling circuit.



6.) Set the **desired (comfortable)** room temperature (between 5 ° C and 30 ° C).

7.) Set the **energy saving** room temperature (between 5 ° C and 30 ° C).

8.) **Party** program timer. Set the desired number of hours.

9.) Set the **desired room temperature** when the party program is active.

10.) Set the **time intervals** of heating/cooling when you want a comfortable room temperature. Outside of the interval, energy saving temperature is always active.

Legend:

Black - we are not in the heating interval.

Green - we are in the heating interval.

Gray - the interval is not set.

Figure 4: Direct circuit basic window



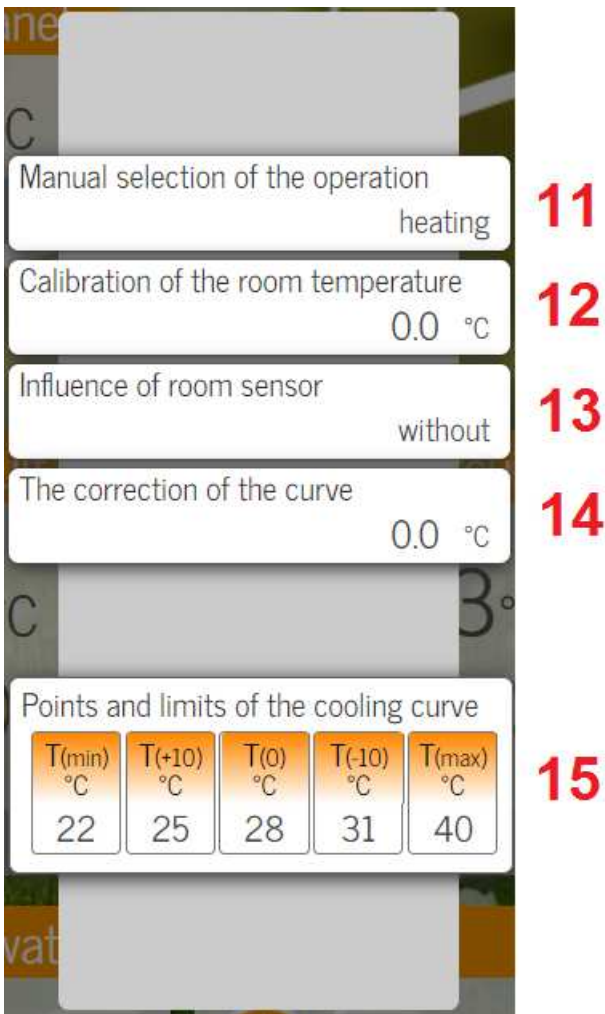


Figure 5: Direct circuit extended window 1/2

Clicking on additional settings:

11.) **Off** – Turn DC off

**Heating** – Set DC to heating

**Cooling** – Set DC to cooling

12.) Possibility of calibration of DC room sensor.

13.) **Without** – regulation does not take into consideration the room sensor

Room sensor's influence on the regulation can be:

**Small**

**Medium**

**Large**

**Ex. thermostat NO** – external thermostat normally open

**Ex. thermostat NC** – external thermostat normally closed

14.) By adjusting the curve, you enable the parallel rise/drop of the source temperature. It is intended for temperature correction from source to consumer.

15.) With the points of the heating curve T (+10), T (0), T (-10) you adjust the heating of your building to the outdoor temperature. With the points T (min) and T (max) you set the conditions for starting the heating and the maximum allowed temperature.

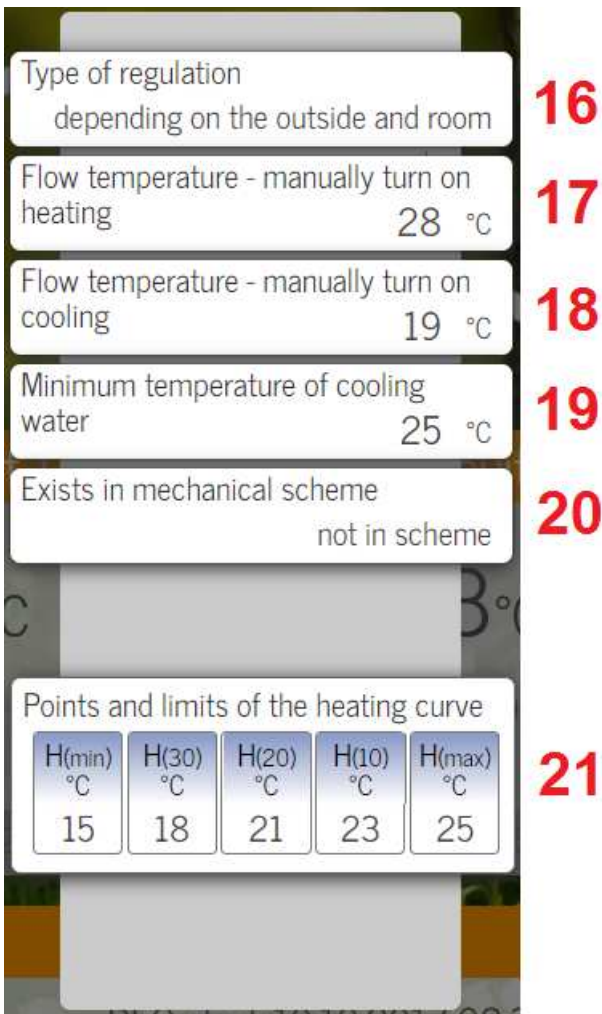
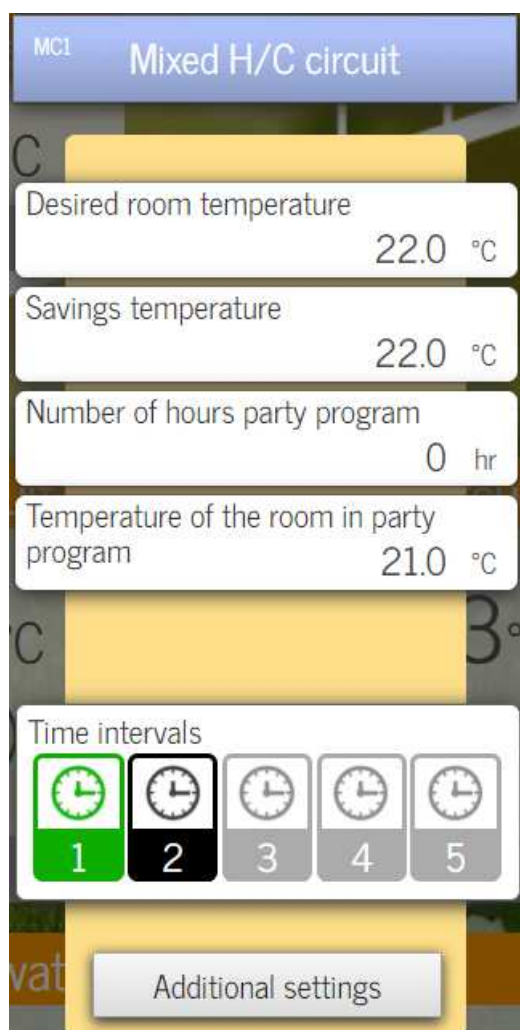


Figure 6: Direct circuit extended window 2/2

- 16.) Choose different types of regulation (outside, inside, exterior, outside and inside, outside and exterior or constant temperature).
- 17.) Set the desired temperature when heating manually starts. ( Regulation from point 16, must not be set as “outside regulation” to make this work)
- 18.) Set the desired temperature when cooling manually starts. ( Regulation from point 16, must not be set as “outside regulation” to make this work)
- 19.) The lowest acceptable cooling temperature (anti-condensation safety setting).
- 20.) **Not in scheme** – the pump for direct circuit is not installed
- Direct circuit** – The circulation pump for direct circuit is installed.
- 21.) With the points of the cooling curve H (30), H (20), H (10), you adjust the cooling of your building to the outdoor temperature. With points H (min) and H (max) you set the conditions for start cooling and the lowest/highest allowed temperature used for cooling.

### 3. Mixed circuit 1 and 2 (MC 1, MC 2)

The DEQ controller supports 2 mixed circuits. The essence of the mixed circuits is, that you don't always need as hot water as the system warms it, or you need to cool the water down due to some installations (eg. too hot water can damage floor heating pipes ...) Mixed circuit differs from a direct circuit, because with mixed circuit you "use" mixing valves and electrical drives, which allows you to mix cold to hot water.



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22.) Set the **desired (comfortable)** room temperature (between 5 ° C and 30 ° C).

23.) Set the **energy saving** room temperature (between 5 ° C and 30 ° C).

24.) **Party** program timer. Set the desired number of hours.

25.) Set the **desired** room **temperature** when the party program is active.

26.) Set the **time intervals** of heating/cooling when you want a comfortable room temperature. Outside of the interval, energy saving temperature is always active.

Legend:

Black - we are not in the heating interval.

Green - we are in the heating interval.

Gray - the interval is not set.

Figure 7: Mixed circuit basic window

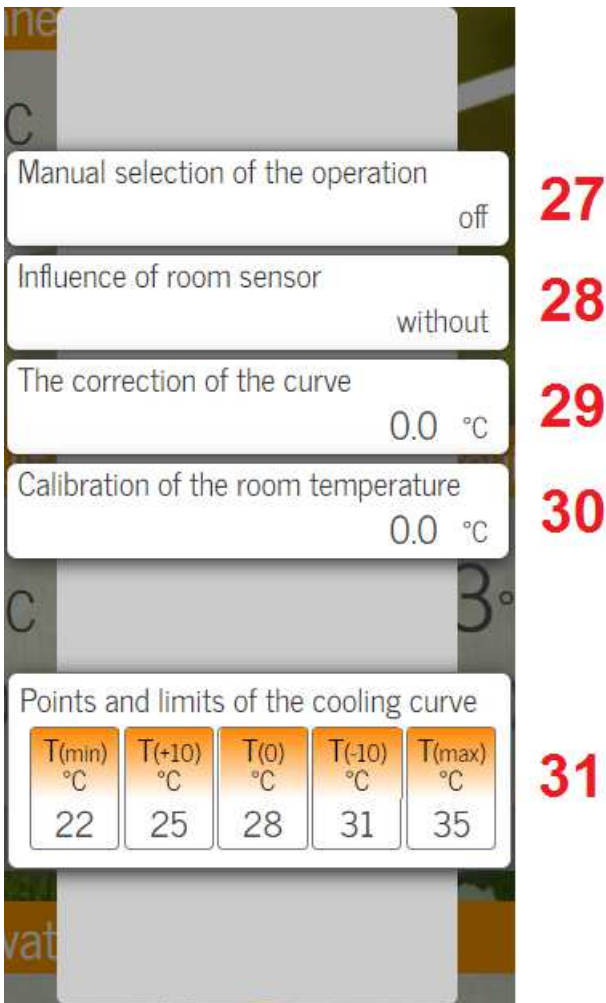


Figure 8: Mixed circuit extended window 1/2

Clicking on additional settings:

**27.) Off** – Turn MC off

**Heating** – Set MC to heating

**Cooling** – Set MC to cooling

**28.) Without** – regulation does not take into consideration the room sensor

Room sensor's influence on the regulation can be:

**Small**

**Medium**

**Large**

**Ex. thermostat NO** – external thermostat normally open

**Ex. thermostat NC** – external thermostat normally closed

**29.)** By adjusting the curve, you enable the parallel rise/drop of the source temperature. It's intended for temperature correction from source to consumer.

**30.)** Possibility of calibration of MC room sensor.

**31.)** With the points of the heating curve T (+10), T (0), T (-10) you adjust the heating of your building to the outdoor temperature. With the points T (min) and T (max) you set the conditions for starting the heating and the lowest/highest allowed temperature.

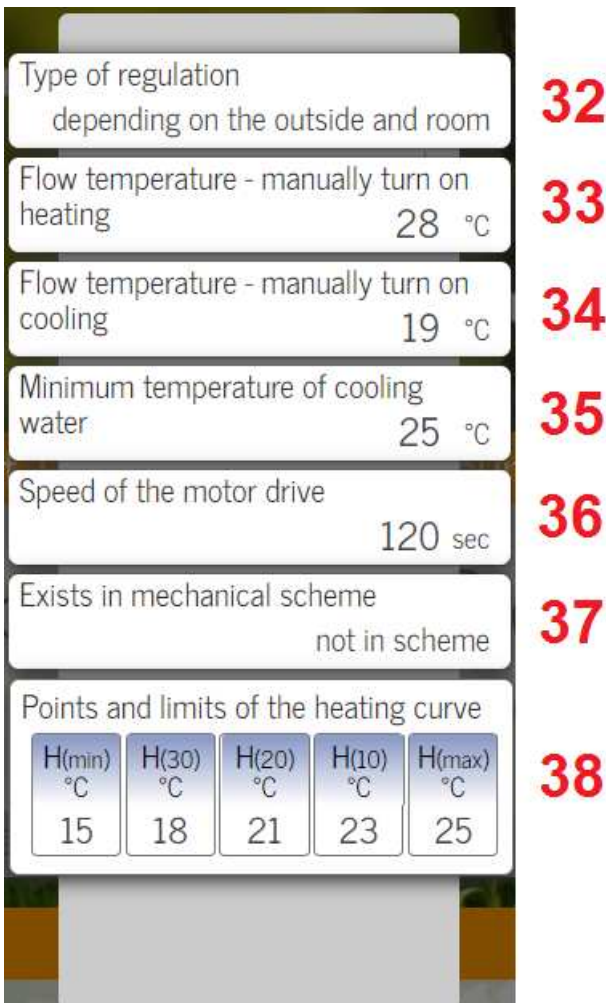


Figure 9: Mixed circuit extended window 2/2

32.) Choose different types of regulation (outside, inside, exterior, outside and inside, outside and exterior or constant temperature).

33.) Set the desired temperature when heating manually starts. ( Regulation from point 32, must not be set as “outside regulation” to make this work )

34.) Set the desired temperature when cooling manually starts. ( Regulation from point 32, must not be set as “outside regulation” to make this work )

35.) The lowest acceptable cooling temperature (anti-condensation safety setting).

36.) The “speed of a motor drive” means the amount of time a motor needs from fully closed to fully open position. This information can be found on a motor drive.

37.) **Not in scheme** – the circulation pump is not installed

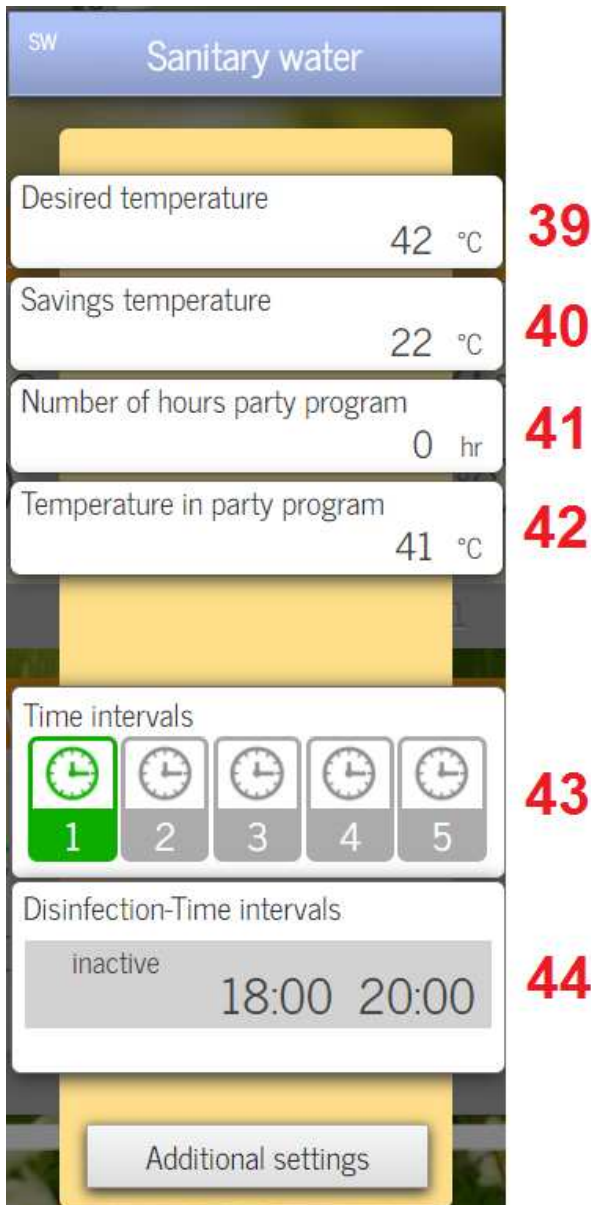
**Direct circuit** – The circulation pump for direct circuit is installed.

**Mixed circuit** – The circulation pump for mixed circuit is installed.

38.) With the points of the cooling curve H (30), H (20), H (10), you adjust the cooling of your building to the outdoor temperature. With points H (min) and H (max) you set the conditions for start of the cooling and the lowest/highest allowed temperature.

## 4. Sanitary water (SW)

Using this window you can set the sanitary water (SW) heating.



39.) Set the **desired (comfortable)** sanitary water temperature (between 20 °C and 65 °C).

40.) Set the **energy saving** sanitary water temperature (between 5°C and 40 °C).

41.) **Party** program timer. Set the desired number of hours.

42.) Set the **desired** sanitary water **temperature** when the party program is active (between 10°C and 60 °C).

43.) Set the heating **time intervals** of sanitary water, when you want a comfortable SW temperature. Outside of the interval, energy saving temperature is always active.

Legend:

Black - we are not in the heating interval.

Green - we are in the heating interval.

Gray - the interval is not set.

44.) Set the intervals of SW thermal disinfection (anti-legionella program).

Figure 10: Sanitary water basic window

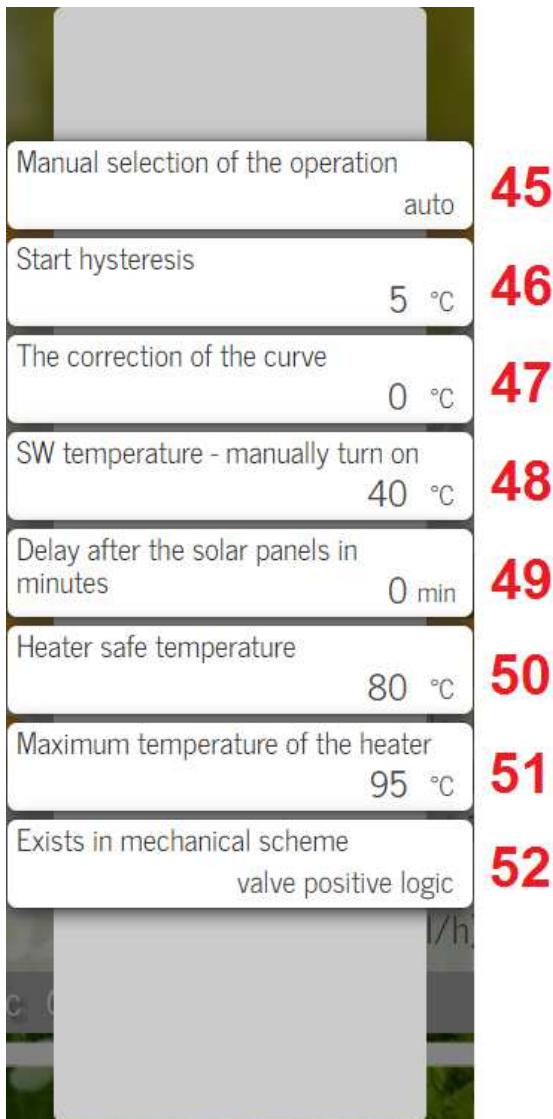


Figure 11: Sanitary water extended window

45.) **Off** – Turn SW heating off

**Heating** – Switch on the SW heating according to the condition: *SW temperature manually turn on*.

**Auto** – The SW heating is carried out automatically according to the pre-set conditions (*desired temperature*).

46.) Set the desired temperature difference to restart the heating SW.

47.) By adjusting the curve, you enable the parallel rise/drop of the source temperature. It is intended for temperature correction from source to consumer.

48.) The condition that must be fulfilled when the *Manual selection of the operation* is set to heating.

49.) Solar delay is active only if you have active solar panels. When the solar panels do not heat the water enough, another source is switched on (after the set minutes).

50.) Set the upper operating temperature of the SW heating.

51.) The water heater's maximum temperature is an information provided by the heater manufacturer.

52.) **Not in scheme**- actuators are not connected

**Valve positive logic**- you're using a switching valve with a positive logic.

**Valve negative logic** – you're using a switching valve with a negative logic.

**Pump** – you're using a circulation pump.

## 5. Main source (MS)

The module is intended for main and other additional sources.

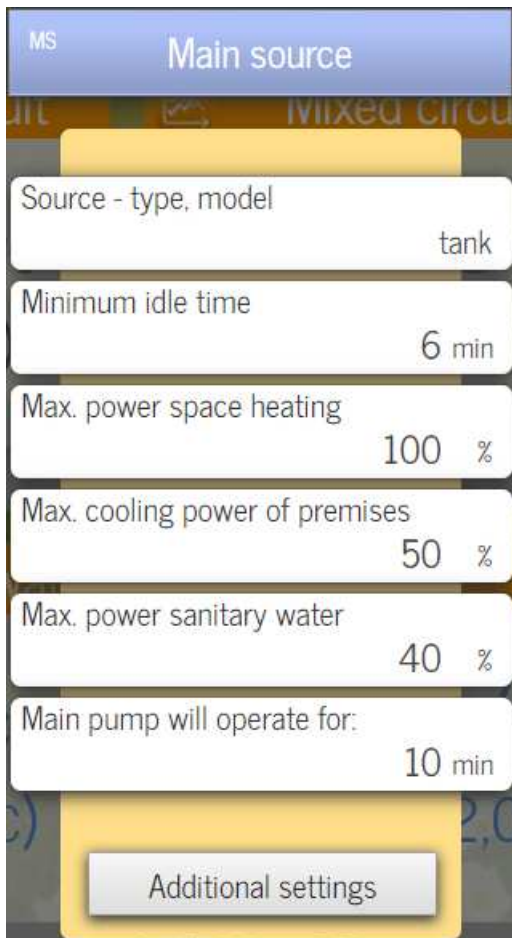


Figure 12: Main source basic window

53.) Select the type or model of heating source.

54.) Minimum Idle Time is a security solution for HP. It protects the HP against rapid overloads.

55.) Limitation of maximum interior heating capacity.

56.) Limitation of maximum interior cooling capacity.

57.) Limitation of maximum sanitary water heating.

58.) After switching off the source, the main pump should run the set number of minutes (recommended for 8 minutes).



Manual selection of the operation	heating	<b>59</b>
Tank	no	<b>60</b>
Heating cable for condensation	no	<b>61</b>
Flow switch	without	<b>62</b>
Electrical heater 1	not installed	<b>63</b>
Electrical heater 2	not installed	<b>64</b>
Electrical heater 3	not installed	<b>65</b>
Additional source	not installed	<b>66</b>

Figure 13: Main source extended window 1/2

59.) **Off**- Turn the source off

**Cooling** – Set MS to cooling

**Heating** – Set MS to heating

**Passive cooling** – Cooling without a heat pump.  
(Suitable for water-to-water systems).

60.) Choose when the main source has a tank.

61.) Choose when the heating cable is installed and you want to enable it.

62.) Select a flow switch, a sensor. (Safety Solution for Flow Measurement via Plate Exchanger).

63, 64, 65.) You can control additional 3 electric heaters.

**Installed** – electric heater is installed

**Not installed** – electric heater is not installed in the system

**Parallel** –The electric heater helps the main source.

66.) **Installed** – Additional source is installed into the system

**Not installed** – additional source is not installed into the system

**Parallel** – additional source helps the main source.

Manual selection of the operation	off	<b>67</b>
Start hysteresis	5 °C	<b>68</b>
Auto, Condition 1, Outdoor temperature	0 °C	<b>69</b>
Auto, Condition 2, Intensity of the operation	90 %	<b>70</b>
Auto, Condition 3, Desired temp. greater than	55 °C	<b>71</b>
Auto, Condition 4, The delay ELgr1	30 min	<b>72</b>
Auto, Condition 5, The delay ELgr2	30 min	<b>73</b>
Auto, Condition 6, The delay ELgr3	30 min	<b>74</b>

Figure 14: Main source extended window 2/2

67.) **On** – Other source is on and is switching on according to the set conditions (*Start hysteresis*).

**Off** – Other source is off

**Auto** – Other source is operating automatically according to the set conditions (*Auto, Condition 1 + Auto, Condition 2 + Auto, Condition3 + Start hysteresis*)..

68.) Set a temperature condition when other source should be switched on. (*Manual selection of the operation* must be set to on).

69.) If the main source *manual selection of operation* is set to automatic, the first condition is outdoor temperature.

70.) If the main source *manual selection of operation* is set to automatic, the second condition is intensity of the operation.

71.) If the main source *manual selection of operation* is set to automatic, the third condition is higher temp, which we enter.

72.) If the main source *manual selection of operation* is set to automatic, the fourth condition is delay in minutes for electric heater 1.

73.) If the main source *manual selection of operation* is set to automatic, the fifth condition is delay in minutes for electric heater 2.

74.) If the main source *manual selection of operation* is set to automatic, the sixth condition is delay in minutes for electric heater 3.

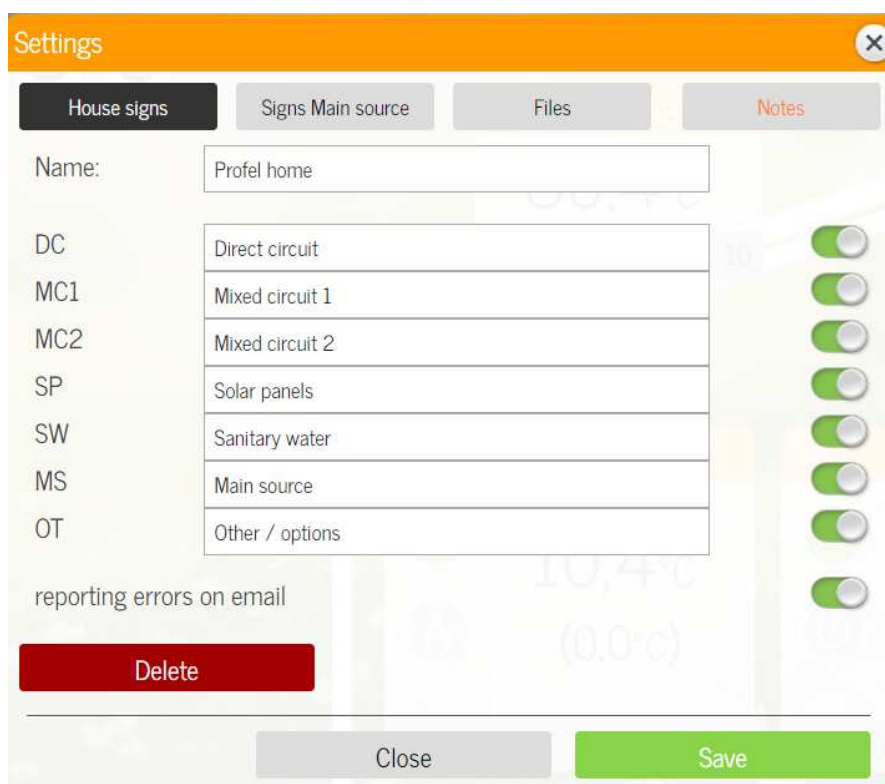
## 6. Settings

You can access the settings in the main menu by clicking on the wheel icon that is located in the main menu (in the upper left corner) directly under the name of your controller.



Figure 15: Icons for Settings, Information and Help

Next to the Settings icon, there are also icons for Information and Help. This icon is intended for test personnel and developers. When clicking on the Settings icon (the wheel), the figure below will appear (figure 16).



Slika 16: Settings window

In the settings you can change the name of your controller. It is also possible to change the names of all basic windows/circuits (direct circuit, mixed circuit, sanitary water, main source...) in order to adapt the system to your needs as much as possible.

With the buttons on the right side, you can turn off/on heating circuits/windows that are not installed in your system.

We have also implemented an e-mail notification system, but is currently still under the development.

