Ecocycle Heat Pumps

User Interface (HMI) Manual

Type: POL895.51/STD

/ecocycleheatpumps
/ecocycle_heatpumps
www.ecocycleheatpumps.com

ecocycle
HEATPUMPS

1.Buttons and Functions:

Info: Pressing this button from any screen gives you access to all current values of the heat pump.

Alarms: When pressing the alarm button (the red LED flashes if an alarm is active), the alarm management menu is displayed.

Escape: Returns to the previous level in the menu tree. Pressing this button during modification invalidates the change being made and returns the user to the previous menu. This function is very important if a setting is inadvertently modified.

And if this button is held down, the HMI settings and the Controller List are accessed.

OK / Roll: The scroll wheel has six functions:

1. In a menu, it is used to move up and down the list of possible options.

2. It can change the value of a setting when it has been selected.

3. It is used to access a submenu.

4. Activate the modification of a setting.

5. Validate the modification of a setting.

6. If logging in with one user level, press and hold key **ROLL** to activate the log in/off page.

If not, press and hold key **ROLL** to redict to the password entering page.

Notes:

⚠ CAUTION

National safety regulations

Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national provisions and comply with the appropriate safety regulations.

The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

2.Main Menu:

- HEATING
- COOLING
- DHW
- SOLAR
- FUNCTIONS
- INFO
- PARAMETERS
- LANGUAGE

When the heat pump user interface is first opened, the main menu welcomes you. From this menu you can easily access all modes and setting menus.

You can move up and down with the Roll button and enter the desired menu by pressing on it.

3.Heating Mode Menu:

You can access the settings for this mode by selecting heating mode from the main menu.

1	Heating Mod	Off
2	Heating Setpoint	28.0°C
3	Differantial	2.0 °C
4	Setting Mod	Constant
	Setpoint at -10C	28.0°C
	Setpoint at -5C	28.0°C
	Setpoint at 0C	28.0°C
	Setpoint at +5	28.0°C
	Setpoint at +10	28.0°C
5	Smart Grid dT Heating	0.0°C
6	Heating Time Program	
7	Night Mode	Off
	Night Mode Start	*
	Night Mode End	*

1) **Heating Mode:**
   - Open: The heat pump is switched on.
   - Off: The heat pump turns off.
   - Auto: The heat pump operates according to the time program.

2) **Heating Setpoint:** It is the setting value of the heat pump water outlet temperature.

3) **Differantial:** The heat pump starts to reduce speed when the water outlet temperature reaches the setpoint value. If there is no need for heat, the water outlet temperature continues to rise. When half of the differential value + set value, the heat pump shuts off. When the set value - half of the differential value, the heat pump starts to work again.

   For example:
   Set value : 50°C
   Differential: 6°C
   Heat pump off : 50 +(6/2) = 53.1°C
   Heat pump restart: 50 -(6/2) = 46.9°C

4) **Setting Mode:**
   - **Constant:** The heat pump operates constant according to the setpoint value entered in the on position.
   - **Curve:** If you put the heat pump in curve mode, you need to enter the outlet water temperature according to the different outdoor temperatures under setting mode. Thus, the heat pump automatically creates a curve according to the entered setpoint values and operates.

5) **Smart Grid dT Heating:** If you have a solar panel and an inverter panel, your Ecocycle heat pump can be integrated into your solar panel. In this case, the solar panel inverter sends information to the heat pump in case of free energy. If you activate this setting, your heat pump will heat for free with the heating setpoint + smartgrid (°C). For example, let the setpoint be 50°C. If you enter this setting as 5°C, the heat pump will heat the water 5°C more in case of free energy. The new water temperature will be 55°C.

6) **Heating Time Program:**

If you want to run your Ecocycle heat pump in Automatic mode, you can set your time program from this menu. You can determine how many degrees it will operate on different days, at which hours.

7) **Night Mode:** You can make the heat pump run quieter at night by setting the night mode. For this, enter the start and end times of the night and turn it on.

3.Cooling Mode Menu:

1) **Cooling Mode:** You can set the cooling mode on or off.
2) **Cooling Setpoint:** Water outlet temperature setting value when the heat pump cooling mode is on.
3) **Smart Grid dT Cooling:** As in heating mode, if you have solar panels and an inverter, your heat pump will provide extra cooling up to the set value in case of free energy.

4.DHW Mode Menu:

1	DHW Mod	Off
2	DHW Setpoint	40.0 °C
3	DHW Differantial	5.00 °C
4	DHW Recharge	Off
5	Legionella Function	Off
6	Legionella Setpoint	70.0 °C
7	Legionella Time	240.0 min
8	Legionella Interval	5.00 Days
9	Smart Grid dT DHW	0.000 °C

1) **DHW Mode:** You can switch the hot water mode of your Ecocycle heat pump on or off.

2) **DHW Setpoint:** You can set the temperature of the hot water tank here.

3) **DHW Differantial:** The set differential value indicates when the heat pump will be activated. For example, if the DHW setpoint is 40°C and the differential value is 5°C. If the hot water tank is 40-5=35°C, the heat pump will restart.

4) **DHW Recharge:** If you have an urgent need for hot water, you can activate the re-charge option. Your heat pump will then start heating your hot water tank directly.

5) **Legionella Function:** You can activate this function to prevent legionella bacteria in your hot water tank. Requires additional heater.

6) **Legionella Setpoint:** It is the desired setpoint. In order to reach the setpoint, the heat pump heats up to the maximum temperature. As there will be a need for more temperature, it activates the additional heater and reaches the desired setpoint.

7) **Legionella Time:** The legionella function is active for the set time.

8) **Legionella Interval:** You can set how often you want the Legionella function to be activated.

9) **Smart Grid dT DHW:** If your solar panel has free energy, the heat pump will heat your hot water tank above the setpoint.

5.Solar Menu:

1	Solar On Dif.	8.00 °C
2	Solar Off Dif.	4.00 °C
3	Max DHW Temp.	70.0 °C

1) **Solar On Dif.:** Indicates when the collector circulation pump will be activated. For example, let your hot water tank be 45°C, if you set the differential value to 8°C, when the collector is 45+8 = 53°C, the collector pump is activated and heats your hot water tank.

2) **Solar Off Dif.:** The collector indicates when the circulation pump will turn off. For example, let your hot water tank be 45°C, if you set the differential value as 4°C, when the collector is 45+4 =49°C, the collector pump is deactivated and does not heat your hot water tank.

3) **Max DHW Temp.:** You can heat your hot water tank with the help of the collector up to the set value. You cannot heat with the collector above this value**.**

6.Functions: (only for services)

1	Cooling Circuit	Off
2	DHW Circuit	Off
3	Solar Circuit	Off
4	DHCP	On
5	IP Adress	192.168.1.2
6	BACnetIP	Passive
7	Master	Off
8	Activate	Off
9	Vacuum Operation	On

1) **Cooling Circuit:** You can switch the Cooling function on or off. After changing the setting, the setting must be activated. The heat pump will restart.

2) **DHW Circuit:** You can switch the DHW function on or off. After changing the setting, the setting must be activated. The heat pump will restart.

3) **Solar Circuit:** You can switch the Solar function on or off. After changing the setting, the setting must be activated. The heat pump will restart.

4) **DHCP:** If DHCP mode is on your heat pump can connect to the cloud system, if it is off it cannot.

5) **IP Adress:** When DHCP is on, you can see the IP address that the device receives automatically. When DHCP is off, you can change the IP address of the device.

6) **BACnetIP:** You can operate your Ecocycle heat pump integrated into your smart home automation via Bacnet interface. Passive mode means off.

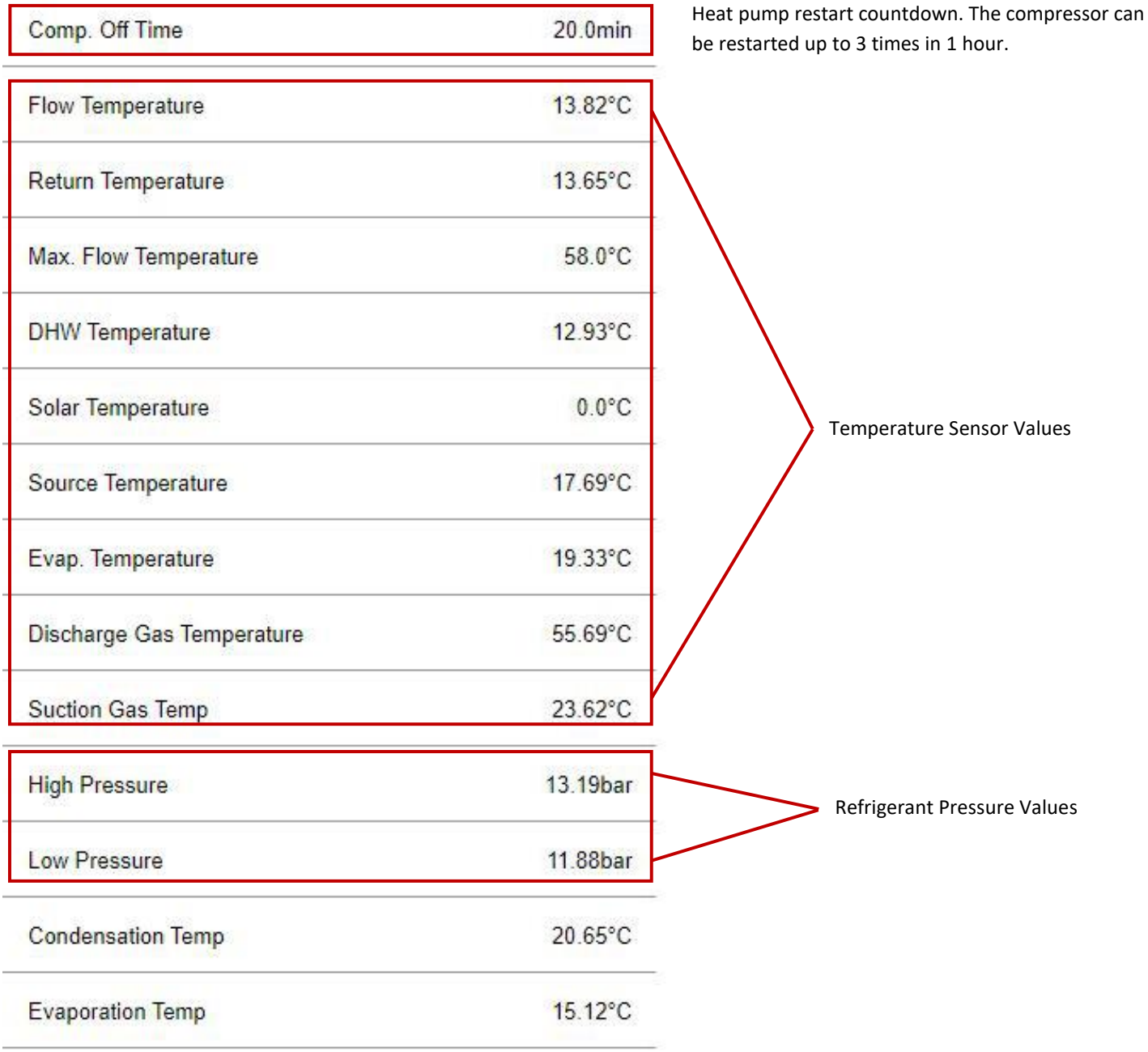
7) **Master:** If you want to operate more than one Ecocycle heat pump in cascade, the Master must be switched on to select the master device. In off state it will remain as slave. After changing the setting, the setting must be activated. The heat pump must be restarted. Cascade connection is explained in detail in chapter 12.

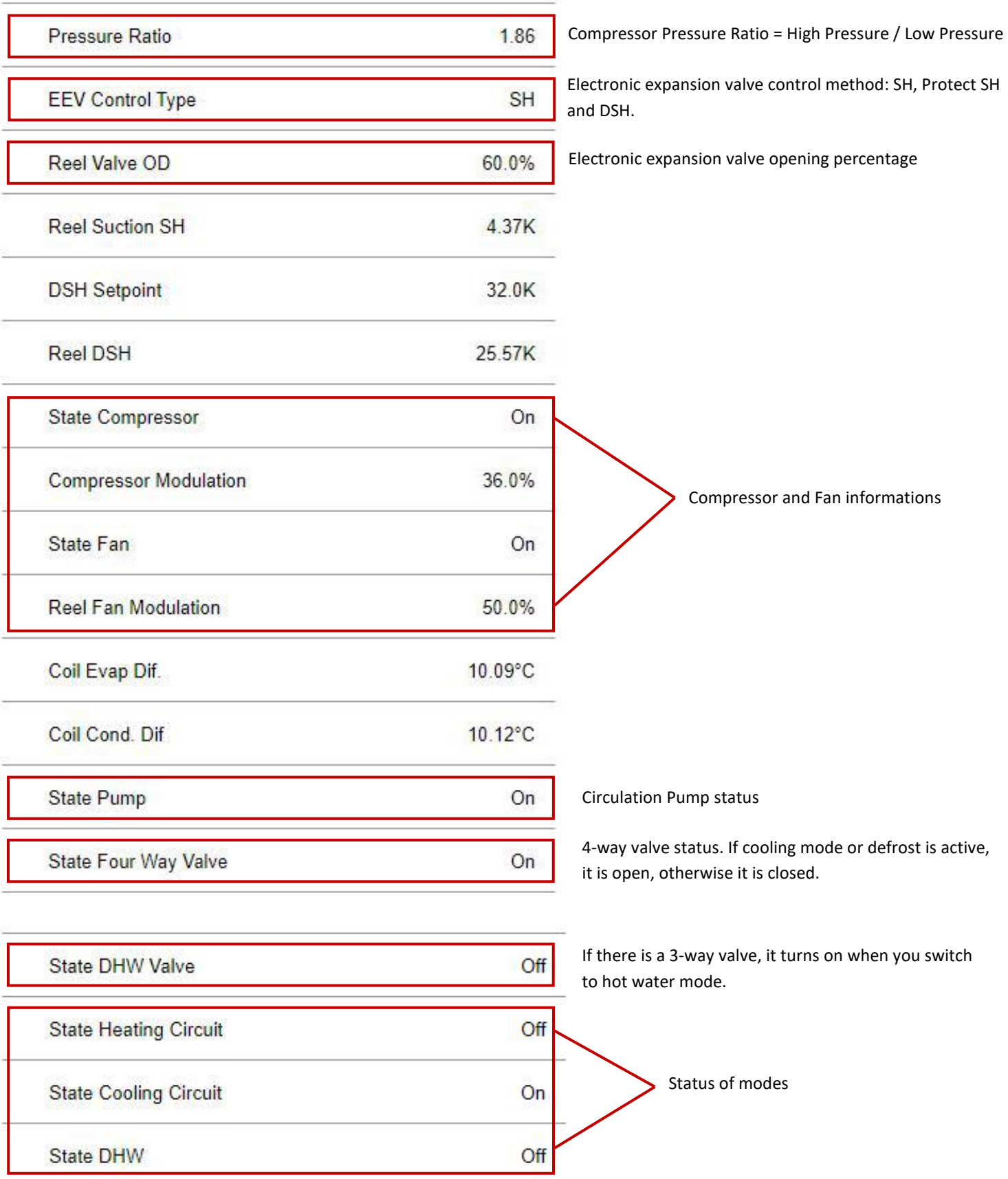
8) **Activate:** To memorize the all settings, you need to turn the activate button on. The heat pump will restart.

9) **Vacuum Operation:** To completely vacuum the remaining gas inside the heat pump during service intervention, the vacuum mode must be activated. EEV will be switched on at 100%. When the process is finished, it must be turned off again, otherwise your heat pump will not work properly.

7.Info Menu:

From the Info menu, you can access all the data of your Ecocycle heat pump.




Pressure Ratio 1.86
Compressor Pressure Ratio = High Pressure / Low Pressure
EEV Control Type SH
Electronic expansion valve control method: SH, Protect SH and DSH.
Reel Valve OD 60.0%
Electronic expansion valve opening percentage
Reel Suction SH 4.37K
DSH Setpoint 32.0K
Reel DSH 25.57K
State Compressor On
Compressor Modulation 36.0%
State Fan On
Reel Fan Modulation 50.0%
Compressor and Fan informations
Coil Evap Dif. 10.09°C
Coil Cond. Dif 10.12°C
State Pump On
Circulation Pump status
State Four Way Valve On
4-way valve status. If cooling mode or defrost is active, it is open, otherwise it is closed.
State DHW Valve Off
If there is a 3-way valve, it turns on when you switch to hot water mode.
State Heating Circuit Off
State Cooling Circuit On
State DHW Off
Status of modes

IP DHW	65.0 °C

DHW memorized value

DHW Heater	Off

Hot Water Tank heating element

Extra Heater	Off

If there is an extra heater, it shows its status.

Solar Pump	Off

Solar energy (collector) circulation pump

Crank Heater	Off

Compressor crank heater for oil.

Freeze Protection	Off

Freeze protection mode; water circulation continues even if the heat pump is switched off at low temperatures.

Defrost State	Off
Forced Defrost Time	120.0min
Defrost Setpoint	20.0°C
Defrost Differantial	-2.11°C

Defrost status informations

State Compressor	13
Compressor Speed Feedback	41Hz
Compressor Driver Temp.	47°C
Compressor Power Consumption	0kW
Comp.Driver Error 1	0
Comp.Driver Error 2	0
Last Driver Error 1	32768.0
Last Driver Error 2	0.0

Compressor status, speed information, inverter driver temperature, power consumption and error information if available.

8.Parameters:

This menu contains and changes some settings of the heat pump. The Parameters menu is not accessible to the end user. Access to this menu is only available for service and factory. A user password is required to enter.

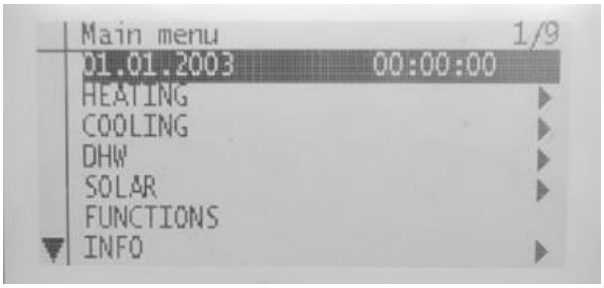
9.Language:

You can choose from the available languages to control your heat pump.

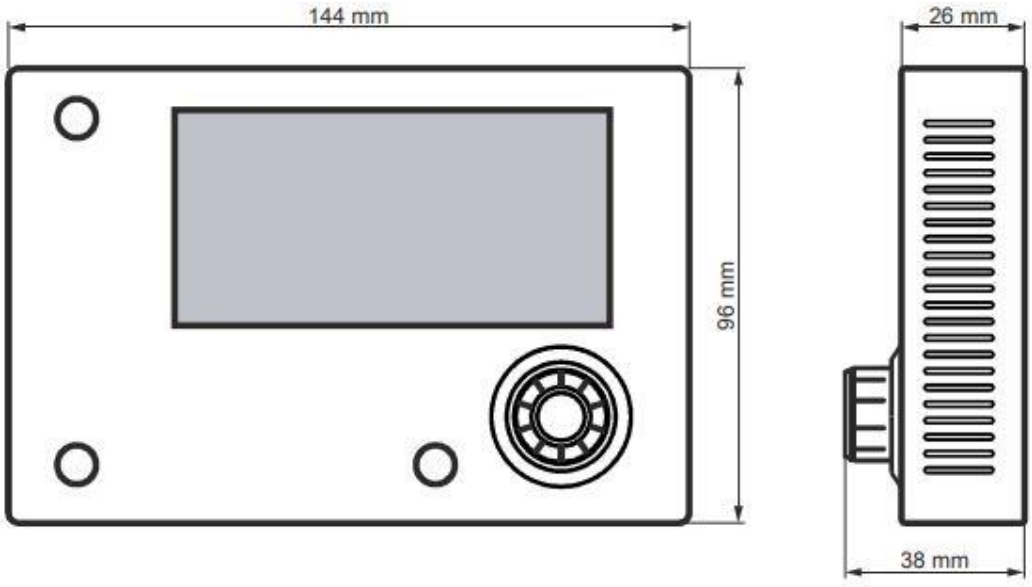
- Turkish
- English
- Deutsch
- Netherlands

10.Date and Time:

You can edit the date and time information by using the Roll button at the top of the main menu. You can press the OK button and roll to edit.



11.Dimensions:

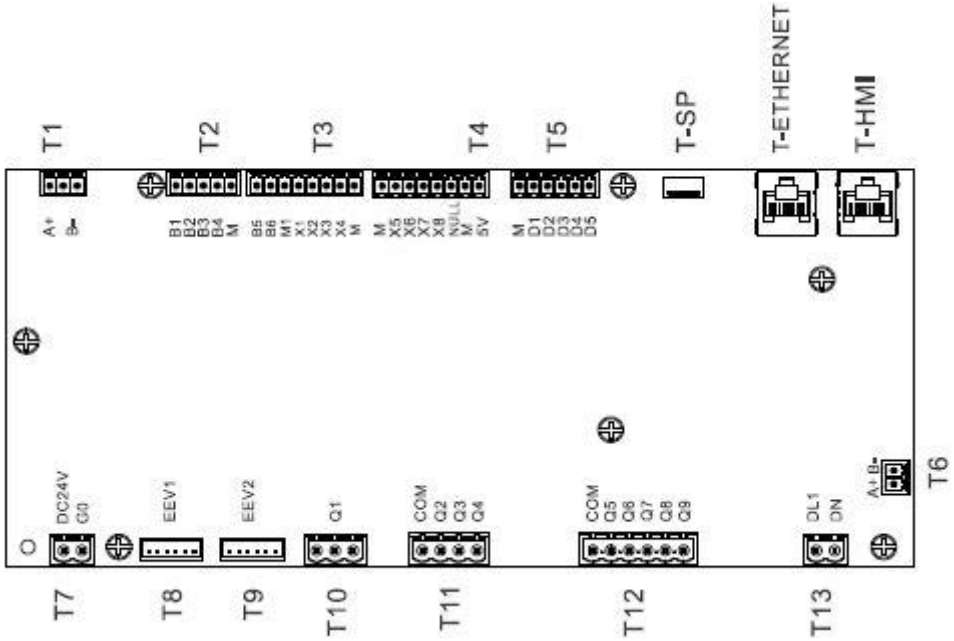


Dimensions in mm

12. Cascade Connection:

You can follow the steps below to connect more than one Ecocycle heat pump in cascade. Maximum 1 Master + 10 Slave heat pumps can be connected to the cascade connection. Thanks to the cascade connection, you can manage all devices from a single device and learn about possible error situations.

Cable Connection:



Heat Pump Control Board

RJ45 Coupler Adapter

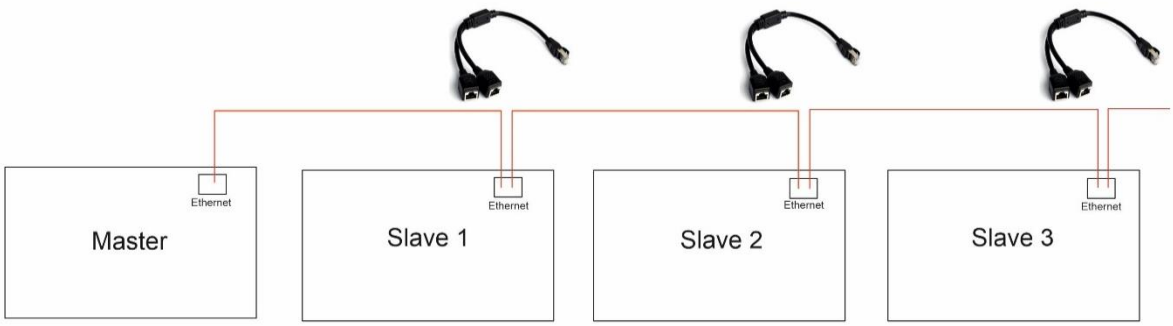
LAN (RJ45) cable and RJ45 multiplier adapter are needed for cable connection between Master and Slave heat pumps. You can follow the steps below for cable connection.

i. Connect the LAN cable to the "Ethernet" output of the Master heat pump control card and connect to the Ethernet output of the 1st Slave device.

ii. If there will be more than one slave heat pump, RJ45 multiplier adapter is needed.

iii. Then, in order to connect to the 2nd slave heat pump, a connection must be made from the Ethernet output of the 1st slave device to the Ethernet output of the 2nd slave device. This step should be repeated for more slave heat pumps.

iv. A sample connection diagram is shown below.



Connection Settings:

After the cable connection between the heat pumps, the settings of the Master and Slave devices must be entered. The following steps can be followed for this.

Cooling Circuit	Off
DHW Circuit	Off
Solar Circuit	Off
DHCP	On
IP Adress	192.168.1.2
BACnetIP	Passive
Master	On
Number Of Device	0
Activate	Off
Vacuum Operation	On

i. To determine the master device, you need to enter the "functions" section from the HMI screen of the heat pump you have selected. This menu is only accessible by the service or manufacturer.

ii. Once in the functions menu, DHCP must be turned off if cloud connection is not desired. If cloud connection is desired, it should be turned on.

iii. The "Master" command must be turned on on the device where the master is determined and the activation process (Activate) must be done. The heat pump will be restarted.

iv. After the heat pump is restarted, enter the functions menu again and enter the "Number of Devices" that will work as slave. And the activation process should be done again. The heat pump will restart. This is the master device settings.

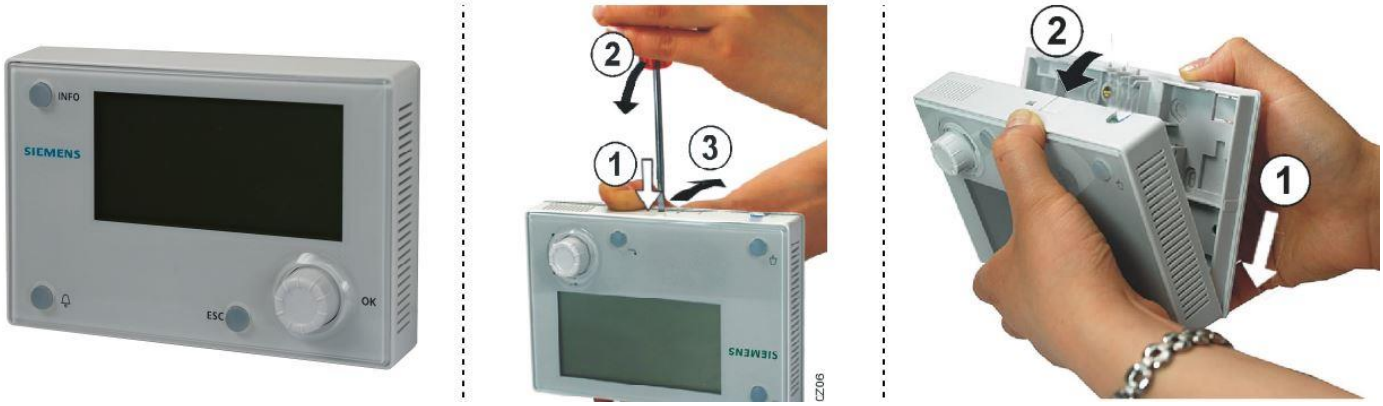
v. Then, by logging into the functions menu from the HMI screen of the slave devices, DHCP should be turned off and the setting should be activated. The heat pump will restart.

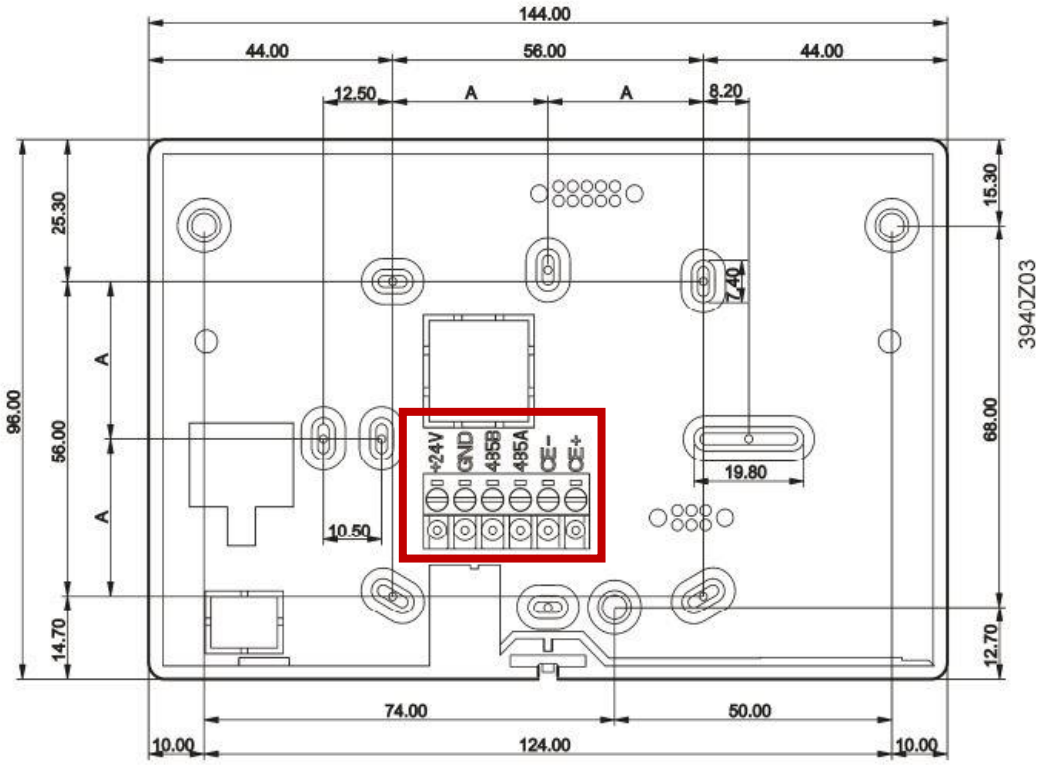
vi. When the heat pump restarts, the IP address of the heat pump should be set manually from the "IP Address" section by entering the functions menu again. 1. It should be set as 192.168.1.101 for the slave device. After the IP settings are made, the activation process should be done again.

2. 192.168.1.102 for slave device // 3. 192.168.1.103 for slave device
4. 192.168.1.104 for slave device // 5. 192.168.1.105 for slave device
6. 192.168.1.106 for slave device // 7. 192.168.1.107 for slave device
8. 192.168.1.108 for slave device // 9. 192.168.1.109 for slave device
10. 192.168.1.110 for slave device

vii. In non-slave heat pumps, the "Master" setting must be off. These are the slave device settings. You can control all heat pumps from the Master device.

13. Mounting Instructions:





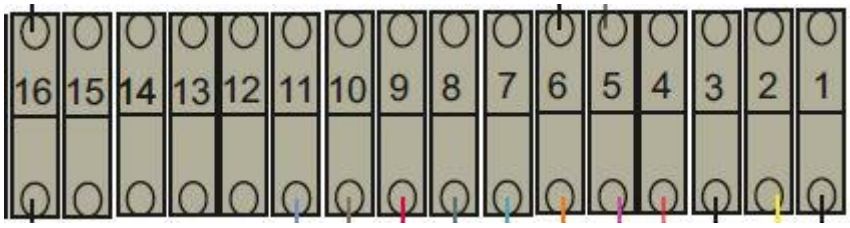
Ecocycle heat pump and HMI connection:

First remove the back cover of the control unit as shown in the first picture.

Then, the cables coming from the heat pump should be connected to the part marked in red in the second picture on the removed back cover as in the table on the side.

Heat Pump Terminals	HMI Terminals
12	R485A
13	GND
14	485B
15	+24V

14. Installation Terminal Diagram:



1-2 = Solar Collector Sensor
3-4 = Boiler (DHW) Sensor
5 = Heating Thermostat (Factory Connected)
6 = Cooling Thermostat (Factory Connected)
7 = Boiler Resistance (Dry Contact)
8 = Extra Heater Element (Dry Contact)
9 = Solar Energy Circulation Pump
10 = 3 Way Valve (220V Phase)
11 = Condenser Pump A1
12 = Blue → HMI R485A
13 = Orange → HMI GND
14 = Blue-White → HMI 485B
15 = Orange-White → HMI 24V
16 = Heating-Cooling Thermostat (Factory Connected)