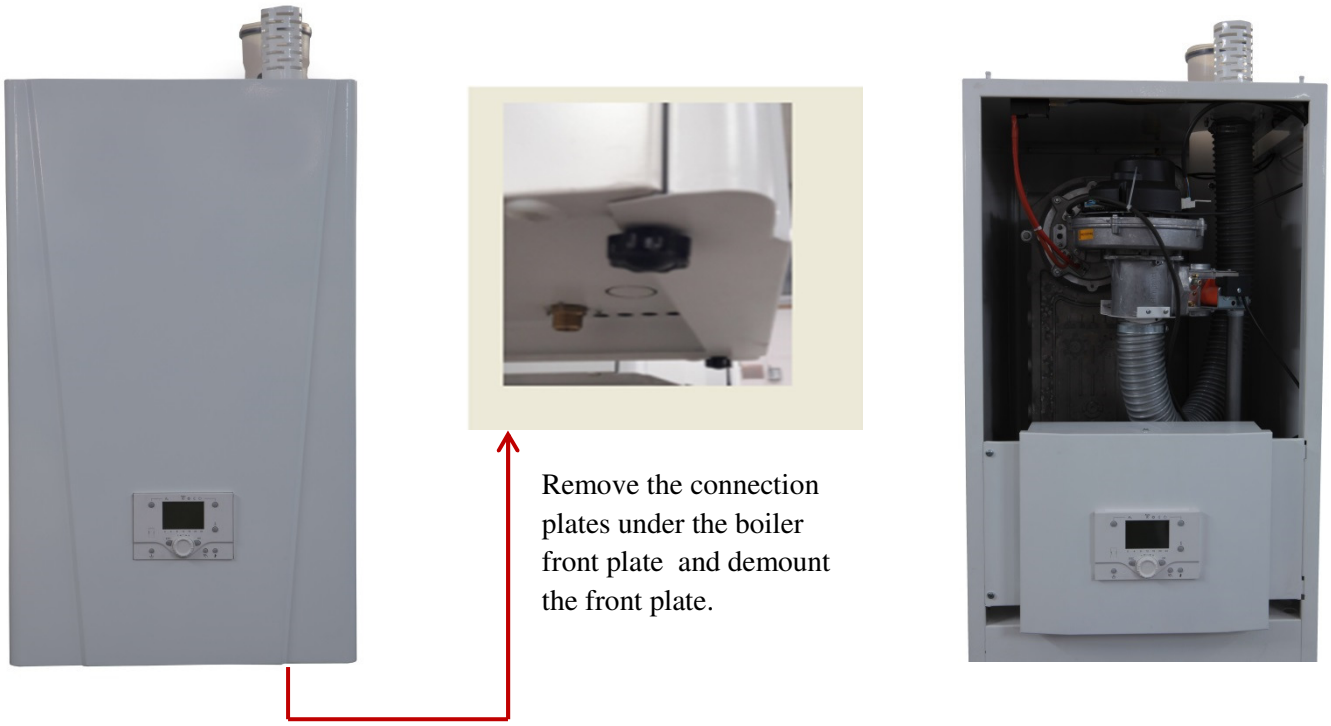
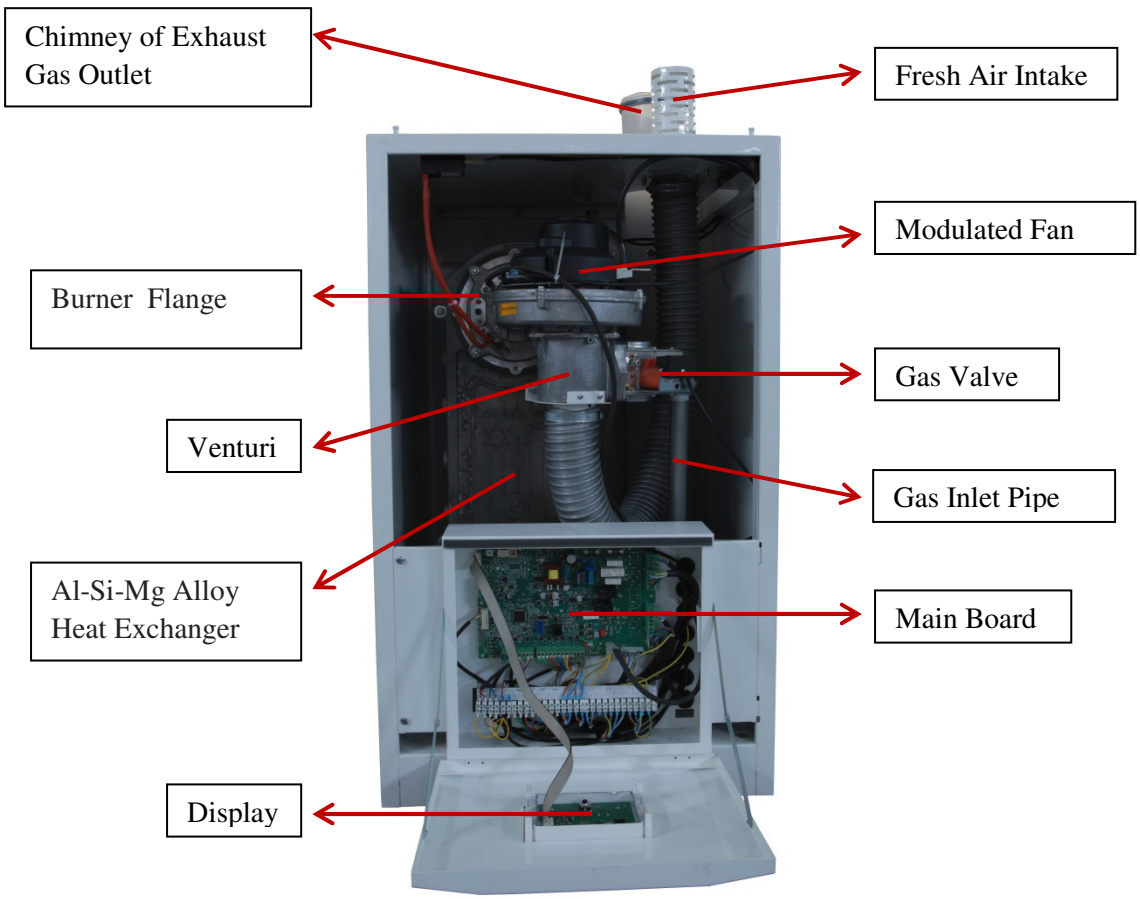
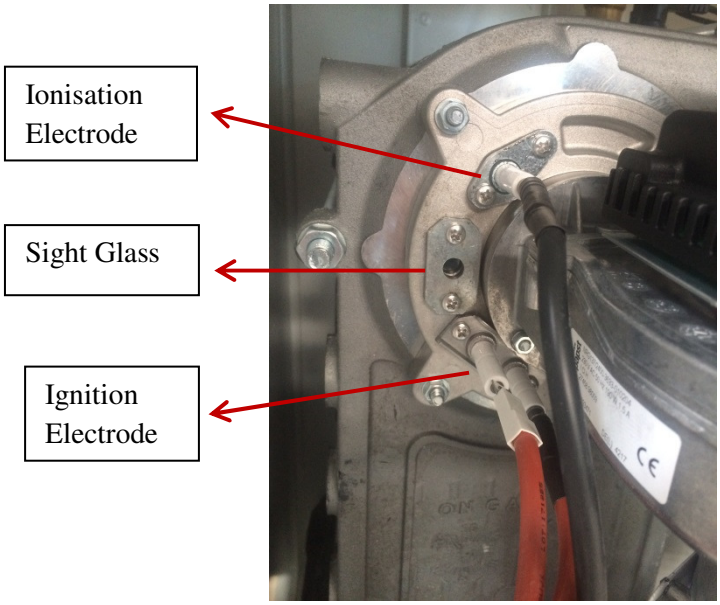
General View of the Boiler and Position of Components



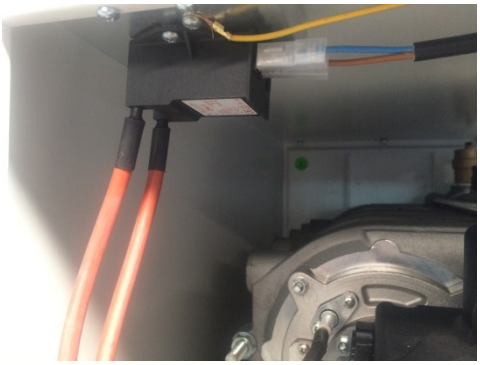
Visual-1: Demount of the Frount Plate



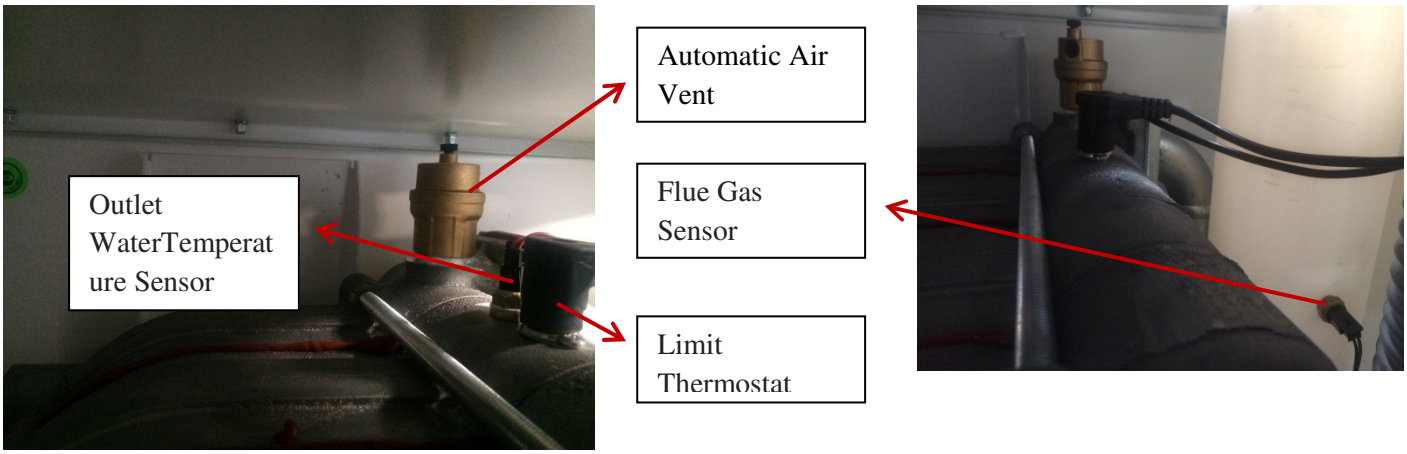
Visual-2: General View



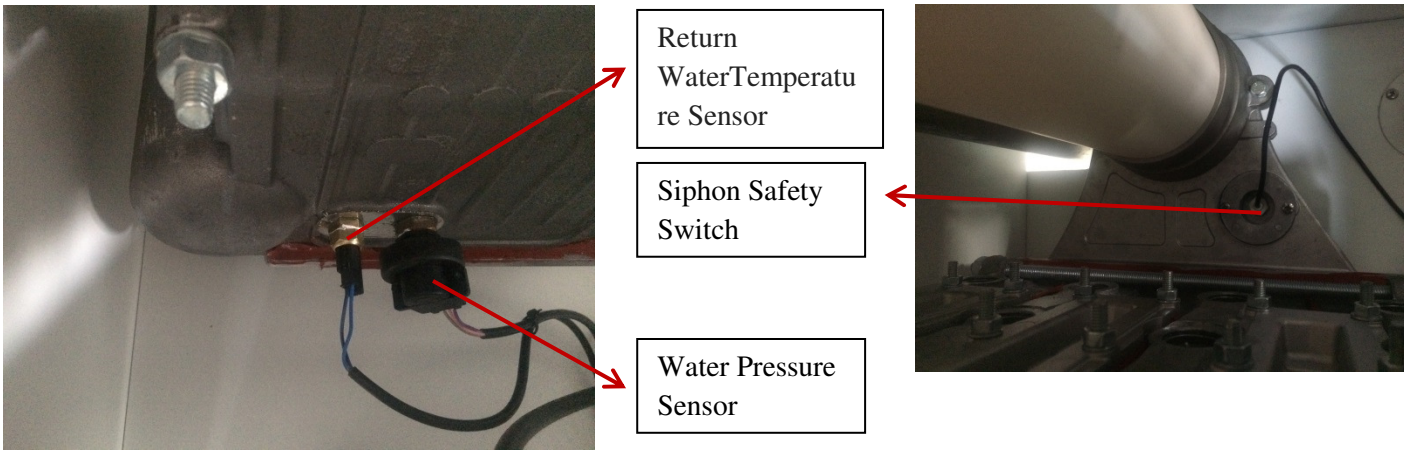
Visual-3: Burner Flange



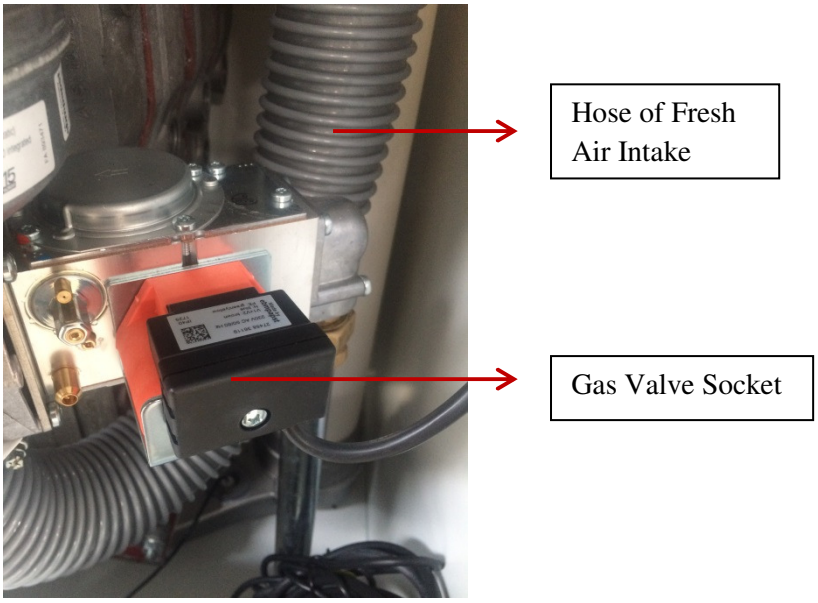
Visual-4: Ignition Transformer



Visual-5:Components of the Boiler (Top)



Visual-6:Components of the Boiler (Bottom)



Visual-7: Components of the Boiler (Mid)

List of Components

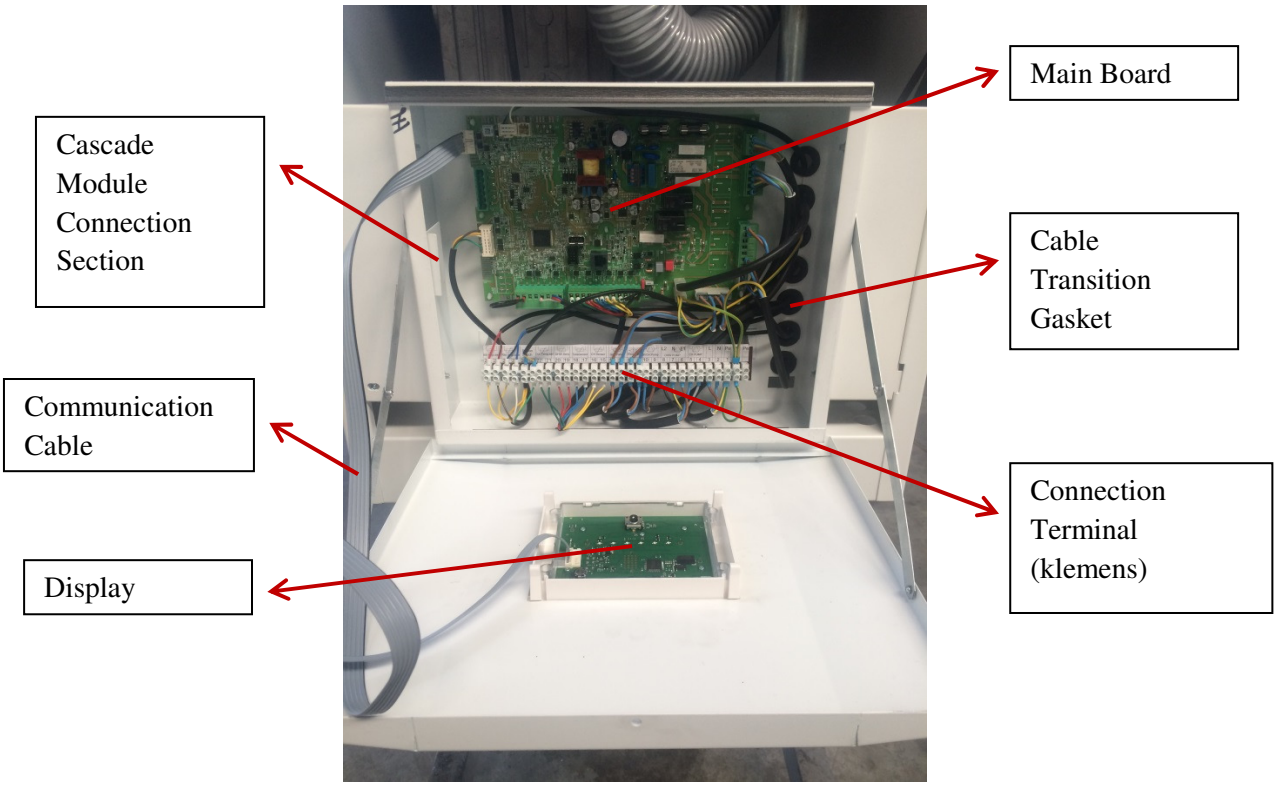
1	Al-Si-Mg Alloy Heat Exchanger
2	Modulated Fan
3	Gas Valve
4	Venturi
5	Main Board
6	Display
7	Burner Flange
8	Ionisation Electrode
9	Ignition Electrode
10	Sight Glass
11	Ignition Transformer
12	Automatic Air Vent
13	Return WaterTemperature Sensor
14	Outlet WaterTemperature Sensor
15	Flue Gas Sensor
16	Water Pressure Sensor
17	Limit Thermostat
18	Chimney of Exhaust Gas Outlet
19	Vent of Fresh Air Intake
20	Atmosphere of Fresh Air Intake
21	Gas Inlet Pipe
22	Gaz Valve Socket

Installation Connections of Boiler

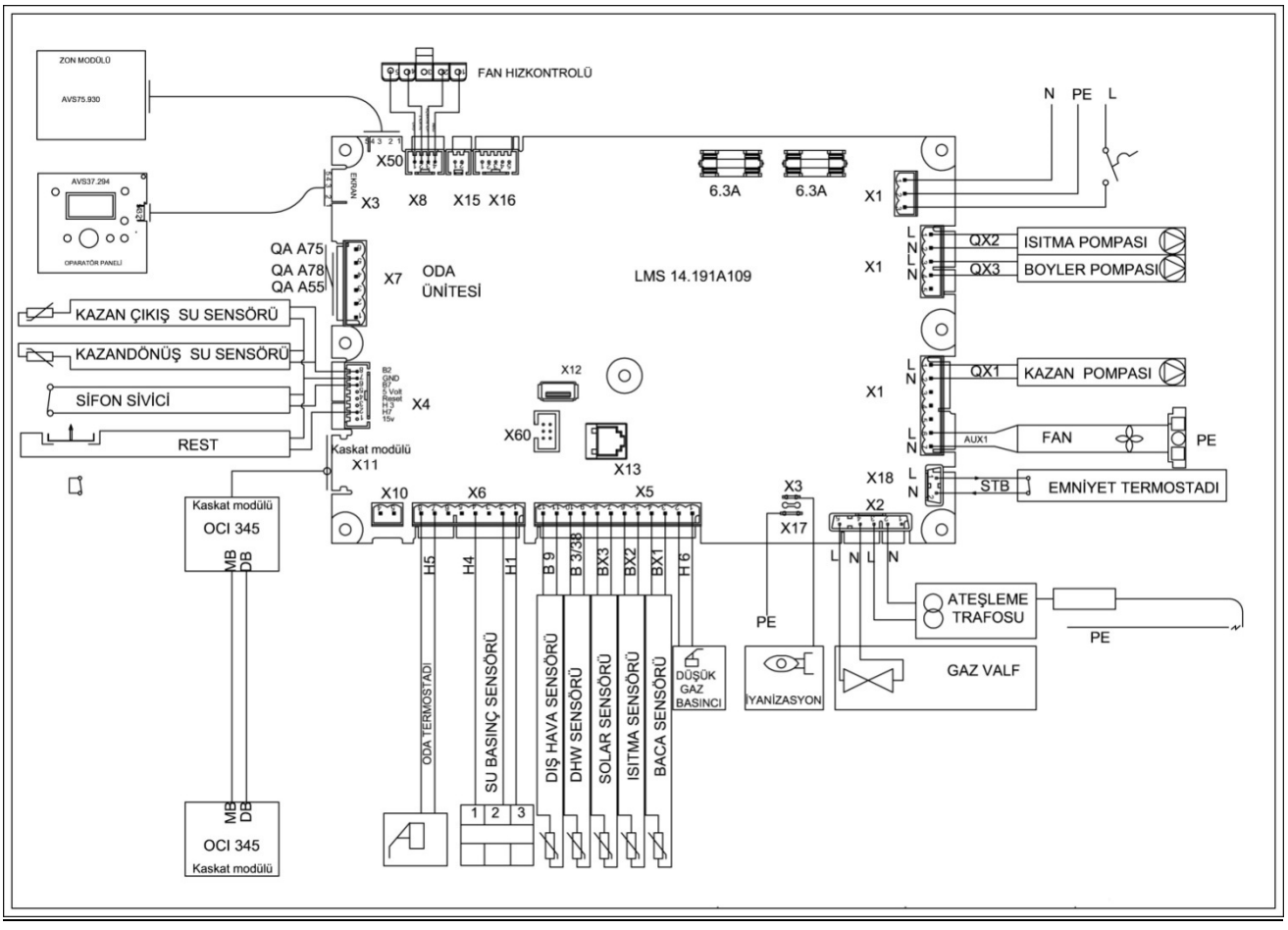
Visual-8: Bottom Connections of Boiler

Visual-9: Siphon and Connection Type

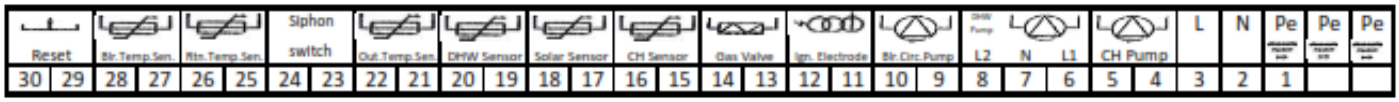
Electrical Connections of Boiler



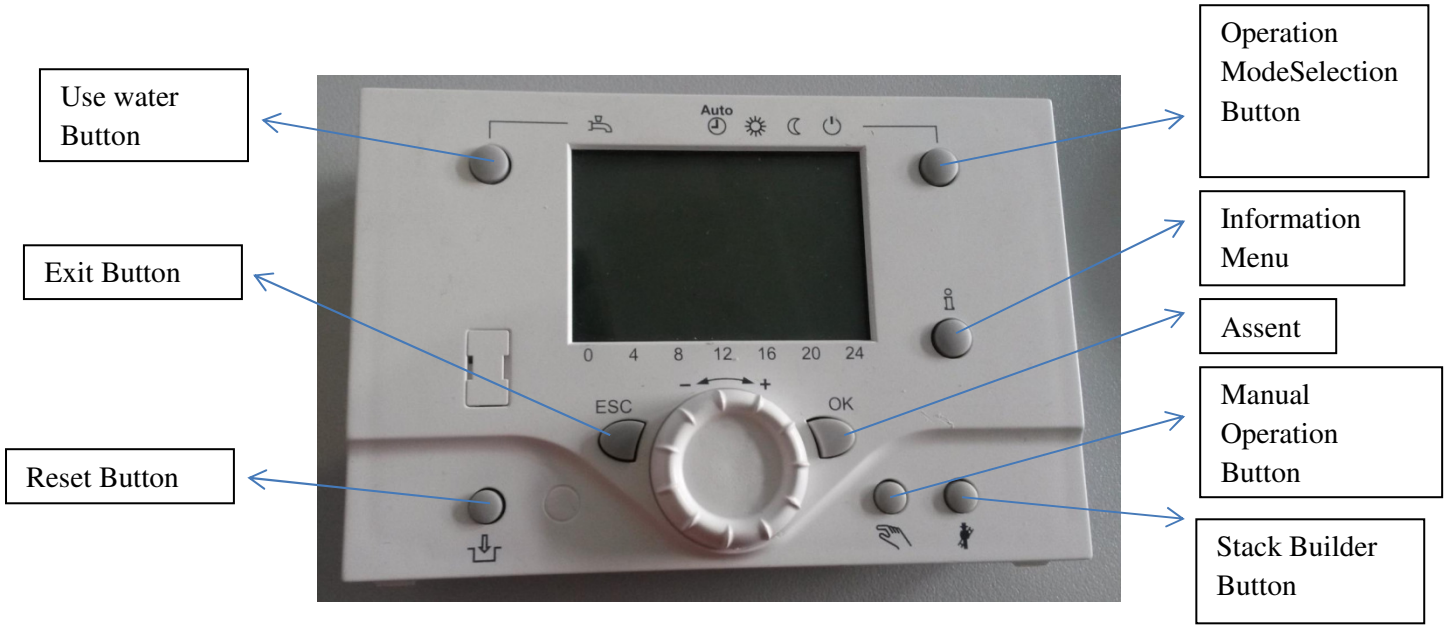
Main Board İnputs& Outputs



Some inputs and outputs on the main board have been moved to the connection terminal (klemens) for convenience. These are as follows;



Display Usage



User Levels

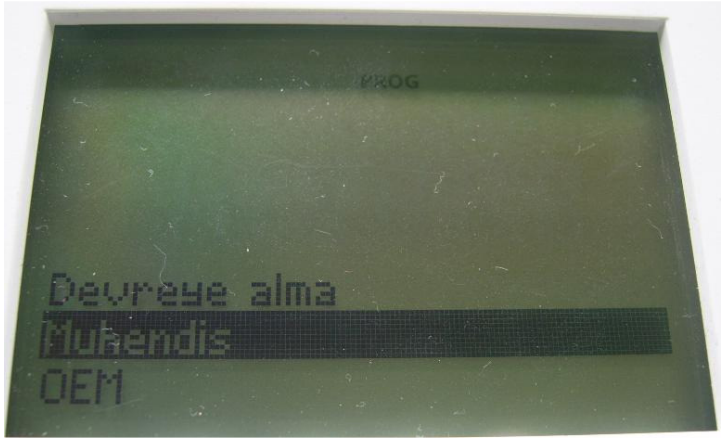
To enter the menus, come to the main screen firstly. Press the "ESC" button several times to make sure you are on the home screen. "Boiler temperature" or "Cascade temperature" will appear on the display.

The LMS14 boiler control panel has 4 user levels;

1. End user level (Enduser)
2. Commissioning
3. Engineer (Heating Engineer)
4. OEM (Password is required to enter this level. Only professional people should enter)

The "Engineer" menu will be sufficient for you when you go to the commissioning.

To enter the Engineer's menu, come to the main screen firstly. When you see the boiler or cascade temperature on the main screen, press the "OK" button. Hold the "info" button on the incoming screen. The user levels in the system will be on the screen. Turn the round button and select "Engineer" level;



Significant Parameters to Exist on the Engineer's Menu

1. Day and time and hour page (parameters 1, 2 and 3)

When you first switch on the LMS14 panel, it is absolutely necessary to set the time for proper operation. On the Engineer's menu, the first parameter is the time setting parameter. The time program is required for automatic operation. Every time you press the "OK" button after the setting you are sure to record.

2. Operator section page (parameters 20 ... 70)

Among the settings you can make on this page are functions such as language selection, operation lock or programming lock. To access the operator section page, select the operator section on the Engineer page and press the OK button. Set your choice of language. The language selection also automatically occurs when you first connect the AVS37 display**.**

You can also set the device to operation lock or programming lock.

When you turn on the Operation Lock Parameter(Parameter 26) , the DHW on the AVS37 screen, the operating mode, the manual control, the stack builder button is locked. However, the user can access and adjust the menus with the "OK" button.

Programming lock (parameter 27) is a more comprehensive lock function. Here, parameter modification is also not allowed. The user can set the comfort temperature on the main screen, and display information with the Info button. When you activate the programming lock, you can turn it off with button combinations. To do this, enter "Engineer" page "Operator section" (page where the lid is activated) page and press "ESC" and "OK" buttons and the warning that the lid is temporarily open appears on the screen. After this, enter "27" parameter and make it "Off".

3. Time program of heating circuit1 (parameters 500 ... 516)

A mixer valve can not be control directly on the LMS14 card. An additional module is needed for this. On the following pages you will find detailed information about this. Therefore, the heating circuit 1 pump output on the LMS14 board is regarded as a direct circuit (pump circuit) and operates as a Q2 pump. Q2 pump is the first heating circuit pump. This pump is controlled by assigning Q2 to the relay output Q2 on the LMS14 card.

In the time program, first select the day your heating circuit will run. (Parameter 500)

After that, choose which hours it will operate. (Parameters 501, 502, 503, 504, 505, 506)

You can switch on and off LMS14 3 times a day. For the time program setting to work properly, the date and time and time parameters must be set correctly and the device must be in "Auto" mode.

There are 4 different options in parameters No. 500. Select the appropriate one by turning the circular knob and press the "OK" button. Do not forget to press the "OK" button after every change you make;

a. From Monday to Sunday (Heating according to all week comfort value)
b. Monday to Friday (Only weekdays)
c. From Saturday to Sunday (Only weekend)
D. Set each day separately (copying can be done for the same day)

Once you have selected which day to run in parameter no 500, set the parameters from 501 to 506 for which times the heating will occur these days;

501: First opening time 502: First closing time
503: Second opening time 504: Second closing time
505: Third opening time 506: Third closing time

4. Time program of other heating circuits

If your system has second or third heating circuits, it is first necessary to activate them. These circuits are closed as factory setting. To activate, go to "Configuration" on the engineer page and make the parameters 5715 and 5721 "On".

Then, you can adjust the settings as if they were in the same Heating circuit-1 time programming.

5. Set time program to your boiler (parameters 560 ... 566)

You can do the same settings for your hot water tank like you do your heating circuits. Here you can operate the hot water tank according to a desired time program. After you have selected which day to operate in parameter 560, set the time with 561 to 566 parameters at which hours the boiler will be heated .

561: First opening time 562: First closing time
563: Second opening time 564: Second closing time
565: Third opening time 566: Third closing time

Here the point will noticed is when you operate your hot water tank according to the time program, the system will heat up the boilers according to the hours you set, and you will have to account for the boiler heating period during the operation mode changes. (Heating can take a long time depending on the hot water tank capacity).

6. Setting the heating circuits parameters (parameters 710 ... 900)

A mixer valve can not be control directly on the LMS14 card. An additional module is needed for this. On the following pages you will find detailed information about this. Therefore, the heating circuit 1 pump output on the LMS14 board is regarded as a direct circuit (pump circuit) and operates as a Q2 pump. Q2 pump is the first heating circuit pump. This pump is controlled by assigning QX2 to the relay output Q2 on the LMS14 card.

On the field, one of the most frequently used parameter groups. On the Engineer page, there are "Heating circuit 1", "Heating circuit 2" and "Heating circuit 3". The parameters for each heating circuit are the same, but the numbers are different.

For example;
The parameters of the heating circuit 1 are between 710 and 900
The parameters of the heating circuit 2 are between 1010 and 1200
The parameters of the heating circuit 3 are between 1300 and 1500.

Here, for example, we will make the parameters "Heating cycle 1". You can adjust the parameters of other heating circuits in a similar way.

a.Setting the temperature values in the heating circuit
The heating operation is realized on the comfort temperature you specify. This comfort value can also be achieved by using the AVS37 display or by using the heating circuit parameters like you can by turning the round knob while in the main display. Carefully examine the parameters related to "Heating circuit 1" below. The same settings can be made on the relevant parameter pages for heating circuits 2 and 3 if they are in your system.

710: Comfort value (desired temperature for heating operation). When there is a sun mark on the screen, it works with the LMS14 control panel according to the temperature you set here. You can set it to a maximum of 35 ºC.

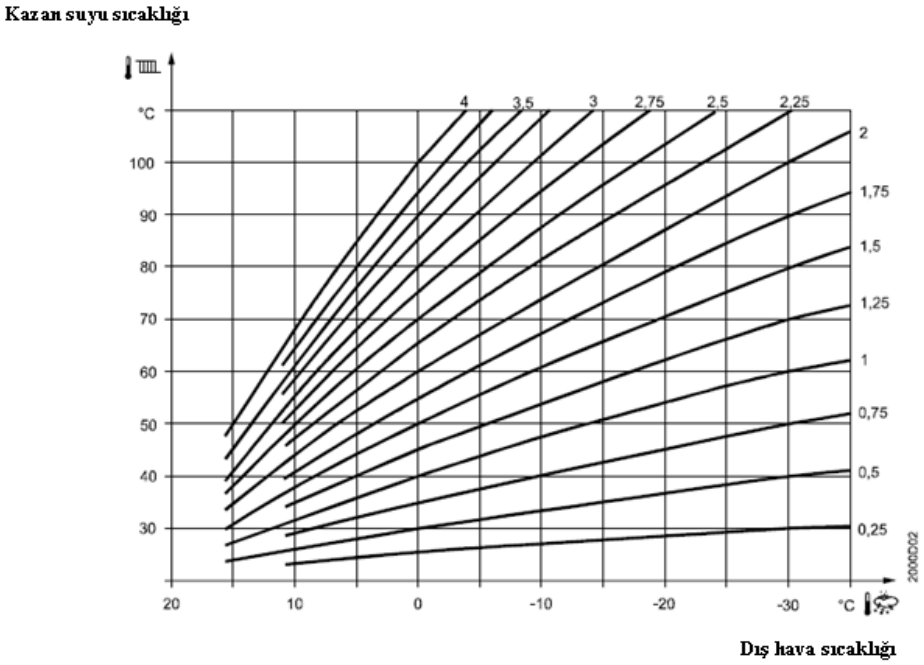
712: Economy temperature (economy mode temperature). When there is a moon sign on the screen, the heating operation is performed according to this temperature. This temperature is the economic temperature. If you make the heating devaluation time program, the heating will be done according to the economy temperature during periods when the LMS14 panel does not work. If you do not want a very high temperature in the economy mode, you can reduce it to the frost protection temperature.

714: The frost protection temperature is the temperature used to prevent the water in your installation from freezing. You can reduce the frost protection temperature to a minimum of 4 ºC. You can also change the frost protection mode with the operation mode button on the AVS37 screen, or you can also enable the system to function according to frost protection in holiday mode.

b. Setting the heating curve

720: Slope of the heating curve, in fields where have hard climatic conditions, it may be necessary to increase the value of the heating curve. When you upgrade, the boiler water temperature is calculated according to the outside air temperature, the comfort temperature value and the new slope value you set. The table below shows the calculation of curve and boiler water temperature according to the comfort temperature of 20 ºC. The slope value is 1.50 as the factory setting. In hard climates this value can be set to about 1.8 or 2.

NOTE: The slope of the heating curve must be raised in places that are not heated even though the comfort temperature is raised. For example; When the external air temperature is -10 ºC and the heating curve is 1.75, the boiler water temperature is calculated as 68 ºC for 20 ºC comfort temperature. The table is calculated according to 20 ° C comfort temperature. At higher comfort temperatures the boiler water temperature will increase;



730: Summer and winter heating limit; according to the value you have set here will carry out the winter or summer operation of the LMS14 panel. The factory setting is 18 ºC. When the outside temperature falls below 18 ºC, it is regarded as winter and the heating is done; when it exceeds 18 ºC, it is accepted as summer and the heating is turned off. You can use this value without changing it to 18 ºC. For example, you brought this value to 10 ºC. If the outside temperature is 15 ºC, it will be detected as summer and the heating will not take place. A warning will appear on the screen as "Summer Work". Hot water will not be sent to radiators.

732: 24 hour heating limit; with the LMS14 boiler control panel, it sets a new comfort value by subtracting the specified value from the comfort temperature. Depending on the actual temperature and the outside temperature of the composer, the heating operation is switched on or off depending on the tolerance of the specified temperature of +1 and -1 ºC. We recommend closing this function as "-----". Do not forget to press the "OK" button after each modification you made.

c. Using the floor heating function

A three-way valve is required for the underfloor heating function. An additional module is also required for the three-way valve. The three-way valve is controlled via an additional module. Connect the additional module to the LMS14 card and set the "Config." Parameter 6020 to "Heating circuit 1" on the "Engineer" page. Then set the following parameters in the "Heating circuit 1" parameter on the screen of the LMS14 card according to the desired temperature.

740 and 741 - Flow water min. and max. temperature; if you have a heating installation on the floor, enter the minimum value of the flow water temperature of parameter 740 (eg 35 ºC). Enter the maximum value of the flow water temperature in parameter 741 (eg 55 ºC)

NOTE: It is absolutely necessary to use three-way valve (mixture valve) in underfloor heating installations.

d. Use of floor drying function

850: Floor drying function (Screed drying); one of the advantages of the LMS14 panel is the screed drying function. You can heat the newly constructed floors according to the temperature value you set. By using parameter 850, you can turn this function off or select what kind of heating you want. You can use this function for heating circuit 1 and 2 or 3;

Parameter 850 for heating circuit 1,

Parameter 1150 for heating circuit 2

For heating circuit 3 you can use parameter 1450.

7. Setting hot water parameters (parameters 1610 ... 1663)

You can adjust the hot water tank settings in your system from the hot water page in the "Engineer" menu. Here are the parameters you will use frequently.

1610: Rated setpoint; The nominal temperature of your hot water tank (the temperature you want to have in the hot water tank)
1612: Economic temperature; The temperature value of your hot water tank in economy mode (if you operate it according to the hot water tank time program)
1620: Your hot water tank's working principle; Here, if you want to operate your hot water tank according to the working principle, you have to make a choice;

a) 24 hours / day; In this option, your hot water tank runs continuously 24 hours / day. Hot water is ready every day
b) According to the heating circuit; Your hot water tank will run according to the time program you set for the heating circuit.
c) Hot water tank time program; Your hot water tank will operate according to the special time program you set for the hot water tank. (It is the time program you set in parameters 560-566)

1630: assignment of working priority to the hot water tank; You can assign priority to your hot water tank using parameter 1630. Here you have 4 priorities;

NOTE: The hot water tank must be fed by the boiler within 150 minutes. If the supply is insufficient during this time, the pump of hot water tank is locked and access to the OEM menu is required to unlock. If you press the "info" button in such a case, you will see a warning "DHW Feed locked".

Absolute (Full); The boiler only tries to heat the hot water tank. The heating circuits are not fed until the hot water tank is heated. In large-capacity hot water tanks, the heating circuits may not be heated for a while, as the hot water tank can take time to bring it to the desired temperature. "Parallel operation" can be used in such cases. If the installation is good and the hot water tank can be fed in a short time, absolute work may be preferred when the hot water tank is more important than heating the tank (dormitory, nursery, barracks, etc.).

Variable priority; The priority is still the hot water tank, but hot water also runs into the heating circuits. If the hot water produced by the boiler in this case is not sufficient for the hot water tank, the heating circuits will be restricted.

None (Parallel work); Hot water tank and heating circuits are fed together.

MC variable, PC absolute; The pump circuit is switched off until the hot water tank is heated. If this is not enough, the mixer valve circuits are switched off.

1640: Legionella function; There are viruses in the waters without circulation for a long time in the hot water tank. Since these viruses are in direct contact with the human body, they pose a serious health hazard. In hot water tanks where there is not much circulation, you can run this function on a certain day of the week or periodically. If the water has a lot of circulation during the day, you can also bring the function to the off position.

NOTE: When the legionella function is active, the hot water tank will reach high temperature at the specified time. It is therefore necessary to adjust this function at night dead times. A good installation between the boiler and the hot water tank is necessary for the hot water tank to reach high temperature; otherwise, if the hot water tank does not reach the high temperature, "Legionella fault" will come out (like pipe diameters are not enough). In the parameter 1640, there are 3 options available;

Closed; Legionella function is off.
Periodically; Legionella function occurs periodically (1 in 3 days or 1 in 5 days)
Fixed weekday; The function is activated on the day you specify 1 day a week.

1641 Periodic legionella function; If you have periodically selected the legionella function, set the number of days that you will be commissioned here.
1642 Legionella function fixed weekday; If you want to set the legionella function to a fixed weekday, set which day will be active in this parameter. (Such as Monday, Tuesday or any other day)
1644 Legionella function time; Set the start time of the function.
1645 Legionella function setting value; During Legionella, set how many degrees the temperature will be.
1646 Period of Legionella function; Set how long the function will be active.

In the table below you can see how long the temperature of the legionella viruses will die. The results of the tests made are values that are reached. It does not reflect the exact results, as it may vary according to the facility;

Boiler tank water temperature lejyonella duration
80 ºC - a few seconds
70 ºC - 1 minute
66 ºC - 2 minutes
60 ºC - 32 minutes
55 ºC - 6 hours
50 ºC - Viruses do not die
45 ºC - Ideal temperature for the formation of viruses

ATTENTION!
Care should be taken that the legionella function is at a time when there is no use of water, since the temperature values above are very high. Otherwise, water consumers may face the risk of boiling and negative consequences.

8. Implementation of swimming pool application (parameters 2055 ... 2080)

On the LMS14 boiler control card, it is sufficient to make the following adjustments for the application of the swimming pool;
Assign a suitable relay output "Swimming pool pump Q19" to QX.
Assign "Swimming pool sensor B13" to an appropriate sensor input BX.
On the LMS14 control panel, bridge the corresponding H input.
On the configuration page, select the corresponding H input as parameter 5960 "Use swimming pool heating.

After you have made the above adjustments, you will come across the "Swimming Pool" menu on the "Engineer" page. In this menu you can set the following temperature values.

2055 Swimming pool heat setting value with solar energy; If you are using solar energy to heat the swimming pool, you can set the desired temperature value for the pool from this parameter.
2056 Swimming pool heating with boiler; If you heat the swimming pool with the boiler, the swimming pool heating is done with the boiler up to the set value in parameter 2056.
2065 Swimming pool solar energy priority; There are 3 priorities;

Priority 1; The swimming pool has first priority.
Priority 2; The swimming pool is fed after DHW tank and accumulation tank. It has a second priority.
Priority 3; There is no priority in the swimming pool feeding (after accumulation, DHW tank, heating circuits and consumer circuits)
2070 Swimming pool maximum temperature; You can adjust the maximum water temperature at the swimming pool feed.

2080 Solar power supply status; If you are going to feed the swimming pool with solar energy then set this parameter to "Yes". If your system does not have solar energy, select "No".

9. Setting of the cascade system (parameters 3532 ... 3560)

For the installation of the cascade system, the OCI345 cascade module must be connected to each LMS14 boiler control card. Then connect the MB / DB connectors on each module accordingly. The important point here is that the cable from the MB to MB and the cable from the DB to the DB must be connected. Afterwards, each boiler must be addressed. The address setting should be made from the parameter labeled "Device address" on the "LPB" page at "Engineer" level. The outside air should be addressed as the main boiler 1 where the cascade sensor is connected, through from 2 'in the other boilers. Heating circuits of the auxiliary boilers addressed through from 2 " should be set to the parameter 5710 'Heating circuit 1' 'closed' 'on the' Configuration 'page.

NOTE: In cascade systems, it is necessary to assign the cascade travel sensor to the appropriate BX sensor inputs as "B10 cascade travel sensor". Your cascade system will not become active unless you connect this sensor. After connecting the sensors, the AVS37 main screen will show "cascade temperature" information. If not, follow the "Save Sensors" step with parameter 6200 on the "Configuration" page.

Check the parameters for the cascade below;

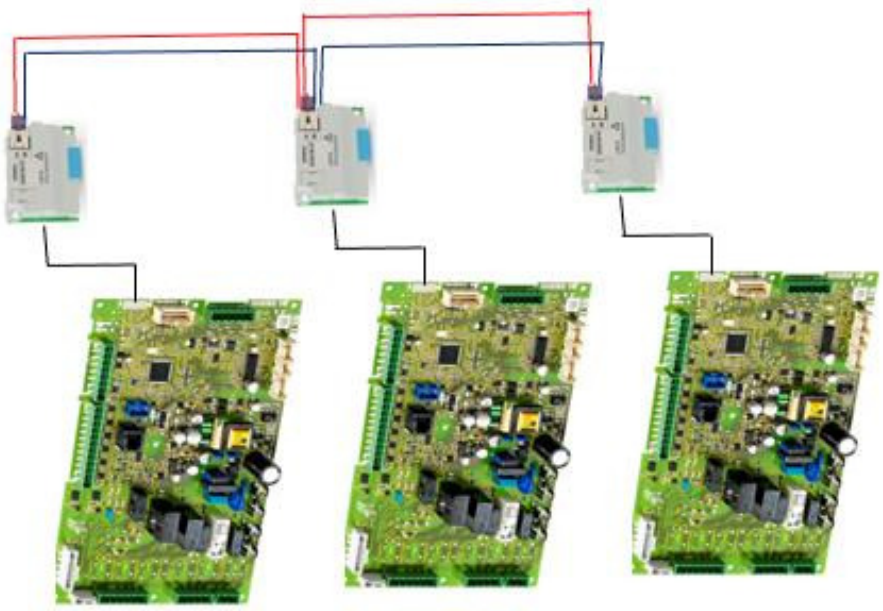
3510: Leadership strategy; In condensed cascade systems, the rightest choice is "Get early, get out late" strategy in order to increase system efficiency and therefore save money.

3540: Time of change for the leader boiler; If you build the cascade system and you decide which boiler's address is 1, it will be the leader boiler. Therefore, this boiler remains the leader for the time you specify in parameter 3540. At the end of this period, leadership goes to the other boiler. For example, it remains a leader for 500 hours, after which time it goes to the other winner.

6640: Clock mode; "Master" or "Leader" should be selected for the main boiler, and "No remote setting - Slave" should be selected for the utility boiler.

Example Cascade application

For example, you have 3 boiler. Address devices as follows;
On the Engineer's menu, choose the line named LPB. Set the parameter 6600 in the LPB to be different for each LMS14 (such as 1, 2, 3, 4,5). If no addressing is performed, the "LPB address conflict" error will be displayed on the main screen. If you see this error, check the address numbers. Here, communication between the boilers is provided via the MB / DB cabling on each OCI345 cascade module. Install MB / DB connections as follows;



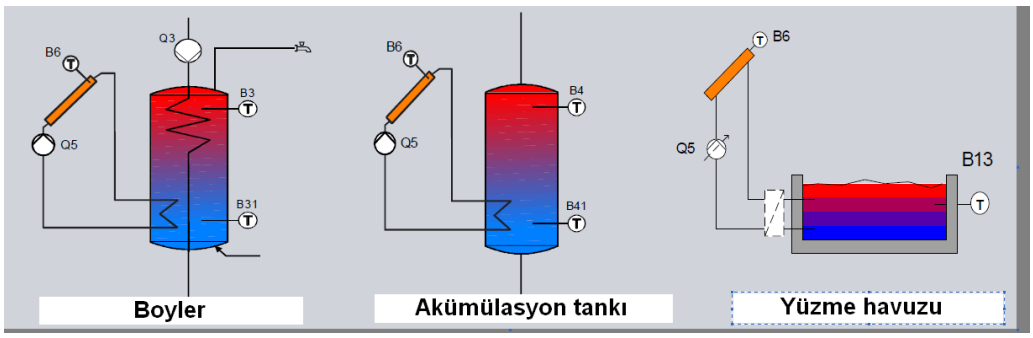
For each boiler, make the MB / DB connection as follows. In each cascade module, make two cable connections to the MB / DB section. Connect the other ends of the cables to the MB / DB section of the second module in the same way. Extract two cables from the MB / DB section of the second module and connect it to the MB / DB section of the third module. In this way, connect all OCI 345 modules together. In this way, all devices are communicated with each other.

ATTENTION!

It is very important that the unconnected parts of the cables are not outside, not touching each other, and are fully inserted into the sockets. Connect the cable that you pulled from the MB end to the MB side and the cable that you pulled from the DB end to the DB end in the same way.

10. Adjusting parameter settings related to solar energy (parameters 3810 ... 3884)

You can use solar energy when hot water tanks, accumulation tanks or swimming pools are fed.



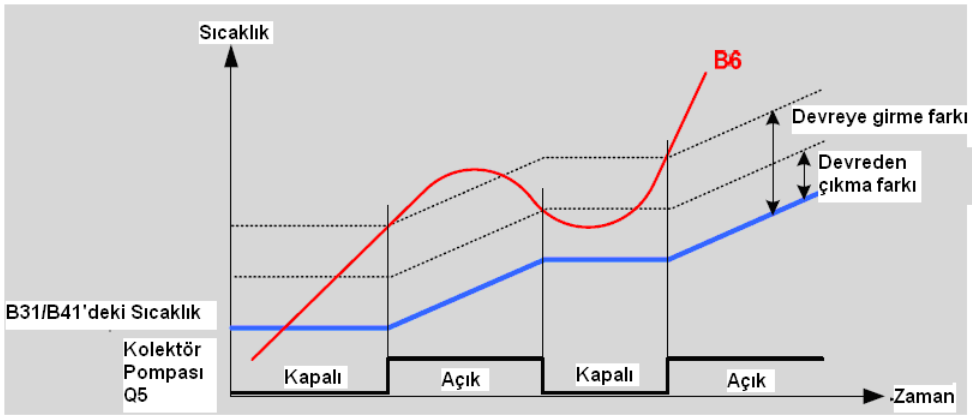
When working with solar energy, you can control the operation of the solar collector pump via the following parameters;

3810 Differential input of the collector pump; The value you enter in this parameter is added to the hot water tank or accumulation tank sensor. When it reaches that temperature, it goes into effect.

3811 Deactivation differential of the collector pump; The value you enter in this parameter is added to the hot water tank or accumulation tank sensor. When it reaches that temperature, it turns off. Therefore, the collector pump opens or closes as follows.

The temperature at which the solar collector pump will enter the circuit;
Temperature at B6 sensor> Temperature at B31 / B41 sensors + value at 3810 parameter

The temperature at which the solar collector pump will be deactivated;
Temperature at B6 sensor< Temperature at B31 / B41 sensors + value at 3811 parameter



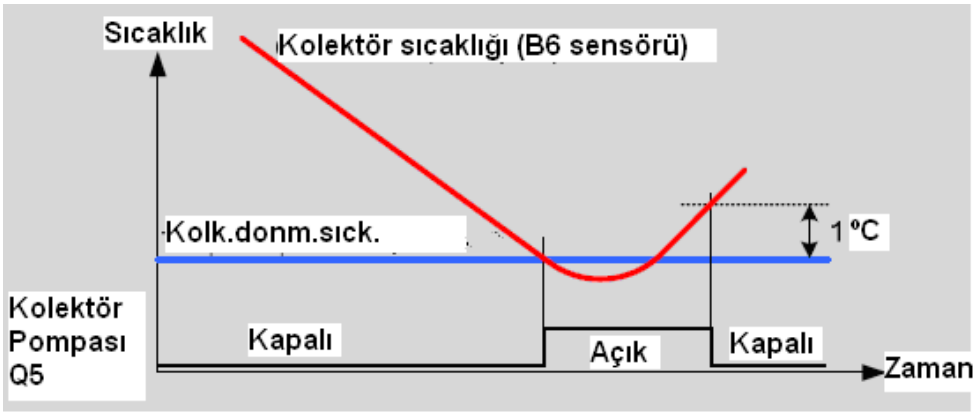
You can set the minimum feed temperature for hot water tanks, accumulation tanks and swimming pools. You can use the following parameters for this;

3812 DHW storage tank minimum feed temperature;
3815 Accumulation tank minimum feed temperature;
3818 Minimum feed temperature of swimming pool by solar energy;
3822 Solar energy feed priority assignment; You can orientate the hot water you get with solar energy according to your priority. You have 3 options here;

None; Each storage tank is fed the same time at 5 ° C intervals.
Hot water tank storage tank (DHW tank); Priority is given to the hot water tank.
Accumulation tank; Priority is given to the accumulation tank. Heating is carried out up to the set value of the accumulation tank.

3840;Solar collector freeze protection; If your collector has a risk of freezing, the collector pump will enter the circuit to carry out the heat. If the temperature in your collector falls below the frost protection temperature, the collector pump opens. Likewise, the collector pump is deactivated if the collector temperature rises above 1 ° C above the frost protection. In summary;
"If the collector temperature is <3840 no parameter value," then the collector pump enters the circuit
"Collector pump is deactivated if collector temperature <3840 parameter value + 1 ºC".

You can examine the chart below;



11. Adjusting hot water storage tank settings (parameters 5020 ... 5102)
The parameters that can be ignored in this page are as follows;

5022 Feed type; If you are feeding your boats with two senses, the option "with B3 and B31" should be ticked here. This is the factory setting. Do not make any changes.

5093 Solar energy utilization status; If you also supply your hot water tank with solar energy, set this parameter to "Yes".

12. Adjusting configuration settings (parameters 5710 ... 6220)
The parameters you will encounter most often in the LMS14 control panel are on the configuration page;

5710 Heating circuit 1 On or Off status; You can bring the heating circuit 1 in your installation to the on / off position.
5715 Heating circuit 2 On or Off status; You can bring the heating circuit 2 in your installation to the on / off position.
5721 Heating circuit 3 On or Off status; You can bring the heating circuit 3 in your installation to the on / off position.

NOTE: As the factory setting, the 1st heating circuit is "On", 2nd and 3rd heating circuits are "Off". If you have more than one heating circuit in your installation, set the other heating circuits to "On".

5730Hot water tank control component; You can control your hot water tank with a sensor or thermostat. If you want to control with thermostat, be sure to set parameter 5730 as "Thermostat". Otherwise the hot water tank will be controlled by the sensor.
5840 Solar energy control component; If you are using a pump or splitter valve while working with solar energy, you can choose from this parameter. The factory setting is "Pump".
5890, 5891, 5892 Relay assignment; The most common parameters you will encounter are the energy of the additional pumps you wish to control in your system via these relays. Here, as the factory setting, the relay output QX1 of 5890 is assigned as "Boiler pump Q1". You can use QX2 or QX3 for your other pump needs. Such as the heating circuit pump (QX2 = Q2) or the boiler pump (QX3 = Q3).
5930, 5931, 5932 Sensor assignments; There are fixed Sensors on the LMS14 control panel. (such as boiler, outside air). You do not need to make any assignments for these sensors. Other than that, you can use auxiliary sensor inputs in your sensor needs. The sensors you can control in your system are as follows. There are 3 auxiliary sensor inputs on the LMS14 control panel.

The LMS14 boiler control panel has sensors that must be used indispensably. One of them is "B8 Flue gas temperature sensor". This sensor is also assigned to a suitable BX sensor input. In addition, the "B10 cascade travel sensor" used in cascade systems must also be assigned to a suitable BX sensor input.

The BX4 sensor input is necessarily assigned as the B7 boiler return sensor;

Satır No.	Çalışma satırı
5930	**Sensör girişi BX1, 2, 3, 4**
5931	Hiçbiri
5932	DHW sensörü B31 Kolektör sensörü B6 DHW resirkülasyon sensörü B39 Aküm.tankı sensörü B4 Aküm.tankı sensörü B41 Baca gazı sıcaklık sensörü B8 Genel akış sensörü B10 Katı yakıt kazanı B22 sensörü DHW besleme sensörü B36 Aküm.tankı sensörü B42 Ortak geri dönüş sensörü B73 Kaskad geri dönüş sensörü B70 Yüzme havuzu sensörü B13 Güneş enerjisi akış sensörü B63 Güneş enerjisi dönüş sensörü B64 Primer eşanjör sensörü B26

Satır No.	*Çalışma Satırı*
5930	**Sensor Input BX1, 2, 3, 4**
5931	None
5932	DHW sensor B3 Collector sensor B6 DHW recirculation sensor B39 Accumulation tank sensor B4 Accumulation tank sensor B41 Sensor of flue gas temperature B8 General flow sensor B10 Solid fuel boiler B22 sensor DHW feed sensor B36 Accumulation tank sensor B42 Common return sensor B73 Cascade return sensor B70 Swimming Pool sensor B13 Solar energy flow sensor B63 Solar energy return sensor B64 Sensor of primary heat exchanger B26

Use of H inputs

H inputs are used for many purposes. The most common applications are water supply at constant temperature to places such as air handling units, floor stations, etc. or swimming pool applications. Detailed information on how to implement these applications can be found in the booklet "Frequently asked questions".

Adjusting additional module settings

If your system has a three-way valve heating circuit (mixer circuit), it is absolutely necessary to use an additional module. This is why the LMS14 card alone does not have a mixed cycle control capability. In addition, you can use additional modules where the relays and sensors on the LMS14 card are not enough. In this case, you will have to assign the function of the additional modules as "Heating circuit 1" or 2, 3 in the following parameters when it comes to use as a heating circuit. There is no need to make any sensor or relay assignments when selecting as the heating circuit. Automatically assigned.

Up to 3 additional modules can be connected to the LMS14 control panel. When you connect an additional module, select the purpose of each additional module to use 6020 (First additional module aim), 6021 (Second additional module aim) and 6022 (Third additional module aim) parameters;

Satır No.	*Çalışma satırı*
6020	**İlave modül x'in fonksiyonu**
6021	Hiçbiri
6022	Çok işlevli
	Isıtma devresi 1
	Isıtma devresi 2
	Isıtma devresi 3
	Dönüş sıck. kontrolcüsü
	Güneş enerjisi DHW
	Ana kontrol cihazı/sistem pomp.

Satır No.	*Çalışma Satırı*
6020	**Function of additional modüle x**
6021	None
6022	Multipurpose
	Heating circuit 1
	Heating circuit 2
	Heating circuit 3
	Return temperature controller
	Solar energy DHW
	Main controller/ System pump

6030, 6031, 6032 assignment of relay outputs for additional module; Like the LMS14 control panel, the additional module also has auxiliary relay outputs. You will need to confirm your auxiliary relay outputs by selecting from the list below according to your need. It is important that you set each module separately. In the case of use as a heating circuit, you do not need to make any assignments;

Satır No.	*Çalışma satırı*
6030	**Röle çıkışı QX21 modül 1**
6031	**Röle çıkışı QX22 modül 1**
6032	**Röle çıkışı QX23 modül 1**
6033	**Röle çıkışı QX21 modül 2**
6034	**Röle çıkışı QX22 modül 2**
6035	**Röle çıkışı QX23 modül 2**
6036	**Röle çıkışı QX21 modül 3**
6037	**Röle çıkışı QX22 modül 3**
6038	**Röle çıkışı QX23 modül 3**
	Hiçbiri
	Sirkülasyon pompası Q4
	Elk.dald.tipi ısıtıcı DHW K6
	Kolektör pompası Q5
	Tüketici devresi pomp. VK1 Q15
	Kazan pompası Q1
	Bypass pompası Q12
	Alarm çıkışı K10
	2nci pompa hızı ID1 Q21
	2nci pompa hızı ID2 Q22
	2nci pompa hızı ID3 Q23
	Isıtma devresi pompası ID3 Q20
	Tüketici dev.pomp. VK2 Q1
	Sistem pompası Q14
	Isı üretimi kapatma vanası Y4
	Katı yakıt kazanı pompası Q10
	Zaman programı 5 K13
	Akümülasyon tankı geri dönüş vanası Y15
	Güneş enj.pomp.harici eşanjör K9
	Güneş enj.kontrol elem.yedek tank K8
	Güneş enj.kontrol yüzm.hvz K8
	Yüzme havuzu pompası Q19
	Kaskad pompası Q25
	Katm.tank.transfer pomp. Q11
	DHW karışım pompası Q35
	DHW ara devre pompası Q33
	Isı talebi K27
	Soğutma isteği K28
	Isıtma devresi pomp ID1 Q2
	Isıtma devresi pomp ID2 Q6
	DHW kontrol elem Q3
	Anlık su ısıtıcısı kont elem Q34
	Su doldurma K34
	2nci kazan pompası hızı Q27
	Durum çıktısı K35
	Durum bilgisi K36
	Fan kapatma K38

Satır No.	*Çalışma Satırı*
6030	**Relay output QX21modul 1**
6031	**Relay output QX22 modul 1**
6032	**Relay output QX23 modul 1**
6033	**Relay output QX21modul 2**
6034	**Relay output QX22 modul 2**
6035	**Relay output QX23 modul 2**
6036	**Relay output QX21 modul 3**
6037	**Relay output QX22 modul 3**
6038	**Relay output QX23 modul 3**
	None
	Circulation pump Q4
	Elect. İmmersion type heater DHW K6
	Collector pump Q5
	Consumer circuit pump VK1 Q15
	Boiler pump Q1
	Bypass pump Q12
	Alarm Output K10
	2nd pump speed ID1 Q21
	2nd pump speed ID2 Q22
	2nd pump speed ID3 Q23
	Heating circuit pump ID3 Q20
	Consumer circuit pump VK2 Q1
	System pump Q14
	Heat production shut-off valve Y4
	Solid fuel boiler pump Q10
	Time program 5 K13
	Accumulation tank return valve Y15
	Solar energy pump external heat exchanger K9
	Solar energy control component reserve tank K8
	Solar energy control swimming pool K8
	Swimming pool pump Q19
	Cascade pump Q25
	Stratified tank transfer pump Q11
	DHW mixture pump Q35
	DHW spacing circuit pump Q35
	Heat demand K27
	Cooling demand K28
	Heating circuit pump ID1 Q2
	Heating circuit pump ID2 Q6
	DHW control component Q3
	Control component of instant water heater Q34
	Water filling K34
	2nd boiler pump speed Q27
	Status output K35
	Status information K36
	Fan shutdown K38

6040, 6041, 6042, 6043, 6044 and 6045 auxiliary sensor settings in the additional module; like the LMS14 boiler control panel, the additional module also has auxiliary sensor inputs. Depending on what you need, make your sensor selection from the list below. In the case of use as a heating circuit, you do not need to make any assignments;

Satır No.	Çalışma satırı
6040	**Sensör girişi BX21 modül 1**
6041	**Sensör girişi BX22 modül 1**
6042	**Sensör girişi BX21 modül 2**
6043	**Sensör girişi BX22 modül 2**
6044	**Sensör girişi BX21 modül 3**
6045	**Sensör girişi BX22 modül 3**
	Hiçbiri
	DHW sensörü B31
	Kolektör sensörü B6
	DHW resirkülasyon sensörü B39
	Aküm.tankı sensörü B4
	Aküm.tankı sensörü B41
	Baca gazı sıcaklık sensörü B8
	Genel akış sensörü B10
	Katı yakıt kazanı B22 sensörü
	DHW besleme sensörü B36
	Aküm.tankı sensörü B42
	Ortak geri dönüş sensörü B73
	Kaskad geri dönüş sensörü B70
	Yüzme havuzu sensörü B13
	Güneş enerjisi akış sensörü B63
	Güneş enerjisi dönüş sensörü B64
	Primer eşanjör sensörü B26

Satır No.	Çalışma Satırı
6040	**Sensor input BX21 modul 1**
6041	**Sensor input BX22 modul 1**
6042	**Sensor input BX21 modul 2**
6043	**Sensor input BX22 modul 2**
6044	**Sensor input BX21 modul 3**
6045	**Sensor input BX22 modul 3**
	None
	DHW sensor B31
	Collector sensor B6
	DHW recirculation sensor B39
	Accumulation tank sensor B4
	Accumulation tank sensor B41
	Flue gaz temperature sensor B8
	General flow sensor B10
	Solid fuel boiler B22 sensor
	DHW feed sensor B36
	Accumulation tank sensor B42
	Common return sensor B73
	Cascade return sensor B70
	Swimming pool sensor B13
	Solar energy flow sensor B63
	Solar energy return sensor B64
	Primary heat exchanger sensor B26

6110 Building time constant; The value here is 15 as the factory setting. This means that the system operates according to the outside temperature of 15 hours ago. When a study like this is mentioned, it is possible to experience discomforts in comfort values, especially during seasonal changes. To prevent this, the value must be 1. Do not make this value 0.

6200 recording sensors; After you have made the sensor settings, save the sensors with parameter 6200 in the "Configuration" page. The intent is to save the sensor connections to memory quickly. Otherwise, the recording

is in the middle of the night. You can do this in situations that do not appear to be connected or appear to be present when you disconnect the sensor.

6205 Reset to factory settings; With this parameter you can return to the factory settings. It is enough to mark the parameter as "Yes".

13. Observation of faults (parameters 6710 ... 6818)

You can view the 20 most recent errors encountered by the LMS14 control panel at the engineer level on the "Error" page. As each new error arrives, the oldest errors in the memory begin to erase. The most recent 20 faults remain in memory. The error codes that you may encounter in the system are as follows;

Hata kodu	LPB kodu	Hata tanımı
10		Dış hava sıcaklığı, sensör hatası
20		Kazan sıcaklığı 1, sensör hatası
20		Kazan sıcaklığı 1, sensör hatası
25		Katı yakıt kazanı sıcaklığı, sensör hatası
26		Genel akış suyu sıcaklığı, sensör hatası
28		Baca gazı sıcaklığı, sensör hatası
28		Baca gazı sıcaklığı, sensör hatası
30		Akış suyu sıcaklığı 1, sensör hatası
31		Akış suyu sıcaklığı 1, soğutma, sensör hatası
32		Akış suyu sıcaklığı 2, sensör hatası
38		Akış suyu sıcaklığı, Ana kontrol cihazı, sensör hatası
40		Dönüş suyu sıcaklığı 1, sensör hatası
40		Dönüş suyu sıcaklığı 1, sensör hatası
46		Kaskad dönüş suyu sıcaklığı, sensör hatası
47		Genel dönüş suyu sıcaklığı, sensör hatası
50		DHW sıcaklığı 1 sensör hatası
52		DHW sıcaklığı 2 sensör hatası
54		Akış suyu sıcaklığı DHW, sensör hatası
57		DHW, resirkülasyon sensör hatası
60		Oda sıcaklığı 1, sensör hatası
65		Oda sıcaklığı 2, sensör hatası
68		Oda sıcaklığı 3, sensör hatası
70		Depolama tankı sıcaklığı 1 (üst), sensör hatası
71		Depolama tankı sıcaklığı 2 (alt), sensör hatası
72		Depolama tankı sıcaklığı 3 (orta), sensör hatası
73		Kolektör sıcaklığı 1, sensör hatası
78		Su basıncı, sensör hatası
78		Su basıncı, sensör hatası
82		LPB adres çakışması
83		BSB kablosu kesitsel/haberleşme yok
84		BSB kablo adres çakışması

Hata kodu	LPB kodu	Hata tanımı
85		BSB RF haberleşme hatası
91		EEPROM'da veri fazla çalışma
91		EEPROM'da veri fazla çalışma
91		EEPROM'da veri fazla çalışma
98		Ilave modül 1, hata
99		Ilave modül 2, hata
100		2 zaman saati lider
102		Yedekleme olmadan lider zaman saati
103		Haberleşme hatası
105		Bakım mesajı
109		Kazan sıcaklığı denetimi
109		Kazan sıcaklığı denetimi
110		STB (SLT) kilitleme
110		STB (SLT) kilitleme
111		Sıcaklık sınırı emniyet kapatması
117		Su basıncı çok yüksek
117		Su basıncı çok yüksek
118		Su basıncı çok düşük
118		Su basıncı çok düşük
119		Su basınç anahtarı devreden çıkma
119		Su basınç anahtarı devreden çıkma
121		Isıtma devresi 1 akış suyu sıcaklığına ulaşılamadı
122		Isıtma devresi 2 akış suyu sıcaklığına ulaşılamadı
125		Maksimum kazan sıcaklığı aşıldı
126		DHW besleme sıcaklığına ulaşılamadı
127		DHW lejyonella sıcaklığına ulaşılamadı
128		Çalışmada alev kaybı
128		Çalışmada alev kaybı
129		Yanlış hava beslemesi
129		Yanlış hava beslemesi
130		Baca gazı sıcaklığı limiti aşıldı
130		Baca gazı sıcaklığı limiti aşıldı
132		Gaz basınç anahtarı emniyet kapaması
133		Alev oluşumu için emniyet zamanı aşlıldı
133		Alev oluşumu için emniyet zamanı aşlıldı
146		Sensör/kontrol elemanı konfigürasyon hatası
151		LMS14… dahili hata
151		LMS14… dahili hata
151		LMS14… dahili hata
152		Parametre hatası
152		Parametre hatası
153		Cihaz manuel olarak kilitli
160		Fan hız eşiğine ulaşılamadı
162		Hava basınç anahtarı kapanmıyor
164		Akış/basınç anahtarı, ısıtma devresi hatası
164		Akış/basınç anahtarı, ısıtma devresi hatası

Hata kodu	LPB kodu	Hata tanımı
166		Hava basınç anahtarı hatası, açılmıyor
169		Sitherm Pro sistem hatası
169		Sitherm Pro sistem hatası
169		Sitherm Pro sistem hatası
170		Su basıncı sensör hatası, primer taraf
170		Su basıncı sensör hatası, primer taraf
171		Alarm kontağı 1 aktif
172		Alarm kontağı 2 aktif
173		Alarm kontağı 3 aktif
174		Alarm kontağı 4 aktif
176		Su basıncı 2 çok yüksek
176		Su basıncı 2 çok yüksek
177		Su basıncı 2 çok düşük
177		Su basıncı 2 çok düşük
178		Isıtma devresi 1 sıcaklık sınırlayıcı
179		Isıtma devresi 2 sıcaklık sınırlayıcı
183		Cihaz parametre modunda
183		Cihaz parametre modunda
195		Her şarj edilme başına geçen maksimum süre aşıldı
195		Her şarj edilme başına geçen maksimum süre aşıldı
196		Hafta başına şarj edilme maksimum süresi aşıldı
196		Hafta başına şarj edilme maksimum süresi aşıldı
209		Isıtma devresi hatası
209		Isıtma devresi hatası
214		Motorun izlenmesi
215		Ayrıştırıcı vana fan havası hatası
216		Kazan hatası
216		Kazan hatası
217		Sensör hatası
217		Sensör hatası
217		Sensör hatası
218		Basınç denetimi
218		Basınç denetimi
241		Verim ölçümü için akış sensörü hatası
242		Verim ölçümü için dönüş sensörü hatası
243		Yüzme havuzu sensör hatası
260	217	Akış suyu sıcaklığı 3, sensör hatası
270	215	Eşanjör sıcaklık farkı çok yüksek
317	214	Şebeke frekansı izin verilen aralık dışında
320	217	DHW besleme sıcaklığı, sensör hatası
321	217	DHW çıkış sıcaklığı, sensör hatası
322	218	Su basıncı 3 çok yüksek
322	218	Su basıncı 3 çok yüksek
323	218	Su basıncı 3 çok düşük
323	218	Su basıncı 3 çok düşük
324	146	BX girişi, aynı sensör

Hata kodu	LPB kodu	Hata tanımı
325	146	BX girişi/ilave modül, aynı sensor
326	146	BX girişi/karışım grubu , aynı sensor
327	146	İlave modül, aynı işlev
328	146	Karışım grubu, aynı işlev
329	146	İlave modül/karışım grubu, aynı işlev
330	146	Sensör girişi BX1 işlev yok
331	146	Sensör girişi BX2 işlev yok
332	146	Sensör girişi BX3 işlev yok
333	146	Sensör girişi BX4 işlev yok
335	146	Sensör girişi BX21 işlev yok
336	146	Sensör girişi BX22 işlev yok
339	146	Kolektör pompası Q5 kayıp
340	146	Kolektör pompası Q16 kayıp
341	146	B6 sensörü kayıp
342	146	Güneş enerjisi beslemesi B31 sensörü kayıp
343	146	Güneş enerjisi entegrasyonu kayıp
344	146	Güneş enerjisi kontrol elemanı yedek tank K8 kayıp
345	146	Güneş enj. kontrol elemanı yüzme havuzu K18 kayıp
346	146	Katı yakıt kazanı pompası Q10 kayıp
347	146	Katı yakıt kazanı kıyaslama sensörü kayıp
348	146	Katı yakıt kazanı adres hatası
349	146	Akümülasyon tankı geri dönüş vanası Y15 kayıp
350	146	Akümülasyon tankı adres hatası
351	146	Ana kontrol cihazı/sistem pompası, adres hatası
352	146	Basınçsız başlık, adres hatası
353	146	B10 sensörü kayıp
371	209	Isıtma devresi 3 akış suyu sıcaklığı
372	209	Isıtma devresi 3 sıcaklık sınırlayıcı
373	103	Ilave modül 3
374	169	Sitherm Pro hesaplama
374	169	Sitherm Pro hesaplama
375	169	BV step motor
376	169	Drift testi limit değeri
376	169	Drift testi limit değeri
376	169	Drift testi limit değeri
377	169	Drift testi önlendi
378	151	Dahili tekrarlama
382	129	Tekrarlama hızı
384	151	Yardımcı ışık
384	151	Yardımcı ışık
385	151	Şebeke düşük voltaj
386	129	Fan hızı toleransı
386	129	Fan hızı toleransı
387	129	Hava basıncı toleransı
387	129	Hava basıncı toleransı
388	146	DHW sensörü işlev yok

Hata kodu	LPB kodu	Hata tanımı
426	151	Baca gazı damperi geri bildirim
427	152	Baca gazı damperi konfigürasyonu
429	218	Dinamik su basıncı çok yüksek
429	218	Dinamik su basıncı çok yüksek
430	218	Dinamik su basıncı çok düşük
430	218	Dinamik su basıncı çok düşük
431	217	Primer eşanjör sensörü
431	217	Primer eşanjör sensörü
432	151	Toprak işlevi bağlı değil
433	216	Primer eşanjör sıcaklığı çok yüksek
433	216	Primer eşanjör sıcaklığı çok yüksek

Error code	LPB code	Description of error	Priority
10		Outside temperature, sensor error	6
20		Boiler temperature 1, sensor error	6
20		Boiler temperature 1, sensor error	9
25		Boiler temperature, solid fuel, sensor error	6
26		Common flow temperature, sensor error	6
28		Flue gas temperature, sensor error	6
28		Flue gas temperature, sensor error	9
30		Flow temperature 1, sensor error	6
31		Flow temperature 1, cooling, sensor error	6
32		Flow temperature 2, sensor error	6
38		Flow temperature, primary controller, sensor error	6
40		Return temperature 1, sensor error	6
40		Return temperature 1, sensor error	9
46		Cascade return temperature, sensor error	6
47		Common return temperature, sensor error	6
50		DHW temperature 1 sensor error	6
52		DHW temperature 2 sensor error	6
54		Flow temperature DHW, sensor error	6
57		DHW, circulation sensor error	6
60		Room temperature 1, sensor error	6
65		Room temperature 2, sensor error	6
68		Room temperature 3, sensor error	6
70		Storage tank temperature 1 (top), sensor error	6
71		Storage tank temperature 2 (bottom), sensor error	6
72		Storage tank temperature 3 (center), sensor error	6
73		Collector temperature 1, sensor error	6
78		Water pressure, sensor error	6
78		Water pressure, sensor error	9
82		LPB address collision	3
83		BSB wire cross-sectional / no communication	8
84		BSB wire address collision	3
85		BSB RF communication error	8
91		Data overrun in EEPROM	3
91		Data overrun in EEPROM	6
91		Data overrun in EEPROM	9
98		Extension module 1, error	8
99		Extension module 2, error	8
100		2 clock time masters	3
102		Clock time master without backup	3
103		Communication error	8
105		Maintenance message	5
109		Supervision boiler temperature	6
109		Supervision boiler temperature	9

Error code	LPB code	Description of error	Priority
110		STB lockout	6
110		STB lockout	9
111		Temperature limiter safety shutdown	8
117		Water pressure too high	6
117		Water pressure too high	9
118		Water pressure too low	6
118		Water pressure too low	9
119		Water pressure switch has cut out	6
119		Water pressure switch has cut out	9
121		Flow temperature heating circuit 1 not reached	6
122		Flow temperature heating circuit 2 not reached	6
125		Maximum boiler temperature exceeded	9
126		DHW charging temperature not reached	6
127		DHW legionella temperature not reached	6
128		Loss of flame during operation	6
128		Loss of flame during operation	9
129		Wrong air supply	6
129		Wrong air supply	9
130		Flue gas temperature limit exceeded	6
130		Flue gas temperature limit exceeded	9
132		Gas pressure switch safety shutdown	6
133		Safety time for establishment of flame exceeded	6
133		Safety time for establishment of flame exceeded	9
146		Configuration error sensor/controlling elements	3
151		LMS14... error, internally	3
151		LMS14... error, internally	6
151		LMS14... error, internally	9
152		Parameterization error	3
152		Parameterization error	9
153		Unit manually locked	9
160		Fan speed threshold not reached	9
162		Air pressure switch does not close	9
164		Flow/pressure switch, heating circuit error	6
164		Flow/pressure switch, heating circuit error	9
166		Air pressure switch error, does not open	9
169		Sitherm Pro system error	3
169		Sitherm Pro system error	6
169		Sitherm Pro system error	9
170		Error water pressure sensor, primary side	6
170		Error water pressure sensor, primary side	9
171		Alarm contact 1 active	6
172		Alarm contact 2 active	6
173		Alarm contact 3 active	6
174		Alarm contact 4 active	6
176		Water pressure 2 too high	6
176		Water pressure 2 too high	9
177		Water pressure 2 too low	6
177		Water pressure 2 too low	9
178		Temperature limiter heating circuit 1	3

Error code	LPB code	Description of error	Priority
179		Temperature limiter heating circuit 2	3
183		Unit in parameterization mode	6
183		Unit in parameterization mode	9
195		Maximum duration of the refill per charging exceeded	6
195		Maximum duration of the refill per charging exceeded	9
196		Maximum duration of the refill per week exceeded	6
196		Maximum duration of the refill per week exceeded	9
209		Fault heating circuit	3
209		Fault heating circuit	6
214		Monitoring of motor	6
215		Fault fan air diverting valve	9
216		Fault boiler	6
216		Fault boiler	9
217		Sensor error	3
217		Sensor error	6
217		Sensor error	9
218		Pressure supervision	6
218		Pressure supervision	9
241		Flow sensor for yield measurement, error	6
242		Return sensor for yield measurement, error	6
243		Swimming pool sensor, error	6
260	217	Flow temperature 3, sensor error	3
270	215	Temperature difference, heat exchanger too large	9
317	214	Mains frequency outside permissible range	6
320	217	DHW charging temperature, sensor error	6
321	217	DHW outlet temperature, sensor error	6
322	218	Water pressure 3 too high	6
322	218	Water pressure 3 too high	9
323	218	Water pressure 3 too low	6
323	218	Water pressure 3 too low	9
324	146	Input BX, same sensors	3
325	146	Input BX/extension module, same sensors	3
326	146	Input BX/mixing group, same sensors	3
327	146	Extension module, same function	3
328	146	Mixing group, same function	3
329	146	Extension module/mixing group, same function	3
330	146	Sensor input BX1 without function	3
331	146	Sensor input BX2 without function	3
332	146	Sensor input BX3 without function	3
333	146	Sensor input BX4 without function	3
335	146	Sensor input BX21 without function	3
336	146	Sensor input BX22 without function	3
339	146	Collector pump Q5 missing	3
340	146	Collector pump Q16 missing	3
341	146	Collector sensor B6 missing	3
342	146	Solar charging DHW sensor B31 missing	3
343	146	Solar integration missing	3
344	146	Solar controlling element buffer K8 missing	3

Error code	LPB code	Description of error	Priority
345	146	Solar controlling element swimming pool K18 missing	3
346	146	Solid fuel boiler pump Q10 missing	3
347	146	Solid fuel boiler comparative sensor missing	3
348	146	Solid fuel boiler address error	3
349	146	Buffer storage tank return valve Y15 missing	3
350	146	Buffer storage tank address error	3
351	146	Primary controller/system pump, address error	3
352	146	Pressureless header, address error	3
353	146	Cascade flow sensor B10 missing	3
371	209	Flow temperature heating circuit 3	6
372	209	Temperature limiter heating circuit 3	3
373	103	Extension module 3	8
374	169	Sitherm Pro calculation	6
374	169	Sitherm Pro calculation	9
375	169	BV stepper motor	9
376	169	Drift test limit value	3
376	169	Drift test limit value	6
376	169	Drift test limit value	9
377	169	Drift test prevented	9
378	151	Internal repetition	9
382	129	Repetition speed	9
384	151	Extraneous light	6
384	151	Extraneous light	9
385	151	Mains undervoltage	9
386	129	Fan speed tolerance	6
386	129	Fan speed tolerance	9
387	129	Air pressure tolerance	6
387	129	Air pressure tolerance	9
388	146	DHW sensor no function	3
426	151	Feedback flue gas damper	9
427	152	Configuration flue gas damper	3
429	218	Dynamic water pressure too high	6
429	218	Dynamic water pressure too high	9
430	218	Dynamic water pressure too low	6
430	218	Dynamic water pressure too low	9
431	217	Sensor primary heat exchanger	6
431	217	Sensor primary heat exchanger	9
432	151	Function earth not connected	9
433	216	Temperature primary heat exchanger too high	6
433	216	Temperature primary heat exchanger too high	9

14. Display parameters of status information (parameters 8000 ... 8011)

We can check whether the heating circuits, boiler, boiler, solar energy, swimming pool in your facility are active or not from the "Status" menu on the engineer page.

8000; The state of the heating circuit 1
8001; The state of the heating circuit 2
8002; The state of the pump circuit
8003; Hot water tank condition
8005; Boiler situation
8007; The state of solar energy
8011; The condition of the swimming pool

15. Making status check of the cascade system (parameters 8100 ... 8150)

In the cascade system, you can see whether the connected boilers are switched on (released / not released) or whether they are in error from the "Cascade status check" menu on the engineer's page.

Control parameters 8101 to 8131; You can view the status of the boilers connected to your system as "Lost", "Error", "Leased" or "Not Released" for each boiler.

Lost; The win is not seen by the card. Check the connections.
Error; The boiler is in crisis
Released; Boiler is on
Has not been released; He's waiting for the boiler.

8138 Cascade current water temperature value; You can view the temperature in the cascade going collector.
8139 Cascade flow water temperature setting value (Requested, should be, required temperature value)
8140 Cascade return water temperature available value
8141 Cascade return water temperature setting value (Requested, should be, required temperature value)

16. Heat generation identification parameters (parameters 8304 ... 8570)

You can view the status information on the side (boiler) where the heat is generated from the "Heat generation identification" section on the engineer page. This menu is for display purposes only. Any changes can not be made from this menu. Only some functions can be reset. For example, the flue gas temperature is max. value, solar collector max. and min. like the value.

17. Consumer identification parameters (parameters 8700 ... 9058)

You can view the information about the heat consumed side from the "Consumer description" section on the engineer page. This menu is for display purposes only. Any changes can not be made from this menu. Only some functions can be reset. For example, outside air min. and max. temperature, reduced outside air temperature, accumulation tank setting value.

Crisis Management

The error codes, description, detail codes, description of the detail and actions to be done are as follows;

Error Main Code	Description of Main Code	Detail Codes	Description of Detail Codes	Actions to be done
10	Outside sensor fault			
		610	Outside sensor fault (B9) (room model, plant frost protection, sensor value not plausible)	Check sensor connection, check cable, check sensor accuracy
20	Boiler outlet water temperaturesensor fault			
		552	Electronic SLT flow sensor fault (B2)	Check sensor connection, check cable, check sensor accuracy
		249	Electronic SLT flow sensor fault (B2)	
		591	Electronic SLT flow sensor fault (B2)	
		439	Short-circuit boiler flow sensor (B2)	
		440	Open-circuit boiler flow sensor (B2)	
		737	Electronic SLT flow sensor fault (B2)	
26	Cascade sensor fault			
		612	Cascade sensor not connected, faulty, short-circuited, dual-configured, connected to auxiliary (slave) gain	Check sensor connection, check cable, check sensor accuracy
28	Flue gas temperature sensor fault			
		539	Short-circuit flue gas sensor	Check sensor connection, check cable, check sensor accuracy
		540	Open-circuit flue gas sensor	
		543	Short-circuit flue gas sensor	
		544	Open-circuit flue gas sensor	
40	Boiler return water temperature sensor fault			
		553	Return temperature sensor fault (B7)	Check sensor connection, check cable, check sensor accuracy
		250	Return temperature sensor fault (B7)	

		441	Short-circuit boiler return sensor (B7)	
		442	Open-circuit boiler return sensor (B7)	
		738	Return temperature sensor fault (B7)	
		52	Return temperature sensor fault (B7)	
50	Hot water tank temperature sensor fault			
		55	DHW temperature sensor/thermostat 1 fault (B3)	Check sensor connection, check cable, check sensor accuracy
52	Hot water tank temperature sensor - 2 (if any) fault			
		56	DHW temperature sensor/thermostat 2 fault (B31)	Check sensor connection, check cable, check sensor accuracy
78	Water pressure sensor fault			
		789	Water refill, sensor fault secondary side	Check sensor connection, check cable, check sensor accuracy
		793	Water refill, sensor fault secondary side	
		506	water pressure sensor fault (short- or open-circuit)	
		758	water pressure sensor fault (short- or open-circuit)	
		786	Water refill, sensor fault secondary side	
		797	Water refill, sensor fault secondary side	
		291	water pressure sensor fault (short- or open-circuit)	
		560	water pressure sensor fault (short- or open-circuit)	
81	LPB short-circuit or no bus power supply			
		67	LPB short-circuit or no bus power supply	Check cascade connections
82	LPB address collision			

		103	LPB address collision	Check cascade address settings
91	Data loss in EEPROM			
		618	Data loss EEPROM	Card incorrect - must change
100	Two clock time masters			
		105	Two clock time masters	Check the cascade setup clock mode parameter
102	Clock time master without power reserve			
		106	Clock time master without power reserve	No electricity on main boiler screen
105	Maintenance message			
		87	Maintenance message	It is an incoming message when the date for maintenance is entered. It must be reset by the service.
109	Supervision Boiler temp			
		592	Boiler alarm	It usually comes out due to sensor errors. Actions to be taken in the above sensor faults must be performed.
		287	Pump supervision after flame, flatnesstest 1 failed	
		503	Flatnesstest1 with flow sensor after flame on fails; pump-circulation is active	
		504	Flatnesstest1 with return sensor after flame on fails; pump-circulation is active	
110	Overheating fault			
		431	repetition SLT-temperature exceeded	If the mechanical limit thermostat or sensor digital value exceeds the high temperature value, it appears. Errors are automatically reset when the temperature returns to normal. But in repeated mistakes, the boiler goes to lock. In this case, a manual reset is necessary. Related faults are related to boiler circulation. The pump may be stalled, jammed, or damaged. Boiler water side may be clogged. Check-valves or filters used in water inlet-outlet may be clogged. In general, there may be systematic errors in plumbing.
		432	SLT-temperature exceeded	
		433	SLT-temperature exceeded	
		434	SLT-temperature exceeded	
		435	SLT-temperature exceeded	
		436	Electronic SLT has cut out (residual heat)	
		437	Repetion error 426 exceed parameter value of GrenzeGradient	

		438	Repetition error 433 exceed parameter value GrenzeDelta	
		756	SLT-temperature exceeded	
		306	SLT-temperature exceeded	
		431	repetition SLT-temperature exceeded	
		432	SLT-temperature exceeded	
		433	SLT-temperature exceeded	
		434	SLT-temperature exceeded	
		435	SLT-temperature exceeded	
		436	Electronic SLT has cut out (residual heat)	
		437	Repetion error 426 exceed parameter value of GrenzeGradient	
		438	Repetition error 433 exceed parameter value GrenzeDelta	
		412	open TL/SLT causes lockout	
		754	open TL/SLT causes lockout	
		305	open TL/SLT causes lockout	
		412	open TL/SLT causes lockout	
		421	Boiler return temperature is higher than/equal to (boiler temperature + Sd_RL_groesser_VL - 2K)	
		820	Boiler return temperature is higher than/equal to (boiler temperature + Sd_RL_groesser_VL - 2K)	
		420	Boiler return temperature is higher than (boiler temperature + Sd_RL_groesser_VL)	

		819	Boiler return temperature is higher than (boiler temperature + Sd_RL_groesser_VL)	
		429	reset criteria (Delta-T less than 1/2 dTkTrSTB) after error 433 not reached	
		818	reset criteria (Delta-T less than 1/2 dTkTrSTB) after error 433 not reached	
		428	dT is higher than design differential dTkTrSTB + 16K	
		817	dT is higher than design differential dTkTrSTB + 16K	
		427	reset critieria (boiler temperature less than boiler temperature set point and Delta-T less than dTkTrSTB) for error 426 not reached	
		816	reset critieria (boiler temperature less than boiler temperature set point and Delta-T less than dTkTrSTB) for error 426 not reached	
		426	Boiler temperature rises faster than allowed in TempGradMax	
		815	Boiler temperature rises faster than allowed in TempGradMax	

		430	Boiler flow temperature > TempKessMaxSTBSec	
		814	Boiler flow temperature > TempKessMaxSTBSec	
		419	Boiler flow temperature > TempKessMaxSTBSec	
		813	Boiler flow temperature > TempKessMaxSTBSec	
		425	Boiler flow temperature > TempKessMaxSTBSec	
		812	Boiler flow temperature > TempKessMaxSTBSec	
		424	Boiler return temperature not plausible (< 0° C)	
		811	Boiler return temperature not plausible (< 0° C)	
		423	Boiler flow temperature not plausible (> 124 °C)	
		810	Boiler flow temperature not plausible (> 124 °C)	
		422	Boiler flow temperature not plausible (< 0° C)	
		809	Boiler flow temperature not plausible (< 0° C)	
		550	open TL/SLT causes start prevention	
		551	open TL/SLT causes start prevention	
111	Temp limiter safety shut-down			
		264	Temp limiter safety shut-down	Max. Boiler outlet water temperature has been exceeded. It is similar to an overheating fault.
117	Water pressure too high			

		309	Water pressure on input H1 too high (lock-out)	
		565	static pressure supervision (lock-out)	
		68	Water pressure on input H1 too high (start prevention)	
		566	static pressure supervision (start prevention)	
118	Water pressure too low			
		310	Water pressure on input H1 too low (lock-out)	
		565	static pressure supervision (lock-out)	
		69	Water pressure on input H1 too low	
		566	static pressure supervision (start prevention)	
126	DHW charging temperature not reached			
		72	DHW charging temperature not reached	The usage in the hot water tank is very high, error in volume selection.
127	DHW legionella temperature not reached			
		73	DHW legionella temperature not reached	The usage in the hot water tank is very high, error in volume selection.
128	Loss of flame in operation			
		244	Repetition error counter exceeded	The flame may disappear immediately after ignition because of the pressure setting on the gas valve or irregularities in the chimney draw.
		625	Repetition error counter exceeded	
		253	Loss of flame in operation	
		394	Loss of flame in operation	
		394	Loss of flame in operation	

		834	Loss of flame in operation	
		394	Loss of flame in operation	
		835	Loss of flame in operation	
130	Flue gas temperature max. limit exceeded			
132	Gas pressure switch safety shut-down			
		262	Start prevention due to open gas pressure switch during safety time	No gas fault. No gas, the pressure is not enough, or the gas regulator may have tripped off the shut-off switch. Check the gas pressures before and after the regulator to ensure that the gas is present.
		411	Start prevention due to open gas pressure switch during safety time	
		261	Gas pressure switch is open	
		409	Gas pressure switch is open	
		410	Gas pressure switch is open	
133	Safety time for establishment of flame exceeded			
		625	Repetition error counter exceeded	It's an ignition failure. On repetitive faults, the boiler goes to lock. Manual reset is necessary. It can be related to no gas fault. Otherwise, the burner's proximity to the ignition electrode should be checked. In addition, the transformer connection and ignition wires must be checked. Also, if a common gas pipeline is selected in the cascade installation, when certain boilers are in operation, then sufficient gas pressures may not be reached in the boilers to be commissioned.
		757	Repetition error counter exceeded	
		245	Repetition error counter exceeded	
		625	Repetition error counter exceeded	
		395	Safety time for establishment of flame exceeded	
		755	Safety time for establishment of flame exceeded	
		254	Safety time for establishment of flame	
		395	Safety time for establishment of flame exceeded	

146	Sensor/actuator configuration error			
		107	Configuration partial diagram	Installation should be checked on the configuration page.
		269	Wrong function for PWM pump	
		583	Partial diagram return controller and bypass pump are not allowed at the same time	
151	BMU fault internal			
		330	error at closing ignition relay	It is an electrical fault. The relay on-off fault may be related to the inversion of the phase-neutral feet in the 230V main supply.
		331	error at closing ignition relay	
		332	error at closing gas valve relay 1	
		333	error at opening gas valve relay 1	
		336	error at closing the safety relay	
		337	error at opening the safety relay	
152	Parameterization error			
		780	Plausiblity of burner control parameters violated	Card incorrect - must change
		781	Partial load is higher than ignition load	
		782	Ignition load is higher than full load	
		851	Operation Blockage is active	
		180	Parameterization error	
		342	d. Parameter "VO_Modu_auf_VD" (Zeilee ???) oder "VO_Modu_ab_VD" (Zeile ???) müssen >= 0,2 s sein.	
		343	VO_Modu_auf or VO_Modu_ab is parameterized as 0	
		344	Software error µc1	
		179	Parameterization error	
		345	Fault due to change of type of gas	

		346	d. Plausibilitätsverletzung: Solldrahzahl Volllast Max (SI) [3842.1]/[3843.1] <= Maximale Gebläsedrehzahl (FA) 9616	
		347	d. Plausibilitätsverletzung: Solldrehzahl Volllast Max (FA) 9530 <= Solldrehzahl Volllast Max (SI) [3842.1]/[3843.1]	
		348	d. Plausibilitätsverletzung: Solldrehzahl Teillast Min (SI) [3840.1]/[3841.1] => Solldrehzahl Stillstand Max (FA) 9551	
		349	d. Plausibilitätsverletzung: Solldrehzahl Teillast Min (FA) 9524/9525 => Solldrehzahl Teillast Min (SI) [3840.1]/[3841.1]	
		350	Condition N_TL (50) <= N_TL_Ex (590) violated	
		351	Condition N_VL (46) > N_VL_Ex (591) violated	
		352	Condition N_TL_Ex < N_VL_Ex violated	
		353	d. Verletzung der Bedingung: [N_TL < N_TL_Exotengas]; [N_TL_Exotengas < N_VO_Drift] oder [N_TL_Exotengas < N_VO_Drift_Fls]	
		354	Condition Ion_Ex_UG_TL (592) < Ion_Ex_OG_TL (593) violated	
		355	Condition Ion_Ex_UG_VL (594) < Ion_Ex_OG_VL (595) violated	
		356	interpolation points of the control curve are not sorted accorting to fan speed (in ascending order)	
		518	Parameter B0_Start or B3_Start out of admissible range. Non conforming condition Bx_Minimum <= Bx_Start <= Bx_Maximum.	

		519	Parameter B0_Stop or B3_Stop out of admissible range. Non conforming consition Bx_Minimum <= Bx_Stop < Bx_Start <= Bx_Maximum.	
		831	d. Parameter Maximale Rücklauftemperatur für Drifttest höher als bei STB Funktion.	
		832	d. Parameter Maximale Differenz Vorlauf-/Rücklauftemperatur für Drifttest ist höher als bei STB Funktion	
		850	fan speed or time parameter for ADA are not sorted	
		839	Parameterization error	
		840	parameter error: flame threshold too small	
		569	function not present in LMS	
		570	function not present in LMS	
		571	HX: Temperature limiter HK	
		573	HX: air pressur switch	
		574	HX: load signal 0..10V	
		575	H6 has double function (sec und nicht sec)	
		576	H7 has double function (sec und nicht sec)	
		577	B4 has double function (sec und nicht sec)	

		578	QX: bypass pump Q12	
		579	QX: cooling request K28	
		580	QX: water filling K34	
		581	EM: return flow controller	
		767	EM: double function	
153	Display manually locked			
		622	Reset button pressed too long	The actions of lifting the lock should be taken.
		235	Unit manually locked	
		848	parameter setting finished. Reset to apply all changes	
		849	parameter setting finished. Reset to apply all changes	
160	Fan speed threshold not reached			
		377	Fan speed threshold not reached: home run	Relevant to the high or low of the chimney draw, this is the error that occurs when the actual fan speed differs from the requested fan speed in some way. Chimney installation, diameter, height, etc. should be corrected by controlling traction.
		378	Fan speed threshold not reached: stand by	
		379	Fan speed threshold not reached: ignition	
		380	Fan speed threshold not reached: pre ventilation	
		381	Fan speed threshold not reached post ventilation	
		749	Fan speed threshold not reached	
		233	Fan speed threshold not reached	
		377	Fan speed threshold not reached: home run	
		378	Fan speed threshold not reached: stand by	

		379	Fan speed threshold not reached: ignition	
		380	Fan speed threshold not reached: pre ventilation	
		381	Fan speed threshold not reached post ventilation	
162	Air pressure switch (APS) and siphon level switch fault			
		397	Air pressure switch does not close	There is no APS at the boiler. However, the siphon level switch is connected at the relevant place. The drain pipe next to the siphon or siphon may be clogged. They have to be removed and cleaned. Depending on the cleanliness of the ambient air where the fresh air is absorbed, it is recommended that the siphon be cleaned every 6 months or once a year.
		398	Air pressure switch does not close: pre ventilation	
		399	Air pressure switch does not close: ignition	
		752	Air pressure switch does not close	
		256	Air pressure switch does not close: pre ventilation	
		397	Air pressure switch does not close	
		398	Air pressure switch does not close: pre ventilation	
		399	Air pressure switch does not close: ignition	
		96	LP mode 5 and LP is open	
		404	LP mode 5 and LP is open	
183	Card parameterization			
		301	Unit in parameterization mode (lock-out)	Card incorrect - must change
		770	Unit in parameterization mode (parameter stick)	
		176	Start prevention due to adjustment of fuel parameters in Sitherm Pro	

		340	Start prevention after change of type of gas	
		341	Start prevention for setting the ignition and supervision range	
		303	Unit in parameterization mode (start prevention)	
193	Start prevention			
		845	Start prevention	The H (dry contact) is a feature set by input, but appears as an error on the screen. The boiler returns to normal when the corresponding signal is removed.
		846	Contact start prevention is active	
217	Ionisation fault			
		765	Short-circuit of ionisation electrode	The location of the ionisation cable, the main board and the location on the electrode must be checked.
		766	Short-circuit of ionisation electrode	
243	Swimming pool sensor fault			
		82	Swimming pool sensor fault (B13)	Check sensor connection, check cable, check sensor accuracy
384	Extraneous light			
		391	Extraneous light (lock-out)	The location of the ionisation cable, the main board and the location on the electrode must be checked.If the error persists, the distance from the electrode to the burner must be checked.
		392	Extraneous light (lock-out)	
		748	Extraneous light (lock-out)	
		251	Extraneous light (lock-out)	
		391	Extraneous light (lock-out)	
		392	Extraneous light (lock-out)	
		252	Extraneous light (start prevention)	
		393	Extraneous light (start prevention)	
385	Mains undervoltage			
		554	Mains undervoltage	
		555	Mains undervoltage	
386	Fan speed tolerance			
		374	Fan speed tolerance exceeded: ignition	Relevant to the high or low of the chimney draw, this is the error that occurs when the

		375	Fan speed tolerance exceeded: partial load	actual fan speed differs from the requested fan speed in some way. Chimney installation, diameter, height, etc. should be corrected by controlling traction.
		750	Fan speed tolerance exceeded	
		232	Fan speed tolerance exceeded	
		374	Fan speed tolerance exceeded: ignition	
		375	Fan speed tolerance exceeded: partial load	
		234	Fan speed tolerance exceeded: home run	
		382	Fan speed tolerance exceeded: post purge	
		383	Fan speed tolerance exceeded: ignition	
		384	Fan speed tolerance exceeded: ignition	
		385	Fan speed tolerance exceeded: full load	
		386	Fan speed tolerance exceeded: partial load	
		387	Fan speed tolerance exceeded: home run	
		388	Fan speed tolerance exceeded: stand-by	
		389	Fan speed tolerance exceeded: pre purge	
		390	Fan speed tolerance exceeded: post purge	
		531	Fan speed tolerance exceeded: pre purge	
		532	Fan speed tolerance exceeded: post purge	
		534	Fan speed tolerance exceeded: post purge	
432	Function ground missing			

		745	missing earth connection causes relay feedback error	Ground connections should be check
		746	missing earth connection causes safety relay feedback error	
		747	missing earth connection causes gas valve relay feedback error	

Cleaning and Maintenance

During the annual use, boilers can have particulate contaminants in siphon, in container of condensation, fresh air suction line and on the slice surfaces result burning of natural gas. Also, Parts such as installation return filter should be checked at least once a year.

Annual controls of the boilers should be careful to the following points;

- Control of the combustion system of the boiler (Blower, venturi and burner)

- Control of the ignition electrode

- Leakage control (Water, gas and flue gas)

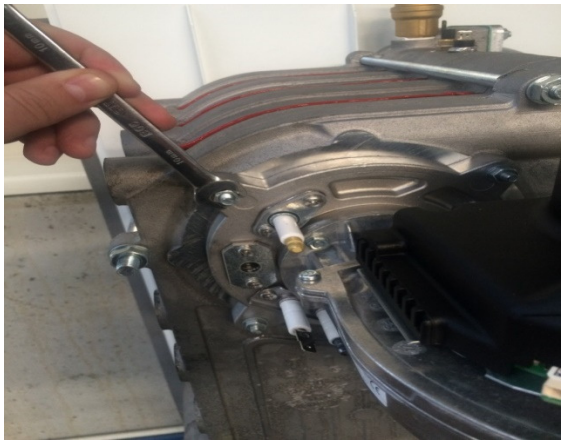
- Water pressure control

- Control of sections such as siphon and exchanger

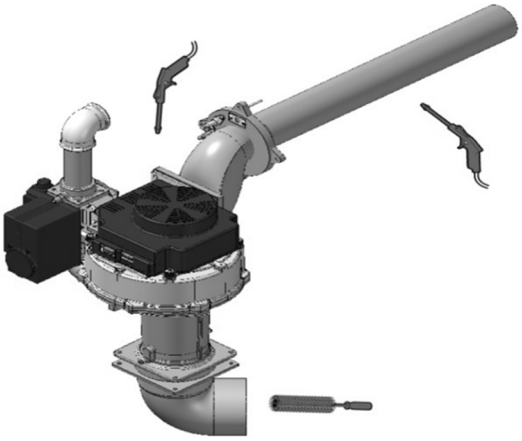
NOTE: Before working on the boiler, disconnect the main line connection, shut off the main gas valve and let the boiler cool.

Combustion System Control

1. Remove the electrical connections from the blower, the gas valve and the electrodes and remove back combustion group by disconnecting the burner flange connections as shown in the photo below.



2. Remove back combustion group as shown in image and remove powder on the blower and burner with compressed air.



3. Clean the venturi tube with a plastic brush or air.

Electrode Control

4. Check the ignition electrode and ionization electrode setting (between 3 and 3.5 mm) and replace the electrode (with gasket) if necessary Also check the electrode porcelain, considering thin cracks that may cause flames to leckage.

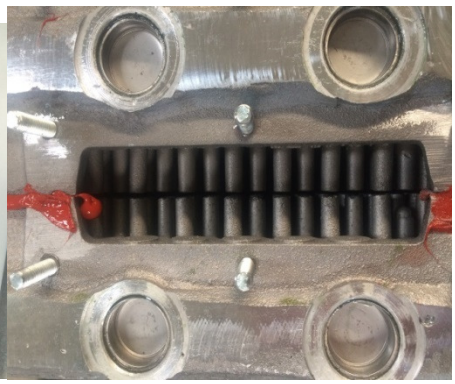
Combustion Chamber Cleaning

5. When you recycle the combustion chamber, the front surface of the exchanger will remain empty on the inlet side of the burner as shown below .

You can fill the entire combustion chamber by filling a cleaning fluid recommended for combustion chamber cleaning from this space. In the meantime, the siphon connection under the boiler should be blind. The cleaning fluid remains in the exchanger for about 1 hour and the corresponding reactions are expected to occur. Then the siphon connection is opened and the heat exchanger is emptied. For correct cleaning, the exchanger should be rinsed with clean water at least twice with a similar operation.

Mechanical Cleaning

6. Open the covers next to the heat exchanger and mechanically clean the combustion chamber with a thin metal rod similar to the one below.



Siphon Cleaning

7. Depending on the cleanliness of the ambient air where the fresh air is absorbed, it is recommended that the siphon be cleaned every 6 months or once a year.