

MCL-BIO Bioplex HL

multifuel biomass boiler 81-1.046 kW



MCL-BIO is an automatic pellet-biomass-wood boiler for industrial use (81-1.162 kW). Thanks to its special design, it can function on multiple fuels without any change on the body.

The boiler is equipped with three doors: upper door for cleaning of the heat exchanger, middle door for manual fuel loading and lower door for ash removal. On the middle door an inspection flange is positioned, which can also be used for mounting a typical oil or gas burner as an alternative or emergency solution.

The wood grate is consisted of water cooled tubes for maximum efficiency.

The boiler is equipped with advanced digital controller with fan modulation and many automatization functions for the boiler and the heating installation.

As an optional. the boiler can be equipped with an automatic ignition system (version MCL-BIO-R).

FUELS



pellet



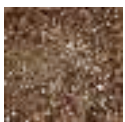
carbon



agropellet



cereals



fruit shells



olive husks



wood



briquettes



Full power modulation



Exhaust gas sensor
Flame detection



Advanced digital controller



3 years warranty

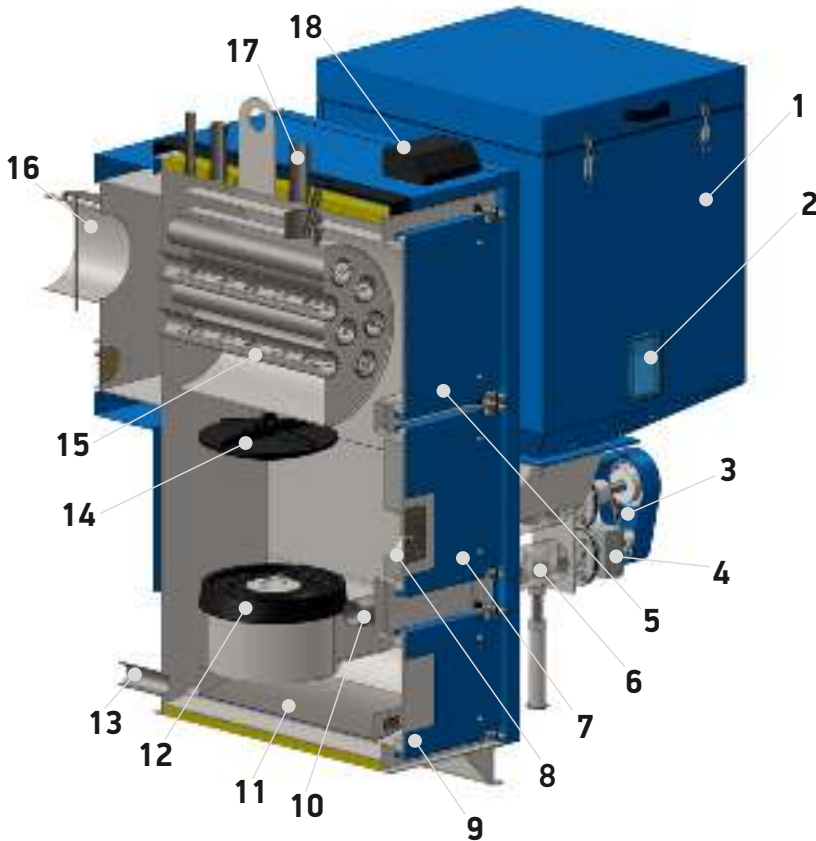


Safety features and alarms

MAIN FEATURES

- Multifuel boiler: automatic function on pellet-biomass, manual function on wood
- Oval-shaped fire chamber for high volume under small dimensions
- High performance furnace for multiple types of fuel
- Three points back-burn security
- High efficiency >87%
- Tubed heat exchanger
- Water-cooled grate for manual wood combustion
- Digital controller with advanced control of the boiler and the heating installation
- Control of 3 pumps, hot water boiler, buffer tank, mixing valve control
- Weather sensitive control with external temperature sensor
- Overheating alarm signal

BOILER CONSTRUCTION



1. Big capacity silo
2. Inspection window for fuel level
3. Furnace transmission system
4. Furnace motoreducer
5. Door for heat exchanger cleaning
6. Feeding system BI-AX
7. Feeding door
8. Flange for burner connection
9. Door for ash removal
10. Wood grate made of water-cooled tubes
11. Ash box
12. Combustion plate
13. Boiler return
14. Deflector
15. Tube heat exchanger
16. Chimney
17. Boiler outlet
18. Digital control panel

CONTROLLER ECOMAX 800R/P



The boiler is equipped with an advanced digital controller for extended control over the boiler and the heating installation.

The design of the controller is modular, which enables BUS extension for control of further devices.

The boiler enables smooth modulation of furnace operation, information about current fuel level, adaptive mixing control, integration with room remote control devices.

The controller automatically recognizes the lack of fuel and passes to standby mode, controls the heating pump, hot water pump and recirculation pump. It can control the hot water boiler, buffer tank, one zone mixing valve and can give comand to an auxiliary boiler. A room thermostat can be also connected to the controller.

The controller is standard equipped with weather sensitive control, by means of an external temperature sensor.



Fan



Weather control



Igniter*



Feeder



Buffer control



Fumes sensor*



Exhaust fan



Boiler switch



Room thermostat



Heating pump



Fuel level recognition



Alarm signals



Hot water pump



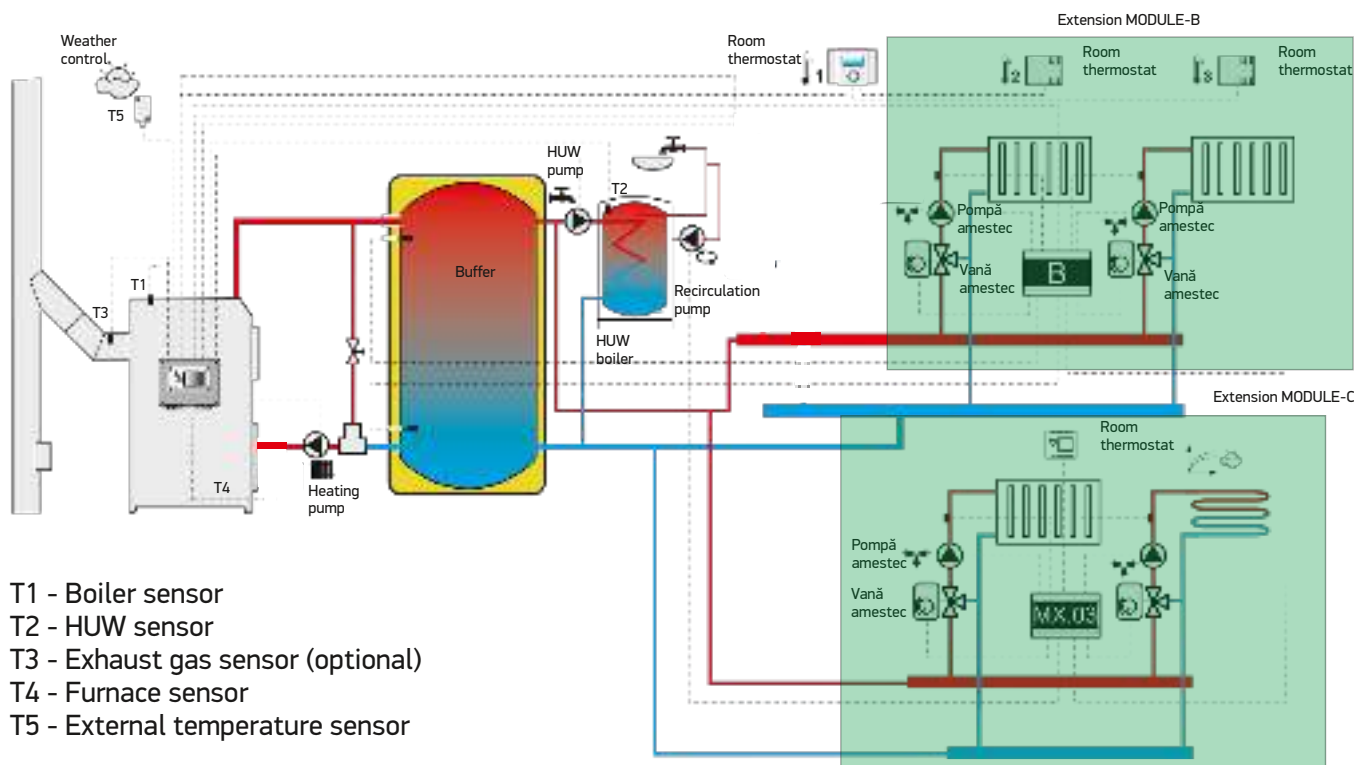
Summer/Winter mode



Overheating protection

*Optional features with auto ignition controller

INSTALLATION SCHEME



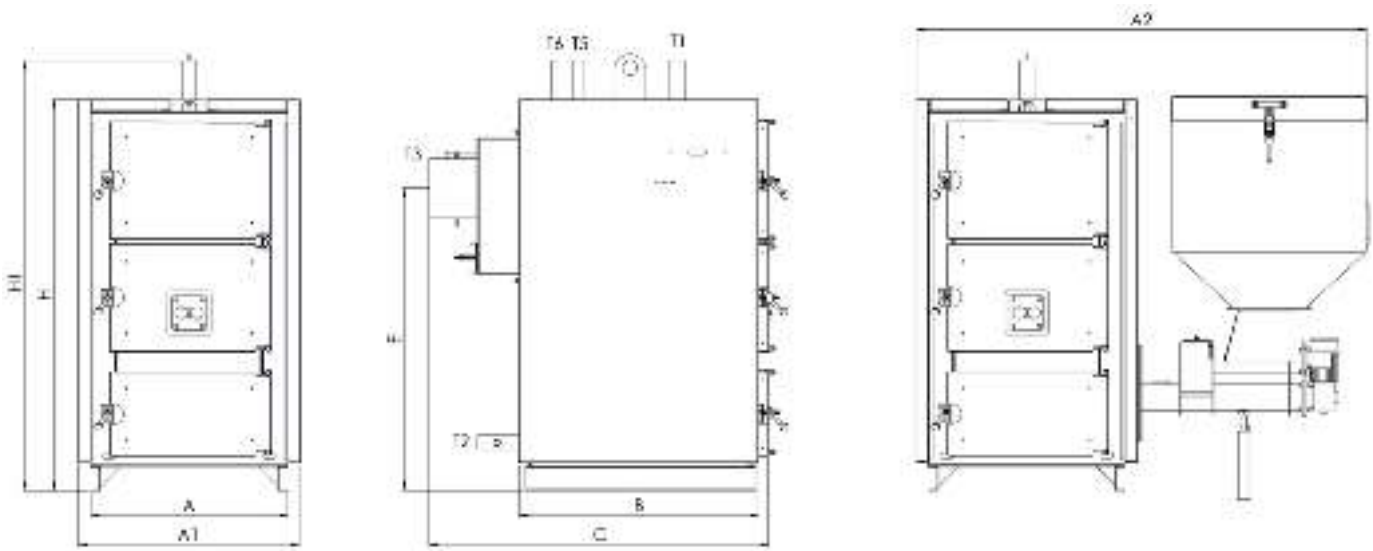
- T1 - Boiler sensor
- T2 - HUW sensor
- T3 - Exhaust gas sensor (optional)
- T4 - Furnace sensor
- T5 - External temperature sensor

Extensions MODULE-B and MODULE-C are not standard boiler equipment.

TECHNICAL DATA

Type	Power	Temp. max.	Pressure max.	Feeding door	Wood length	Efficiency	Water contents	Silo volume	Electric supply	Weight
	kW	°C	bar	mm	mm	%	lit	lit	V/Hz	kg
MCL BIO 70	81	90	3	590x370	680	87	230	460	230/50	750
MCL BIO 80	93	90	3	590x370	800	87	260	460	230/50	880
MCL BIO 90	104	90	3	590x370	900	87	290	460	230/50	930
MCL BIO 100	116	90	3	590x370	1000	87	330	720	230/50	1000
MCL BIO 120	139	90	3	590x370	1150	87	360	720	230/50	1070
MCL BIO 150	174	90	3	590x370	1400	87	420	720	230/50	1220
MCL BIO 180	208	90	3	590x370	1600	87	550	720	230/50	1420
MCL BIO 200	232	90	3	825x510	1000	87	620	1350	230/50	1790
MCL BIO 250	291	90	3	825x510	1250	87	720	1350	230/50	2010
MCL BIO 300	349	90	3	825x510	1500	87	820	1350	230/50	2230
MCL BIO 400	465	90	3	825x510	1750	87	920	1350	400/50	2750
MCL BIO 500	581	90	3	1180x665	1250	87	1.420	2200	400/50	3500
MCL BIO 600	698	90	3	1180x665	1500	87	1.860	2200	400/50	4200
MCL BIO 700	814	90	3	1180x665	1750	87	2.440	2200	400/50	5200
MCL BIO 800	930	90	3	1180x665	2000	87	2.650	2200	400/50	5650
MCL BIO 900	1.046	90	3	1180x665	2250	87	2.890	2200	400/50	6150

DIMENSIONS

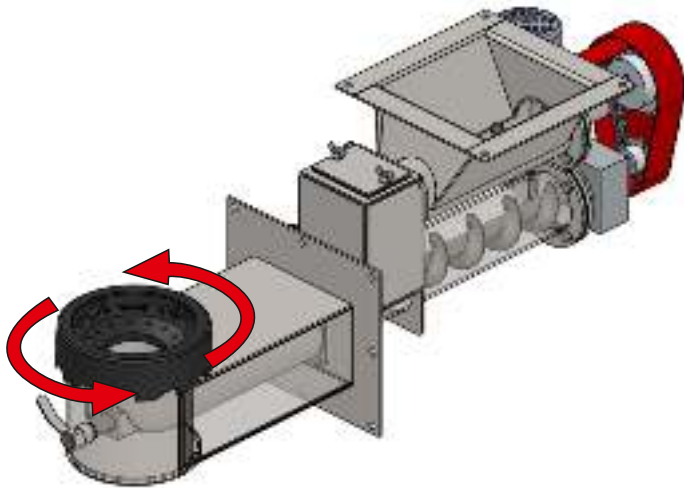


- T1 - Outlet
- T2 - Return
- T3 - Chimney
- T5 - Safety kit connection
- T6 - Expansion vessel

Type	A1	A2	B	H	H1	E	C	T3	T1-T2	T5	T6
	mm								inch		
MCL BIO 70	920	1750	850	1585	1740	1245	1295	245	2	1 ¼	¾
MCL BIO 80	920	1750	970	1585	1740	1245	1415	245	2	1 ¼	¾
MCL BIO 90	920	1750	1070	1585	1740	1245	1515	245	2	1 ¼	¾
MCL BIO 100	920	1775	1170	1585	1740	1245	1615	295	2 ½	1 ¼	¾
MCL BIO 120	920	1930	1320	1585	1740	1245	1765	295	2 ½	1 ½	¾
MCL BIO 150	920	1930	1570	1585	1740	1245	2015	295	2 ½	1 ½	¾
MCL BIO 180	920	1930	1820	1585	1740	1245	2265	295	2 ½	1 ½	¾
MCL BIO 200	1107	2255	1320	1970	2150	1510	1840	345	DN 80	2	2x¾
MCL BIO 250	1107	2255	1570	1970	2150	1510	2090	345	DN 80	2	2x¾
MCL BIO 300	1107	2255	1820	1970	2150	1510	2340	395	DN 100	2	2x¾
MCL BIO 400	1107	2255	2070	1970	2150	1510	2590	395	DN 100	2	2x¾
MCL BIO 500	1575	2865	1590	2465	2570	1870	2225	445	DN 100	2 ½	2x¾
MCL BIO 600	1575	2865	1840	2465	2570	1870	2475	445	DN 125	2 ½	2x¾
MCL BIO 700	1575	2865	2090	2465	2570	1870	2725	495	DN 125	2 ½	2x¾
MCL BIO 800	1575	2865	2340	2465	2570	1870	2975	495	DN 150	3	2x¾
MCL BIO 900	1575	2865	2590	2465	2570	1870	3225	495	DN 150	3	2x¾

ECOBIO-CS / MCL-BIO-CS

rotating system for automatic furnace cleaning



Biomass boilers ECOBIO and MCL-BIO can be equipped with a rotating system for automatic cleaning of the furnace.

When using fuel with ash content (straw pellet, cereals) the use of an automatic cleaning furnace is recommended. This system function together with the fuel feeding. The feeding screw actions on the furnace plate where cleaning blades are installed. This rotating movement eliminates the formation of conglomerates on the furnace surface and ash is removed automatically.

FUELS



pellet



carbon



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cereals



fruit shells



olive husks



wood



briquettes



Rotating system for automatic cleaning



Exhaust gas sensor
Flame detection



Advanced digital controller



3 years warranty



Safety features and alarms

MAIN FEATURES

- Special system for combustion of fuel with high ash content
- Rotating furnace with mechanical removal of the ash
- Three points back-burn security
- High efficiency of combustion for low quality fuel
- Digital controller with advanced control of the boiler and the heating installation
- Control of 3 pumps, hot water boiler, buffer tank, mixing valve control
- Weather sensitive control with external temperature sensor
- Overheating alarm signal

ECOBIO-R / MCL-BIO-R

automatic ignition system for biomass boilers



Biomass boilers ECOBIO and MCL-BIO can be equipped with automatic ignition system which consists of an electrical resistance, exhaust gas sensor and a corresponding digital controller.

The fuel ignition is achieved by hot air delivered from the resistance installed in the furnace. The whole ignition process is controlled by the ECOMAX 800P controller by means of an exhaust gas temperature sensor, which is installed on the chimney.

During the ignition, the controller manages the fuel feeding and the fan speed until a flame is developed. When the exhaust gas temperature reaches the preset level, the boiler automatically moves from ignition mode to operation mode.

Boiler type Controller	ECOBIO ECOMAX 250R	ECOBIO-R ECOMAX 800P	MCL-BIO ECOMAX 800R	MCL-BIO-R ECOMAX 800P
Feeding motor	✓	✓	✓	✓
Fan	✓	✓	✓	✓
Exhaust fan	-	✓	✓	✓
Heating pump	✓	✓	✓	✓
HUW pump	✓	✓	✓	✓
Ignition resistance	-	✓	-	✓
Exhaust gas sensor	-	✓	-	✓
Weather sensor	-	✓	✓	✓
Mixing valve	-	-	✓	-
Fuel level	-	✓	✓	✓
Room thermostat	✓	✓	✓	✓
MODULE-B				
Mixing valve I	-	✓	✓	✓
Mixing valve II	-	✓	✓	✓
Circulation pumps	-	✓	✓	✓
Buffer	-	✓	✓	✓
MODULE-C				
Mixing valve III	-	✓	✓	✓
Mixing valve IV	-	✓	✓	✓
Pompe de circulație	-	✓	✓	✓
ECOLAMBDA				
Lamda sensor	-	✓	✓	✓
REMOTE CONTROL				
ECOSTER 200	✓	✓	✓	✓
ECOSTER TOUCH	-	✓	✓	✓

OPTIONAL ACCESSORIES



Automatic ignition

As an optional, MCL-BIO can be equipped with an automatic ignition system. The ignition is performed by an electrical resistance installed in the BIOFIRE furnace. The system is controlled by an electronic control panel with an exhaust gas sensor.



Safety heat exchanger

All models can be equipped with a safety heat exchanger for additional protection against overheating. The exchanger is made of copper pipe and is incorporated in the boiler body, surrounding the upper part of the fire chamber.



Extension MODULE-B

It is an extension module of the basic controller which enables the control of two additional mixing zones.



Modul ECOLAMBDA

For maximum efficiency of the combustion, the boiler can be equipped with a lambda module. The sensor is installed at the chimney of the boiler and regulates automatically the oxygen supply in order to achieve perfect combustion parameters.



ECOSTER 200

This device enables distant access to all the parameters of the boiler. The ECOSTER 200 is also equipped with room thermostat with a function of setting a temperature schedule. It is also possible to connect two more temperature sensors for greater functionality.



ECONET

It is an advanced communication module which facilitates remote control of operation of the boiler via PC computer with Internet access. User is given possibility to control all the parameters: temperature adjustments, pumps and mixers operation and monitoring of current regulator operation states. Clear visualization of the boiler operation history, presented in a form of charts is another crucial benefit for the user.



ECOSTER TOUCH

It is an integrated remote control over the heating installation. Gives access to all parameters to the user. Touch screen with color interface.

***Compatible only with series ECOMAX 800 or superior.**



Safety kit

It is intended for mounting on the safety connection of the boiler. It includes safety valve(s) (according to boiler capacity), one air-relief valve and one thermomanometer.



Adaptor for cereals combustion

It ensures optimum conditions for combustion of cereals.