Mini Bio

smallest pellet boiler in Poland

Automatic second generation Fuzzy Logic1 controller reduces fuel consumption by up to 20%.

Boiler class according to EN 303-5:2012 — class 5

Bundesamt für Wirtschaft und Ausfuhrkontrolle

ecocombustion

models [kW]

10 | 20

App Store — iOS app

Google play — Android app

fuels	pellets	pellets / oats 50 / 50	7/24	P265 GH	H25N20S2	5 class	> 92.8%	5 years	GSM
			manufacturer service	boiler steel	heat resistant steel	boiler class	heat resistant steel	5 years warranty + 2 years extended warranty	GSM module

Description

The only operations required for the Mini Bio boiler is to charge the main 230 l reservoir with fuel, every 3-14[2] days and remove ash from the burner and the central heating boiler.

Mini Bio boiler for pellets and oats is a "new look at the automatic burning of solid fuels in Poland and Europe" It is an optimum device intended for installation in houses, with small boiler rooms or at places without boiler rooms at all. The area of heated building is 50 to 300 (m^2)[2].

The main Mini Bio boiler features are compact design and easy operation, consisting in charging the main reservoir with fuel and pressing the START button. The messages are shown on a large display. In several minutes, the device will automatically ignite the fuel, select optimum operation parameters and maintain constant room and domestic hot water temperature.

The device has four sections. The full boiler is a 600 x 600 x 1600 mm cuboid (10 kW output) or 700 x 700 x 1650 mm (20 kW output).

The first section is a steel heavy duty tubular **heat exchanger**. Following 3T guidelines (time, turbulator, and temperature) allowed very compact design of the heat exchanger. The heat exchanger is made of high quality 4-5 mm boiler steel P265GH.

The second section is a **Platinum Bio** burner for burning 6-8 mm diameter pellets and optional grain (oats). The structural components are made of heat resistant steel H25N20S2, with resistance up to 1150°C. With second generation Fuzzy Logic controller and power saving components, the burner consumes less fuel and energy compared to other devices available.

1. reservoir cover
2. fuel reservoir
3. flexible fuel feeding tube
4. furnace doors
5. Platinum Bio boiler
   is practically a maintenance free device, its operation is easy to provide the highest comfort
6. round steel heat exchanger
7. flue
8. heat exchanger cleanout

front

rear

Mini Bio boilers meet PN-EN 303-5:2012 requirements

Features

The third section is the reservoir installed on the top of **heat exchanger** to save space. The reservoir capacity is 230 l.

The fourth section is the **controller** of the entire building heating system. It is designed for easy maintenance with clear menu and high degree of design and technological advancement.

The first controller in Poland with automatic power modulation and second generation Fuzzy Logic system - reduces fuel and electrical power consumption by up to 20%

- automatic burner start
- flame control with photocell
- low electricity consumption
- up to 16 heating circuits control
- (heaters, floor heating or domestic hot water) - optional
- burner working temperature control - the highest safety
- three ignition stages eliminate gas explosion during the ignition process
- AUTOSTART at voltage loss - current settings are stored
- the primary and secondary air allows reduction of CO_2 emission to the level of gas and oil burners
- automatic cleaning

1. Second generation Fuzzy Logic controller allow fuel consumption reduction by up to 20%
2. depending on building heat demand
3. option - recommended pellets/oats ratio - 50/50
4. burner can be installed in every new or used solid, liquid or gas fuel boiler without modifications to existing boiler. It is assembled with the adapter available to order.

Technical specification

The design may change due to improvements.

PARAMETER	MB 10 kW	MB 20 kW
Power range on pellet *(kW)*	3.3–10	6–20
Control method	Fuzzy Logic 2	Fuzzy Logic 2
Class as per PN-EN 303-5:2012	5	5
Water capacity *(l)*	48	90
Max. operating pressure *(bar)*	2	2
Max. operating temperature *(°C)*	85	85
Test pressure *(bar)*	4	4
Flue draught *(mbar)*	0.15–0.25	0.15–0.25
Flue gas temperature at nominal / minimum thermal power *(°C)*	140 / 90	160 / 90
Min. return water temperature *(°C)*	45	45
Average fuel consumption (pellets) at nominal / minimum thermal power *(kg/h)*	3 / 1	6 / 2
Flue diameter *(mm)*	135	160
Supply/return connector diameter *(in.)*	G1″	G1.1/4″
Power supply *(V)*	230	230
Max. power consumption (ignition) *(W)*	400	400
Weight *(kg)*	200	270
Fuel reservoir capacity *(l)*	230	240
Charging opening dimensions *(mm)*	555 x 555	655 x 655

Fuel parameters

Sawdust pellets as per EN 14961-2:2011 class A1:

- size 6 +/-1 mm; 8+/- 1 mm
- recommended calorific value 16 500 - 19 000 kJ/kg
- ash content<0,7%
- lenght 3,15 ≤ L ≤ 40
- moisture content<10%
- specific weight (density) ≥ 600 kg/m³

Oats[1]

- moisture content <12%

1. recommended pellet/oat ratio - 50/50

Platinum Bio

with second generation Fuzzy Logic control

Automatic boiler power modulation with second generation Fuzzy Logic controller - reduces fuel consumption by up to 20%, as well as power consumption.

Control

- fuel conveyor from the reservoir
- burner screw
- pressure blower
- igniter
- central heating pump
- domestic hot water pump
- mixing valve[1]

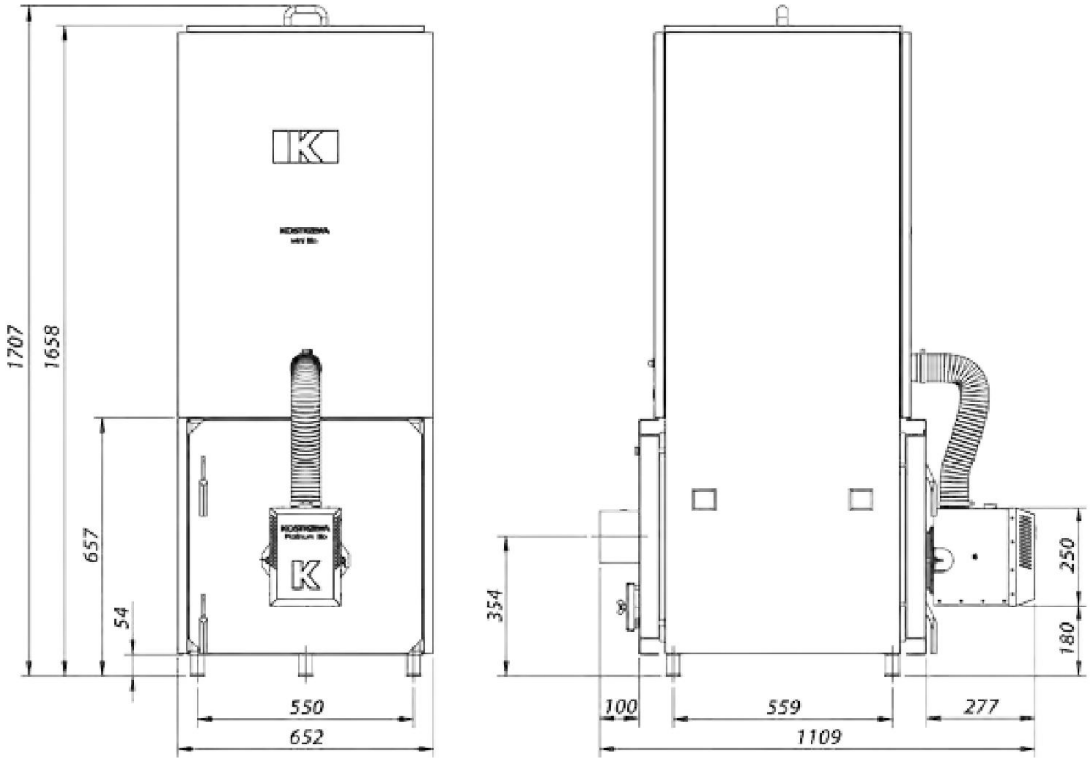
Functions

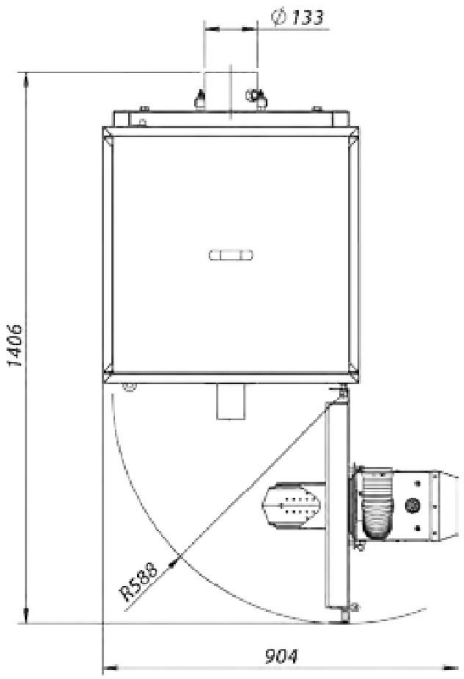
- automatic burner start
- flame control with photocell
- low thermal inertia during starting and stopping
- low energy consumption
- up to 16 heating circuits control (heaters, floor heating or domestic hot water) x - optional
- burner working temperature control - the highest safety
- three fuel ignition stages eliminate gas explosion during ignition process
- AUTOSTART function after voltage loss - current settings are stored
- primary and secondary air reduces CO_2 emission to the gas and oil burner level automatic
- cleaning function, removes slag from the grate - not available in reservoir burners
- oats burner design allows grain burning (oats) - optional [2]
- Statistics preview
  - minimum, maximum and average burner power
  - minimum, maximum and average fuel consumption.
- Temperature parameters are presented as numbers and graphs on a large display along with many other functions - optional
- Boiler operation and comfort may be compared to the oil boiler.

1. with auxiliary module 1-16 heating circuits (heaters or floor heating)
2. recommended pellet/oat ratio - 50/50

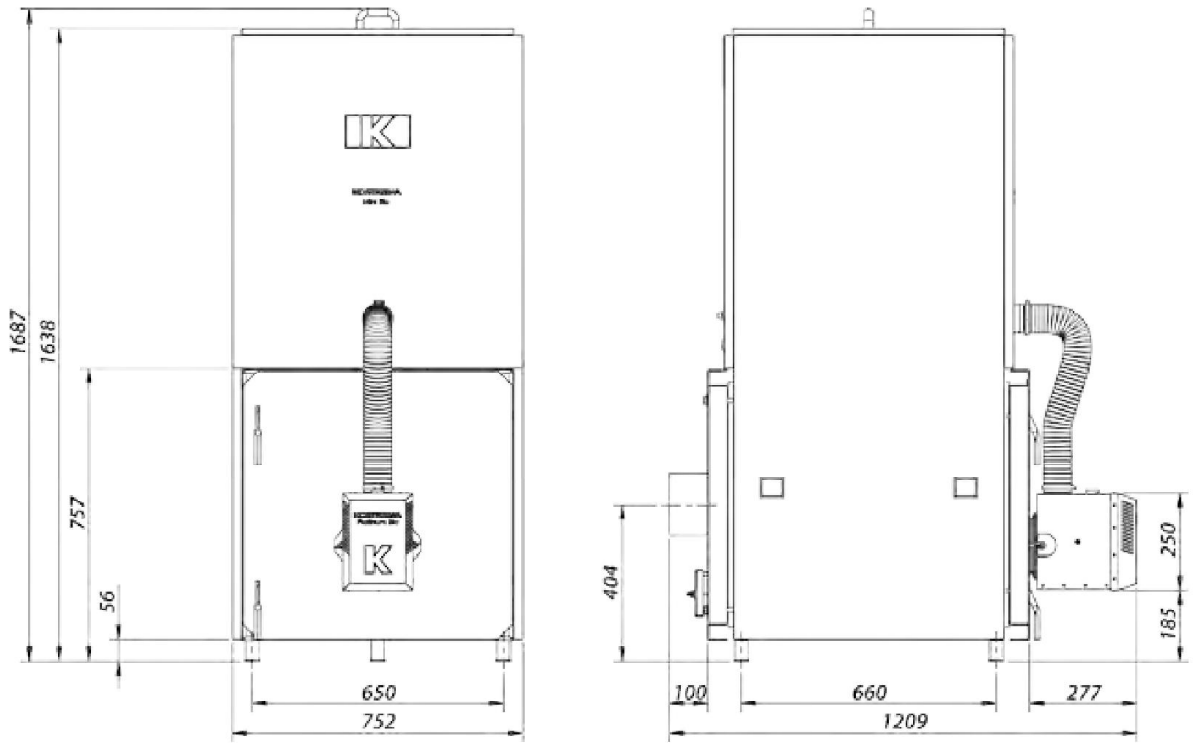
Dimensions

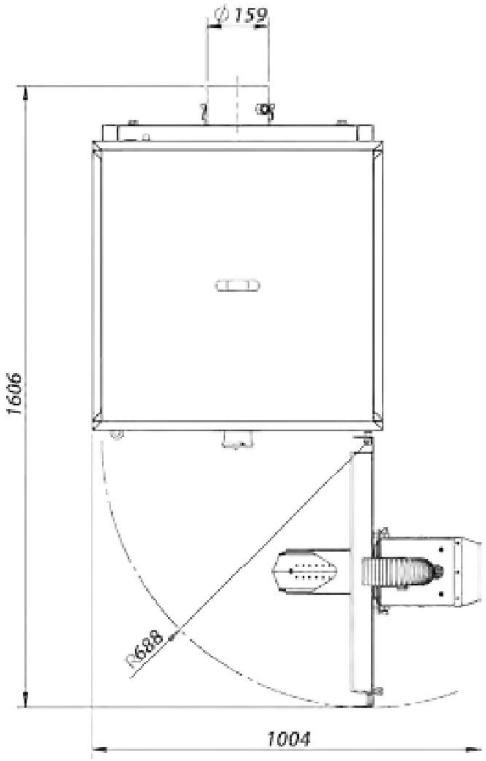
Mini Bio 10 kW





Mini Bio 20 kW





Installation diagram

Diagram 1 Caution! Additional modules may be required.

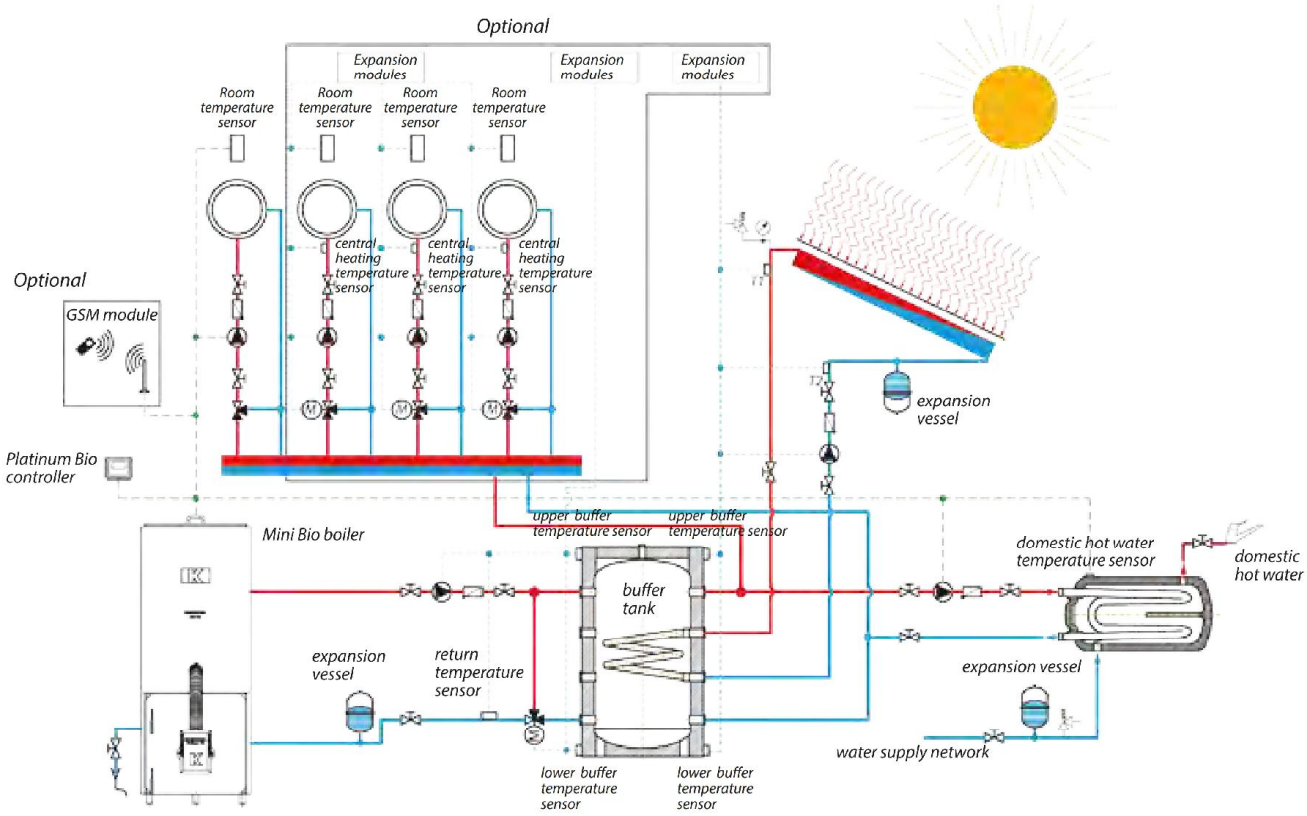


Diagram 2 Caution! Additional modules may be required.

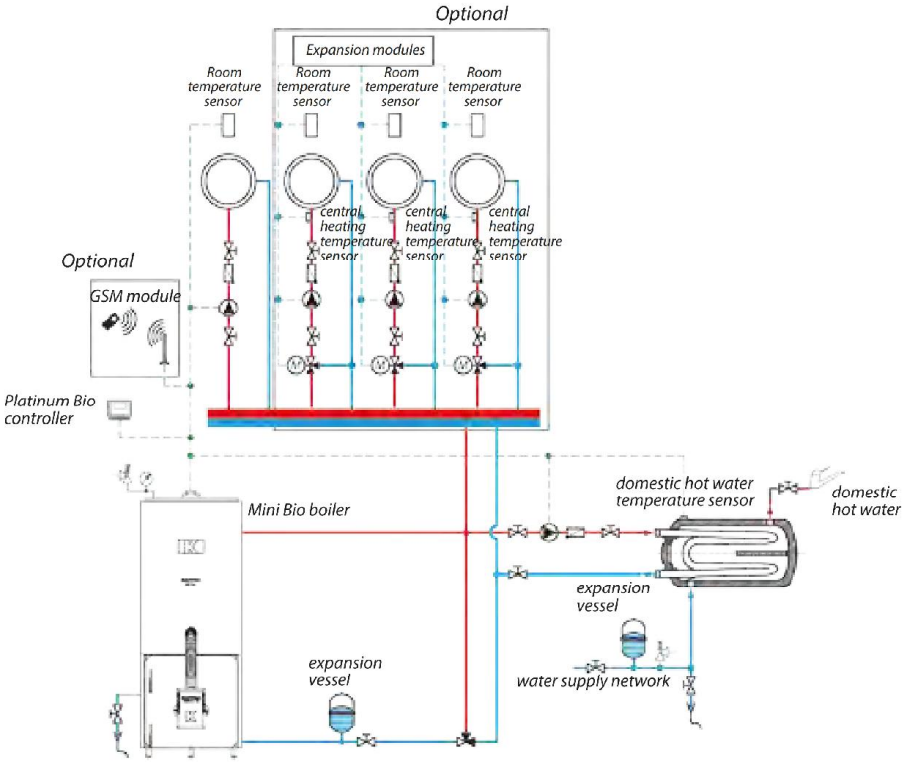
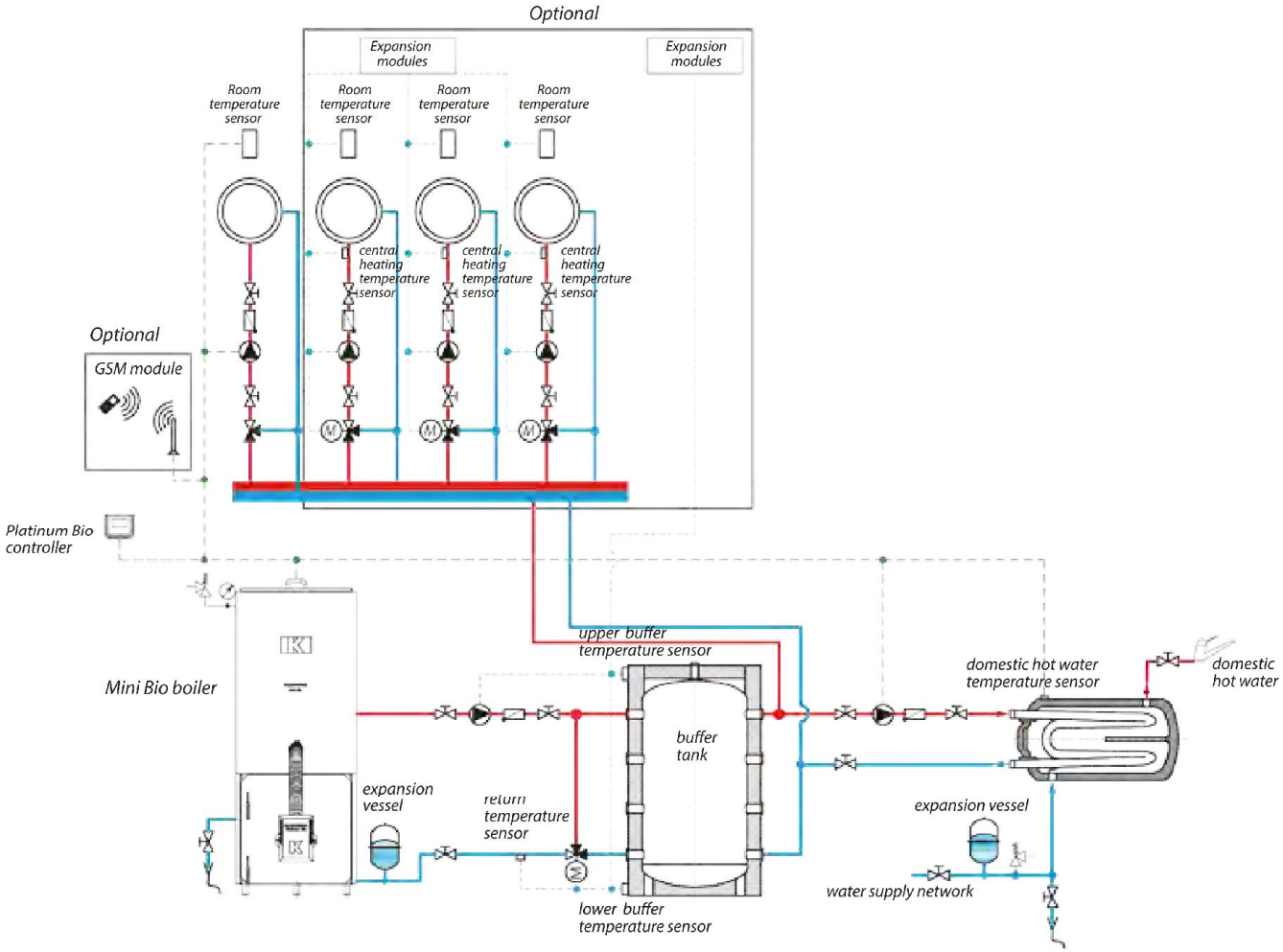


Diagram 3 Caution! Additional modules may be required.



Specification

Standard and optional accessories

TYPE	MB 10 kW	MB 20 kW
power range on pellet *(kW)*	3,3–10	6–20
building area *(m²)*	50–200	100–300
FUEL TYPES		
pellets	s	s
oats/pellets 50/50	s	s
HORIZONTAL HEAT EXCHANGER		
boiler steel P265GH	s	s
no. of exchanger draughts	2	2
flue gas turbulator	o	o
exchanger design*	3t	3t
optional closed system	s	s
left doors	o	o
horizontal cylindrical heat exchanger	s	s
built-in heat exchanger ceramics	o	o
RESERVOIR		
basic *(l)*	s / 230 l o/177 l	s / 240 l o/177 l
external feeding	o	o
fuel feeding from the reservoir to the burner	s	s
BURNER		
heat resistant steel H25N20S2	s	s
reservoir burner	s	s
automatic ash removal	s	s
ignition and heating element	s	s
pressure blower	s	s
gear motor	s	s
photo cell	s	s
built-in burner ceramics	o	o
pellets burning grate	s	s
oats/pellets burning grate	o	o
AUTOMATICS		
boiler temperature sensor	s	s
burner temperature sensor	s	s
ambient temperature sensor	o	o
domestic hot water sensor	o	o
lambda sensor	o	o
modular design	s	s
GSM module	o	o
AUTOMATICS AND CONTROL FEATURES		
Fuel feeding from reservoir control	s	s
fuel feeding mechanism control	s	s
pressure blower control	s	s
igniter control	s	s
heating pump control	s	s
hot domestic water pump control	s	s
mixing valve control **	o	o
cooperation with GSM module	s	s

TYPE	MB 10 kW	MB 20 kW
AUTOMATIC SYSTEMS		
second generation Fuzzy Logic controller	s	s
domestic hot water priority	s	s
communication	CAN	CAN
fuel selection	s	s
alternative function "boiler operation"	s	s
output testing	s	s
domestic hot water weekly program	s	s
weekly room temperature program	s	s
simple menu	s	s
advanced menu	s	s
outdoor temp.compensation, solar module and accumulation tank control via control menu	s	s
alarm log	s	s
help	s	s
alarm codes	s	s
service mode	s	s
language - multilingual	s	s
AUXILIARY MODULES		
Solar system and buffor control	o	o
system control with 3 additional mixing valve (max. 16)	o	o
DELIVERY		
delivery to the address indicated	s	s
24h delivery	s	s
WARRANTY/Years		
boiler body integrity	5	5
mechanics and automatics	2	2
extended warranty - mechanics and automatics	2	2

The price list for optional accessories is available at the manufacturer.

Key

s - standard accessories
o - optional accessories

* high quality durable steel heat exchanger was designed following 3T guidelines (time, turbulator, temperature).

** with additional module 1-16 heating circuits (heaters or floor heating)