



**ADAX**  
WALL-HUNG GAS CONDENSING BOILER  
FUEL: NATURAL GAS G20, PROPANE G31

**ADVANTAGES:**

Efficiency 107%



Automatic combustion control



Stainless steel heat exchanger and burner



NOx 5



Smallest dimensions of boiler



Equitherm regulation



Room thermostat



TURBO version



# ECOLOGY AND COMFORT



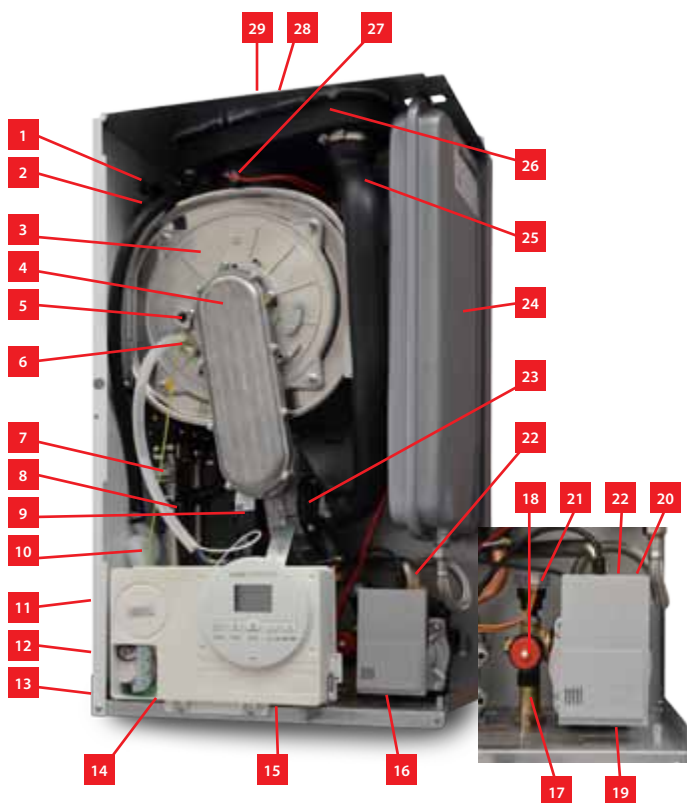
**Wall-hung gas condensing boiler ADAX** is designed for heating family houses and small businesses or medium-sized objects with instantaneous heating, external tank hot water or for central heating. ADAX is one of the smallest boilers on the market, which has the aesthetic appearance and offers TURBO version of the boiler. The boiler is produced in many color options, according to customer requirements.

**ECOLOGY** – Automatic combustion control based on evaluation of flame resistance in a combustion chamber, the control unit controls the ratio of gas and air supplied to the burner. Due to this modern technology, all the energy from the fuel is utilized, so there are no unnecessary losses. The boiler meets the strictest emission standards Nox 5 and minimizes the burden on the environment. Condensing boilers ADAX have a fuel saving of up to 30% compared to conventional boilers, and also significantly reduce emission levels emitted into the atmosphere by up to more than 50%.

**COMFORT** - Boiler is able to modulate the power output 1:5 for CH and 1:6 for HUW, which ensures desired power output with high efficiency of the combustion. Condensing boilers use energy that would otherwise be leaked off the chimney for preheating the return water in a separate heat exchanger, which increases the temperature of the water by about 7°C. The condensing technology is most effective for a temperature of 50/30 °C, e.g. for floor heating and conventional heating systems using equithermal control by outdoor heat sensor. The savings are not insignificant. The boiler can be operated by any room thermostat and the boiler can be connected to a solar heating system with HUW.

**BOILER EFFICIENCY  
UP TO 107%**

# BOILER CONSTRUCTION



1) Heat exchanger bleed point	11) Diverter valve	21) Water pressure transducer
2) Stainless steel heat exchanger	12) System filling unit	22) Automatic bleed valve
3) Combustion chamber door	13) Sensor HUW	23) Air-gas mixer
4) Oversleeve	14) Control panel	24) Expansion vessel
5) Flame viewing window	15) Domestic hot water heat exchanger	25) Air inlet pipe
6) Ignition/detection electrode	16) Gas valve	26) Air-smoke chamber
7) Heat safety thermostat	17) Domestic hot water filter	27) Smoke probe
8) Delivery sensor CH	18) System relief valve	28) Air inlet
9) Fan	19) Boiler drain	29) Smoke outlet
10) Condensate siphon	20) System pump	

The boiler consists of a stainless steel tube heat exchanger of high quality, which is covered by protective cap of combustion chamber where is located the stainless steel burner. In the cover of the combustion chamber is positioned the electrode for ignition and combustion control. There is also the peephole for checking the flame. The burner is connected with gas inlet with the air. The gas and air intake is coupled with the fan and with mixer gas/air. On the top of the heat exchanger is positioned vent valve. Above the heat exchanger is located a mixing chamber with a flue gas sensor and the connection to the flue and the combustion air supply 60/100 mm. The mixing chamber is connected with the hose equipped with the fan for air intake. In the right side of the boiler is located an expansion tank. Under the heat exchanger is located the hydraulic system. On the heating system are placed a temperature sensors for CH, HUW and emergency thermostat preventing overheating the boiler. The boiler is equipped with three-way mixing valve with an actuator, a filling valve, a gas valve and a circulation pump which has a cold water filter, a safety valve, a drain valve. Pressure switch on water scarcity and automatic bleeder valve is part of the pump station. At the rear part is located siphon for drainage of condensate from the exchanger. In the front part is located the electronic control unit which controls and optimizes the combustion process. The control unit is possible to connect with the additional moduls. Casing of the boiler is assembled only by 3 parts.



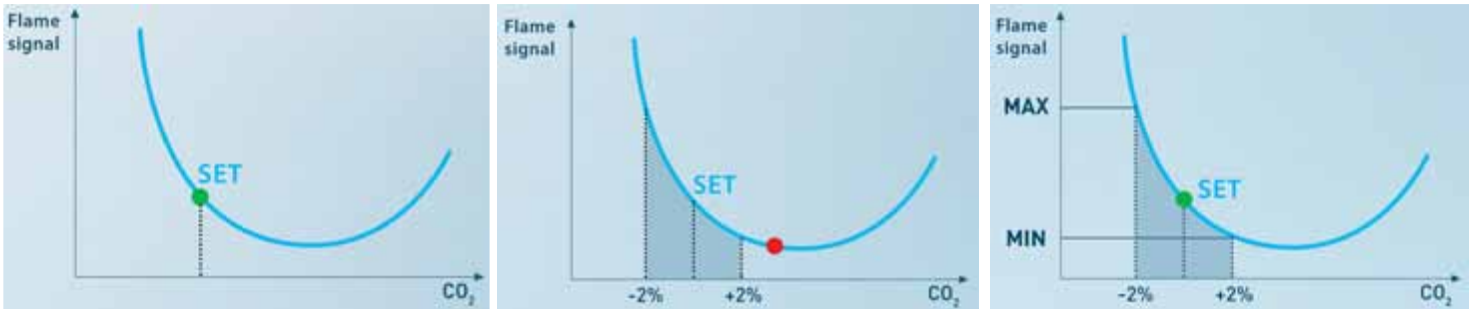
## BOILER PROTECTION

The boiler is protected against overheating by means of safety thermostat (100 ° C) placed at the outlet from the boiler. When the temperature overstep the critical level, burner and blower turns off. The boiler has a built-in safety valve 3 bar and pressure switch for a lack of water in the heating system. The boiler is equipped with an automatic by-pass, which ensures constant circulation of water in the boiler, even if occurs the closure of thermostatic heads. You can also set the service interval of the boiler, which informs the user that regularly service should be performed. The display shows the information key and the user must ensures the service of the boiler within one month.

# BOILER FUNCTION / BOILER CONTROL

## AUTOMATIC CONTROL OF COMBUSTION

Automatic combustion control works on principle of collecting feedback from combustion chamber via the ignition electrode and evaluation of this values by control unit, which automatically adjusts the ration of combustion air and gas. The burner is fed by combustion mixture and boiler has throughout function ideal combustion values in a predefined working area.



After ignition, the boiler operates at optimal combustion conditions.

During operation, combustion undergoes fluctuations, which might lead to the operation outside the defined area.

The system detects fluctuations and automatically starts a new calibration. Refer it back to work in a defined area of work.

## BOILER FUNCTION

ADAX boilers are manufactured in three variants, either with instantaneous heating, external tank hot water or central heating. The electronic control unit sets the desired temperature for CH and HUW. Based on information obtained from temperature sensors CH and HUW. The boiler passes from the state of switched off after reaching the set temperature to heating mode when the temperature drops below the set value. For heating HUW boiler switched on automatically during the water consumption or if external tank temperature decrease under set value. The boiler can operate either in summer mode which is switched off CH and it works only for hot water, or may work in winter mode when turned on CH and HUW.

The boiler has a calibration function, which must always be performed when is the boiler connected to system or when it is necessary to change control unit. This feature calibrates the correct combustion at different power levels and takes approximately 5 minutes. Furthermore, the boiler has a flue gas analysis function, which enable to carry out the checking measurement of emission by analyzer.

## BOILER CONTROL

Easy and convenient operation of the boiler takes place using 5 buttons. Everything is displayed on a large LCD display with blue backlight. Modern control unit automatically calculates and records operating hours, number of burner ignition, the number of hours burning in premix burner and many more. The control unit enable to set temperature for CH and HUW separately. Temperature of HUW can be set in following range 10 - 60°C, temperature range for CH is 20 - 80°C. Connection of outdoor sensor and setting of a suitable equitherm curve will result in optimal CH temperature depending on obtained data from sensor. The menu has an installer and service menu for setting the parameters of the boiler. ALARM function informs the user via the number on the display about an error.



# MODERN TECHNOLOGY - accessories



## ROOM THERMOSTAT

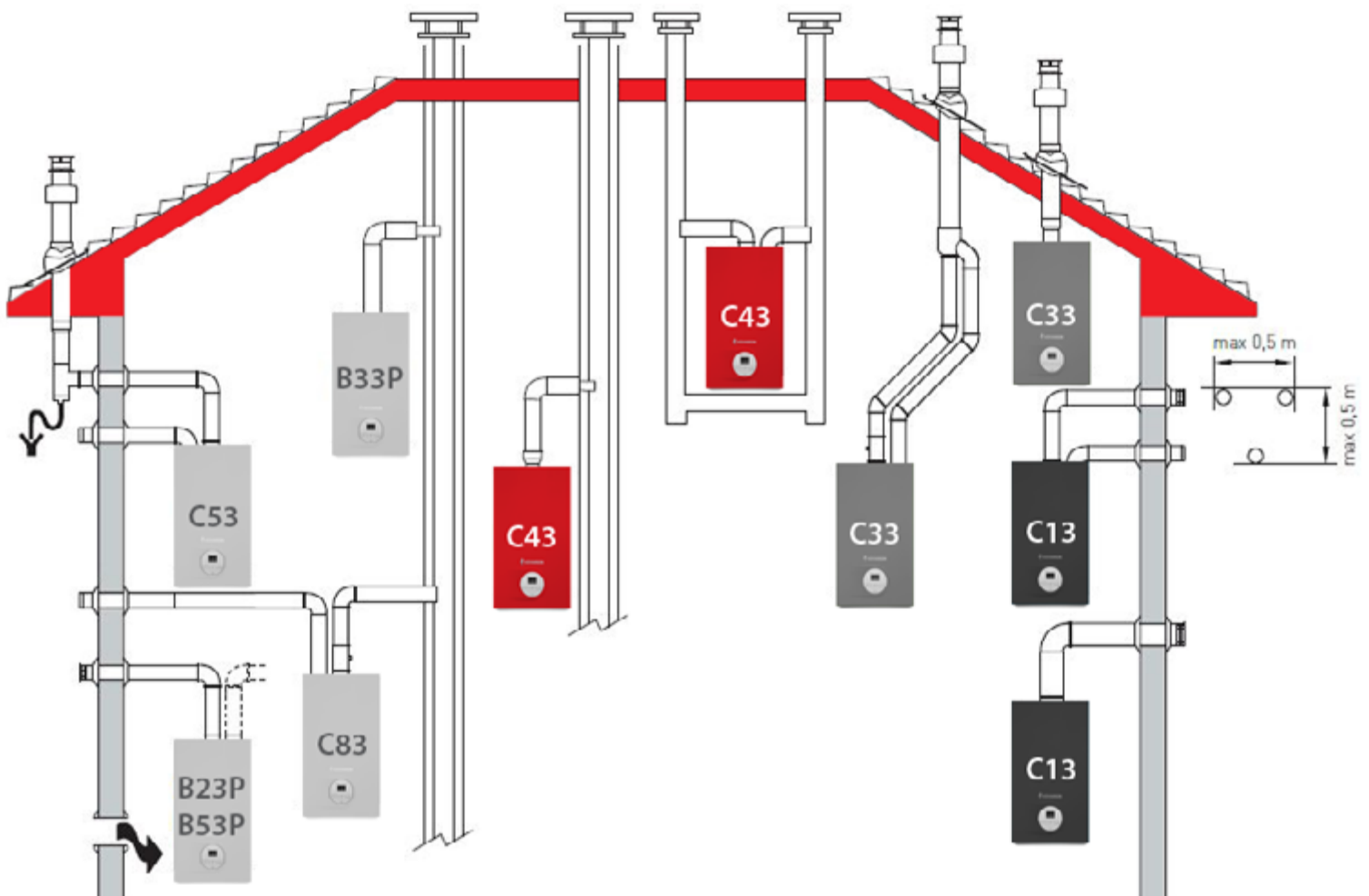
Thermostat output, which controls the boiler and heating pump.



## OUTDOOR SENSOR

Sensor informs about outdoor temperature. Assists in the evaluation of algorithms for mixer control.

## CONNECTIVITY TO THE CHIMNEY

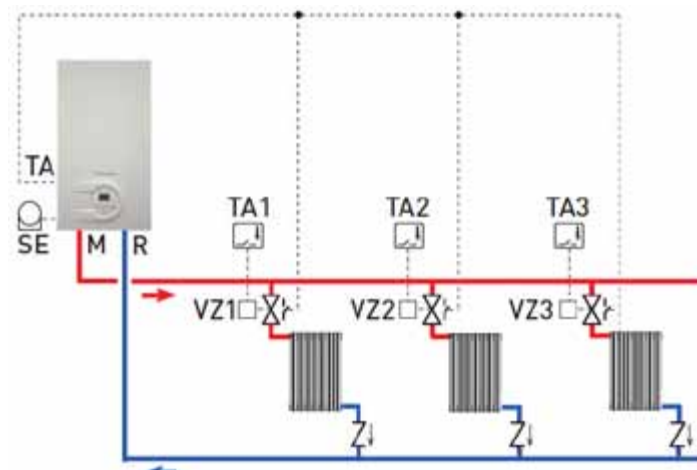
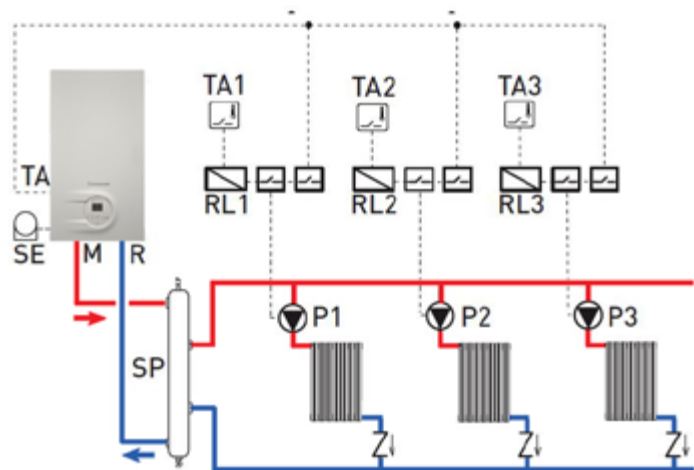
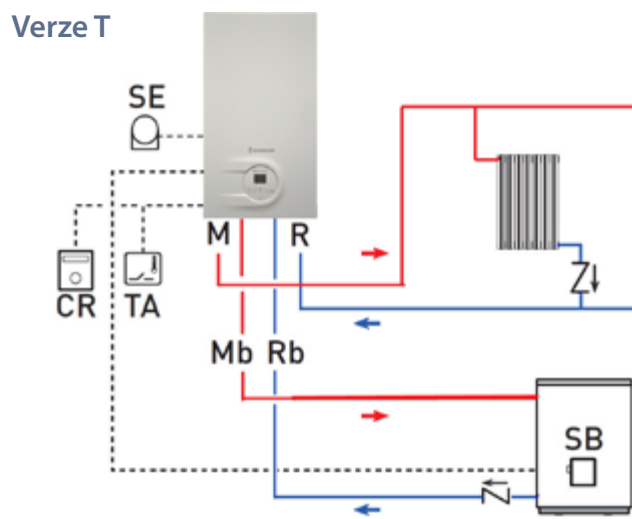
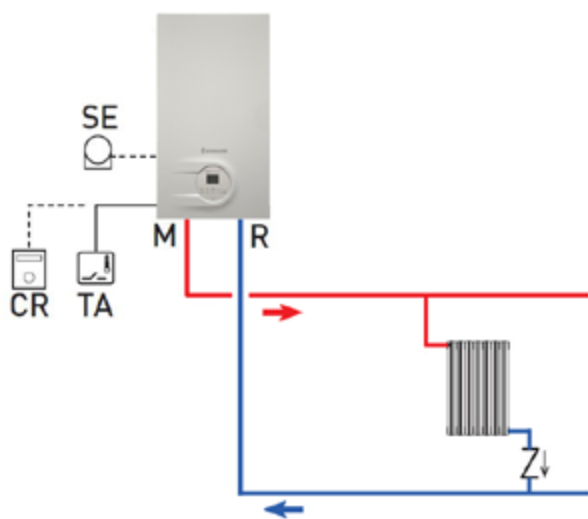


- CONNECTION MARKED AS B – INTAKE OF COMBUSTION AIR FROM THE ROOM

- CONNECTION MARKED AS C – TURBO INTAKE OF COMBUSTION AIR FROM OUTDOORS

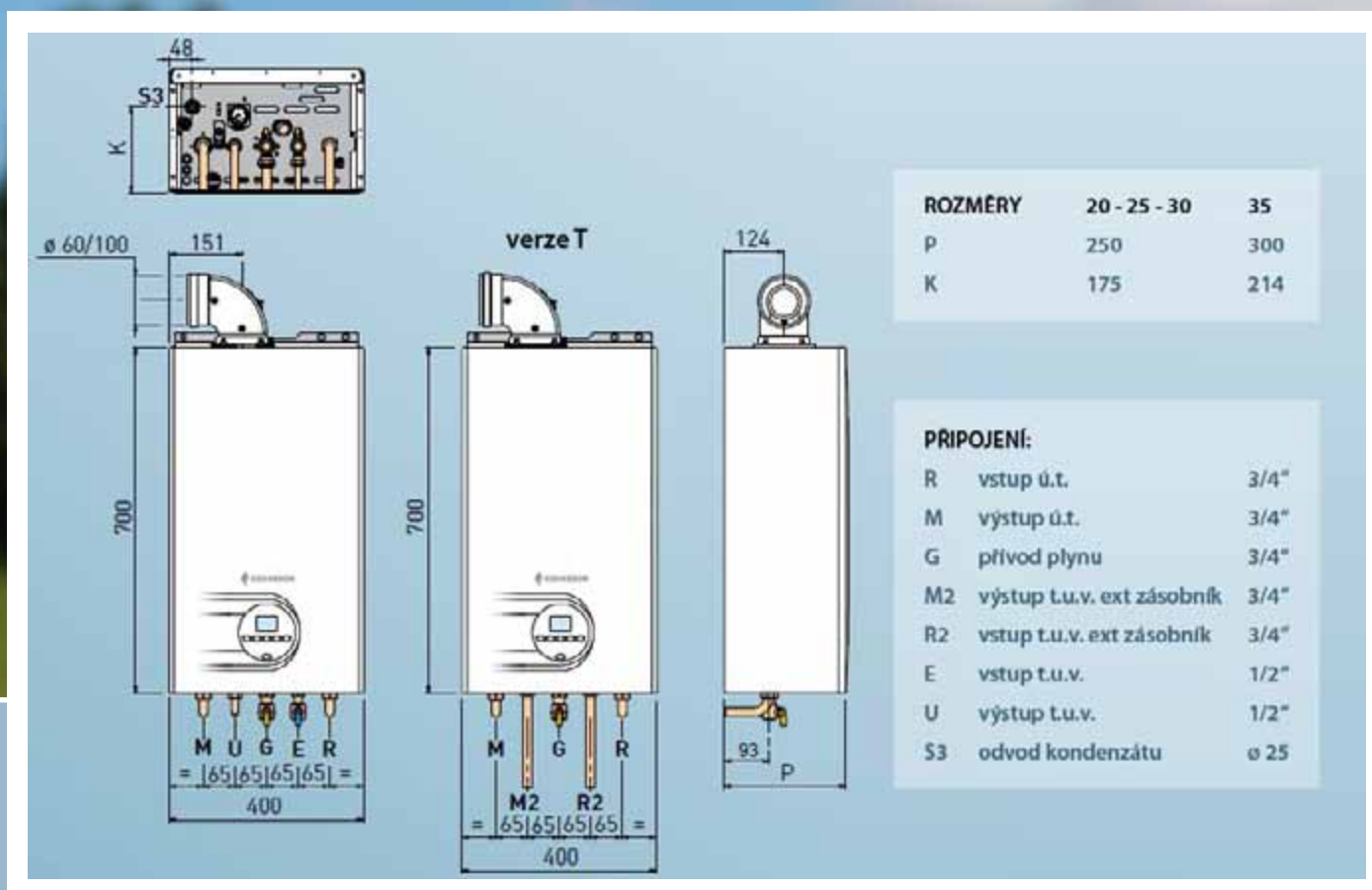
# RECOMMENDED INSTALLATION

MINIMAL  
SIZE OF THE BOILER!



# PARAMETERS


DESCRIPTION		20	25	30	35	20T
Land of use		European Union				
Type of gas		G20 / G31				
PIN number		1312CP5936				
Category		I12H3P				
Type of gas appliance		B23P - B33P - B53P - C13 - C33 - C43 - C53 - C63 - C83				
Nox class		5 (< 70 mg/kWh)				
<b>CH heating</b>						
Maximal boiler power output	kW	20	24	30	35	24
Minimal boiler power output	kW	4	4,8	6	7	3
Maximal power output -80% (80-60°C)	kW	19,7	23,6	29,5	34,5	23,6
Maximal power output - 80% (50-30°C)	kW	21,4	25,7	32,2	37,5	25,7
Minimal power output G20 (80-60°C)	kW	3,9	4,7	5,9	6,9	2,9
Minimal power output G20 (50-30°C)	kW	4,3	5,1	6,5	7,5	3,2
Minimal power output G31 (80-60°C)	kW	3,9	4,7	5,9	6,9	2,9
Minimal power output G31 (50-30°C)	kW	4,3	5,1	6,5	7,5	3,2
Efficiency at max. pow. output (80-60°C)	%	98,5	98,3	98,3	98,6	98,3
Efficiency at min. pow. output (80-60°C)	%	97,5	97,9	98,3	98,6	96,6
Efficiency at max. pow. output (50-30°C)	%	107	107,1	107,3	107,1	107,1
Efficiency at min. pow. output (50-30°C)	%	107,5	106,3	108,3	107,1	106,6
Efficiency at 30% pow. output (40-30°C)	%	107				
Energy efficiency class (CEE 92/42)		****				
Heat loss at decrease temp. 50 °C	W	84	88	88	92	84
<b>HUW heating</b>						
Maximal boiler power output	kW	24	28	34,8	40	-
Minimal boiler power output	kW	4	4,8	6	7	-
The flow of hot water Δt 30°C	l/min	11,2	12,9	16,5	19,7	-
Constant HUW water flow at (Δt 25°C / Δt 35°C)	l/min	13,6/9,7	16,1/11,5	20/14,3	22,9/16,4	-
Minimal water flow	l/min	2				
Pressure Max / Min	bar	7/0,5				
<b>WIRING</b>						
Voltage	V	230				
Frequency	Hz	50				
Power consumption	W	105	114	135		73
Enclosure	IP	X5D				
<b>COMBUSTION</b>						
Flue gas temp. at max / min (80-60°C)	°C	82/66	89/71	77/67	75/62	82/65
Flue gas temp. at max / min (50-30°C)	°C	59/45	71/51	58/49	54/39	59/45
Exhaust flow rate at max / min	g/s	11,2/1,9	13,1/2,2	16,3/2,8	18,6/3,3	11,1/11,38
CO2 at max / min (G20) div. pipeline	%	9,0 / 9,0				
CO2 at max / min (G31) div. pipeline	%	10,0 / 10,0				
<b>GAS</b>						
Number of lines	n°	1				
Nozzles diameter (G20-G31)	nm	5,3				
Gas consumption at max / min output (G20)	m3/h	2,53/0,42	2,96/0,5	3,7/0,63	4,23/0,74	2,53/0,32
Gas consumption at max / min output (G31)	Kg/h	1,86/0,31	2,17/0,37	2,71/0,46	3,1/0,74	1,86/0,23
Gas pressure (G20/G31)	mbar	20 / 37				
<b>TEMPERATURE - PRESSURE</b>						
Maximal operating temperature	°C	85				
Temperature setting range CH	°C	20 - 80				
Temperature setting range HUW	°C	10 - 60				
Maximal operating pressure	bar	3				
Volume of water in the boiler	l/min	4,65	4,75	4,95	5,6	4,5




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