



Technical manual
CONDENSING GAS THERMAL MODULE

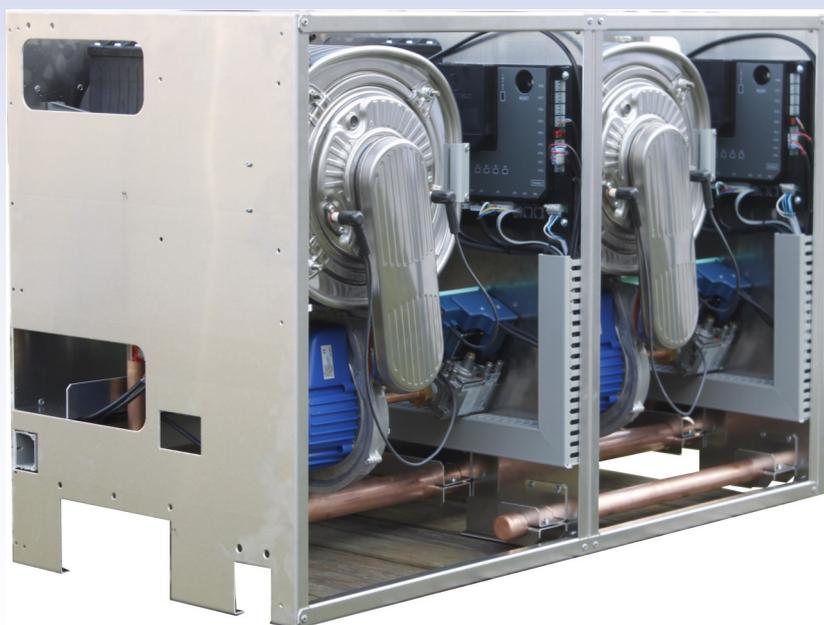
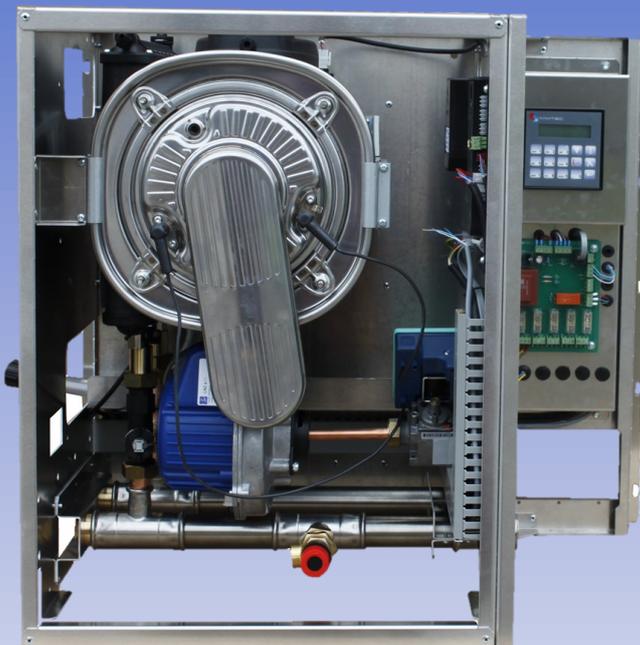


TABLE OF CONTENTS

Section N°	Section	Pages
1	<u>General information</u>	3
	1.1 CE marking	
	1.2 Responsibility	
	1.3 Reception and storage 1.4 Guarantee	
2	Technical specifications	4
3	Dimensions	5
4	<u>Hydraulic connection</u>	6-7
	4.1 Inlet and outlet coil upper the connection pipe of the module 4.2 Inlet and outlet coil lower down the connection pipe of the module	
5	Modulation cycle of the regulator	8
6	Operating and safety cycle of the boiler	9
7	Operating cycle of pressure maintenance module	10
7	Gas connection	11
8	Evacuation of combustion products	11
9	Selection and connection of the circulator	13
10	Selection and dosage of the heat transfer medium	13
11	Calibration of glycol rate	13
12	Electrical connection of the module	14
13	Operation principle of the regulator	14
14	Complete electric diagram	15
15	Electric diagram of the boiler	16
16	<u>Check before commissioning</u>	17-19
	16.1 Electrical connection	
	16.2 Gas circuit	
	16.3 Condensate drain connection	
	16.4 Heat transport system + automatic purge cycle	
	16.5 Water flow control within the boiler 16.6 Connection of the smoke exhaust system	
17	Commissioning	19
18	<u>Regulator features</u>	20-21
	18.1 Indication of the number of boiler inside the module	
	18.2 Boiler shutdown	
	18.3 Forcing of the power 18.4 Addressing and reprogramming of a AHU boiler card	
19	<u>Burner setting</u>	22-23
	19.1 Burner setting features 19.2 Setting values of the burners	
20	Annual maintenance	24
21	Exploded view	25
22	User recommendations	26

GENERAL INFORMATION

1. CE marking

Concerning the technical demands that are required, the CE marking is the official recognition of the quality of design, manufacture and performance of this device. Its long lifetime and its performance will be at optimum level if its use and its maintenance are properly carried out following the regulations in force.

2. Responsibility

This equipment must be used expressly for the purpose for which YAHTEC has designed and manufactured it. Any contractual liability of YAHTEC is therefore excluded in case of damage undergone by persons, animals or goods, following errors in installation, settings, maintenance and inappropriate use.

This equipment is intended for integrating a CE certified device. As such, it could only be considered as a component and cannot be used in its present state.

YAHTEC is responsible for the conformity of the device to the rules, directives and standards of construction in force at the time of marketing. Knowledge and respect for the legal provisions as well as the standards inherent in the design, implantation, installation, commissioning and maintenance are exclusively the responsibility of the manufacturer.

3. Reception – Storage

The condensing gas thermal module is delivered on a wooden pallet, protected by cardboard packing and plastic film. It is essential to check the condition of the equipment delivered (even if the packaging is intact) and its conformity compared to the order.

In case of damage or missing parts, you must report the observations on the transport company's receipt form in the most precise way possible, "subject to unpacking" has no legal value, and then you must confirm those reservations by registered letter within 48h to the transport company. We remind you that it is the responsibility of the buyer to check the delivered merchandise, no recourse will be possible if this procedure is not respected.

Store the equipment in a clean and dry room, away from shocks, vibration, divergences in temperature and in an ambient environment with a rate of hygrometry lower than 90%.

4. Guarantee

Your device benefits from a contractual guarantee against any manufacturing defect, the duration of that guarantee is of 18 months from the date of production.

Our liability as a manufacturer cannot be committed if there is an incorrect use or integration, or if there is a defect or an insufficiency in the maintenance, or an incorrect installation.

Our guarantee is limited to the exchange or repair of only those parts which are recognised as being defective by our technical departments, excluding the cost of labour, travel and transport.

Our guarantee does not cover the replacement or repair of parts as a result of, in particular, normal wear, incorrect use, service visits by unqualified third parties, a defect in or insufficiency of maintenance or surveillance, non-conforming electrical supply and the use of a fuel which is inappropriate or of bad quality.

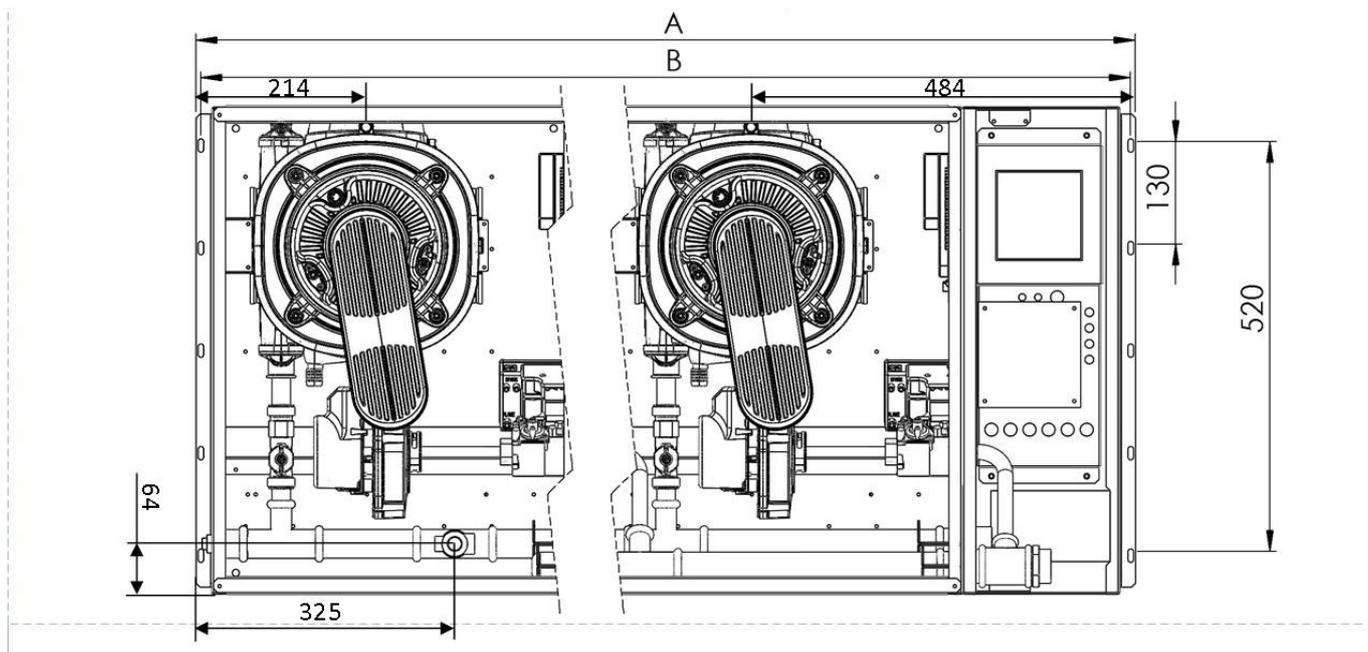
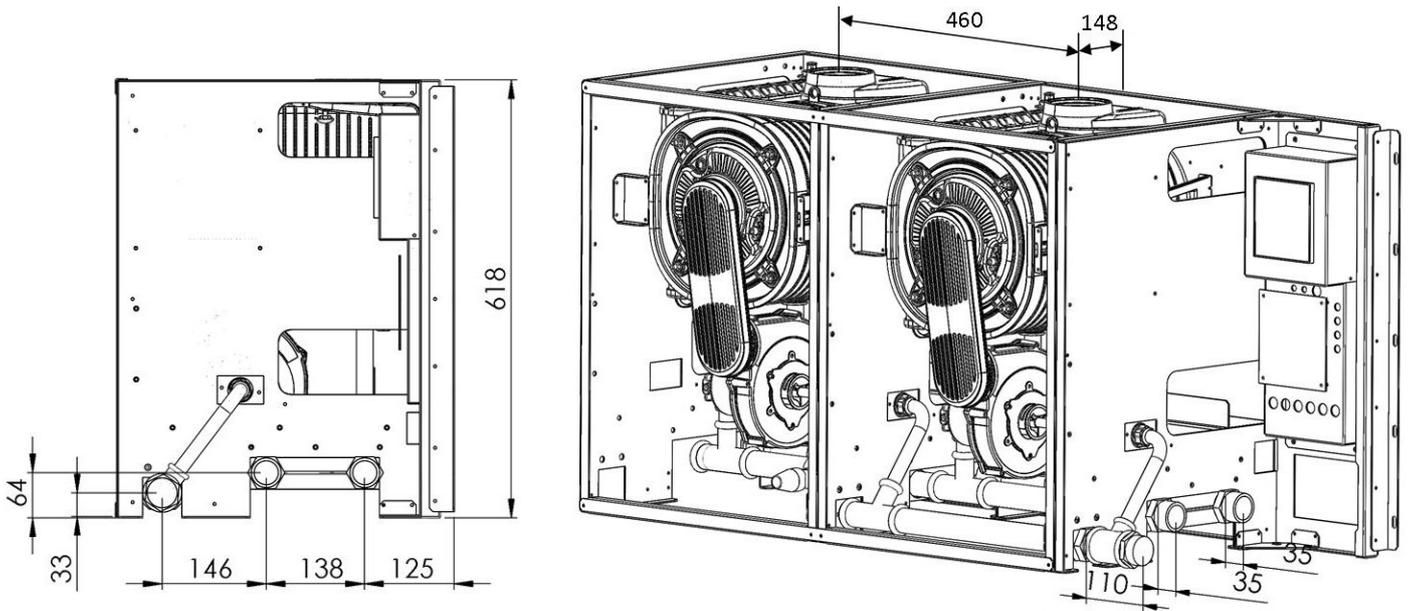
Sub-assemblies, such as motors, pumps, electric valves, etc..., are only guaranteed if they have never been removed.

The rights established under the European directive 99/44/CEE, transferred by the legislative decree No. 24 of 2 February 2002 published on the Official Journal No. 57 of 8 March 2002, remain valid.

TECHNICAL SPECIFICATIONS :

TYPES		MTG70	MTG140	MTG210	MTG280
Heat input HHV	kW	70	140	210	280
Heat input LCV	kW	63	126	189	252
Nominal power output Max	kW	61.7	123.4	185.1	246.8
Nominal power output Mini	kW	15.5	15.5	15.5	15.5
Nominal power output Mini (HE)	kW	4	4	4	4
Efficiency LHV	%	98 / 108	98 / 108	98 / 108	98 / 108
Basic turndown ratio		1/4	1/8	1/12	1/16
High turndown ration (HE option)		1/15	1/30	1/45	1/60
NOx's class	Val.	5			
Gas flow at 15°C	PRESSURE				
Natural G20	20 mbar	6.68 m3/h	13.36 m3/h	20.00 m3/h	26.68 m3/h
Groningen G25	25 mbar	7.37 m3/h	14.74 m3/h	22.11 m3/h	29.5 m3/h
Propane G31	37 mbar	4.91 kg/h	9.82 kg/h	14.75 kg/h	19.7 kg/h
Gas connection Ø		3/4" M	1"	1"	1"
Water connection Ø		1"1/4 M	1"1/4 M	1" 1/4 M	1" 1/4 M
Supply voltage		230V ~ 50Hz			
Electrical power	W	215	415	615	815
Amperage	A	0.93	1.81	2.68	3.55
Model of the pump suggested		RS 15/7	STRATOS 25/1-8	STRATOS 25/1-12	STRATOS 25/1-12
Electrical power of the circulator	W	92	130	310	310
Amperage of the circulator	A	0.4	0.85	0.85	1.37
Heat transfer medium volume	Litres	3.7	7.4	11	15
Heat transfer medium flow capacity	L/h	1 800	3 600	5 400	7 200
Pressure loss at 2 m3/h	bar	0.22	0.24	0.26	0.30
Ambient temperature of the boiler	°C	0°C /+40°C		0%-90% RH	
Condensation maximum	l/h	5.2	10.4	15.6	20.8
Empty weight	Kg	42	73	104	135
Exhaust diameter	mm	60 (optional) or 80			

DIMENSIONS :



Model	MTG 70	MTG 140	MTG 210	MTG 280
A (mm)	698	1158	1618	2078
B (mm)	686	1146	1606	2066

HYDRAULIC CONNECTION :

1. Inlet and outlet coil upper the connection pipe of the module:

It is really important to carry out an installation that allows a perfect and automatic purge of the air circuit. The installation must be autonomous and without external water supply.

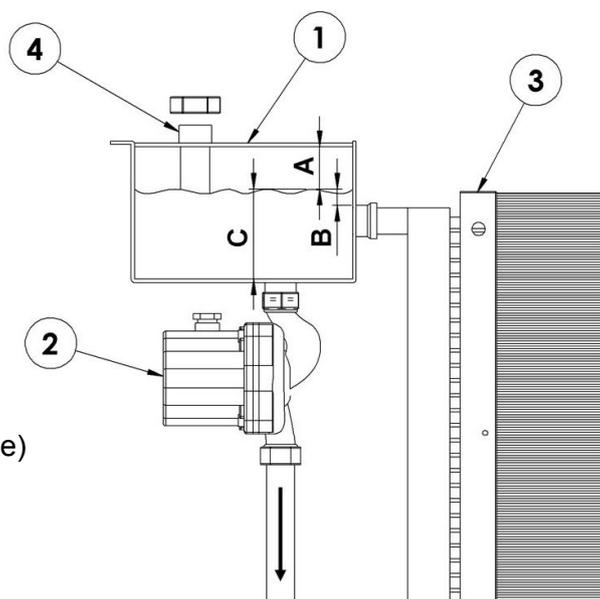
The block diagram here below includes the principle of a car cooling circuit.

A closed expansion tank which is watertight and without membrane is installed at the highest point of the installation. This solution helps to lock the air and to ensure that there is no air in the pump.

The expansion tank must have a stock of air that allows the expansion of the water. This volume must be from 6 to 10 % of the water's volume of the complete circuit (included the water volume of the expansion tank).

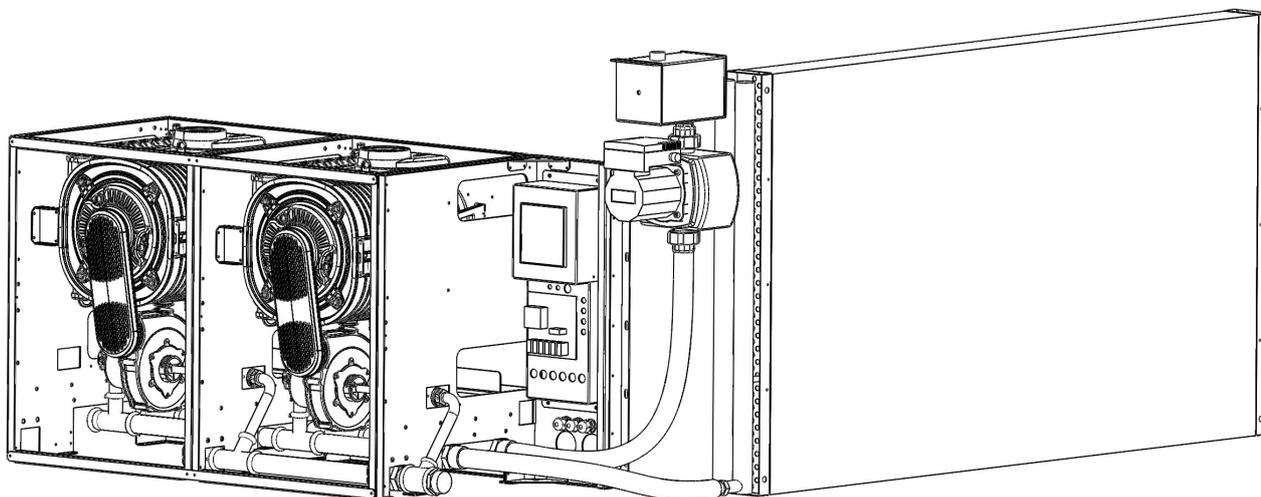
It will be important to check that the circuit pressure is higher to 0.6 Bar from 40 °C and never exceed 1.6 Bar at the maximum temperature 85 °C.

- 1 Expansion tank
- 2 Circulator
- 3 Coil
- 4 Fill dip tube



- A Volume of expansion (6 to 10 % of the system volume)
- B Top of the tube at the minimum level = 20 mm mini.
- C Minimum water depth 100 mm

Installation view:



2. Inlet and outlet coil lower down the connection pipe of the module:

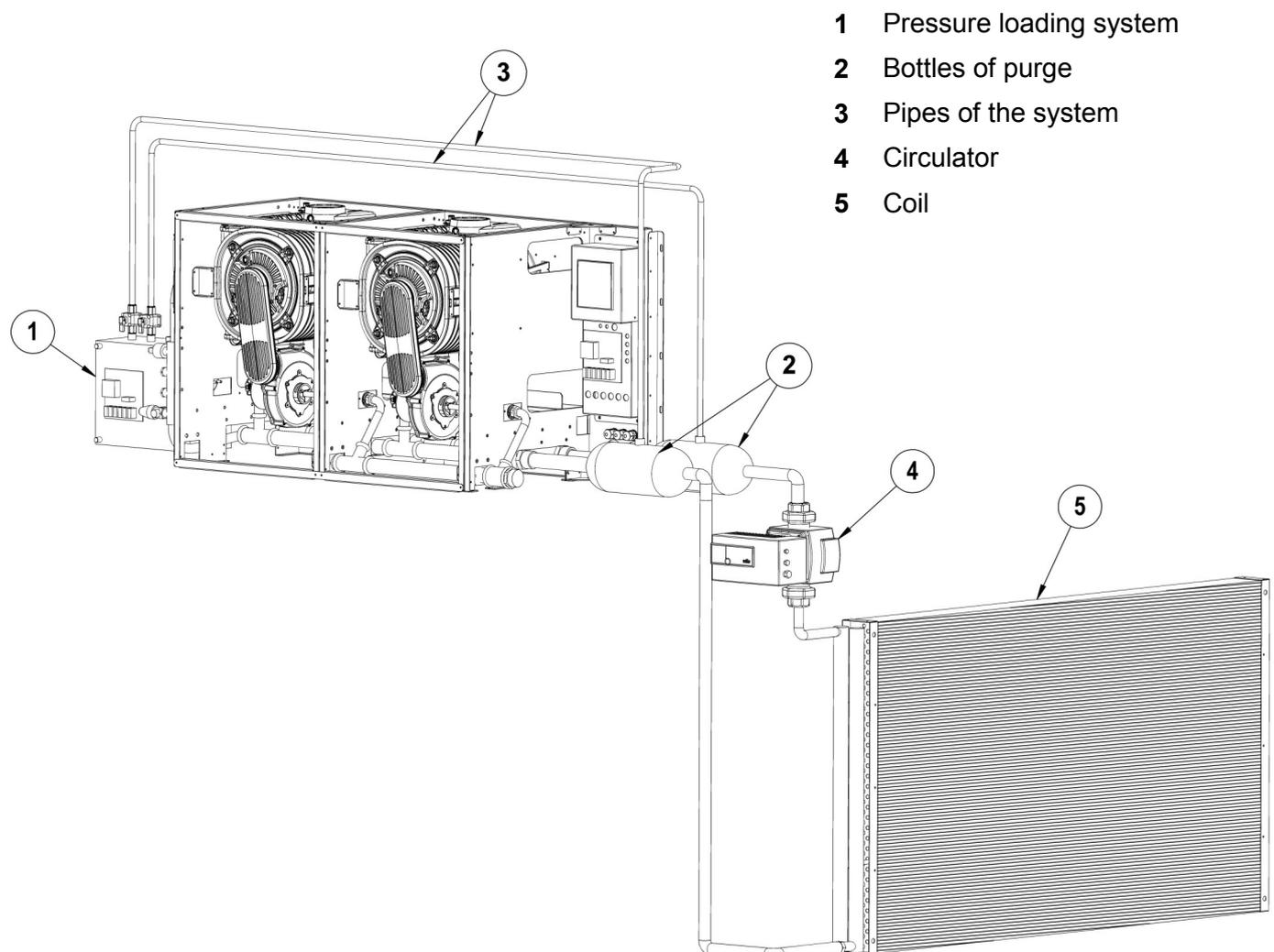
It is really important to carry out an installation that allows a perfect and automatic purge of the air's circuit. The installation must be autonomous and without external water supply. The block diagram here below includes a pressure loading system which in addition helps to lock and exhaust the air of the circuit.

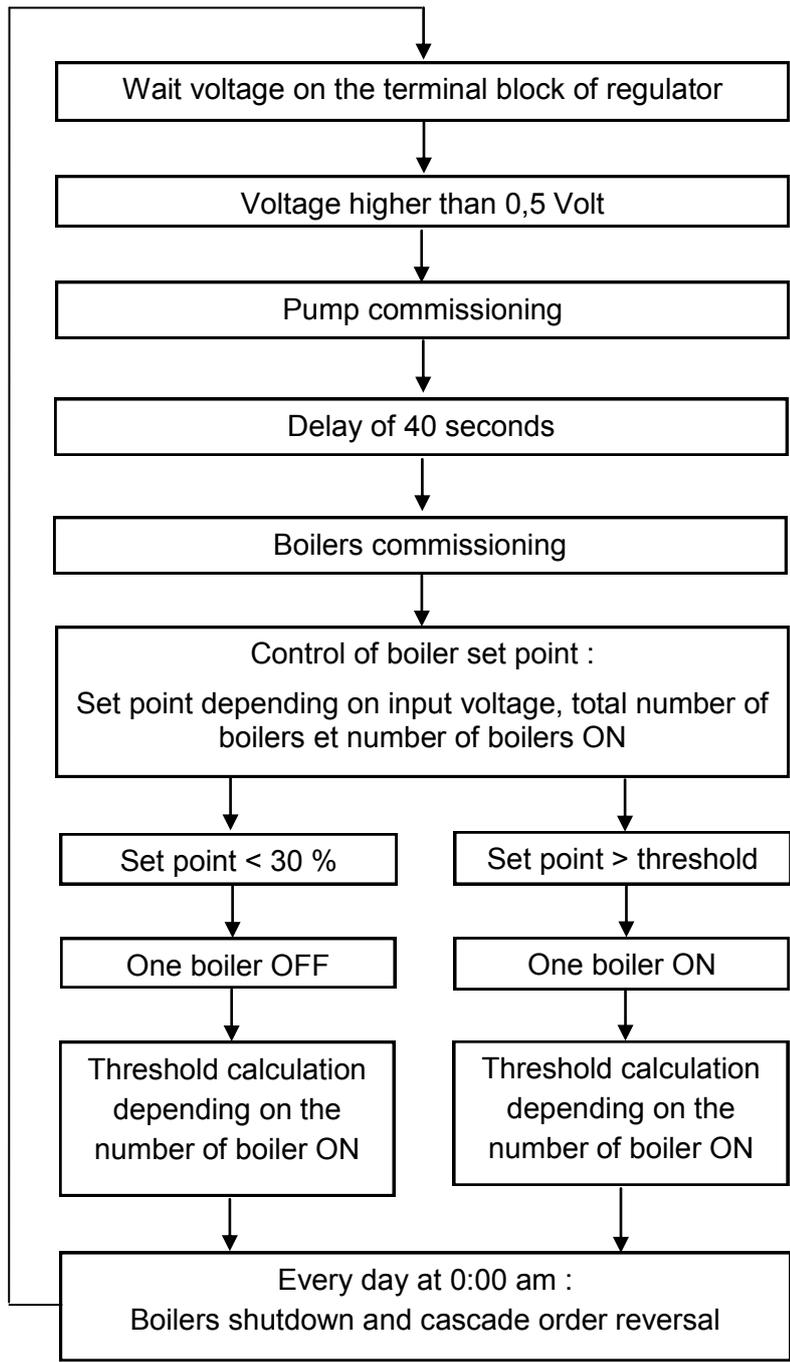
The system is composed of two bottles of purge, a pressure loading system and 6 meters of Rilsan pipe that allows the connection between the bottles of purge and the pressure loading system.

This system allows to permanently adjust the pressure of the system and the automatic exhaust of air. Depending on the configuration of the installation, a third bottle can be added to lock the air in the higher point of the heat transfer circuit.

The pressure loading system is adapted for installations which have a maximum volume of water of 100 liters which means 10 liters of dilatation. Moreover, it has a heat transfer medium's storage of 8 liters in case of a leak in the circuit.

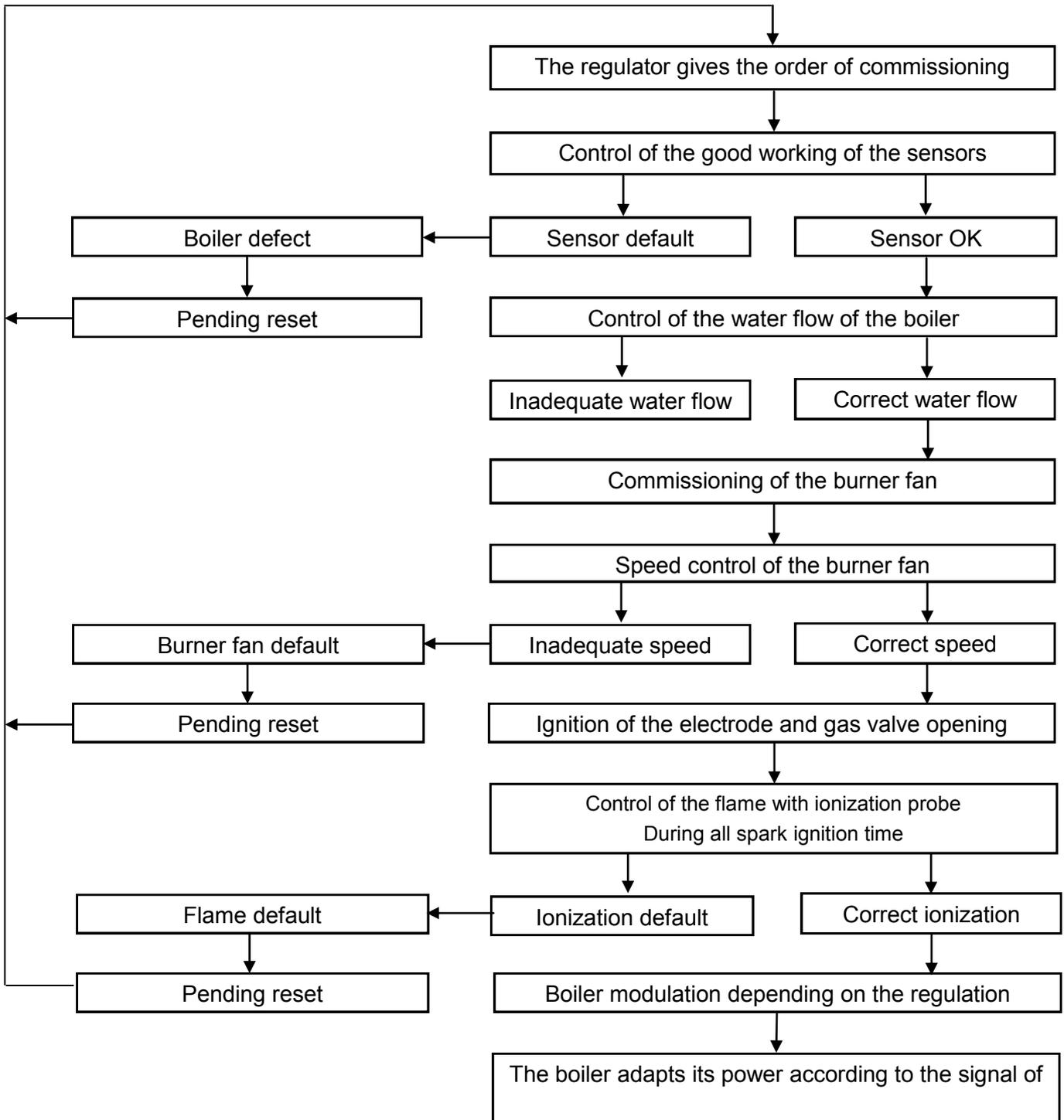
The pressure of the circuit is permanently stabilized between 1 Bar and 1.8 bars.





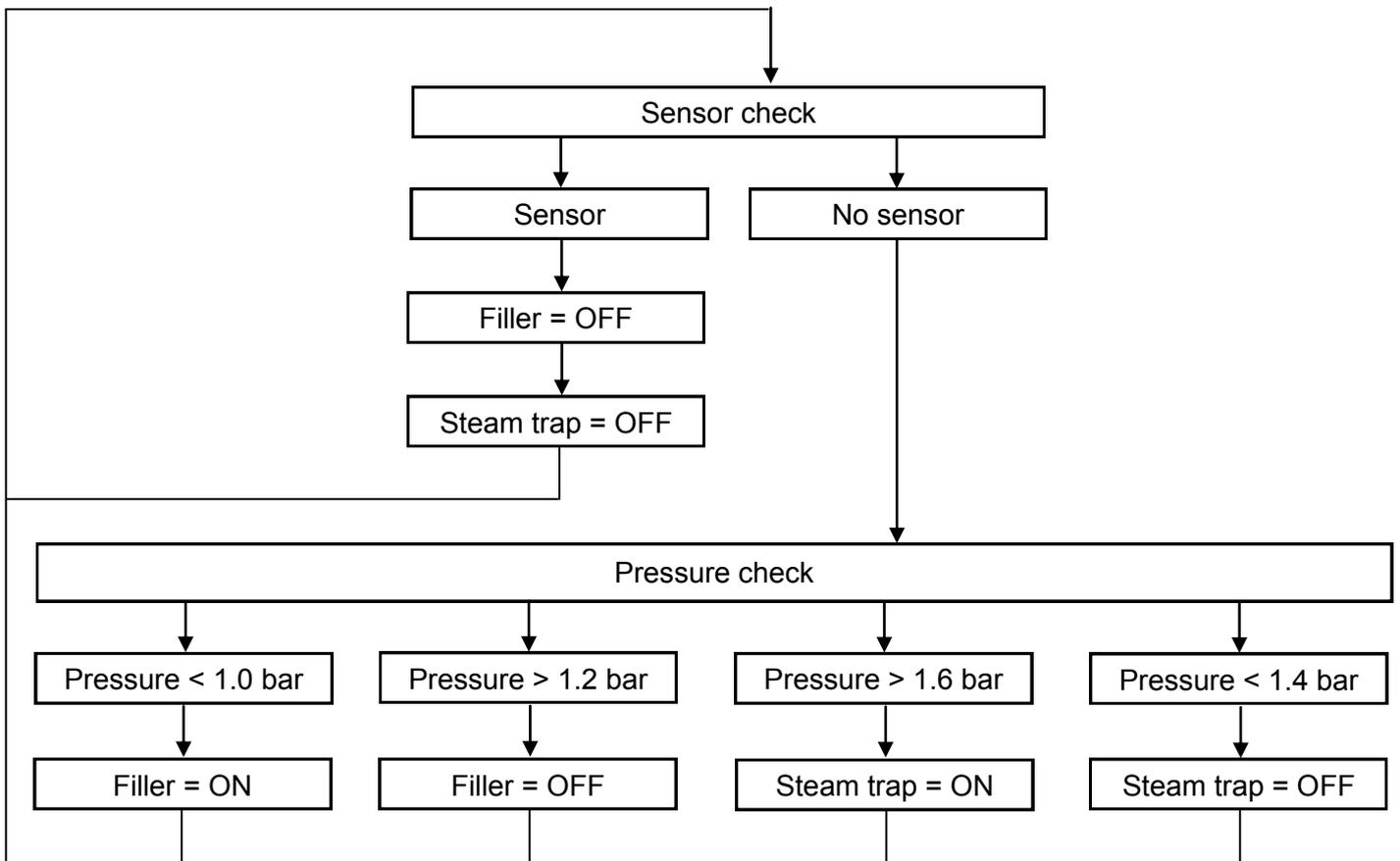
OPERATING AND SAFETY CYCLE OF THE BOILER

REGULATOR V2.1
Control Box UTC0410V2

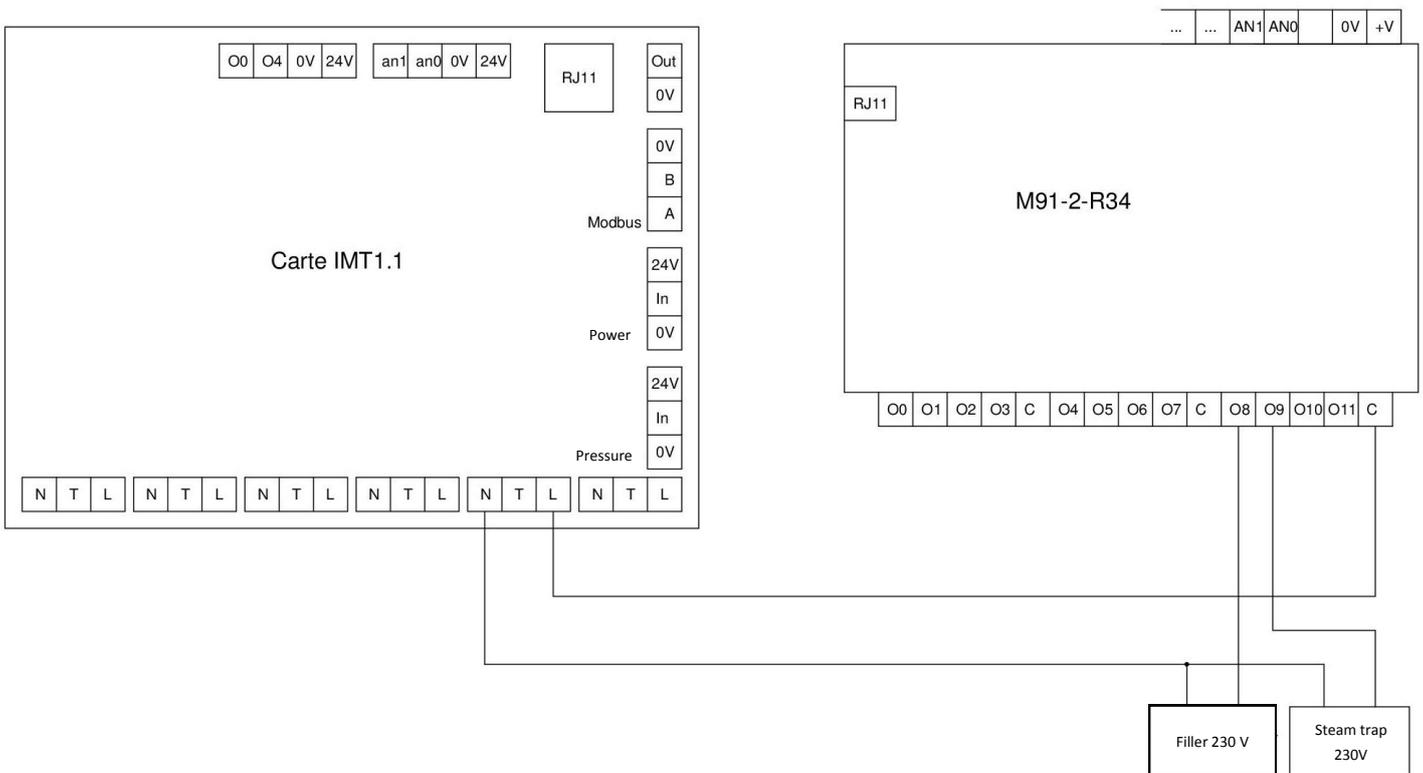


At any time, the AHU card of each boiler controls the values of the sensors. In case of failure, it stops the functioning of the boiler and switches to fault mode. To reset a default it can be made by pressing the reset button of the AHU card of the concerned boiler. The presence of a defect and its origin are displayed on the regulator. In case of flame defect, the burner makes 3 attempts to restart.

OPERATING CYCLE OF PRESSURE MAINTENANCE MODULE



Connection :



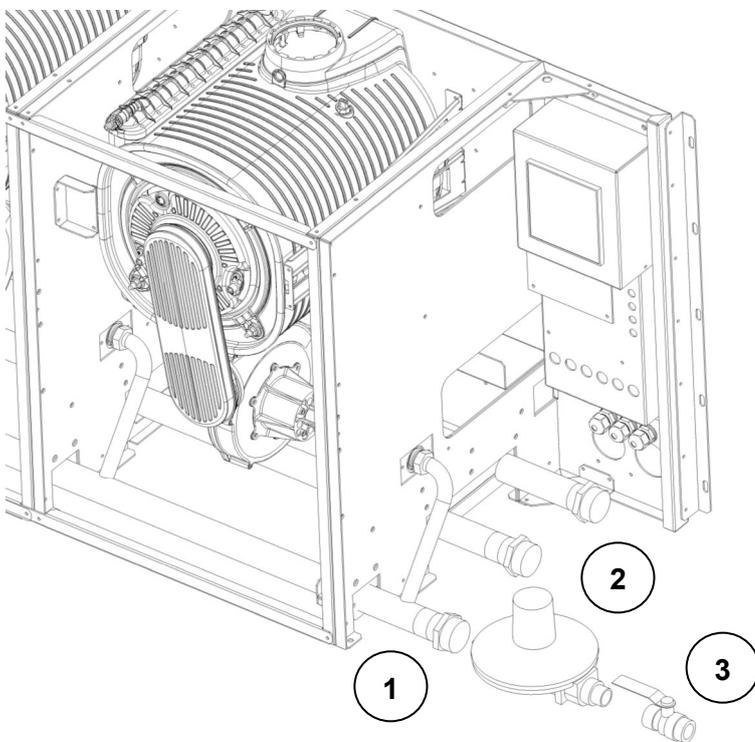
GAS CONNECTION

CAUTION : Check that the unit received is in conformity with the type of gas distributed. For this purpose, you must refer to the indications shown on the manufacturer's type plate. Otherwise, you must convert the thermal module to the correct gas and supply pressure, see section « Burner setting ».

The gas supply must be appropriate to module power and must be equipped with all the security and inspection devices required by current standards, especially a shut-off valve.

A precise study must be carried out on the diameters of the piping depending on the gas type, the gas flow and the length of the piping. It is necessary to ensure that pressure drops in the piping do not exceed 5% of the supply pressure.

The gas heating module MTG is foreseen for a low gas pressure supply, lower than 50 mbar. If your supply pressure is higher, foresee a flow regulator adapted to the total power installed. In case of an installation of multiple units in series, foresee a manifold pressure with a gas pressure regulator, see diagram .



- 1 Gas inlet
- 2 Gas pressure regulator
- 3 Shut-off valve

EVACUATION OF THE PRODUCTS OF COMBUSTION

The evacuation systems of the products of combustion illustrated in this manual are those usually used on the market. It is your responsibility to ensure that the selected smoke exhaust system meets local installation standards.

Whatever the type of connection, it is important to treat the combustion air intake to do not cool down the boiler box below 0°C. The goal is to avoid the risk of condensate gels. This precautions have to been realized by the integrator.

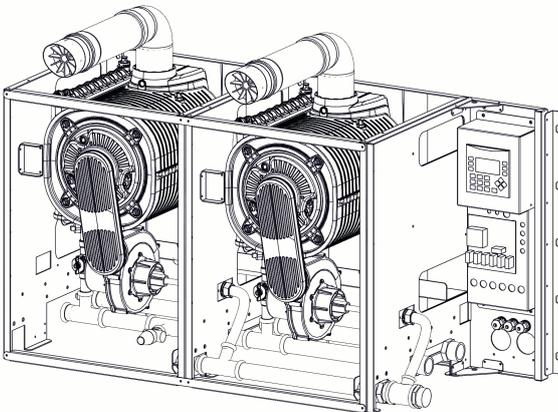
The choice of the evacuation type for the products of combustion will depend on the integration of the thermal module.

For installation in area where temperatures can fall down below -15°C for long periods, the use of concentric flue pipes C13 and C33 is forbidden. This avoids to freeze the extremity of the terminal. The maximum temperature of the fumes is 95°C . It is necessary to use corrosion-resistant material because of the condensates and the temperatures.

All flue pipe accessories which are used for the installation must be approved. Only used intake and discharge pipes referenced by YAHTEC. The use of non-approved materials lead to a cancellation of the manufacturer guarantee.

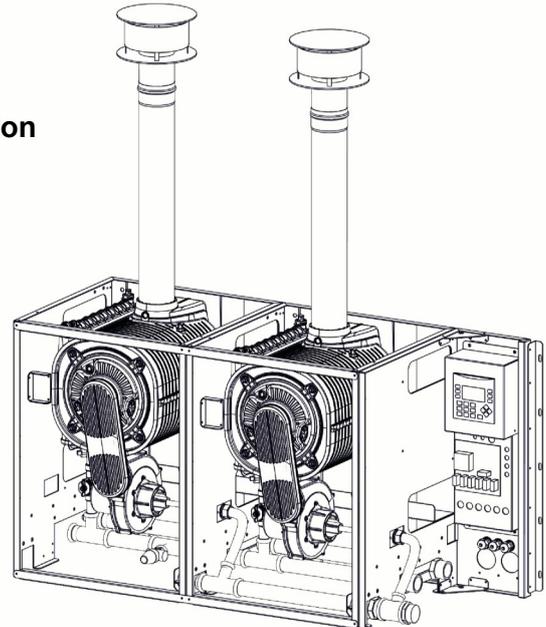
For B23H and B23V versions (only evacuation of combustion's product) it will be necessary to foresee one or more combustion air inlets to allow a sufficient air coming of $100\text{ m}^3/\text{h}$ per boiler, without putting the module in depression.

B23H Version



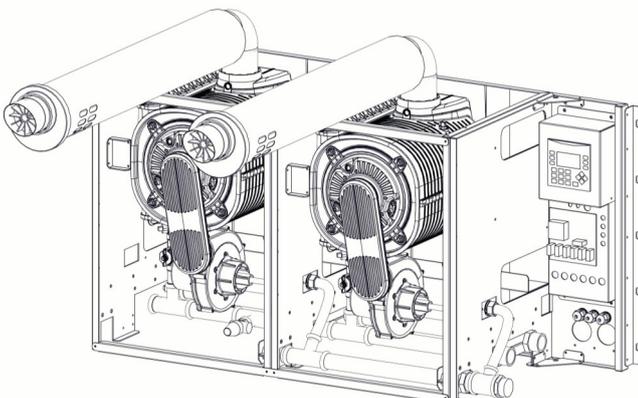
Single wall horizontal terminal (no fresh air intake) Foresee a return air grille.

B23V Version



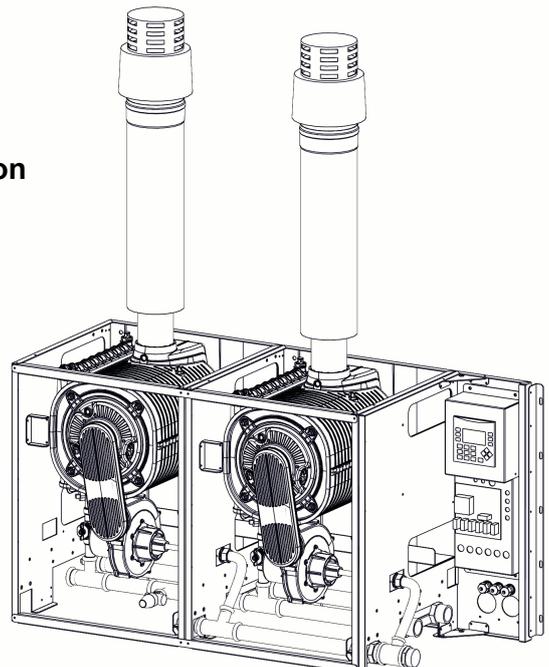
Single vertical terminal (no fresh air intake) Foresee a return air grille.

C13 Version



Concentric wall horizontal terminal with fresh air intake

C33 Version



Concentric vertical terminal with fresh air intake

SELECTION AND CONNECTION OF THE CIRCULATOR

The circulator must be selected according to the thermal module and the performances of the coil:

Model	Water flow	Delta P in Bar MTG	Delta P in Bar Coil + Pipes	Operating point of the
MTG 70	1 800 l/h	0.22 Bar	+	= X.X Bar to 1 800 l/h
MTG 140	3 600 l/h	0.24 Bar	+	= X.X Bar to 3 600 l/h
MTG 210	5 400 l/h	0.26 Bar	+	= X.X Bar to 5 400 l/h
MTG 280	7 200 l/h	0.30 Bar	+	= X.X Bar to 7 200 l/h

- The pump must be designed to work with temperatures from -15°C to 90°C and with pressure from 0,6 bars at 40°C and from 1 to 2 bars at 90°C .

- The circulator will be connected to the card located under the regulator (see page 11).

- Caution: outlet 230 V AC 3 Amp. maximum. In the case of a three phase circulator use or a too high power, foresee a power changeover switch.

Be careful that the water flow within the boiler will never be lower than 10% of the nominal water flow at a heat transfer medium temperature of 20°C .

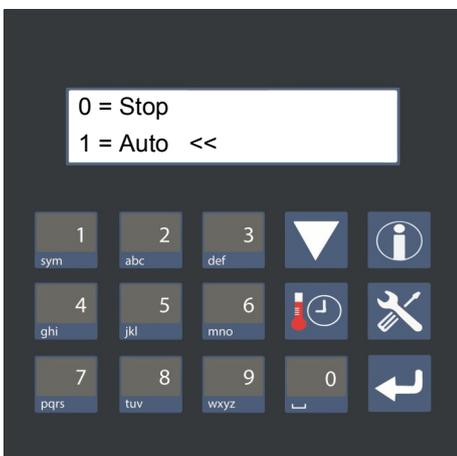
SELECTION AND DOSAGE OF THE HEAT TRANSFER MEDIUM

It is recommended to use a heat transfer medium that avoids the risk of freezing. It must be compatible with the regulatory requirements of the country. Yahtec recommends the **ethylene glycol**. This protection is necessary during a disconnection of power on the air handling unit and when temperatures are very cold.

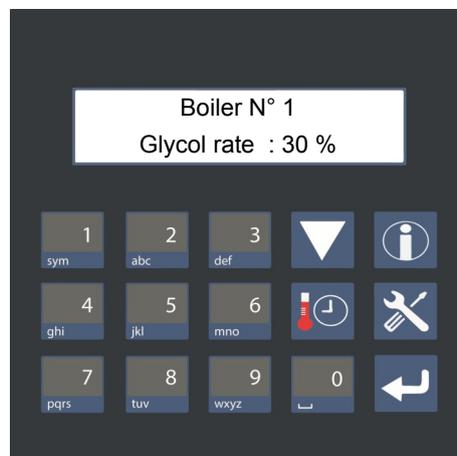
	Ethylene glycol	Water	Protection
Basic protection	30 %	70 %	-15°C
Protection for very cold temperatures (max)	50 %	50 %	-30°C

CALIBRATION OF THE GLYCOL PERCENTAGE

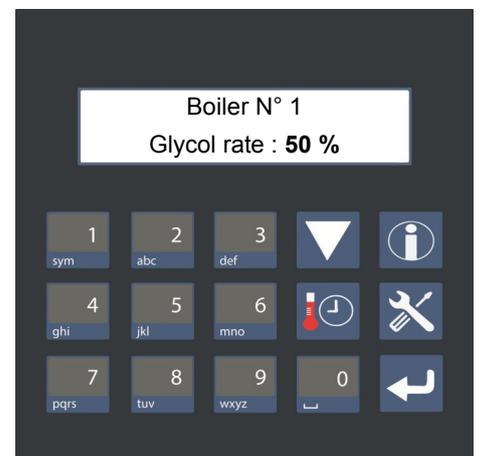
Caution: the concentration of ethylene glycol must be referenced in the regulator. This allows the calibration of the flow meters and therefore, the power output of the module.



Press the key Then press several times on until the line "Glycol rate" and press 5 sec. on the key



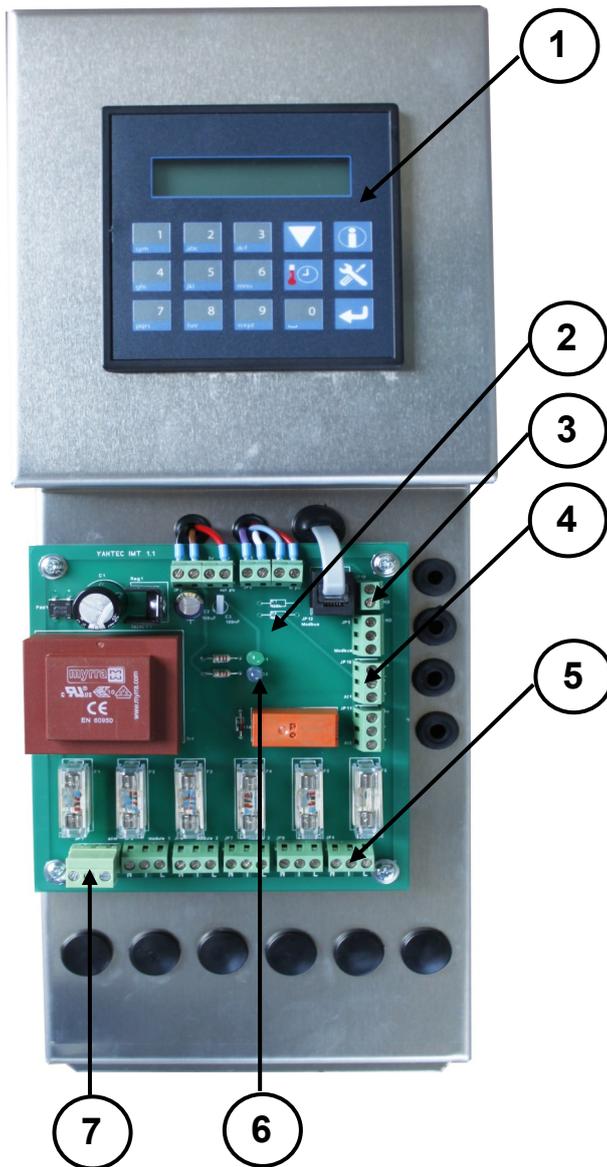
Press the key to select the right percentage of glycol.



Once the percentage of glycol selected, validate with the key

ELECTRICAL CONNECTION OF THE MODULE

All the connections of the module must be realized following the directives of the country of destination.



- 1 Regulator
- 2 Interface card IMT1
- 3 Default output of the module (24 VDC)
- 4 Input 0 -10 Volts (power controller)
- 5 Circulator (max. 3 A 230 V AC)
- 6 Relay LED of the circulator (blue)
- 7 Supply 230V AC

Electrical connection :

- 1) Connect the general power supply **(6)** in single phase 230V. Foresee a sufficient section of the cable for maximum of 6 Amp.
- 2) Connect the circulator on the terminal block **(5)**. Caution: the consumption of the circulator do not exceed 3 Amp. In the case of a higher power or a three phase version, foresee a power contactor.
- 3) Connect the terminal block **(4)** to your power controller 0 - 10 Volts on IN and the GND of your regulator. Be careful because the reversal between the GND and the 10 V lead to a irrecoverable dysfunction.
- 4) Connect the module default of the terminal block **(3)** to your application (Caution: output 24 VDC)

OPERATING PRINCIPLE OF THE REGULATOR

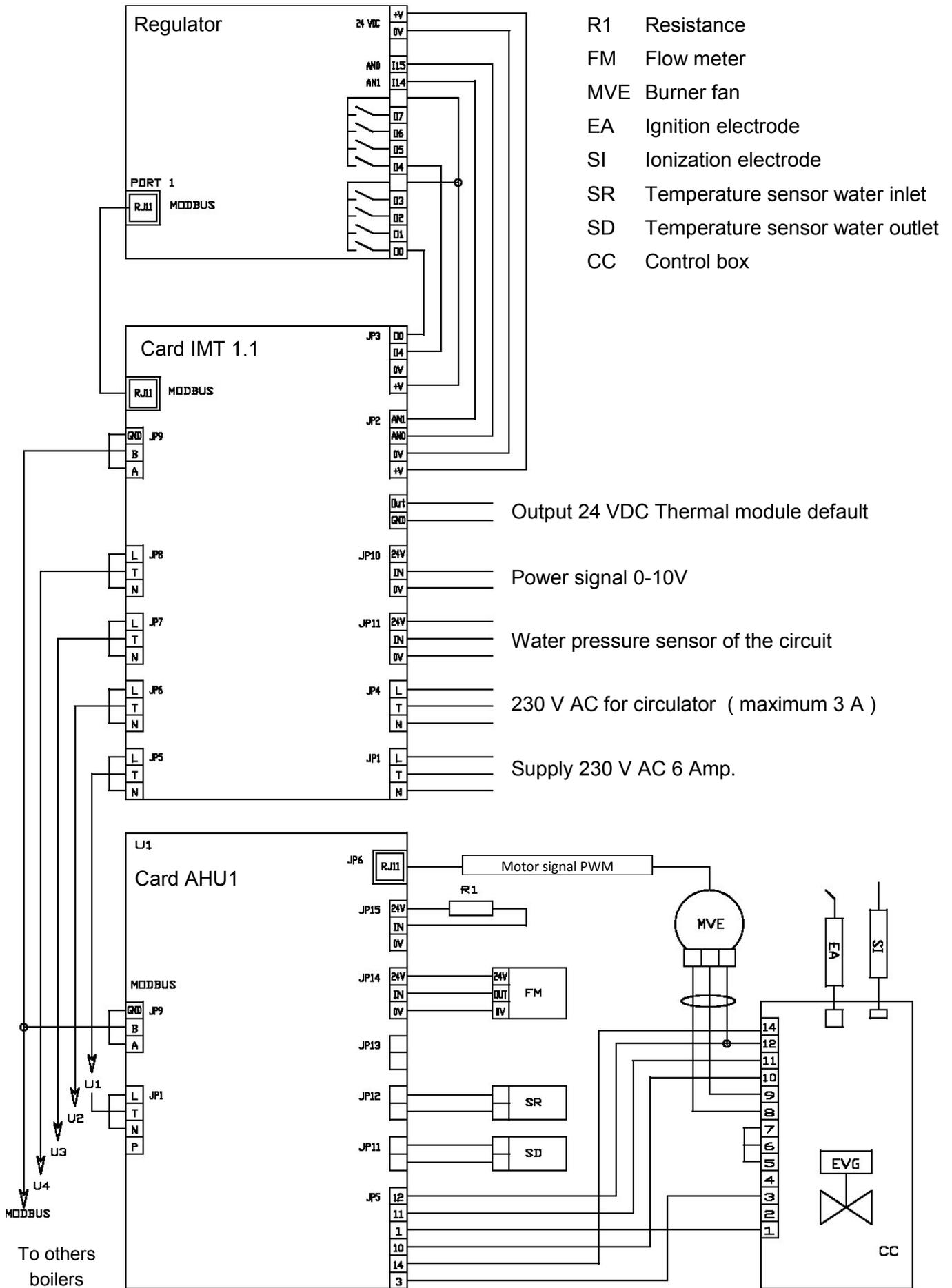
The regulator is the communication interface between the controller of the air handling unit and the boilers. It communicates permanently with each boiler in Modbus RTC. It manages all the data like: the water flow within each boiler, its inlet and outlet temperatures, the burner speed and state, and the water pressure of the circuit.

The other features of the regulator is that according to the 0-10 Volt voltage applied, it selects the number of boilers to put into service and adapts their power. It manages automatically the rotation of the boilers cascade to homogenize their operation time. This occurs each 24 hours.

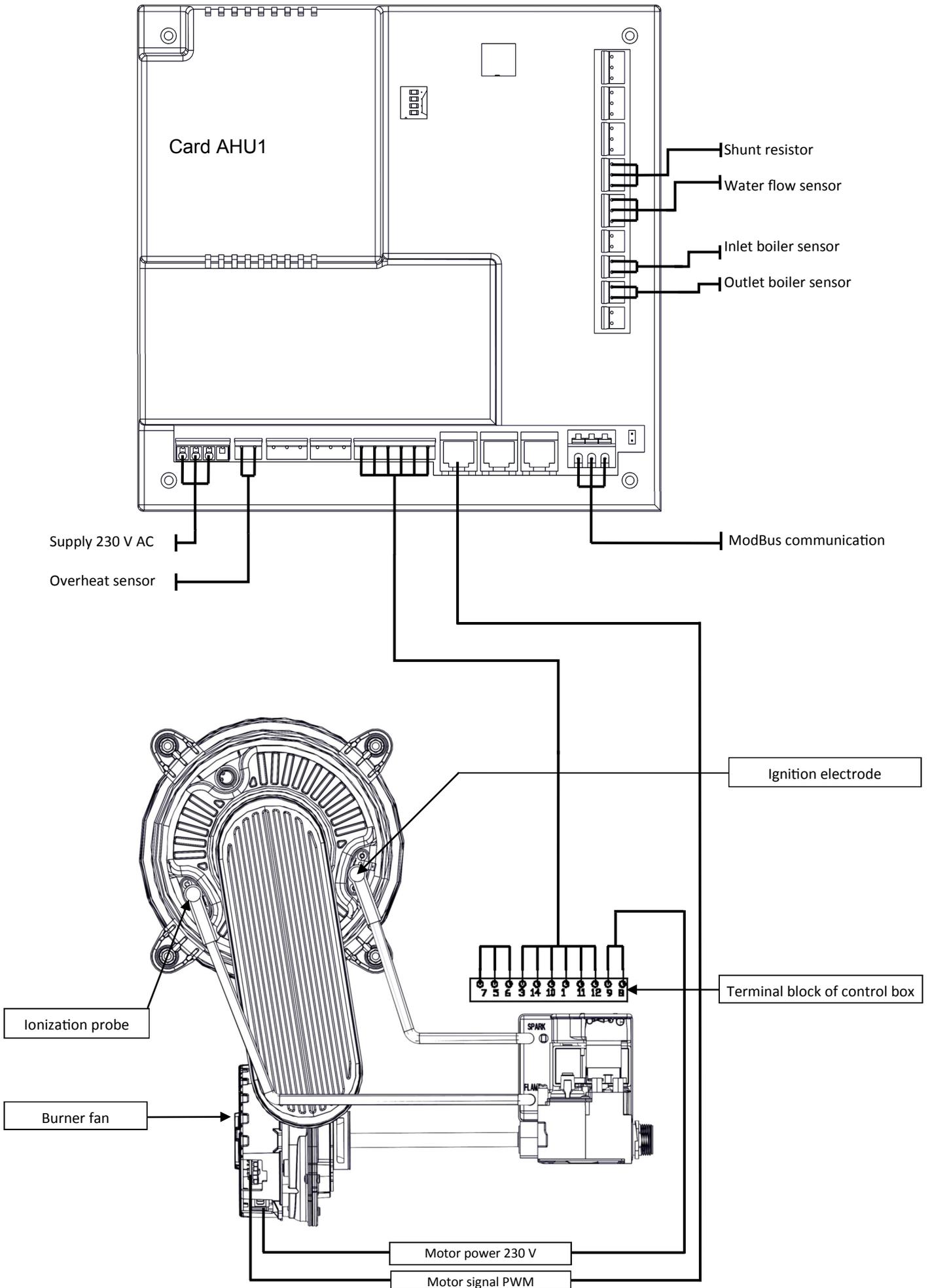
On request, the regulator can manage alone the power delivered according to the supply air temperature set point (Contact Yahtec for this feature).

The regulator is an indispensable tool for the maintenance, because it allows to view rapidly the operating state and to make different setting.

COMPLETE ELECTRICAL DIAGRAM



ELECTRICAL DIAGRAM OF THE BOILER



CHECK BEFORE COMMISSIONING

1. Electrical connection

Check the voltage supply, it must be between 210 V and 230 V AC. Be careful to respect the phase-neutral polarity. In the case of impedance earthed neutral, foresee a non-polarized control box. Caution: the use of this box reduces the lecture of the ionization signal and do not allow to get an optimal turndown ratio (Contact the manufacturer for more information).

2. Gas circuit

Check the tightness of the gas circuit and ensure that the type of gas and the pressure supply match with the unit (Maximum pressure of 50 mbar, see the pressure/water flow board). Check that the gas valve is well, purge the gas pipe. Open the tap located upstream the unit.

3. Condensate drain connection

Caution: The condensates made by the thermal module are acids. Before the evacuation, it could be necessary to treat them in order to neutralize them. Always refer to national regulations. The evacuation must be realized with resistant materials against acid water with a PH of 3.

Never use copper or zinced iron tubes.

- For the system for draining off water of condensation, use PVC pipe with a diameter at least equal to the one of the unit. Ensure that the pipes is always installed lower than the higher point of the treatment box.
- Check the tightness of evacuation pipes.

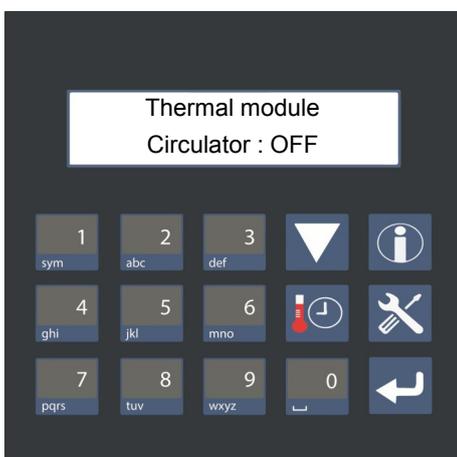
Some regulations impose the treatment of the condensates; in that case, foresee a kit for the neutralization of condensation's water. Contact our technical service for more information.

4. Heat transport system

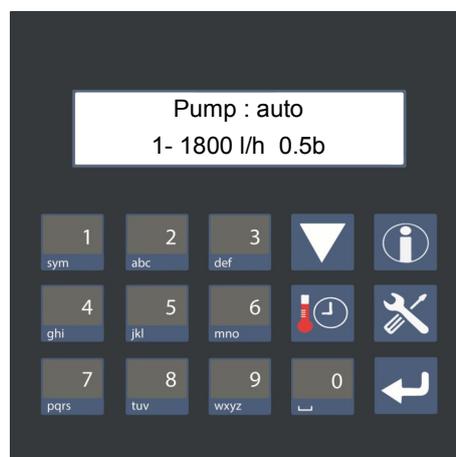
Fill the circuit while controlling the ethylene glycol percentage. Once the circuit is filled, operate the circulator many times to purge it. For a manual commissioning of the circulator, follow the instructions here below:

Caution: see further clarification to use the pressure loading system.

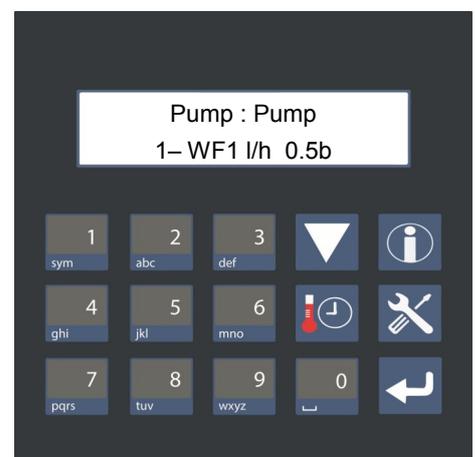
Pump commissioning in manual mode



Press the key  then press several times on  until the line « Circulator »

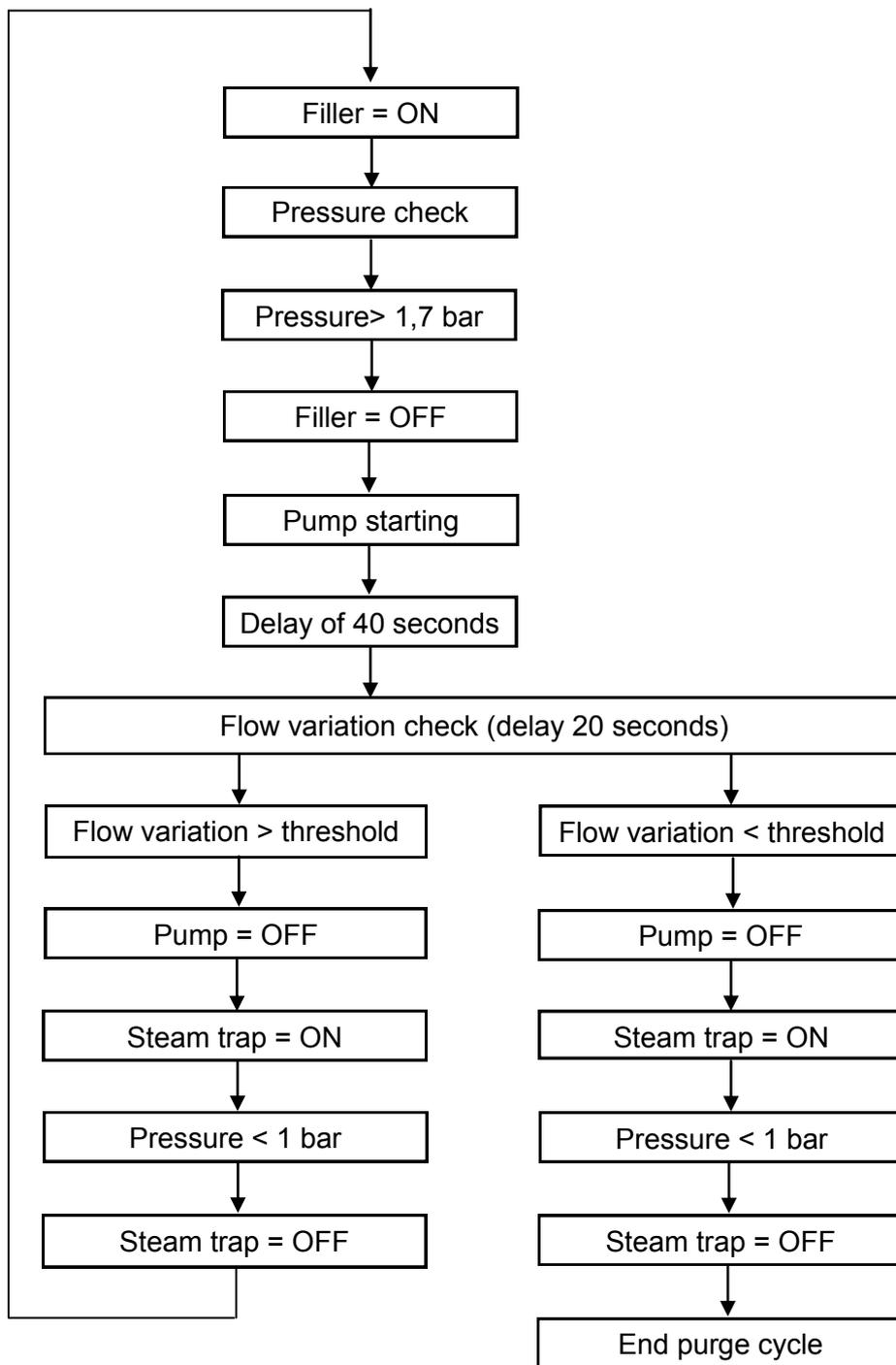


Press during 5 sec. on the key  to select the operating mode of the circulator.



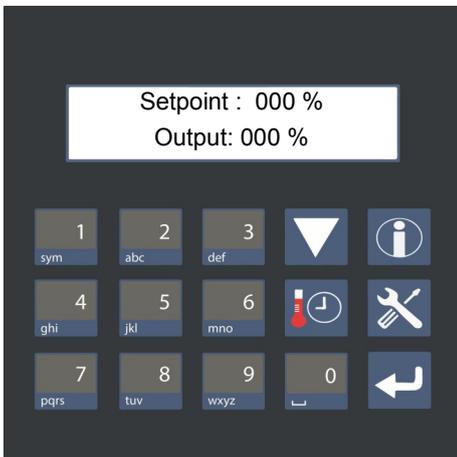
Press the key  to modify the mode [auto or manual (pump) or steam trap (automatic procedure)] then validate  on the manual mode, which switches into automatic mode after 5minutes.

PURGE CYCLE PROCEDURE



5. Water flow check within the boiler

Check the water flow of the boilers. More the value raises more the heat transfer medium heats. The water flow should not be lower than 1700 l/h at a boiler flow temperature of 30°C. A lack of water flow can be caused by a bad dimensioning of the circulator, a bad purge or a too resistant heat transfer system. To check the water flow on the regulator, follow the instructions here below:



Press the key 



Press several times on  until the line « WF » (water flow) to display the water flow of the boiler.



Press on the numerical keypad the No. of the boiler to display.

6. Connection of the smoke exhaust system

Check the good connection of the flue pipes.

COMMISSIONING

- Put into service the air handling unit in order to cool down the coil.
- On the terminal block of the regulator, apply a tension proportional to the needed power. Automatically, the regulator will bring into service successively each boiler and will adapt their power. It is possible to adjust the power in manual mode directly on the regulator. This feature is temporized and after 10 minutes, the system follow the tension applied on the terminals of the regulator.

At the first commissioning, it will be recommended to check the combustion of the boilers (see page 20) because the combustion could vary according to the altitude and quality of the gas distributed.

REGULATOR FEATURES

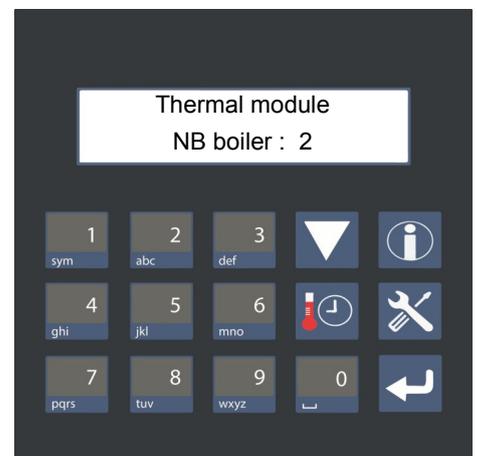
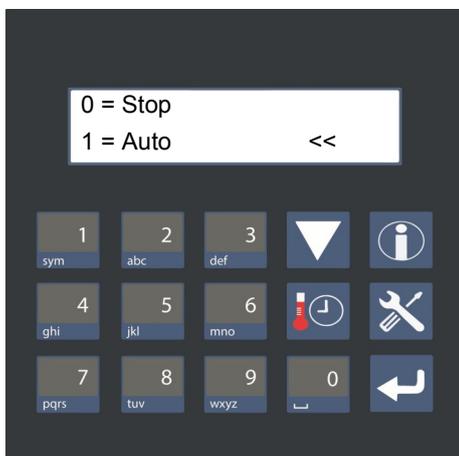
The regulator shows the different information sent by each boiler. In order to see it, press the key  and scroll with 

To display the information of a boiler, enter its number on the numerical keypad.

Some keys allow to modify the programming. To achieve this, press 5 seconds on the key  to go to the setting menu. Caution: all modification should be made by a qualified person. To go back to the main menu, press on 

 + 	Feature	Line N°1	Line N°2	Value 1	Value 2	Value 3	Value 4	Feature
0	Power setpoint	Set point	Returned	xxx kW				 5 sec
1	Boiler state	Boiler No. x	State	ON	OFF	Default	Stop	 + 
2	Power output	Thermal module	RP	00 kW				
3	Pump	Thermal module	Circulator					 5 sec
4	Circuit pressure	Boiler No. x	Pressure	0.8 Bars	Default			
5	Burner	Boiler No. x	Burner	ON	OFF	Default		
6	Burner speed	Boiler No. x	BS	6 500 rpm	Default			
7	Water flow	Boiler No. x	WF	2 000 l/h	Default			
8	Flow T°C	Boiler No. x	T°C out	80 °C	Overheat	Default		
9	Return T°C	Boiler No. x	T°C in	60 °C		Default		
10	Communication	Boiler No. x	DT transmit	OK	Default			 5 sec
11	Operating time	Boiler No. x	Time	X hour				
12	Cascade	Thermal module		1-2-3-4	2-3-4-1	3-4-1-2	4-1-2-3	
13	Burner setting	Boiler No. x	Burner settings					 5 sec
14	Percentage of Glycol	Thermal module	Glycol rate	30 %	40 %	50 %		 5 sec
15	Language	Thermal module	Language	Français	English	Deutsch	Español	 5 sec
16	Boiler card release	Boiler No. x	Bo. Release					
17	Reg. Program release	Thermal module	Reg. Release					 5 sec

1 - Indication of the number of boiler inside the module

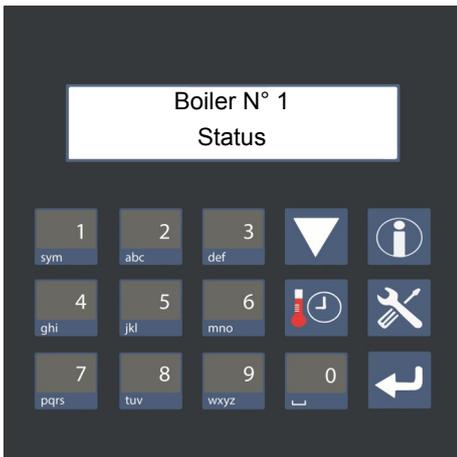


Press the key  then, scroll with  until the line « Reg. version ».

During 5 seconds, press the key 

Indicate the number of the boiler on the numerical keypad and validate with 

2 - Boiler shutdown



Press on **i** then press several times **▼** to scroll until the line « State » and validate with **↩**



Press on the key **▼** and select the boiler feature needed (Stop or automatic operation) and validate with the key **↩** to exit.

3 - Forcing the power



Press on **i** then press several times on **▼** until the line « Set point », then press 5 sec. on the key (the first **⊠** line flashes)

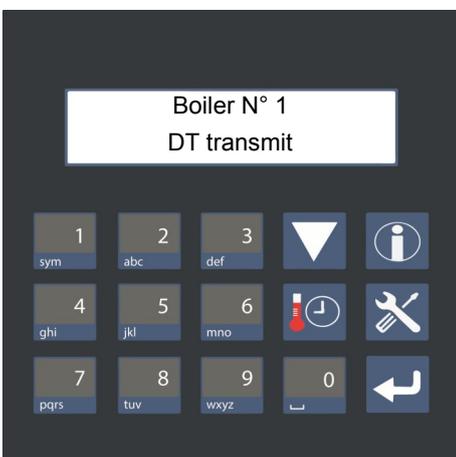


Indicate the required power on the numerical keypad and validate with **↩**. The value will be activated during 5 minutes and will be displayed by the flashing of the first line.



Go back to the line « Set point » Then press on the key **⊠** to go back to the normal power.

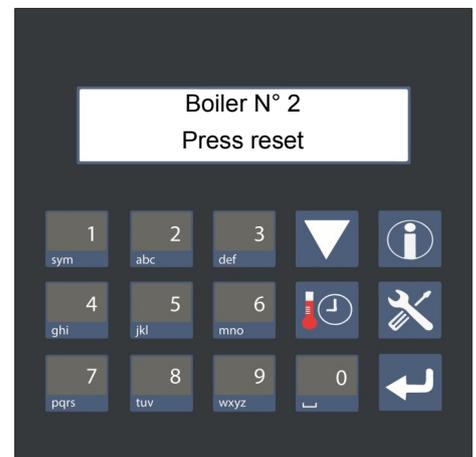
4 - Addressing and programming of the AHU boiler card



Press on **i** then scroll with **▼** to go to the line « DT transmit » And press **⊠** during 5 seconds.



Indicate the number of the boiler to reprogram with the numerical keypad and validate with the key **↩**



Press the reset on the selected boiler and wait for the message « Programming OK » To exit, press the key **↩**

BURNER SETTING

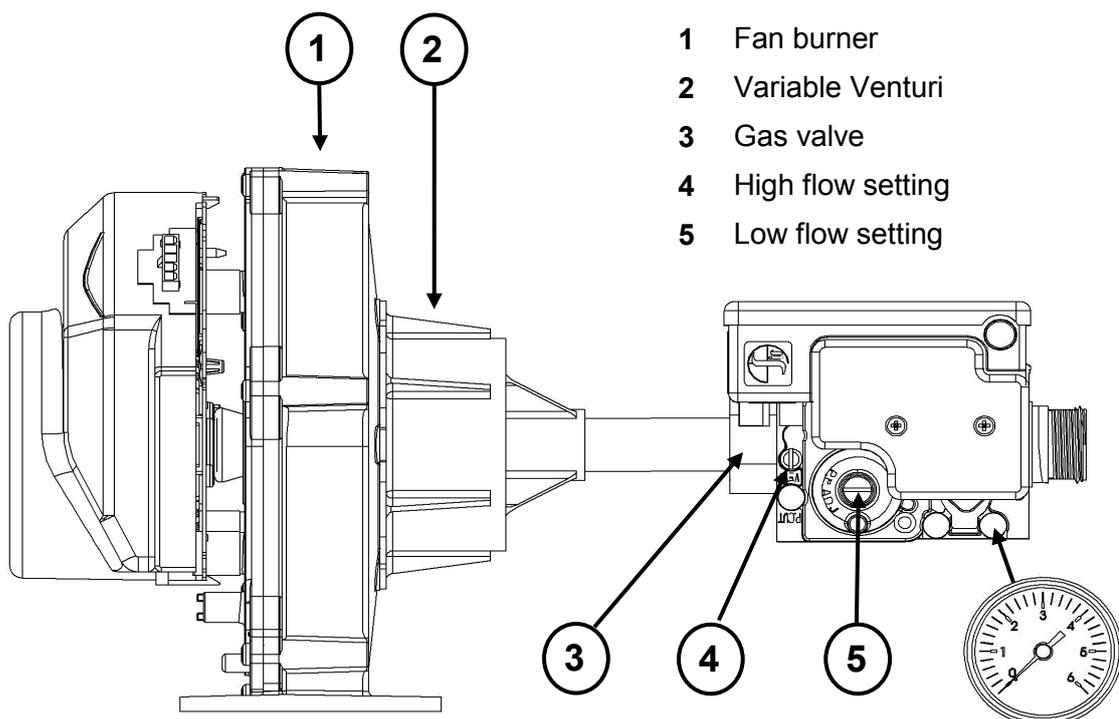
This operation must be carried out by a qualified professional person and equipped with a combustion analyser. Check the tightness of the gas circuit after each intervention.

Necessary tooling :

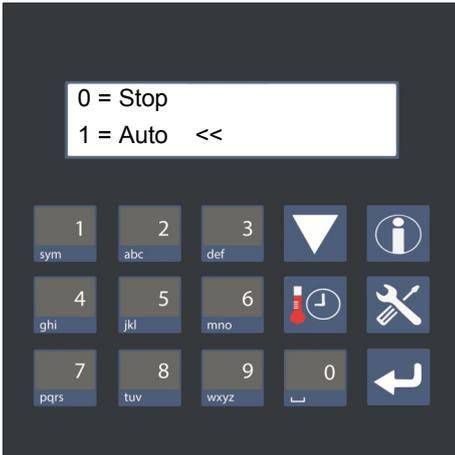
- Hexagonal male wrench of 2.5 (High flow air gas ratio setting « 4 »)
- Hexagonal male wrench of 4 (Low flow air gas ratio setting « 5 »)
- Combustion analyser (CO₂/ CO – Smoke temperature)
- Gas pressure regulator max 50 mbar

Procedure for inspecting and setting of the burner using premix:

- 1) Calibrate your combustion analyser and place the rod in the smoke pipe.
- 2) Check the gas supply pressure before lighting, when stopped and when running (see table).
- 3) Start the unit:
 - Start the boiler in high flow setting (see burner setting function of the regulator)
 - After 1 minute of working, check the value of the oxygen (O₂)
 - Adjust the value using the screw 4 according to the board here below. Turn clockwise to reduce the value of the O₂ and is the other side to raise it.
 - Change to the low flow setting (see burner setting function of the regulator)
 - Adjust the value with the screw 5 according to the board here below. Turn clockwise to raise the value of the O₂ and is the other side to reduce it.
 - Once the low flow setting has been done, exit the setting mode of the regulator



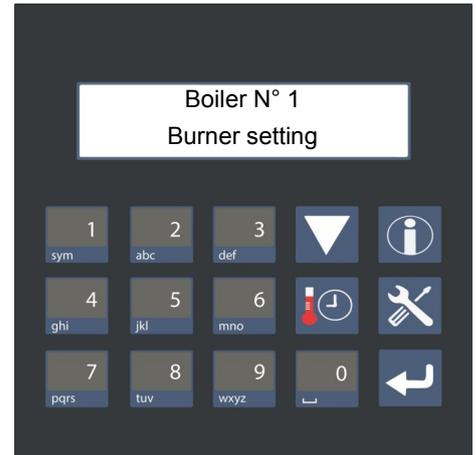
1. Burner setting



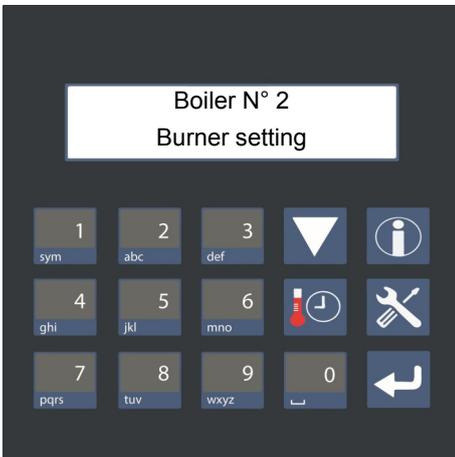
Press the key 



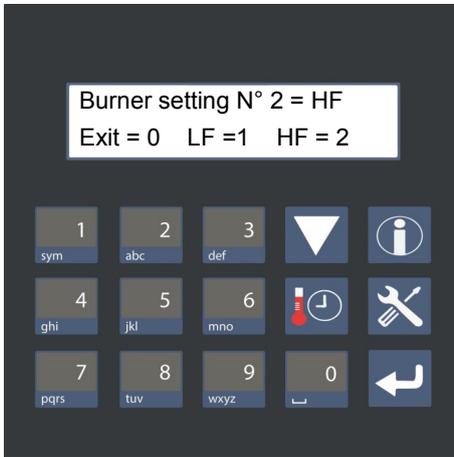
Press the key  to display the burner setting.



Select the boiler to adjust with the numerical keypad from 1 to 4



During 5 seconds press the key 



Select the low flow setting (1)
Or the high flow setting (2)



Press the key 0 to exit the mode.

2. Setting values of the boilers

Gas type	Cut-off pressure	Service pressure	O ₂ at max power	O ₂ at min power	CO max PPM	
			Vis 4	Vis 5	NG	LPG
G20 (Natural gas)	From 20 to 50 mbar	Mini 18 mbar	5%	5.5%	160	200
G25 (Natural gas)	From 25 to 50 mbar	Mini 20 mbar	5%	5.5%	160	200
G31 (LPG gas)	From 28 to 50 mbar	Mini 25 mbar	5%	5.5%	160	200

ANNUAL MAINTENANCE

Caution: All the following instructions has to be realized by a qualified person.

General visual check

Make a visual check of the hydraulic and electric connections of the thermal module. If leaks occur, replace the defective seal.

Water level check in the heat transport system

For the version with an expansion tank, cut the boilers of the module and wait that the water into the system is lower than 30°C. With precaution, open the fill plug and check the level. For the version with a pressure loading system, check the level of the tank.

Glycol rate check

Sample the heat transfer medium and if necessary, adjust the glycol rate.

Control of the boiler water flow

Realized this operation following the instructions page16 and 17 (Commissioning of the circulator and Water flow check of each boiler)

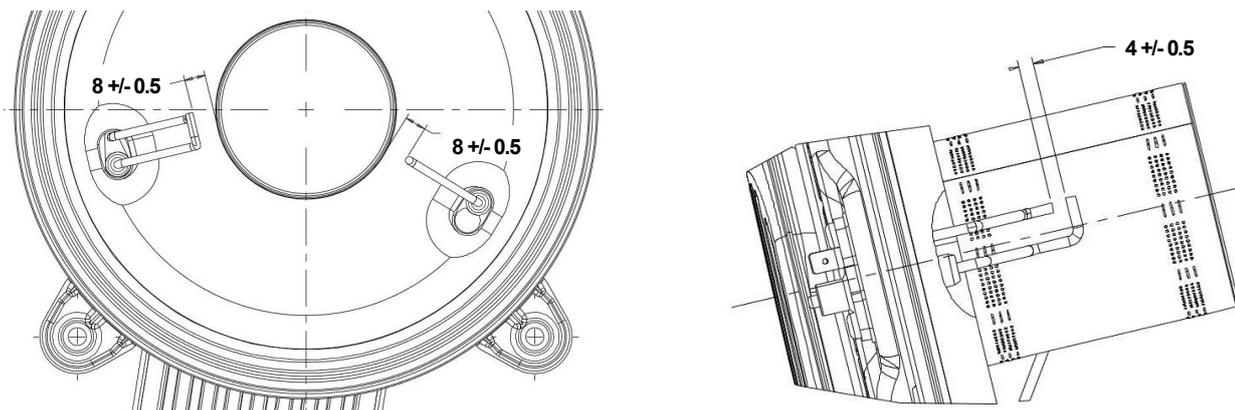
Combustion chamber:

If during the annual inspection, deposits are observed in the combustion chamber, it is necessary to vacuum it up. if required, brushed the coils of the heat exchanger using a non metal wire flexible brush. Any cleaning of the combustion chamber with acid or alkali products is prohibited.

Inspect the insulation of the heat exchanger and replace it if it is necessary (bottom of the boiler and door). Before closing the combustion chamber, control that the door gasket is correct. This has to be replaced every two years.

Electrodes and burner check

Replace the electrode and the gasket if they show signs of damages. Check out the space of the ignition electrode (4 +/- 0.5 mm) and the space in relation to the electrode of the burner (8 +/- 1 mm).



If the burner is damaged (crack or overheat), replace the whole door and burner.

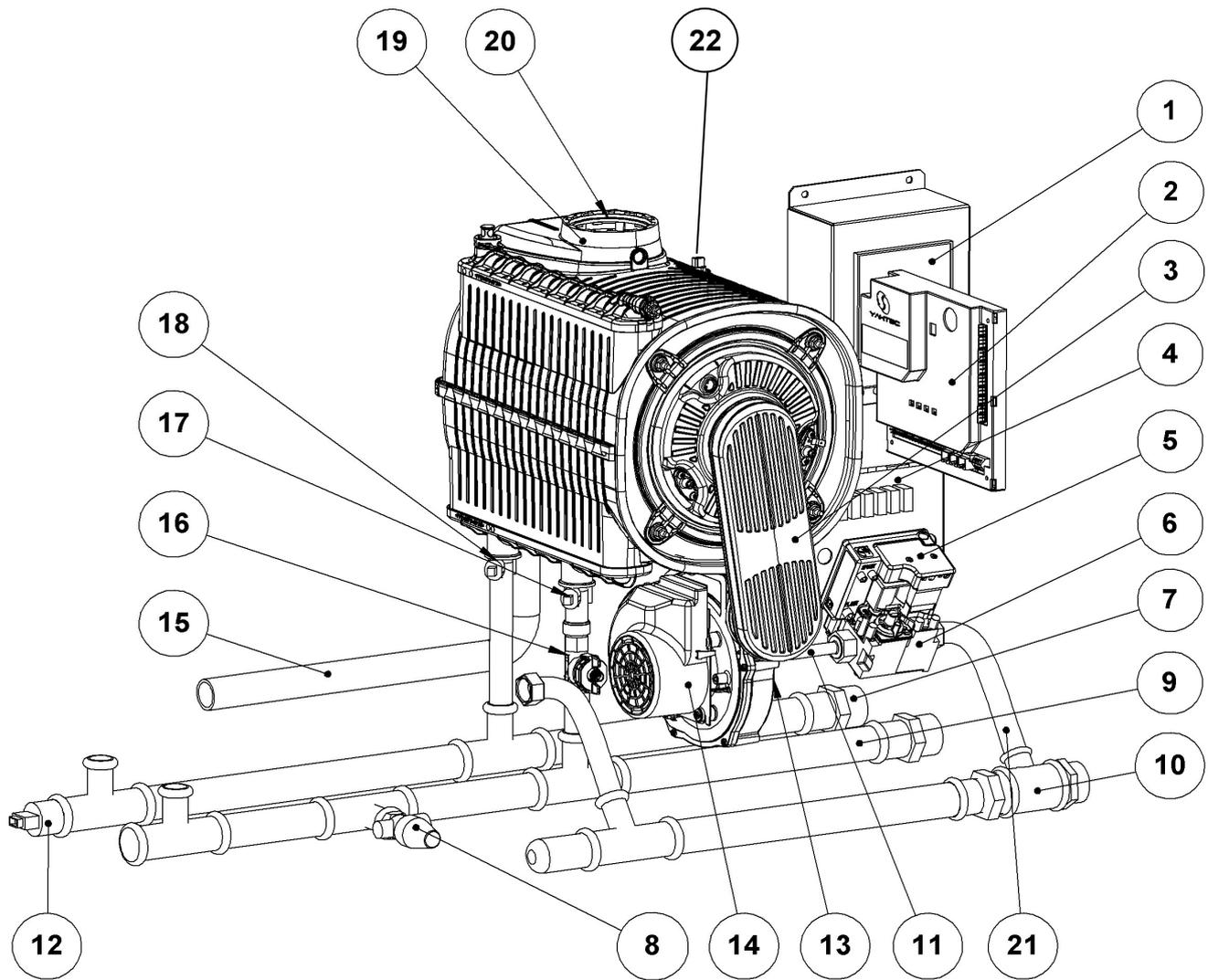
Combustion check

Check each boiler. Refer to page 20 of the manual.

Control of the condensate treatment system

A routine audit is necessary because a rise of condensates into the combustion chamber can occur if there is an obstruction and therefore it will degrade the insulators of the boiler. It is recommended to check the efficiency of the granules which allow to read off the PH value before the evacuation. This value must be higher than 5 °.

EXPLODED VIEW



Attention seules les pièces d'origine permettent de garantir la sécurité du produit. L'utilisation de pièces autres que celles d'origines entraine automatiquement la décharge de toutes responsabilités du constructeur.

N°	Description	Article number	N°	Description	Article number
1	Regulator	REG301	12	Water pressure sensor	ATE455
2	AHU 1 slave card	REG230	13	Variable Venturi	UTC0402
3	Cold burner door	UTC0060B	14	Burner fan	UTC0424
4	IMT 1 supply card	ELE1105	15	Condensate drain pipe	-
5	Control box	UTC0410V2	16	Water flow meter	UTC0560
6	Gas valve	UTC0400	17	Flow temperature probe	ELE0148
7	Return pipe	-	18	Return flow temperature probe	ELE0148
8	Safety valve	PB404	19	Stainless steel exchanger	UTC0060C
9	Departure pipe	-	20	Smoke tightness seal	NC
10	Gas collecting tube	-	21	Flexible gas pipe	UTC0508
11	Venturi gas injector	UTC0502	22	Overheat sensor	-

USER RECOMMENDATION

Safety rules

- It is forbidden to plug and/or reduce the ventilation openings of the boiler section.
- Never obstruct the evacuation of smoke or the fresh air intake,
- Never make any modifications to the settings made by the qualified person
- Never touch hot parts of the unit heater, and/or moving parts,
- Never put or hook any object on the device,
- Any operation on the device is forbidden unless it has been disconnected from the electricity network and the gas supply has been cut off.
- Do not modify the type of gas used, the settings of the device, the safety and regulation systems, because dangerous situations could occur.

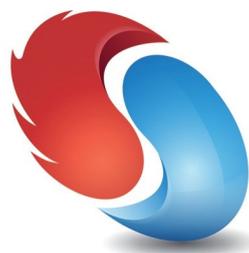
Inform the after-sales technician in the case of changing the gas, the gas pressure or modifying the supply voltage.

If there is a long period of non-operation, disconnect the electrical supply from the device. Once it starts operating again, it is recommended to call a qualified person. As a general rule all repair and/or maintenance visits must be carried out exclusively by authorised and qualified personnel

The taking out of a maintenance contract is strongly recommended

What should be done in case of problems?

PROBLEM	REMEDY
<i>Gas smell</i>	<i>- Close the gas valve outside and cut off the electricity. After that, call a qualified and professional technician.</i>
<i>Burner is in security position</i>	<i>- Reset the burner using the regulation box. - If the problem is not solved, call a qualified technician.</i>



YAHTEC

36, rue Pascal
77100 Meaux - France
Tel (33) 160 24 41 86
Fax (33) 164 34 24 03

All performance characteristics are presented as contractual on the commercial brochure available on the website: www.yahtec.com