

**ALL BURNERS ARE NO LONGER THE SAME A TECHNOLOGICAL BREAKTHROUGH.  
THE UNIGAS “MASS FLOW INDEX ” CONCEPT TAKES BURNERS INTO THE FUTURE**



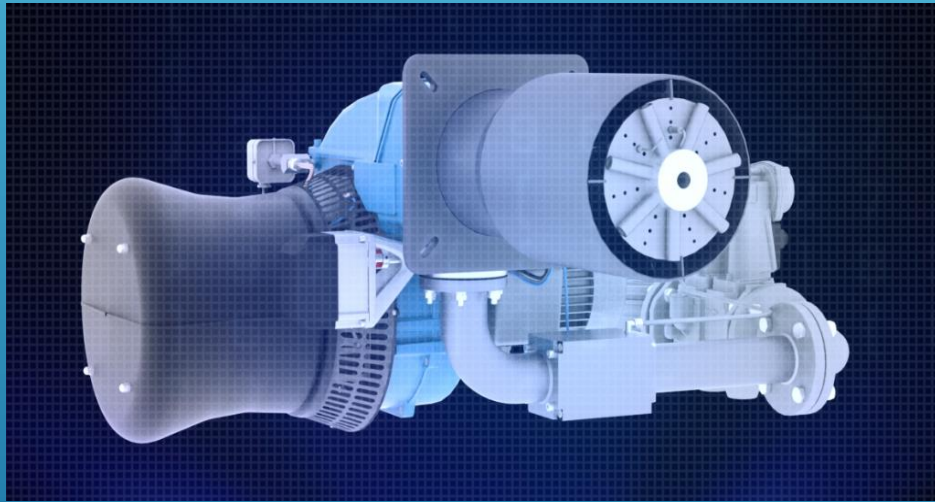
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1991-2021



# CHANGE PERSPECTIVE, IT'S



The “Facile” was born from the need to create a system that is suitable for simplifying the commissioning process but at the same time improves the operational efficiency and energy consumption of the burner.



From the beginning the goal has been to see the ‘machine’ from another point of view, freeing itself from the constraints of classical burner design and also integrating a new developmental concept that makes new technology more readily accessible than in the past.

We also look to change the perception of the modern-day burner, no longer to be seen as a passive device but an active and autonomous machine that adapts to the plant and environment conditions.

# A CLEVER SYSTEM.

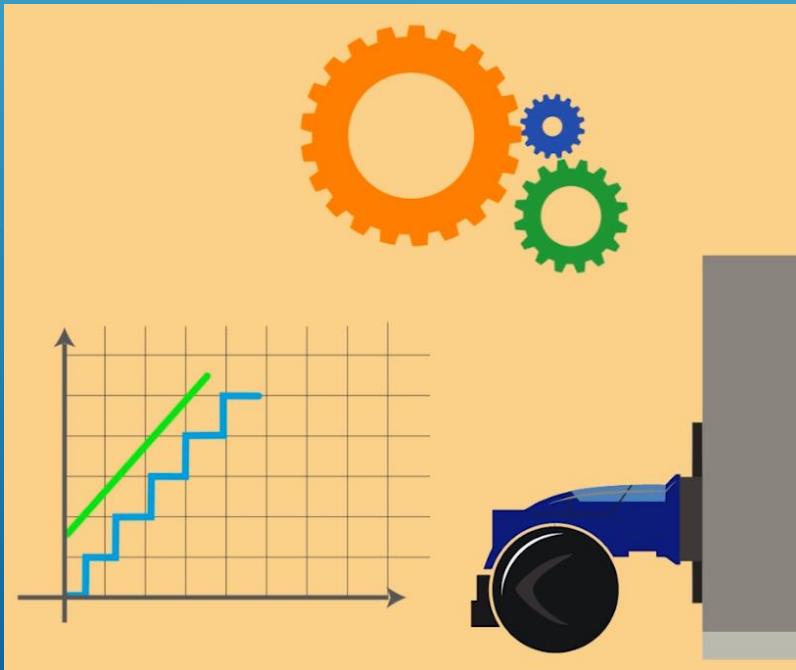
It is commonly known that there are electromechanical and electronic burner control systems that allow for a certain elasticity and reactivity of the machine in relation to changes of the external variables.



By breaking new technological ground we have gone a step further and equipped the machine with a 'brain' that can independently adjust the power according to the users' request while maintaining combustion in an optimum range of safety and efficiency, guaranteeing an O<sub>2</sub> content close to 3% in the fumes with next to no CO.

# THE TECHNICIAN IS THERE, BUT NOT SEEN.

The beauty of the system is that it negates the need for the (sometimes) laborious and expensive commissioning phase by a skilled technician.



Normally the technician is required for the adjustment of fuel-comburent curves case by case according to the type of generator, the plant's characteristics and the environmental conditions.

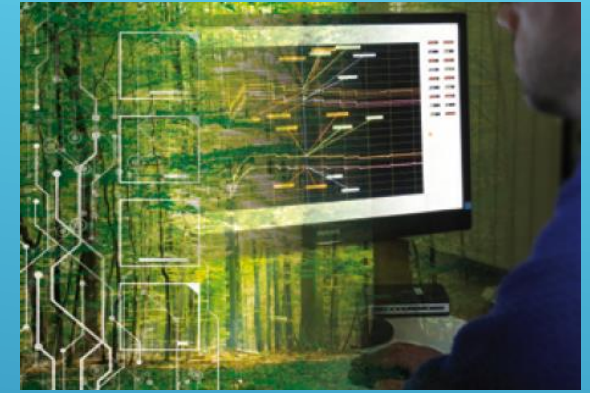
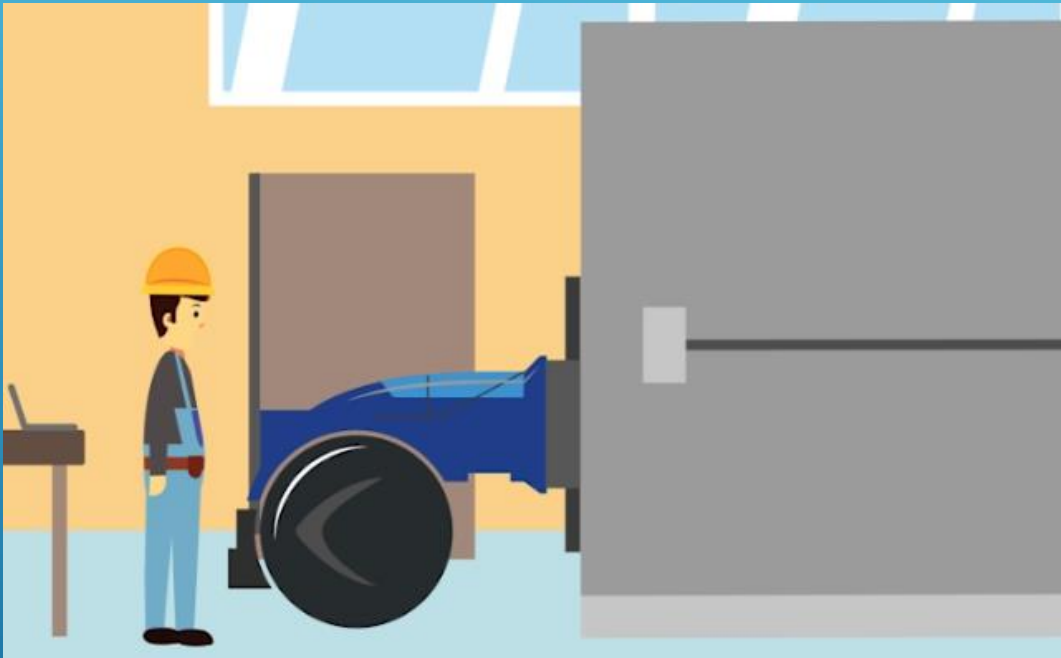
With the *Facile*, these are pre-set in the burner which will have the capacity to adapt to different situations, while remaining within its performance characteristics and safety parameters.



# SIMPLE, AS



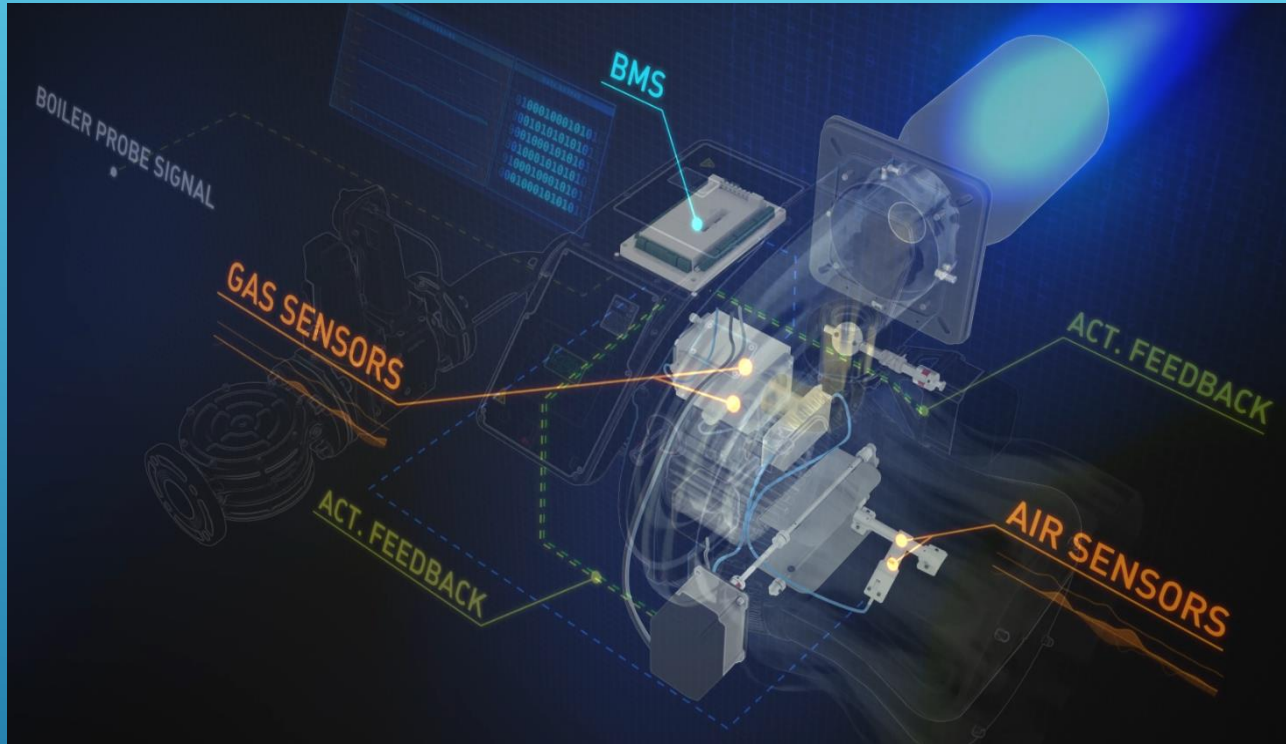
Whereas traditional systems use a "closed loop" with feedback on combustion (Lambda sensor - O2 sensor - probe CO ..), the Facile is ready for operation without any changes or connections that involve the generator.



During the autocalibration phase the technician will only have to supervise the operation, the smoke analyser it will only be necessary as a supervision during the auto commissioning phase, or if different setting from the default is required.



# THE SENSORS.



The system requirements that we are committed to comply with have led to the identification of the safest and most technologically advanced method to reach this goal/milestone.

The operation is based on the detection of fluid masses in the input, in relation to the combustion theory. Speed and density of the fluids are 'felt' by special hot-film sensors and the output signal is processed. Through this a proportional relationship is created between the output signal and the actual mass flow of the fluid passing.

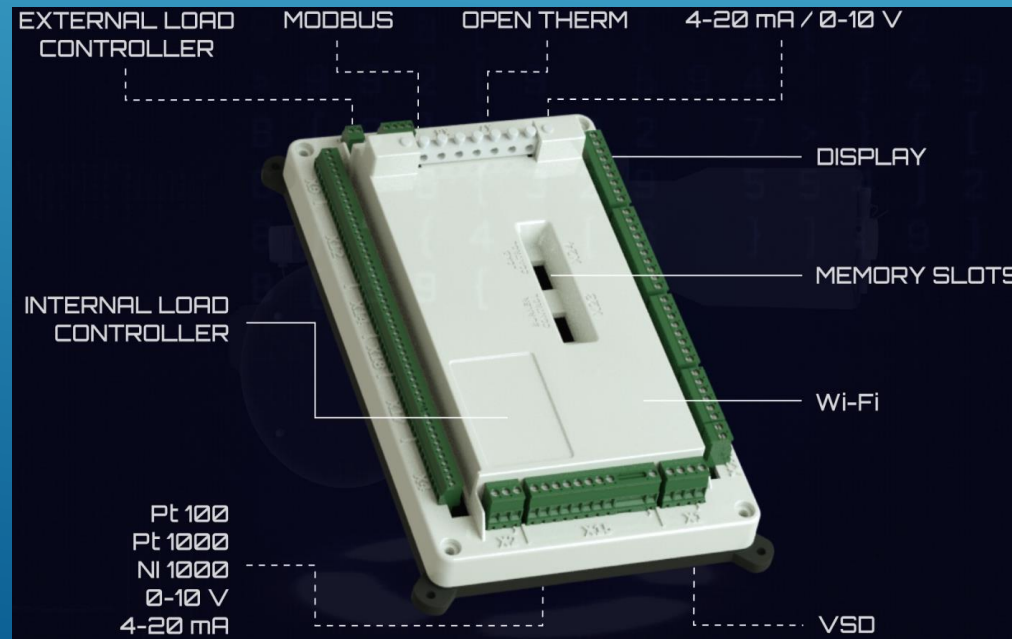
# E-GARC AND USER INTERFACE

The burner main control unit operates in full all functions relating to the cycle of the machine and system security.

Hw and Sw are designed to ensure maximum reliability in relation to the reference standards for the GARC control equipment.

The control board manages the burner cycle; the various stages of pre-purge, valves leakage control, ignition, ignition timing, modulation, shutdown and post-purge (leakage control) are all operated and programmable within normal operational safety limits.

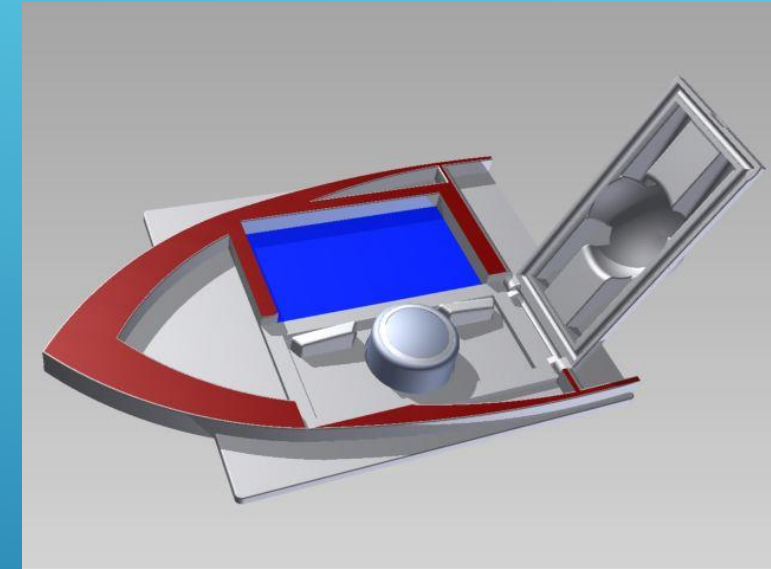
Similarly controlled are the safety devices such as the gas and air pressure switches and flame detector. It is equipped with two removable memories for the programming of the curves and the functioning cycle.



The user interface is made in a panel provided with two side buttons that allow the passage of the macro levels, management of the stages of lighting and unlocking, and a rotor-button allows scrolling of parameters and navigation through sub-menus available.

The screen shows the default status of the burner at that instant; depending on the choices made by the user, displayed are the real-time burnt power, the instantaneous flow of gas and air, the positions of the actuators and the setpoint of the termoregulation.

All phases of the ignition cycle, operation and shutdown are represented by pictograms, which indicate the status.



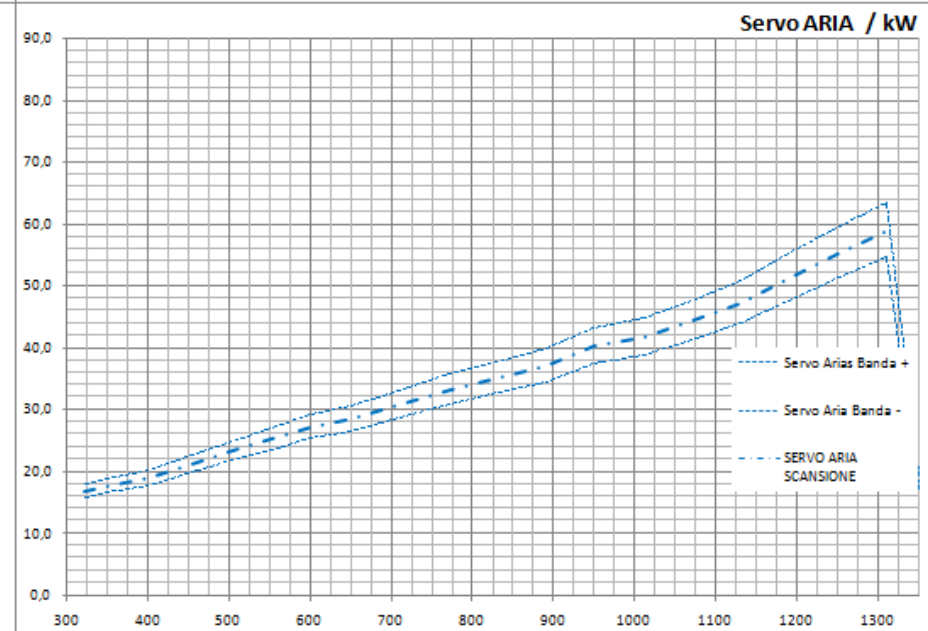
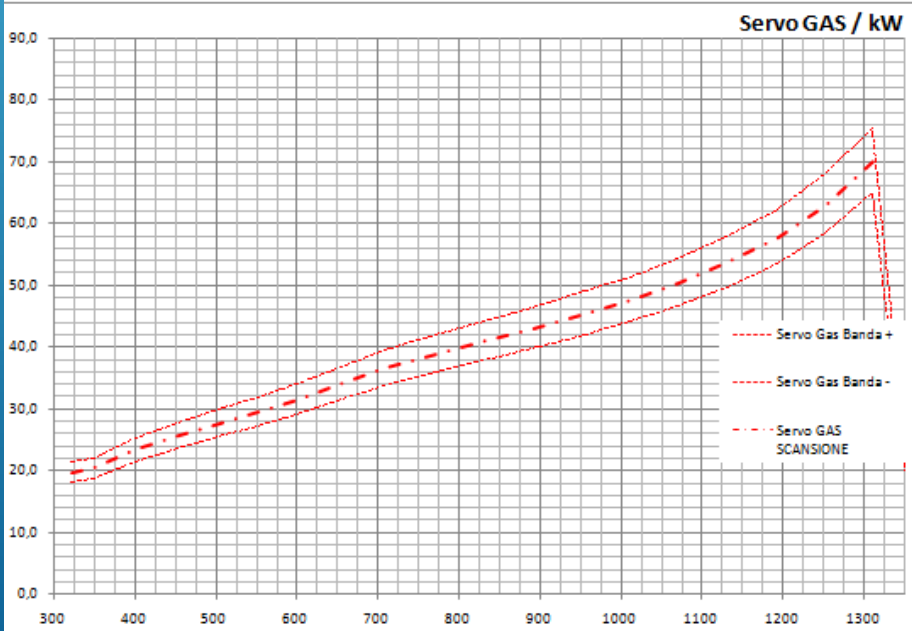
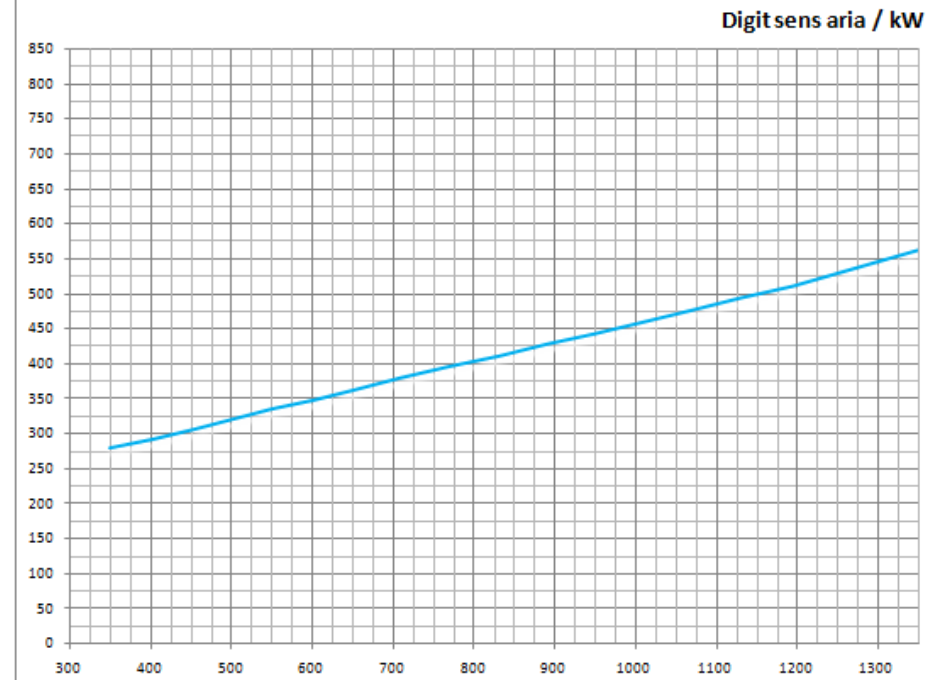
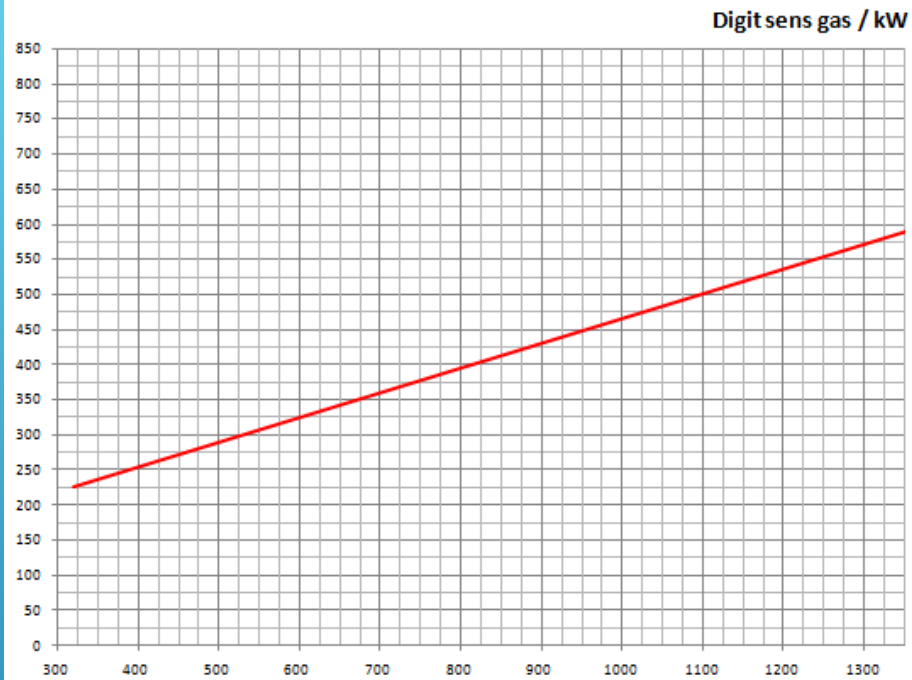


# START-UP OPERATION

After checking that all the plant conditions have been verified (eg gas line pressure, generator data, electrical connections..) and that the burner has been correctly installed, the operations to be performed are few and simple:

1st level	2nd level	3rd level	4th level	Description
Menu				Main menu
	Parameters			Menu level for making the parameter settings
		Boiler unit		Settings for the boiler unit
			Max Power	This parameter is the maximum boiler capacity (express in kW).
			Min Power	This parameter is the minimum boiler capacity (express in kW).
			Max Load	This parameter is the maximum boiler load (express in %). This parameter is used to limit the burner working capacity range.
			Min Load	This parameter is the minimum boiler capacity (express in kW). This parameter is used to limit the burner working capacity range.
			Boiler set point	Temperature or pressure setpoint

1st level	2nd level	3rd level	4th level	Description
Menu				Main menu
	Parameters			Menu level for making the parameter settings
		Boiler unit		Settings for the boiler unit
			Learning curve	Set to "on". After parameter enabling, the actuator tests are performed



# THE BURNER

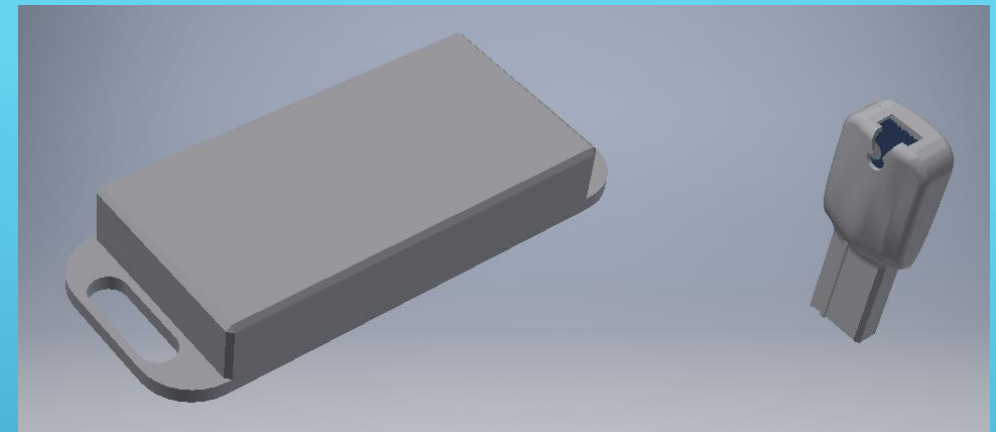
- ▶ The burner hasn't had changes in the ventilating part, it is even possible to think of the system as an "upgrade kit" to be applied on the burners CIB UNIGAS has already installed.
- ▶ On the other side, intensive design and verification work was performed on the elements that house the sensors to ensure the optimum result while maintaining the efficiency of the fan.

The sizes available at the moment cover a field of application ranging from 650 kW to 12 MW.

The burners are available for class 2 and 3 (EN676) but will also be available for the emission levels required for the strictest NOx regulation < 30 mg/m<sup>3</sup>.

# SUPERVISION BY REMOTE

Remote supervision can be realized thanks to an additional module, supplied as standard.



Cib Unigas Facile

Ricerca...

RiccardoPancolini

1 Bruciatori in Blocco

0 Bruciatori in Allarme

7 Bruciatori On-Line

3 Bruciatori Off-Line

TABELLA

MAPPA

N° Serie - Tipo	Cliente	Filiale	Service	Modello	Indirizzo
1813194 - FG267X	RobertoRadaelli	CibUnigas	Pozzoli	M-MD.SR.IT.A.1.50.FA	Via Giovanni Pascoli, 40, 20833 Giussano MB
1811970 - FE140X	Cadel	CibUnigas	Cadel	M-MD.LR.IT.A.1.50.FA	Viale Europa, 49, 31018 Albina TV
1811969 - FE180X		CibUnigas	Cadel	M-MD.LR.IT.A.1.65.FA	Viale Europa, 49, 31018 Albina TV
1812289 - FE180X	Byworth	CibUnigas	GPBurners	M-MD.LR.IT.A.1.50.FA	Parkwood Boiler Works, Parkwood St, Keighley BD21 4NW, Regno Unito
1809489 - FX180X	DETTOMA	CibUnigas	Calligaris	M-MD.LR.IT.A.1.50.FB	Via del Cervo 13 Candelo

Pagina 2 di 2 (11 elementi) 1 2





1 Bruciatori in Blocco



0 Bruciatori in Allarme



7 Bruciatori On-Line

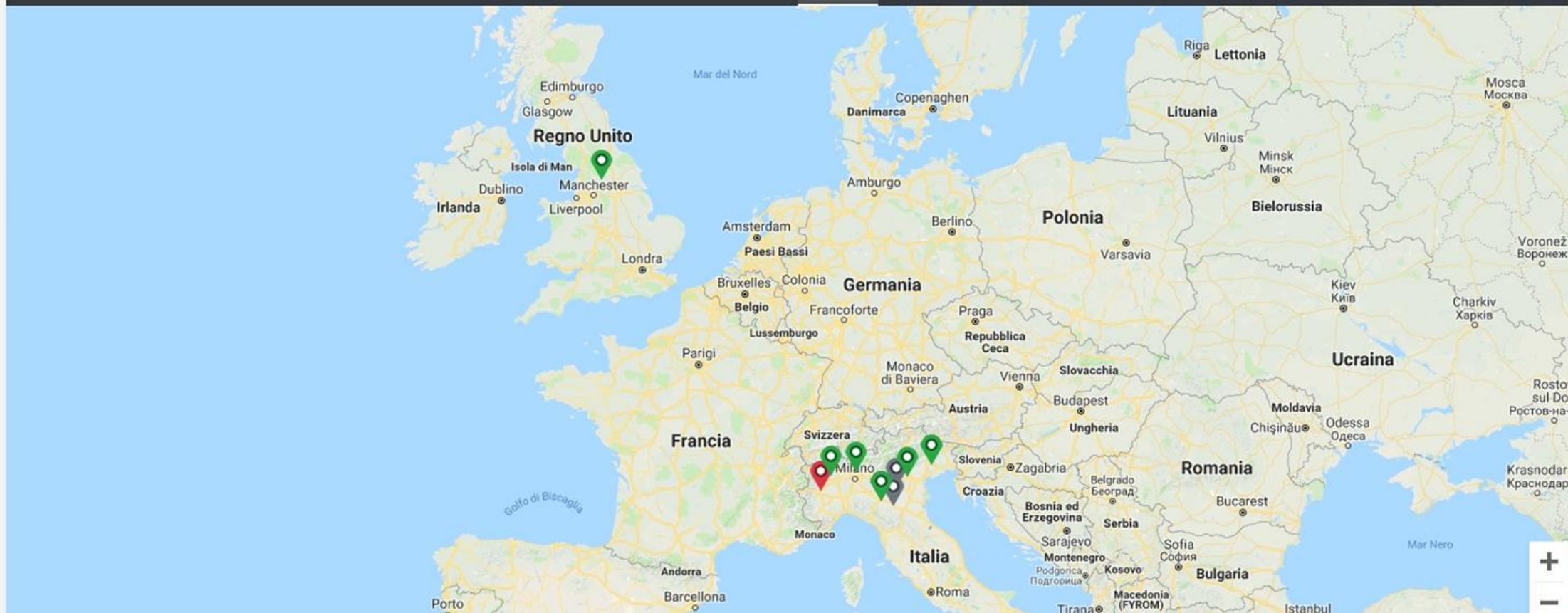


3 Bruciatori Off-Line



TABELLA

MAPPA



Bruciatore

Utenti e gruppi

N° Serie - Tipo: 1812289 - FE180X

Indirizzo: Parkwood Boiler Works, Parkwood St, Keighley BD21 4NW, Regno Unito

Service: GPBurners

Ultimo aggiornamento: 5 mar 2019, 12:21:16

5 Bruciatore in Funzione



0 Nessun Blocco

419 kW

0%  
Valore AttualeServomotore  
ARIA

Set Point	19,7 °
Max	22,5 °
Attuale	19,8 °
Min	16,9 °

Servomotore  
GAS

Set Point	29,6 °
Max	33,1 °
Attuale	29,6 °
Min	26,1 °

## Sensore GAS

Set Point	300
Max	310
Attuale	304
Min	290

## Sensore ARIA

Set Point	286
Max	296
Attuale	279
Min	276

## Stato ingressi

Termostato Caldaia	
Catena sicurezze	
X15-7/8	
P Gas Min	
P Gas Max	
PGCP	
Pressostato ARIA	
CO/ Relè Termico	
Potenza attuale	419 kW
Portata GAS	44 Stm3/h

Bruciatore

Utenti e gruppi

N° Serie - Tipo: 1812289 - FE180X

Indirizzo: Parkwood Boiler Works, Parkwood St, Keighley BD21 4NW, Regno Unito

Service: GPBurners

Ultimo aggiornamento: 5 mar 2019, 12:16:40

2 Bruciatore in Prelavaggio

05/02/2019 05/03/2019

Ultimo aggiorna... ↓	Numero di accensioni		Blocchi		Ore di funzionamento		Aria Bruciata m3			Gas Bruciato m3		
	Totali	Parziali	Totali	Parziali	Totali	Parziali	Totali	Parziali	Allarme ARIA	Totali	Parziali	Allarme GAS
<input type="checkbox"/> 27/2/2019, 22:59	315	315	128	128	42	42	0	0	0	65000	65000	0

Bruciatore

Utenti e gruppi

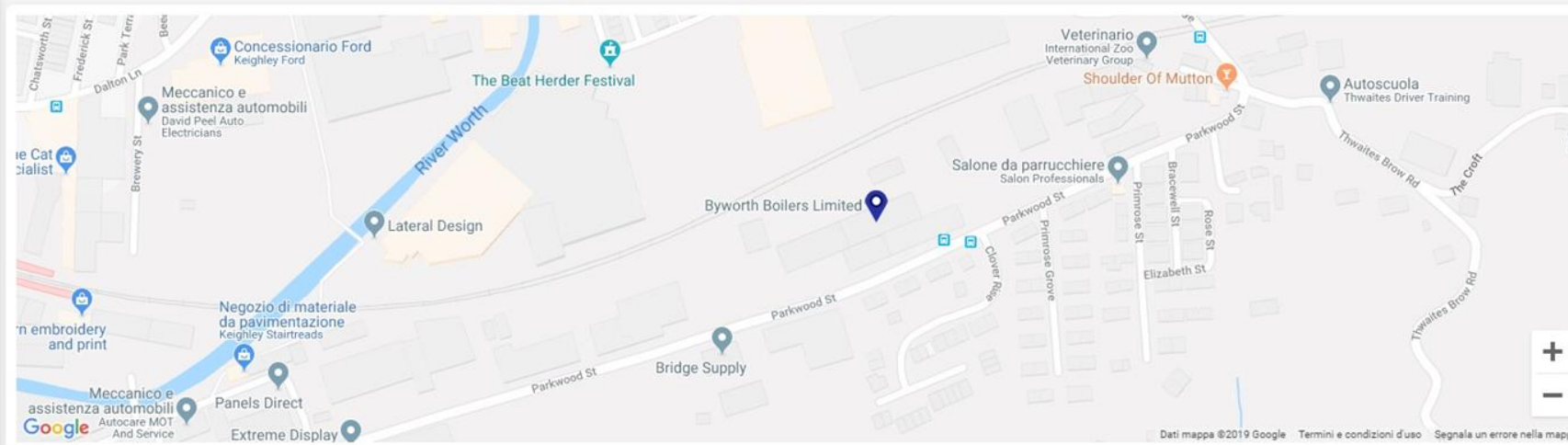
N° Serie - Tipo: 1812289 - FE180X

Indirizzo: Parkwood Boiler Works, Parkwood St, Keighley BD21 4NW, Regno Unito

Service: GPBurners

Ultimo aggiornamento: 5 mar 2019, 12:18:15

5 Bruciatore in Funzione





Bruciatore

Utenti e gruppi

N° Serie - Tipo: 1812289 - FE180X

Indirizzo: Parkwood Boiler Works, Parkwood St, Keighley BD21 4NW, Regno Unito

Service: GPBurners

Ultimo aggiornamento: 5 mar 2019, 12:18:53

5 Bruciatore in Funzione

Tipo:

Avvisami quando il bruciatore va in blocco

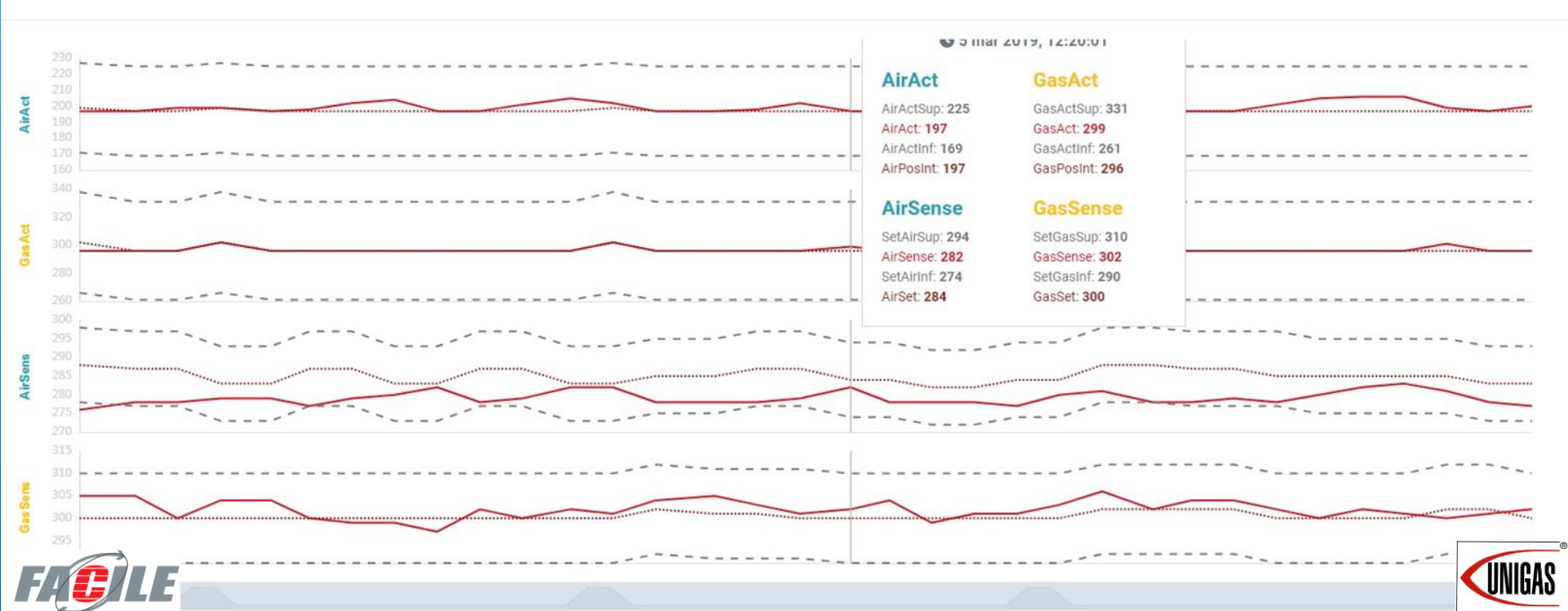
Mail:

Device.Notify.Language:

Italiano

Tipo	Messaggio	Data ↓
Heartbeat	Il dispositivo #23 non è stato aggiornato negli ultimi 5 minuti. Impostato lo stato in inattivo.	5/3/2019, 08:53
Heartbeat	Il dispositivo #23 non è stato aggiornato negli ultimi 5 minuti. Impostato lo stato in inattivo.	5/3/2019, 06:59
Heartbeat	Il dispositivo #23 non è stato aggiornato negli ultimi 5 minuti. Impostato lo stato in inattivo.	5/3/2019, 05:55
Heartbeat	Il dispositivo #23 non è stato aggiornato negli ultimi 5 minuti. Impostato lo stato in inattivo.	5/3/2019, 00:12
Heartbeat	Il dispositivo #23 non è stato aggiornato negli ultimi 5 minuti. Impostato lo stato in inattivo.	4/3/2019, 23:37
Heartbeat	Il dispositivo #23 non è stato aggiornato negli ultimi 5 minuti. Impostato lo stato in inattivo.	4/3/2019, 23:18

Grafici

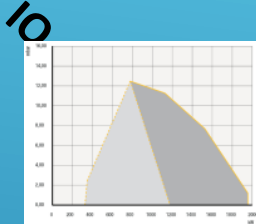




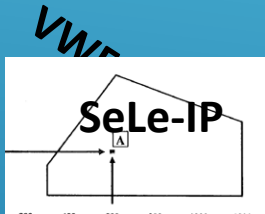
# AN EFFECTIVE SYSTEM.



**Indirect O<sub>2</sub> Control:** Indirect oxygen control. The AIR/GAS ratio is guaranteed and corrected by instantly measuring the mass flow rate.



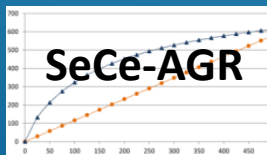
**Variable Working Field:** The working field is automatically adapted to the characteristics of the boiler used, the system guarantees correct combustion by limiting the working point in the event that the fan cannot guarantee the required flow rate.



**Self-Learning Ignition Point:** The ignition point is automatically adjusted to a power suitable to guarantee optimal ignitions in compliance with UNI-EN 676 specifications. The ignition power (kW) can be selected manually up to 50% of the maximum load .



**Self-Learning Servomotors Settings:** The system automatically memorizes the working curves of the servomotors to ensure operation even in the event of sensor failure.



**Self-Checking Air-Gas Ratio:** The air-gas ratio is constantly monitored and readjusted to guarantee the required power and maintain optimum system performance and highest combustion efficiency.

## MORE THAN A BURNER.

► Facile is not a simple burner but a "combustion philosophy" that brings considerable advantages to the existing technology allowing an increase in efficiency, a guarantee of functioning in all conditions of use in accordance with the legislation, a lower human commitment during commissioning and significant economic savings in the short and long term

