

## GAS P100/MCE LX4 EL EVO

Burners for gas with electronic control box. Two stages progressive or modulating operation (if equipped with addition of optional modulation kit PID and probe; to guarantee an ideal proportionality of the power supplied to the thermal load).

They are composed by: fan at high pressurisation with reverse blades and combustion head with adjustment at high efficiency and high flame stability.

Compact overall dimensions and disposition rationalized of the components with accessibility facilitated for the operations of setting and maintenance.

Available in the versions METHANE (natural gas) or L.P.G. (to specify at the order).

Gas train completely assembled and tested; complete of working valve with flow adjustment, safety valve, minimum gas pressure switch and gas filter.

Complete of flange and gasket for installation on generator.

The servomotors are independent and managed directly from the electronic control box of the burner: one servomotor for the gas modulator and one servomotor for the air shutter.

The burners are equipped with a display that allows to:

- adjust the operating parameters of the burner
- visualize the flame intensity
- adjust the operating curve of the burner (air / gas ratio)

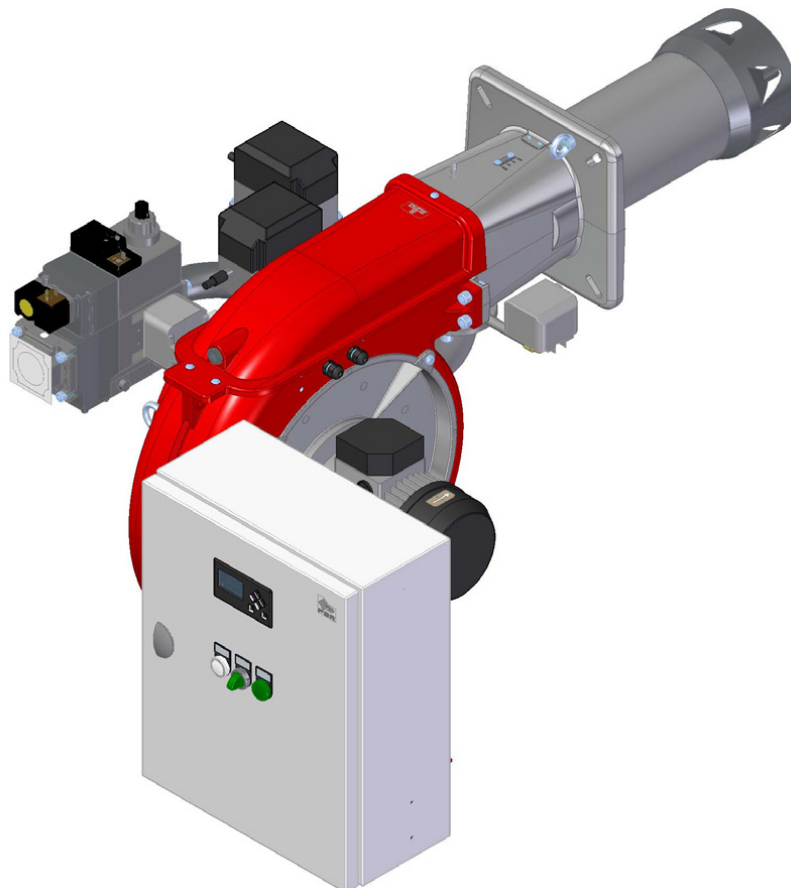
With the addition of optional accessories (probes) thanks to the most advanced systems for automatic modulation in mechanical or electronic version, the burner constantly ensures the proper gas / air ratio.

The maximum efficiency of the returns in each combustion point derived from the punctual adaptation of the thermal load to the heat requirements of the burner at any instant of operation.

In the version with the electronic cam the fuel / combustion air curve, more extended, is fully exploited, guaranteeing excellent performance in terms of accuracy and speed, even during the calibration phase.

A microprocessor monitors the different stages of the process and allows the correct repetition of the sequences of operation.

Optional accessories: PID power modulator kit, probe, PC interface, VSD, O<sub>2</sub> control, O<sub>2</sub> + CO control, field bus (profibus, modbus, profinet).



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Fig. 1 GAS P100/MCE LX4 EL EVO

CONTROL BOX LAMTEC BT3

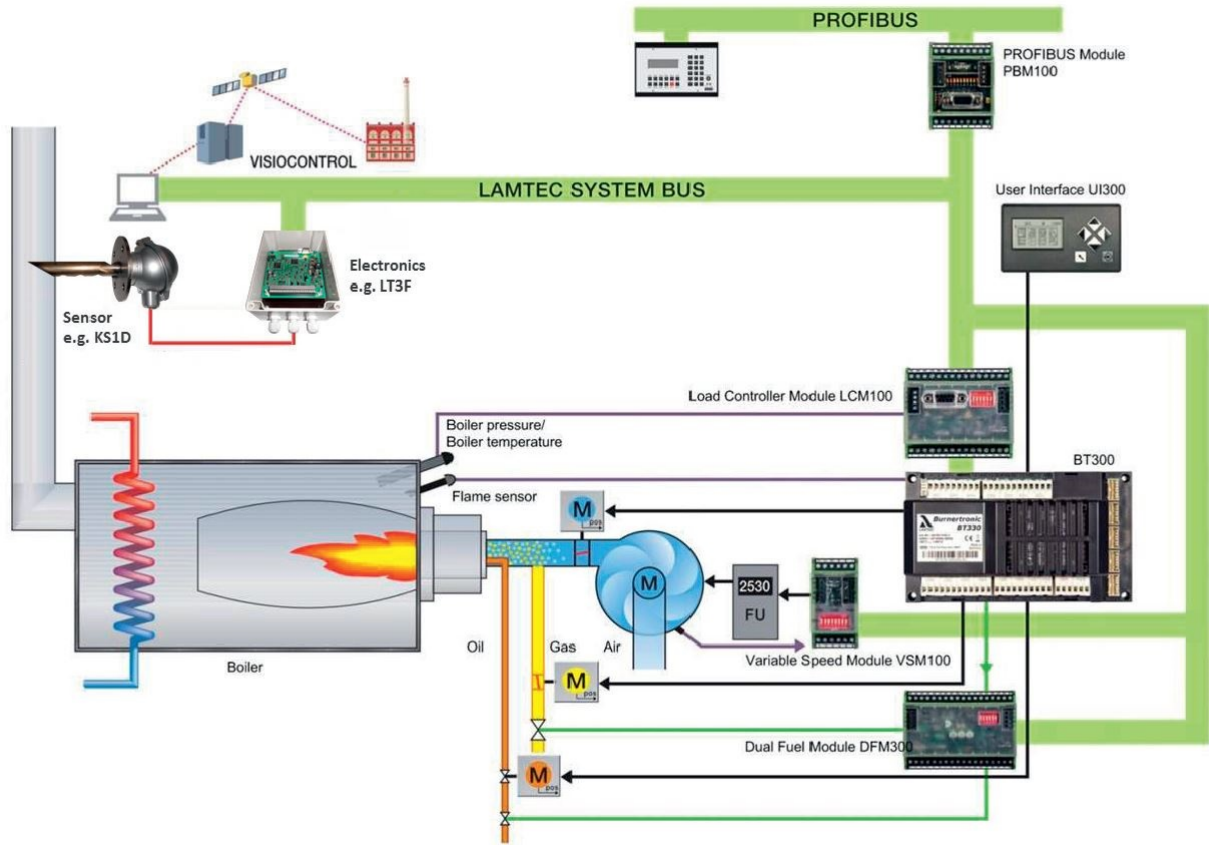


Fig. 2 Control box Lamtec BT3

**TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P100/MCE LX4 EL EVO**

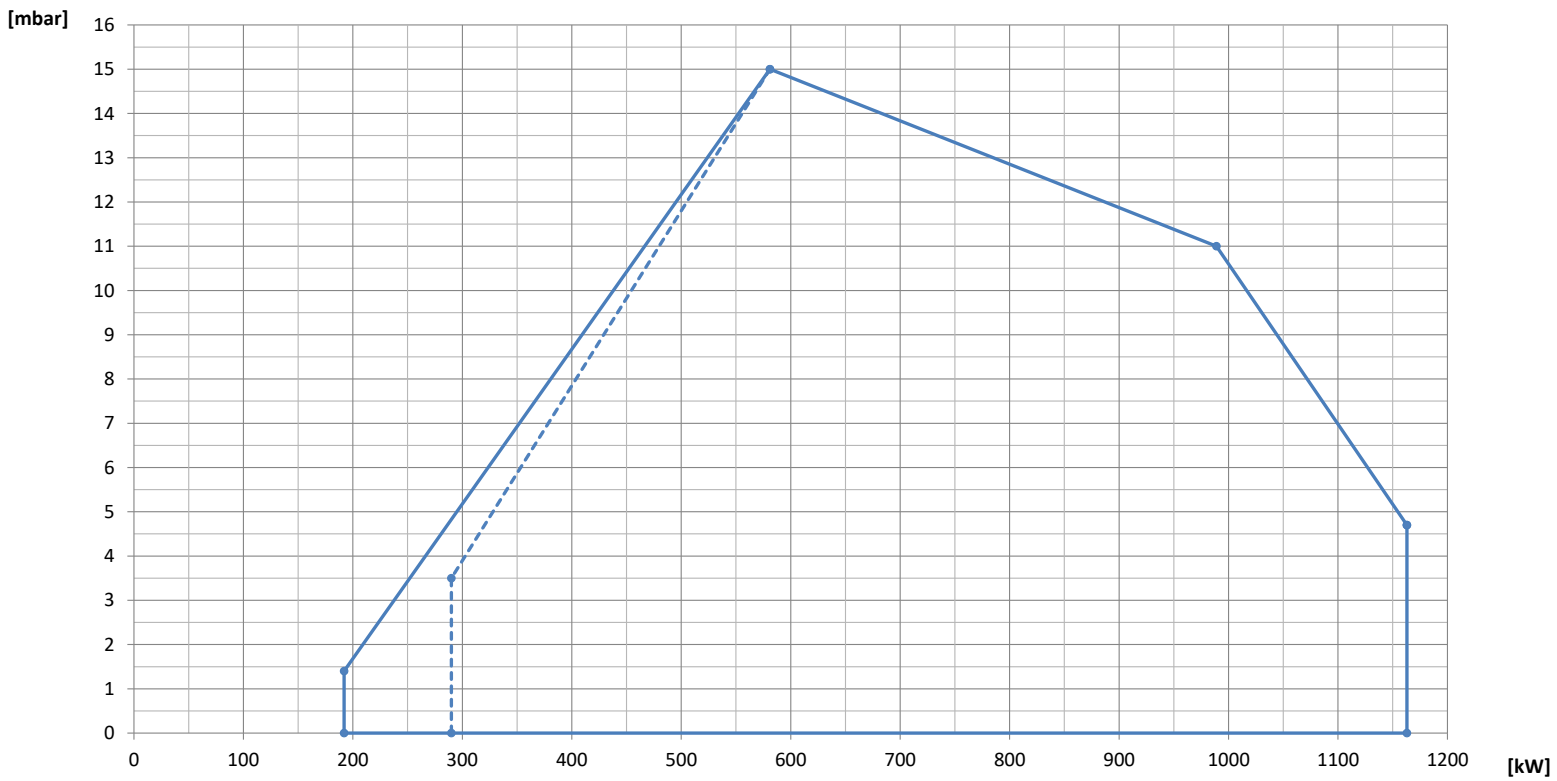
MODEL	GAS P100/MCE LX4 EL EVO	
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	172/500-1000
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	200/581-1163
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	20.1/58.3-116.7
Gas flow G25 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	23.3/67.8-135.7
Gas flow G25.3 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	22.8/66.3-132.7
Gas flow G31 (L.P.G.) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	11.2/22.5-45.1
Fuel: NATURAL GAS (second family, G20, G25, G25.3) - L.P.G. (third family, G31)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R),I3B/P,I3+,I3P,I3B,I3R	
Intermittent working operation (min. 1 stop every 24 hours) two stages		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Min. pressure gas train D1"1/4-S NATURAL GAS/L.P.G. **	[mbar]	96/58
Min. pressure gas train D1"1/2-S NATURAL GAS/L.P.G. **	[mbar]	52/37
Min. pressure gas train D2"-S NATURAL GAS/L.P.G. **	[mbar]	43/31
Min. pressure gas train DN65-FS65 NATURAL GAS/L.P.G. **	[mbar]	25/23
Min. pressure gas train DN80-FS80 NATURAL GAS/L.P.G. **	[mbar]	21/22
Maximum pressure at the entry of valves (D 1"1/4 - 1"1/2 - 2")	[mbar]	360
Maximum pressure at the entry of valves (DN65 - DN80)	[mbar]	500
Nominal electric power	[kW]	1.7
Fan motor	[kW]	1.5
Nominal motor current absorption	[A]	3.6
Nominal auxiliary absorption	[A]	0.7
Power supply:	3~400V, 1/N~230V-50Hz	
Electric protection degree:	IP 54	
NOx Class, NATURAL GAS (second family)	4	
NOx Class, L.P.G. (third family)	4	
Noisiness *** min. - max.	[dB(A)]	81-82
Burner weight ****	[kg]	52

\* For L.P.G. Minimum 1st stage power: 249 Mcal/h - 290 kW. Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

\*\* Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

\*\*\* Measured sonorous pressure in the laboratory combustion, with functional burner on beta boiler to 1 metre of distance (UNI EN ISO 3746 law - Control method class 3 - The measured sound pressure tolerance can be assumed to be ± 1 [dB (A)]).

\*\*\*\* For burner with long head add 2 kg to the weight.

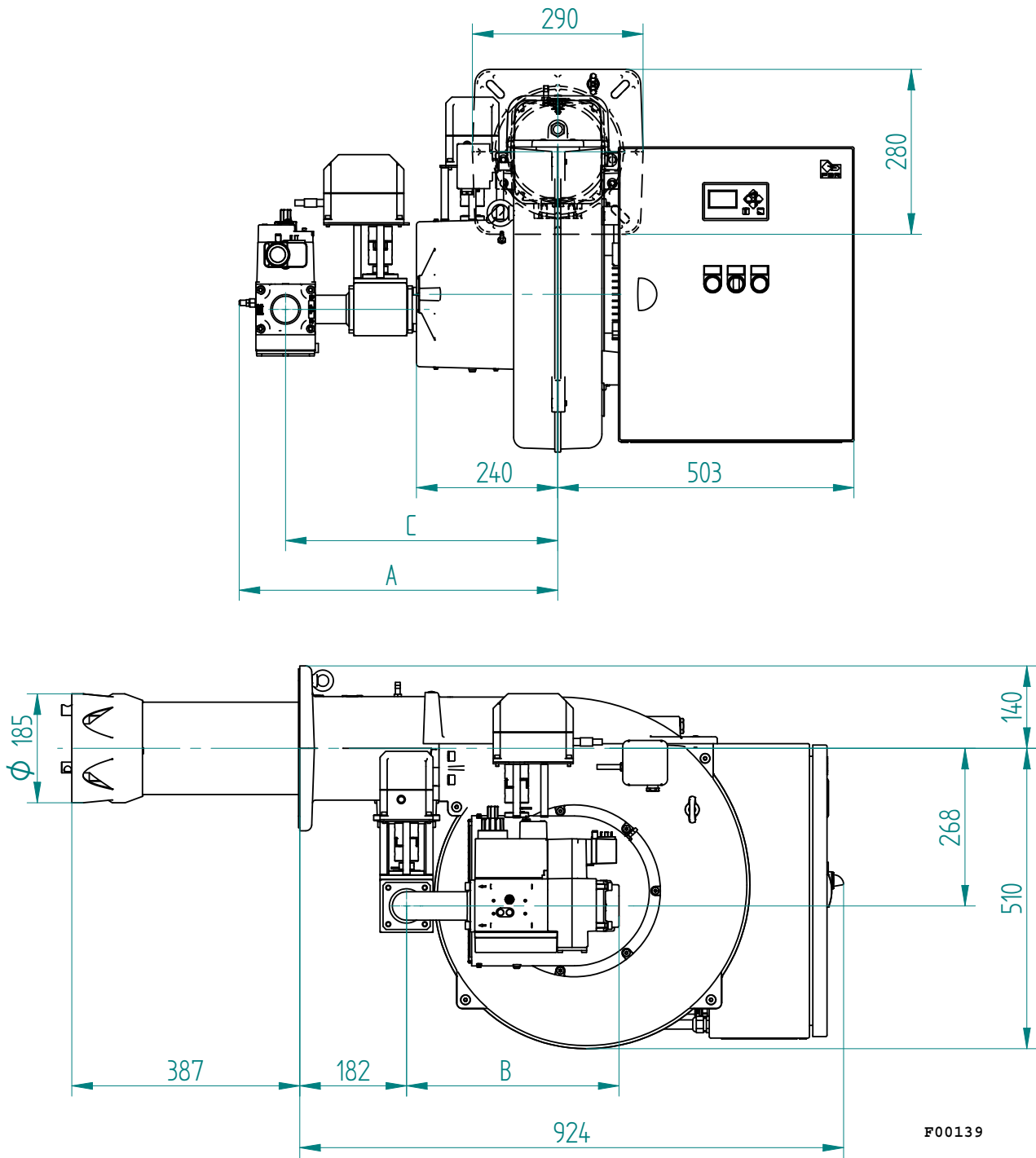


**Fig. 3** X = Thermal power Y = Pression in the combustion chamber

For L.P.G. Minimum 1st stage power: 249 Mcal/h - 290 kW.

The firing rates has been obtained based on test boilers in accordance with EN267 standards and are indicative of matching the burner to the boiler. For the correct operation of the burner, combustion chamber dimensions must be in accordance with current regulation. In case of non-compliance, contact the manufacturer.

**DIMENSIONS [MM]**

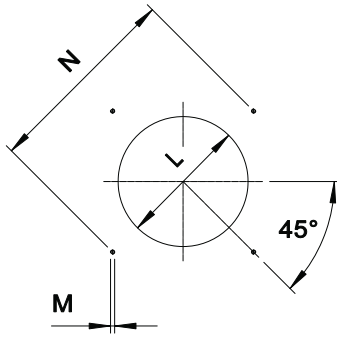


**Fig. 4 Dimensions**

GAS TRAIN	A	B
D1"1/4-S	520	347
D1"1/2-S	541	361
D2"-S	541	361
DN65-FS65	663	430
DN80-FS80	663	430

TC - TL: Please see chapter "Flame tube length"

## BOILER PLATE



The dimensions of the boiler plate must be as indicated in the drawing.

\* Suggested dimension of connection between burner and generator.

MODEL		L min	L*	L max	M	N min	N max
GAS P100/MCE LX4 EL EVO	mm	195	195	250	M12	275	325

## FLAME TUBE LENGTH

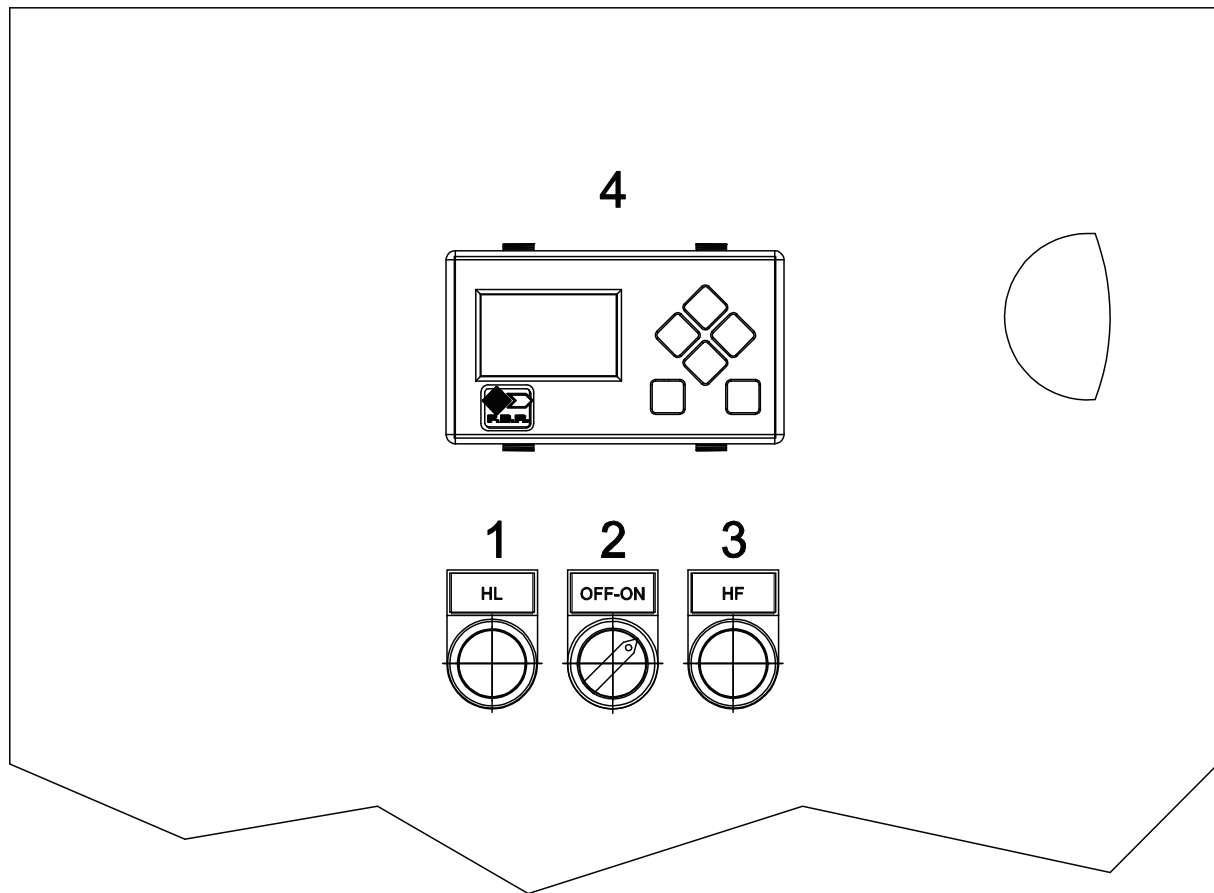
Flame tube length must be selected based on the specifications supplied by boiler manufacturer and, in any case, it must be greater than the thickness of the boiler door included its insulation.

In case of boilers with flame inversion or front flue combustion chambers, it is necessary to insulate the area between the flame tube and front door with refractory material. This protection material must not impede flame tube extraction.

FLAME TUBE LENGTH		
TC	mm	252
TL	mm	387 *

\* For different flame lengths, please contact our Technical-Sales Department.

**BURNER CONTROL PANEL**



**Fig. 5** Burner control panel

**LEGEND**

- 1) HL: line lamp
- 2) OFF-ON: OFF-ON switch
- 3) HF: operation lamp
- 4) Display

## PRODUCT SPECIFICATION

### SHORT DESCRIPTION

Burners for gas two stages progressive or modulating (PID fully modulating) if equipped with addition of optional modulation kit and probe low emissions class 4 (NO<sub>x</sub> < 60 mg/kWh).

### DETAILED SPECIFICATION

Burner for gas two stages progressive or modulating (PID fully modulating) if equipped with addition of optional modulation kit and probe low emissions class 4 (NO<sub>x</sub> < 60 mg/kWh); composed by:

- Fan at high pressurisation with reversed blades;
- Combustion head with adjustment at high performance and elevated flame stability equipped with inox steel blast tube and inox steel flame disc;
- Flange and insulating gasket for fixing at boiler;
- Three-phase power supply;
- Burner electrical panel with: display with lock-out reset button, white led for power supply presence, green illuminated switch ON/OFF, green led for flame alight;
- Safety air pressure switch to stop the burner in lock-out in case of failed or anomalous fan operation;
- Gas train with safety valve class A, adjustment valve class A;
- Ionisation probe for flame detection;
- IP 54 electric protection level;
- Spherical gas valve servo-controlled; progressive start and free way passage with total opening;
- Servomotor for air shutter;
- Servomotor for spherical gas valve;
- Moving shutter with total closure when idle in order to reduce at the least energy losses related to boiler cooling down;
- Easy extraction of combustion head without get off the burners by boiler;
- Maximum gas pressure switch to stop the burner in lock-out in case of the gas pressure is higher then the set point value;
- Set up for the additional specific kit that transforms burner operation as modulating i.e. the modulating kit allows to supply any power between the minimum and the maximum value based on instantaneous loading request.

### CONFORMING TO:

- CE rules;
- 2014/30/UE Directive E.M.C.;
- 2014/35/UE Directive L.V.;
- 2006/42/CE - 2006/42/EG - 2006/42/EC Directive M.D.;
- GAS 2016/426/UE Regulation;
- Reference rules: EN676 (gas) – EN 746-2 (industrial thermoprocessing equipment).

### STANDARD EQUIPMENT

- Isomart gasket;
- Flange with insulating gasket;
- Burner nameplate;
- Warranty;
- Instruction handbook for installation, use and maintenance.

### OPTIONAL

- Power modulating kits for temperatures;
- Power modulating kits for pressures;
- Kit for input 4-20mA / 0-10Vdc;
- Temperature probe 0°C-400°C (PT 100 a 0° C);
- Temperature probe 0°C-350°C (J probe);
- Temperature probe 0°C-1200°C (K probe);
- Pressure probe 0-3 bar, 0-6 bar. 0-16 bar, 0-20 bar, 0-30 bar;
- Sensors and system for O<sub>2</sub> control (is suggest to add the VSD);
- Sensors and system for CO control (is suggest to add the VSD);
- Sensors and system for O<sub>2</sub>-CO control (is suggest to add the VSD);
- Modules for field BUS (modbus - profibus - profinet);
- Noise protection;
- Antivibration couplings;
- Handle gas taps.