DUAL FUEL BURNERS_GAS/LIGHT OIL _ SERIE K

SK073526_B_en

K 350/M - K 450/M - K 550/M-EL

Dual fuel burners for gas and light oil at 2 stages progressive (hi-low flame) or PID fully modulating if equipped with modulation kit and probe.

Equipped with Lamtec BT340 electronic control box.

Fan at high pressurization, high efficiency combustion head with adjustment and high flame stability. Available versions for natural gas or LPG (to be specified at the order).

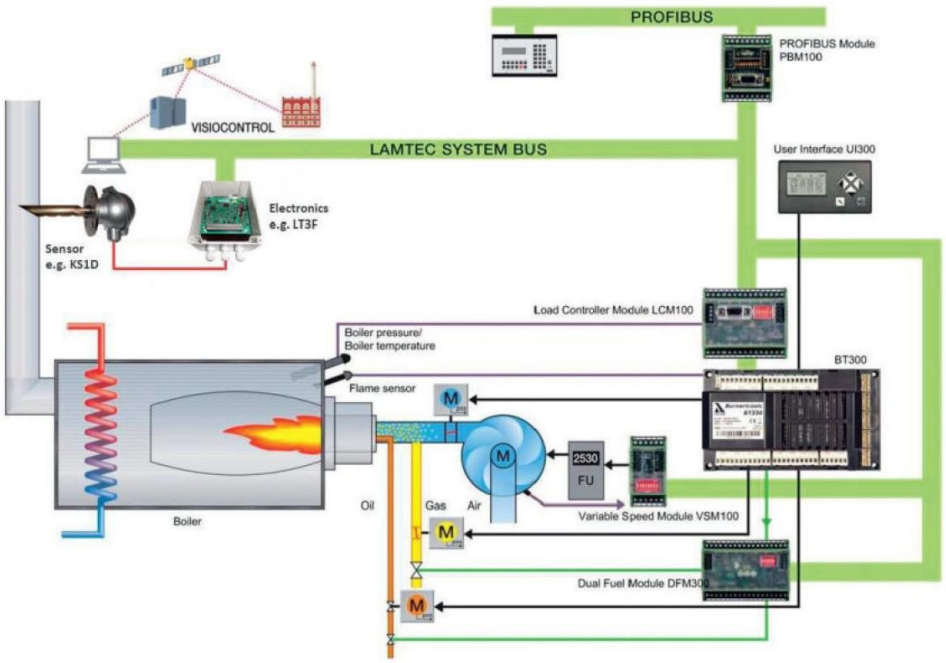
Gas train includes working valve, safety valve, minimum gas pressure switch, gas pressure filter-stabilizer and is supplied already assembled, connected and tested.

The adoption of strong metal components makes the burner durable also in heavy duty conditions.

Burners are supplied with nozzle, fuel switch, gasket for installation on boiler, flexible hoses, line filter.

The burners are equipped with an operating display that allows:
- Adjustment of the parameters of the burner operation
- Adjustment of the setpoint and operation range of the pressure / temperature probe
- Adjustment of the burner's curveset

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.
Some accessories are available, like: PC interface, VSD (inverter), O2 contol, O2 + CO control, field bus (profibus, modbus, profinet).



DUAL FUEL GAS/LIGHT-OIL BURNERS TWO STAGES PROGRESSIVE OR MODULATING

TECHNICAL DATA AND OPERATING RANGE DIAGRAM K 350/M - K 450/M - K 550/M

MODEL		K 350/M	K 450/M	K 550/M
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	400/1200-3500	500/1600-4500	600/2000-5500
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	465/1395-4070	581/1860-5232	698/2325-6395
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	47/140-409	58/187-526	70/235-647
Gas flow G31 (L.P.G.) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	18/54-158	22/72-203	27/91-250
Fuel: NATURAL GAS (second family) - L.P.G. (third family)				
Fuel category:		I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B/I3B/P,I3+,I3P,I3B,I3R		
Intermitted working operation (min. 1 stop every 24 hours) two stage progressive or modulating				
Environmental conditions operation / storage:		-15...+40°C / -20...+70°C, rel. humidity max. 80%		
Max. temperature combustion air	[°C]	60	60	60
Minimum pressure gas train D2" FS50 NATURAL GAS/L.P.G. **	[mbar]	326/140	539/237	-/354
Minimum pressure gas train DN65 FS65 NATURAL GAS/L.P.G. **	[mbar]	140/90	231/143	346/195
Minimum pressure gas train DN80 FS80 NATURAL GAS/L.P.G. **	[mbar]	84/70	139/115	208/153
Minimum pressure gas train DN100 FS100 NATURAL GAS/L.P.G. **	[mbar]	68/65	113/90	168/114
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500	500	500
LIGHT-OIL flow min. 1°st. / min. 2°st. - max. 2°st. *	[kg/h]	40/120-350	50/160-450	60/200-550
Fuel: light-oil 1.5°E at 20°C = 6.2 cSt = 35sec Redwood N°1				
Nominal electric power	[kW]	12.5	14	21
Fan motor	[kW]	9	11	18.5
Pump motor	[kW]	2.2	2.2	2.2
Nominal absorption powers	[A]	23.5	27	37.5
Nominal absorption auxiliary	[A]	0.5	0.5	0.5
Power supply:		3~400V, 1N~230V - 50Hz		
Electric protection degree:		IP40	IP40	IP40
Noisiness *** min. - max.	[dB(A)]	84-85	85-88	87-91
Burner weight	[kg]	274	306	341

* 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).

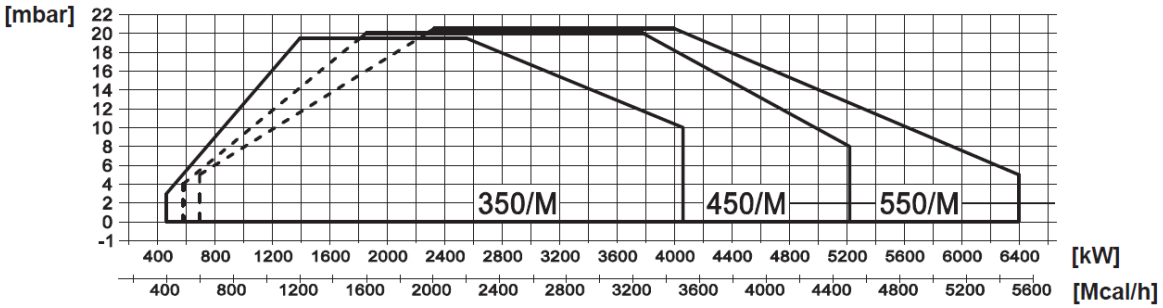


Fig. 1 X = Thermal power Y = pressure in combustion chamber

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]

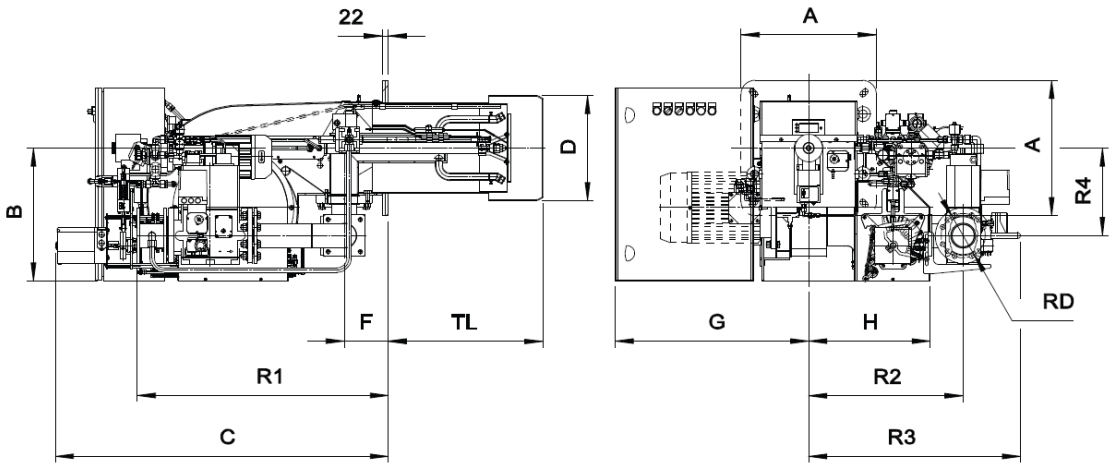


Fig. 2 Dimensions

MODEL	A	B	C	D	F	G	H	R1	R2	R3	R4	RD
K 350/M - D2"	490	481	1206	334	160	600	440	665	535	664	317	Rp 2
K 350/M - DN65	490	481	1206	334	160	600	440	780	560	765	317	DN65
K 350/M - DN80	490	481	1206	334	160	600	440	800	560	783	317	DN80
K 350/M - DN100	490	481	1206	334	160	600	440	840	590	800	317	DN100
K 450/M - D2"	490	481	1206	380	160	600	440	665	535	664	317	Rp 2
K 450/M - DN65	490	481	1206	380	160	600	440	780	560	765	317	DN65
K 450/M - DN80	490	481	1206	380	160	600	440	800	560	783	317	DN80
K 450/M - DN100	490	481	1206	380	160	600	440	840	590	800	317	DN100
K 550/M - D2"	490	481	1206	380	160	600	440	665	535	664	317	Rp 2
K 550/M - DN65	490	481	1206	380	160	600	440	780	560	765	317	DN65
K 550/M - DN80	490	481	1206	380	160	600	440	800	560	783	317	DN80
K 550/M - DN100	490	481	1206	380	160	600	440	840	590	800	317	DN100

BOILER PLATE

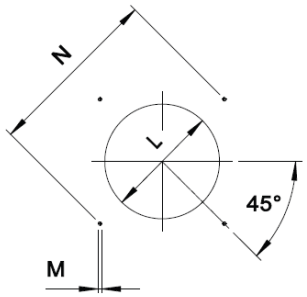


Fig. 3 Boiler plate

MODEL		L min	L *	L max	M	N min	N *	N max
K 350/M	mm	350	350	450	M14	552	552	580
K 450/M	mm	390	390	450	M14	552	552	580
K 550/M	mm	390	410	450	M14	552	552	580

* The dimensions of the boiler plate (threaded holes or studs) must be as indicated in the drawing.

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.

MODEL		TL *
K 350/M	mm	535
K 450/M	mm	560
K 550/M	mm	560

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

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PRODUCT SPECIFICATION

SHORT DESCRIPTION

Dual fuel burners for gas and light-oil two stages progressive (hi-low flame) or modulating (PID fully modulating) if equipped with addition of optional modulation kit and probe.

DETAILED SPECIFICATION

Gas and Light-oil burner two stages progressive (hi-low flame) or modulating (PID fully modulating) if equipped with addition of optional modulation kit and probe; composed by:

- Burner frame made of steel completed by specific boiler plate;
- Centrifugal fan at high pressurization with reverse curved blades at low noisiness;
- Combustion head with adjustment at high performance and elevated flame stability equipped with steel blast tube and steel flame disc;
- Easy extraction of combustion head without get off the burners by bolier;
- Combustible-air adjustment for optimal combustion value;
- Flange and insulating gasket for fixing at boiler;
- Electronic control system for controlling and command the burner;
- UV Photocell for flame detection;
- Gas/light oil selector;
- Three-phase power supply;
- IP40 electric protection level;
- Safety air pressure switch to stop the burner in case of failed or anomalous fan operation;
- Spherical gas servocontrolled valve: progressive start and free way passage with total opening;
- Servomotor for air shutter, for the spherical gas valve and for the light-oil pressure regulator;
- Mobile shutter with total closure when idle for minimize the energetic losses related at boiler cooling;
- Gas train with A class safety valve and A class adjustment valve;
- Leakage control integrate in Lamtec BT340 system;
- Light-oil pressure regulator servo-controlled;
- Light oil gear pump operated by specific electric motor;
- Maximum gas pressure switch to stop the burner in lock-out in case of the gas pressure is higher then the set point value;
- Maximum light-oil pressure switch to stop the burner in case of the light-oil pressure on the return is higher then the set point;
- Pilot ignition (only for GAS fuel);
- 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 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.;
- Reference rules: EN676 (gas) - EN267 (liquid fuel) - EN746-2 (industrial thermoprocessing equipment)

STANDARD EQUIPMENT

- Flexible pipes for connection
- Line filter
- Isomart gasket
- Nozzle
- 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 O2 control (is suggest to add the VSD);
- Sensors and system for CO control (is suggest to add the VSD);
- Sensors and system for O2-CO control (is suggest to add the VSD);
- Modules for field BUS (modbus - profibus - profinet);
- Noise protection;
- Antivibration couplings;
- Handle gas taps.