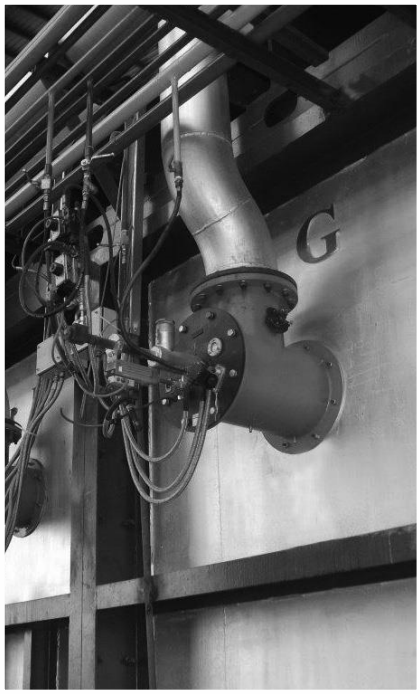
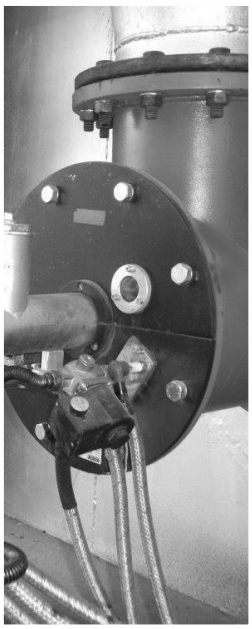
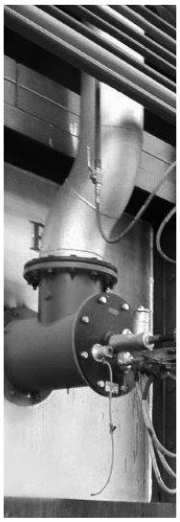
ecostar®
COMBUSTION SYSTEMS







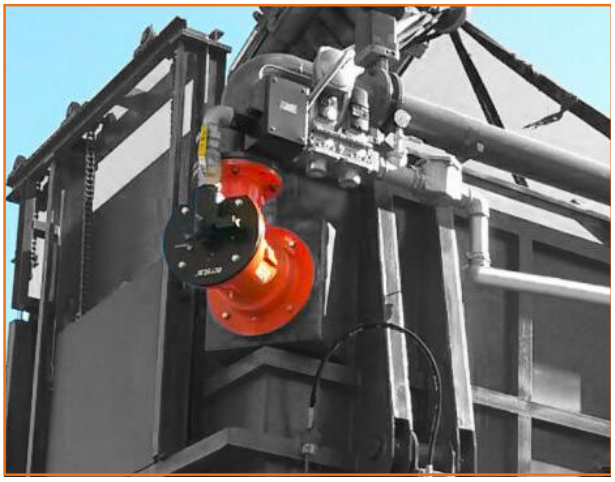
2017

PROCESS BURNERS

www.ecostarburners.com

AREAS OF USE

- Our burners used in furnaces and salt baths where treatment processes are carried out by annealing, recrystallization, normalization, carburization, hardening, etc.,
- In furnaces with crucible and similar ones where alloys like aluminum, magnesium and copper are melted down,
- In dye cabinets where dyed metal products are kiln-dried in dyeing industry,
- In indirect hot air gas generators manufactured to dry various foodstuff, mines, etc.,
- In cabin, tunnel and cart type furnaces that are used in firing similar materials like porcelain and ceramic.



Aluminum melting furnace

Glass melting pot

Cast melting pot

TECHNICAL SPECIFICATIONS

- From 4 kW up to 5800 kW wide capacity range,
- For natural gas, LPG, CNG, Light Oil and Heavy Oil powered operation,
- Flame tube and turbulator made of high temperature-resistant Cr-Ni material,
- High efficiency and trouble-free operation in applications with high temperatures,
- Single stage, two stage, manually modulating, mechanically modulating, pneumatically modulating (Natural gas) and electronically modulating control options; depending on the requirement and demand,
- Single and multi-zone control systems,
- Control panel attached to or detached from the body; depending on the application's requirement,
- Direct or pilot ignition option (pilot ignition is optional for certain models.),
- Ionization or photocell flame control (Photocell flame control is optional for certain models.),
- Easy assembly and disassembly thanks to its design,
- Easy operation and maintenance,
- Different installation options that allow compatibility for various industrial applications,
- Optional flame tube length allows adaptation to new, modernized and currently used applications.

ECOSTAR FPB series Process Burners are compatible even with heavy industry applications owing to its superior design. Easy connection with the connecting flange and the optional flame tube length allow easy adaptation to the rendered systems.

System-specific designed control and command panels meet the requirements of single and multi-zone control systems.

CAPACITY TABLES

FPB PROCESS BURNERS

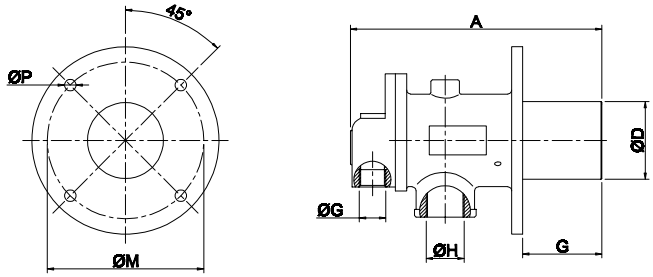
	CAPACITY		CAPACITY		NATURAL GAS		LPG CONSUMPTION		LIGHT OIL CONSUMPTION		HEAVY OIL CONSUMPTION		IN 50 Hz VOLTAGE
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	FAN FLOW RATE
	kcal/h		kW		Nm³/h		Nm³/h		kg/h		kg/h		Nm³/h
FPB 20	4.000	20.000	4,7	23,3	0,5	2,4	0,2	0,9	-	-	-	-	30
FPB 80	16.000	80.000	18,6	93,0	1,9	9,7	0,7	3,6	-	-	-	-	150
FPB 200	40.000	200.000	46,5	232,6	4,8	24,2	1,8	8,9	3,9	19,6	4,1	20,7	350
FPB 300	60.000	300.000	69,8	348,8	7,3	36,4	2,7	13,3	5,9	29,4	6,2	31,1	500
FPB 400	80.000	400.000	93,0	465,1	9,7	48,5	3,6	17,8	7,8	39,2	8,3	41,5	650
FPB 550	110.000	550.000	127,9	639,5	13,3	66,7	4,9	24,4	10,8	53,9	11,4	57,0	900
FPB 870	174.000	870.000	202,3	1011,6	21,1	105,5	7,7	38,7	17,1	85,3	18,0	90,2	1.400
FPB 1200	240.000	1.200.000	279,1	1395,3	29,1	145,5	10,7	53,3	23,5	117,6	24,9	124,4	2.000
FPB 1600	320.000	1.600.000	372,1	1860,5	38,8	193,9	14,2	71,1	31,4	156,9	33,2	165,8	2.500
FPB 2000	400.000	2.000.000	465,1	2325,6	48,5	242,4	17,8	88,9	39,2	196,1	41,5	207,3	3.100
FPB 2500	500.000	2.500.000	581,4	2907,0	60,6	303,0	22,2	111,1	49,0	245,1	51,8	259,1	4.000
FPB 3500	700.000	3.500.000	814,0	4069,8	84,8	424,2	31,1	155,6	68,6	343,1	72,5	362,7	5.500
FPB 5000	1.000.000	5.000.000	1162,8	5814,0	121,2	606,1	44,4	222,2	98,0	490,2	103,6	518,1	7.800

OPTIONAL ACCESSORIES

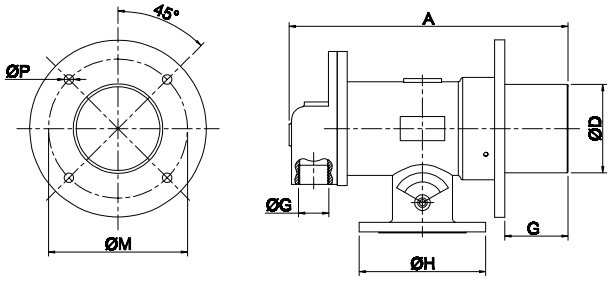
- Command and control panel,
- Gas line equipment,
- Liquid fuel transfer and preparation stations,
- Combustion air fan,
- Modulating control equipment,
- Temperature control equipment,
- Pressure control equipment

PROCESS BURNER DIMENSIONS

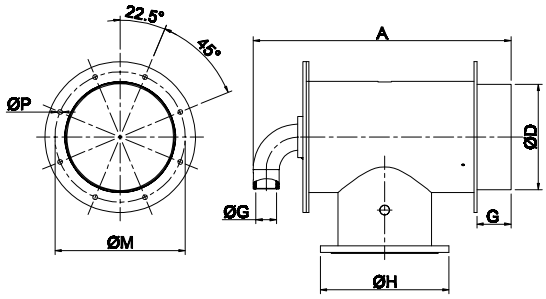
FPB 20 - 80 - 200



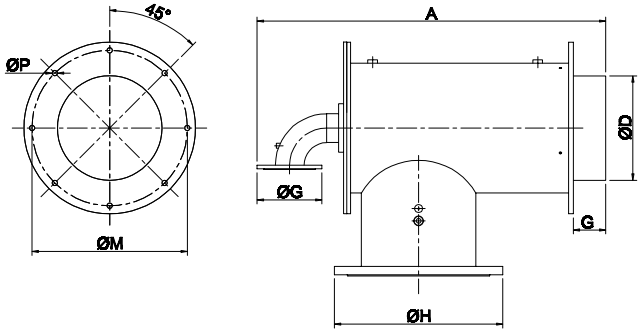
FPB 300 - 400 - 550 - 870 - 1200



FPB 1200 - 1600 - 2000 - 2500



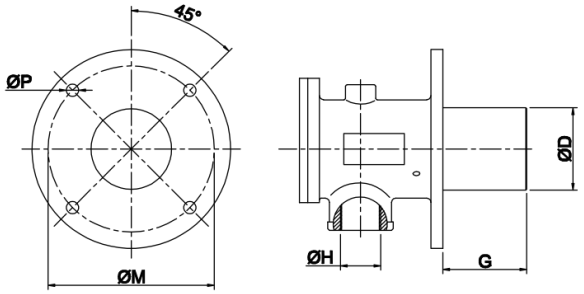
FPB 3500 - 5000



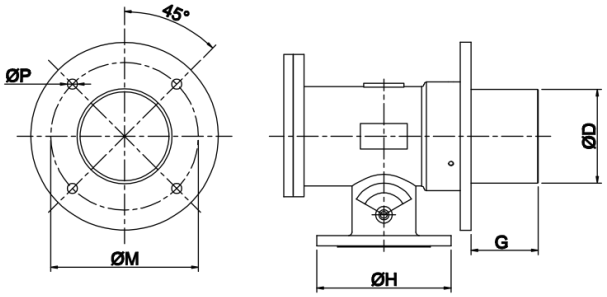
FPB BURNER		A	G	ØD	ØH	ØDG	ØM	ØP
		mm	mm	mm	-	-	mm	mm
CAST BODY	FPB 20	270	100	41	R 3/4"	R 1/2"	90	9
	FPB 80	350	100	69	R 1 1/2"	R 1"	108	12
	FPB 200	365	100	100	R 2"	R 1"	198	12
	FPB 300	490	100	140	NW 80	R 1 1/2"	220	15
	FPB 400	490	100	140	NW 80	R 1 1/2"	220	15
	FPB 550	545	100	175	NW 100	R 1 1/2"	243	15
	FPB 870	620	100	220	NW 150	R 2"	330	17
	FPB 1200	620	100	220	NW 150	R 2"	330	17
STEEL BODY	FPB 1600	800	100	308	NW 250	R 2"	380	14
	FPB 2000	800	100	308	NW 250	R 2"	380	14
	FPB 2500	800	100	308	NW 250	R 2 1/2"	380	14
	FPB 3500	1080	100	322	NW 350	NW 80	480	17
	FPB 5000	1235	100	322	NW 350	NW 100	480	17

LIQUID FUEL BURNER DIAGRAMS

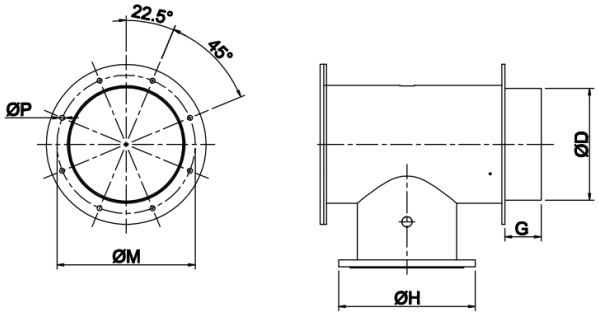
FPB 200



FPB 300 - 400 - 550 - 870 - 1200



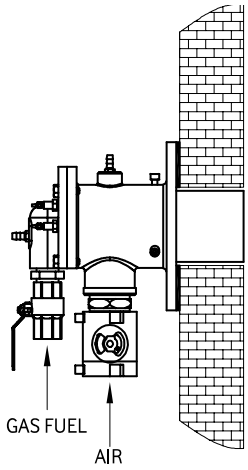
FPB 1600 - 2000 - 2500 - 3500 - 5000



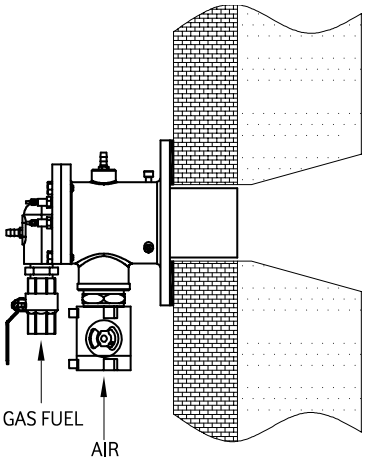
FPB BURNER		ØD	ØH	ØM	ØP
		mm	-	mm	mm
CAST BODY	FPB 200	100	R 2"	198	12
	FPB 300	140	NW 80	220	15
	FPB 400	140	NW 80	220	15
	FPB 550	175	NW 100	243	15
	FPB 870	220	NW 150	330	17
	FPB 1200	220	NW 150	330	17
STEEL BODY	FPB 1600	308	NW 250	380	14
	FPB 2000	308	NW 250	380	14
	FPB 2500	240	NW 250	380	14
	FPB 3500	322	NW 350	480	17
	FPB 5000	322	NW 350	480	17

APPLICATION METHODS

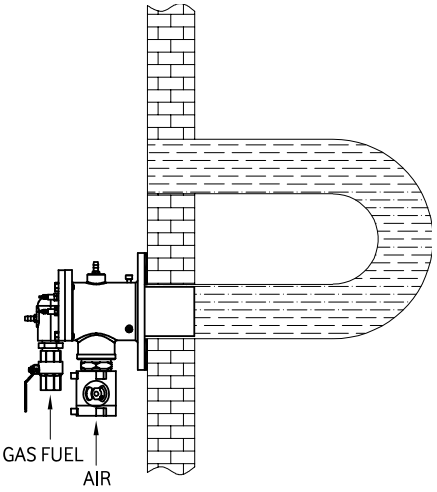
INDUSTRIAL FURNACE AND KILN INSTALLATIONS WITH OPEN FIRING, CYLINDRICAL COMBUSTION CHAMBER



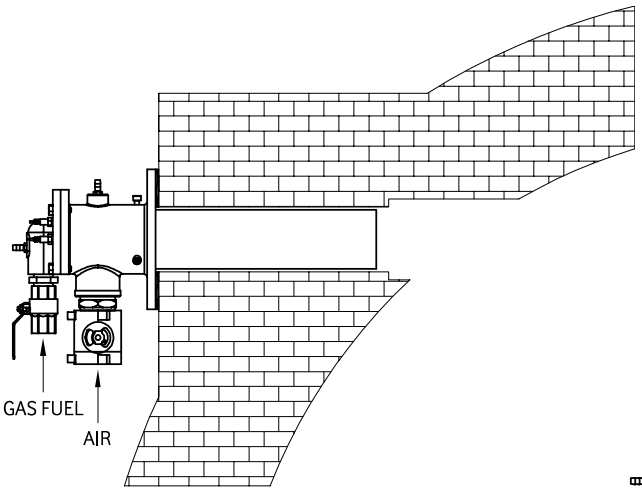
INDUSTRIAL FURNACE AND KILN APPLICATIONS WITH OPEN FIRING, CONICALLY OPENING COMBUSTION CHAMBER



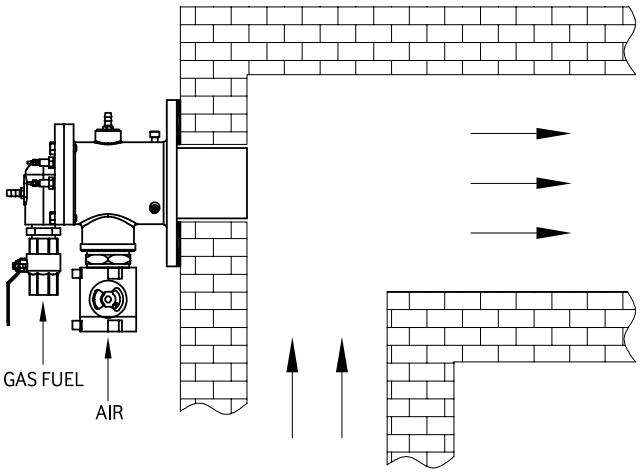
RADIANT TUBE HEATING



TANGENTIALLY FIRED CRUCIBLES

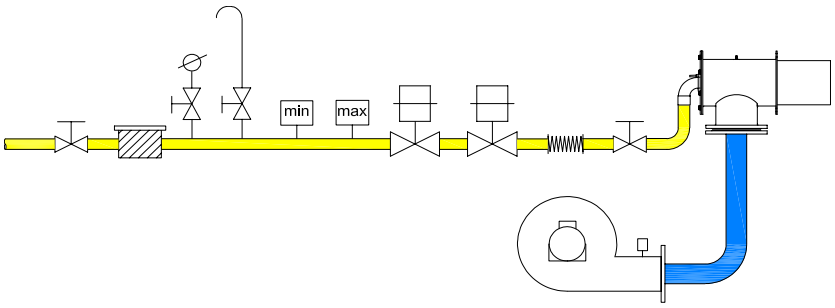


HOT GAS GENARATOR



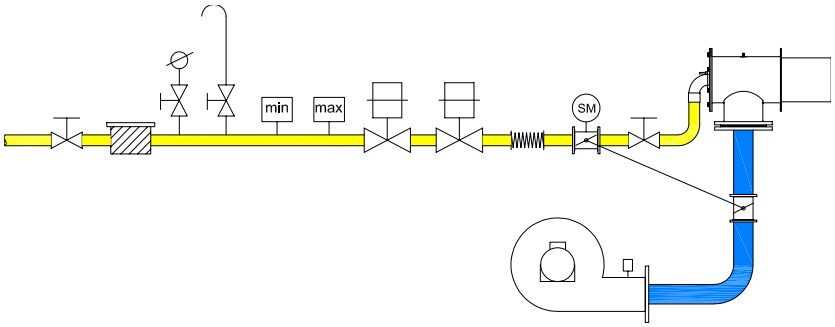
SAMPLE SYSTEM DIAGRAMS

1. SINGLE STAGE PROCESS BURNER



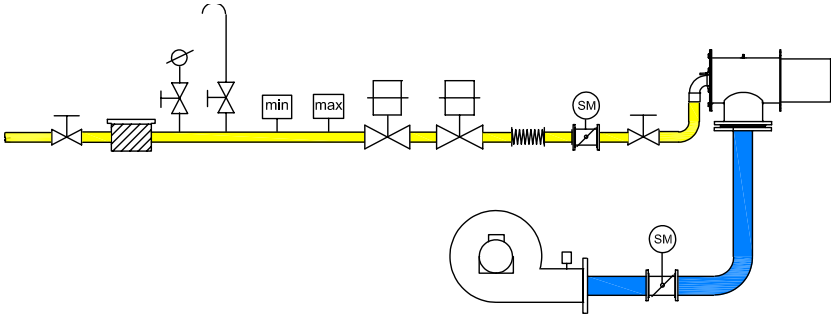
The ON-OFF running process is switched on and off according to the load requirement of the burner process. It operates in a fixed fuel and air ratio setting.

2. MECHANICALLY MODULATING PROCESS BURNER



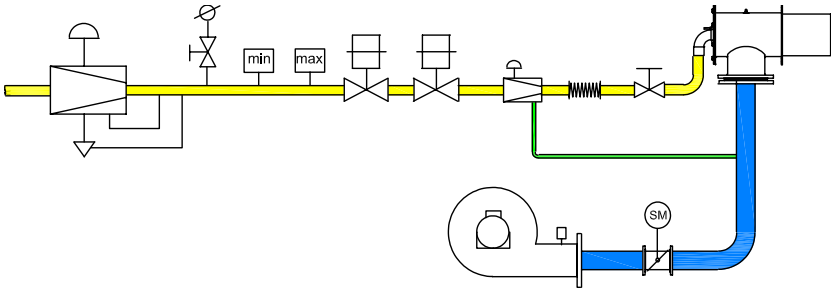
The air and fuel flow ratio is controlled by transferring the propulsion received from a single servomotor connected to gas flap, to the air flap. It runs as modulating within the minimum and maximum

3. ELECTRONICALLY MODULATING PROCESS BURNER



The air and fuel flow ratio is controlled with two separate servo motors, one connected to the gas flap and the other to the air flap. It runs as modulating within the minimum and maximum capacity range.

4. PNEUMATICALLY MODULATING PROCESS BURNER

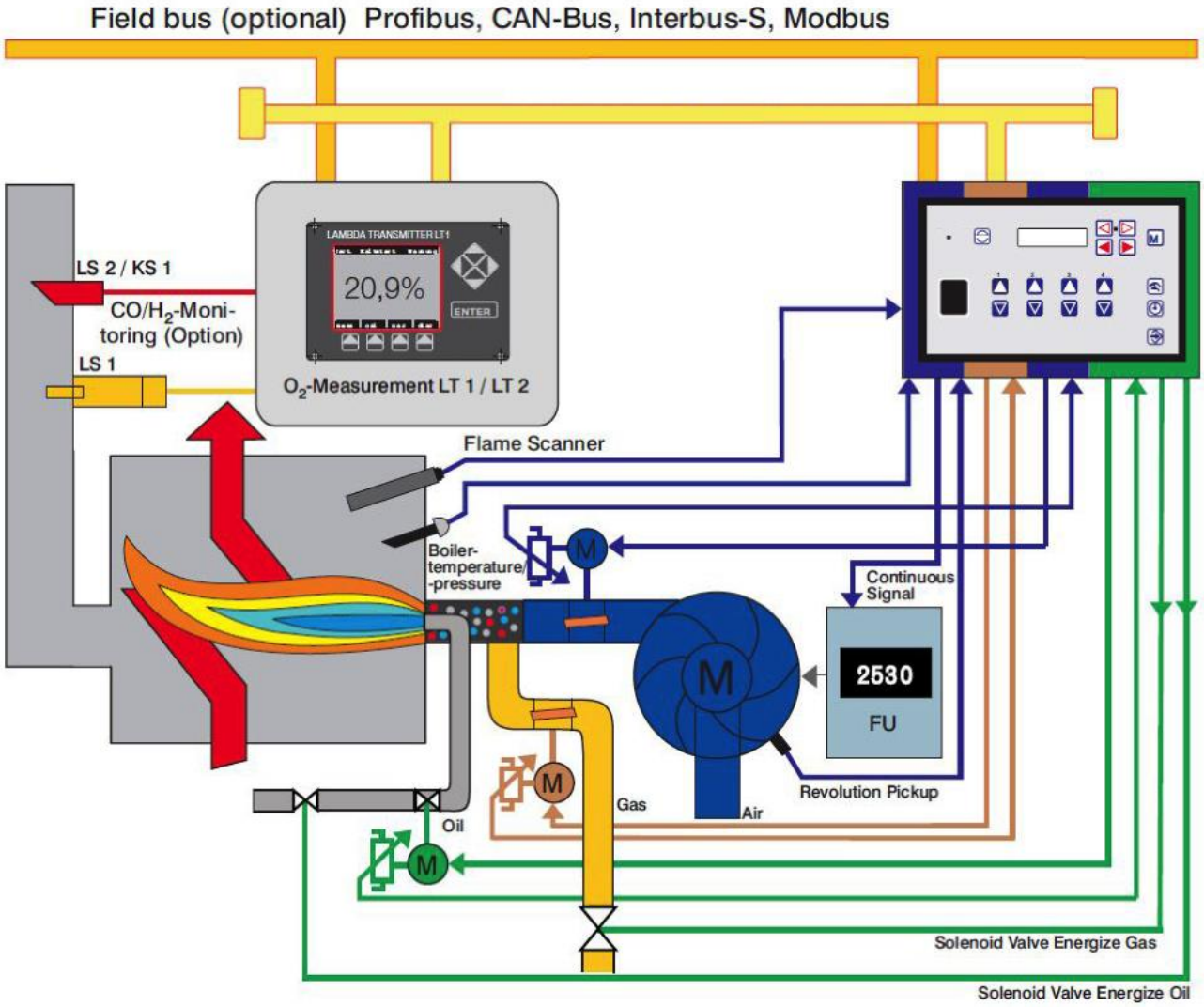


The modulating control of the system is achieved by the balance between the air pressure impulse and the fuel impulse. It runs as modulating within the minimum and maximum capacity range.

ELECTRONIC SINGLE / MULTI-PROCESS BURNER CONTROL SYSTEM

The electronic burning management system is microprocessor system which allows command and control of the burners.

- Gas emission improved with precise air-fuel adjustment,
- Energy saving,
- Fan motor inverter connection,
- Remote control with Profibus/ModBus interface,
- Error history display



RECUPERATIVE BURNERS

NOXMAT
Combustion Technology

The recuperative burners has high energy efficiency, low flue emission values, and designed for direct and indirect heating systems. The combustion air is heated with the recuperator integrated to the burner body.

TECHNICAL SPECIFICATIONS

- Recuperator integrated, high-speed burner for heat recovery,
- Combustion tube and combustion zone with ceramic design air duct,
- Different directions for air inlet, gas inlet and exhaust gas outlet, allows 90-degree changing of positions,
- 100% waste gas suction from the combustion chamber,
- Easy installation and maintenance,

CAPACITY TABLES

	CAPACITY		GAS SUPPLY PRESSURE	AIR SUPPLY PRESSURE	MAX. RECUP. TEMPERATURE	WEIGHT (Burner)
	kW		mbar	mbar	°C	kg
K-RHGH 15/G	9	15	50	60	1300	14/16
K-RHGH 25	13	25	50	100	1300	21
K-RHGH 40	25	40	50	100	1300	28
K-RHGH 80	40	80	50	120	1300	33
K-RHGH 160	80	160	50	120	1300	61
K-RHGH 250	100	250	70	130	1300	65

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