

# RLS 1300-1600-2000/E-/EV Series

Dual Fuel Burners

Product Overview

## Overview

RLS/E-EV series burners are characterised by a modular monoblock structure that means all necessary components can be combined in a single unit thus making installation easier, faster and, above all, more flexible. The series covers a firing range from 7500 to 18500 kW, and they have been designed for use in hot water boilers, overheated water boilers as well as steam boilers. Operation on RLS 1300-1600-2000/E-/EV series is fully "modulating". The burner can, therefore, supply with precision the demanded power, guaranteeing an high efficiency system level and the stability setting, obtaining fuel consumption and operating costs reduction. The innovative combustion head, adjustment system ensures perfect movement during modulation as well as reducing noise and pollutants.



## Technical Data

MODEL		RLS 1300	RLS 1600	RLS 2000	
Burner operation mode		Progressive two-stage or modulating			
Modulation ratio at max. output		1 ÷ 4 (oil) 1 ÷ 5 (gas)			
Servomotor	type	SQM48.4 (Oil and Gas)			
	run time s	30s / 90°			
Heat output	kW	2400/7500 ÷ 12500	3100/5500 ÷ 15500	3700/11500 ÷ 18500	
	Mcal/h	2064/6450 ÷ 10750	2666/4730 ÷ 13330	3182/9890 ÷ 15910	
Working temperature	°C min./max.	0/60			
<b>FUEL/AIR DATA</b>					
Light oil	net calorific value	kWh/kg	11,86		
	viscosity at 20°C	mm <sup>2</sup> /s (cSt)	4 ÷ 6		
	output	kg/h	202/632 - 1060	261/801 - 1307	312/970 - 1560
Pump	type	VB...			
	output	kg/h	2970 (at 30 bar)		
Fuel nozzle pressure	bar	25 ÷ 30			
Fuel temperature	rated °C	20			
Fuel pre-heater		NO			
G20 gas	net calorific value	kWh/Nm <sup>3</sup>	10		
	gas density	kg/Nm <sup>3</sup>	0,71		
	gas delivery	Nm <sup>3</sup> /h	240/750 ÷ 1250	310/950 ÷ 1550	370/1150 ÷ 1850
G25 gas	net calorific value	kWh/Nm <sup>3</sup>	8,6		
	gas density	kg/Nm <sup>3</sup>	0,78		
	gas delivery	Nm <sup>3</sup> /h	279/872 ÷ 1453	360/1105 ÷ 1802	430/1337 ÷ 2151
LPG gas	net calorific value	kWh/Nm <sup>3</sup>	25,8		
	gas density	kg/Nm <sup>3</sup>	2,02		
	gas delivery	Nm <sup>3</sup> /h	93/291 ÷ 484	120/368 ÷ 601	143/446 ÷ 717
Fan	type	Backward blades			
Air temperature	max °C	60			
<b>ELECTRICAL DATA</b>					
Electrical supply	Ph/Hz/V	3N/400/50 (±10%)			
Auxiliary electrical supply	Ph/Hz/V	1/230/50 ~ (±10%)			
Control box	type E/EV	LMV 51.1 / LMV 52.2			
Total electrical power	kW	36 (oil) / 32 (gas)	42 (oil) / 39 (gas)	51 (oil) / 47 (gas)	
Auxiliary electrical power	kW	-			
Heaters electrical power	kW	-			
Protection level	IP	54			
Fan motor	electrical power	kW	30	37	45
	rated current	A	55 - 32	68 - 40	80 - 46
	utilization category	A	SC-3 (IEC 60947-4-1)		
	protection level	IP	54		
Ignition transformer	V1 - V2	230V - 1 x 8 kV			
	I1 - I2	1 A - 20 mA			
Operation		Intermittent (at least one stop every 24 h) or Continuous			

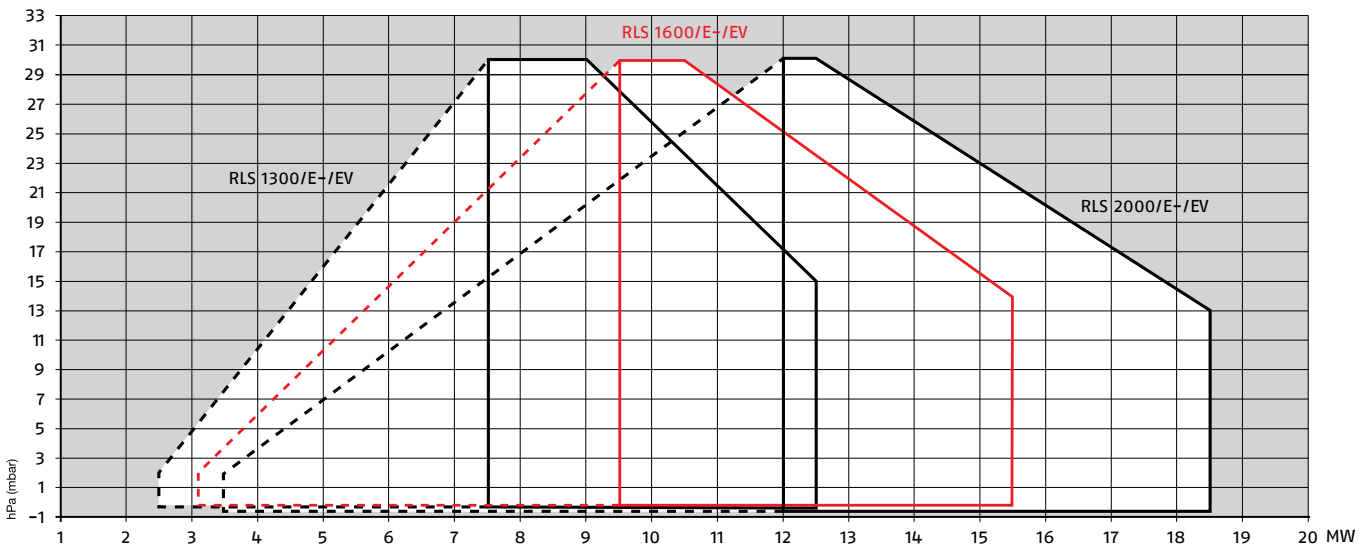
MODEL			RLS 1300	RLS 1600	RLS 2000
<b>EMISSIONS</b>					
Noise levels	sound pressure	dB (A)	90	91	93
	sound power	W	101	102	104
Light oil	CO emission	mg/kWh		< 10	
	grade of smoke indicator	N° Bacharach		< 2	
	CxHy emission	mg/kWh		< 2	
	NOx emission	mg/kWh		< 250	
Gas G20	CO emission	mg/kWh		< 10	
	NOx emission	mg/kWh		< 200	
<b>APPROVAL</b>					
Directive			2006/42 - 2009/142 - 2004/108 - 2006/95 EC		
Conforming to			EN 267 - EN 676		
Certification			In progress		

Reference conditions:

Temperature: 20°C - Pressure: 1013,5 mbar - Altitude: 0 m a.s.l. - Noise measured at a distance of 1 meter.

## Firing Rates

### RLS 1300-1600-2000/E - /EV



- Rated working field for burner selection
- Modulation range

Test conditions conforming to EN676  
 Temperature: 20°C  
 Pressure: 1013,5 mbar  
 Altitude: 0 m a.s.l.

# Gas Train Specification

## GAS TRAIN DESIGNATION

Series: MB

MBC
DMV
DMV12
VGD
CB
CBH
MV
CG

Size:	405	407	410	412	415	420							
		65	120	300	700	1200	-	1900	3100	5000			
	505	507	510	512	-	520	525	5065	5080	50100	50125	50150	
	10	15	20	32	40	-	50	-	65	80	100	125	150
		120	220										

Operation:

/S	only ON-OFF function
/1	stage mode opening
/2	2nd stage mode opening
/P	1st stage mode opening with air/gas proportional regulator

Leak detection control:

-	0
CT	leak detection control device installed on the gas train
CQ	equipped with pressure switch for leak detection control

Joint type:

R	threaded joint
F	standard flange ISO
F1	square flange BS1
F2	square flange BS2
F3	square flange BS3 - BS4

Electrical connection:

T	Terminals - Terminal strip
SD	Domestic plug
SM	Medium voltage plug

Standard output pressure range:

-	without pressure governor
0	with governor and air/gas proportional pressure
2	with governor and output pressure up to 20 mbar
3	with governor and output pressure up to 30 mbar
4	with governor and output pressure up to 40 mbar
5	with governor and output pressure up to 50 mbar
6	with governor and output pressure up to 60 mbar
8	with governor and output pressure up to 80 mbar
15	with governor and output pressure up to 150 mbar

Valve control:

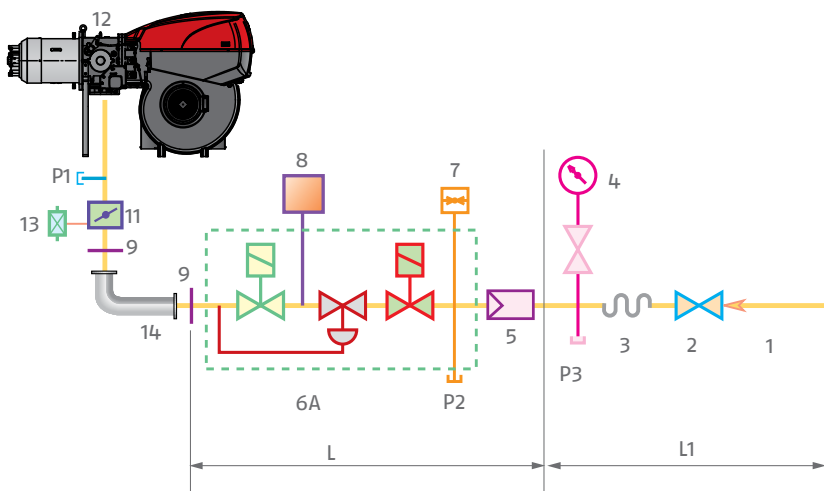
0	shared
2	separate

CB	5065	/1	CT	F	SM	3	0
BASIC DESIGNATION				EXTENDED DESIGNATION			

**GAS TRAINS**

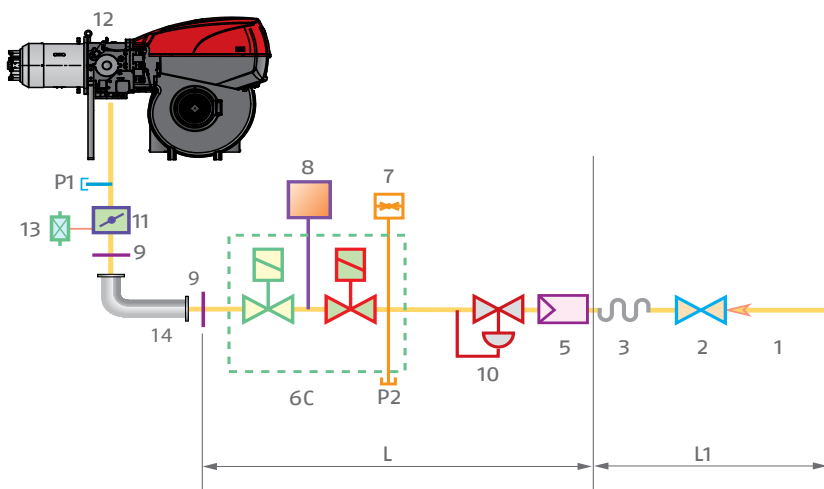
The burners are fitted with a butterfly valve to regulate the fuel, controlled by the main management module of burner through a high precision servomotor.  
 Fuel can be supplied either from the right or left sides, on the basis of the application requirements.  
 A maximum gas pressure switch stops the burner in case of excess pressure in the fuel line.  
 The gas train can be selected to best fit system requirements depending on the fuel output and pressure in the supply line.  
 The gas trains are with or without seal control.

**MBC "FLANGED"**

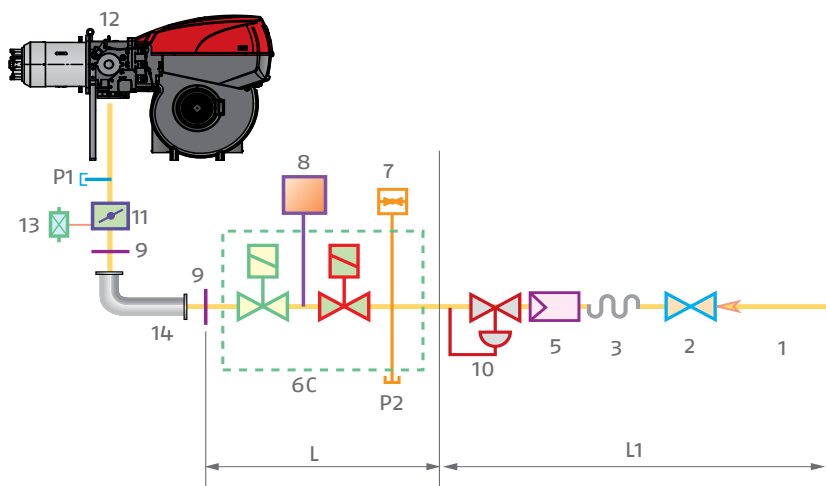


1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6A	Includes: - operation valve - safety valve - pressure adjuster
6B	Includes: - operation valve + pressure adjuster (SKP25) - safety valve (SKP 15) - pressure adjuster
6C	Includes: - operation valve - safety valve
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code.
9	Gasket, for "flanged" versions only
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor, supplied separately
P1	Combustion head pressure
P2	Upstream pressure of valves
P3	Upstream pressure of the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer' responsibility

**CB "FLANGED OR THREADED"**

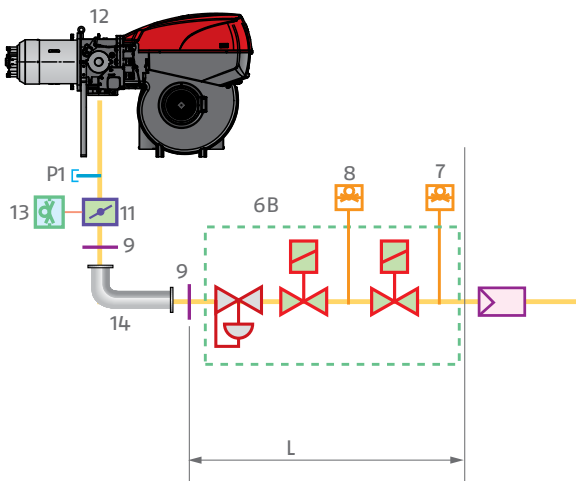


**DMV "FLANGED"**



1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6A	Includes: - operation valve
	- safety valve
	- pressure adjuster
6B	Includes: - operation valve + pressure adjuster (SKP25)
	- safety valve (SKP 15)
	- pressure adjuster
6C	Includes: - operation valve
	- safety valve
7	Minimum gas pressure switch
8	Leak detection device, supplied as an accessory or incorporated, based on the gas train code.
9	Gasket, for "flanged" versions only
10	Pressure adjuster
11	Gas adjuster butterfly valve
12	Burner
13	Maximum gas pressure switch
14	Gas train-burner adaptor, supplied separately
P1	Combustion head pressure
P2	Upstream pressure of valves
P3	Upstream pressure of the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer' responsibility

**VGD "FLANGED"**

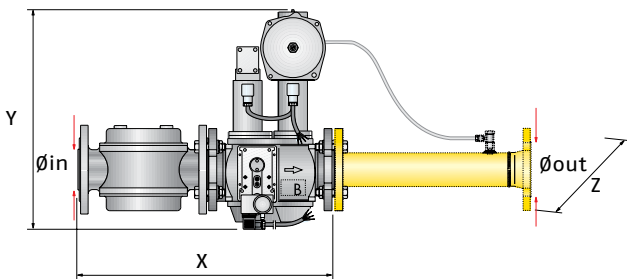


Gas trains are approved by standard EN 676 together with the burner. The overall dimensions of the gas train depends on how they are constructed. The following table shows the maximum dimensions of the gas trains that can be fitted to RLS 1300-1600-2000/E-/EV burners, intake and outlet diameters and seal control if fitted.

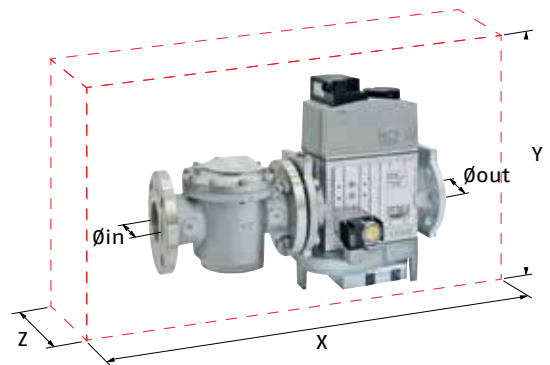
The maximum gas pressure of gas train "COMPOSED" type is 500 mbar.

For version DN 65 and DN 80 is from 20 to 40 mbar. For version DN 100 is from 40 to 80 mbar. The range of pressure in the "MULTIBLOC" with flange can be modified choosing the stabiliser spring (see gas train accessory). The maximum gas pressure of gas train "CB" series is 500 mbar. "CB" gas train guarantees a range of pressure towards the burner from 10 to 30 mbar. The range of pressure can be modified choosing the stabilizer spring (see accessories).

The maximum gas pressure of gas train "DMV" series is 500 mbar. "DMV" gas train is supplied without pressure governor. The maximum gas pressure of gas train "VGD" series is 500 mbar. VGD guarantees a range of pressure towards the burner. Frome 15 to 150 mbar. The range can be modified choosing a different spring (see accessories).



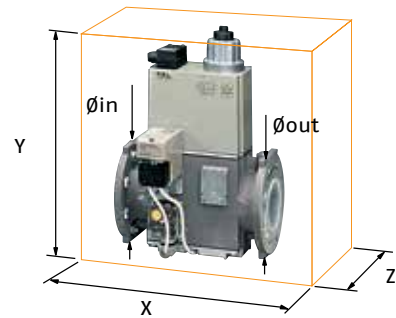
Example of gas train "VGD" type



Example of gas train "COMPOSED" type without seal control (i.e. MBC 1900-3100-5000)



Example of gas train "CB" series with seal control



Example of gas train "DMV" series with seal control



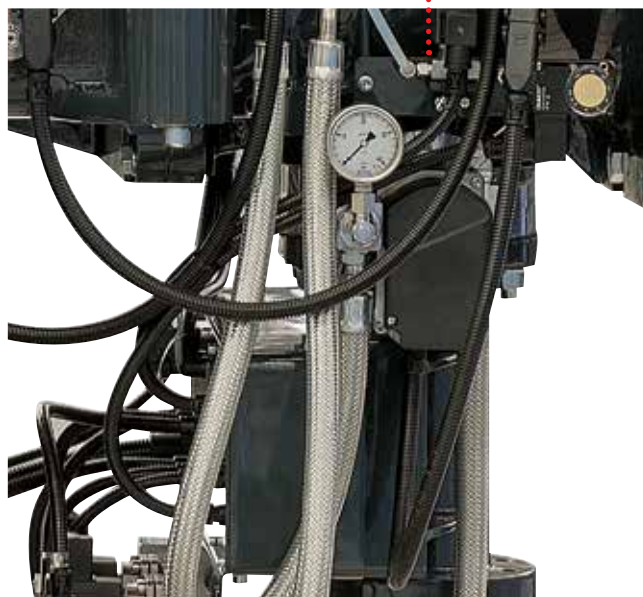
## Hydraulic circuits

The burners are fitted with two valves (a safety valve and an operation valve) and an oil filter along the oil line from the pump to the nozzle.

A pressure regulator on the return circuit from the nozzle enables the quantity of fuel burnt to be varied. Two safety valves on the return circuit avoid oil leakage from the nozzle when the burner is in stand-by and prepurge phase.

The models are fitted with a maximum pressure switch on the oil return circuit, and a minimum oil pressure switch on the oil line from the pump to the nozzle.

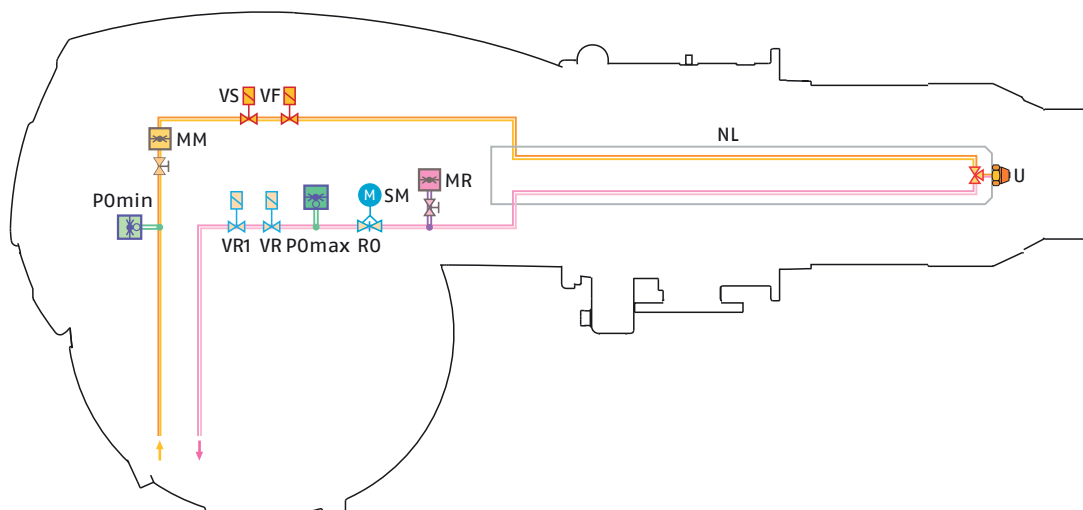
The burner is suitable for continuous operation.



Example of the RLS 1600/EV burner hydraulic circuit

P0 min	Min. oil pressure switch on the delivery circuit
VF	Operating valve
VS	Safety valve on the delivery circuit
MM	Pressure gauge on the delivery circuit
NL	Nozzle pipe
U	Nozzle
MR	Pressure gauge on the return circuit
SM	Servomotor
R0	Pressure regulator on the return circuit
P0 max	Max. oil pressure switch on the return circuit
VR	Safety valve on the return circuit
VR1	Safety valve on the return circuit

### EN 267 > 100 Kg/h RLS 1300-1600-2000/E-EV



## Ventilation

The ventilation unit comes with a sound proofing system. All the burners in the RLS 1300-1600-2000/E-EV series are fitted with fans, which give excellent performance and are fitted in line with the combustion head. The air flow and sound-deadening materials used in the construction are designed to reduce sound emissions to the minimum and guarantee high levels of performance in terms of output and air pressure.

A high precision servomotor through the main management module installed on each burner of RLS 1300-1600-2000/E-EV, controls the air dampers position constantly.



Example of the RLS 1600/EV sound proofing system.

## Combustion Head

The innovative combustion head adjustment system ensures perfect movement during modulation as well as reducing noise and pollutants.

Simple adjustment of the combustion head allows to adapt internal geometry of the head to the output of the burner.

The same adjustment servomotor for the air damper also varies, depending on the required output, the setting of the combustion head, through a simple lever. This system guarantees excellent mix on all firing rates range.



Example of a RLS 1600/EV burner combustion head

## Burner Operation Mode

Each RLS/E-EV series burner is equipped with an electronic microprocessor management panel, which controls the air damper servomotor as well the fuel servomotors.



Hysteresis is prevented by the precise control of the two servomotors and the software link by can - bus.

The high precision regulation is due to the absence of mechanical clearance normally found in mechanical regulation cams on traditional modulating burners. For the burner commissioning it is necessary to use the AZL unit display, for RLS 1300-1600-2000/E and RLS 1300-1600-2000/EV models it is included.

In the RLS 1300-1600-2000/E-/EV burners, the PID regulator to control the boiler temperature or pressure is included in the control box. The burner can work for a long time on intermediate output settings (see picture A).

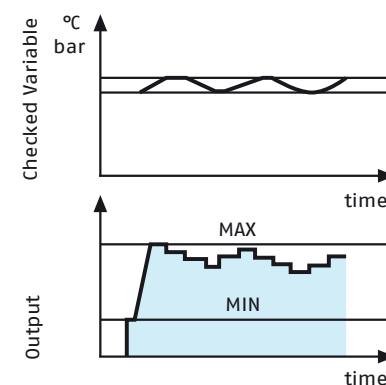
In the RLS/EV series variable speed drive control (VDS) and Oxygen control are obtained by installation of a special kit. The display operating unit (AZL) is already on board.

The display and operating unit (AZL) shows all operational parameters in real time, so as to keep a constant check on the burner:

- servomotor angle
- required set-point and actual set-point
- fuel consumption (RLS/EV)
- smoke and environmental temperature (RLS/EV)
- O<sub>2</sub> value (RLS/EV)
- error checking, self diagnostic fault analysis.

Control box management table		
Function	LMV 51.1	LMV 52.2
Intermittent operation	●	●
Continuous operation	●	●
Intermittent operation flame detector	Infrared Detector	Infrared Detector
Continuous operation flame detector	Infrared Detector	Infrared Detector
Numbers of regulating stepper actuators	4	5
Variable Speed Drive (VSD)	-	○
Input O <sub>2</sub> probe	-	○
Built in O <sub>2</sub> regulator	-	○
Single fuel operation	●	●
Double fuel operation (different timing for oil and gas)	●	●
Gas valve proving system	●	●
Built in temperature pressure PID regulator	●	●
External analog modulation	on demand	●
Analog input signal for preset load	●	●
Analog 4÷20 mA output load signal	●	●
Efficiency Indication	-	○
External e-Bus Interface (AZL)	●	●
Commissioning PC Interface (AZL)	○	○
Commissioning Interface Display (AZL)	●	●

“Modulating” operation



Picture A

- Included in supply
- As accessory

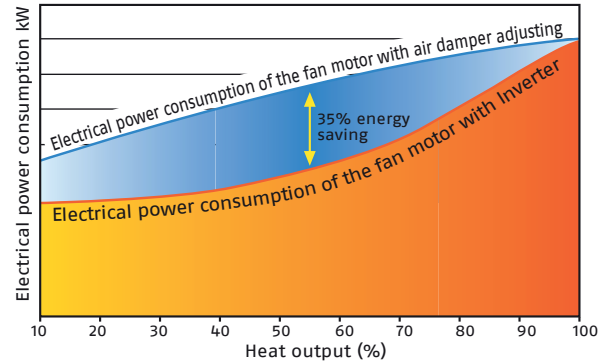
Control box management version table		
	RLS/E version	RLS/EV version
LMV 51.1	●	
LMV 52.2		●

**FAN SPEED CONTROL (ON DEMAND)**

The inverter device fitted to the RLS/EV series burner acts on the electrical supply frequency of the fan motor to adjust the air flow through the motor speed variation.

The main advantages of speed control:  
 - lower sound emissions  
 - electric power saving.

The fan motor supplies just the necessary air flow, thus reducing sound emissions and avoiding energy loss due to the air damper regulation mechanism. The inverter technology can save up to 35% of the energy costs. A safety device to verify the correct speed of the motor is mounted on the air suction circuit of the burner.



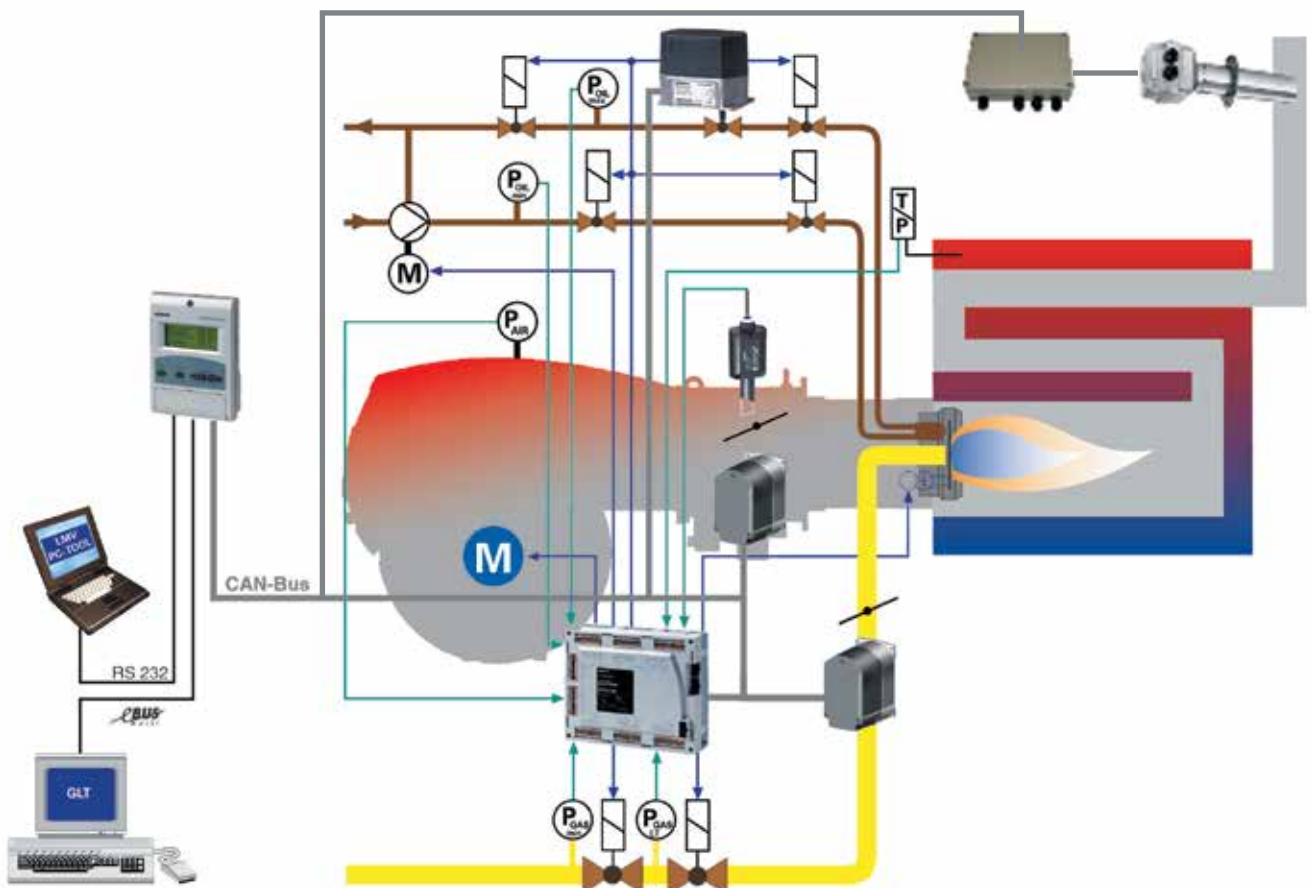
**BURNER MANAGEMENT SYSTEM**

The new electronic cam is a microprocessor based burner management system with matching system components for the control and supervision of forced draft burners.

The system components are interconnected via a bus system.

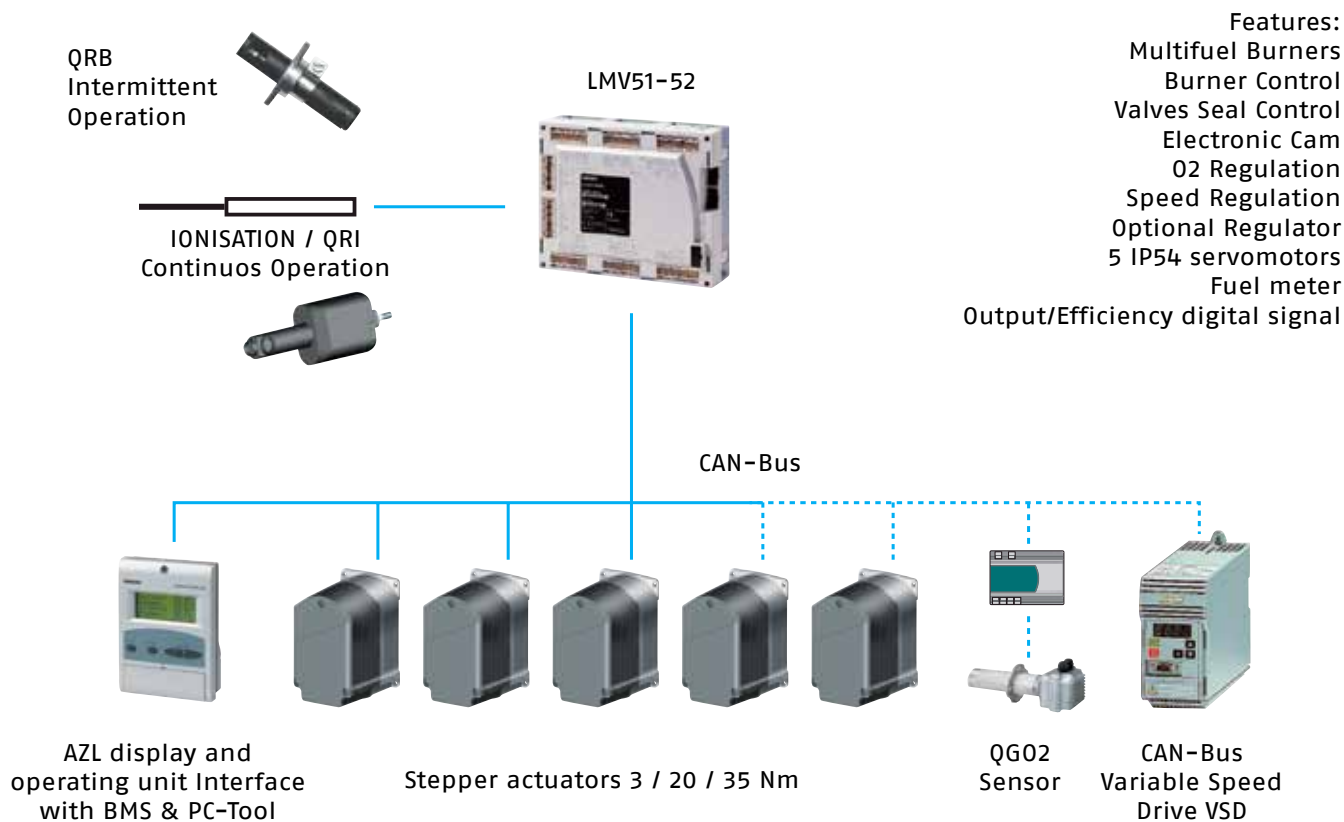
Communication between the individual bus users takes place via a reliable system-based data bus.

All safety-related digital outputs of the system are permanently monitored via e contact feedback network.



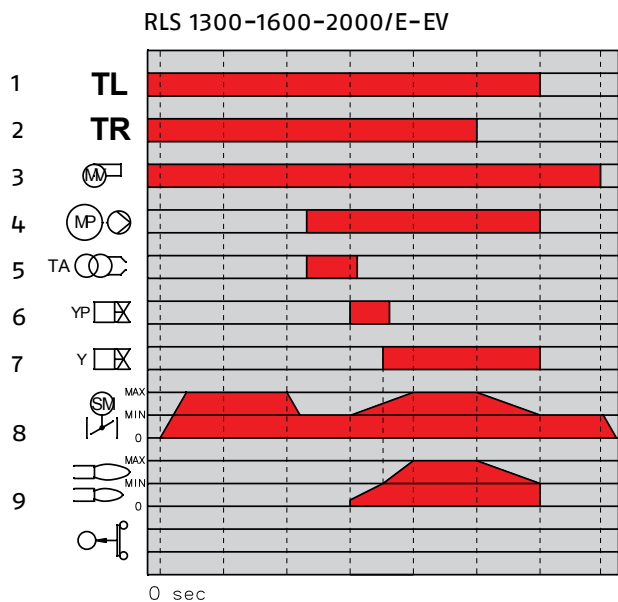
Example of burner management system in dual fuel burner configuration

**ELECTRONIC CAM PLATFORM**



**Operation**

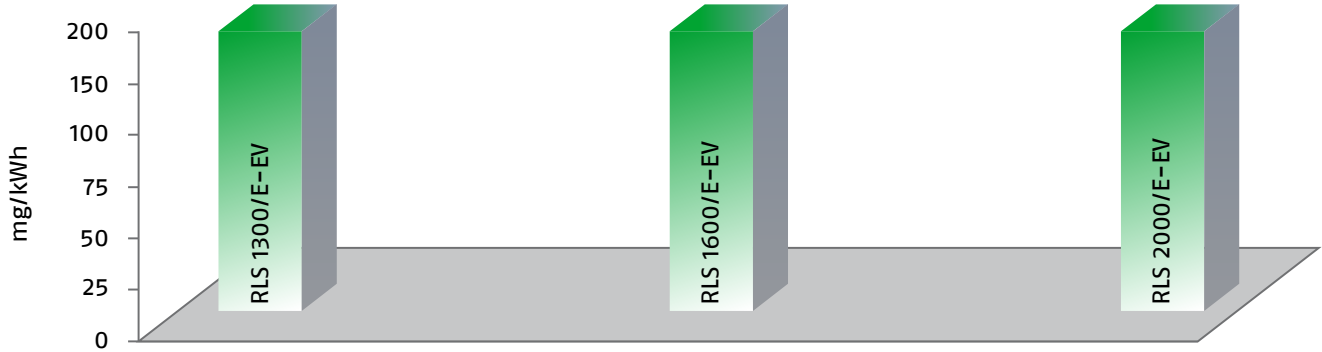
**START UP CYCLE**



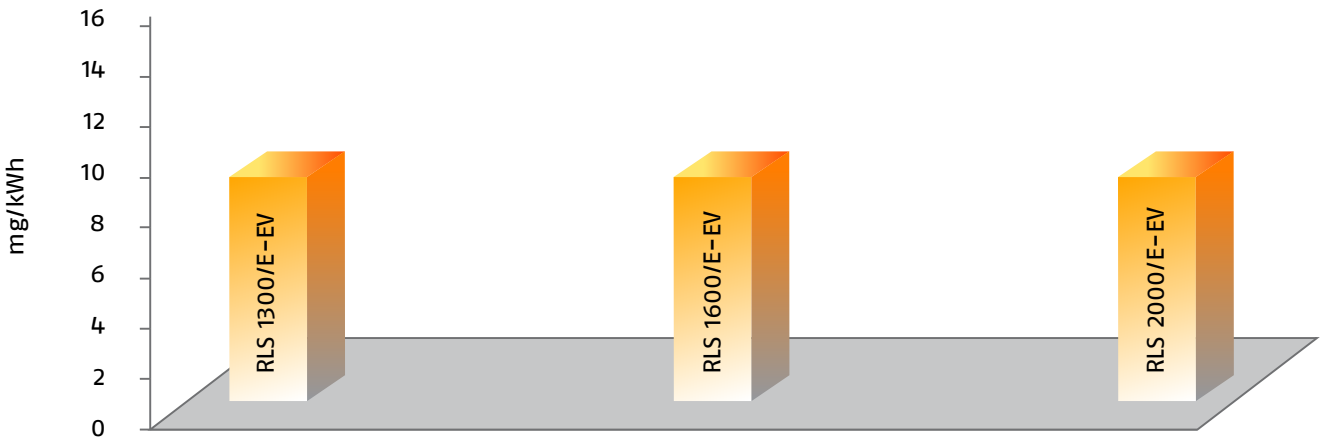
- 1 - Closing thermostat
- 2 - Closing thermostat
- 3 - Fan motor working
- 4 - Pump motor working
- 5 - Ignition transformer
- 6 - Valves open
- 7 - Valves open
- 8 - Actuators
- 9 - Flame max. - min.

# Emission

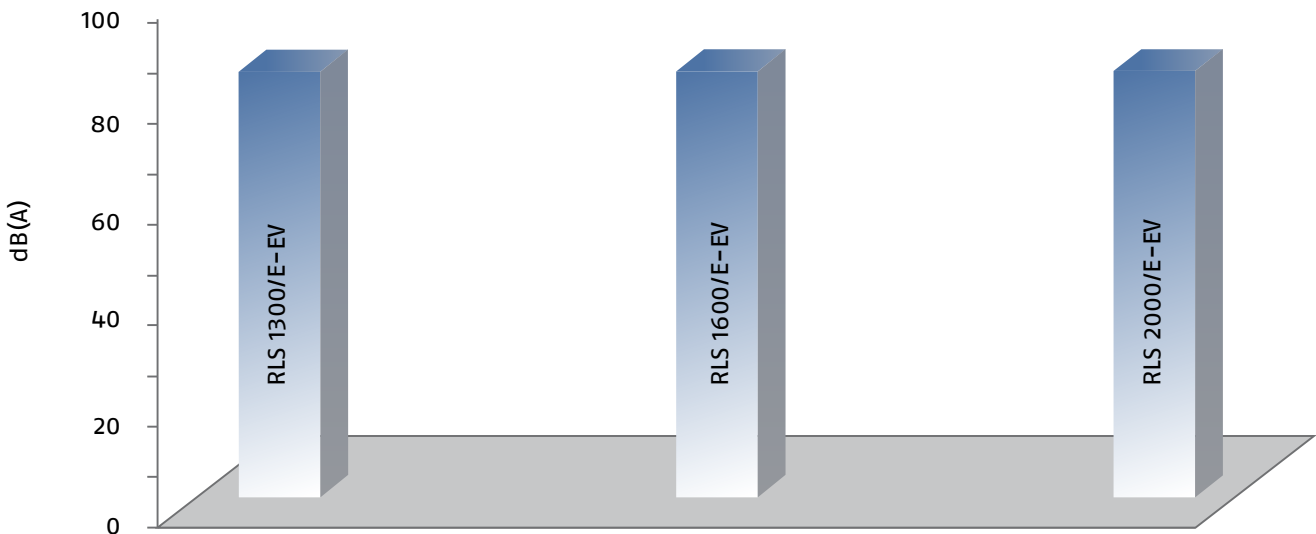
**NO2 EMISSIONS (gas G20)**



**CO EMISSIONS (gas G20)**



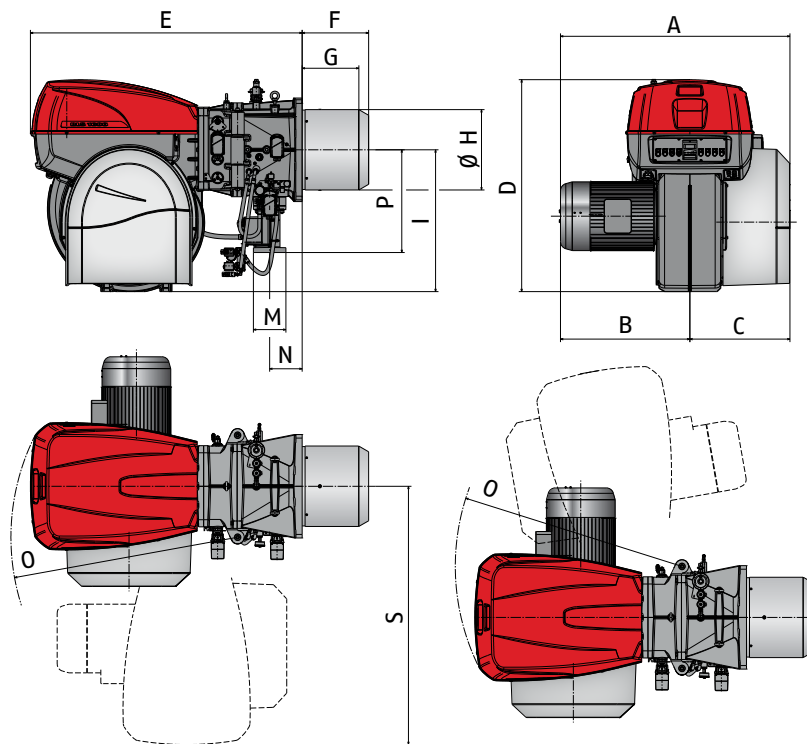
**NOISE EMISSIONS**



The noise emissions have been measured at the maximum output.

# Overall Dimensions (mm)

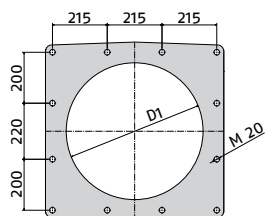
## BURNER



## BURNER - BOILER MOUNTING FLANGE

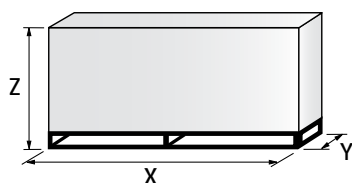
MODEL	A	B	C	D	E	F	G	H	I	M	N	O	P	S
RLS 1300/E-EV	1495	815	680	1433	1840	450	384	456	960	DN100	212	1540	695	1750
RLS 1600/E-EV	1540	860	680	1433	1840	450	384	456	960	DN100	212	1540	695	1750
RLS 2000/E-EV	1555	875	680	1433	1840	450	384	545	960	DN100	212	1540	695	1750

## BURNER - BOILER MOUNTING FLANGE



MODEL	D1
RLS 1300/E-EV	560
RLS 1600/E-EV	560
RLS 2000/E-EV	560

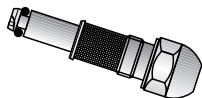
## PACKAGING



MODEL	X	Y	Z	kg
RLS 1300/E-EV	2600	1710	1650	850
RLS 1600/E-EV	2600	1710	1650	900
RLS 2000/E-EV	2600	1710	1650	950

## Burner accessories

### NOZZLES



The nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required fuel output.

BURNER	NOZZLE TYPE	RATED DELIVERY (kg/h)	NOZZLE CODE
RLS 1300-1600-2000/E-EV	22 N1 45°	700	20091731
RLS 1300-1600-2000/E-EV	22 N1 45°	750	20091732
RLS 1300-1600-2000/E-EV	22 N1 45°	800	20091733
RLS 1300-1600-2000/E-EV	22 N1 45°	850	20091734
RLS 1300-1600-2000/E-EV	22 N1 45°	900	20091735
RLS 1300-1600-2000/E-EV	22 N1 45°	950	20091736
RLS 1300-1600-2000/E-EV	22 N1 45°	1000	20091737
RLS 1300-1600-2000/E-EV	22 N1 45°	1100	20091738
RLS 1300-1600-2000/E-EV	22 N1 45°	1200	20091739
RLS 1300-1600-2000/E-EV	22 N1 45°	1300	20091740
RLS 1300-1600-2000/E-EV	22 N1 45°	1400	20091741
RLS 1300-1600-2000/E-EV	22 N1 45°	1500	20091742



**ACCESSORIES FOR MODULATING OPERATION**



The relative temperature or pressure probes fitted to the regulator, must be chosen on the basis of the application.

BURNER	PROBE TYPE	RANGE (°C) (bar)	PROBE CODE
All models	Temperature PT 100	-100 ÷ 500°C	3010110
	Pressure 4 ÷ 20 mA	0 ÷ 2,5 bar	3010213
	Pressure 4 ÷ 20 mA	0 ÷ 16 bar	3010214
	Pressure 4 ÷ 20 mA	0 ÷ 25 bar	3090873

**VARIABLE SPEED DRIVE (VSD) FOR RLS/EV SERIES ONLY**



The motor speed variation for the RLS/EV burners series is obtained thanks to a frequency converter: variable speed drive (VSD). It always must be ordered with RLS/EV series.

BURNER	MAX POWER (kW)	KIT CODE
RLS 1300/EV	30	20030338
RLS 1600/EV	37	3090927
RLS 2000/EV	45	3091729

**OXYGEN CONTROL KIT (QG02)**



The QG02 is an oxygen analyzer with relevant probe which controls and supervises the residual oxygen content in exhaust gases.

BURNER	KIT CODE
RLS 1300-1600-2000/EV	20045187

**PC INTERFACE SOFTWARE (ACS 450)**



PC tool for convenient programming and burner settings, process visualization, data recording, selection of AZL language, software update AZL.

BURNER	KIT CODE
All models	3010388

**KIT EFFICIENCY WITH OXYGEN CONTROL KIT (FOR RLS/EV ONLY)**



The kit includes two temperature sensors: one for air and one for exhaust gas detection. They must be wired to oxygen control kit interface to allow the LMV 52 efficiency calculation. The value is showed on AZL display.

BURNER	KIT CODE
All models	3010377 (*)

(\*) Probe type PT 1000 - range -80°C + 600°C

**LPG KIT**



For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner.

BURNER	KIT CODE
RLS 1300-1600-2000/E-EV C13	in progress

(\*) Certification in progress, CE approval on field is required

**DISPLAY AND OPERATING UNIT (AZL)**

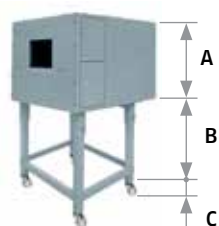


This tool is needed for combustion system commissioning and monitoring. The AZL, Display and Operating Unit, is included in RLS 1300-1600-2000/E and RLS/EV models.

BURNER	KIT CODE
All models	3010469 (*)

(\*) for Russian market only

**SOUND PROOFING BOX**



If noise emission needs reducing even further, sound-proofing boxes are available.

In case of generator heights, where a lower dimension "B" is required, ask for the Box Support Kit code.

BURNER	BOX TYPE	A (mm) MIN-MAX	B (mm)	C (mm)	[dB(A)] (*)	BOX CODE
RLS 1300-1600-2000/E-EV	C8	1495 - 1555	1500	110	10	NEW

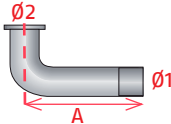
(\*) Average noise reduction according to EN 15036-1 standard

## Gas train accessories

### ADAPTERS

In certain cases, an adapter must be fitted between the gas train and the burner, when the diameter of the gas train is different from the set diameter of the burner.

Below are given the available adapters; please see on the Gas Train list the correct adapter codes to select.

ADAPTER	DIMENSIONS					ADAPTER CODE
	$\varnothing 1$ DN	$\varnothing 2$ DN	A mm	B mm	C mm	
	65	100	230	-	-	NEW
	80	100	230	-	-	NEW
	100	100	230	-	-	NEW
	125	100	230	-	-	NEW

### STABILISER SPRING



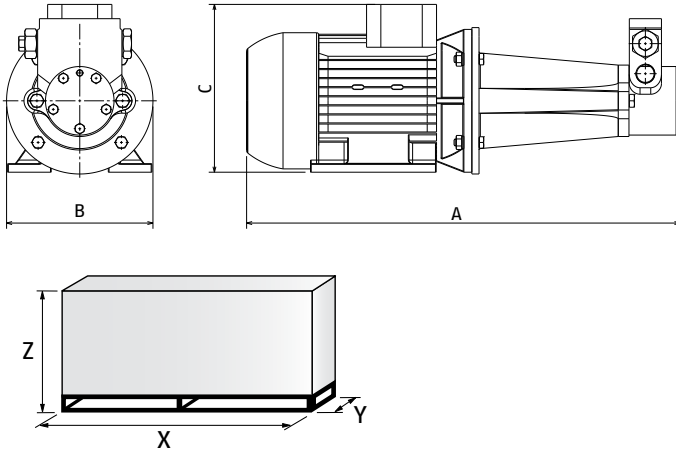
To vary the pressure range of the gas train stabilisers, accessory springs are available. The following table shows these accessories with their application range. Please refer to the technical manual for the correct choice of spring.

GAS TRAIN	SPRING COLOUR	SPRING PRESSURE RANGE mbar	SPRING CODE
MBC 1900/1 - 3100/1 MBC 5000/1	White	4 - 20	3010381
	Red	20 - 40	3010382
	Black	40 - 80	3010383
	Green	80 - 150	3010384
CB 5065/1 - 5080/1	Red	25 - 55	3010133
	Black	60 - 110	3010135
	Pink	100 - 150	3090456
	Grey	140 - 200	3090992
CB 50100/1	Red	25 - 55	3010134
	Black	60 - 110	3010136
	Pink	100 - 150	3090489
	Grey	140 - 200	3092174
CB 50125/1	Red	25 - 55	3010315
	Yellow	30 - 70	3010316
	Black	60 - 110	3010317
	Pink	100 - 150	3010318
VGD 80, 100, 125, 150	Yellow	15 - 120	Standard on board
	Red	100 - 250	(2541086)

# Pumping Unit

## GP SERIES

### OVERALL DIMENSIONS (mm) - PACKAGING



MODEL	A	B	C
GP 2200	680	230	270
GP 3000	680	230	270
GP 3600	740	270	310
SG 4800	740	270	310

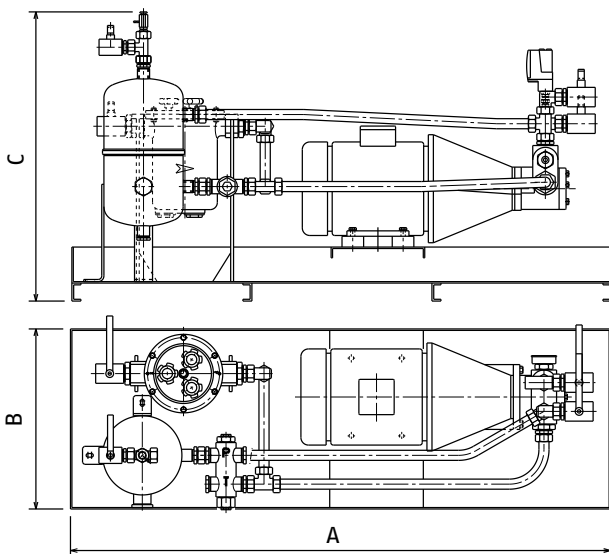
MODEL	X	Y	Z
All models	800	330	260

CODE	MODELS	FUEL	PORT	DELIVERY at 30 mbar	MOTOR (kW)	MAX DELIVERY (kg/h)
3091137	GP 2200	LIGHT OIL	1"	2200 l/h	4	900
20098505	GP 3000	LIGHT OIL	1"	3000 l/h	4	12500
3093218	GP 3600	LIGHT OIL	1"	3600 l/h	5.5	1500
20098507	GP 4800	LIGHT OIL	1"	4800 l/h	7.5	2000

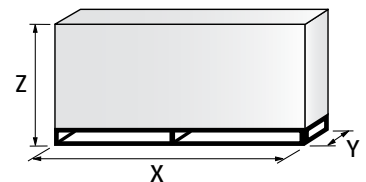
# Pumping Unit Skids

## SG SERIES

### OVERALL DIMENSIONS (mm) - PACKAGING



MODEL	A	B	C
All models	1500	500	803



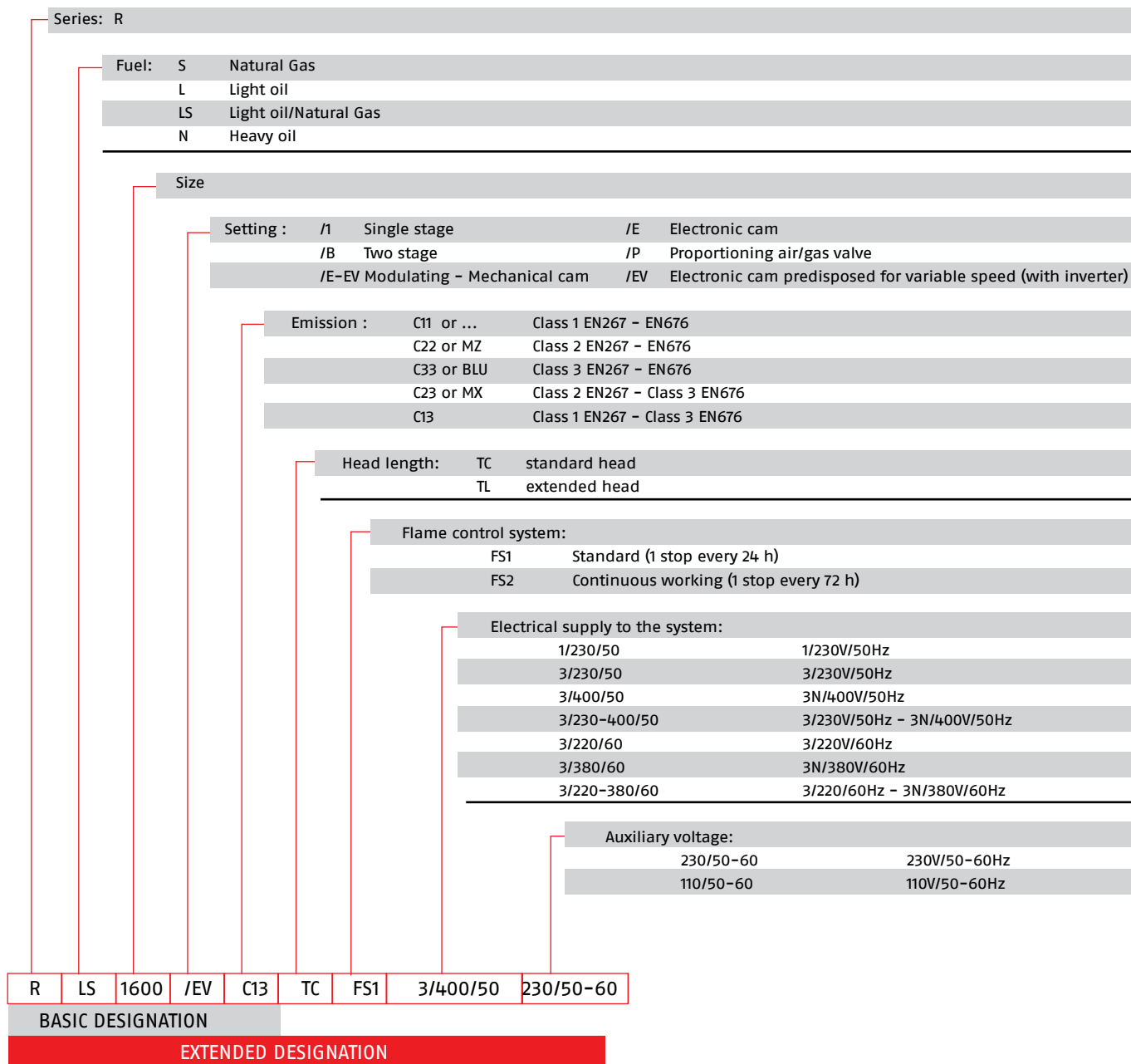
MODEL	X	Y	Z
All models	800	330	260

CODE	MODELS	FUEL	PORT	DELIVERY at 30 mbar	MOTOR (kW)	MAX DELIVERY (kg/h)
20097693	SG 1000	LIGHT OIL	1"	2200 l/h (*)	4	900
20098501	SG 1250	LIGHT OIL	1"	3000 l/h (*)	4	1250
20097701	SG 1500	LIGHT OIL	1"	3600 l/h (*)	5.5	1500
20097703	SG 2000	LIGHT OIL	1"	4800 l/h (*)	7.5	2000

# Specification

## DESIGNATION OF SERIES

A specific index guides your choice of burner from the various models available in the RLS/E-EV series. Below is a clear and detailed specification description of the product.



BURNER MODELS	HEAD LENGTH	FLAME CONTROL SYSTEM	ELECTRICAL SUPPLY	AUXILIARY VOLTAGE
RLS 1300/E C11	TC	FS1-FS2	3/400/50	230/50-60
RLS 1600/E C11	TC	FS1-FS2	3/400/50	230/50-60
RLS 2000/E C11	TC	FS1-FS2	3/400/50	230/50-60
RLS 1300/EV C11	TC	FS1-FS2	3/400/50	230/50-60
RLS 1600/EV C11	TC	FS1-FS2	3/400/50	230/50-60
RLS 2000/EV C11	TC	FS1-FS2	3/400/50	230/50-60

Other versions are available on request.

## PRODUCT SPECIFICATION

### Burner

Monoblock forced draught gas burner with modulating operation, fully automatic, made up of:

- Fan with low sound emissions
- Air suction circuit lined with sound-proofing material
- Air damper for air setting controlled by a high precision servomotor
- Air pressure switch
- Fan starting motor at 2800 rpm, three-phase 230/400 - 400/690 V with neutral, 50Hz
- Separate light oil pump
- Low emission combustion head, that can be set on the basis of required output, fitted with:
  - stainless steel end cone, resistant to corrosion and high temperatures
  - ignition gas pilot with gas train for RLS 1300-1600-2000
  - flame stability disk
- Maximum gas pressure switch, with pressure test point, for halting the burner in the case of over pressure on the fuel supply line
- Electronic cam for controlling the system safety
- Infrared flame detector
- Display unit AZL... for RLS 1300-1600-2000/E-EV models
- Star/triangle starter for the fan motor
- Main electrical supply terminal board
- Burner on/off switch
- Auxiliary voltage led signal
- Burner working led signal
- Contacts motor and thermal relay with release button
- Motor internal thermal protection
- Motor failure led signal
- Burner failure led signal and lighted release button
- Emergency button
- Connection plugs-sockets
- Burner opening hinge
- Lifting rings
- IP 54 electric protection level
- Gears pump for high pressure fuel supply
- Pump starting motor
- Oil safety valves
- Valve system with double oil safety valve on the output circuit and double safety valve on the return circuit
- Oil/Gas selector
- Flame inspection window.

**Gas train:**

Fuel supply line in the Composed configuration  
(from a diameter of DN 65 to a diameter of DN 125) fitted with:

- Filter (not in "VGD" series)
- Stabilizer
- Minimum gas pressure switch
- Safety valve
- One stage working valve with ignition gas output regulator

Note: valve seal control already present inside burner control box.

**Conforming to:**

- 2004/108/EC directive (electromagnetic compatibility)
- 2006/95/EC directive (low voltage)
- 2006/42/EC directive (machine)
- 2009/142 directive (gas)
- EN 676 (gas burners)
- EN 267 (light oil burners).

**Standard equipment:**

- 1 flange gasket
- 4 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- 2 flexible pipes for connection to the oil supply network
- 2 nipples for connection to the pump with gaskets
- Seal control
- Seal control pressure switch (for installation on gas train)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

**Available accessories to be ordered separately:**

- Nozzle
- Temperature probe  $-100 \div 500^{\circ}\text{C}$
- Pressure probe  $0 \div 2.5$  bar
- Pressure probe  $0 \div 16$  bar
- Pressure probe  $0 \div 25$  bar
- Variable speed drive (VSD) for /EV models
- Oxygen control kit
- PC interface software (ACS 450)
- Kit efficiency for /EV models
- LPG kit
- Display and operating unit (AZL)(included in /E-/EV models)
- Sound proofing box
- Gas train adapters
- Spring.

# Riello Burners a world of experience in every burner we sell.



[ 1 ]



[ 2 ]

Across the world, Riello sets the standard in reliable and high efficiency burner technology.

With burner capacity from 5 kW to 48 MW, Riello gas, oil, dual fuel and Low Nox burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.

With headquarter in Legnago, Italy, Riello has been manufacturing premium quality burners for over 90 year. The manufacturing plant is equipped with the most innovative systems of assembling lines and modern manufacturing cells for a quick and flexible response to the market.

Besides, the Riello Combustion Research Centre, located in Angiari, Italy, represents one of the most modern facility in Europe and one of the most advanced in the world for the development of the combustion technology.

Today, the company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries to meet its customers' needs. Riello has 13 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.

[ 1 ] BURNERS PRODUCTION PLANT  
S. PIETRO, LEGNAGO (VERONA) - ITALIA

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