

Low NOx modulating dual fuel burners

RLS 1000-1200/E MX



- Dual fuel burners
- Modulating operation on both gas and light oil side
- Low NOx emissions according to Class 3 of European standard EN 676 (NOx lower than 80 mg/kWh* on the gas side) and according to Class 2 of European standard EN 267 (NOx lower than 185 mg/kWh* on light oil side)

RLS 1000-1200/E MX 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 1200 to 11500 kW, and they have been designed for use in hot water boilers, overheated water boilers as well as steam boilers. Operation is fully "modulating" for both fuels, light oil and gas. 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.

* The emission value is determined, according to the provisions of standard EN 267-EN 676, in a standardised combustion chamber, on the average of the firing rates and standardised at the reference conditions provided for by the standard.

TECHNICAL DATA

Description	Heat output			Total electrical power	Electric power supply		Certification	Code
	kW	Light oil kg/h	Natural Gas (Nm³/h)		PhV/Hz	V/Hz		
MODELS FOR STANDARD OPERATION (FS1: ONE STOP EVERY 24 HOURS) - WITH ELECTRONIC CAM (LMV 51)								
RLS 1000/E MX TC FS1	1200/3750-10600	110/320-793	130/380-940	27 (oil) 24 (gas)	3/400/50	230/50-60	CE-0085CN0119	20057529
RLS 1200/E MX TC FS1	1500/5500-11500	126/464-970	150/550-1150	32 (oil) 27.2 (gas)	3/400/50	230/50-60	CE-0085CN0120	20057530

Net calorific value of light oil: 11.86 kWh/kg - Viscosity at 20 °C: 4-6 mm²/s (cSt).
Net calorific value of natural gas (G20): 10 kWh/Nm³.
The burners comply with 2016/426/EU Regulation, 2014/30/EU - 2014/35/EU - 2006/42/EC Directives and EN 267 - EN 676 Standards.

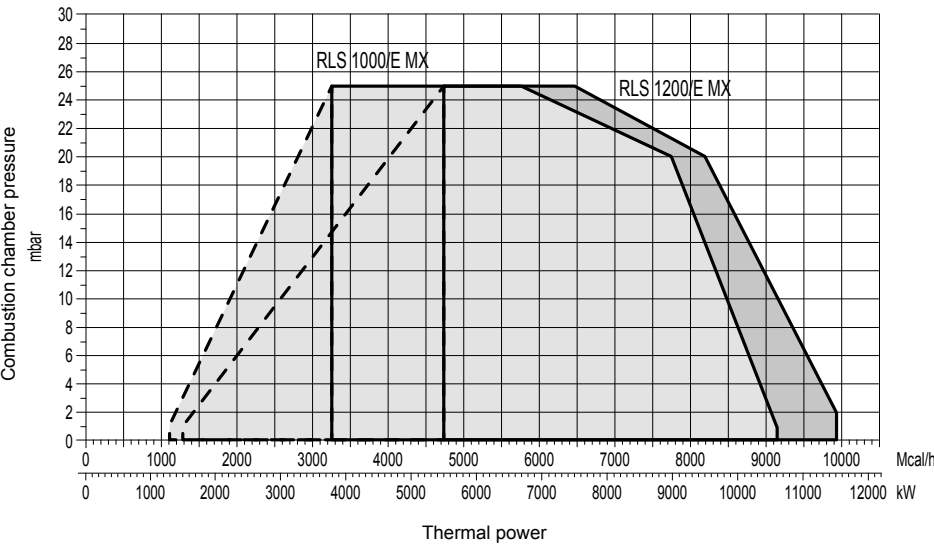
GAS

LIGHT OIL

DUAL FUEL

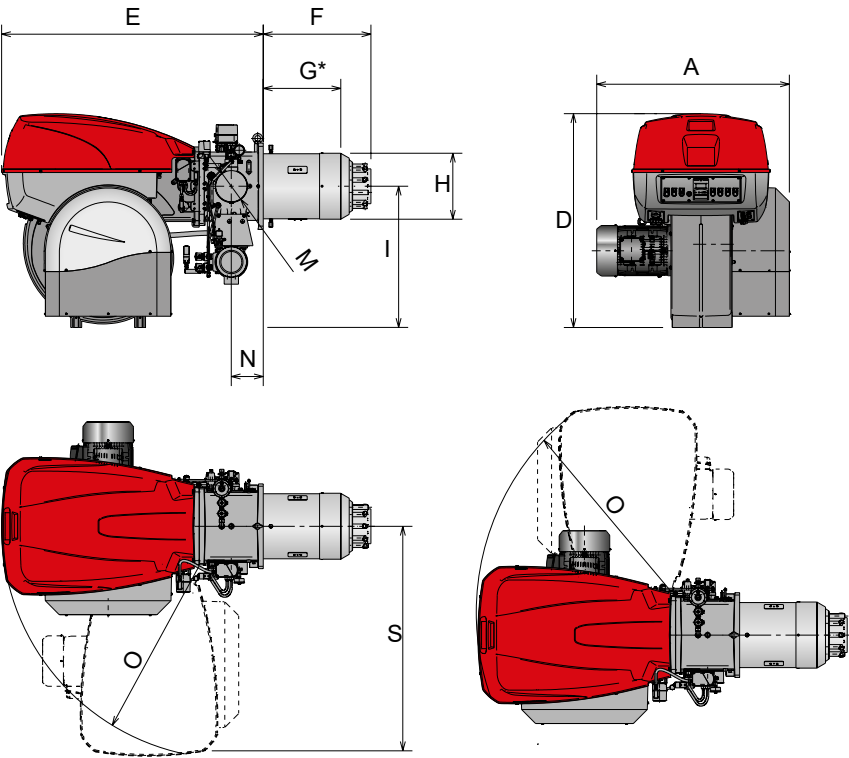
HEAVY OIL

FIRING RATES



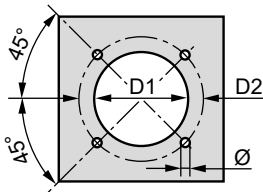
Useful working field for choosing the burner
Modulation range
Test conditions conforming to EN 267-EN 676
Temperature: 20 °C
Pressure: 1013,5 mbar
Altitude: 0 m a.s.l.

OVERALL DIMENSIONS

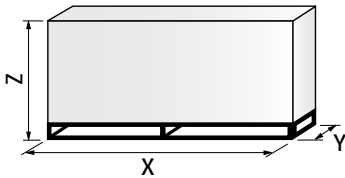


Description	A mm	D mm	E mm	F mm	G (*) mm	H mm	I mm	M inch	N mm	O mm	S(1) mm
RLS 1000/E MX	1206	1338	1637	674	484	413	885	DN80	200	1350	1425
RLS 1200/E MX	1250	1338	1637	658	465	456	885	DN80	200	1350	1425

(*) Maximum depth of the boiler door including the depth of the burner flange insulating gasket.



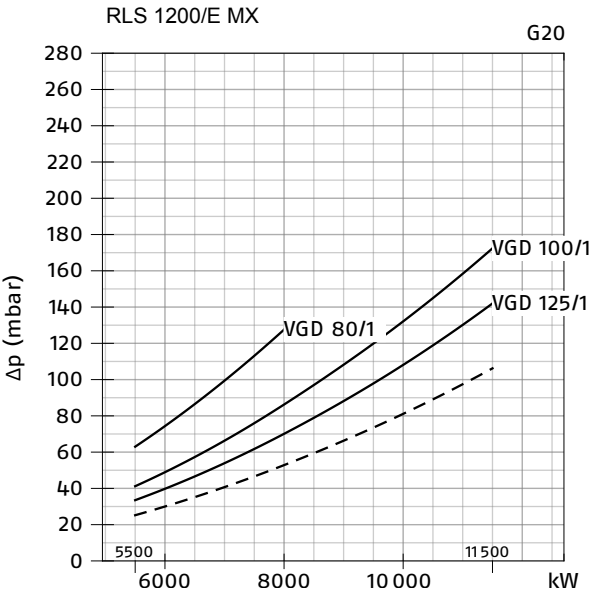
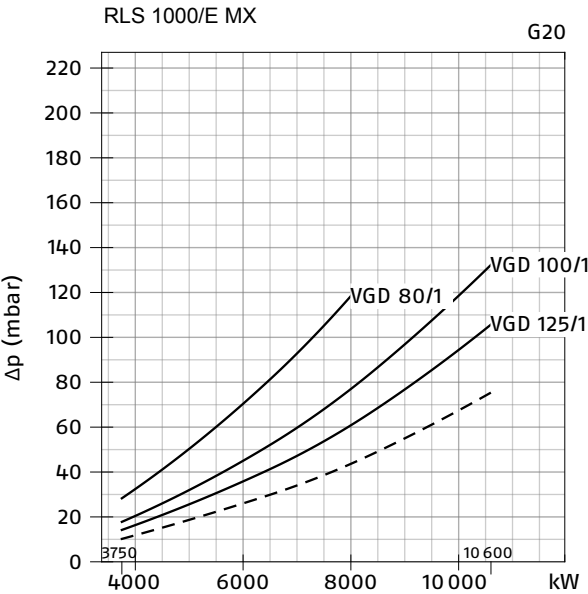
Description	D1 mm	D2 mm	Ø mm
RLS 1000/E MX	460	608	M20
RLS 1200/E MX	500	608	M20



Description	X mm	Y mm	Z mm	Net weight kg
RLS 1000/E MX	2400	1400	1595	550
RLS 1200/E MX	2400	1400	1595	600

PRESSURE LOSS DIAGRAMS

VGD SERIES GAS TRAIN



Please note: the diagrams indicate the minimum gas pressure drops of the burners equipped with the gas trains to be used (approved according to the EN 676 standard); in order to obtain the minimum pressure required at gas train inlet, combustion chamber counterpressure (expressed in mbar) must be added to this value.

— Combustion head + gas train
--- Combustion head

GAS TRAINS

Description (1)	Code	Ø Gas train	Valve seal control (2)	VPS kit code (3)	Burner-gas train adapter (4)	
					RLS 1000/E MX	RLS 1200/E MX
VGD SERIES ONE STAGE GAS TRAIN						
VGD 80/1-FT 122	20140763*	DN80	-	3010123	□	□
VGD 100/1-FT 122	20169193*	DN100	-	3010123	3010370	3010370
VGD 125/1-FT 122	20169195*	DN125	-	(5)	3010224	3010224

- (1) Please refer to "GAS TRAIN DESIGNATION".
(2) The valve seal control device is compulsory (conforming to EN 676) on gas trains to burners with a maximum output over 1200 kW.
(3) Valve leak detection control device. Supplied separately from the gas train (see "GAS TRAIN ACCESSORIES" paragraph for both 50 Hz and 60 Hz codes).
(4) The code indicates the adapter necessary for "burner-gas train connection (see "GAS TRAINS ACCESSORIES").
(5) On demand.
* 230V/50Hz - 220V/60Hz electrical supply.
** 230V/50Hz electrical supply.
NOTE: for further information, refer to section "GAS TRAINS FOR BURNERS".

Key to symbols:
- Gas train not equipped with leak detection control device; this device can be ordered separately - see VPS column - and installed later.
□ Additional adapter not necessary, the gas train may be connected directly to the burner.

ACCESSORIES

Drawing	Burner model	Specification	Code
	All models	SOUND PROOFING BOX If noise emission needs reducing even further, sound-proofing boxes are available. The sound-proofing boxes are not suitable for outdoor use. Box type: C8 Dimensions: A = 1425 mm, B (min-max) = 285-1000 mm, C = 110 mm, D = 1500 mm, E = 1800 mm Average noise reduction according to EN 15036-1 Standard = 10 dB(A).	3010401
	All models	TEMPERATURE PROBE The temperature probe to be fitted to the power controller must be chosen based on the application. Temperature probe type PT 100 (-100-500 °C).	3010110
	All models	PRESSURE PROBE The pressure probe to be fitted to the power controller must be chosen based on the application. Pressure (0-2.5 bar) with 4-20 mA output.	3010213
		Pressure (0-16 bar) with 4-20 mA output.	3010214
		Pressure (0-25 bar) with 4-20 mA output.	3090873
	All models	PC INTERFACE SOFTWARE (ACS 450) PC tool for convenient programming and burner settings, process visualization, data recording, selection of AZL language, software update AZL.	3010388

NOZZLES

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

Drawing	Burner model	Specification	Code	
		Rated delivery (kg/h)	BERGONZO TYPE B5 60° AA	BERGONZO TYPE CT5 60°
	RLS 1000/E MX	350	20047954	-
		600	20047978	-
		750	20047985	-
		900	20047994	-
	RLS 1200/E MX	700	-	20006479
		900	-	20006482
		1100	-	20006484

For more information please contact Riello Burners Commercial and Technical Department, our Application Engineers will be pleased to help you.

STATE OF SUPPLY

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

- High performance fan with low sound emissions and reverse curve blades
- 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 electrodes
 - ignition by gas pilot with gas train
 - 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
- Digital Burner management system for air/fuel setting, with output PID modulation control included
- AZL Display Interface, for combustion system commissioning and monitoring
- Electronic cam for controlling the system safety
- Infrared flame detector
- Star/delta starter for the fan motor (burners with motor electrical power ≥ 7,5 kW)
- 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
- Coded 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 unit with double oil safety valve on the output circuit and double safety valve on the return circuit
- Oil/Gas selector
- Flame inspection window
- The gas train can only enter from the right side of the burner
- Equipped with as spray lance for light oil, activated by compressed air

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 pressure switch (for installation on gas train)
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue

GAS

LIGHT OIL

DUAL FUEL

HEAVY OIL