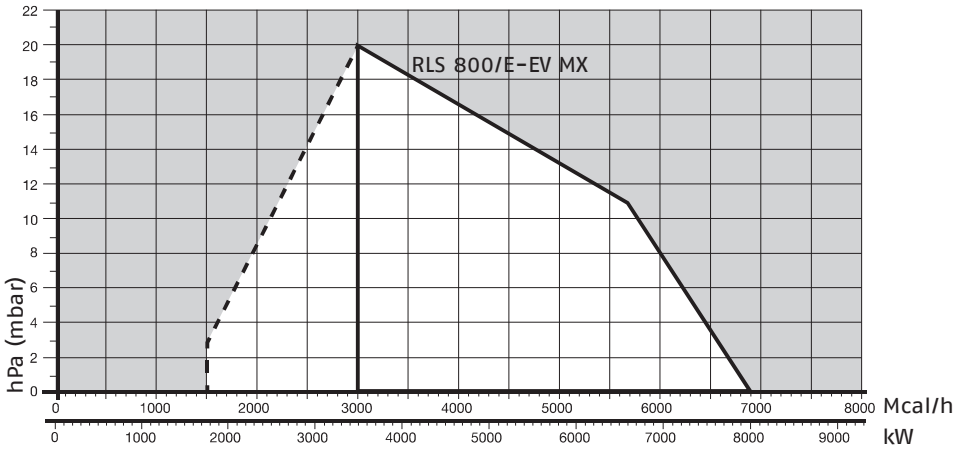
RLS 800÷1200/E-EV MX SERIES

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 1750 to 11500 kW, and they have been designed for use in hot water boilers, overheated water boilers as well as steam boilers.
Operation can be "two stage progressive" or alternatively "modulating" for both fuels, light oil and gas, with the installation of a PID logic regulator on the RLS 800/E series burners while RLS/EV and RLS 1000-1200/E 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.

RLS 800/E-EV MX	1750/3500	÷	8000 kW
RLS 1000/E-EV MX	1200/3750	÷	10600 kW
RLS 1200/E-EV MX	1500/5500	÷	11500 kW

RLS 800÷1200/E-EV MX SERIES

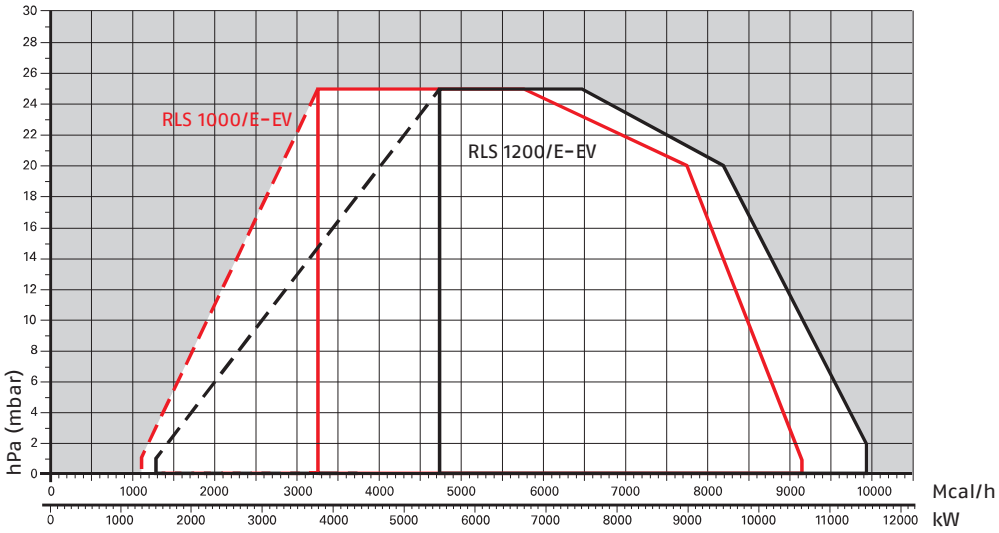
FIRING RATES



Useful working field for choosing the burner

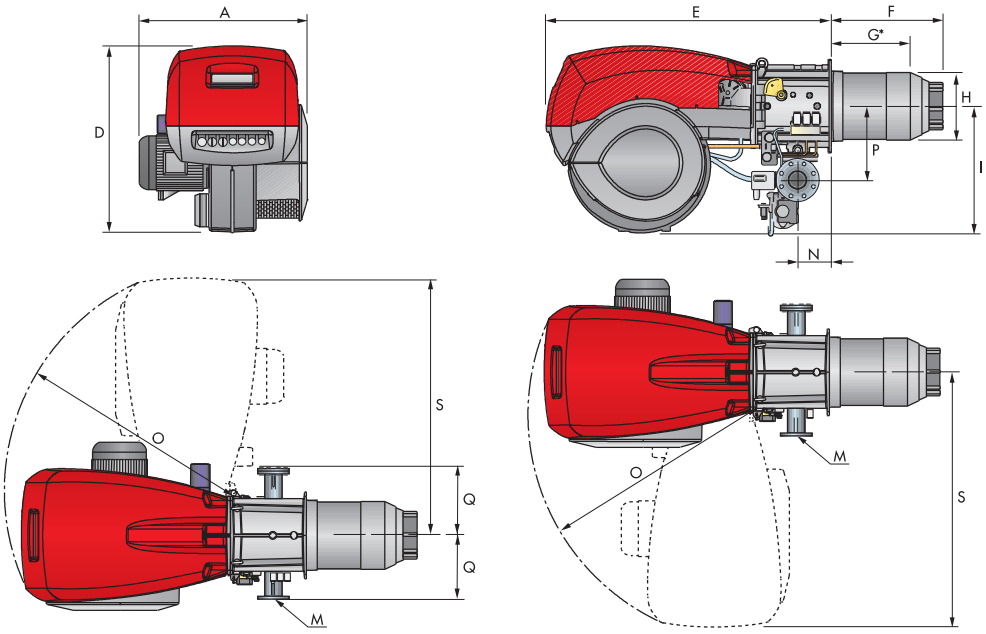
Modulation range

Test conditions conforming to EN267- EN676
Temperature: 20°C
Pressure: 1013,5 mbar
Altitude: 0 m a.s.l.



Overall dimensions (mm)

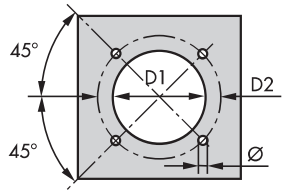
BURNER



MODEL	A	D	E	F	G*	H	I	M	N	O	P	Q	S
▶ RLS 800/E-EV MX	940	937	1325	558	382	428	630	DN80	164	1055	427	320	1190

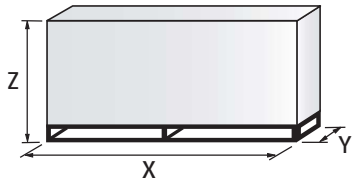
* Maximum depth of the boiler door including the depth of the burner flange insulating gasket.

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
▶ RLS 800/E-EV MX	440	495	M18

PACKAGING

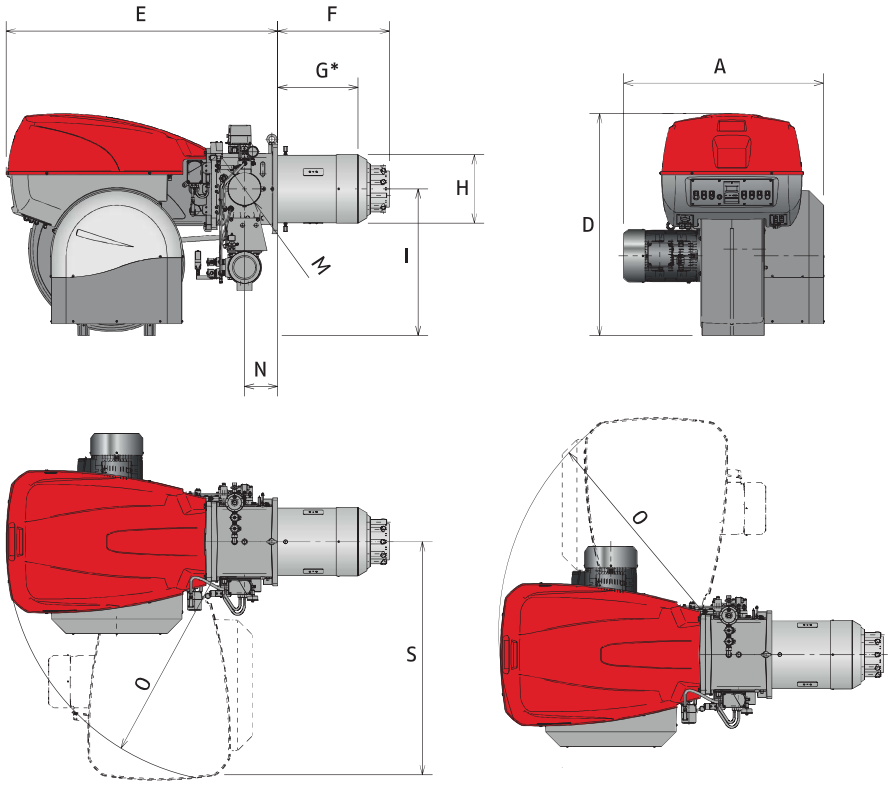


MODEL	X	Y	Z	kg
▶ RLS 800/E-EV MX	2190	1110	1450	320

RLS 800÷1200/E-EV MX SERIES

Overall dimensions (mm)

BURNER

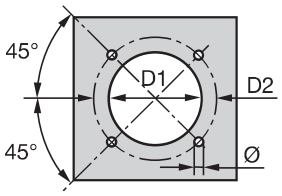


BURNER - BOILER MOUNTING FLANGE

MODEL	A	D	E	F	G*	H	I	M	N	O	S
▶ RLS 1000/E-EV MX	1206	1338	1637	674	484	413	885	DN80	200	1350	1425
▶ RLS 1200/E-EV MX	1250	1338	1637	658	465	456	885	DN80	200	1350	1425

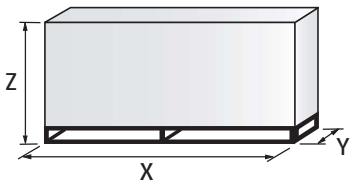
* Maximum depth of the boiler door including the depth of the burner flange insulating gasket.

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
▶ RLS 1000/E-EV MX	460	608	M20
▶ RLS 1200/E-EV MX	500	608	M20

PACKAGING



MODEL	X	Y	Z	kg
▶ RLS 1000/E-EV MX	2400	1400	1595	550
▶ RLS 1200/E-EV MX	2400	1400	1595	600

RLS 800÷1200/E-EV MX SERIES

Specification

DESIGNATION OF SERIES

Series:	R	
Fuel:	S	Natural Gas
	L	Light oil
	LS	Light oil/Natural Gas
	N	Heavy oil
Size:		
Setting:	/1	Single stage
	/B	Two stage
	/M	Modulating-Mechanical cam
	/E	Electronic cam
	/P	Proportioning air/gas valve
	/EV	Electronic cam predisposed for variable speed (with inverter)
	/EVi	Electronic cam with integrated inverter

Emission:	... or C11	Class 1 EN267 - EN676
	MZ or C22	Class 2 EN267 - EN676
	BLU or C33	Class 3 EN267 - EN676
	MX or C23	Class 2 EN267 - Class 3 EN676
	C13	Class 1 EN267 - Class 3 EN676

Head length:	TC	standard head
	TL	extended head

Flame control system:	FS1	Standard/Intermittent (at least 1 stop every 24 h)
	FS2	Continuous (1 stop every 72 h)

Electrical supply to the system:		
	1/230/50	1/230V/50Hz
	3/230/50	3/230V/50Hz
	3/400/50	3/400V/50Hz
	3/230-400/50	3/230V/50Hz - 3N/400V/50Hz
	3/220/60	3/220V/60Hz
	3/380/60	3N/380V/60Hz
	3/220-380/60	3/220/60Hz - 3N/380V/60Hz

Auxiliary voltage:	230/50	230V/50Hz
	110/50-60	110V/50-60Hz

R	LS	1200	/E	MX	TC	FS1	3/400/50	230/50

BASIC DESIGNATION

EXTENDED DESIGNATION

Specification

STATE OF SUPPLY

Monoblock forced draught gas burner with modulating operation, fully automatic, made up of:
- High performance fan with low sound emissions, reverse curve blades for RLS 300-400-1000-1200, forward curve blades for RLS 800
- 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 for RLS 800-1000-1200 models
    - 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 on RLS/EV models, and RLS 1000-1200/E (available as accessory on RLS 800/E MX models)
- AZL Display Interface, for combustion system commissioning and monitoring, included in RLS/EV and RLS 1000-1200/E models (available as accessory for RLS 800/E BLU models)
- 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 - RLS/E versions)
- 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
- The RLS 1000-1200/E-EV dual fuel burners are 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.

Available models

Burners

CODE	MODEL	HEAT OUTPUT (kW)	HEAT OUTPUT LIGHT OIL (kg/h)	HEAT OUTPUT NATURAL GAS (Nm³/h)	TOTAL ELECTRICAL POWER (kW)	CERTIFICATION	NOTE
3911132	RLS 800/E MX TC FS1 3/400/50 230/50-60	1750/3500-8000	148/295-675	175/350-800	25,8 (oil) 24 (gas)	CE 0085CL0422	(1)(2)
20057529	RLS 1000/E MX TC FS1 3/400/50 230/50-60	1200/3750-10600	110/320-793	130/380-940	27 (oil) 24 (gas)	CE 0085CN0119	(1)
20057530	RLS 1200/E MX TC FS1 3/400/50 230/50-60	1500/5500-11500	126/464-970	150/550-1150	32 (oil) 27,2 (gas)	CE 0085CN0120	(1)
20011318	RLS 800/EV MX TC FS1 3/400/50 230/50-60	1750/3500-8000	148/295-675	175/350-800	25,8 (oil) 24 (gas)	CE 0085CL0422	(1)(2)
20051416	RLS 1000/EV MX TC FS1 3/400/50 230/50-60	1200/3750-10600	110/320-793	130/380-940	27 (oil) 24 (gas)	CE 0085CN0119	(1)
20047475	RLS 1200/EV MX TC FS1 3/400/50 230/50-60	1500/5500-11500	126/464-970	150/550-1150	32 (oil) 27,2 (gas)	CE 0085CN0120	(1)

Net calorific value light oil: 11,8 kWh/kg; 10.200 kcal/kg - Viscosity at 20°C: 4-6 mm²/s (cSt).
Net calorific value G20 gas: 10 kWh/Nm³; 8.600 kcal/Nm³ - Density: 0,71 kg/Nm³.
(1) according to 2016/426/EU - 2014/30/EU - 2014/35/EU - 2014/68/EU - 2006/42 CE Directive and EN 267 - 676 Norm.
(2) the burners are factory set for FS1 operation (1 stop every 24 h) but they can be switched to FS2 operation (continuous - 1 stop every 72 h) by changing the parameters through the AZL unit menu.

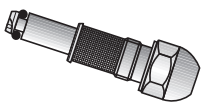
Gas Trains

GAS TRAIN CODE	GAS TRAIN MODEL	GAS TRAIN Ø	ADAPTER CODE RLS 800	ADAPTER CODE RLS 1000	ADAPTER CODE RLS 1200
20140762*	VGD 65/1 - FT 122	DN 65 (1)	□	●	●
20140763*	VGD 80/1 - FT 122	DN 80	□		
20169193*	VGD 100/1 - FT 122	DN 100	3010370		
20169195*	VGD 125/1 - FT 122	DN 125	3010224		

Please see designation of Gas Train Series in the page before the Catalogue index.
* gas train are 230V/50Hz - 220V/60Hz electrical supply.
The valve seal control device is compulsory (conforming to EN 676) on gas trains to burners with a maximum output over 1200 kW.
The seal control function is managed by LMV control box, by installation on gas train of pressure switch supplied, as standard equipment, with the burner.
To select the gas train please refer to the technical data leaflet and/or instruction manual.
(1) øin = DN 65, øout = DN 80.
● Not available.
□ Additional adapter not necessary, the gas train may be connected directly to the burner.

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	RATED DELIVERY (kg/h)	NOZZLE CODE
▶ RLS 800/E-EV MX	375	3009332
▶ RLS 800/E-EV MX	550	3009346
▶ RLS 800/E-EV MX	650	3009352
▶ RLS 800/E-EV MX	750	3009356
▶ RLS 1000/E-EV MX	350	20047954
▶ RLS 1000/E-EV MX	600	20047978
▶ RLS 1000/E-EV MX	750	20047985
▶ RLS 1000/E-EV MX	900	20047994
▶ RLS 1200/E-EV MX	700	20006479
▶ RLS 1200/E-EV MX	700	20006479
▶ RLS 1200/E-EV MX	900	20006482
▶ RLS 1200/E-EV MX	1100	20006484

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

Accessories for modulating operation

To obtain modulating operation, the RLS/E MX series of burners requires a regulator.
In RLS/EV models PID regulator is integrated inside LMV 52 control box.
For remote setpoint use RWF 55.

BURNER	REGULATOR TYPE	KIT CODE
▶ RLS 800/E MX	RWF 50.2	20101190
▶ RLS 800/E MX	RWF 55.5	20101191

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

Burner accessories

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), provided with a programming panel with start-up assistant. It always must be ordered with RLS/EV series.

BURNER	MAX POWER (kW)	KIT CODE
▶ RLS 800-1000/EV	22	20163099
▶ RLS 1200/EV	30	20163100

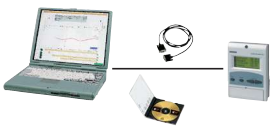
Oxygen Control kit (QGO_2)

The QGO_2 is an oxygen analizer with relevant probe which controls and supervises the residual oxygen content in exhaust gases.

BURNER	KIT CODE
▶ All RLS/EV models	3010378
▶ All RLS/EV models	20045187 *

An additional transformer kit is needed to guarantee the power supply to the PLL device in case of installation where the distance between the last servomotor and the PLL kit is greater than 20 meters.
Please contact Riello Burners Commercial and Technical Department, our Application Engineers will be pleased to help you.
* Installation outside the burner cover

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

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 800/E-EV MX	20007379
▶ RLS 1000-1200/E-EV MX	(1)

(*) CE approval on field is required.
(1) Not available

Burner accessories

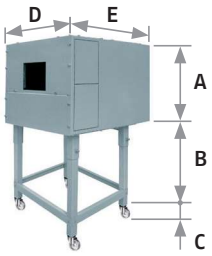
Display and Operating Unit (AZL)

This tool is needed for combustion system commissioning and monitoring.
The AZL, Display and Operating Unit, is included in RLS 1000-1200/E and RLS/EV models.

BURNER	KIT CODE
▶ RLS 800/E MX	3010355
▶ RLS 800/E MX *	3010469

* for Russian language only

Sound proofing box



If noise emission needs reducing even further, sound-proofing boxes are available.
When a lower "B" dimension is required, it is available the Box Support Kit code 20065135 which allows to reduce it at the fixed dimension of 55 mm.
The sound-proofing boxes are not suitable for outdoor use.

BURNER	BOX TYPE	A (mm)	B (mm) min-max	C (mm)	D (mm)	E (mm)	[dB(A)] (*)	BOX CODE
▶ RLS 800/E-EV	C7	1255	160 - 980	110	1140	1345	10	3010376
▶ RLS 1000-1200/E-EV	C8	1425	285 - 1000	110	1500	1800	10	3010401

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

Spacer kit

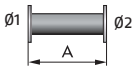
If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following table:

BURNER	SPACER THICKNESS S (mm)	KIT CODE
▶ RLS 800/E-EV	180	20008903

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
	Øi DN	ØO DN	A mm	
	125	80	320	3010224
	100	80	50	3010370

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
▶ VGD/1 series	Neutral	0 - 22	20181839
	Yellow	15 - 120	20141900
	Red	100 - 250	20141901