

RLS 1300÷2000/E-EV C11 SERIES

The RLS/E and RLS/EV C11 dual fuel burners series are characterized 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 burners cover a firing range from 7500 to 19500 kW and they have been designed for use in hot water boilers or industrial steam generators.

Operation can be modulating on the RLS/E series and modulating with variable speed drive operation on RLS/EV series.

The mechanisms of regulation allow to catch up a high modulation ratio on all firing rates range.

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 burner operation can be intermittent or continuous by menu setting.

The innovative combustion head, adjustment system ensures perfect movement during modulation.

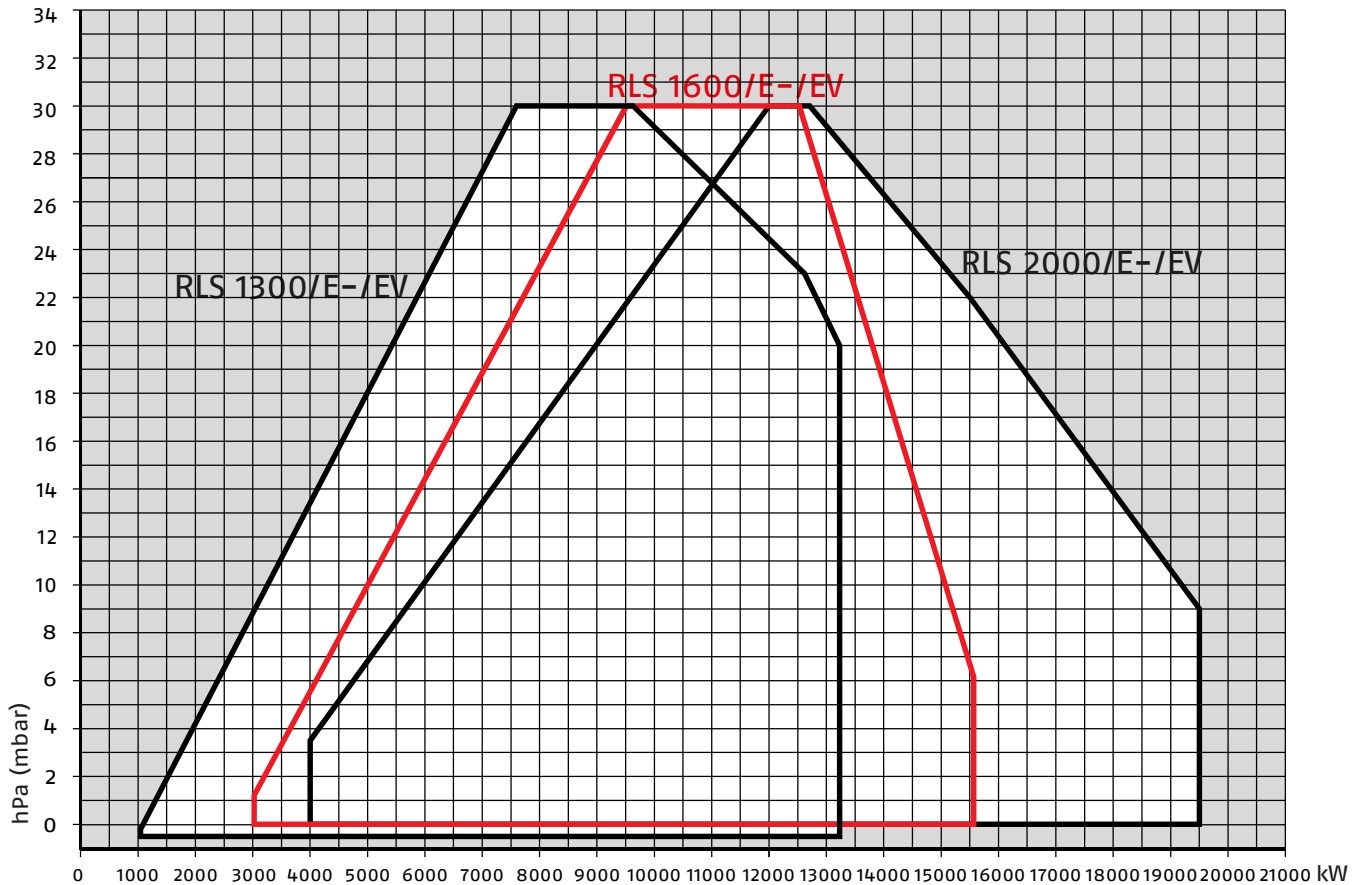


RLS 1300/E-EV C11	1100/7500 ÷ 13000 kW
RLS 1600/E-EV C11	3065/9503 ÷ 15560 kW
RLS 2000/E-EV C11	4000/12000 ÷ 19500 kW

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 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.

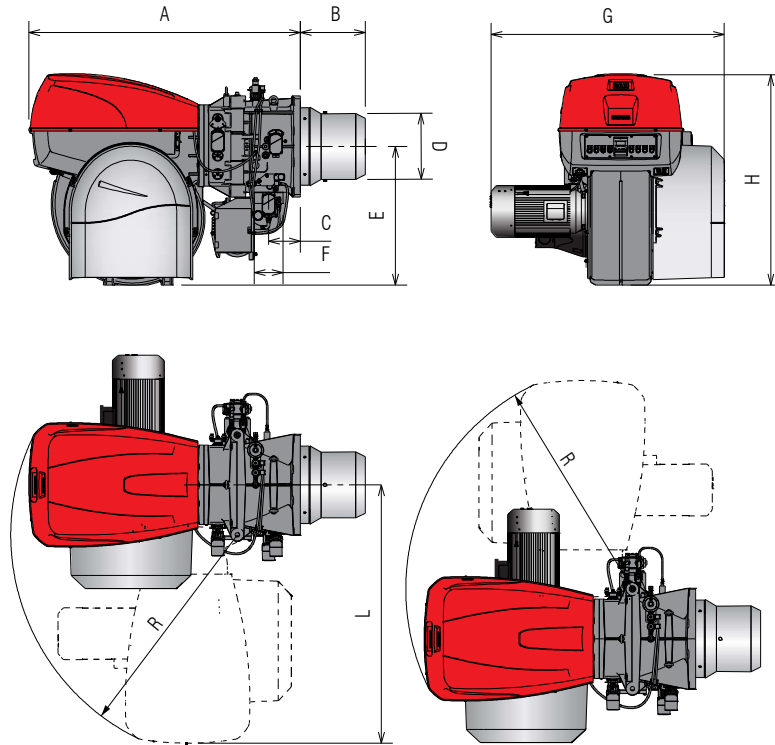
Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

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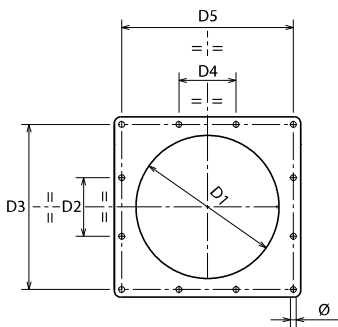
Overall dimensions (mm)

BURNER



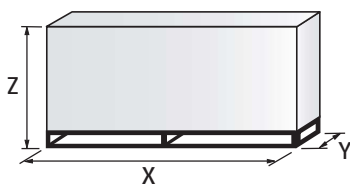
MODEL	A	B	C	D	E	F	G	H	I	L	R
► RLS 1300/E-EV C11	1880	450	220	544	459	DN80	1620	1463	380	1787	1564

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	D3	D4	D5	Ø
► RLS 1300/E-EV C11	580	220	620	215	645	M20

PACKAGING



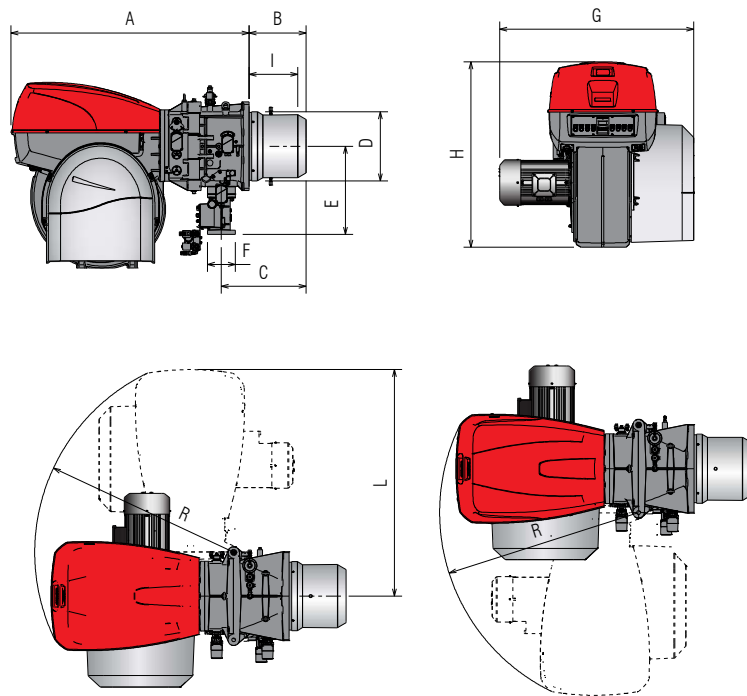
MODEL	X	Y	Z	kg
► RLS 1300/E-EV C11	3000	1800	1750	1000

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

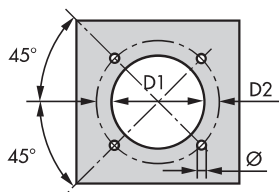
Overall dimensions (mm)

BURNER



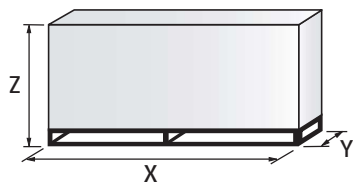
MODEL	A	B	C	D	E	F	G	H	I	L	R
► RLS 1600/E-EV C11	1880	450	220	544	960	DN100	1560	1464	383	1782	1564
► RLS 2000/E-EV C11	1880	450	220	544	960	DN100	1530	1464	383	1782	1564

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
► RLS 1600/E-EV C11	580	645	M20
► RLS 2000/E-EV C11	580	645	M20

PACKAGING



MODEL	X	Y	Z	kg
► RLS 1600/E-EV C11	2600	1710	1700	1000
► RLS 2000/E-EV C11	2600	1710	1700	1000

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

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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 2 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	2000	/E	C11	TC	FS1	3/400/50	230/50		
BASIC DESIGNATION									EXTENDED DESIGNATION	

DUAL FUEL

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

Specification

STATE OF SUPPLY

Monoblock forced draught dual fuel burner, suitable for gas and gasoil combustion, with modulating operation, fully automatic, made up of:

- High performance fan with low sound emissions, forward 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 2900 rpm, three-phase 400/690 V with neutral, 50Hz
- Mobile 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
 - flame stability disk
- Ignition pilot burner
- Automatic regulator for gas and oil delivery, controlled by a high precision servomotor
- Maximum gas pressure switch, with pressure test point, for halting the burner in the case of over pressure on the fuel supply line
- Module for air/fuel setting and output modulation with incorporated PID control of temperature or pressure of the heat generator (for both RS/E and RS/EV models)
- Integrated light oil pump with dedicated motor on RLS 1300 model (separated pumping unit, to be ordered as accessory, for the RLS 1600 and RLS 2000 models).
- Oil delivery safety valves
- Maximum oil pressure switch
- Minimum oil pressure switch
- AZL Display Interface, for combustion system commissioning and monitoring, included
- Burner safety control included on Electronic Cam device
- IRD sensor flame detector
- Star/delta starter for the fan motor
- Main terminal supply board
- Volt-free contacts output relay
- Emergency button
- Fuel selector and enable signal to remote fuel selector
- Light signalling of main fuel valve open
- Voltage present warning lamp
- Light signalling fan motor and pump motor lockout
- Burner lockout warning lamp and reset switch
- Heat request light signalling
- Ventil motor contactor and thermal relay (RLS /E),
- Star/Delta starter (RLS /E)
- Off-automatic selector
- Pump motor contactor and thermal relay
- Burner opening hinge
- Lifting rings
- IP 55 electric protection level

Standard equipment:

- Gasket for gas train flange
- Gas flange fixing screws, M 16 x 50
- Thermal insulation screen
- M 20 x 70 for fixing the burner flange to the boiler
- M20 nuts to secure the burner to the boiler door
- Pressure switch (for leak detection control)
- Light oil flexible hoses
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

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Available models

Burners

CODE	MODEL	HEAT OUTPUT			TOTAL ELECTRICAL POWER (kW)	CERTIFICATION	NOTE
		(kW)	LIGHT OIL (kg/h)	NATURAL GAS (Nm ³ /h)			
20081188	RLS 1300/E C11 TC FS1 3/400/50 230/50-60	1100/7500-13000	127/635-1102	110/750-1300	39,2 (oil) 34,5 (gas)	-	(1)(2)
20081187	RLS 1300/EV C11 TC FS1 3/400/50 230/50-60	1100/7500-13000	127/635-1102	110/750-1300	39,2 (oil) 34,5 (gas)	-	(1)(2)
20080870	RLS 1600/E C11 TC FS1 3/400/50 230/50-60	3065/9503-15560	259/802-1313	307/950-1556	48 (oil) 41,5 (gas)	-	(1)(2)
20080869	RLS 1600/EV C11 TC FS1 3/400/50 230/50-60	3065/9503-15560	259/802-1313	307/950-1556	48 (oil) 41,5 (gas)	-	(1)(2)
20080864	RLS 2000/E C11 TC FS1 3/400/50 230/50-60	4000/12000-19500	337/1013-1645	400/1200-1950	55,8 (oil) 49,3 (gas)	-	(1)(2)
20066055	RLS 2000/EV C11 TC FS1 3/400/50 230/50-60	4000/12000-19500	337/1013-1645	400/1200-1950	55,8 (oil) 49,3 (gas)	-	(1)(2)

Natural gas, net calorific value: 10 kWh/Nm³ - Density: 0,71 kg/Nm³

According to 2014/35/EU - 2014/30/EU - 2014/68/EU - 2006/42 CE Directives

(1) The maximum absorbed electric power is calculated considering the motor pump assembly

(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

CODE	GAS TRAIN		ADAPTER CODE		
	MODEL	∅	RLS 1300	RLS 1600	RLS 1600
20137718*	VGD 50/1 - RT 122	Rp 2"	●	●	●
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	20130602		20130616
20169195*	VGD 125/1 - FT 122	DN 125	20130606		20130617

Please see designation of Gas Train Series in the page before the Catalogue index.

(1) ∅in = DN 65, ∅out = DN 80.

● Gas train not available or not suitable for the matching to the burner.

□ Additional adapter not necessary, the gas train may be connected directly to the burner.

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

Burner accessories

Accessories for checking temperature and pressure

PROBE



The relative RLS 1300-2000/E-EV C11 models the PID regulator is integrated inside the LMV control box. The relative temperature or pressure probes fitted to the regulator must be chosen on the basis of the applications.

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

Display and Operating Unit (AZL) for RS/E models

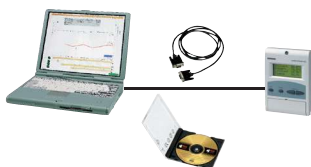


This tool is needed for combustion system commissioning and monitoring. The AZL, Display and Operating Unit, is included in RLS/E-EV C11 models.

BURNER	KIT CODE
► All models *	3010469

* for Russian language only

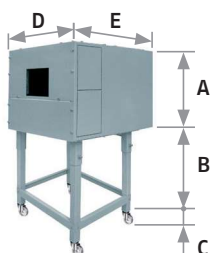
PC Interface Software (ACS 450)



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

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
► All models	C9							20108736

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

Burner accessories

Oxygen Control kit (QGO₂) for RS/EV series only



The QGO₂ 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 C11	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

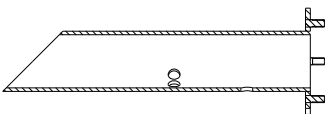
Variable Speed Drive (VSD) for RLS/EV series only



The motor speed variation for the RLS/EV C11 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 C11 series.

BURNER	MAX POWER (kW)	KIT CODE
► RLS 1300/EV C11	30	20163100
► RLS 1600/EV C11	37	20163105
► RLS 2000/EV C11	45	On demand

Flue Gases Sensor Bracket kit



Available to be used as flue gas collector.

BURNER	KIT CODE
► RLS 1300-1600-2000/EV C11	20041585

Air/Combustion fume temperature sensor (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.

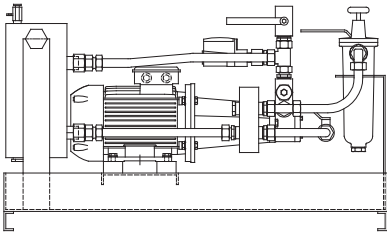
BURNER	ADJUSTMENT FIELD	PROBE TYPE	KIT CODE
► RLS 1300-1600-2000/EV C11	Temperature - 100 ... +500°C	PT 1000Ni1000	3010377

Modulating Dual Fuel Burners

RLS 1300÷2000/E-EV C11 SERIES

Burner accessories

Pump Unit Control Box Kit



The RLS 1600 and RLS 2000 burners must be combined with a pumping unit suitable for the output to be produced.
The pump unit models available in combination with these burners are indicated in the table below.

BURNER	MODEL	FUEL	CONNECTION	OUTPUT AT 30 BAR	MOTOR (kW)	BURNER MAX. OUTPUT (kg/h)	CODE
▶ RLS/EV C11	SG 1000	Light oil	1"	2200 l/h	4	900	On demand
	SG 1250	Light oil	1"	3000 l/h	4	1250	On demand
	SG 1500	Light oil	1"	3600 l/h	5.5	1500	On demand
	SG 2000	Light oil	1"	4800 l/h	7.5	2000	On demand

Modulating Dual Fuel Burners

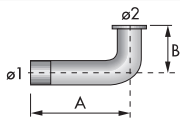
RLS 1300÷2000/E-EV C11 SERIES

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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
	Ø1 DN	Ø2 DN	A mm	B mm	
	100	100	350	350	20130616
	125	100	350	350	20130617
	100	80	350	350	20130602
	125	80	350	350	20130606

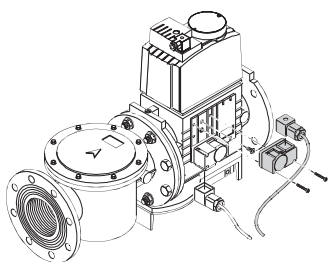
Stabiliser spring



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

PVP (Pressure Valve Proving) kit



The seal control function is included on Burner Digital Management System, it is only necessary to add the PVP kit on the gas train. The PVP is included as standard equipment on RLS 1300-1600-2000 models.

BURNER	KIT CODE
► MB - VGD type	3010344