

## RS 1000-1200/M BLU SERIES

The well-known RS 300-800/M BLU Burner Series, till now available up to 8 MW, has been upgraded with two new powerful burner models, the RS 1000-1200/M BLU models that extend his max output up to 12 MW and make the Burner Series even more complete and suitable for matching with the various Heat and Steam Generators in today's market.

The New Burner Models take the reliability of combustion and the solidity typical of Riello's Burners and match them with the most advanced solutions on Power Output Control and Ventilation Technology; as result a 12 MW output is supplied with a User Friendly monoblock machine assuring easiness of installation and servicing, and safe operation.

An easy access to internal components is ensured by the burner opening hinge.

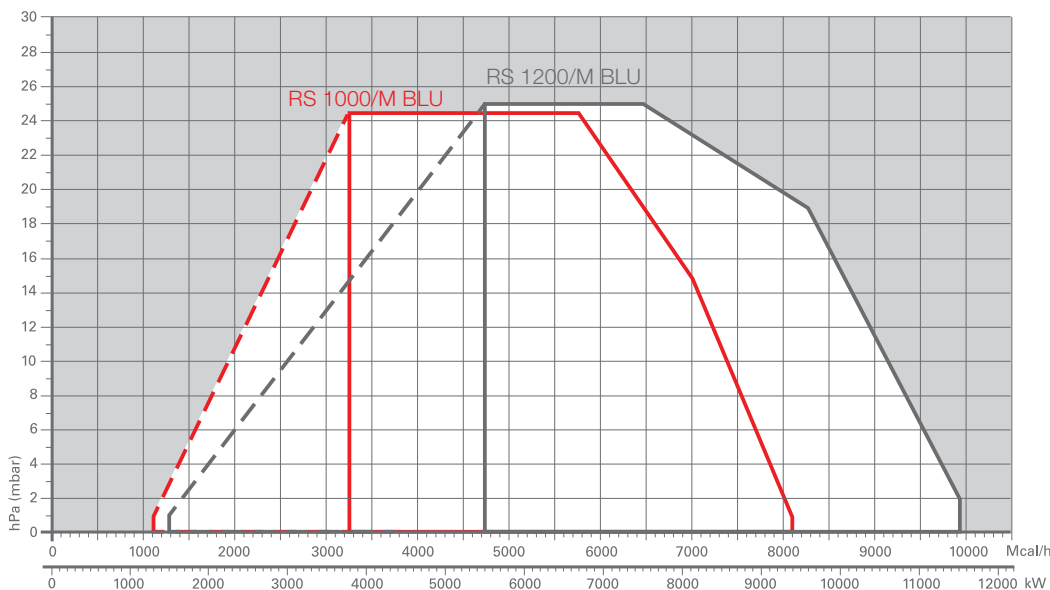
The New Gas Models are available with Modulating operation managed through Mechanical Cam, for a simple commissioning and to supply with precision the demanded power, guaranteeing high efficiency and setting stability, obtaining fuel consumption and operating costs reduction.

RS 1000-1200/M BLU models allow Low NOx, environmentally friendly, emissions according to the Class 3 of EN676 European Standard.



RS 1000/M BLU	1300/3800 ÷ 9400 kW
RS 1200/M BLU	1500/5500 ÷ 11500 kW

### FIRING RATES



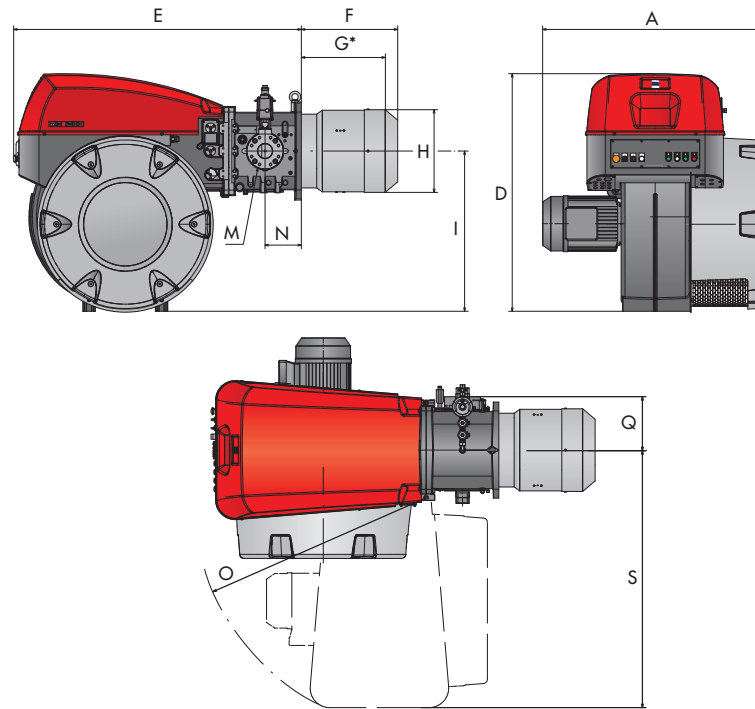
Useful working field for choosing the burner  
 Modulation range  
 Test conditions conforming to EN676  
 Temperature: 20°C  
 Pressure: 1013,5 mbar  
 Altitude: 0 m a.s.l.

# Low NOx Modulating Gas Burners

## RS 1000-1200/M BLU SERIES

### Overall dimensions (mm)

#### BURNER

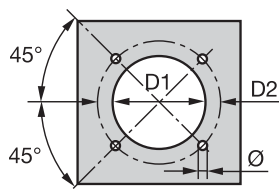


#### BURNER - BOILER MOUNTING FLANGE

MODEL	A	D	E	F	G*	H	I	M	N	O	Q	S
▶ RS 1000/M BLU	1223	1311	1574	674	485	413	884	DN80	200	1290	312	1422
▶ RS 1200/M BLU	1293	1311	1574	658	464	456	884	DN80	200	1290	312	1422

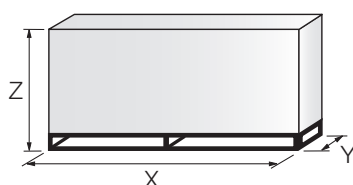
\* Maximum depth of the boiler door including the depth of the burner flange insulating gasket.

#### BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
▶ RS 1000/M BLU	418	608	M20
▶ RS 1200/M BLU	470	608	M20

#### PACKAGING



MODEL	X	Y	Z	kg
▶ RS 1000/M BLU	2400	1400	1595	500
▶ RS 1200/M BLU	2400	1400	1595	550

# Low NOx Modulating Gas Burners

## RS 1000-1200/M BLU 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											
/P Proportioning air/gas valve											
/E Electronic cam											
/EV Electronic cam predisposed for variable speed (with inverter)											
Emission : ... Class 1 EN267 - EN676											
MZ Class 2 EN267 - EN676											
BLU Class 3 EN267 - EN676											
MX Class 2 EN267											
Class 3 EN676											
Head length: TC standard head											
TL extended head											
Flame control system: FS1 Standard (1 stop every 24 h)											
FS2 Continuous working (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 3N/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: 230/50-60 230V/50-60Hz											
110/50-60 110V/50-60Hz											
R	S	1200	/M	BLU	TC	FS1	3/400/50	230/50-60			
BASIC DESIGNATION								EXTENDED DESIGNATION			

# Low NOx Modulating Gas Burners

## RS 1000-1200/M BLU SERIES

### Specification

#### STATE OF SUPPLY

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

- Fan with reverse curve blades high performance
- 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 230/400 - 400/690 V with neutral, 50 Hz
- 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 pilot burner and 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
- Burner safety control box for controlling the system safety (LFL for FS1 intermittent operation - LGK16 for FS2 continuous operation)
- UV probe for flame detection
- Star/triangle starter for the fan motor
- Main electrical supply terminal board
- Burner on/off switch
- Auxiliary voltage led signal
- Manual or automatic output increase/decrease switch
- 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
- Led signal for correct rotation direction of fan motor
- Emergency button
- Coded connection plugs-sockets
- Burner opening hinge
- Lifting rings
- IP 54 electric protection level

#### Standard equipment:

- 1 flange gasket
- 8 screws for fixing the flange
- 1 thermal screen
- 4 screws for fixing the burner flange to the boiler
- DN 80 gas supply connector for gas train connection
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

## RS 1000-1200/M BLU SERIES

### Available models

#### Burners

CODE	MODEL	HEAT OUTPUT		TOTAL ELECTRICAL POWER (kW)	NOTE
		(kW)	NATURAL GAS (Nm <sup>3</sup> /h)		
20034424	RS 1000/M BLU TC FS1 3/400/50 230/50-60	1300/3800-9400	130/380-940	24	
20034425	RS 1200/M BLU TC FS1 3/400/50 230/50-60	1500/5500-11500	150/550-1150	28	

Natural gas, net calorific value: 10 kWh/Nm<sup>3</sup> - Density: 0,71 kg/Nm<sup>3</sup>

The RS 1000-1200/M BLU burners are in according to 2009/142 EC - 89/336 (2004/108) - 73/23 (2006/95) EC Directives.

#### Gas Trains

GAS TRAIN CODE*	GAS TRAIN MODEL	NATURAL GAS BURNER (type)	ADAPTER (code)	NOTE
3970221	MBC 1200 SE 50	RS 1000/M BLU	3000826	(1)
3970146	CB 50/1			(1)
3970225	MBC 1200 SE 50 CT	RS 1000/M BLU	3000826	(2)
3970160	CB 50/1 CT			(2)
3970222	MBC 1900 SE 65 FC	RS 1000-1200/M BLU	3010221	(1)
3970147	CBF 65/1			(1)
3970226	MBC 1900 SE 65 FC CT	RS 1000-1200/M BLU	3010221	(2)
3970161	CBF 65/1 CT			(2)
3970223	MBC 3100 SE 80 FC	RS 1000-1200/M BLU	3010222	(1)
3970148	CBF 80/1			(1)
3970227	MBC 3100 SE 80 FC CT	RS 1000-1200/M BLU	3010222	(2)
3970162	CBF 80/1 CT			(2)
3970224	MBC 5000 SE 100 FC	RS 1000-1200/M BLU	3010223	(1)
3970149	CBF 100/1			(1)
3970228	MBC 5000 SE 100 FC CT	RS 1000-1200/M BLU	3010223	(2)
3970163	CBF 100/1 CT			(2)

\* gas train are 230V/50Hz - 220V/60Hz electrical supply

(1) without seal control

(2) seal control included (the valve seal control device is compulsory on gas trains of burners with a maximum output over 1200 kW, conforming to the European standard EN 676)

To select the gas train please refer to the technical data leaflet and/or instruction manual.

# Low NOx Modulating Gas Burners

## RS 1000-1200/M BLU SERIES

### Burner accessories

#### Accessories for modulating operation

##### POWER CONTROLLER



To obtain modulating operation, the RS/M BLU series of burners requires a regulator with three point outlet controls. The following table lists the accessories for modulating operation with their application range.

BURNER	TYPE	CODE
► RS 1000-1200/M BLU	RWF 40 - Basic version with 3 position output	3010356
	RWF 40 - High version with additional modulating output and RS 485 Interface	3010357

##### PROBE



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

BURNER	TYPE	RANGE (°C) (bar)	CODE
► RS 1000-1200/M BLU	Temperature PT 100	-100 ÷ 500°C	3010110
	Pressure 4 ÷ 20 mA	0 ÷ 2,5 bar	3010213
	Pressure 4 ÷ 20 mA	0 ÷ 16 bar	3010214

##### ANALOG CONTROL SIGNAL CONVERTER



BURNER	TYPE (INPUT SIGNAL)	CODE
► RS 1000-1200/M BLU	0/2 - 10 V (impedance 200 KΩ) 0/4 - 20 mA (impedance 250 Ω)	3010390

##### POTENTIOMETER



BURNER	KIT CODE
► RS 1000-1200/M BLU	in progress

It is necessary for analogic control signal converter operation.

## Burner accessories

### Continuous ventilation kit



If the burner requires continuous ventilation in the stages without flame, a special kit is available as given in the following table:

BURNER	KIT CODE
► RS 1000-1200/M BLU	3010094

### Sound proofing box



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

BURNER	AVERAGE NOISE REDUCTION [dB(A)] (*)	BOX CODE
► RS 1000-1200/M BLU	10	3010401

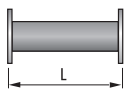
(\*) according to EN 15036-1 standard

# Low NOx Modulating Gas Burners







## RS 1000-1200/M BLU SERIES

### 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 adapters that can be fitted on the various burners:

BURNER	GAS TRAIN	ADAPTER TYPE	DIMENSIONS	L mm	ADAPTER CODE
▶ RS 1000-1200/M BLU	CB 50/1* MBC 1200 SE 50*	I	2"  DN 80	300	3000826
	CBF 65/1* MBC 1900 SE 65 FC*	I	DN 65  DN 80	400	3010221
	CBF 65/1* MBC 1900 SE 65 FC*	I	DN 65  DN 80	10	3010369
	CBF 80/1* MBC 3100 SE 80 FC*	I	DN 80  DN 80	400	3010222
	CBF 100/1* MBC 5000 SE 100 FC*	I	DN 100  DN 80	400	3010223
	CBF 100/1* MBC 5000 SE 100 FC*	I	DN 100  DN 80	50	3010370

\* with and without seal control

#### 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	SPRING CODE
▶ MBC 1900 SE 65 FC (CT)* ▶ MBC 3100 SE 80 FC (CT)* MBC 5000 SE 100 FC (CT)*	White from 4 to 20 mbar	3010381
	Red from 20 to 40 mbar	3010382
	Black from 40 to 80 mbar	3010383
	Green from 80 to 150 mbar	3010384
▶ CBF 65/1 - CBF 80/1*	Red from 25 to 55 mbar	3010133
▶ CBF 100/1*	Red from 25 to 55 mbar	3010134
▶ CBF 65/1 - CBF 80/1*	Black from 60 to 110 mbar	3010135
▶ CBF 100/1*	Black from 60 to 110 mbar	3010136
▶ CBF 65/1 - CBF 80/1*	Pink from 100 to 150 mbar	3090456
▶ CBF 100/1*	Pink from 100 to 150 mbar	3090489

\* with and without seal control

#### Seal control



BURNER	GAS TRAIN	CODE
▶ RS 1000-1200/M BLU	MBC type	3010367
▶ RS 1000-1200/M BLU	CB-CBF type	3010125