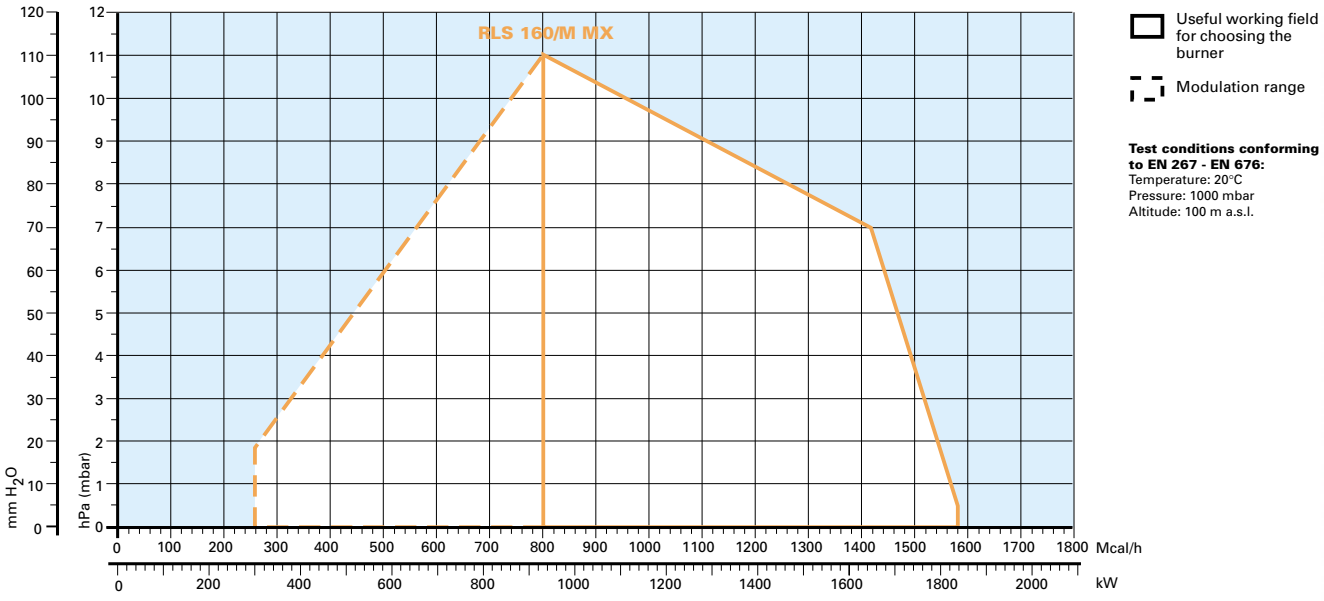
CE

TWO STAGE DUAL FUEL BURNERS

RLS/M MX SERIES | **RLS 160/M MX** 300/930 ÷ 1840kW

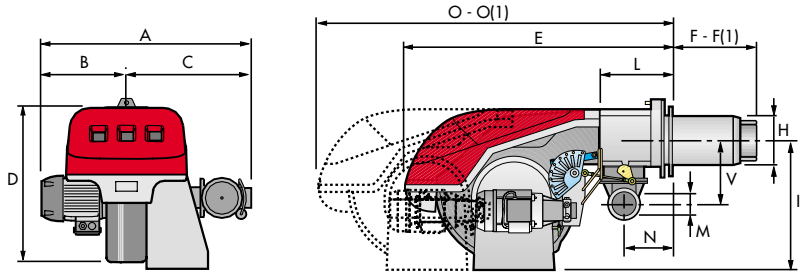
The RLS/M MX series of burners covers a firing range from 300 to 1840 kW, and they have been designed for use in hot or superheated water boilers, hot air or steam generators, diathermic oil boilers.
Operation is "two stage" at the oil side and "modulating" at the gas side with the installation of a PID logic regulator and respective probes.
RLS/M MX series burners guarantees high efficiency levels in all the various applications, thus reducing fuel consumption and running costs.
Optimisation of sound emissions is guaranteed by the special design of air suction circuit and the use of sound proofing material.
The exclusive design ensures reduced dimensions, simple use and maintenance. A wide range of accessories guarantees elevated working flexibility.

FIRING RATES



RLS/M MX series - OVERALL DIMENSIONS (mm)

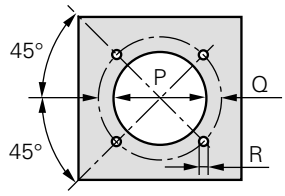
BURNER



Model	A	B	C	D	E	F - F (1)	H	I	L	M	N	O - O (1)	V
RLS 160/M MX	843	366	477	555	847	373 - 503	221	430	221	Rp2	141	1395 - 1535	186

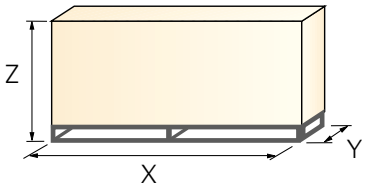
(1) Length with extended combustion head.

BURNER - BOILER MOUNTING FLANGE



Model	P	Q	R
RLS 160/M MX	230	325 - 368	M16

PACKAGING

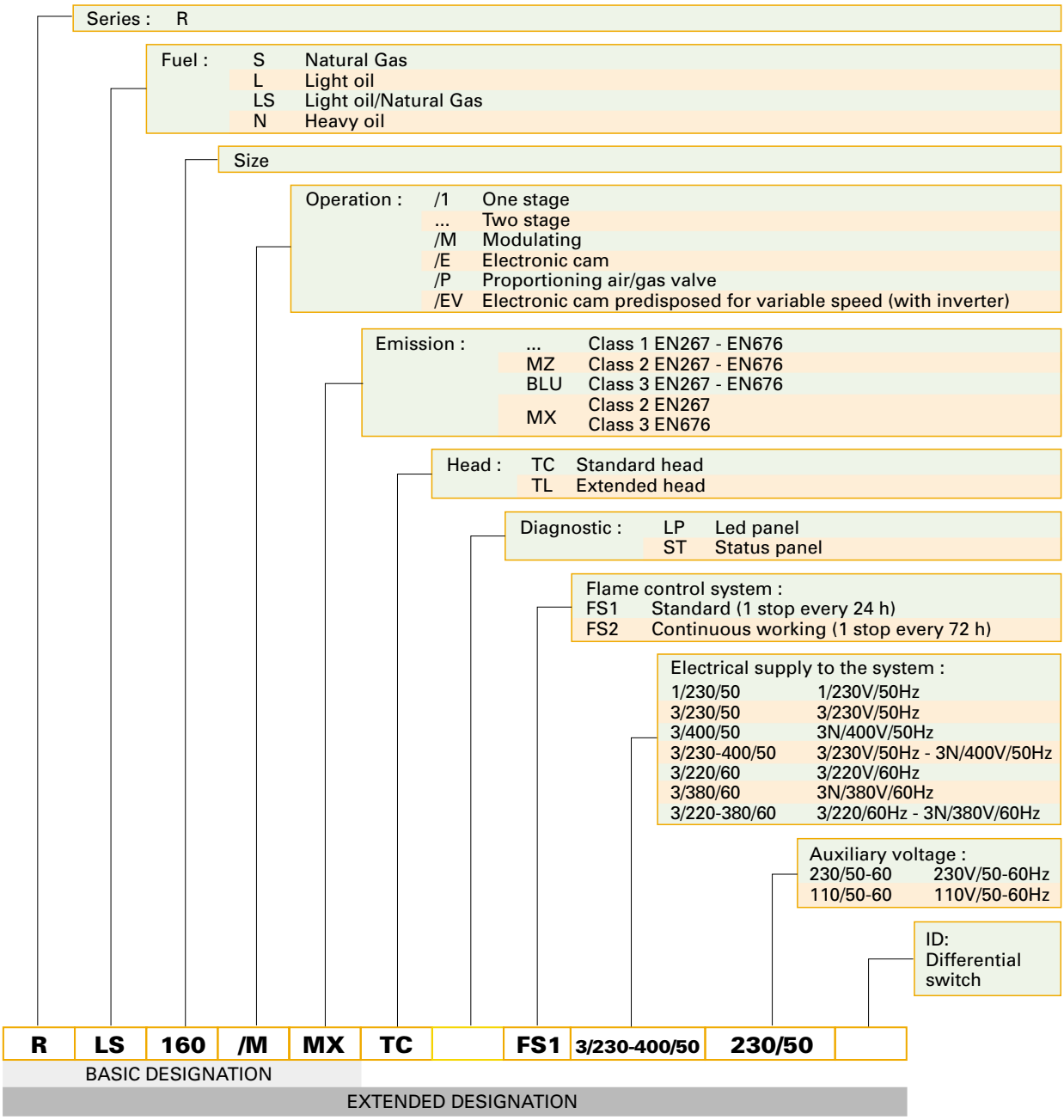


Model	X - X(1)	Y	Z	kg
RLS 160/M MX	1270 - 1400	900	750	95

(1) Length with extended combustion head.

RLS/M MX series - SPECIFICATION

DESIGNATION OF SERIES



RLS/M MX series - STATE OF SUPPLY

Monoblock forced draught LOW NOx dual fuel burner with two stage operation at the oil side and two stage progressive or modulating operation at the gas side, with a specific kit, fully automatic, made up of:
- air suction circuit lined with sound-proofing material
- centrifugal fan with high performance and low sound emissions
- air damper for air flow setting and butterfly valve for regulating gas output controlled by a servomotor with variable cam
- starting motor at 2800 rpm, three-phase 400V with neutral, 50Hz
- 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
    - gas distributor
    - flame stability disk
- maximum gas pressure switch to stop the burner in the case of excess pressure on the fuel supply line
- minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- gears pump for high pressure fuel supply
- pump starting motor
- oil safety valves
- two oil valves (1st and 2nd stage)
- flame control panel
- UV photocell for flame detection
- burner on/off selection switch
- manual or automatic output increase/decrease selection switch
- Oil/Gas selector
- flame inspection window
- slide bars for easier installation and maintenance
- protection filter against radio interference
- IP 44 electric protection level.

Standard equipment:
- 1 gas train gasket
- 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
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

RLS/M MX series - AVAILABLE BURNER MODELS

Code	Model	Heat output			Total electrical power (kW)	Certification	Note	Price
		(kW)	Light oil (kg/h)	Natural Gas (Nm^3/h)				
3898210	RLS 160/M MX TC FS1 3/230-400/50 230/50-60	300/930-1840	25/78-155	30/93-184	6,0	CE 0085BN0625		
3898211	RLS 160/M MX TL FS1 3/230-400/50 230/50-60	300/930-1840	25/78-155	30/93-184	6,0	CE 0085BN0625		

Net calorific value light oil: 11,8 kWh/kg; 10.200 kcal/kg - Viscosity at 20°C: 4-6 mm^2/s (cSt).
Net calorific value G20 gas: 10 kWh/Nm^3; 8.600 $kcal/Nm^3$ - Density: 0,71 kg/Nm^3.
The burners of RLS/M MX series are in according to 90/396 - 89/336 - 73/23 - 92/42 CEE Directive and EN 267 - 676 Norm.

RLS/M MX series - AVAILABLE GAS TRAIN MODELS

	Gas train code*	Gas train model	Natural gas		Note	Gas train price
			Burner (type)	Adapter ** (code)		
MULTIBLOC GAS TRAIN	3970181	MBD 420	RLS 160/M MX	-	(1)	
	3970182	MBD 420 CT	RLS 160/M MX	-	(2)	
COMPOSED GAS TRAIN	3970146	CB 50/1	RLS 160/M MX	-	(1)	
	3970160	CB 50/1 CT	RLS 160/M MX	-	(2)	
	3970147	CBF 65/1	RLS 160/M MX	3000825	(1)	
	3970161	CBF 65/1 CT	RLS 160/M MX	3000825	(2)	
	3970148	CBF 80/1	RLS 160/M MX	3000826	(1)	
	3970162	CBF 80/1 CT	RLS 160/M MX	3000826	(2)	
	3970149	CBF 100/1	RLS 160/M MX	3010127	(1)	
	3970163	CBF 100/1 CT	RLS 160/M MX	3010127	(2)	

*** gas train are 230V/50Hz - 220V/60Hz electrical supply**
**** the adapter price is available in the "Gas train accessories" section**
(1) Seal control accessory
(2) Seal control incorporated

The following table shows the frequently matching between RLS/M MX burners and the gas train, referred to different inlet gas pressure.

Burner	Reference combustion chamber pressure (mbar)	Natural gas G20 (20 mbar)		Natural gas G20 (300 mbar)		LPG (35 mbar)		LPG (150 mbar)	
		Gas train	Reference output (kW)	Gas train	Reference output (kW)	Gas train	Reference output (kW)	Gas train	Reference output (kW)
RLS 160/M MX	7			MBD 420	1540				
RLS 160/M MX	7			CB 50/1	1540				

RLS/M MX series - BURNER ACCESSORIES

Nozzles type 60° B

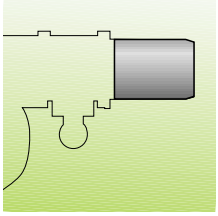
The nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required fuel output.

NOTE: each burner needs N° 2 nozzles.

Burner	Rated delivery kg/h (*)	GPH	Nozzle code	Price
RLS 160/M MX	42,4	10,00	3042292	
	46,7	11,00	3042312	
	50,9	12,00	3042322	
	55,1	13,00	3042332	
	59,4	14,00	3042352	
	63,6	15,00	3042362	
	67,9	16,00	3042382	
	72,1	17,00	3042392	
	76,4	18,00	3042412	
	80,6	19,00	3042422	
	84,8	20,00	3042442	
	93,3	22,00	3042462	
	101,8	24,00	3042472	
	110,3	26,00	3042482	
	118,8	28,00	3042492	

(*) Nozzle rated delivery is reffered to atomized pressure

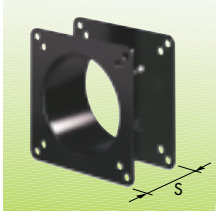
Extended head kit



"Standard head" burners can be transformed into "extended head" versions, by using the special kit. The kits available for the various burners, giving the original and the extended lengths, are listed below.

Burner	Standard head length (mm)	Extended head length (mm)	Kit code	Price
RLS 160/M MX	373	503	3010340	

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	Price
RLS 160/M MX	110	3000722	

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	Price
RLS 160/M MX	3010094	

Accessories for modulating operation

To obtain modulating operation, the RLS 160/M MX 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	Regulator type	Kit code	Price
RLS 160/M MX	RWF 40	3010212	

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

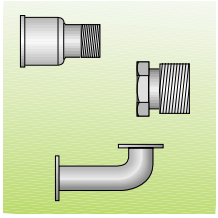
Probe type	Range (°C) (bar)	Probe code	Price
Temperature PT 100	-100 ÷ 500°C	3010110	
Pressure 4 ÷ 20 mA	0 ÷ 2,5 bar	3010213	
Pressure 4 ÷ 20 mA	0 ÷ 16 bar	3010214	

Depending on the servomotor fitted to the burner, a three-pole potentiometer (1000 Ω) can be installed to check the position of the servomotor. The KITS available for the various burners are listed below.

Burner	Kit code	Price
RLS 160/M MX	3010021	

RLS/M MX series - GAS TRAIN ACCESSORIES

Adapters



When the diameter of the gas train is different from the set diameter of the burners, an adapter must be fitted between the gas train and the burner. The following table lists the adapters for various burners.

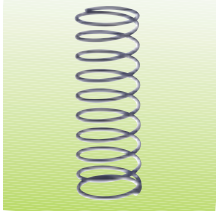
Burner	Gas train	Dimensions	Adapter code	Price
RLS 160/M MX	CBF 65/1	DN 65 2"1/2 1" 1/2 2"	3000825	
	CBF 80/1	DN 80 2"1/2 2"	3000826	
	CBF 100/1	DN 100 DN 80	3010127	

Seal control kit

To test the valve seals on the gas train, a special "seal control kit" is available. The valve seal control device is compulsory (EN 676) on gas trains to burners with a maximum output over 1200 kW. The seal control is type VPS 504.

Burner	Gas train	Kit code	Price
RLS 160/M MX	CB 50/1 - MBD 420 - CBF 65/1 - CBF 80/1 - CBF 100/1	3010123	

Stabiliser spring



Accessory springs are available to vary the pressure range of the gas train stabilisers. 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	Price
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 90 to 150 mbar	3090456	
CBF 100/1	Pink from 90 to 150 mbar	3090489	