

RIELLO

Energy For Life

RS/M
Linkage Power Burner

The RS/M series has been designed for use in low or medium temperature hot water boilers, steam boilers, diathermic oil boilers, warm air appliance, and similar applications. Operation can be "two stage progressive" or, alternatively, "modulating" with the installation of a PID logic regulator and respective probes. RS/M series burners guarantee high- efficiency, reducing fuel and running costs while the exclusive design provides simple use and maintenance with low sound emissions.

Project	Project Name	
	Site Location	
	Installation Altitude	
	Engineering Firm	
	Installing Contractor	
	Riello Representative	
	Rep. Contact Information	
	RBNA Project Number	
	Job Name	
	Equipment Manufacturer	
	Equipment Model	
	Equipment Type	
	Input	
	Fuel Type	
	Length	
	Width	
Height / diameter		
Chamber Pressure		

Project Notes:

General Burner Data	Product Type	
	Design	
	Model	
	Product Code	
	Power Supply	
	Gas Train Code	
	Gas Train Size	
	Supply Pressure	
	Compliance	
	Assembly Direction	

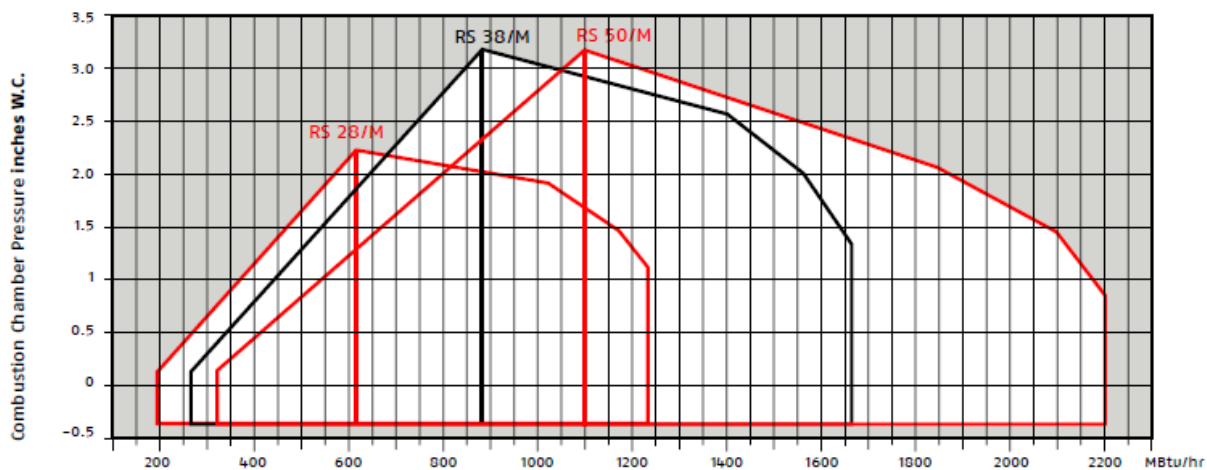
Optional Accessories	RWF 55 PID Modulating Control	
	Post Purge Time Delay Kit	
	Air Intake Adaptor	
	Propane Conversion Kit	
	Alarm Horn with Silence Switch	
	Local/ Remote control Switch	
	Additional Indicating Light	
	Dry Contact	
	Combustion Head Extension	
	Pre-Wire and Assembled Gas Train	
	UV Scanner	
	Post Purge Timer	
	Temperature Sensor	
Pressure Sensor		

Standard Feature

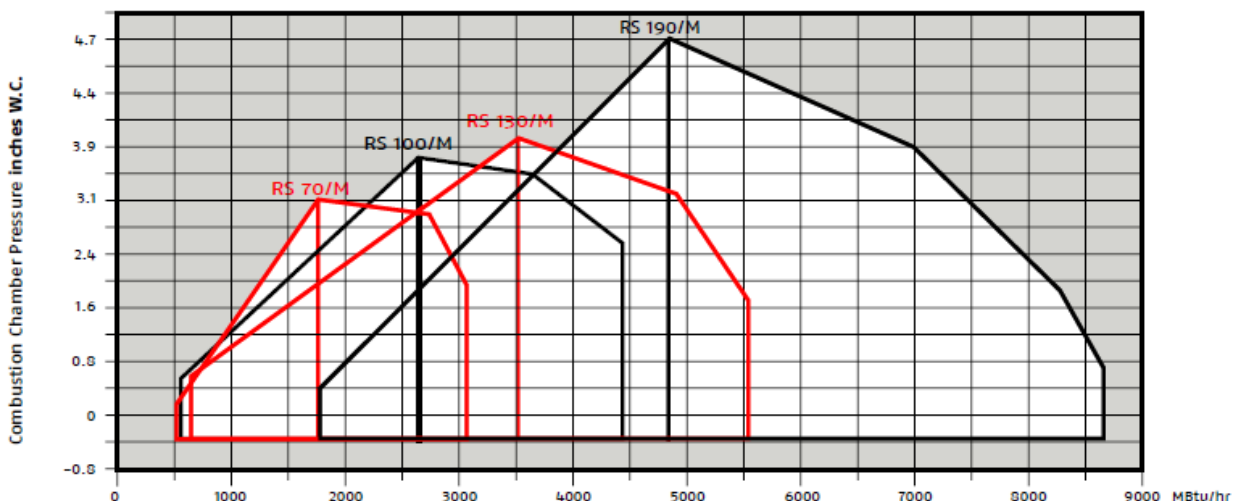
- Factory wired flame safeguard
- Flame rod or UV scanner flame detection
- Premium efficiency motor
- Aluminum combustion air fan
- Die cast aluminum mono-bloc construction
- Air suction circuit lined with sound-proofing material
- Fan with reverse curve blades
- Air damper for air setting and butterfly valve for regulating fuel output controlled by a servomotor with variable cam
- Combustion head, that can be set on the basis of required output
- High gas pressure switch (when code requires) to stop the burner in the case of excess pressure on the fuel supply line
- Low air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- Integrated control panel, fitted with control functions for the correct positioning of the servomotor and possibility of post-ventilation by just changing the electric wiring
- Burner on/off switch
- Flame inspection window
- Manual or automatic output increase/decrease switch
- Slide bars for easier installation and maintenance
- NEMA 1 electric protection level.

Output Capacity Chart

RS28, 38, 50/M



RS70, 100, 130, 190/M



Max. firing rates are based on zero furnace backpressure, ambient temperature of 68 °F, barometric pressure 394 inches WC, 329 ft. elevation a.s.l. For more details and final burner selection refer to applicable installation manual.

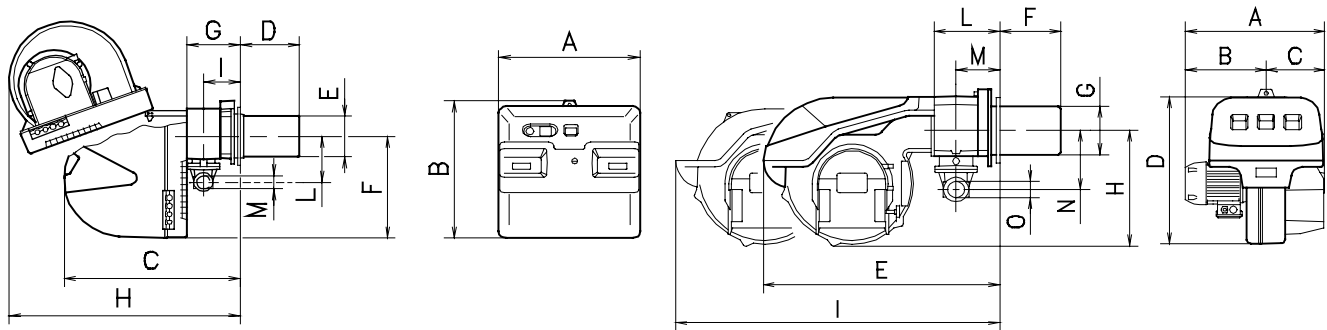
Burner Data Chart

			RS28/M	RS38/M	RS50/M	RS70/M	RS100/M	RS130/M	RS190/M
General Data									
Burner operation			Progressive 2 stage or low-high-low / full modulation with supply of modulating signal						
Modulating signal type accepted			120 volt drive up - drive down			120 volt drive up - drive down / 4-20 mA / 0-135 ohm / 0-10 vdc			
Burner turndown at maximum input high fire			2:1 / 6.2:1	2:1 / 6.3:1	2:1 / 6.9:1	6:01	7.7:1	9:01	4.9:1
Servomotor	Make & Model		Siemens SQN 70			Siemens SQM 4			
	Run time		25 seconds to 90°			32 seconds to 130°			
Low Fire Input Range (min / max)		MBtu/Hr	198 - 617	266 - 880	321 - 1099	512 - 1761	570 - 2644	607 - 3521	1781 - 4845
High Fire Input Range (min / max)		MBtu/Hr	617 - 1232	880 - 1665	1099 - 2201	1761 - 3084	2644 - 4405	3521 - 5545	4845 - 8673
Working temperature range	min / max	°C	0-40						
		°F	32-104						
Combustion air fan type			Centrifugal with reverse incline blades						Centrifugal
Combustion air temperature	max.	°C	60						
		°F	140						
Approvals			cULus (UL795, CSA 3.4) CSD-1 Compliant						
Fuel Data									
Fuel heating value	Natural gas	Btu/ft ³	1000						
	Propane gas	Btu/ft ³	2500						
Specific gravity	Natural gas		0.64						
	Propane gas		1.52						
Fuel flow (max)	Natural gas	CFH	1232	1665	2201	3085	4405	5545	8673
	Propane gas	CFH	493	666	880	1234	1762	2218	3469
Electrical Data									
Main voltage	volts / phase / hertz		120/1/60			230-460-575/3/60			
Control voltage	volts / phase / hertz		120/1/60 (separate control voltage supply required on 3 phase integral flame safeguard units)						
Fan motor size	W / HP		370 / 0.5	550 / 0.75	1100 / 1.5	2200 / 3	2200 / 3	4000 / 5.5	
Amperage draw	Motor	Amps	5.2	9.8 - 4.9	4.0 - 2.0 - 1.6	7.4 - 3.8 - 3.0	8.8 - 5.1 - 4.1	15.8 - 9.1 - 7.3	
FLA			11.5	16.1	6.1 - 2.9 - 2.4	9.5 - 4.7 - 3.8	tba	tba	
MCA			13	19	8 - 4 - 3	12 - 6 - 5	tba	tba	
MOCP			15	25	10 - 5 - 5	15 - 10 - 5	tba	tba	
Motor type			TEFC						
Ignition transformer(s)	V1 - V2		120V - 1 x 7 kV						
	I1 - I2		1.6 A - 23 mA						
Flame safeguard	Riello	Model	RFGO						
Burner protection level		NEMA	1						
Operation			Intermittent (1 stop minimum every 24hr of continuous operation)						
Emissions									
Sound level	dBa		68	70	72	75	77	78.5	83.1
CO ₂ operating range	%		9 - 10.5%						
CO emission (@ 3.0% O ₂)	ppm		<25						
NO ₂ emission (NO _x prompt) (@ 3.0% O ₂)	ppm		<65						
<p>All emission values are based on laboratory conditions and are for reference only. Emissions testing conducted on European DIN combustion test chambers.</p> <p>Maximum input ratings based on furnace pressure of 0"w.c. Contact factory if required input is outside of that shown in operating charts located in the burner manuals.</p> <p>Reference conditions: Ambient temperature 68°F (20°C). Barometric pressure 394"w.c. Altitude <2000 fasl. Contact factory for higher altitude selection.</p>									

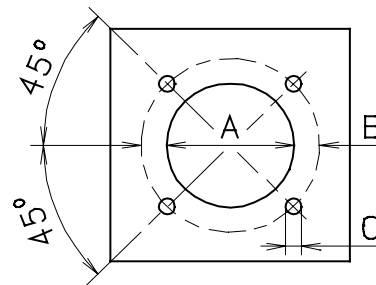
General Dimensions & Weight

Burner Dimensions												
	A	B	C	D - D(1)	E	F	G	H	I	L	M	
RS/M	28	18 3/4	18 11/16	22 7/8	8 1/2 - 13 3/4	5 1/2	13 7/8	6 7/16	31 7/8	4 1/4	6 5/8	1 1/2
	38	18 3/4	18 11/16	22 7/8	8 1/2 - 13 3/4	5 1/2	13 7/8	6 7/16	31 7/8	4 1/4	6 5/8	1 1/2
	50	18 3/4	18 11/16	22 7/8	8 1/2 - 13 3/4	5 1/2	13 7/8	6 7/16	31 7/8	4 1/4	6 5/8	1 1/2

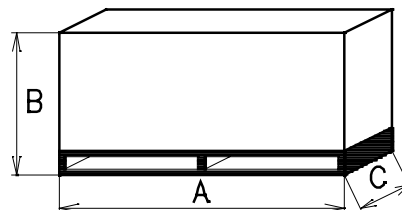
Burner Dimensions														
	A	B	C	D	E	F - F(1)	G	H	I	L	M	N	O	
RS/M	70	20 1/8	11 5/8	8 1/2	21 7/8	33	9 7/8 - 15 3/16	7 1/16	16 15/16	45 3/4 - 51	8 7/16	5 5/16	8 3/4	2
	100	20 1/16	12 5/16	8 1/2	21 7/8	33	9 7/8 - 15 3/16	7 1/16	16 15/16	45 3/4 - 51	8 7/16	5 5/16	8 3/4	2
	130	21 3/4	13 5/16	8 1/2	21 7/8	33	11 - 15 3/16	7 1/16	16 15/16	45 3/4 - 51	8 7/16	5 5/16	8 3/4	2
	190	26 7/8	14 3/8	12 3/8	21 7/8	33 5/8	14 11/16	8 3/4	16 15/16	51 5/8	9 1/16	5 5/16	8 3/4	2



Mounting Plate Details			
Model	A	B	C
RS28/M	6 5/16	8 13/16	3/8 W
RS38/M	6 5/16	8 13/16	3/8 W
RS50/M	6 5/16	8 13/16	3/8 W
RS70/M	7 1/4	10 7/8 - 12 7/8	1/2 W
RS100/M	7 1/4	10 7/8 - 12 7/8	1/2 W
RS130/M	7 11/16	10 7/8 - 12 7/8	1/2 W
RS190/M	9 1/6	12 13/16 - 14 1/2	5/8 W



Package Size				
Model	Dimensions - inches			Weight lbs
	A	B	C	
RS28/M	40	24 3/4	19 3/4	84
RS38/M	40	24 3/4	19 3/4	88
RS50/M	40	24 3/4	19 3/4	91
RS70/M	52 1/6	29 1/8	27 1/4	154
RS100/M	52 1/6	29 1/8	27 1/4	161
RS130/M	52 1/6	29 1/8	27 1/4	168
RS190/M	50	28 1/2	31	181



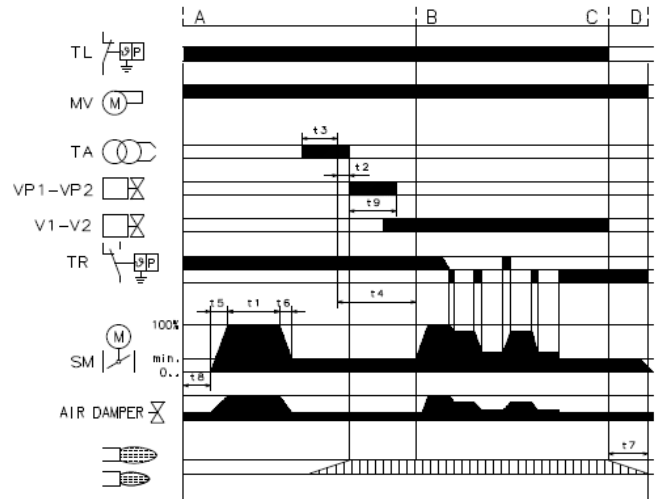
Flame Safeguard

Model		RFGO-A13
Electrical Supply	V/Ph/Hz	120/3/50-60
Primary fuse	A	10
Ambient Conditions	%RH	90 (no condensation)
	°F	-40-140
Weight	Lbs	2.5
Cover Material		Thermoplastic
Flame Detection	Type	Flame Rod or UV
Indication Lights	#	7
Approval		cULus

The RFGO is a microprocessor based flame safeguard. The LED indicator lights provide information about the current operating condition of the burner as well as diagnostic information such as flame signal strength and fault code.



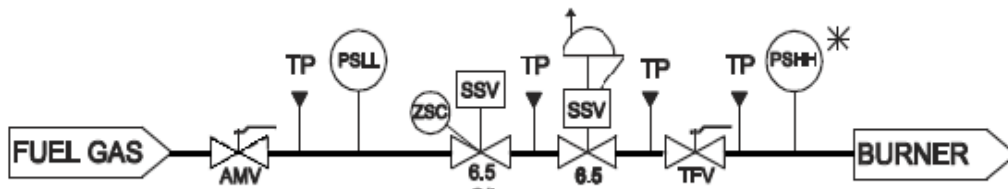
Safety Time	Duration (s)	Description
T1	30	Pre-Purge
T2	2	Safety Time
T3	4	Pre-ignition
T4	20	Interval between T2 and valve release (term. 19)
T5	Optional	Air damper open time
T6	Optional	Air damper to low fire
T7	12	Post Purge
T8	4	Interval to open air command
T9	16	Pilot run time



Gas Train

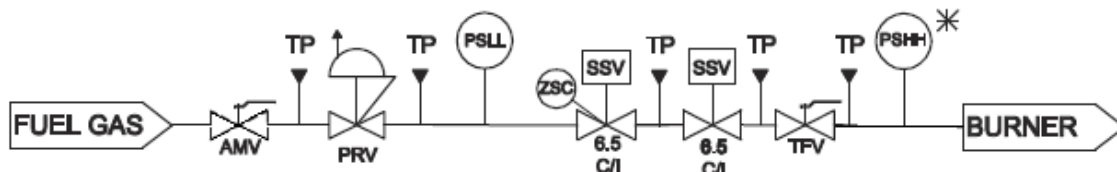
CSD-1 and UL compliance Gas Train

SEE PROJECT FILE FOR FULL GASTRAIN DRAWING.



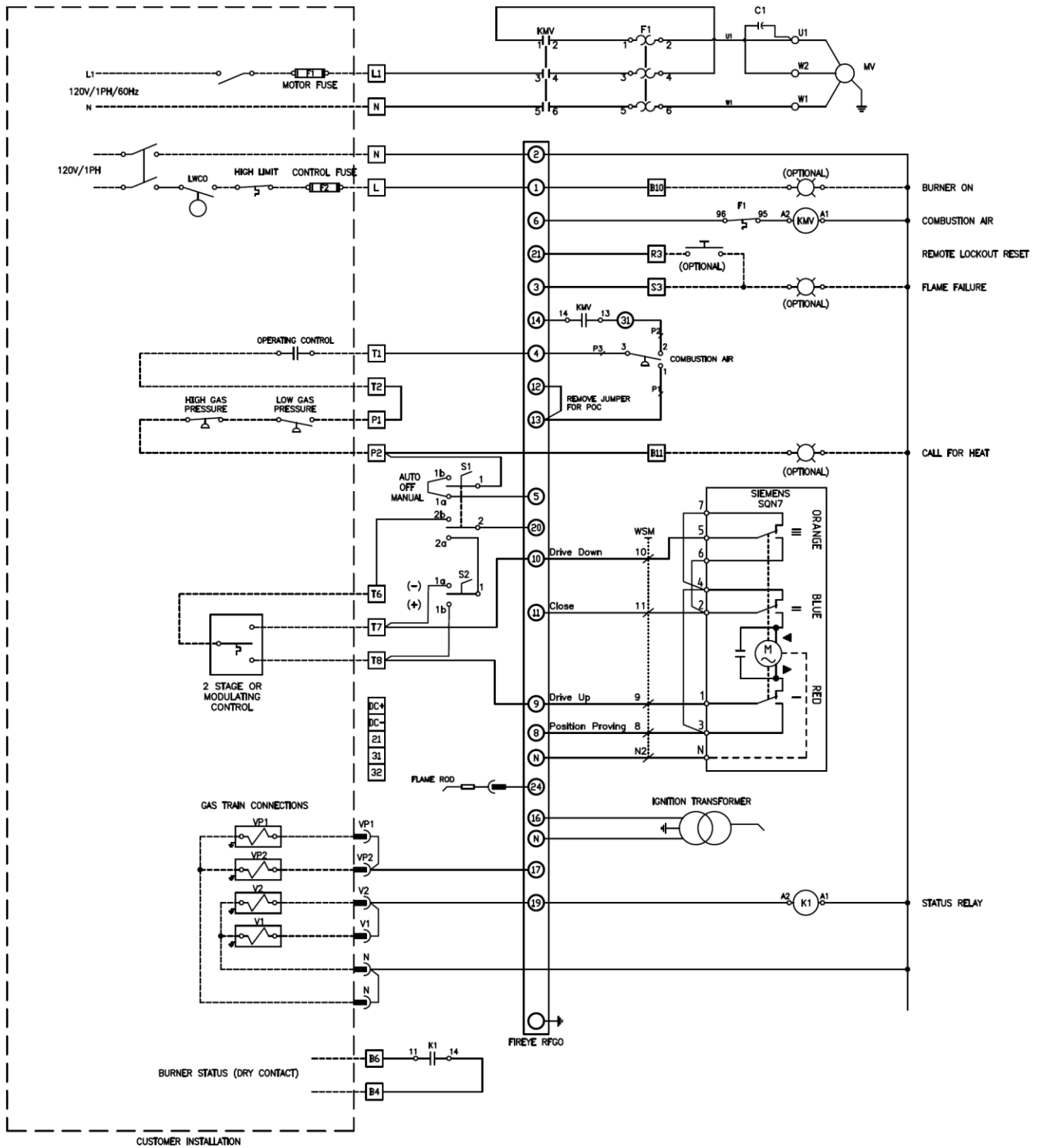
*USA installation only excluding Massachusetts

OR

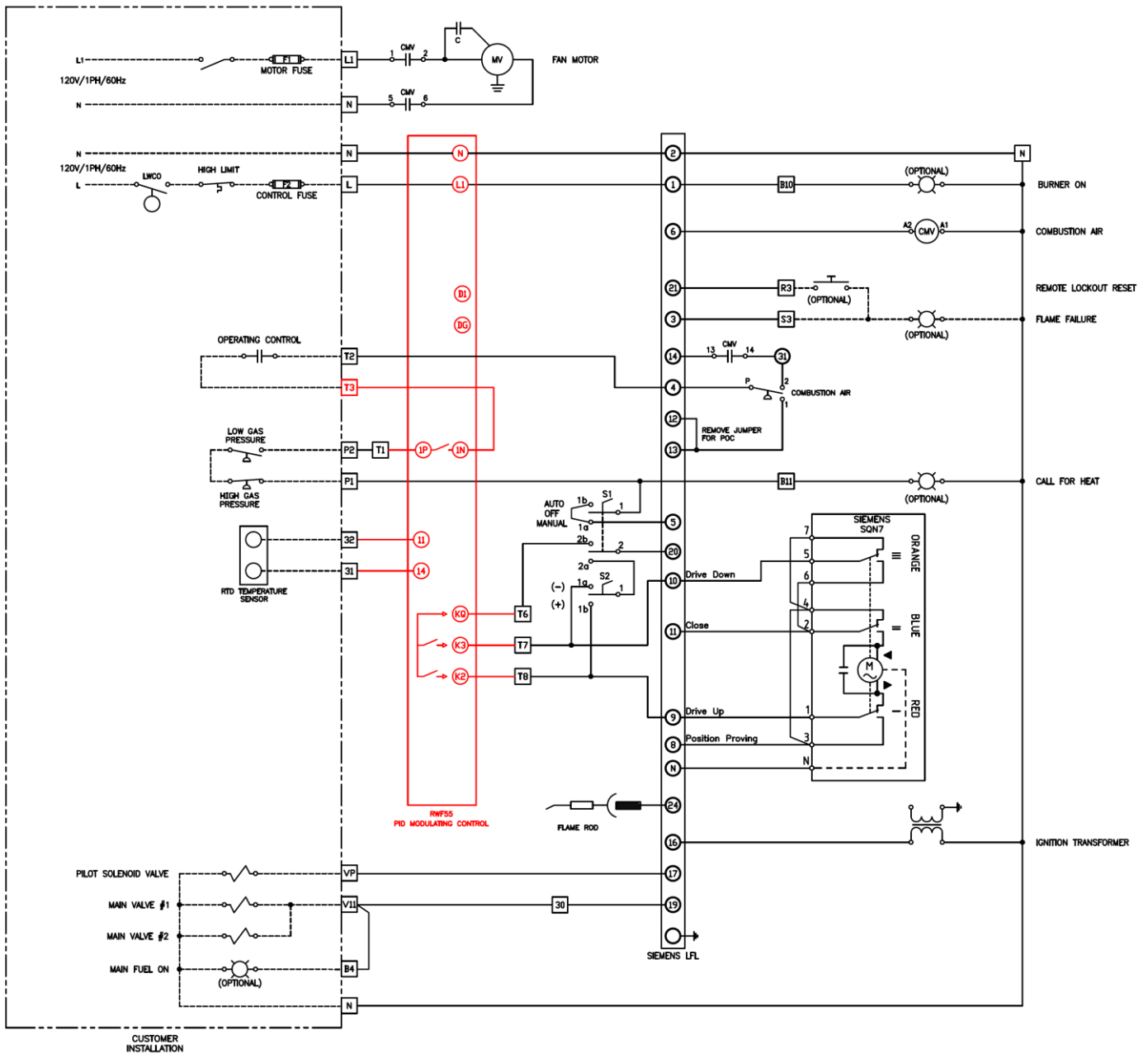


AMV= Manual Valve; PRV = pressure regulator; PSLL = Low Gas Switch; SSV = Safety Valve; TPV = Manual valve "test fire valve"; PSHH = High Gas Pressure (installed on burner); TP= pressure tap

Standard Wiring Diagram – RS28-50



Standard Wiring Diagram – RS70-190



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