

4/9/2015		Gas Performance Data																				
PT2-125-G-2015		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
% Burner output		0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
1 Heat input	MMBtu/hr	5.00	11.00	17.00	23.00	29.00	35.00	41.00	47.00	53.00	59.00	65.00	71.00	77.00	83.00	89.00	95.00	101.00	107.00	113.00	119.00	125.00
2	KW	1,465	3,224	4,982	6,741	8,499	10,257	12,016	13,774	15,533	17,291	19,050	20,808	22,566	24,325	26,083	27,842	29,600	31,359	33,117	34,875	36,634
3 Gas Flow	SCFH	5,000	11,000	17,000	23,000	29,000	35,000	41,000	47,000	53,000	59,000	65,000	71,000	77,000	83,000	89,000	95,000	101,000	107,000	113,000	119,000	125,000
4	M ³	142	311	481	651	821	991	1,161	1,331	1,501	1,671	1,841	2,010	2,180	2,350	2,520	2,690	2,860	3,030	3,200	3,370	3,540
5 Gas Pressure at Train Inlet	PSI	5.51	5.42	5.33	5.32	5.21	5.16	5.13	5.04	5.01	4.94	5	4.92	4.89	4.97	4.95	4.92	4.89	4.88	4.86	4.83	4.63
6	kPa	38.0	37.4	36.7	36.7	35.9	35.6	35.4	34.7	34.5	34.1	34.5	33.9	33.7	34.3	34.1	33.9	33.7	33.6	33.5	33.3	31.9
7 Gas Manifold Pressure	"w.c"	0.4	1.0	1.6	3.0	4.0	5.5	7.7	9.7	11.5	14.2	16.6	19.4	22.5	25.8	30.2	34.8	39.5	43.7	49.1	54.5	62.0
8	Pa	90	244	399	747	996	1370	1918	2416	2864	3537	4135	4832	5604	6426	7522	8668	9839	10885	12230	13575	15443
9 Gas Valve Position		4.8	14.6	17.9	23.0	26.7	32.2	36.7	39.8	42.0	45.0	47.0	49.4	52.0	53.8	56.8	59.9	63.0	65.8	69.9	76.0	100.0
10 Blower Output	%	0.0	2.0	6.0	11.0	14.0	20.2	25.2	29.1	34.0	39.0	45.0	49.0	53.5	60.0	65.0	71.0	77.0	82.0	88.0	93.0	100.0
11 Blower Speed	Hz	8.3	9.1	10.7	12.8	14	16.5	18.5	20.2	22.1	24.2	26.6	28.2	30.1	32.7	34.8	37.2	39.6	41.7	44.1	46.2	49
12 Blower Body Pressure	"w.c"	0.28	0.37	0.53	0.80	0.96	1.39	1.69	2.04	2.37	2.86	3.39	3.82	4.29	5.03	5.72	6.64	7.51	8.27	9.23	10.21	11.60
13	Pa	70	92	132	199	239	346	421	508	590	712	844	951	1069	1253	1425	1654	1871	2060	2299	2543	2889
14 Combustion Air Motor Power	HP	0.7	0.9	1.1	1.6	1.9	2.9	4.0	5.0	6.7	8.5	11.2	13.4	16.3	20.9	24.9	30.6	36.8	43.1	50.8	58.5	70.0
15	KW	0.5	0.7	0.9	1.2	1.4	2.2	3.0	3.7	5.0	6.3	8.4	10.0	12.2	15.6	18.6	22.8	27.4	32.1	37.9	43.2	52.2
16 Combustion Air Motor Current	Amp.	29.7	28.9	28.0	28.1	28.5	29.6	31.1	32.6	38.5	39.5	44.2	47.5	52.5	58.7	63.7	70.0	76.5	82.6	88.8	94.0	102.0
17 Gas Orifice Differential Pressure	"w.c"	0.03	0.18	0.34	0.57	0.94	1.05	1.48	1.92	2.33	2.88	3.38	4.02	4.70	5.29	6.31	7.26	7.46	9.14	10.24	11.38	13.61
18	Pa	7.47	44.83	84.69	141.98	234.14	261.54	368.64	478.24	580.36	717.36	841.90	1001.31	1170.69	1317.64	1571.71	1808.34	1858.15	2276.61	2550.60	2834.55	3390.01
19 Main Air Flow	SCFH	200,000	252,483	304,967	357,450	409,934	462,417	514,901	567,384	639,816	712,248	784,680	857,112	929,544	1,001,976	1,074,408	1,146,840	1,219,272	1,291,704	1,364,136	1,436,568	1,509,000
20	M ³	5,663	7,150	8,636	10,122	11,608	13,094	14,580	16,067	18,118	20,169	22,220	24,271	26,322	28,373	30,424	32,475	34,526	36,577	38,628	40,679	42,730
21 Excess air	%	298%	128%	78%	54%	41%	31%	25%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
22 Flame Length	Feet	2	3	3	3	3.5	4	4	4	4.5	4.5	4.5	4.5	5	5	6.5	6.5	7	7	7	7	7
23 Flame Diameter	Feet	4	4.5	4.5	5	5.5	5.5	5.5	5.5	6	6	6	6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5

Combustion Air VFD Setup			Limit Switch Setup		
Min Ref	Hz	8.3	Blower Proof of Running	-20	in H ₂ O
Max Ref	Hz	49.0	Blower Proof of High Fire	6.9	in H ₂ O
Ramp Up Time	Sec	40	Blower Proof of Low Fire	0.5	in H ₂ O
Ramp Down Time	Sec	40	Low Gas Pressure	1.5	psi
Nominal Motor Speed	rpm	1780	High Gas Pressure	10	psi
Motor Current	A	115	Pilot Low Gas Pressure	n/a	PSI
Motor Frequency	Hz	60			
Motor Voltage	V	480			
Motor Power	kW	74.6			

Use Chart 1 below to match the natural gas flow to the blower body pressure. Chart 1 shows the relationship between the gas manifold pressure and the appropriate blower body pressure. Chart 2 shows the relationship between the differential pressure as measured across the gas orifice plate with gas flow. Increase or decrease the fan speed or the gas control valve setting in the burner profile as needed to match the values. Please note that in premix burners gas and air compete for space inside the burner. That means that a change in the pressure or flow of either gas or air will effect the other. You will usually have to adjust both fuel and air to get the the desired pressures.

15-008

