



# Model 2008SDL-P 1.0% (10,000 ppm) CO<sub>2</sub> -P (low profile terminal block option)

## Specification: 2008SDL-P 1.0% CO<sub>2</sub>

Method: ..... N.D. I. R. (Non-dispersive Infra-red) Sample draw type gas sampling  
(see VTI **Application Note A7** - Recommended Gas Conditioning)

Gas sample hose barbs: ..... Designed for 1/8 inch I.D. tubing and **flow rates** between 0.3 and 1 liter/minute  
see Application Note A24 about gas calibration.

Gas: ..... Carbon Dioxide (CO<sub>2</sub>)

Range: ..... 0-1.0% (10,000 ppm) CO<sub>2</sub>

Accuracy: ..... ±250 ppm CO<sub>2</sub> from 0 to 5000 ppm CO<sub>2</sub>, ± 5% of reading from 0.5 to 1.0% - see scale data

Repeatability: ..... ± 1% of full scale (challenge with same gas sample and assure zero )

External Power Source: ..... 12 Volts D.C. @ 0.6 amp. max.(11.0 to 16.0 VDC absolute min. / max.)

Power Consumption: ..... less than 3 watts @ 12.0 VDC (2.4 watts typical, 7.2 watts peak at 12.0 V)

Output Signals,  
Voltage: ..... 0 to 1 volt = 0 to 1.0% CO<sub>2</sub> ( linear scale data attached)  
Current Loop: ..... 4 to 20 mA = 0 to 1.0% CO<sub>2</sub> ( linear scale data attached) 300Ω max loop R

Zero Drift at Constant Temperature: Less than 2% of full scale per 24 hours (random not cumulative)

Zero Noise at Constant Temperature: .. Less than 10 mV peak to peak, measured on V out during any 20 second period

Zero Drift due to Ambient Temp.: .... Less than 0.5% of full scale per degree Centigrade

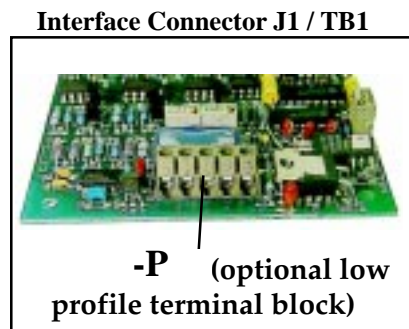
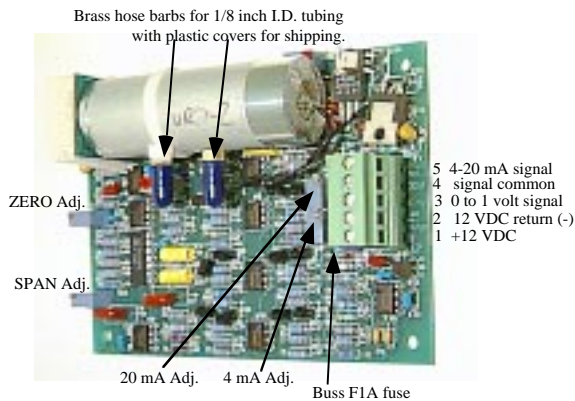
Operating Temperature Range: ..... 0 to 50°C (32° to 122°F) ( see **Application Note A12** )

Storage Temperature Range: ..... -40 to +70°C (-40 to +158°F)

Operating Humidity Range: ..... 5 to 95% RH non-condensing ( see **Application Note A30** )

Weight: ..... Less than 0.5 pounds (0.23 kilograms)

External Dimensions: PCB Card: 3.9" x 5" x 1.5" dimensions are in inches - see diagram on page 2 for mounting



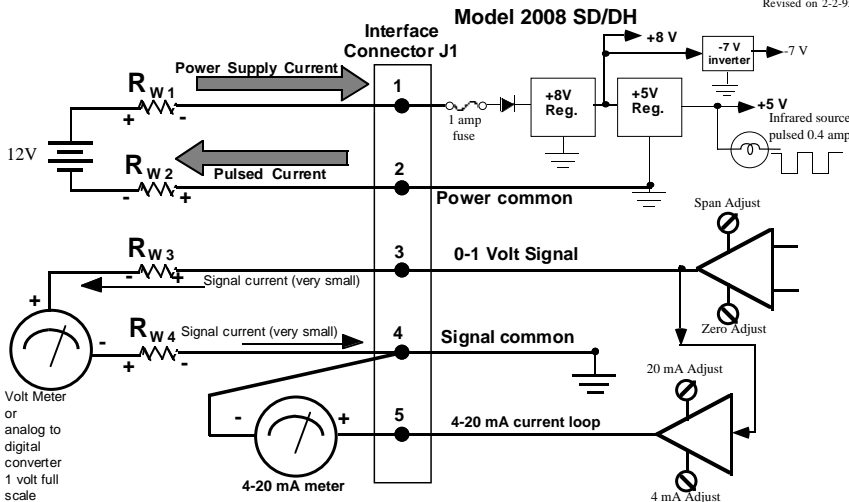


**Note:** Flow rate through the gas cell should be between 300 mL (0.3 L) to 1000 mL (1 L) per minute to assure enough flow and that the gas cell is not pressurized. A pressure in the gas cell above atmospheric pressure will result in a SPAN error (gas law). See **Application Note A12** for gas law info and **Application Note A7** for gas conditioning info.

**VALTRONICS & 1 volt full scale** Accuracy = ±0.025% CO2 from 0 to 0.5% CO2 and ±5% of reading from 0.5 to 1% CO2

±0.025% CO2				±0.025% CO2				±5% of Reading				±5% of Reading			
Gas in %	Output in volts	Max	Min	4-20 mA output	Max	Min	4-20 mA output	Max	Min	4-20 mA output	Max	Min	4-20 mA output	Max	Min
0.00	0.000	0.025	-0.025	4.00	4.40	3.60	0.51	0.510	0.536	0.485	12.16	12.57	11.75		
0.01	0.010	0.035	-0.015	4.16	4.56	3.76	0.52	0.520	0.546	0.494	12.32	12.74	11.90		
0.02	0.020	0.045	-0.005	4.32	4.72	3.92	0.53	0.530	0.557	0.504	12.48	12.90	12.06		
0.03	0.030	0.055	0.005	4.48	4.88	4.08	0.54	0.540	0.567	0.513	12.64	13.17	12.21		
0.04	0.040	0.065	0.015	4.64	5.04	4.24	0.55	0.550	0.578	0.523	12.80	13.24	12.36		
0.05	0.050	0.075	0.025	4.80	5.20	4.40	0.56	0.560	0.588	0.532	12.96	13.41	12.51		
0.06	0.060	0.085	0.035	4.96	5.36	4.56	0.57	0.570	0.599	0.542	13.12	13.58	12.66		
0.07	0.070	0.095	0.045	5.12	5.52	4.72	0.58	0.580	0.609	0.551	13.28	13.74	12.82		
0.08	0.080	0.105	0.055	5.28	5.68	4.88	0.59	0.590	0.630	0.560	13.44	13.91	12.97		
0.09	0.090	0.115	0.065	5.44	5.84	5.04	0.60	0.600	0.650	0.570	13.60	14.08	13.12		
0.10	0.100	0.125	0.075	5.60	6.00	5.20	0.61	0.610	0.641	0.580	13.76	14.25	13.27		
0.11	0.110	0.135	0.085	5.76	6.16	5.36	0.62	0.620	0.651	0.589	13.92	14.42	13.42		
0.12	0.120	0.145	0.095	5.92	6.32	5.52	0.63	0.630	0.662	0.599	14.08	14.58	13.58		
0.13	0.130	0.155	0.105	6.08	6.48	5.68	0.64	0.640	0.672	0.608	14.24	14.75	13.73		
0.14	0.140	0.165	0.115	6.24	6.64	5.84	0.65	0.650	0.683	0.618	14.40	14.92	13.88		
0.15	0.150	0.175	0.125	6.40	6.80	6.00	0.66	0.660	0.693	0.627	14.56	15.09	14.03		
0.16	0.160	0.185	0.135	6.56	6.96	6.16	0.67	0.670	0.704	0.637	14.72	15.26	14.18		
0.17	0.170	0.195	0.145	6.72	7.12	6.32	0.68	0.680	0.714	0.646	14.88	15.42	14.34		
0.18	0.180	0.205	0.155	6.88	7.28	6.48	0.69	0.690	0.725	0.656	15.04	15.59	14.49		
0.19	0.190	0.215	0.165	7.04	7.44	6.64	0.70	0.700	0.735	0.665	15.20	15.76	14.64		
0.20	0.200	0.225	0.175	7.20	7.60	6.80	0.71	0.710	0.746	0.675	15.36	15.93	14.79		
0.21	0.210	0.235	0.185	7.36	7.76	6.96	0.72	0.720	0.756	0.684	15.52	16.10	14.94		
0.22	0.220	0.245	0.195	7.52	7.92	7.12	0.73	0.730	0.767	0.694	15.68	16.26	15.10		
0.23	0.230	0.255	0.205	7.68	8.08	7.28	0.74	0.740	0.777	0.703	15.84	16.43	15.25		
0.24	0.240	0.265	0.215	7.84	8.24	7.44	0.75	0.750	0.788	0.713	16.00	16.60	15.40		
0.25	0.250	0.275	0.225	8.00	8.40	7.60	0.76	0.760	0.798	0.722	16.16	16.77	15.55		
0.26	0.260	0.285	0.235	8.16	8.56	7.76	0.77	0.770	0.809	0.732	16.32	16.94	15.70		
0.27	0.270	0.295	0.245	8.32	8.72	7.92	0.78	0.780	0.819	0.741	16.48	17.10	15.86		
0.28	0.280	0.305	0.255	8.48	8.88	8.08	0.79	0.790	0.830	0.751	16.64	17.27	16.01		
0.29	0.290	0.315	0.265	8.64	9.04	8.24	0.80	0.800	0.840	0.760	16.80	17.44	16.16		
0.30	0.300	0.325	0.275	8.80	9.20	8.40	0.81	0.810	0.851	0.770	16.96	17.61	16.31		
0.31	0.310	0.335	0.285	8.96	9.36	8.56	0.82	0.820	0.861	0.779	17.12	17.78	16.46		
0.32	0.320	0.345	0.295	9.12	9.52	8.72	0.83	0.830	0.872	0.789	17.28	17.94	16.62		
0.33	0.330	0.355	0.305	9.28	9.68	8.88	0.84	0.840	0.882	0.798	17.44	18.11	16.77		
0.34	0.340	0.365	0.315	9.44	9.84	9.04	0.85	0.850	0.893	0.808	17.60	18.28	16.92		
0.35	0.350	0.375	0.325	9.60	10.00	9.20	0.86	0.860	0.903	0.817	17.76	18.45	17.07		
0.36	0.360	0.385	0.335	9.76	10.16	9.36	0.87	0.870	0.914	0.827	17.92	18.62	17.22		
0.37	0.370	0.395	0.345	9.92	10.32	9.52	0.88	0.880	0.924	0.836	18.08	18.78	17.38		
0.38	0.380	0.405	0.355	10.08	10.48	9.68	0.89	0.890	0.935	0.846	18.24	18.95	17.53		
0.39	0.390	0.415	0.365	10.24	10.64	9.84	0.90	0.900	0.945	0.855	18.40	19.12	17.68		
0.40	0.400	0.425	0.375	10.40	10.80	10.00	0.91	0.910	0.956	0.865	18.56	19.29	17.83		
0.41	0.410	0.435	0.385	10.56	10.96	10.16	0.92	0.920	0.966	0.874	18.72	19.46	17.98		
0.42	0.420	0.445	0.395	10.72	11.12	10.32	0.93	0.930	0.977	0.884	18.88	19.62	18.14		
0.43	0.430	0.455	0.405	10.88	11.28	10.48	0.94	0.940	0.987	0.893	19.04	19.79	18.29		
0.44	0.440	0.465	0.415	11.04	11.44	10.64	0.95	0.950	0.998	0.903	19.20	19.96	18.44		
0.45	0.450	0.475	0.425	11.20	11.60	10.80	0.96	0.960	1.008	0.912	19.36	20.13	18.59		
0.46	0.460	0.485	0.435	11.36	11.76	10.96	0.97	0.970	1.019	0.922	19.52	20.30	18.74		
0.47	0.470	0.495	0.445	11.52	11.92	11.12	0.98	0.980	1.029	0.931	19.68	20.46	18.90		
0.48	0.480	0.505	0.455	11.68	12.08	11.28	0.99	0.990	1.040	0.941	19.84	20.63	19.05		
0.49	0.490	0.515	0.465	11.84	12.24	11.44	1.00	1.000	1.050	0.950	20.00	20.80	19.20		
0.50	0.500	0.525	0.475	12.00	12.40	11.60									

Revised on 2-2-95



• The pulsating power supply return current will take the path of least resistance. If the wire from pin# 2 is large and short it will travel through it and not in the signal path which would introduce an offset and noise. The SIGNAL COMMON must have a separate wire for signal current to flow through. There must be a minimum of four (4) wires. A three (3) wire connection where one wire is used for both power supply and signal common will **not work** even with the current loop.

