Model 2008SDH-2A 50% CO_2

2008SDH-2A**P (low profile terminal block option)**

Specification: 2008SDH-2A 50% CO_2

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 **0.05** and **0.3** liter/minute
see Application Note A24 about gas calibration.

Gas: ..... Carbon Dioxide (CO_2)

Range: ..... 0-50% CO_2

Accuracy: ..... ± 5% of reading (±1.25% CO_2 from 0 to 25% CO_2) - 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 50% CO_2 (linear scale data attached)
- Current Loop: ..... 4 to 20 mA = 0 to 50% CO_2 (linear scale data attached) 300Ω max loop R

Zero Drift at Constant Temperature: Less than 2% of full scale per 24 hopurs (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

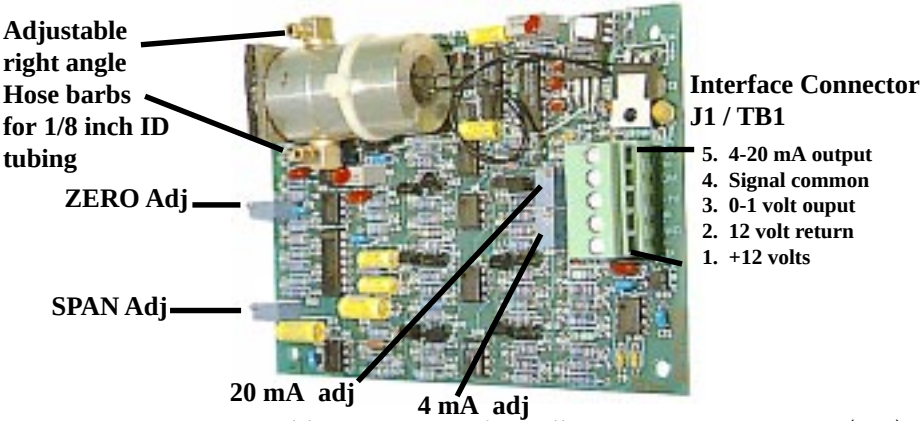
Operating Temperature Range: ..... 0 to 50°C (32° to 122°F) the gas laws effect the gas density and span

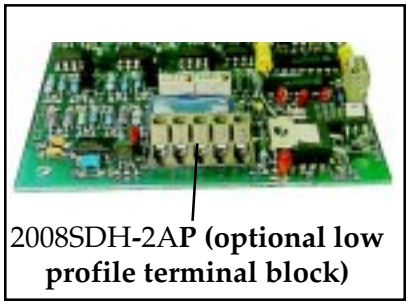
Storage Temperature Range: ..... -40 to +70°C (-40 to +158°F)

Operating Humidity Range: ..... 5 to 95% RH non-condensing

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

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





2008SDH-2A**P (optional low profile terminal block)**

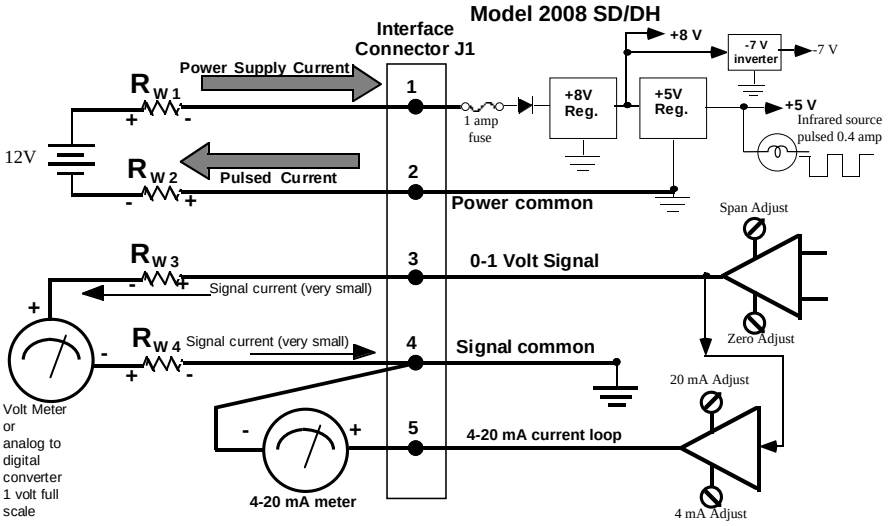
VALTRONICS

Note: Flow rate through the gas cell should not exceed 300 mL (0.3 L) per minute to assure that the gas cell is not pressurized. A pressure in the gas cell above atmospheric pressure will result in a SPAN error (gas law). The gas cell is very small due to the short path length required for high concentration measurement.

VALTRONICS 50% Gas & 1 volt full scale

Gas in %	Output in volts	±5% of Reading Max.	±5% of Reading Min.	4-20 mA output	±5% of Reading Max.	±5% of Reading Min.	4-20 mA across 250Ω in volts
0.00	0.000	0.025	-0.025	4.00	4.40	3.60	1.00
1.00	0.020	0.045	-0.005	4.32	4.72	3.92	1.08
2.00	0.040	0.065	0.015	4.64	5.04	4.24	1.16
3.00	0.060	0.085	0.035	4.96	5.36	4.56	1.24
4.00	0.080	0.105	0.055	5.28	5.68	4.88	1.32
5.00	0.100	0.125	0.075	5.60	6.00	5.20	1.40
6.00	0.120	0.145	0.095	5.92	6.32	5.52	1.48
7.00	0.140	0.165	0.115	6.24	6.64	5.84	1.56
8.00	0.160	0.185	0.135	6.56	6.96	6.16	1.64
9.00	0.180	0.205	0.155	6.88	7.28	6.48	1.72
10.00	0.200	0.225	0.175	7.20	7.60	6.80	1.80
11.00	0.220	0.245	0.195	7.52	7.92	7.12	1.88
12.00	0.240	0.265	0.215	7.84	8.24	7.44	1.96
13.00	0.260	0.285	0.235	8.16	8.56	7.76	2.04
14.00	0.280	0.305	0.255	8.48	8.88	8.08	2.12
15.00	0.300	0.325	0.275	8.80	9.20	8.40	2.20
16.00	0.320	0.345	0.295	9.12	9.52	8.72	2.28
17.00	0.340	0.365	0.315	9.44	9.84	9.04	2.36
18.00	0.360	0.385	0.335	9.76	10.16	9.36	2.44
19.00	0.380	0.405	0.355	10.08	10.48	9.68	2.52
20.00	0.400	0.425	0.375	10.40	10.80	10.00	2.60
21.00	0.420	0.445	0.395	10.72	11.12	10.32	2.68
22.00	0.440	0.465	0.415	11.04	11.44	10.64	2.76
23.00	0.460	0.485	0.435	11.36	11.76	10.96	2.84
24.00	0.480	0.505	0.455	11.68	12.08	11.28	2.92
25.00	0.500	0.525	0.475	12.00	12.40	11.60	3.00
26.00	0.520	0.546	0.494	12.32	12.74	11.90	3.08
27.00	0.540	0.567	0.513	12.64	13.07	12.21	3.16
28.00	0.560	0.588	0.532	12.96	13.41	12.51	3.24
29.00	0.580	0.609	0.551	13.28	13.74	12.82	3.32
30.00	0.600	0.630	0.570	13.60	14.08	13.12	3.40
31.00	0.620	0.651	0.589	13.92	14.42	13.42	3.48
32.00	0.640	0.672	0.608	14.24	14.75	13.73	3.56
33.00	0.660	0.693	0.627	14.56	15.09	14.03	3.64
34.00	0.680	0.714	0.646	14.88	15.42	14.34	3.72
35.00	0.700	0.735	0.665	15.20	15.76	14.64	3.80
36.00	0.720	0.756	0.684	15.52	16.10	14.94	3.88
37.00	0.740	0.777	0.703	15.84	16.43	15.25	3.96
38.00	0.760	0.798	0.722	16.16	16.77	15.55	4.04
39.00	0.780	0.819	0.741	16.48	17.10	15.86	4.12
40.00	0.800	0.840	0.760	16.80	17.44	16.16	4.20
41.00	0.820	0.861	0.779	17.12	17.78	16.46	4.28
42.00	0.840	0.882	0.798	17.44	18.11	16.77	4.36
43.00	0.860	0.903	0.817	17.76	18.45	17.07	4.44
44.00	0.880	0.924	0.836	18.08	18.78	17.38	4.52
45.00	0.900	0.945	0.855	18.40	19.12	17.68	4.60
46.00	0.920	0.966	0.874	18.72	19.46	17.98	4.68
47.00	0.940	0.987	0.893	19.04	19.79	18.29	4.76
48.00	0.960	1.008	0.912	19.36	20.13	18.59	4.84
49.00	0.980	1.029	0.931	19.68	20.46	18.90	4.92
50.00	1.000	1.050	0.950	20.00	20.80	19.20	5.00

Accuracy = ± 1.3 % gas from 0.0% gas to 25% gas
Accuracy = ±5% of reading from 25% gas to 50% gas
Chart revised on 2-9-96



• 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.

2008SDH-2AP **(optional low profile terminal block)**