VALTRONICS

Model 2008SDH-5V 10% CO_2

2008SDH-P-5V 10%

(low profile terminal block and 90° hose barbs on gas cell option)

Specification: 2008SDH-5V 10% CO_2

Method: ..... N.D. I. R. (Non-dispersive Infra-red) Sample draw type gas sampling
(see **Application Note A67** - 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: ..... 0-10% CO_2
Accuracy: ..... ± 5% of reading (±0.25% CO_2 from 0 to 5% 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)

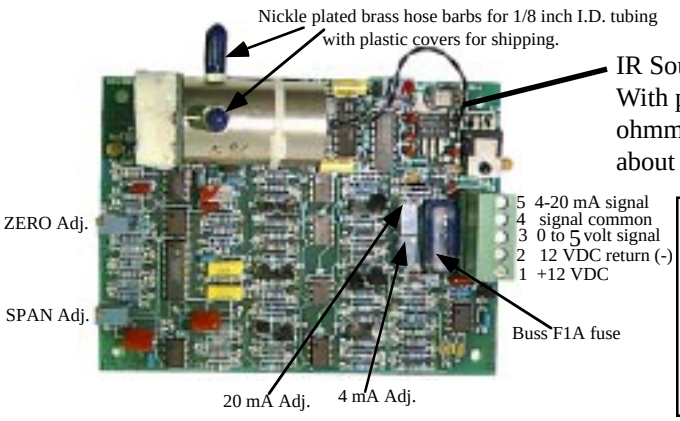
Output Signals: ..... Std. output connector is a Phoenix 5 pin male with mating terminal block, see option below
Voltage: ..... 0 to 5 volt = 0 to 10% CO_2 (linear scale data attached)
Current Loop: ..... 4 to 20 mA = 0 to 10% CO_2 (linear scale data attached) 300Ω max loop R

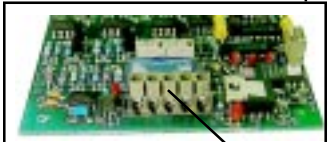
Zero Drift at Constant Temperature: Less than 2% of full scale per 24 hours (random not cumulative)
Zero Noise at Constant Temperature: .. Less than 50 mV peak to peak, measured on V out during any 20 second period
Zero Drift due to Ambient Temp.: .... Less than 0.5% of full scale per degree Centigrade

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

Gas calibration should be done every 6 months. Flow nitrogen at about 0.3 to 1 liter/min through the cell and adjust ZERO for a 0-1 volt output of 0.00 volt Check the 4-20 mA output for 4.0±0.4 mA. Adjust 4mA if necessary. Flow 5.0±0.1% CO_2 through cell and adjust SPAN for 2.50 volt and check current loop for an output of 12.0±0.4 mA. Adjust 20 mA if necessary.





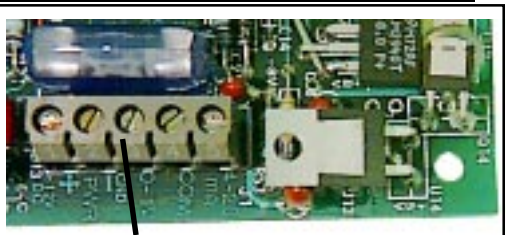
2008SDH-**P (optional low profile terminal block)**

Note: Flow rate through the gas cell should not exceed 1 liter 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). Gas calibration should be done every 6 months, especially ZERO adjust using ZERO gas (nitrogen) flowing at about 500 mL/ min. flow rate for a 0-5 volt output of 0.000±0.05 volt. See **Application Note A67** for info about gas conditioning and parts for filtering the gas and preventing water droplets from entering the gas cell. See **Application Note A50** for PC board troubleshooting.

Adjustable **90° hose barbs option** on gas cell for lower profile **-P** Option

VALTRONICS 10% & 5 volt full scale

Gas in %	Output in volts	±5% of reading Max	Min	Output 4-20 mA	±5% of reading Max	Min
0.00	**0.000**	0.125	-0.125	**4.00**	4.40	3.60
0.20	**0.100**	0.225	-0.025	**4.32**	4.72	3.92
0.40	**0.200**	0.325	0.075	**4.64**	5.04	4.24
0.60	**0.300**	0.425	0.175	**4.96**	5.36	4.56
0.80	**0.400**	0.525	0.275	**5.28**	5.68	4.88
1.00	**0.500**	0.625	0.375	**5.60**	6.00	5.20
1.20	**0.600**	0.725	0.475	**5.92**	6.32	5.52
1.40	**0.700**	0.825	0.575	**6.24**	6.64	5.84
1.60	**0.800**	0.925	0.675	**6.56**	6.96	6.16
1.80	**0.900**	1.025	0.775	**6.88**	7.28	6.48
2.00	**1.000**	1.125	0.875	**7.20**	7.60	6.80
2.20	**1.100**	1.225	0.975	**7.52**	7.92	7.12
2.40	**1.200**	1.325	1.075	**7.84**	8.24	7.44
2.60	**1.300**	1.425	1.175	**8.16**	8.56	7.76
2.80	**1.400**	1.525	1.275	**8.48**	8.88	8.08
3.00	**1.500**	1.625	1.375	**8.80**	9.20	8.40
3.20	**1.600**	1.725	1.475	**9.12**	9.52	8.72
3.40	**1.700**	1.825	1.575	**9.44**	9.84	9.04
3.60	**1.800**	1.925	1.675	**9.76**	10.16	9.36
3.80	**1.900**	2.025	1.775	**10.08**	10.48	9.68
4.00	**2.000**	2.125	1.875	**10.40**	10.80	10.00
4.20	**2.100**	2.225	1.975	**10.72**	11.12	10.32
4.40	**2.200**	2.325	2.075	**11.04**	11.44	10.64
4.60	**2.300**	2.425	2.175	**11.36**	11.76	10.96
4.80	**2.400**	2.525	2.275	**11.68**	12.08	11.28
5.00	**2.500**	2.625	2.375	**12.00**	12.40	11.60
5.20	**2.600**	2.730	2.470	**12.32**	12.74	11.90
5.40	**2.700**	2.835	2.565	**12.64**	13.07	12.21
5.60	**2.800**	2.940	2.660	**12.96**	13.41	12.51
5.80	**2.900**	3.045	2.755	**13.28**	13.74	12.82
6.00	**3.000**	3.150	2.850	**13.60**	14.08	13.12
6.20	**3.100**	3.255	2.945	**13.92**	14.42	13.42
6.40	**3.200**	3.360	3.040	**14.24**	14.75	13.73
6.60	**3.300**	3.465	3.135	**14.56**	15.09	14.03
6.80	**3.400**	3.570	3.230	**14.88**	15.42	14.34
7.00	**3.500**	3.675	3.325	**15.20**	15.76	14.64
7.20	**3.600**	3.780	3.420	**15.52**	16.10	14.94
7.40	**3.700**	3.885	3.515	**15.84**	16.43	15.25
7.60	**3.800**	3.990	3.610	**16.16**	16.77	15.55
7.80	**3.900**	4.095	3.705	**16.48**	17.10	15.86
8.00	**4.000**	4.200	3.800	**16.80**	17.44	16.16
8.20	**4.100**	4.305	3.895	**17.12**	17.78	16.46
8.40	**4.200**	4.410	3.990	**17.44**	18.11	16.77
8.60	**4.300**	4.515	4.085	**17.76**	18.45	17.07
8.80	**4.400**	4.620	4.180	**18.08**	18.78	17.38
9.00	**4.500**	4.725	4.275	**18.40**	19.12	17.68
9.20	**4.600**	4.830	4.370	**18.72**	19.46	17.98
9.40	**4.700**	4.935	4.465	**19.04**	19.79	18.29
9.60	**4.800**	5.040	4.560	**19.36**	20.13	18.59
9.80	**4.900**	5.145	4.655	**19.68**	20.46	18.90
10.00	**5.000**	5.250	4.750	**20.00**	20.80	19.20



2008SDH-**P (low profile terminal block)**