



Model 2008SDH 100% CH₄

Specification: 2008SDH 100% Methane (CH₄):

Method: **N.D. I. R.** (Non-dispersive Infra-red) Sample draw type gas sampling
 (see VTI **Application Note A67**- Recommended Gas Conditioning)

Gas sample hose barbs: Designed for 1/8 inch I.D. tubing and **flow rates** between **0.5** and **1.0** liter /minute

Gas: **Methane (CH₄)**

Range: 0-100% CH₄

Accuracy: ±2.5% CH₄ from 0 to 50% CH₄ - see scale data
 ±5% of reading from 51 to 100 % CH₄
 **CAUTION: Lower Explosive Limit (LEL)** is **5.0 %** CH₄ in air
 **CAUTION: Upper Explosive Limit (UEL)** is **15%** CH₄ in air
 **Note:** If this sensor is used to measure CH₄ levels near or above the LEL it should be
 enclosed in an **explosion proof housing** with flame arrestors in the gas path.

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 100% CH₄ (linear scale data attached)
 Current Loop: 4 to 20 mA = 0 to 100% CH₄ (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

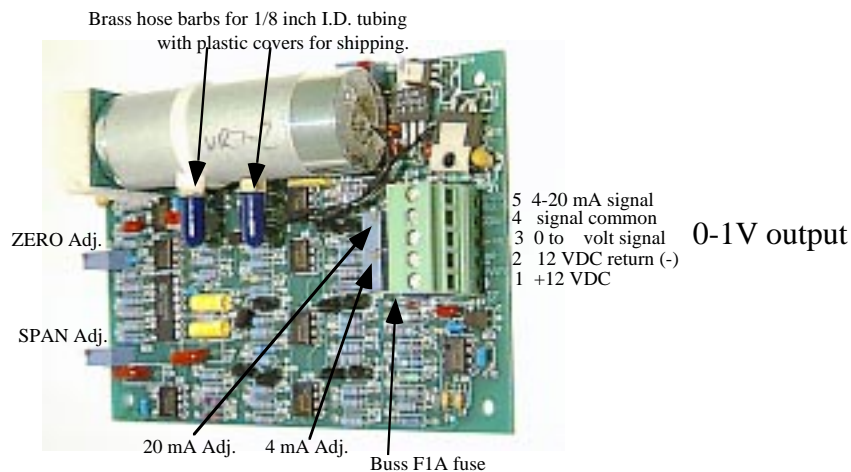
Operating Temperature Range: 0 to 50°C (32° to 122°F) the gas laws effect the gas density and span

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" dimensions are in inches - see diagram on page 2 for mounting

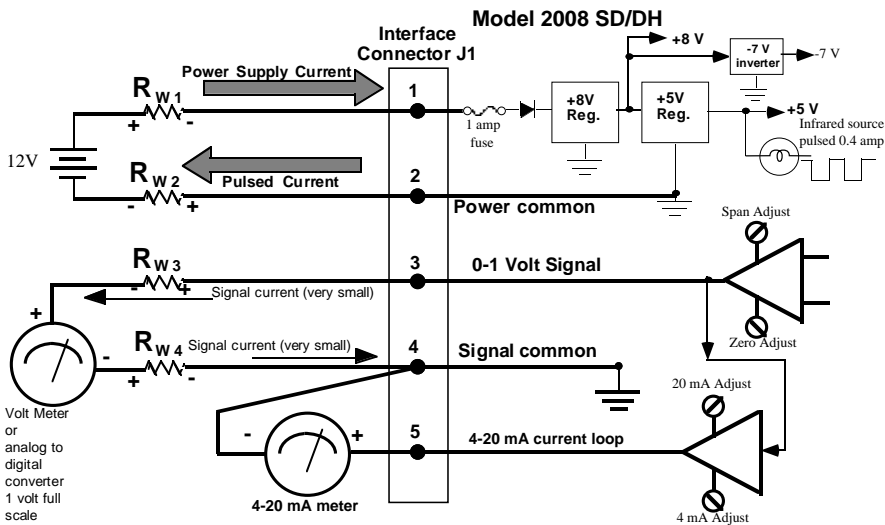




Note: Flow rate through the gas cell should not exceed 1000 mL (1.0 L) per minute to assure that the gas cell is not pressurized. A pressure in the gas cell above atmospheric pressure will result in a SPAN error (gas law). The gas cell is very small due to the short path length required for high concentration measurement.

Gas in %	Output in volts	±5 of Reading		4-20 mA output	±5 of Reading		4-20 mA across 250Ω in volts
		Max.	Min.		Max.	Min.	
0.0	0.000	0.025	-0.025	4.00	4.40	3.60	1.00
2.0	0.020	0.045	-0.005	4.32	4.72	3.92	1.08
4.0	0.040	0.065	0.015	4.64	5.04	4.24	1.16
6.0	0.060	0.085	0.035	4.96	5.36	4.56	1.24
8.0	0.080	0.105	0.055	5.28	5.68	4.88	1.32
10.0	0.100	0.125	0.075	5.60	6.00	5.20	1.40
12.0	0.120	0.145	0.095	5.92	6.32	5.52	1.48
14.0	0.140	0.165	0.115	6.24	6.64	5.84	1.56
16.0	0.160	0.185	0.135	6.56	6.96	6.16	1.64
18.0	0.180	0.205	0.155	6.88	7.28	6.48	1.72
20.0	0.200	0.225	0.175	7.20	7.60	6.80	1.80
22.0	0.220	0.245	0.195	7.52	7.92	7.12	1.88
24.0	0.240	0.265	0.215	7.84	8.24	7.44	1.96
26.0	0.260	0.285	0.235	8.16	8.56	7.76	2.04
28.0	0.280	0.305	0.255	8.48	8.88	8.08	2.12
30.0	0.300	0.325	0.275	8.80	9.20	8.40	2.20
32.0	0.320	0.345	0.295	9.12	9.52	8.72	2.28
34.0	0.340	0.365	0.315	9.44	9.84	9.04	2.36
36.0	0.360	0.385	0.335	9.76	10.16	9.36	2.44
38.0	0.380	0.405	0.355	10.08	10.48	9.68	2.52
40.0	0.400	0.425	0.375	10.40	10.80	10.00	2.60
42.0	0.420	0.445	0.395	10.72	11.12	10.32	2.68
44.0	0.440	0.465	0.415	11.04	11.44	10.64	2.76
46.0	0.460	0.485	0.435	11.36	11.76	10.96	2.84
48.0	0.480	0.505	0.455	11.68	12.08	11.28	2.92
50.0	0.500	0.525	0.475	12.00	12.40	11.60	3.00
52.0	0.520	0.545	0.495	12.32	12.72	11.92	3.08
54.0	0.540	0.565	0.515	12.64	13.04	12.24	3.16
56.0	0.560	0.585	0.535	12.96	13.36	12.56	3.24
58.0	0.580	0.605	0.555	13.28	13.68	12.88	3.32
60.0	0.600	0.625	0.575	13.60	14.00	13.20	3.40
62.0	0.620	0.651	0.589	13.92	14.42	13.42	3.48
64.0	0.640	0.672	0.608	14.24	14.75	13.73	3.56
66.0	0.660	0.693	0.627	14.56	15.09	14.03	3.64
68.0	0.680	0.714	0.646	14.88	15.42	14.34	3.72
70.0	0.700	0.735	0.665	15.20	15.76	14.64	3.80
72.0	0.720	0.756	0.684	15.52	16.10	14.94	3.88
74.0	0.740	0.777	0.703	15.84	16.43	15.25	3.96
76.0	0.760	0.798	0.722	16.16	16.77	15.55	4.04
78.0	0.780	0.819	0.741	16.48	17.10	15.86	4.12
80.0	0.800	0.840	0.760	16.80	17.44	16.16	4.20
82.0	0.820	0.861	0.779	17.12	17.78	16.46	4.28
84.0	0.840	0.882	0.798	17.44	18.11	16.77	4.36
86.0	0.860	0.903	0.817	17.76	18.45	17.07	4.44
88.0	0.880	0.924	0.836	18.08	18.78	17.38	4.52
90.0	0.900	0.945	0.855	18.40	19.12	17.68	4.60
92.0	0.920	0.966	0.874	18.72	19.46	17.98	4.68
94.0	0.940	0.987	0.893	19.04	19.79	18.29	4.76
96.0	0.960	1.008	0.912	19.36	20.13	18.59	4.84
98.0	0.980	1.029	0.931	19.68	20.46	18.90	4.92
100.0	1.000	1.050	0.950	20.00	20.80	19.20	5.00

Accuracy = ±5% of reading from 50 to 100% gas and ±2.5% gas from 0 to 50% gas



• 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.

