# Model 2008SDH-5V 100% $CH_4$

## Specification: 2008SDH-5V 100% Methane ($CH_4$): custom 0-5 volt output

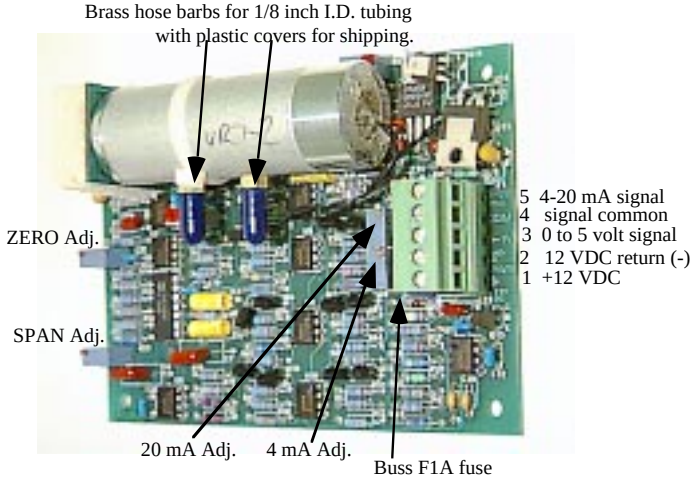
Method: ..... N.D. I. R. (Non-dispersive Infra-red) Sample draw type gas sampling
(see VTI **Application Note A67**- Recommended Gas Conditioning)
Gas sample hose barbs: ..... Designed for 1/8 inch I.D. tubing and **flow rates** between **0.5** and **1.0** liter/minute
see information about our ECON-CAL™ gas calibration kits
Gas: ..... Carbon Dioxide ($CH_4$)
Range: ..... 0-100% $CH_4$
Accuracy: ..... ± 5% of reading (±2.5% $CH_4$ from 0 to 50% $CH_4$) - see scale data
..... **Span adjusted at 5.0% $CH_4$,** ±10% of reading from 51 to 100 % $CH_4$
..... **CAUTION: Lower Exposive Limit ( LEL )** is **5.0 %** $CH_4$ in air
..... **CAUTION: Upper Explosive Limit ( UEL )** is **15%** $CH_4$ in air
..... **Note:** If this sensor is used to measure $CH_4$ 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 5 volt = 0 to 100% $CH_4$ ( linear scale data attached)
Current Loop: ..... 4 to 20 mA = 0 to 100% $CH_4$ ( 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 **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) 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



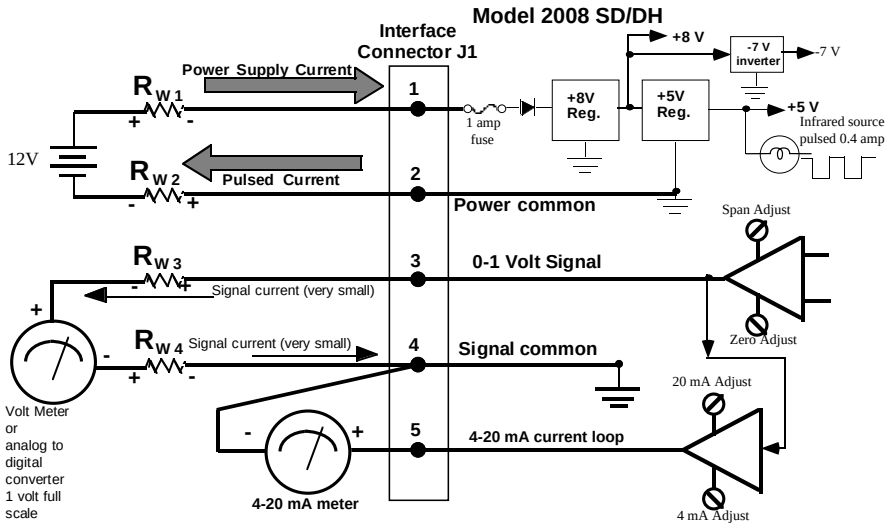

 

**VALTRONICS** 100% & 5 volt full scale 2008SDH-5V (Calibrated at 5.0% gas = 0.250 volt)

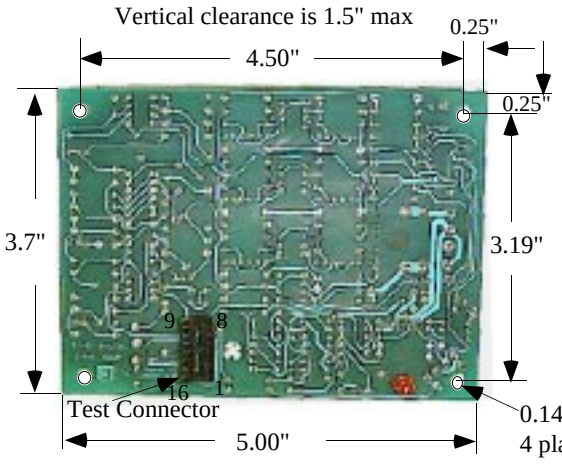
| Gas in % | Output in volts | ±2.5% gas Max | Min | 4-20 mA output | ±0.4 mA Max | Min | Gas in % | Output in volts | ±10% of reading Max | Min | 4-20 mA output | ±5% of reading Max | Min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.000 | 0.125 | -0.125 | 4.00 | 4.40 | 3.60 | | | | | | | |
| 2 | 0.100 | 0.225 | -0.025 | 4.32 | 4.72 | 3.92 | 52 | 2.600 | 2.860 | 2.340 | 12.32 | 13.15 | 11.49 |
| 4 | 0.200 | 0.325 | 0.075 | 4.64 | 5.04 | 4.24 | 54 | 2.700 | 2.970 | 2.430 | 12.64 | 13.50 | 11.78 |
| 6 | 0.300 | 0.425 | 0.175 | 4.96 | 5.36 | 4.56 | 56 | 2.800 | 3.080 | 2.520 | 12.96 | 13.86 | 12.06 |
| 8 | 0.400 | 0.525 | 0.275 | 5.28 | 5.68 | 4.88 | 58 | 2.900 | 3.190 | 2.610 | 13.28 | 14.21 | 12.35 |
| 10 | 0.500 | 0.625 | 0.375 | 5.60 | 6.00 | 5.20 | 60 | 3.000 | 3.300 | 2.700 | 13.60 | 14.56 | 12.64 |
| 12 | 0.600 | 0.725 | 0.475 | 5.92 | 6.32 | 5.52 | 62 | 3.100 | 3.410 | 2.790 | 13.92 | 14.91 | 12.93 |
| 14 | 0.700 | 0.825 | 0.575 | 6.24 | 6.64 | 5.84 | 64 | 3.200 | 3.520 | 2.880 | 14.24 | 15.26 | 13.22 |
| 16 | 0.800 | 0.925 | 0.675 | 6.56 | 6.96 | 6.16 | 66 | 3.300 | 3.630 | 2.970 | 14.56 | 15.62 | 13.50 |
| 18 | 0.900 | 1.025 | 0.775 | 6.88 | 7.28 | 6.48 | 68 | 3.400 | 3.740 | 3.060 | 14.88 | 15.97 | 13.79 |
| 20 | 1.000 | 1.125 | 0.875 | 7.20 | 7.60 | 6.80 | 70 | 3.500 | 3.850 | 3.150 | 15.20 | 16.32 | 14.08 |
| 22 | 1.100 | 1.225 | 0.975 | 7.52 | 7.92 | 7.12 | 72 | 3.600 | 3.960 | 3.240 | 15.52 | 16.67 | 14.37 |
| 24 | 1.200 | 1.325 | 1.075 | 7.84 | 8.24 | 7.44 | 74 | 3.700 | 4.070 | 3.330 | 15.84 | 17.02 | 14.66 |
| 26 | 1.300 | 1.425 | 1.175 | 8.16 | 8.56 | 7.76 | 76 | 3.800 | 4.180 | 3.420 | 16.16 | 17.38 | 14.94 |
| 28 | 1.400 | 1.525 | 1.275 | 8.48 | 8.88 | 8.08 | 78 | 3.900 | 4.290 | 3.510 | 16.48 | 17.73 | 15.23 |
| 30 | 1.500 | 1.625 | 1.375 | 8.80 | 9.20 | 8.40 | 80 | 4.000 | 4.400 | 3.600 | 16.80 | 18.08 | 15.52 |
| 32 | 1.600 | 1.725 | 1.475 | 9.12 | 9.52 | 8.72 | 82 | 4.100 | 4.510 | 3.690 | 17.12 | 18.43 | 15.81 |
| 34 | 1.700 | 1.825 | 1.575 | 9.44 | 9.84 | 9.04 | 84 | 4.200 | 4.620 | 3.780 | 17.44 | 18.78 | 16.10 |
| 36 | 1.800 | 1.925 | 1.675 | 9.76 | 10.16 | 9.36 | 86 | 4.300 | 4.730 | 3.870 | 17.76 | 19.14 | 16.38 |
| 38 | 1.900 | 2.025 | 1.775 | 10.08 | 10.48 | 9.68 | 88 | 4.400 | 4.840 | 3.960 | 18.08 | 19.49 | 16.67 |
| 40 | 2.000 | 2.125 | 1.875 | 10.40 | 10.80 | 10.00 | 90 | 4.500 | 4.950 | 4.050 | 18.40 | 19.84 | 16.96 |
| 42 | 2.100 | 2.225 | 1.975 | 10.72 | 11.12 | 10.32 | 92 | 4.600 | 5.060 | 4.140 | 18.72 | 20.19 | 17.25 |
| 44 | 2.200 | 2.325 | 2.075 | 11.04 | 11.44 | 10.64 | 94 | 4.700 | 5.170 | 4.230 | 19.04 | 20.54 | 17.54 |
| 46 | 2.300 | 2.425 | 2.175 | 11.36 | 11.76 | 10.96 | 96 | 4.800 | 5.280 | 4.320 | 19.36 | 20.90 | 17.82 |
| 48 | 2.400 | 2.525 | 2.275 | 11.68 | 12.08 | 11.28 | 98 | 4.900 | 5.390 | 4.410 | 19.68 | 21.25 | 18.11 |
| 50 | 2.500 | 2.625 | 2.375 | 12.00 | 12.40 | 11.60 | 100 | 5.000 | 5.500 | 4.500 | 20.00 | 21.60 | 18.40 |

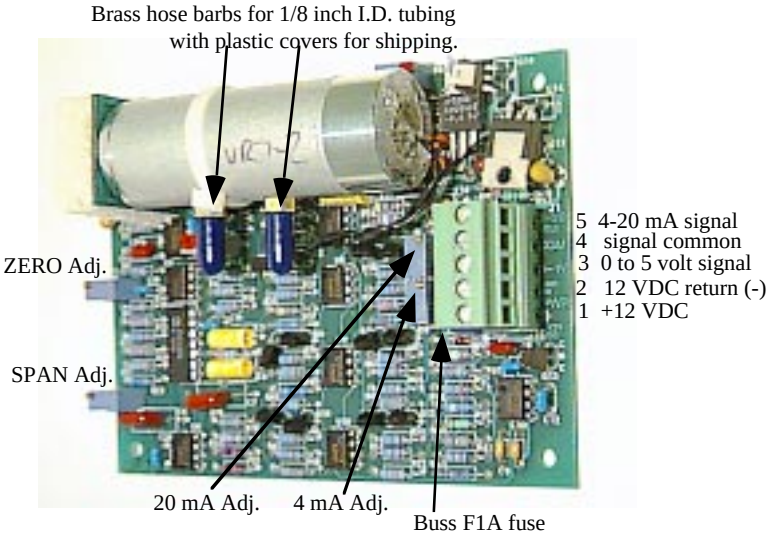
**Note:** Flow rate through the gas cell should not exceed 1000 mL (1.0 L) per minute to assure that the gas cell is not pressurized. A pressure in the gas cell above atmospheric pressure will result in a SPAN error (gas law). See Application Note A12.

Accuracy: **±2.5%** $CH_4$ (±0.125 volt) from 0 to 50.9% $CH_4$ and ±10% of reading from 51 to 100% $CH_4$.




• 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.

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