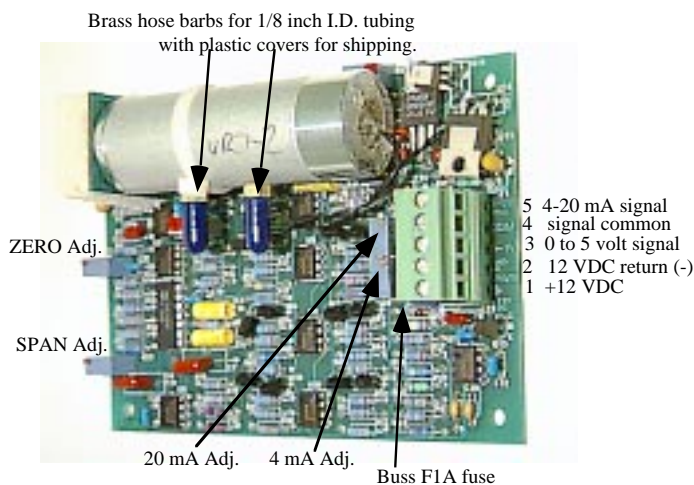




# Model 2008SDH-5V 100% CH<sub>4</sub>

## Specification: 2008SDH-5V 100% Methane (CH<sub>4</sub>): 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<sub>4</sub>)
- Range: ..... 0-100% CH<sub>4</sub>
- Accuracy: ..... ± 5% of reading (±2.5% CH<sub>4</sub> from 0 to 50% CH<sub>4</sub>) - see scale data  
..... **Span adjusted at 5.0% CH<sub>4</sub>**, ±10% of reading from 51 to 100 % CH<sub>4</sub>  
..... **CAUTION: Lower Explosive Limit ( LEL ) is 5.0 %** CH<sub>4</sub> in air  
..... **CAUTION: Upper Explosive Limit ( UEL ) is 15% CH<sub>4</sub>** in air  
..... **Note:** If this sensor is used to measure CH<sub>4</sub> 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<sub>4</sub> ( linear scale data attached)  
Current Loop: ..... 4 to 20 mA = 0 to 100% CH<sub>4</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 **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" dimensions in inches - see diagram on page 2 for mounting



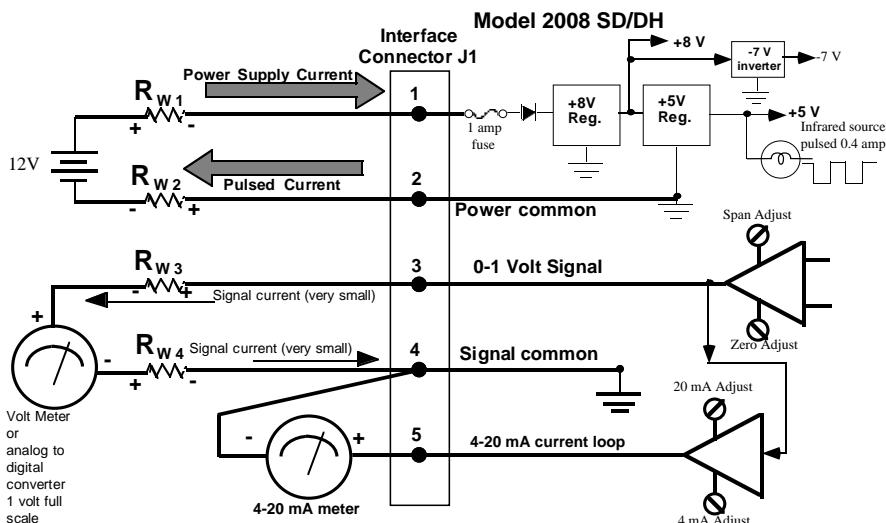


**VALTRONICS** 100% & 5 volt full scale 2008SDH-5V (Calibrated at 5.0% gas = 0.250 volt)

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

**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<sub>4</sub> (±0.125 volt) from 0 to 50.9% CH<sub>4</sub> and ±10% of reading from 51 to 100% CH<sub>4</sub>.



• 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.

