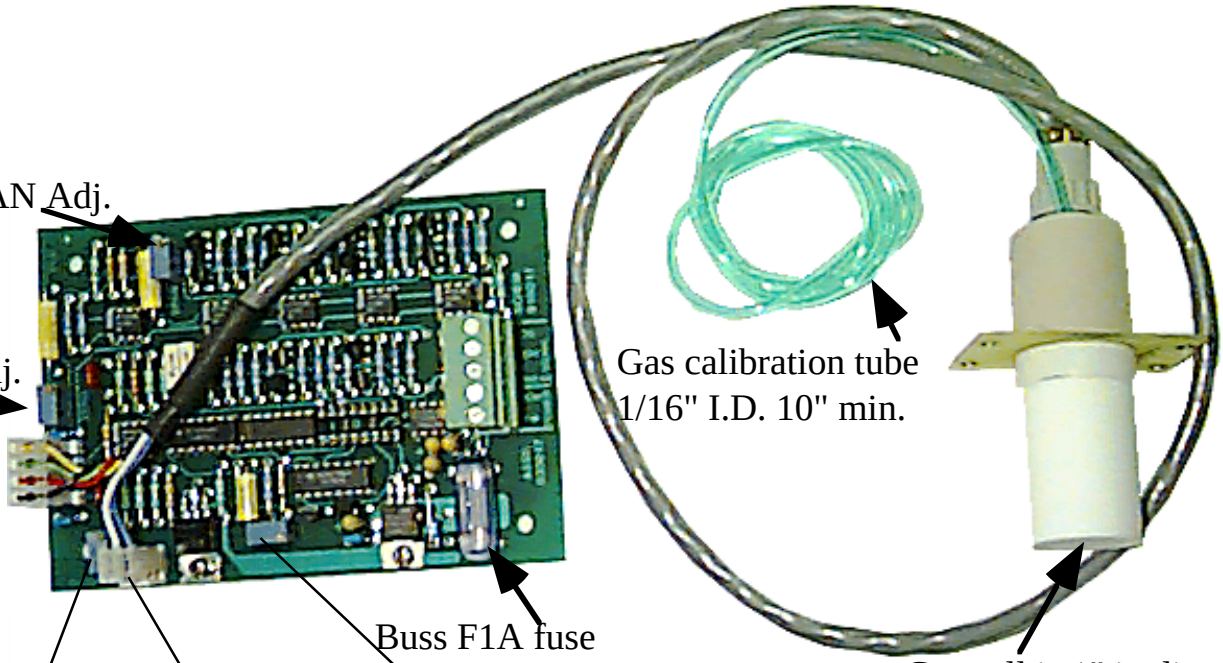
VALTRONICS

Application Note A63
Model 2007DHH Calibration & Troubleshooting



COARSE ZERO adj. (R1)
Use only if the ZERO adj runs out of adjustment range with zero gas flowing into the gas cell at about 300 ml/min or with fresh air of about 0.04% CO_2 in the cell. Center the ZERO Adj (R5) and adjust very slowly because the output response is delayed about 8 to 10 seconds.

J2: IR Source connector has pulsed 5 volts applied every 1.4765 seconds with a 50% duty cycle.
With power off, the IR source located inside the remote gas cell, should measure about 3 to 5 ohms across J2 pins 1 & 2.

CLOCK adjust (R56)
DO NOT adjust without a frequency counter to measure the IR source ON/OFF duration of 1.4765 seconds.

Gas calibration should be done every six (6) months, especially the **ZERO** calibration. **DO NOT** adjust the **SPAN** (R18) unless you have a known upscale concentration of CO_2 in the gas cell somewhere between 1/3 to 3/4 of full scale. Certified **5.0** ±0.1% CO_2 flowing into the gas calibration tube at about 300 ml/minute is ideal for most **SPAN** adjustments after **ZERO** has been adjusted (**0.00 v**) with nitrogen flowing at about 300 ml/minute or fresh air at about 0.04% CO_2. A Fyrite measurement of an incubator chamber is less accurate but may be used to determine the CO_2 level to adjust SPAN to. Refer to the response scale data table for the specifice full scale you have. An example whould be a 10% full scale would give you **0.50 volt** for 5% CO_2 and a 20% full scale would give you **0.25 volt.** The gas calibration tube should be pinched closed when not being used to calibrate the sensor.

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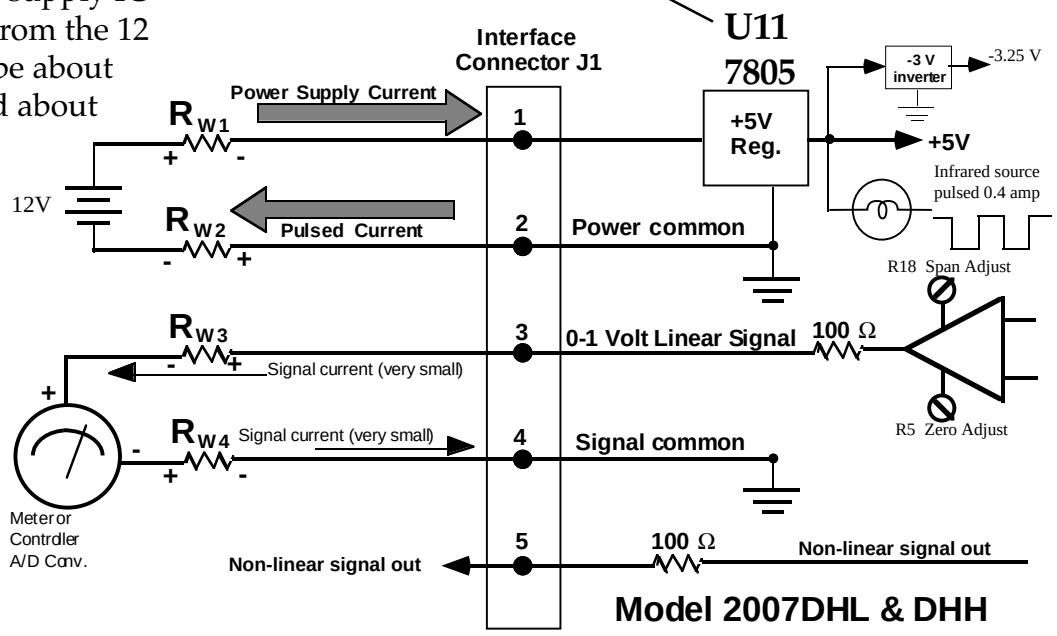
U11 a 7805 linear regulator. The middle pin is ground, one pin is the 12V input and the third pin is the 5V output. This +5V supplies all the ICs and the infrared source (emitter) as well as a negative inverter supply IC U8. The current from the 12 volt supply will be about 0.6 amp peak and about 0.25 amp ave.



U8: a **7662** inverter IC has +5V into pin 8 and about **-2.5** to **-3.5** volt out on pin 5 and the other side of R52 a 15 ohm resistor

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