

**OS-1 SPECIFICATIONS:**

Input Power:	24Vac/24Vdc at 0.25 amps
Alarm Relay Rating:	24Vac/24Vdc at 0.5 amps
Output Impedance:	
4-20mA <sub>dc</sub> range:	300Ω maximum
0-5V <sub>dc</sub> and 0-10V <sub>dc</sub> range:	20kΩ minimum
Operating Temperature:	5-40°C

**POWERING THE OS-1**

The OS-1 unit can be configured to operate from a 24Vac or 24Vdc supply voltage. Jumper J1 must be set in the correct position for the supply voltage to be used (see Figure 1a and 1b). Also note the polarity of the supply voltage when connecting 24Vdc. Make sure power is disconnected before making these jumper changes.

**NOTE:** AC power must be floating and may not be grounded. If AC power is grounded, a separate transformer is required for each OS-1.

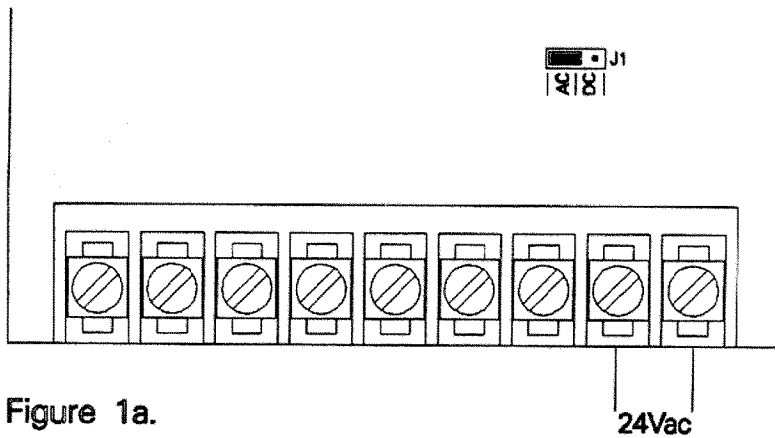


Figure 1a.

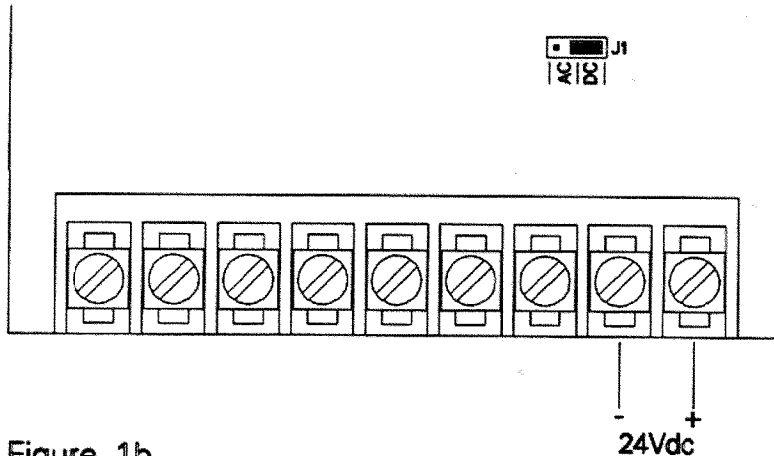


Figure 1b.

## **ANALOG OUTPUT**

The OS-1 can be configured to output either 4-20mAdc, 0-5Vdc, or 0-10Vdc. The outputs are linear over a range of 0-25% concentration of oxygen. Jumper J2 will allow the user to select the desired output.

### **CALIBRATION (GENERAL)**

When calibrating the OS-1 first set jumper J2 to the analog output range to be used. Note the following calibration techniques are done in an environment with 20.95% concentration of oxygen (normal room air).

### **CALIBRATION OF 4-20mAdc ANALOG OUTPUT**

- Step 1 - Connect an ammeter in series with a resistor to the analog output.
- Step 2 - Move the jumper on J3 to the (OFF) position.
- Step 3 - Use the OFFSET POT to adjust the current to 4mAdc.
- Step 4 - Move the jumper on J3 to the operating position (OPR).
- Step 5 - Use the SPAN POT to calibrate the current to 17.41mAdc.
- Step 6 - Repeat steps 2 - 5 until calibration has been reached on both the offset and span.

### **CALIBRATION OF 0-5Vdc ANALOG OUTPUT**

- Step 1 - Connect a voltmeter to the analog output terminals.
- Step 2 - Move the jumper on J3 to the off position (OFF).
- Step 3 - Use the OFFSET POT to adjust the voltage to 0Vdc.
- Step 4 - Move the jumper on J3 to the operating position (OPR).
- Step 5 - Use the SPAN POT to calibrate the voltage to 4.19Vdc.
- Step 6 - Repeat steps 2 - 5 until calibration has been reached on both the offset and span.

### **CALIBRATION OF 0-10Vdc ANALOG OUTPUT**

- Step 1 - Connect a voltmeter to the analog output.
- Step 2 - Move the jumper on J3 to the off position (OFF).
- Step 3 - Use the OFFSET POT to adjust the voltage to 0Vdc.
- Step 4 - Move the jumper on J3 to the operating position (OPR).
- Step 5 - Use the SPAN POT to calibrate the voltage to 8.38Vdc.
- Step 6 - Repeat steps 2 - 5 until calibration has been reached on both the offset and span.

## SETTING THE ALARM SETPOINT

The OS-1 alarm setpoint comes factory calibrated to energize the alarm relay when the percent concentration of oxygen drops below 19.5%.

The user may adjust the setpoint as follows:

Step 1 - Place a voltmeter probe on the pad shown in Figure 2.

Step 2 - Turn the SETPOINT POT until the voltage corresponding to the desired setpoint is reached.

Oxygen Concentration (%)	Setpoint Voltage (Vdc)
1	0.2
2	0.4
3	0.6
4	0.8
5	1.0
6	1.2
7	1.4
8	1.6
9	1.8
10	2.0
11	2.2
12	2.4
13	2.6
14	2.8
15	3.0
16	3.2
17	3.4
18	3.6
19	3.8
19.5	3.9
20	4.0
21	4.2
22	4.4
23	4.6
24	4.8
25	5.0

$$\text{Setpoint Voltage} = 0.2\text{Vdc} * \text{Oxygen Concentration \%}$$

## REMOTE ALARM

The OS-1 offers NO-COM-NC dry contact terminals for alarm use. Note: Disconnect alarm before calibrating to eliminate any false alarms.

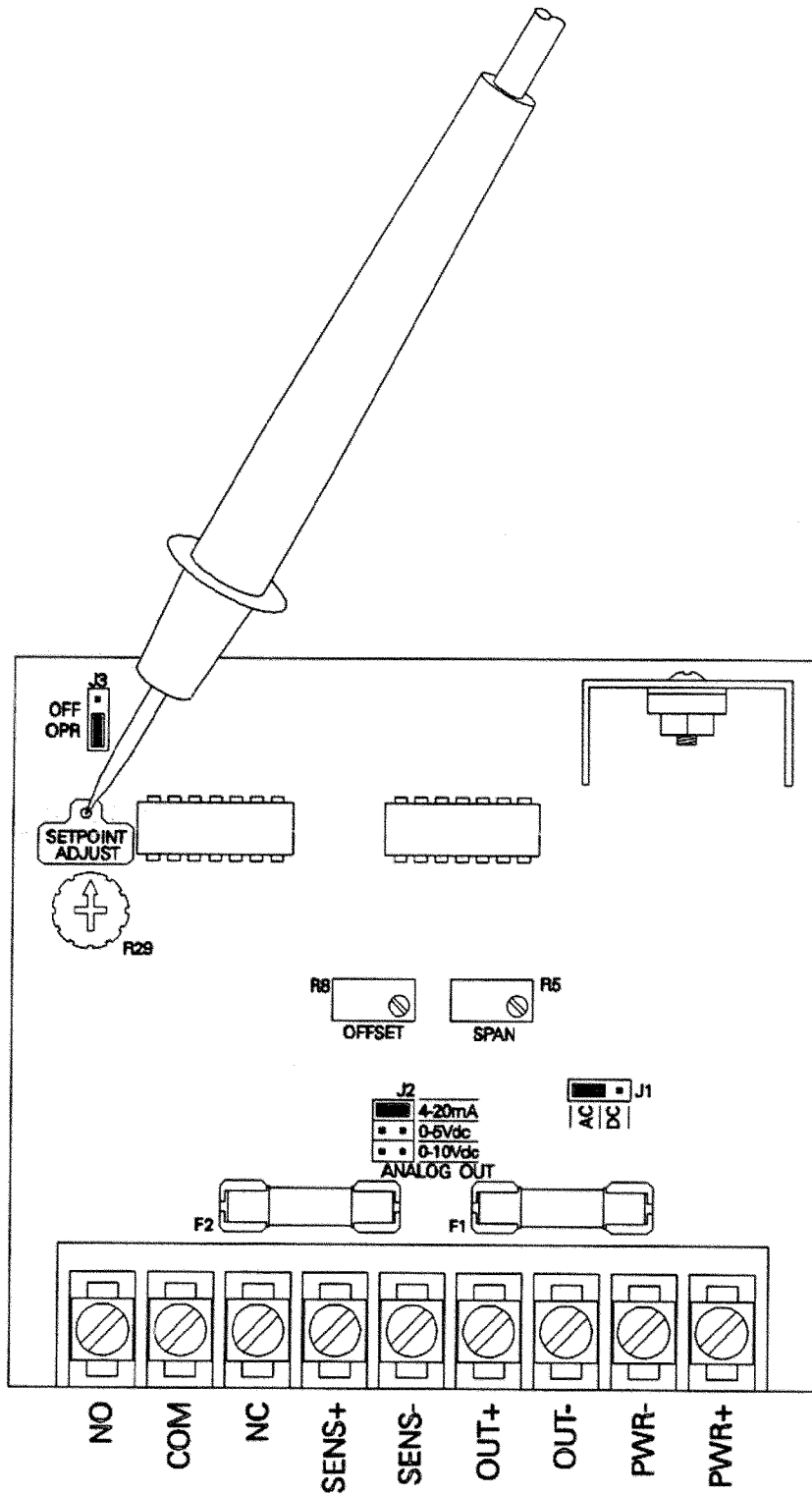


Figure 2