

**Atmospheric Control Unit
Quick Guide
CO2 regulation only
for**

**FLUOstar Omega
LUMIstar Omega
POLARstar Omega
SPECTROstar Omega**

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Gas Connections

CO₂ gas supply connection

CO₂ gas cylinder/supply with 100% CO₂ vapor withdrawal is needed, together with a two-stage regulator (recommended) for pressure control at 30 psi (2 bar).

Connect the unit to the CO₂ supply using the supplied 6mm plastic tubing (with installed HEPA filter and inline regulator) by attaching the tubing between the two-stage regulator and the CO₂ inlet on the back right side of the Atmospheric Control Unit, with the HEPA filter nearest the microplate reader CO₂ inlet. Clamp the tubing at the two-stage regulator end using one of the supplied metal pipe clips. Clamp the tubing at the CO₂ inlet end using one of the supplied black plastic pipe clips (*see Figure 1a*).



WARNING! Only connect the supplied tubing and regulators to the Nitrogen and CO₂ inlet ports on the rear of the Atmospheric Control Unit. Maximum inlet pressure to the Nitrogen inlet ports should not exceed 30 psi (2 bars).

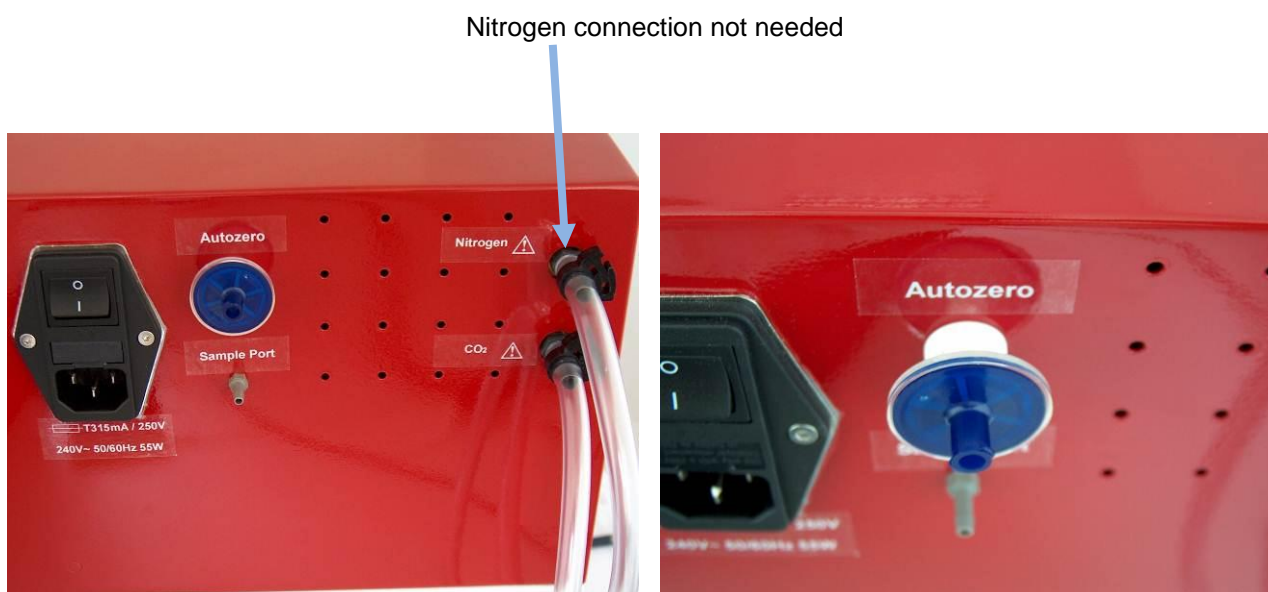


Figure 1a, 1b: Making Connections

Auto Zero HEPA Filter

Install the Auto Zero HEPA filter, by pressing the Auto Zero HEPA filter gently into the white plastic filter socket on the back of the Atmospheric Control Unit, marked 'Autozero' (*see Figure 1b*)

1.1 Power Connections



First check that the power switch on the back of the instrument is in the "Off" position. Inspect the voltage information on the label below the power switch to ensure that it corresponds to the local main power specifications. Insert the power cord provided into its receptacle on the back of the Atmospheric Control Unit (*see Figure 1 above*).

2 Operation

2.1 Control Panel

The control panel consists of an LCD display, five function keys & four direction keys (see Figure 2):



Figure 2: Control Panel

The illustration above shows the screen in normal operation. This is also how the screen should look when you switch the Atmospheric Control Unit On.

The purpose of each Function Key is identified at the bottom of the display (above each key); the function may change from screen to screen.

The cluster of four arrowed Direction Keys will move the cursor around the screen and will adjust values.

2.2 Preparing for Operation



NOTE: IMPORTANT – Before Switching on the Atmospheric Control Unit the Omega must be switched ON, the incubator set to the desired temperature, and the reader left on for at least 30 minutes to allow the incubator temperature to stabilize.

Initiating Operation

1. Using the power cord provided, connect the Atmospheric Control Unit to a suitable grounded power supply.
2. Switch the ACU ON using the on/off switch at the rear. The display will illuminate immediately.
3. Turn on the CO₂ gas supply with the inline pressure regulator set to 5 psi or 0.35 bars.
4. Leave the Atmospheric Control Unit to stabilize until the programmed CO₂ concentrations have been reached, and the 'Chamber Alarm' is 'Armed'. The ACU system is then ready for use.

3 Programming the ACU

3.1 Setting CO₂ Level

1. Press the **PROG** function key (see Figure 2 above, left-most menu button):
2. In the **PROG** screen that appears, press the desired function key, **O₂** or **CO₂**, and then use the ◀ & ▶ direction keys to adjust the value.
3. When the desired set point is displayed, press the ENTER function key. Then press the EXIT function key to return to the main screen
4. After making adjustments (if any were made), allow the unit to stabilize at the set points before continuing.

When using CO₂ only:

- Set O₂ level to 19% or
- Enter 'User' menu and 'Manual Disable'. Set O₂ control to 'OFF'