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**Operation Instructions  
for  
Model 2012  
Four Channel Ambient Air Sampler**

**Caution:**

**Read rules for safe operation and instructions  
carefully.**

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**Dedicated to Developing Leading Edge Environmental Equipment**

# Model 2012 Four Channel Ambient Air Sampler

The Model 2012 Air Sampler is a great alternative to canister sampling, which can be costly and inconvenient. This four channel ambient air sampler provides the environmental scientist and industrial hygienist easy EPA Compendium Method TO-17(*Determination of VOCs in Ambient Air Using Active Sampling onto Sorbent Tubes*) sampling, IAQ, ambient air monitoring, odor compliant source determinations, evaluating hazardous waste sites or fence line monitoring. The Model 2012 Air Sampler is compact, waterproof, portable, has precision constant flow control (Porter® needle valves), and has an easily programmable computer. The 2012 Air Sampler has four custom sample tube holders that protect the sample tubes by having 75% of the tube inside the sampler. The sample tube holder accepts 1/4 inch diameter tubes, 6mm diameter tubes, and 10mm diameter tubes with 6mm ends. The 2012 Air Sampler provides high flow rates and high back pressure for short-term sampling. The flow range is from 5-500ml/min. @ 297 in/H<sub>2</sub>O vacuum. The Porter® flow valves provide remarkable accuracy, very stable flow over long periods of sampling, and easy precise flow setting.

The Model 2012 software provides individual programmable start date, start time, and sampling duration for all four channels. This software enables the user to perform individual sampling, sequential sampling, and parallel sampling for up to 12 hours (with booster battery). Continuous sampling of all 4 sampling channels simultaneously is possible.

The sampler has 6 power choices:

Single 5AmpHr battery, 5AmpHr + 1.2AmpHr booster battery, single 9AmpHr battery, 9AmpHr + 1.2AmpHr booster battery, external battery charger, or external battery. The Model 2012 comes standard with a 5AmpHr rechargeable AGM sealed lead acid battery and internal booster battery cable. The battery charger can operate the sampler continuously. Software displays low battery condition for the main battery and for the back-up memory battery. The external power port makes this sampler easy to recharge when in a vertical stack.

## Model 2012 Features and Specifications

### Order No.: 2012

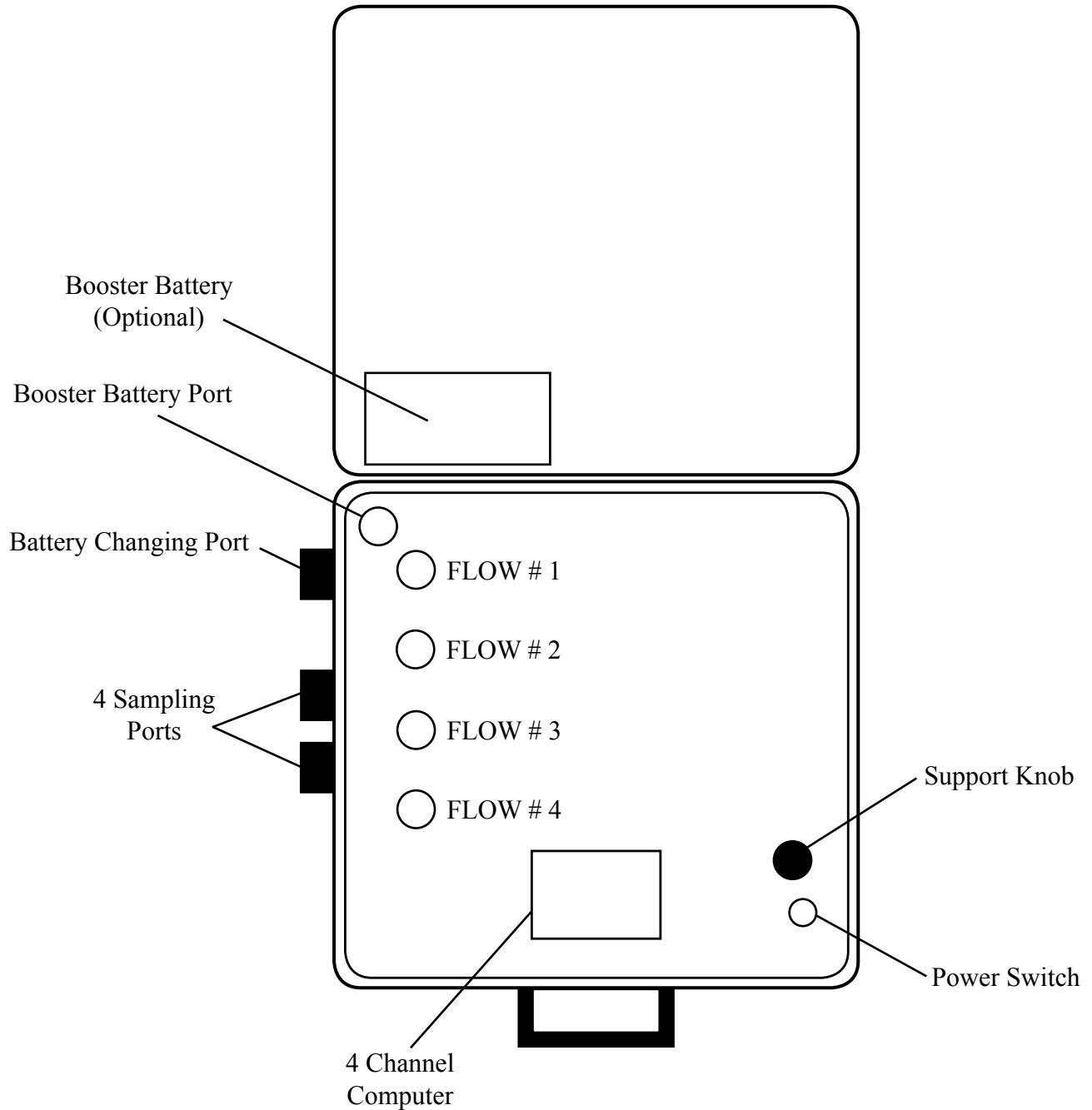
- Suitable for U.S.E.P.A. TO-17 sampling
- 4 independently controlled sample channels
- 4 Precision constant flow Porter® needle valves
- Accepts 1/4", 6mm, or 10mm diameter tubes
- Accommodates up to 150mm tube lengths
- Independent flow rates from 5 to 500 ml/min
- Controller displays: elapsed run time, sampling status for all 4 channels and low battery condition
- Max vacuum: 297in/H<sub>2</sub>O
- Easy push-in connection for sample tubes
- Waterproof lockable enclosure
- Low battery monitoring and protection

- Battery charging indication and monitoring
- Battery: 5 AmpHr (included)
- Internal booster battery cable (included)
- Dimensions: 14.1" X 10.6" X 6.1"
- Weight: 14 lbs.

### Optional Parts

- Single 750ma battery charger (USA only)
- Single 1.25A battery charger (USA+Int)
- 4 channel battery charger (USA+Int)
- 6 foot long external battery cable
- 1.2 AmpHr booster battery
- 5AmpHr battery
- 9AmpHr battery

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## Explanation For the 2012 Software Windows

**SET UP MODE:** This is where you set the actual time and date for the computer.

**DIRECT MODE:** This is where you program each of the 4 sampling channels.

**STATUS WINDOW:** This is the first window in the Direct Mode. Here you can observe the state of each sampling channel and the elapsed run of each sampling channel.

**PROGRAM WINDOW:** This is the second window in the Direct Mode. This is where you program each sampling channel START DATE, START TIME, and DURATION.

**LOW BATT SENSOR WINDOW:** When the Low Batt Sensor is ON, the computer will turn off the internal air sampling pump(s) when the main battery capacity is low.

**MANUAL CONTROL WINDOW:** This is the fourth window in the Direct Mode. This window is used to temporarily override the program. OFF means that this sample channel is not running. ON means this sample channel is running. Changing states will not change the program. When you leave this window and return to the "Status" window the computer will resume its program.

## DIRECT MODE Status Window Conditions

<b>INACTIVE</b>	This sampling channel has no program and is off.
<b>ACTIVE</b>	This sampling channel has a program but not currently running.
<b>SAMPLING</b>	This sampling channel is sampling and is elapsing time.
<b>COMPLETED</b>	This sampling channel has completed its program and is not running.
<b>LOW MAIN BAT</b>	The main internal battery is low and the computer has stopped sampling.
<b>LOW MEM BAT</b>	The computer memory back-up batteries are low and need replacing.

# Model 2012 Four Channel Ambient Air Sampler

## Key Pad Descriptions

**MENU:** This Key changes windows.

The **left & right arrow** Keys move the cursor to the next programmable field.

▲: The **UP** arrow Key increases the value in the field the cursor is on.

▼: The **DOWN** arrow Key decreases the value in the field the cursor is on.

**RESET:** This Key will reset the elapsed run time of a channel and place you in the STATUS WINDOW.

**REV:** This Key is to show you what software version is currently being used by your computer.

## NOTES:

It is very important that you recharge your battery after sampling.

When the internal main power battery (i.e. 5 AmpHr battery) reaches its lowest safe capacity level, the computer will turn off the internal air sampling pump(s) to prevent battery damage and display “MAIN BAT LOW”, “RECHARGE BATTERY”. You can override this software feature by going to the LOW BAT SENSOR window and changing the “ON” to “OFF”. To recharge the battery, attach the battery charger plug in the battery charging port for about 8 hours.

When the internal computer memory back-up batteries reach their lowest safe capacity level, the computer will display “LOW MEM BAT”, “REPLACE BATTERIES”. These batteries are located on the back side of the computer. After replacing these batteries hit the “RESET” key one time.

# Model 2012 Four Channel Ambient Air Sampler

## RULES FOR SAFE OPERATION

1. **DO NOT** operate sampler in a CLASS I area.
2. Be very careful installing glass sampling tubes.

## Operation Procedure

### 1. Install the air sampling tubes.

### 2. Adjust the air flow rate through the sampling tube:

1. Turn on the sampler.
2. Go to the manual control window.
3. Attach a flowmeter to the inlet of the #1 sampling tube.
4. Turn on Channel #1.
5. Adjust #1 flow control knob to obtain the desired flow rate.

Repeat steps 2 through 4 for other sampling tubes.

### 3. Set the internal computer real time clock to the present time and date. These memory settings are battery backed.

1. Go to the “Control Mode” “Direct” window.
2. Hit the UP arrow key one time to change modes to “Set Up”.
3. Hit the MENU key one time.
4. Change the time to the present time.
5. Hit the MENU key one time.
6. Change the date to the present date.
7. Hit the MENU key one time.
8. Hit the UP arrow key one time to change back to “Direct” mode.
9. Hit the MENU key one time to move to the “Status” window.

### 4. Set up sampling program:

1. From the “Status” window hit the MENU key one time.
2. Enter the date, start time, and sampling duration.
3. Change sampling channel by moving the cursor to the “1” in the upper left and hit the UP arrow key one time.
4. Repeat step 2 and 3 for other sampling tubes.
5. When all sampling tubes have a program, hit the MENU key until you arrive back at the “Status” window.

# Model 2012 Four Channel Ambient Air Sampler

## Computer Data Windows For The SET UP & DIRECT Modes

### SET UP MODE:

#### System Time and Date

1. Mode Selection Window  
CONTROL MODE  
**SETUP**
2. Set Current Time Window  
SET TIME: **MM:DD:YY**  
USE 24 HOUR TIME
3. Set Current Date Window  
SET DATE: **MM-DD-YY**

### DIRECT MODE:

#### Channels Set Up, Bat Sensor, and Manual Control

1. Mode Selection Window  
CONTROL MODE  
**DIRECT**
2. Station Status Window  
CHANNEL 1 INACTIVE  
TOTAL TIME = **00000:00**
3. Channel Set Up Window  
1 START **MM-DD-YY HH:MM**  
DURATION **HH:MM**
4. Low Batt Sensor Window  
LOW BATT SENSOR **ON**
5. Manual Control Window  
1 CHANNEL **OFF**