

## **FuelCell 3 Addendum – Wet/Dry Gas Controls for 850**

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### **Introduction**

This addendum describes the wet/dry gas solenoid control implementation in FuelCell Version 3.3b and later for 850C/e Fuel Cell Test Systems.

The FuelCell software should be installed and the system tested without wet/dry controls prior to enabling these controls.

### **Hardware Support**

In 850 models with Wet/Dry option, hardware is already installed and configured at the factory. 850 units equipped with wet-dry are indicated by “WD” under the Options section of the serial plate which located on the rear panel of the instrument. Contact Scribner Associates for additional information or support.

### **Enabling Wet/Dry Support**

Wet/Dry solenoid support is enabled by manually editing the “fuelcell.ini” file on the computer. At this time, it cannot be configured through the Instrument Configuration screens in the FuelCell program.

- Open the fuelcell.ini located in the C:\FuelCell\ directory file using Notepad.

- Add the EnableWetDry=1 line to the end of the [System] section of the ini file as shown below. Note that other settings in the [System] section may differ from those shown below.

```
[System]
EnableAnodeGas=1
EnableAnodePurge=1
EnableAnodeTemp=1
EnableCathodeGas=1
EnableCathodePurge=1
EnableCathodeTemp=1
EnableCellTemp=1
EnableWetDry=1
```

- Save and close the fuelcell.ini file.

## Wet/Dry settings in the Setup Fuel screen.

The wet/dry controls are in the Setup Fuel screen as shown below.

The image shows a software dialog box titled "Setup Fuel". It is divided into two main columns: "Anode Fuel" on the left and "Cathode Fuel" on the right. Each column contains several input fields and radio buttons. At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

Parameter	Anode Fuel	Cathode Fuel
Minimum Flow (l/min.)	0.5	0.5
Load Based Flow (l/min. /Cell)	0.02	0.01
+ l/min. /Amp /Cell	0.007	0.01
Temperature (Degrees C)	25	20
Humidification	<input type="radio"/> Dry <input checked="" type="radio"/> Wet	<input type="radio"/> Dry <input checked="" type="radio"/> Wet

Note: When shutting down the system, the background wet/dry settings remain applied to the unit.

The background settings are saved so that the next time the system is started, the controls will default to their previous settings.

### Changing wet/dry settings from the Experiment List:

As with other fuel controls, the wet/dry condition can be changed in an experiment list by inserting a “Setup Fuel” experiment into the list.

### Changing wet/dry conditions from an Arbitrary Control Experiment:

The wet/dry settings can be changed by an action line in an arbitrary control file. The action is described below, for more information on the operation of the Arbitrary Control experiment, consult the main FuelCell manual.

```
' Action = 26      set wet/dry gas valves
' example   26    1  0
' set anode valve to wet
' set cathode valve to dry
' Note: Wet = 1, Dry = 0
' Note: The actual valve has the opposite polarity. Power off = wet, Power on = dry
'
```

### Recording Wet/Dry Data:

The state of the wet/dry valves is displayed in the measured parameters list. In the Anode Fuel and Cathode Fuel sections, the Wet/Dry value is 1 if it is in the wet condition and 0 when dry.

Items that are checked will be saved in the data file.

