

Welcome to FertiCom® JEPOL Help

We have tried to provide you with a complete overview of the FertiCom® program. If you cannot find the answer to your question here, just click on the Customer Service link at the bottom and give us a call.

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Hardware Configuration

The Configuration Worksheet

Before configuring your hardware, print and fill out the [Configuration Worksheet](#).

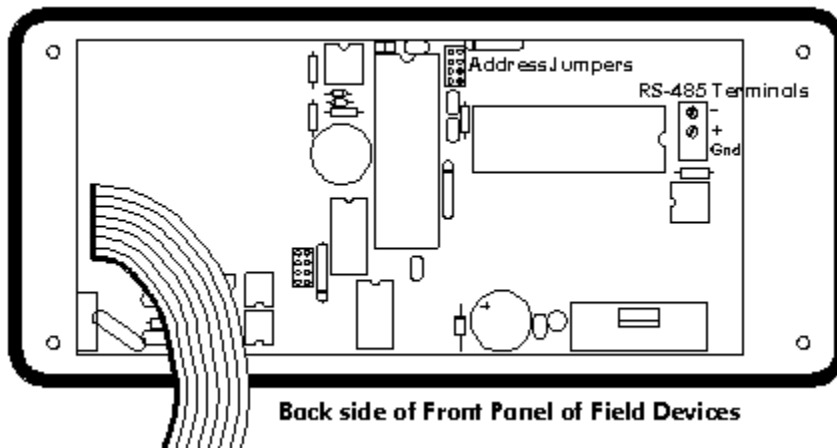
Put down a description to identify each injector system location and list the injector type (none if no injector is present, 2-output, or 4-output). If the injector type is set incorrectly, the program cannot communicate with the injector. Check each type of monitor installed at the location.

Setting up the Injector & Monitor Hardware

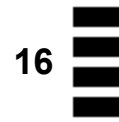
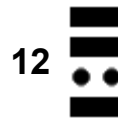
You must set up the injector and other monitors before you can use the program. Each device which communicates with the PC must have a unique device address. You can have up to 16 devices of each type.

Each location has an address jumper setting which corresponds to the line number on the PC display. All other devices (EC pH or ORP monitors) associated with that injector location should have their jumpers set exactly the same as the injector. The table below shows the jumper configuration for each location #. The jumpers are located in the same place on all devices.

 **Incorrectly setting the device address jumpers is the most common source of problems.**



Location #	Jumpers	Location #	Jumpers	Location #	Jumpers	Location #	Jumpers
1	•• •• •• ••	5	•• •• ■■■■ ••	9	•• •• •• ■■■■	13	•• •• ■■■■ ■■■■
2	■■■■ •• •• ••	6	•• ■■■■ ■■■■ ••	10	•• •• ■■■■ ■■■■	14	•• •• ■■■■ ■■■■
3	•• ■■■■ •• ••	7	•• ■■■■ ■■■■ ••	11	•• ■■■■ •• ■■■■	15	•• ■■■■ ■■■■ ■■■■



Setting up the Communications Hardware

Communications may be hard-wired or wireless. The recommended way is to use a USB connection. This is the easiest to set up. If your computer has an unused serial port, you may instead use an RS-232/485 converter connected to an RS-232 serial port. The serial port converter requires a separate plug-in power supply. The converter type must be specified at time of ordering, as the converter is included with the software. Please [contact the factory](#) for more information about wireless systems.

If the converter has a plug-in power supply, plug it in after all wires have been connected.

Setting Up the Converter

Either converter provides optical isolation between the computer and field devices. All RS-485 serial wiring should be twisted pair (size is not critical) and isolated or shielded from high current wiring or wiring which may experience line surges. We recommend shielded twisted pair. The shield may be left ungrounded unless you experience communication problems, and then ground the shield only at the converter end. **Do not ground the controller boxes!**

Connect either "-" terminal to the "-" terminal of each device in the field, and either "+" terminal to the "+" terminal of each device in the field. Switch settings are preset; Do not change them.

Field devices may be wired serially (serial daisychain) or parallel (star) configuration. Devices in a single location should be wired in a daisychain.



USB/485 Converter

Connect the converter to an available USB port on your computer and install the software driver according to the instructions included with the converter. The switch settings have been pre-set. Do not change them.



RS-232/485 Converter
(Shown with cover removed)

The switch settings have been pre-set. Do not change them. Once all field connections are made, replace the cover and connect the converter to the computer and plug in the wall mounted power supply. There is no software driver installation for this converter.

Once the injector and controller jumpers have been set and the communications wiring is complete, you will need to set up the [system configuration](#) to tell the FertiCom® program what devices are connected.

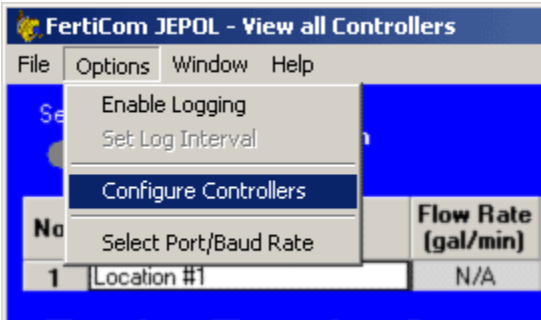
See also [Setting the Serial Communications Port and Baud Rate](#).

Program Configuration

The Configuration Window

To configure the program you will need the Configuration Worksheet you filled out for the [Hardware Configuration](#).

The configuration window is displayed by selecting **Options|Configure Controllers** from the top menu in the View all Controllers window.



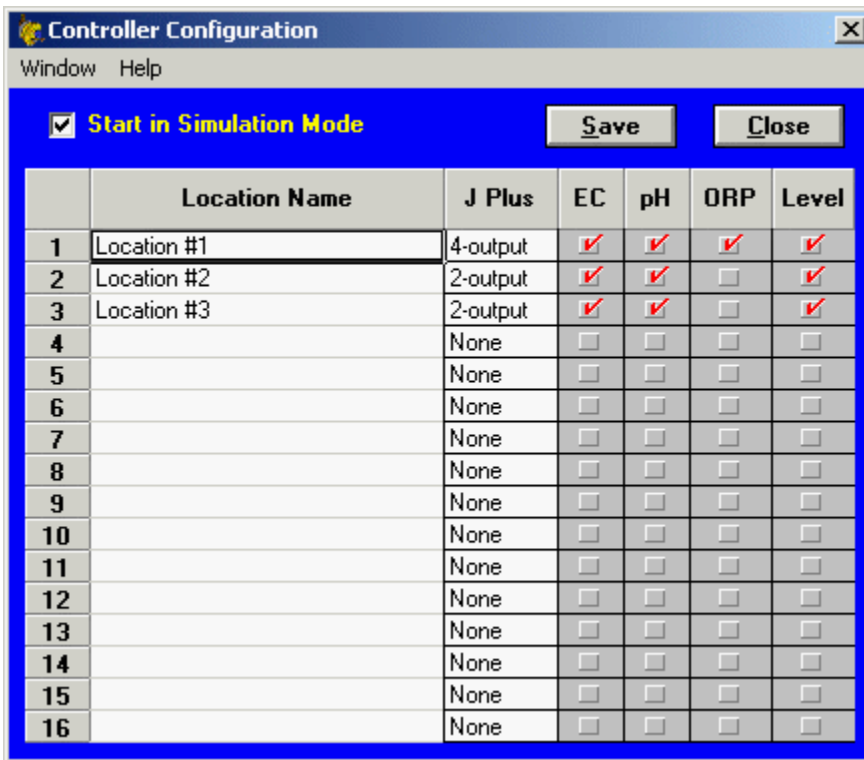
This window is used to set up the controllers which are connected to the computer. You can also assign names to your injector locations. Here are the steps for setting up each location.

1. Before filling out the on-screen form you should print and fill out the [FertiCom® Configuration Worksheet](#)
2. Select a cell in the location name column. Enter the name or description for that location.
3. Move to the cell to the right and use the drop down list to select the type of injector at that location.
4. Check the EC, pH, and ORP columns if a monitor of that type is present at that location.
5. Repeat for each new location.
6. It is recommended that you keep the program in Simulation mode until it is fully configured. The **Start in Simulation Mode** check box sets the operating mode and determines the mode in which the program starts. The operating mode may also be changed from the **View All Controllers window**, but changing the mode there does not affect the start-up mode.



If you turn off simulation before your recipes and schedules are fully set up your injectors might do some very strange things which you might not like.

7. When you are done, click on **S**ave and **C**lose the window.
8. Now from the **View All Controllers** window, highlight each location in turn and click on **D**etails to go to the [Details window](#). Here you will enter the cumulative pumper capacity for each chemical tank.
9. Set up the chemical blends and feed [recipes](#).
10. Set up the [feed schedules](#).
11. Check your computer's internal clock and set it if necessary. You must also set the date correctly if you will be scheduling by day of week.
12. Once this is all done you can return to the configuration window and turn off simulation. This will place the program in control of your injectors and monitors.



The Configuration File

The configuration file stores basic information about our program setup and systems. It is automatically set up by the FertiCom® program when you configure it. Any time you save a change in the configuration window this file is updated.



You must have the address jumpers set correctly at each controller in your system. If you have any question about your configuration, contact [Customer Service](#).

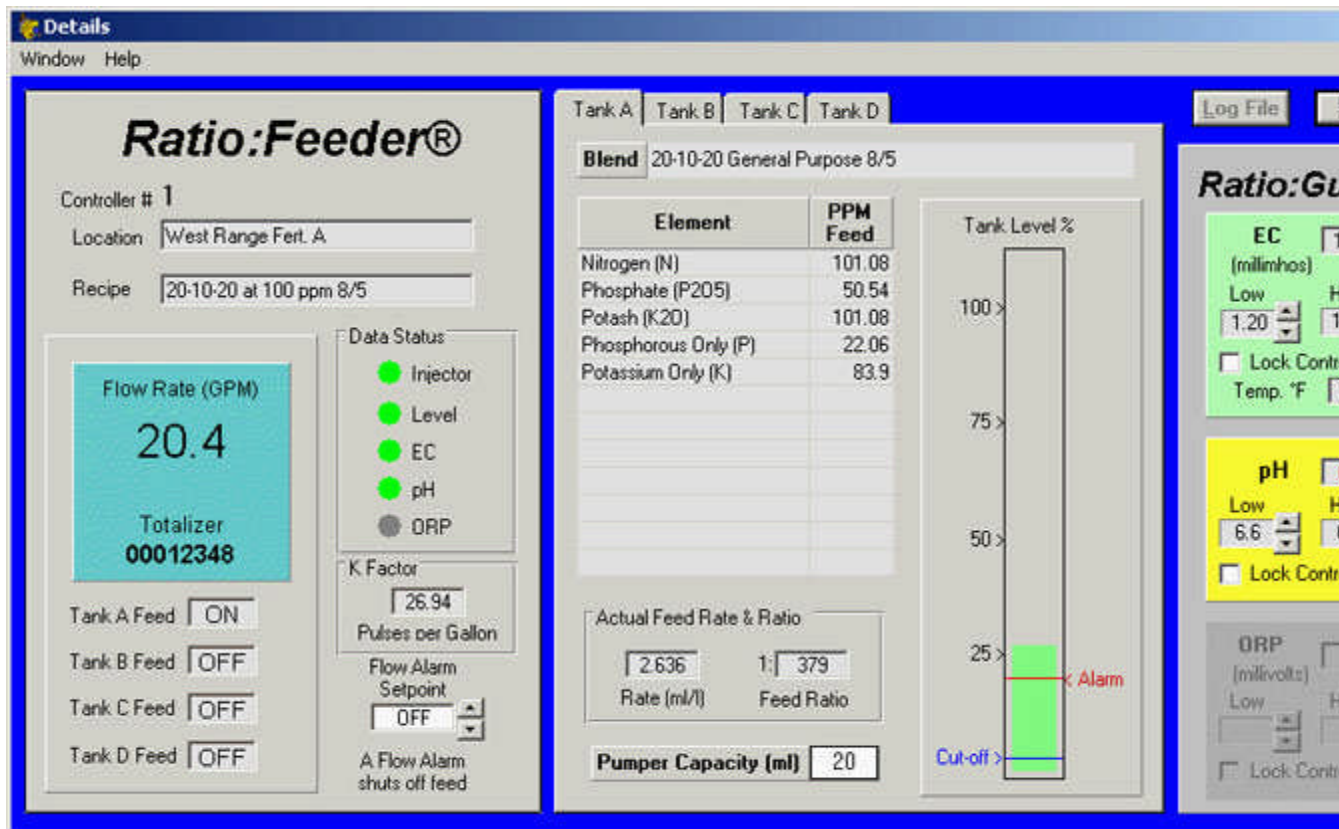
Pumper Capacity



You must also set the pumper capacity for each manifold for each location. See [Setting the Injector Pumper Capacity](#).

The Details Window

The details window displays complete operating details of a specific injector or location. It also allows you to set the injector pumper capacity, and set the EC, pH, and ORP controller setpoints, level alarm and cut-off setpoints, and flow alarm setpoint.



The Injector Display panel

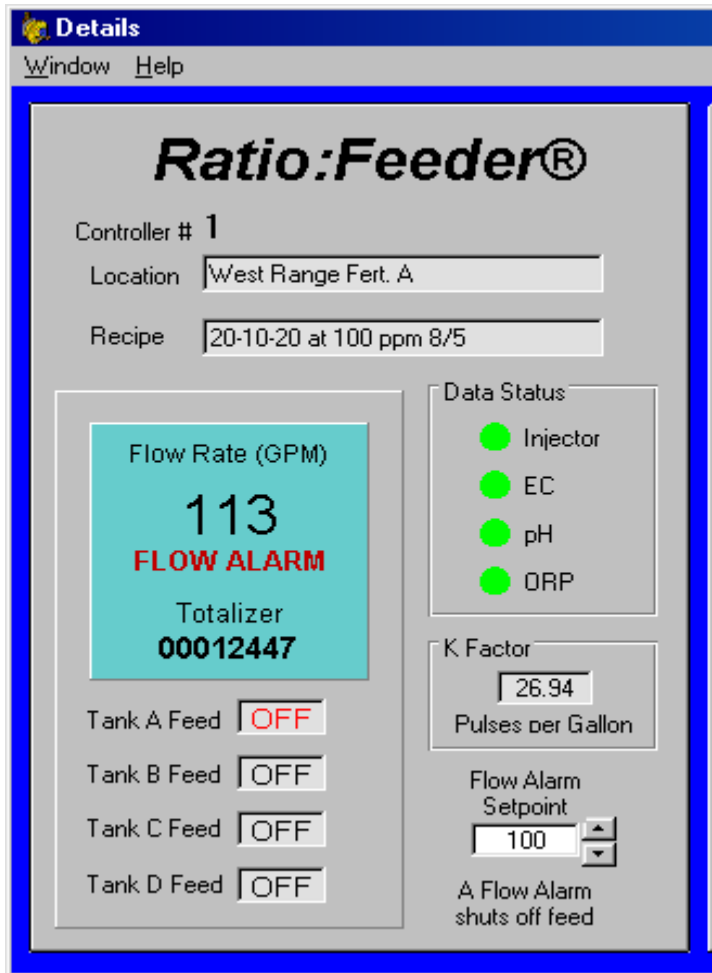
The injector display panel displays the location number and name of the injector, the active recipe, the current flow rate, flow totalizer, and the feed status of each independent injector output.

The **K Factor** for the flow meter for the location is also displayed. (K factor is the term used for the number of pulses the meter puts out for each gallon of water which passes through it.) This value is set at the J Plus injector controller, either by jumper settings for standard meter sizes, or by front panel entry at the J Plus controller. It cannot be changed from the FertiCom® program. For more information, see the J Plus injector manual.

Flow Alarms

You may optionally set a flow alarm setpoint for each injector by clicking on the up or down pointers by the setpoint box. Setting it to zero will turn the flow alarm off.

If the water flow exceeds the setpoint, chemical feed will be shut off. If feed from any tank is shut off, the tank feed indicator will show **OFF** in red, to differentiate from tanks which are turned OFF by the recipe. Once flow drops below the setpoint, feed will be turned back on. A typical flow alarm display is shown below.



The Tank Tab panel

The tank tab panel displays the actual feed rate, feed ratio, and PPM feed of each element in the chemical blend for each of up to four tanks. These data are computed from the K Factor of the J Plus controller, the recipe data, and the Pumper capacity.

Setting the Injector Pumper Capacity

You may set or change the pumper capacities on these tank tabs. The value entered should be the total capacity per stroke of all pumpers feeding from the tank specific to the tab. Example: You have three 40 ml pumpers feeding from Tank A, two set at dial setting 10, and one at dial setting five; the total capacity of these pumpers would be 100 ml (40 + 40 + 20). This would be the value entered in the Pumper Capacity (ml) box at the bottom of the tab.

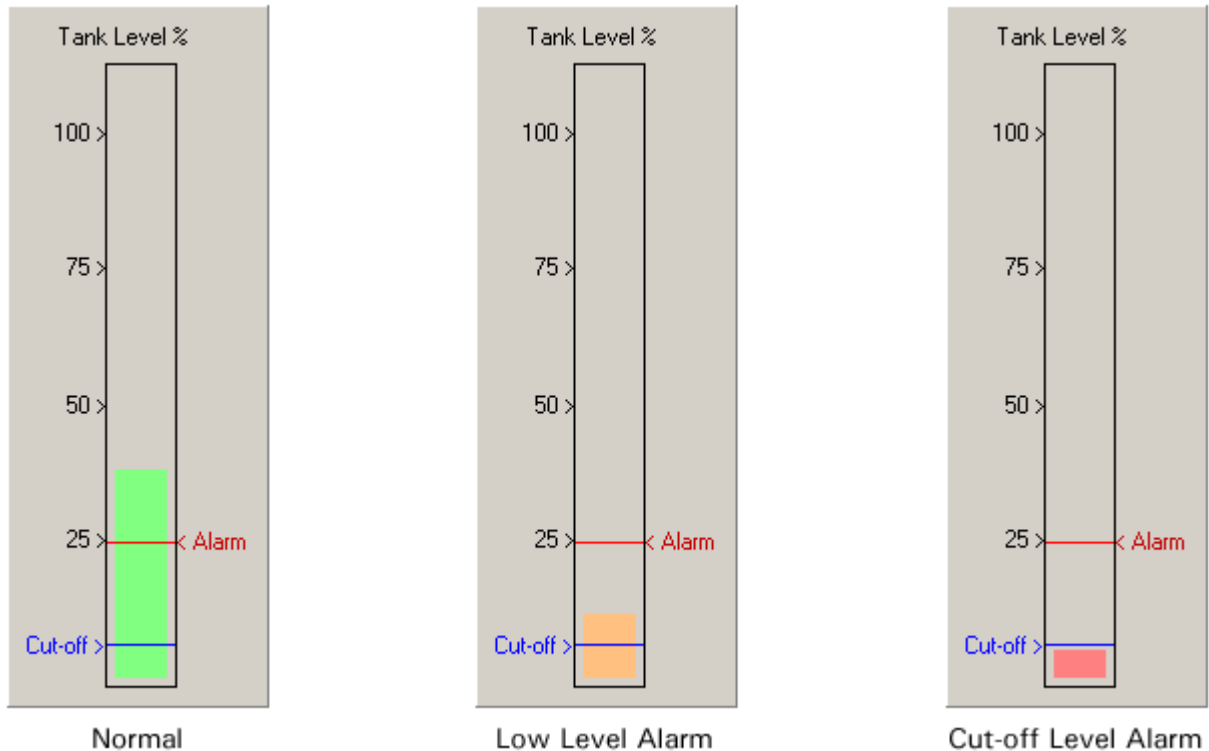
The pumper capacities available are:

Model	Max. Displacement
H4-**, P4-**	40ml
H2-**, P2-**	20ml
A1-**, H1-**, P1-**	10ml
A2-***	20ml
A3-***	3ml

Tank Level Gauges & Alarms

There is a solution tank level gauge for each manifold.

If your system is configured with a level monitor, you can also view the tank levels remotely and set the alarm and cut-off points for each tank. Click and drag the **Alarm** and **Cut-off** labels up and down the level indicator to set them. When the level drops below the alarm setpoint, the level indication will turn orange and if the program is minimized, the Viewall window will pop up to indicate the alarm. When a tank level drops below the cut-off setpoint, the injector manifold on that tank will be turned off to prevent the tank from being emptied completely. This will preserve prime and prevent pumping dirt and sludge from the bottom.



The Ratio:Guard display panel

This panel displays data for EC, pH, and ORP monitors. The EC panel displays the EC value, high and low EC alarm setpoints, the water temperature, and the lock status of the controller. The pH and ORP panels display the value, high and low pH alarm setpoints, and the lock status of the controllers. If a controller is not configured for a location, that panel will be grayed out.

Setting the Controllers

The alarm setpoints for the all controller are set simply by clicking on the up or down pointers to the right of the Setpoint boxes.

Locking the Controllers

If you wish to keep someone in the field from changing the setpoints, you may check the Lock Controller checkbox. The unit will stay locked as long as the supervisory computer is on-line. When the computer goes off-line or the program is terminated, the

controller will automatically unlock after a period of time, (about a minute). This feature insures that the unit can still be manually operated if the computer is down.

Using the FertiCom® Program

This program depends on the PC's system clock to control all time functions. Be sure your system clock is correct. We recommend using a clock utility to set your computer's clock using the internet. These are available free on the web, and one is included with Microsoft Windows® XP. The clock on your irrigation computer must also be set correctly for the two independent programs to coordinate properly with each other. If your irrigation program is running on the same computer, time coordination should not be a problem.

First Time Operation

Switching between Simulation and Normal Mode

If you have been using the FertiCom® program in simulation mode to set up your injectors, controllers, and database, you must switch to normal operating mode. Do this from the **Configuration** window, so that if the program is shut down it will restart in the run mode. This will allow the computer to communicate and to send and retrieve information from the units in the field.

To make this change you must open up the FertiCom® Controller Configuration window by selecting **Options|Configure Controllers** from the top menu in the View all Controllers window. Uncheck the **Start in Simulation Mode** box and **Save** and **Close** the window.

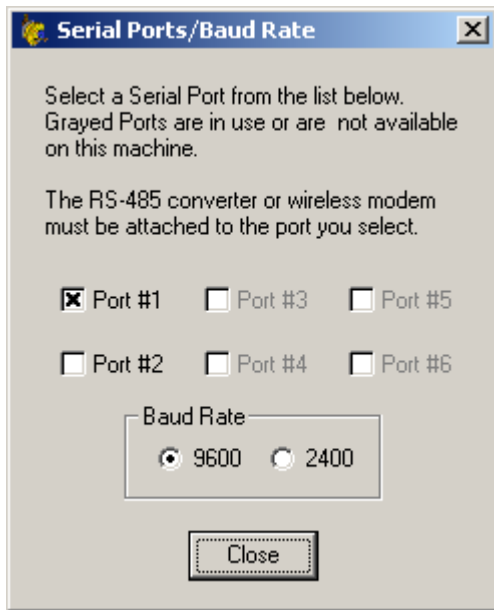
Normal Operating Mode

When the program starts it will display the [View all Controllers](#) window and will attempt to communicate with all controllers configured as present in the system.

Setting the Serial Communications Port and Baud Rate

If the display remains blank or is filled with N/A indicators, you are not communicating with the field devices. You may not be using the correct serial port. The default serial port is COM1. If your RS-485 converter is connected or configured as a port other than COM1, you must select that serial port. To change the port, on the **View all Controllers** window top menu select **Options|Select Port**. This will bring up the **Serial Ports/Baud Rate** window as shown below. Instructions are on the form.

You must also set the baud rate. The default rate is 9600. This should not be changed unless you will be communicating with controllers which were purchased before May, 2005 (Serial numbers beginning with FE or earlier). All controllers made after May 1, 2005 will come from the factory set at 9600 baud. All controllers must be set to the same baud rate. If you will be mixing old and new controllers on the same system, contact the factory for information on setting the baud rate for the devices. See [Customer Service](#) for the number.



Shutting the Program Down

Click the **Quit** button to shut the program down. You will be presented with a dialog box asking you to confirm the shut-down. When the program is not running the injectors will not be set to any new settings, but will remain operating at those last set.

The View All Controllers Window

This main opening window displays an overview of current data for all controllers. The window sizes itself automatically according to the number of locations (up to 16) configured for the program. It displays the controllers by location, water flow rate, flow totalization, whether the feed is on or off for each tank, tank levels, and EC, pH, and ORP values. Tank levels display black for normal levels, orange for low level alarm, and red for level below the cut-off point. See [Tank Level Gauges & Alarms](#) for a more complete explanation. EC, pH, and ORP alarm conditions are indicated by text color, black for normal, blue for low alarm and red for high alarm. Four buttons allow access to other features of the program. These functions plus others are accessed from the top menu.

No.	J+ Ratio:Feeder® Injector Location	Flow Rate (gal/min)	Total	Feeds ON/OFF				Tank Levels % full				Ratio:Guard	
				A	B	C	D	A	B	C	D	EC	pH
1	West Range Fert. A	20.1	12345	ON	OFF	OFF	OFF	13	53	37	66	1.900	6.70
2	West Range Fert. B	50.0	12845	ON	OFF			29	55	39	68	1.050	6.65
3	East Range Fert. A	79.9	13345	ON	OFF			30	57	41	70	1.050	6.60
4	East Range Fert. B	109.6	13845	ON	OFF			33	59	43	72	1.000	6.70

Highlighting a location and clicking the **Details** button will bring up the details window which displays complete information about the controllers. It also allows you to edit pumper capacities of your injectors and the setpoints for the EC, pH, and ORP monitors. See [The Details Window](#) for more information.

Highlighting a location and clicking the **Schedule** button will bring up the schedule window with which you display and set up the feed schedule for that location. See [Setting Up Feed Schedules](#) for more information.

Clicking the **Recipes** button will bring up the recipe window with which you display and set up the feed solution blends and recipes. Recipes and blends may be used with any injector, but the solutions in the recipe must match the actual contents of the tanks. See [Setting Up Recipes](#) for more information.

The **Simulation** check box allows you to easily turn the simulation mode on or off. Changing the operating mode here does not affect the start-up mode. The start-up mode is set from the [Configuration Window](#).

The Easy Solution Calculator

Display the Soluton Calculator window by selecting **Help|Solution Calculator** from the top menu in the **View all Controllers** or the **Recipe Set-up** windows.

The Solution Calculator is simple spreadsheet type window which allows you to easily compute the parts-per-million (ppm) concentrations of the elements in your concentrated chemical blends. Just fill in the form.

1. Select a chemical blend from the drop down list, or enter your own blend name.

When selecting a blend name, We recommend indicating the chemical and mix ratios in the name. This will make setting up your recipes much easier and will help avoid confusion if you have other strengths of concentrate blends using the same fertilizer. The example below shows a blend of 20-10-20 general purpose fertilizer mixed at 8 lbs. per 5 gallons of water, as indicated by the 8/5 at the end of the blend name.

2. Enter the amount of chemical used to make the the solution.
3. Enter the amount of solution to be mixed at one time.
4. If you have entered your own blend name you will need to add the chemical elements in the dry blend and their percentages by weight. If the table was automatically filled in, proceed to step 5.
5. Each tank tab in the **Recipe Set-Up** form has its own separate list of blends. Select the tank list to which you want to add this blend.
6. Click the **Add Blend** button to add the blend to the selected list.

Element	PPM in Tank	% by wt.
1 Nitrogen (N)	38344.96	20.000
2 Phosphate (P2O5)	19172.48	10.000
3 Potash (K2O)	38344.96	20.000
4 Phosphorous Only (P)	8366.87	4.364
5 Potassium Only (K)	31826.32	16.600
6		
7		
8		
9		
10		
11		
12		




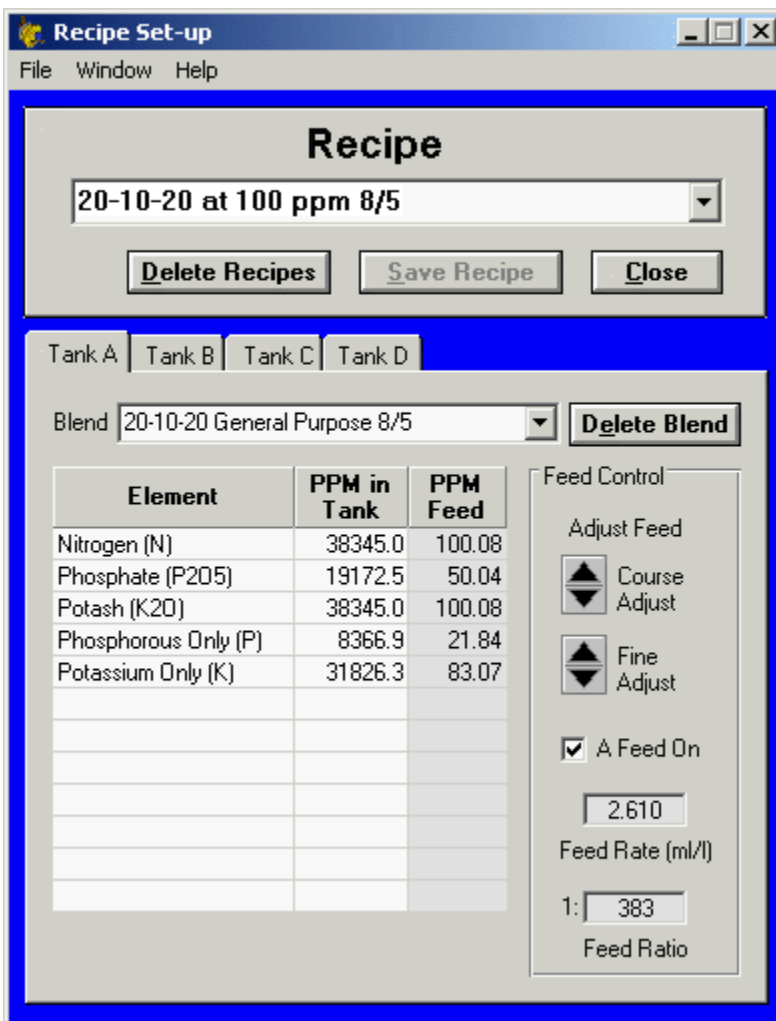
Be sure to select the proper tank before adding the blend to a tank list

The Recipe Window

 **IMPORTANT!** In order to feed recipes accurately, you must set the pumper capacity for each manifold for each location. See [Setting the Injector Pumper Capacity for details](#).

The Recipe window provides an interface to enter new recipe names, to set up solutions, and to set the feed rates/ratios of the solutions. Before entering the information into the database you should complete the [chemical blends worksheets](#) for each different injector location.


 Setting up recipes is much easier if you enter your chemical blend information first. We have provided some easy to use simple spreadsheet type [solution calculator](#) which allows you to easily compute the parts-per-million (ppm) concentrations of the elements in your chemical blends.



Element	PPM in Tank	PPM Feed
Nitrogen (N)	38345.0	100.08
Phosphate (P2O5)	19172.5	50.04
Potash (K2O)	38345.0	100.08
Phosphorous Only (P)	8366.9	21.84
Potassium Only (K)	31826.3	83.07

Setting Up Your Recipes

You must have a recipe specified for an injector before you can automatically control it. There is no limit to the number of recipes you may have in your database.

 **Recipes are tied to individual injectors using the feed schedule. When setting up a schedule you must choose recipes which match the contents of the solution tanks for that injector. We recommend having all injector solutions mixed the same for all injector locations. That way any recipe can be safely used with any injector.**

What is a Recipe?

A recipe is combination of one to four concentrated chemical solutions, each containing one or a variety of elements, and a specified feed rate for each solution, which is chosen to provide the right feed to the plants. You may have numerous recipes, all based on the same concentrate blends.

The Tank Tabs

Four tabs are provided, one for each of four solutions which may be a part of the recipe It is on these tabs where the solutions and feed rates are set.

Adding a New Recipe

The first step in setting up a new recipe is to enter a name for your recipe in the recipe box. A dialog box will ask if you want to add it to the recipe list. Respond "Yes."

Naming the Recipe

When selecting a recipe name, We recommend indicating the fertilizer blend used. This will make setting up recipes and schedules much easier and will help avoid confusion if you have other blends using the same fertilizer. The example above shows a recipe for 100 ppm nitrogen of 20-10-20 general purpose fertilizer using the blend mixed at 8 lbs. per 5 gallons of water, as indicated by the 8/5 at the end of the recipe name. You could also have recipes for 150 ppm, 200 ppm, or other strengths using the same blend, but fed at a different feed rate (feed ratio). These recipes could all use additional blends from other tanks (such as acid or micronutrients) fed at the same (or different) rate for all recipes.

Entering Solution Blend



Be sure to select the proper tank tab before entering the blend data into the blend grid.

Next you must select a chemical blend from the drop down list, or enter a new blend name. Entering a new name will require confirmation. If you enter a new blend name, you will need to fill out the Element table. To do this, you must know what the PPM concentrations are of each element of interest. If you buy ready made liquid blends, you may obtain these figures from from your supplier. If you blend your solutions from powders, you will need to compute these values from the elemental concentrations in the fertilizer and the amount of powder per unit of solution.

The element data is displayed as an aid in setting your recipes to feed the desired PPMs of the elements by altering the feed rates. It does this by showing you the final PPM feed of the elements in the irrigation water at the selected feed rate. It has no direct effect on the injectors.

Deleting a Solution Blend

To delete a solution blend from the database, click the **Delete Blend** button. This will open up the **Delete Blends** dialog box. Choose the blend to delete from the drop down list. Only blends which are not used In any recipe will be listed and may be deleted.

Setting the Feed Rate/Ratio

Once a blend has been set up or chosen, you may set the desired feed rate by using the coarse and fine feed adjust spin buttons. The coarse adjust buttons change the feed rate in increments of 0.1 ml/liter; the fine adjust in increments of .005 ml.liter. As you make these changes, the feed ratio and PPM Feed displays will also change accordingly. Set the feed nearest to the PPM feed values you desire.

The Limitations of Recipes

Because each flow sensor has different calibration characteristics based on size or variations, the actual PPM's being fed may not exactly match the PPM's set in the Recipe window. The program collects calibration data from the injector controllers and sets the individual injectors to the feed closest to that set in the recipe. The feeds displayed on the controller details screen are the exact PPM's being feed by that particular injector (assuming you have entered the correct Blend data).



Injectors are set according to the data in the recipe database. Having the injector set properly depends on having the pumper capacity properly set and the solutions in the tanks match the solutions in the recipe. If the solution contents and PPM concentrations are incorrect, the feed rate and ratio will be displayed correctly, but the PPMs may not be correct.



Recipes are tied to individual injectors using the feed schedule. When setting up a schedule you must choose recipes which match the contents of the solution tanks for that injector. We recommend having all injector solutions mixed the same for all injector locations. That way any recipe can be safely used with any injector.

After an initial recipe has been chosen for a location's schedule, only recipes with the same tank blends will be allowed for that location.

Turning Solution Feed On or Off

You may select if a solution is included in a recipe by checking the Feed ON check box on each tank tab. You may also set up a "clear water" recipe by turning off the feed from all tanks.

Modifying a Recipe or Blend

You may modify a recipe at any time by simply selecting the recipe from the drop down list and making your changes, such as turning the feed on/off or selecting a different solution.

You modify a blend by editing the data in the Element table This data should match the chemical in your tank in the field.



Be sure the solutions match the solutions in your tanks Any feed on/off or feed rate changes made to recipes are reflected in the database immediately and will have an immediate effect on any injector currently feeding the recipe which was modified.

Deleting a Recipe Record


To delete a recipe from the database, click the **Delete Recipes** button. This will open up the **Delete Recipes** dialog box. Choose the recipe to delete from the drop down list. Only recipes which are not used In any schedule will be listed and may be deleted.

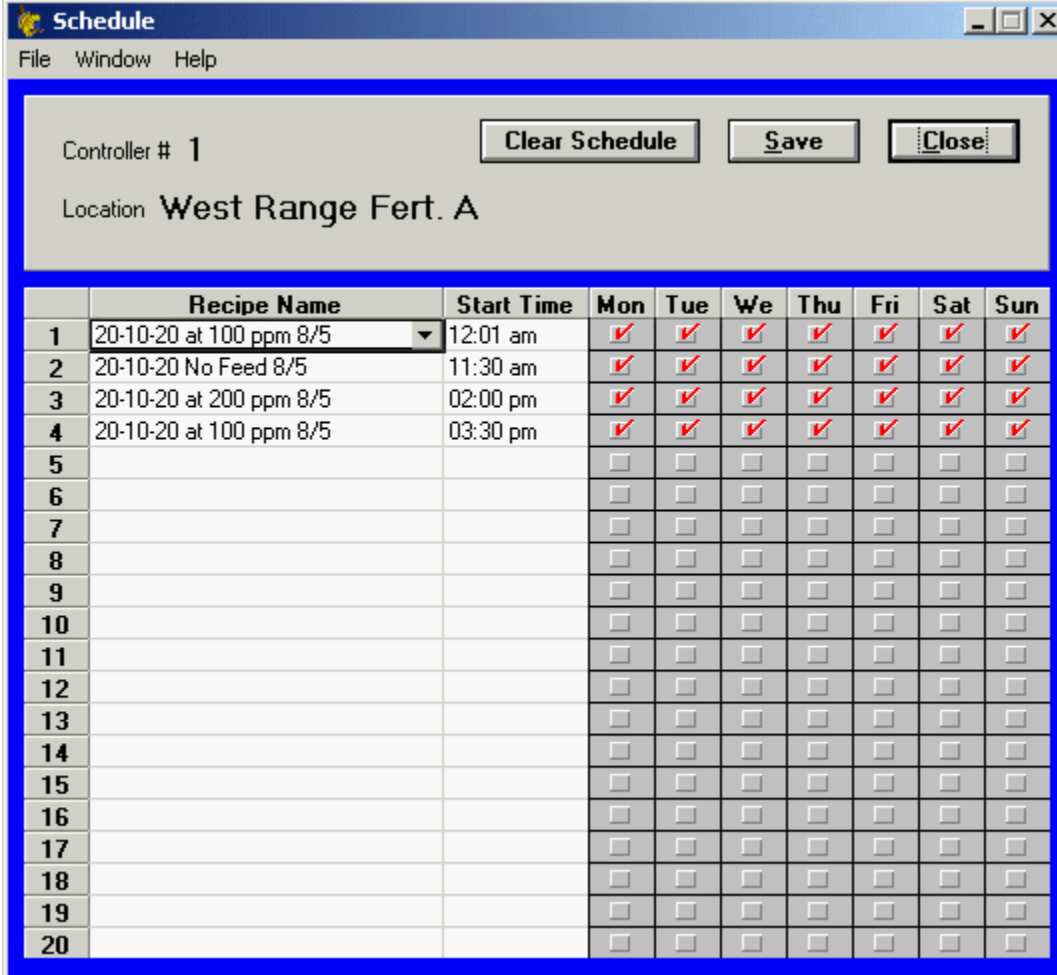
Printing All Recipes

You may print all recipe records from the Recipe Set-up window. To print the recipes, select **File|Print All Recipes** from the top menu. This will print a formatted list of all recipes in the database to the default printer.

Setting up Feed Schedules

Before you can set up the feed schedule you must enter all the data for your concentrated solution blends and set up your feed recipes. If you have not yet done this see [Setting Up Your Recipes](#).

 **If the schedule is cleared (first recipe is "None"), the injector will not be controlled by this program. It will perform as set in the field. The computer will display and log injector water flow and manifold operation. If the correct pumper capacities have been entered, it will display the correct feed rates and ratios, but no other feed data.**



	Recipe Name	Start Time	Mon	Tue	We	Thu	Fri	Sat	Sun
1	20-10-20 at 100 ppm 8/5	12:01 am	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	20-10-20 No Feed 8/5	11:30 am	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	20-10-20 at 200 ppm 8/5	02:00 pm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	20-10-20 at 100 ppm 8/5	03:30 pm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Schedules are set independently for each J Plus controller. Click to highlight a location in the **View All Controllers** window to Highlight the controller location you wish to schedule. Then click on the Schedule button.

This program is designed to work in conjunction with an irrigation computer or controller with which it is time coordinated. With proper set-up, it has great flexibility. It can change feed recipes as the irrigation is changed from one area or plant type or another. It can also be set to feed nutrients for only part of the watering cycle. It can be set to feed only clear untreated water, or only acid for pH control.

 **Recipes are tied to individual injectors using the feed schedule. When setting up a schedule the recipes must match the blends in the solution tanks for that injector.**

 **After an initial recipe has been chosen for a location, only recipes with the same tank**

blends will be shown in the drop-down list of recipes. We recommend having blends mixed the same for all injector locations. That allows using any recipe with any injector.

Coordinating with an Irrigation Controller or Computer

It is up to you, the grower, to be certain that the feed schedule is properly coordinated with the irrigation schedule, and that the injector locations correspond to the watering zones.

Since the injector stops feeding when there is no water flow, there is no need to enter a stop time. Therefore there is no provision for stop times. If you need to stop feeding before the watering cycle is complete, you can schedule a no-feed recipe (see below).

Also, if you are feeding the same recipe to more than one zone in secession, you need only enter the recipe and time for the first zone. You do not need to enter another until you wish to change recipes. This can simplify your feed schedule.

Selecting the Recipe

Use the mouse to highlight the first blank line of the schedule window. A small arrowhead will show at the right edge of the cell. Click on the arrow to display the list of all recipes in the database. Click on the recipe you wish to feed and it will appear in the cell.

Setting the Start Time

After selecting the recipe, highlight the cell in the **Start Time** column. Use the number keys to enter the start time. Only valid times will be allowed by the program. You must enter times less than 10 with a leading zero, e.g. 08 for 8 o'clock. Enter the hour and minutes and a or p for am or p.m. You can move back and forth using the right and left arrow keys to edit your entry. You can move from cell to cell with the up and down arrow keys. You can also double click to place a cell into edit mode and then place the cursor with the mouse or arrow keys.

Once you have completed your schedule you must click the Save button to enter the new schedule into the database. If you close the window without saving, you will be asked if you want to save your new or revised schedule.

Setting the Days of the Week

A new schedule item defaults to being active every day of the week. If you wish to have different recipes active at the same time, but on different days, you have to select the days of the week you wish each recipe to be active.

Revising Your Feeding Schedule

To delete a schedule change from the schedule grid, double click the recipe name cell, highlight the name and delete it. You do not have to delete the time or day cells. When you save the schedule and close the window the schedule entry will be deleted.

Changing to Recipes Using Different Blends

If you change the fertilizer formula used to make your blend, you must enter the new blend into the database and set up new recipes using the new blend. For example you might set up two recipes, one for 100 ppm nitrogen, and one for 200 ppm. to change

the schedule to use the new recipes you must first clear the schedule using the recipes using the old blend. that is done by clicking the **Clear Schedule** button on the Schedule form.

Now you may select the new recipes from the drop-down list. Note that all recipes using all blends will appear in the list. Be sure that you select the recipe which uses the blend currently in the tank. Once you have selected the first recipe, only recipes using the same blends will appear in the drop-down list.

Watering With no Feed

You may wish to feed clear water with no fertilizer. To do this, you must set up a recipe with the fertilizer pumper turned off. Even though the fertilizer pumper is turned off, it must use the same fertilizer blend as the other recipes for that location in order to appear on the drop-down list.

Printing Feed Schedules

You may print all feed schedules records from the Schedule window. To print the schedules, select **File|Print Feed Schedules** from the top menu. This will print a formatted list of all schedules in the database to the default printer.

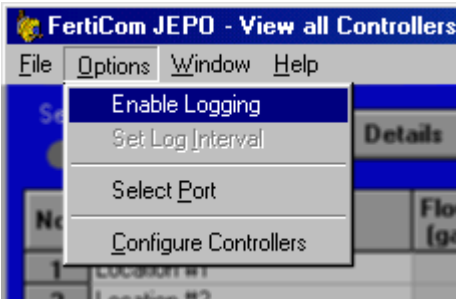
Data Logging

The FertiCom® Program allows you to automatically log current operating values received from the field into log files.

These files are stored in the C:\Program Files\FertiCom-JEPOL\Log folder. NOTE: The path C:\Program Files\ may be different if you did not install the program in the default directory.

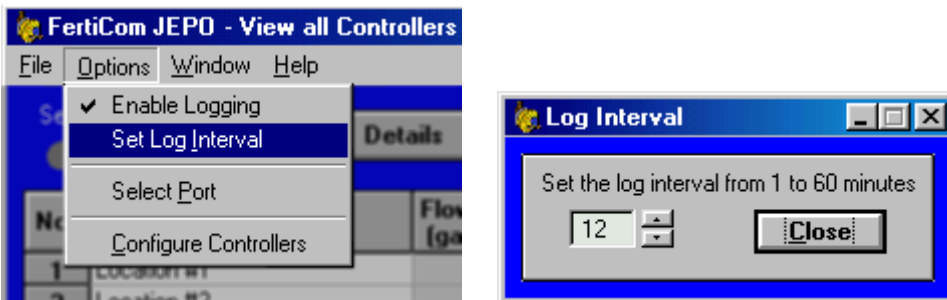
Turning Data Logging On

Data logging should be off when the program is installed. Turn it on by selecting **Options|Enable Logging** from the menu in the View All Controllers window. This will enable all logging functions. Do the same thing to turn logging off. Logging may be turned on or off at any time.



Setting the Logging Interval

Set the desired logging interval by selecting **Options|Set Log Interval** from the menu in the View All Controllers window, and then use the arrows to set the interval from 1 to 60 minutes.

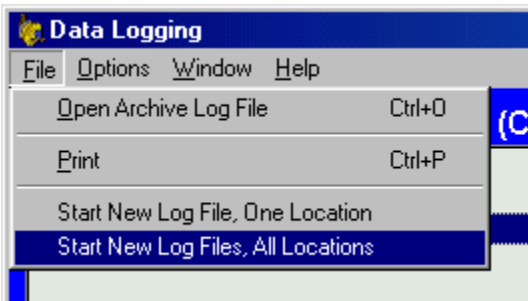


With data logging enabled you can open the **Data Logging** window by clicking on the **Log Files** button.

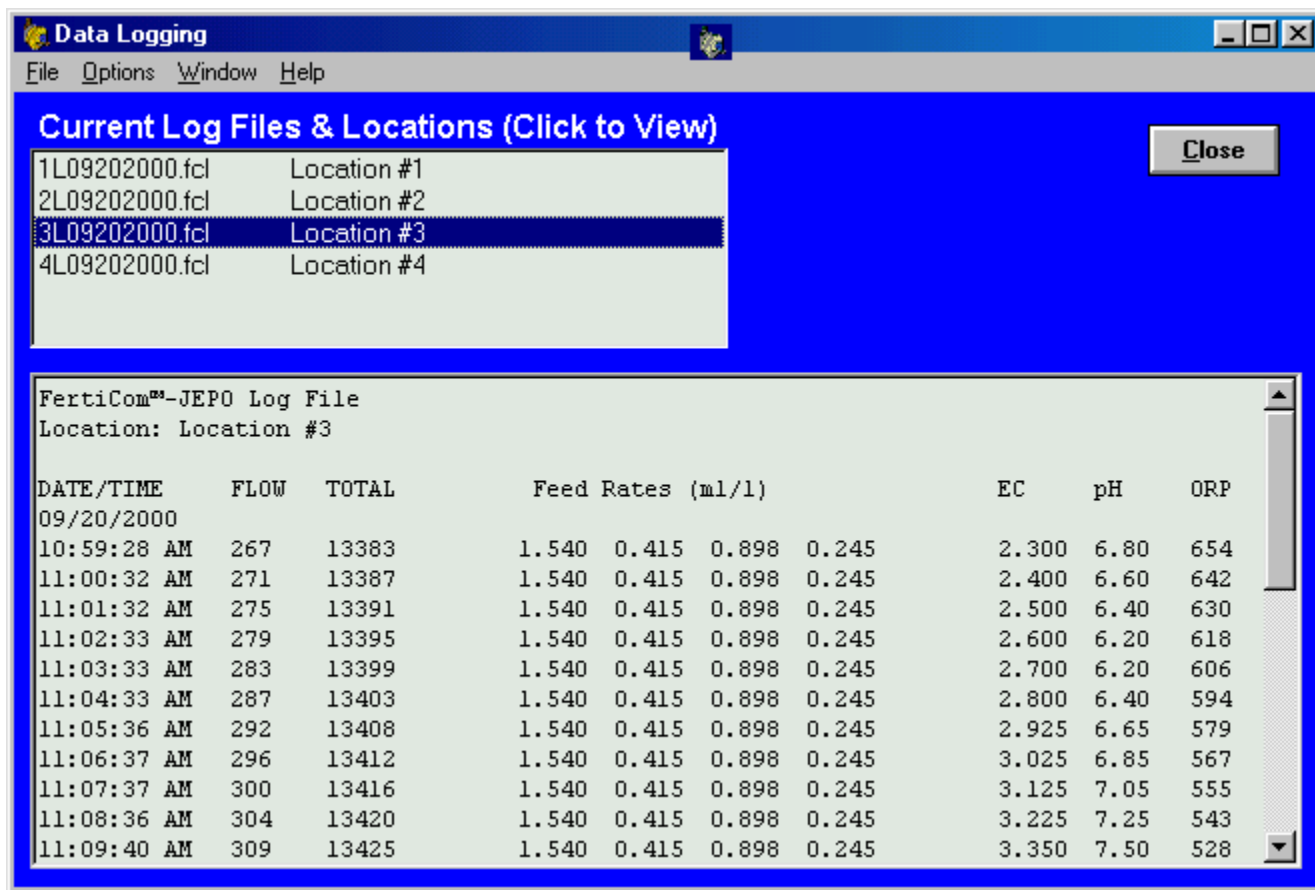
Logging can be turned on or off at any time and new log files can be opened for any or all locations at any time.

Initializing the Log Files

To start data logging you must open log files for each location you wish to log. To open log files for all locations select **File|Start New Log Files, All Locations** from the menu. To open a log file for a single location, highlight that location in the Current Log Files window and then select **File|Start New Log Files, One Location** from the menu.



The location number and date a log file is created are encoded in the file name. The exact date format depends on the Regional Settings for your computer. Regional Settings are accessed from the Control Panel. The file extension is .fcl. A log file will remain current until a new file is opened. If you try to open a new file on the same date the current file was created, you will be warned, because the new file will overwrite the current file and you will lose that data. Otherwise the program will close the current file and open a new one. The closed file remains on the hard drive and may still be accessed for viewing and printing. You can clean out unneeded log files with Windows Explorer.



Viewing Log Files

To view a log file for a given location, simply click on the location and the file will be loaded into the viewer window. The viewer shows a snapshot of the log file and does not automatically update on the screen. If the log is updated after the file has been displayed, a message will pop up to indicate the file has been updated.

The format for the log files is simple and straight forward. The date is recorded whenever a new file is opened, when the program is restarted, or when the date changes. The time is recorded for each entry. The data logged includes the flow rate, flow totalizer, feed rates for all active injector outputs, and the EC, pH, and ORP values, if

monitored.

Data is only logged if there is flow. An ellipsis (...) is entered into the log to indicate a period of no flow. An ellipsis is also used to indicate a gap in logging due to shutting the program down or turning logging off from the menu.

To display an archive log file, select **File|Open Archive Log File** from the menu. Then select the file to be viewed. The first number in the file name indicates the location number. The numbers following the "L" encode the date the file was created.

Printing Log Files

Any file that is currently displayed can be printed. Select **File|Print** from the menu to print the currently displayed file.

Other Uses for Log Files

Log files are straight forward tab delimited text files. Archive files may be opened with text editors or imported into other programs such as spreadsheet programs for additional formatting or manipulation. Current log files are in use by the FertiCom® program and sometimes may not be opened by other programs while the program is running with logging enabled.

The Schedule Database

Most of the information about the injector system is contained in the Schedule database. The file name is schedule.mdb; it is stored in the program directory. It includes information about the controllers, solutions, recipes, and feed schedules.

Information about solutions, recipes and schedules is entered by you and is automatically updated in the database. Information is entered into the database using the [Details](#), [Recipe](#), and [Schedule](#) forms. Some information about controllers is automatically updated by the system according to information received from the controllers.

The database is in Microsoft Access 97 format and its contents can viewed, edited, and printed with this or a later version of the program.

Backing up Your Data



You must close the FertiCom program before backing up your data. Otherwise you will not be able to copy the schedule.mdb data file.

If you have problems with your computer such as a disk crash, you might find yourself having to completely reconfigure your system, including reentering all your solutions, recipes and schedules. You should back up the two critical data files which are specific to your system. the remainder of the program files can easily be reinstalled from the original installation CD-ROM.

The files you need to back up are **ferticom-jepol.ini**, and **schedule.mdb**. These files are stored in the folder **C:\Program Files\FertiCom-JEPOL**.



The path "C:\Program Files\" may be different if you did not install the program in the default directory.

These files are not large. They should be copied to a separate physical disk drive, preferably to removable media. Any time you make changes to your database or controller configuration you should back up these files. normally these files will not change, so regularly scheduled back-ups are not necessary.

Troubleshooting your FertiCom Injection System

There are two main areas where trouble can occur in your system; The [System Configuration](#) and the communications hardware and wiring.

Checking for Proper Communications

A first check for proper communications is to observe the LED indicators on the RS-232/485 converter. The program will send commands out to each device configured in the system. This is repeated approximately every 10 seconds; This communication will appear as a succession of short pulses on the LED indicator labeled TD ENABLE. If a device is on line and working properly, it will respond with a return message which will show as a short pulse on the LED indicator labeled RD. So during normal operation you should periodically see a group of alternating TD/RD pulses. A missing RD pulse indicates a device which is not responding.

Although the pulses are quick, it is possible to count them. It is easier to count them if you cover one LED while counting the pulses from the other. Careful observation of the pulses and noting which return pulses are missing can be very helpful in troubleshooting.



RS-232-485 Converter
(Shown with cover removed)

A first check for proper communications is to observe the LED indicators on the RS-232/485 converter. The program will send commands out to each device in the configuration file approximately every 10 seconds; This will appear as a succession of short pulses on the LED indicator labeled **Transmit**. Although the pulses are quick, it is possible to count them.

If a device is on line and working properly, it will respond with a return message which will show as a short pulse on the LED indicator labeled **Receive**. So during normal operation you should periodically see a group of alternating transmit/receive pulses.

Communication Problem Indicators and Possible Causes

No Transmit Pulses

- No devices specified in the [Configuration window](#).
- Program set to wrong serial port. (See [Setting the Serial Communications Port](#))
- RS-232/485 converter not plugged in.
- Bad cable or connection to computer.

Transmit Pulses but No Return Receive Pulses

- Field devices not correctly specified in the [Configuration window](#).
- Address jumpers in field devices not correctly set. (See [Hardware Configuration](#))
- Improper or faulty wiring or connections (See [Setting Up the Converter](#))
- Field devices defective or not powered up.

Some Return Pulses

- Devices not correctly specified in the configuration window.
- Improper or faulty wiring or connections. (See [Setting Up the Converter](#))
- Some field devices defective or not powered up.
- Address jumpers in some field devices not correctly set.

Some injector data does not show in Viewall or Details window

- Address jumpers not correctly set. (See [Hardware Configuration](#))
- Wrong type of injector set in [Configuration window](#).

Some monitor data does not show in Viewall or Details window, or data shows on wrong line.

- Address jumpers for monitors not correctly set. (See [Hardware Configuration](#))
- Two devices of the same type at different locations are set to same address.

Computer turns off feed from one or more tanks.

- Be sure the the "Feed ON" check box is checked on the tank tab for the recipe being fed.
- Check for flow alarm.

If you have problems you cannot resolve on your own, you may call [Customer Service](#) for help

Moving the Program to Another Computer

If you wish to move the program from one computer to another, you need to transfer the configuration and database files from the old to the new computer. Here is one procedure.

These files are stored in the folder **C:\Program Files\FertiCom-JEPOL**.



The path "C:\Program Files\" may be different if you did not install the program in the default directory.

Using Windows Explorer, access the folder and copy the two files **schedule.mdb**, and **ferticom-jepol.ini** from this folder to a floppy disk or other removable media. After installing the software on the new computer, copy the files from the floppy to the corresponding folder on the new machine. This completes the transfer process.

Chemical Blends

Injector No. _____ Location _____

Tank 1 - Chemical Blend _____

Chemical Element	PPM in Blend
1 _____	_____
2 _____	_____
3 _____	_____
4 _____	_____
5 _____	_____
6 _____	_____
7 _____	_____
8 _____	_____
9 _____	_____
10 _____	_____
11 _____	_____
12 _____	_____

Tank 2 - Chemical Blend _____

Chemical Element	PPM in Blend
1 _____	_____
2 _____	_____
3 _____	_____
4 _____	_____
5 _____	_____
6 _____	_____
7 _____	_____
8 _____	_____
9 _____	_____
10 _____	_____
11 _____	_____
12 _____	_____

Tank 3 - Chemical Blend _____

Chemical Element	PPM in Blend
1 _____	_____
2 _____	_____

3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Tank 4 - Chemical Blend _____

	Chemical Element	PPM in Blend
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Customer Service

For Customer Service Contact

H.E. Anderson Co.

Phone: 800-331-9620
8:30 a.m.-4:30 p.m.
Central time

E-mail: info@heanderson.com

FAX: 918-682-3342

Please have the version number of your software available when you call, as well as information on the number and type of devices. You can display the Version Number by using the top menu **Help|About FertiCom**.