Signature CONTROL SYSTEMS, INC.

FIELD CONTROL SYSTEMS

GALAXY™

OPERATION MANUAL

GALAXY™ Field Controller Operation Manual

Firmware Version 5.50

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Figure 1 Galaxy Field Controller Menu Tree 83

Safety Symbols

Become familiar with the safety symbols presented in this section. These symbols will alert you to safety hazards and conditions that may result in personal injury, death, or property and equipment damage. The following symbols are used in this document:

WARNING: Failure to observe this warning may result in personal injury or death.

CAUTION: Failure to observe this caution may result in property and equipment damage.

Note: Highlights important information or details.

Idea: Indicates a suggestion that helps you make better use of your system.

Personal Injury Warning

WARNING!

TO PREVENT PERSONAL INJURY - DO NOT STAND DIRECTLY OVER ANY LARGE TURF SPRINKLERS WHEN FILLING SYSTEM OR WHEN ACTIVATING MANUALLY AT THE SPRINKLER.

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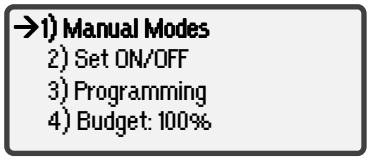
Chapter 1 Manual Modes

Manually Starting and Stopping of Stations and Programs

Chapter 1 describes the Main Menu option “1) Manual Modes” procedures to start and stop stations or programs manually.



The above “Manual Modes” sub-menu options perform these tasks:

- Manually starting or stopping a station.
- Manually starting or stopping a program.
- Stop all active stations on the Field Controller.

1) Manual Station

START/STOP

There are optional parameters to set specific DELAY durations.

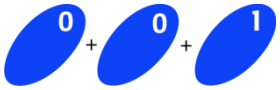
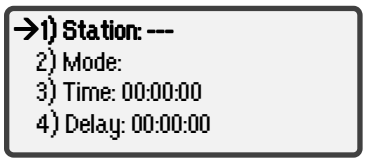
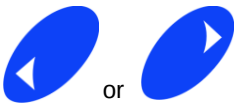
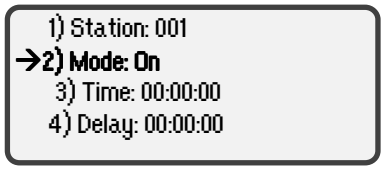
The Delay Time duration, HHMMSS, is an optional parameter.

- If the Delay Time duration is omitted in an ON operation, no DELAY is used and the station starts immediately. If used, it defines the DELAY duration, after expiration of this duration the Station will start.

The Run Time duration may be used by itself without specifying the Delay Time duration, but if using the Delay Time duration the Run Time duration must be specified.

Neither of the parameters is required for OFF operations.

1) Station - Manually Start/Stop a Station

Procedure	Keypad	Display
1. From the **Startup** screen press Enter. Then select option **1) Manual Modes.** Then select option **1) Manual Station**. 2. Press **ENTER/NEXT** button again. 3. At menu option **1) Station**, press keys to enter a three-digit number to identify the station number; for example, press keys **001** for Station 1.	 Press keys: 	
4. Press the **ON/AM** button or press left or right arrows until **ON** is the **Mode.**	 	

Procedure	Keypad	Display
5. Press down arrow to option **3) Time**, enter the **Water Time** for the station in hours: minutes: second's format. For example, to enter a Water Time of 10 minutes, press right arrow twice, press key 1.	Arrow twice and Press key: 1	1) Station: 001 2) Mode: ON →**3) Time: 00:10:00** 4) Delay: 00:10:00
6. Press down arrow to option **4) Delay**, enter the **Delay Time** for the station in hours: minutes: second's format. For example, to enter a delay time of 10 seconds, you would press keys 000010.	Press keys: 000010	1) Station: 001 2) Mode: ON 3) Time: 00:10:00 →**4) Delay: 00:00:10**
7. To start the station, press the **ENTER/NEXT** button. The station starts or if you entered a delay time, the delay countdown begins.		→**1) Station: 001** 2) Mode: 3) Time: 00:10:00 4) Delay: 00:00:10
8. To add another station with the same Water Time and Delay Time, enter a station number and press the **ON/AM** button; and then press the **ENTER/NEXT** button to activate the station(s).		→**1) Station: ---** 2) Mode: 3) Time: 00:10:00 4) Delay: 00:00:10

A Delay time is not required to activate a station.

2) Manual Program

START, STOP, PAUSE, RESUME

The **2) Manual Programs**, **2) Mode options**: Start, Stop, Pause, Resume are independent of the pre-programmed schedule and cycle starts of the saved program.

The Delay Parameter has specific functions depending on the MODE used:

When initiating an OFF command:

- The parameter is not used or required.

When initiating an ON command:

- The parameter is optional if zero or omitted, the Program will start immediately.
- If used, it defines DELAY duration; after expiration of this duration, the program will start.

When initiating a PAUSE command:

- If the parameter is zero or omitted, the PAUSE command requires a RESUME command to restart.
- If used, the parameter defines the length of the PAUSE; after expiration of this duration, the program will resume.

A PAUSE cannot be longer than 30 minutes.

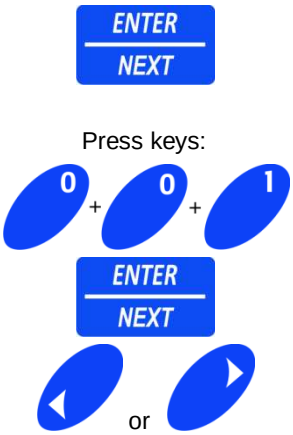
A PAUSE will expire, and the Program is cancelled under these conditions:

- 30 minutes elapses without a RESUME being issued.
- A GLOBAL STATION: OFF command is issued on the network.
- A System RESET is generated on the Field Controller.
- An automatic cycle start of the paused Program is initiated.

When initiating a RESUME command:

- If the parameter is zero or omitted, the Program will resume immediately.
- If currently in PAUSE, the parameter delays the RESUME of the Program.

Manually Start a Program

Procedure	Keypad	Display
1. From the **Startup** screen press Enter. Then select option **1) Manual Modes**. Then select option **2) Manual Program**. 2. At menu option **1) Program** enter a program number. Example, press keys 001 for program 001 and press the **ENTER/NEXT** button. 3. Press down arrow to option **2) Mode**, and press right or left arrows until **ON** is the **Mode**.		→1) Program: 001 2) Mode: ON 3) Delay:00:00:00 4) ←/→ Prev/Next
4. Press down arrow to option **3) Delay**, to enter a **Delay Time** in hours: minutes: seconds: format. Press keys 000015 for a 15-second delay. 5. To activate the program, press the **ENTER/NEXT** button. 6. The program starts or, if you entered a delay time, the delay **countdown** begins.	Press keys: 000015 for a 15 second delay	1) Program: 001 2) Mode : ON →3) Delay: 00:00:15 4) ←/→ Prev/Next 1) Program: 001 2) Mode: ON 3) Delay: 00:00:15 →4) ←/→ Prev/Next

In program 001 (that is, stations 1 through 4 running in sequence for a given time) use the manual program option to start the program. Once the program is started, station 1 will be running. Then enter the program number again and arrow down to this option 4) ←/→ Prev/Next. This feature allows you to step forward and backward through any active program. If a program is active and you enter this program number on the first line and arrow down to option 4 and use the right and left arrows, you can step through the program. Arrow right for the next station in a program (Forward) arrow left for the previous station in the program (Backward).

Use this example to start the 001 program, and then go back and enter 001 again, arrow down to option 4) ←/→ Prev/Next, and press the right arrow two times to station three. Press the left arrow once to go to station two and so on through all the stations.

CAUTION!

If you toggle past the last station or skip backward past the first station in the program, the program will turn off.

3) All Stations OFF

Stop All Active Stations on a Field Controller

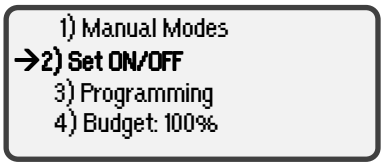
The **3) All Stations OFF** command initiates an immediate stop of ALL stations on a Field Controller.

Procedure	Keypad	Display
1. From the **Startup** screen press Enter. Then select option **1) Manual Modes**. Then select option **3) All Stations OFF**. At menu **1) Manual Station** arrow down to option **3) All Stations OFF**. 2. Press the **ENTER/NEXT** button. The Main Menu appears and all active stations on the Field Controller will shut **DOWN**.		

Chapter 2 Set ON/OFF Command

Setup the Field Controller Modes

Chapter 2 describes how to use the "**Set ON/OFF**" menu command to turn the Field Controller, ON or OFF.



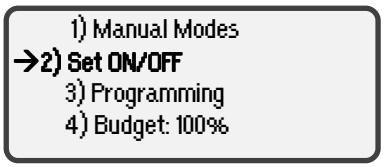
The above menu options set these controller modes:

- Turn the Field Controller ON or OFF.

2) Set ON/OFF

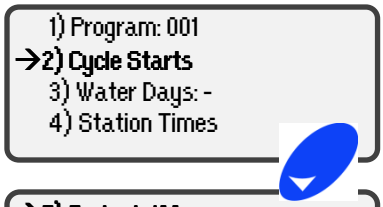
Field Controller ON/OFF (Rain Shutdown)

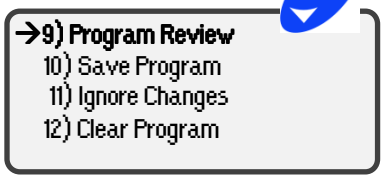
The "**2) Set ON/OFF"** Command sets the Field Controller state or Master Valve (MV) to ON (Normal or Active) or to OFF (Rain Shutdown).

Procedure	Keypad	Display
1. From the **Main Menu** press **ENTER/NEXT,** press down arrow to option **2) Set ON/OFF**, and press the **ENTER/NEXT** button.		
2. At menu option **1) Controller,** 3. Press down arrow to option **2) Mode**; and the right or left arrows to toggle modes: • ON or OFF 4. Press the **ENTER/NEXT** button. The Field Controller immediately changes state.	 	

Chapter 3 Programming

This chapter describes how to use the 3) Programming menu to build Manual or automatic programs, and save them in the field controller.





The menu options set these watering programs:

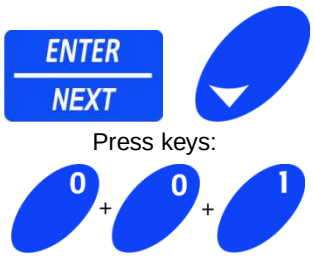
- Setup a Cycle Starts type
- Setup the Water Days
- Setup the Station Times
- Setup the watering Budget for a program
- Select operating Mode: Sequence or Parallel
- Setup an ET source
- Setup the Broadcast ON/OFF Mode
- Preview, Save, Ignore or Clear current program settings
-

1) Program

Setup Watering Programs

Programming is a process where you navigate from one input to the next until you are finished. This means a Program number is input, and then Cycle Starts, and then Water Days, and finally Station Times until finished. Once entering the Programming section, you cannot exit from the program process unless you enter one of these options: Save, Ignore or Clear.

Galaxy Field Controller's can save up to 32 independent programs. The programs do not stack, and each program will start as scheduled regardless of how many other programs are currently running.

Procedure	Keypad	Display
1. From the **Main Menu** press down arrow to option **3) Programming**, and press the **ENTER/NEXT** button. 2. At menu option **1) Program**, enter a three-digit number to identify the program. The program number can be any value between 001 and 032.		
After entering the last number, the word "New" appears to the right of the program number. If a program already exists at this location, the "New" will not appear. The arrow moves to option 2) "Cycle Starts" to set cycle starts.		

2) Cycle Starts

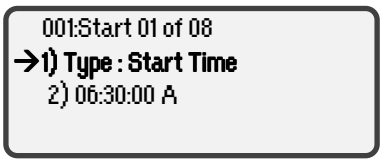
Set Cycle Starting Type

Cycle Types

Description of Cycle Types: (use right and left arrow keys to toggle to between the cycle starts options.) Detailed instructions for each cycle type are described in this section.

None	If all 8 cycles are left on “None” then the controller stores the program as a manual program. If not all 8 cycles starts are needed (in an automatic program), leave all unused as None.
Start Time	Enter the time you want the watering cycle to start.
Stop Time	Enter the time you want the watering cycle to stop. In order to enter a stop time, you must first setup a start time.
Link Start	Links the current program to another program either on this field controller or from any other field controller on the network, so that, when the other program finishes, this program automatically starts.
Repeat	Repeat the cycle for a maximum of 99 times. In order to repeat a cycle, you must first set up a “Start Time”.
Loop Until	Sets up an interval of time. The watering continuously cycles through all the stations in the program from the “Start Time” through the “Loop Until” time.
Sensor	Start a watering cycle based on input from a Sensor.

Start Time

Procedure	Keypad	Display
1. At menu option **1) Type** press the right arrow button until **Start Time** appears as the **Type**. 2. Press down arrow to option **2) 00:00:00**, enter the start time in hours: minutes: seconds: format, when a watering cycle will start. Example, press keys 063000. If your system uses the 12-hour clock: To start a watering cycle at 6:30 A.M. press keys: 063000 and then press the **ON/AM** button. To start a watering cycle at 10:45 P.M. press keys: 104500. Then press the **OFF/PM** button. If you are using the 24 hr format, to start at 6:30AM press keys 063000: to start at 10:45PM press keys 224500.	 For start time in 12-hr Press keys: 063000 A For start time in 12-hr Press keys: 104500 P 	

Stop Time

Procedure	Keypad	Display
1. At menu option **1) Type** press the right arrow button until **Stop Time** appears as the **Type**. 2. Press down arrow to menu option **2) 00:00:00A**. 3. Enter the time of day in hours: minutes: seconds: when the watering cycle should stop. Example, press keys 063000 A. The watering cycle will stop immediately when this set time comes around, which triggers the current program to stop running.	 Enter time of day press keys: 063000 A	001 : Start 03 of 08 →1) Type: Stop Time 2) 00 : 00 : 00 A 001 : Start 03 of 08 1) Type : Stop Time →2) 06:30:00 A

Special considerations when using the "**Stop Time**" Type:

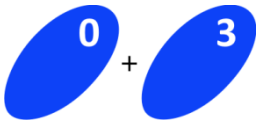
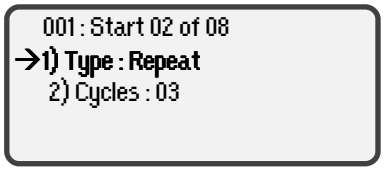
- Use the first cycle start 1 of 8 to start the program.
- Use the second 2 of 8 to repeat the program.
- Use the third 3 of 8 to stop the program.
- When the stop time comes up, the program stops immediately no matter where the program is running.
- The repeat option must be set or the program will only run one time and stop.
- If enough time is not set between the start and stop times, the program will not complete a full cycle.
- If a sensor is set to start a program, and it remains active, when the stop time is reached, the program will stop and start over again right away.

Link Start Time

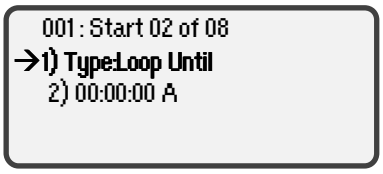
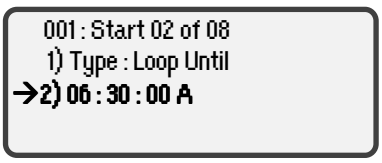
Link a program to start after another program. Programs must all be in the local field controller.

Procedure	Keypad	Display
1. At menu option **1) Type:** press the right arrow button until "**Link Start**" appears as the **Type**. 2. At menu option **2) Satellite**, is not functional. 3. At menu option **3) After PGM**, enter the program number that you want this program to follow. 4. Press down arrow to option **3) After PGM,** and enter a three-digit program number to link.		001:Start 01 of 08 →**1) Type:Link Start** 2) Satellite: --- 3) After PGM: --- 001:Start 01 of 08 1)Type:Link Start →**2) Satellite: ---** 3) After PGM: --- 001:Start 01 of 08 1) Type:Link Start 2) Satellite: --- →**3) After PGM: 002**

Repeat Time

Procedure	Keypad	Display
1. At menu option **1) Type :** press the right arrow button until the "**Repeat**" appears as the **Type**. 2. Press down arrow to option **2) Cycle**, enter the number of cycles you want the watering cycle to repeat. For example, to repeat the watering cycle three times, press keys 03; for the actual first start cycle + 3 repeats= 4 cycles.	 Enter 05 for five repeat cycles 	

Loop Until Time

Procedure	Keypad	Display
1. At menu option **1) Type** press the right arrow button until "**Loop Until**" appears as the **Type**. A start time is required in one of the 8 cycle starts. 2. Press down arrow to menu option 2) 00:00:00A. (A start time is required in one of the 8 cycle starts.) 3. Enter the time of day in hours: minutes: seconds for the watering cycle to **loop until.** Example, press keys 063000 A. The Loop Until program cycle will trigger the current program to stop after completing the current cycle when the time is reached.	 Enter time of day To Loop Until Press keys: 063000 A	 

Sensor

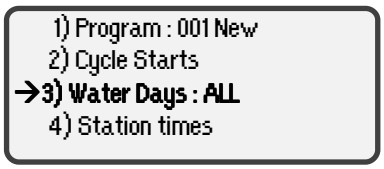
This program does not define *a* Sensor, only *which* Sensor will start a watering cycle.

As long as the sensor is active the program will continue to run. Once the program stops, if the sensor is still active, the program will be triggered to start again. This will continue as long as the sensor is active.

Procedure	Keypad	Display
1. At menu option **1) Type** press the right arrow button until "**Sensor**" appears as the **Type**. 2. Press down arrow to option **2) Sensor** and enter *which* sensor (example Sensor 1), that will start the watering cycle. 3. When you have filled all 8 cycle starts or leave the next available cycle start on None and press the Enter/Next button the cursor will move down to menu item 3) Water Days	 Press key 1	001: Start 01 of 08 →**1) Type: Sensor** 2) Sensor 001: Start 01 of 08 1) Type: Sensor →**2) Sensor: 1**

3) Water Days

Setup Watering Days

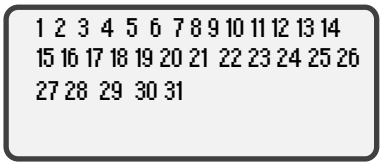
Procedure	Keypad	Display
1. At menu option **3) Water Days**, set watering days options.		

Water Days Options

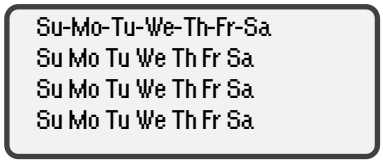
There are five watering day options described in the following pages:

All	Displays a 31-day calendar to allow you to select the watering days.
Week	Displays a 4-week calendar to select any one-watering Week.
INT (Interval)	Allows you to enter the interval between watering days.
Odd/Even	Sets up watering to occur only on odd or even days of the month.

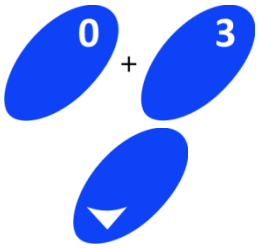
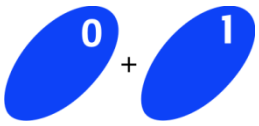
ALL

Procedure	Keypad	Display
1. Press down arrow to option **3) Water Days** and right arrow until **"ALL"** appears. This will open a calendar to review all water days. 2. Press the **ENTER/NEXT** button.		
3. A 31-day calendar appears. Press arrow buttons to navigate through the calendar. 4. Press the **ON/AM** button to activate individual watering days. STEADY ON is a Water Day (Enabled). 5. Press **the OFF/PM** button to deactivate individual watering days. FLASHING ON/OFF is a NON-Water Day (Disabled).		
Press ON/AM + 9 to toggle ALL days to ON Press OFF/PM + 9 to toggle ALL days to OFF		

Week

Procedure	Keypad	Display
1. Press down arrow to option **3) Water Days** and right arrow until **"Week"** appears. 2. Press the **ENTER/NEXT** button. The week calendar display appears. 3. Use arrow buttons to move the cursor through "Week" schedule.		
The week with dashes is the current week. The current week can be set in the "Controller Setup" section within the Date and Time option.		

Interval

Procedure	Keypad	Display
1. Press down arrow to option **3) Water Days** and press right arrow until **"INT"** appears as the watering days. 2. Press the **ENTER/NEXT** button. 3. At menu option **1) Interval,** enter the interval for days *between* watering days. For example, for every 3rd day to water, press keys 03. 4. Press down arrow to option **2) Today.** Example, press keys 01 if today is the watering day. Press keys 03 if tomorrow is the watering day.	 Press keys:  Press keys: 	

The program will only water on Day 01 of the watering interval.

ODD or EVEN Options

1. Press down arrow to option **3) Water Days** and the right arrow until either "**ODD**" or "**EVEN**" appears.
2. Press the **ENTER/NEXT** button and based on your selection, watering will occur either on odd or even numbered days.

4) Station Times

Set Station Run Times

Procedure	Keypad	Display
1. Press down arrow to option **4) Station Times**, and press the **ENTER/NEXT** button.	ENTER / NEXT	1) Program : 001 2) Cycle Starts 3) Water Days : ALL →4) Station Times
2. Enter a three-digit number that identifies the first station to water. For example, press keys 008 for Station 008.	Press keys: 0 + 0 + 8	001 : Event 01 of 48 →1) Station: --- 2) Duration : --hr--min--sec

- The upper left three-digit number shows the program number you are working with.
- For sequential programs, the Event number indicates the sequence in which the program will water.
- An event consists of a station duration time or a pause time.
- Create up to 48 events per program.
- Use Station 000 as an event to force a pause in the program for the specified duration.
- The same station number can be entered more than once within a program.
- Entering more than once will set up a different duration for each event.
- The "–hr" will auto fill "00" when you enter "–min".

3. Press down arrow to menu option **2) Duration**, enter the length of time, in hours: minutes: seconds: format to set the station to water. For example, to enter a watering duration of 15 minutes, press keys 001500. 4. After entering duration, use the down arrow key to move to the next event. 5. Once you have finished entering the last event and its duration press the **ENTER/NEXT** button.	 Press keys: 001500 ENTER / NEXT	001 : Event 01 of 48 1) Station: 008 →2) Duration: 00 : 15 : 00

Even though it is required to fill in all blank spaces the first time, enter a time and arrow right to the minutes location. If you just enter minutes and seconds (i.e. 1500) the hours will be filled in with 00.

5) Budget

Setup Water Budget for Current Program

The Water Budget is used to adjust ALL active events within this program only.

Procedure	Keypad	Display
1. At option **5) Budget** the cursor will be on the 1 of 100, change the % by typing over the 100 with the new %. 2. Press the **ENTER/NEXT** button and enter the water budget minutes for the program.	ENTER / NEXT	→5) Budget 100% 6) Mode : Sequence 7) ET Setup 8) Broadcast : OFF

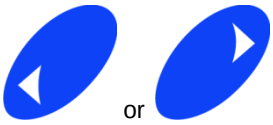
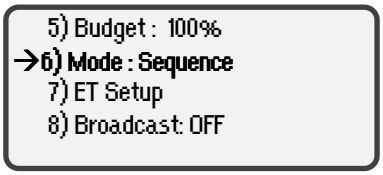
This budget is for the selected program only, and can be any value between 000% and 999%. The event duration times are multiplied by the water budget to determine the actual watering duration. For example:

- 100% of 10 minutes = 10 minutes
- 50% of 10 minutes = 5 minutes
- 150% of 10 minutes = 15 minutes.

The program water budget additionally adjusts the length of a pause event within a program. Refer to Controller Budgeting for more information.

6) Mode

Set Sequence or Parallel

Procedure	Keypad	Display
1. Press down arrow to option **6) Mode**, and use the right arrow button to select the Sequence or Parallel mode option.		

There are two Mode options:

Sequence The program starts with the first event. After the duration time has elapsed, the second event starts. The program continues the events, in sequence, until all events have completed.

Parallel The program starts all stations in the program, up to a maximum of 14 active stations or 3.15 amps, whichever occurs first.

Only use parallel mode for a program that includes 14 or fewer stations.

If a program with 15 or more events attempts to start, the fifteenth event generates an “Exceed Max. STNS” Alarm, the 15th event and all subsequent events are ignored.

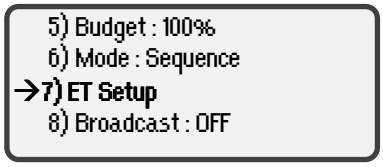
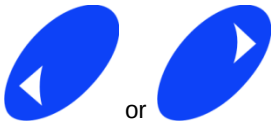
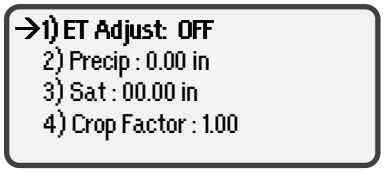
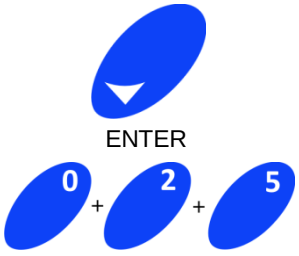
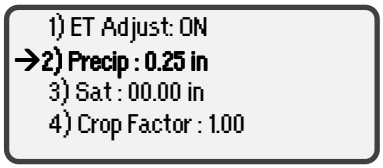
If differing station runtimes have been specified for the stations will run for its individual programmed time.
Additionally, if this program is being linked to the next program it will not start until the last station in the program completes its runtime.

7) ET Setup

ET Source to Update Water Duration and Usage

The ET Setup option allows the program to use an ET source to update water duration and usage based on daily ET measurements.

The Field Controller will receive ET data from a source, multiply the data with a Crop Factor and compare the results with the Precipitation Rate. If the results are lower, less water will be applied. If the results are greater, more water will be applied. If the results exceed the Saturation Rate, the excess amount will be carried over to the next watering cycle.

Procedure	Keypad	Display
1. Press down arrow to menu option **7) ET Setup**, and press the **ENTER/NEXT** button.		
2. Using the right and left arrow buttons, toggle the **1) ET Adjust** option to **ON** for the Field Controller to accept the ET information.		
3. Press down arrow to option **2) Precip** and enter a Precipitation Rate. For example, to enter a 0.25 in. Precipitation Rate, you would press 025.		

This is not the actual Precipitation Rate of the sprinkler heads. This is the expected Precipitation Rate that will be applied to the turf/plant material based on the reference runtime given to each station.

Procedure	Keypad	Display
4. Press down arrow to option **3) Sat**, and enter the Saturation value. For example, to enter a 00.45 in. Saturation Value, you would press keys 0045.	Press keys: 0 + 0 + 4 + 5	1) ET Adjust : ON 2) Precip : 0.25in →3) Sat : 00.00 in 4) Crop Factor : 1.00 1) ET Adjust : ON 2) Precip : 0.25in →3) Sat : 00.45 in 4) Crop Factor : 1.00

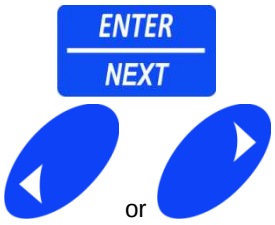
If the goal is to prevent any excess runoff from occurring during the irrigation cycle, consider using shorter runtimes with multiple repeats. For example, if you have tight clay soils with an infiltration rate of less than .2" per hour this will compensate for the lower intake rate.

ETo (Crop Factor of 1.00) is based on cool season grass at 6" height and in full sunlight. In areas with shade and/or deep rooted plants your Crop Factor may be less than 1.00. Use this feature to achieve maximum conservation while still maintain good plant health.

5. Press down arrow to option **4) Crop Factor** and press keys 100 to enter the Crop Factor. After you enter the last number of the Crop factor, the cursor returns to the **1) ET Adjust** options. 6. Press the **ESC/PREVIOUS** button to return to the main programming menu.	Press keys: 1 + 0 + 0 ESC / PREVIOUS	1) ET Adjust : ON 2) Precip : 0.25in 3) Sat : 00.45 in →4) CropFactor :1.00

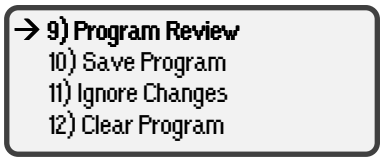
8) Broadcast

The Broadcast feature communicates to the other controllers on the network that a program has completed and will trigger another program based on the **Link Start** setting. GAL field controllers can only send this communication to a CON controller; GAL to GAL communication is not enabled.

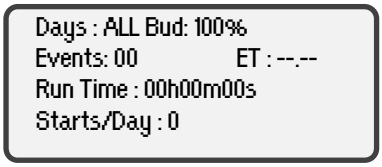
Procedure	Keypad	Display
1. Press down arrow to menu option **8) Broadcast**, and press right or left arrow buttons to toggle between **ON** and **OFF**.		

9) Program Review

Review the Program Settings

Procedure	Keypad	Display
1. Press down arrow to option **9) Program Review** and press **ENTER/NEXT** button to review program settings.		

The Review Program display descriptions:



- The Water Days option is set to ALL.
- The Water Budget for the program is 100%.
- There are no Events scheduled, and the ET displays
- What ET's have accumulated:
- If you have accumulated ET and you make a change to the program then select the save option, this value will be zeroed out.
- Total Run time on the program is 00h 00m & 00s.
- There no scheduled Start Times per Day.

10) Save Program / 11) Ignore Changes / 12) Clear Program

Save, Ignore or Clear Program Settings

After creating a new program or making changes to an existing program, choose to save, ignore, or clear the program to be able to exit the Programming Menu.

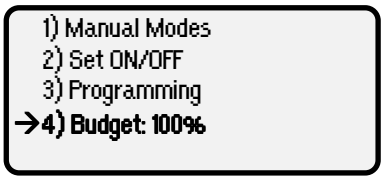
Procedure	Keypad	Display
1. Press down arrow to option **10) Save Program** or **11) Ignore Changes** or **12) Clear Program** option, and press the **ENTER/NEXT** button to save and exit.		
2. Press the **ESC/PREVIOU**S button to exit the programming menu or enter a program number to continue adding or editing programs.		

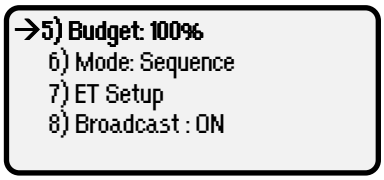
Chapter 4 Budget

Set Controller Budget
Adjustment Percentage Value

Chapter 4 describes the **4) Budget** command that sets controller budget adjustment percentage values. This Water Budget is used to adjust all active programs saved in the field controller. The Water Budget described here works in conjunction with the program specific Water Budget and/or ET Adjust described in Chapter 3.

Both 4) Budget (Controller), and 5) Budget (programming), are taken into account whenever a program is started.

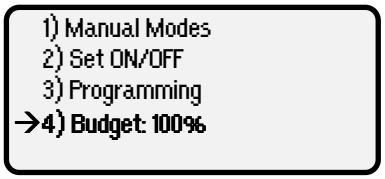




Setup Water Budget for All Programs

This 4) Budget affects all the programs in the Controller; it is multiplied by the 5) Budget program budget as well.

This means if you have a station set with a 10-minute run time, and a program budget of 50%, and a Controller Budget of 50%, the station will only run for 2 1/2 minutes because you will be getting 50% of 50%.

Procedure	Keypad	Display
1. To change percentage value, arrow down to menu option **4) Budget : 100%.** The first number is automatically highlighted, press key numbers to change percentage value; for example press keys 050 for a 50% value, 025 for 25%, etc. 2. Press **ENTER/NEXT** button to view the alarm logs.	 	

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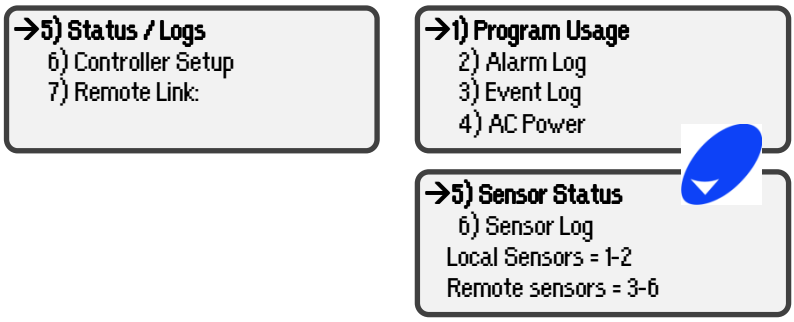
Chapter 5 Status/Logs

Viewing Status Logs

Chapter 5 describes the “5) Status / Log” menu to review Program Usage, Alarms, Events and the AC Power status, as well as Sensor status.



There are 4 different Logs for reviewing current status data.

Program Usage	A list of automatic and manual program numbers stored in the field controller.
Alarm Log	The last 90 alarms recorded in the Field Controller.
Event Log	The last 125 events recorded in the Field Controller.
AC Power	The actual currents draw in Amps.
Sensor Status	Status of current active Sensors.

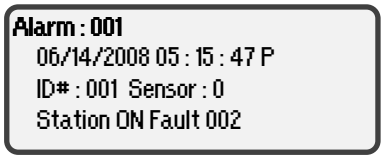
1) Program Usage

Display of Program Numbers in Use

Shows a list of all automatic and manual programs stored in the field controller.

Procedure	Keypad	Display
1. From the **Main Menu** press down arrow to menu option **5) Status / Logs** and press **ENTER/NEXT** button to open 1) Program Usage menu and press **ENTER/NEXT** button. 2. If the screen has no three digit numbers there are no programs stored in the field controller. Automatic programs will be displayed as a solid three digit number and manual programs (no cycle starts and/or watering days) will be displayed as a flashing three digit number. This screen lists the programs on the Field Controller. Each screen will show a maximum of twenty programs. If the Field Controller has more than twenty programs, it will be necessary to use the **DOWN** or **UP** arrow buttons to see the next twenty programs. Steady numbers indicate an automatic program that has a valid schedule and start time. Blinking indicates the program will not start automatically, such as, manual program or link start.		

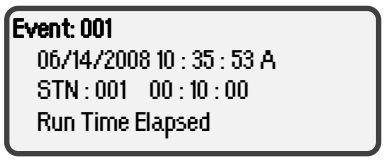
2) Alarm Log

Procedure	Keypad	Display
1. From the Main Menu press the down arrow key to 5) Status / Logs, then press the Enter/Next button, press the down arrow to **2) Alarm Log**, press the **ENTER/NEXT** button to open the Alarm status menu. 2. Use the up and down arrows to scroll through the Alarms. 3. Press the **ESC/PREVIOUS** button three times to get back to the main screen. For Fault ID numbers and Error Codes refer to Appendix tables at the end of this guide.	 	

Alarm Log Definitions

Alarm: 001	The Alarm field indicates the Alarm number. The Alarm Log shows the most recent 90 alarms. Once the Alarm Log is full, the oldest alarm is deleted.
06/14/2008 05:15:47 P	The second line of the display shows the date and time the Alarm occurred.
ID# : 001 Sensor : 0	The ID# field shows the Field Controller that detected the alarm. The Sensor field shows the sensor that detected the alarm. Sensor 0 indicates that the alarm condition that was detected by the CPU.
Station ON Fault 002	The fourth line shows a code to identify the alarm.

3) Event Log

Procedure	Keypad	Display
1. From the Main Menu press the down arrow key to 5) Status / Logs, then press the Enter/Next button, press the down arrow to **3) Event Log**, press the **ENTER/NEXT** button to open the Event Log. Use the up and down arrows to scroll through the Events. 2. Press the **ESC/PREVIOUS** button three times to get back to the main screen. For Fault ID numbers and Error Codes refer to Appendix tables at the end of this guide.	 	 

Definition of Event 001 Display

Event : 001 The Event field shows the event number. The Event Log shows the most recent 125 events. Once the Event Log is full, the oldest event will be deleted.

06/14/2008 10:35:53 A The second line of the display indicates the date and time the event occurred.

STN : 001 00: 10:00 This field shows the detail of the event code.

This is only accurate for this particular event. If it were a program sequence event this would not say STN: it would show the program number or a sensor number if a sensor goes active, the third line shows the detail of the event code.

Run Time Elapsed The fourth line shows a code to identify the event.

For troubleshooting Fault ID numbers and Error Codes refer to Appendix tables at the end of this guide.

4) AC Power Status

Current AC Power Status

AC Power is the amperage used by the Controller at any given time, which changes based on the number of stations currently being used. Additionally, the Controller measures for different fault conditions.

Procedure	Keypad	Display
1. From the **Main Menu** press the down arrow key to option **5) Status / Logs**, then press the **ENTER/NEXT** button. 2. Press the down arrow key to **4) AC Power** then press the **ENTER/NEXT** button to view the AC power status. The display shows the total amperage use on the 24Vac circuit. Numbers will change as power requirements change. 3. Press the **ESC/PREVIOUS** button three times to get back to the main screen.	 ENTER / NEXT ESC / PREVIOUS	1) Program Usage 2) Alarm Log 3) Event Log →4) AC Power Power Usage 00.062 A

5) Sensor Status

Current Status of Active Sensors

View local sensors 1 and 2 and view current sensor activity status.

Note: even though the display shows sensors 3-6, these “remote” sensors are not valid on GAL.

Procedure	Keypad	Display
1. Press down arrow to option **5) Sensor Status** and press the **ENTER/NEXT** button again. 2. To check status of sensor use the left or right arrow buttons to select the sensor number 1-2 and press **ENTER/NEXT** button. 3. Press **ESC/PREVIOUS** one time to select another sensor for its status or then press the down arrow to move to menu option **6) Sensor Log**.	 ENTER / NEXT ESC / PREVIOUS	→5) Sensor Status:1 6) Sensor Log: 1 Local Sensors= 1-2 Remote Sensors= 3-6 Current Status: NONE

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Chapter 6 Controller Setup

Setup a Field Controller

Chapter 6 describes how to setup the field controller for your specific configuration.

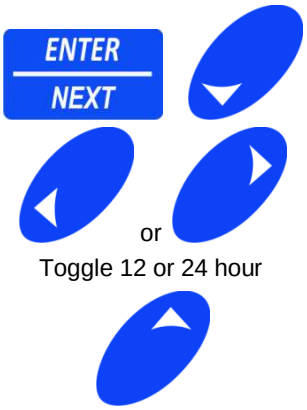
These 11 sub-menus perform controller setup:

- Set Date/Time – to set the field controller's date, time and current week
- Pump Setup – to configure pumps and master valves
- Sensor Setup – to configure sensors
- Advanced Setup – to configure communication ports
- Set Smart Switch – to set/change the Smart Switch runtime
- Setup Decoders – to configure decoder modulator boards
- Test Stations – to test station flow (if a flow meter is installed)
- Set Passwords – to set multilevel passwords
- Set Station Load – to set min and max station amperage loads (use defaults unless you have decoders)
- Set ID#'s – to set a unique field controller ID#
- Set Module Bus – to configure the valve modules

1) Set Date/Time

Setup Current Time and Date

First set the Mode for time to a 12-hour or 24-hour clock then continue through to set time, date, week preferences.

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button. 2. At menu option **1) Set Date / Time** press the **ENTER/NEXT** button. 3. Press down arrow to option **4) Mode**; use right or left arrow buttons to toggle between a 12-hour and a 24-hour time mode. 4. After you select the Mode, press the up arrow to menu option **1) Time** to set time, date and week preferences.		1) Time : 07 : 45 : 00 P 2) Date : 04/15/2008 3) Week (1-4) : 1 →**4) Mode : 12 hour**
5. At menu option **1) Time**, enter the **current time of day**; set in hours: minutes: seconds: format. Press keys: 060000. 6. Press down arrow to option **2) Date** enter the **current date** set mm/dd/yyyy format. Enter date, press keys: 04152008.	Enter Time of Day Press keys: 060000 Enter Date Press keys: 04152008	→**1) Time : 06 : 00 : 00** 2) Date : 01/01/1999 3) Week (1-4) : 1 4) Mode : 12 hour 1) Time : 06 : 00 : 00P →**2) Date : 04/15/2008** 3) Week (1-4) : 1 4) Mode : 12 hour

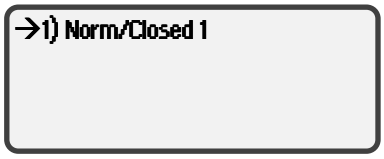
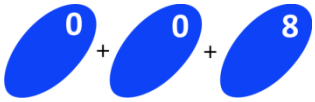
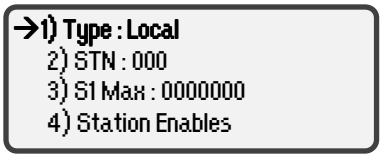
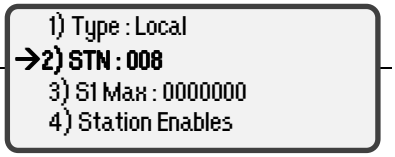
CAUTION! Make sure to verify the AM/PM status before leaving option 1) Time. If it is 7:45 PM in the afternoon (and this is the first time the controller is setup), and then settings are changed from a 12 to a24 hour mode, the controller will be set at 7:45 AM not PM. You would be required to set the time to 19:45:00.

3) Week option applies only to programs that are using the Weekday schedule option. 7. Press down arrow to **3) Week** option; use the keypad to enter the current week, based on the 4-week period used by the watering programs.	Enter 1 = week 1 of 4 This only applies to programs that are using the WEEK day schedule option.	1) Time : 07 : 45 : 00 P 2) Date : 04/15/2008 →**3) Week (1-4) : 1** 4) Mode : 12 hour

2) Pump Setup

Assign Pump Stations (Pump/MV), and Enable Stations

Program and assign one Pump Start/Master Valves per Field Controller.

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		
2. Press down arrow to option **2) Pump Setup**, and press the **ENTER/NEXT** button.		
3. At menu option **1) Norm/Closed 1** press the **ENTER/NEXT** button.		
4. At menu option **1) Type "Local"** is the only option. For "**Local**" press the down arrow key to option **2) STN**. 5. For "**Local**" press down arrow to option **2) STN**. 6. At option **2) STN** enter the 3-digit station number that the pump start or master valve is wired to on the valve module. 7. Press the down arrow key to option **3) S1 Max.**	Press keys:  	 

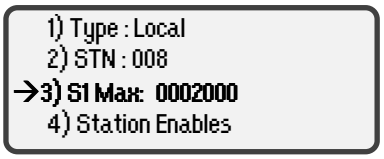
8. At menu option **3) S1 Max**:

   If you have a flow sensor installed for this controller and it is on Sensor 1, press the right arrow button.

   OR, If the flow sensor is on Sensor 2 change the 1 to a 2 and press the right arrow button.

   If you have a maximum amount of flow allowed per day, enter the gallons here. Example: If the max flow in a 24-hour period is 2,000 gallons enter 0002000.

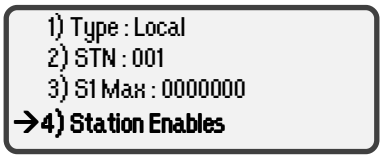
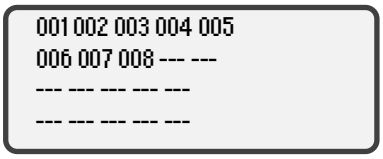
Enter 7-digit #
0002000
or
"0000000" to OFF



CAUTION!

A flow sensor must be attached to either sensor 1 or 2 on this controller to use this feature. If no flow sensor is attached or you do not have a maximum limit , leave this at 0000000.

4) Station Enables

Procedure	Keypad	Display
1. Press the down arrow to move cursor to **4) Station Enables**. 2. Press the **ENTER/NEXT** button.		
This display shows the number of stations on the Field Controller. The example above shows the display for an 8-station Field Controller. 3. Use the arrow buttons to navigate to each station. To assign a selected station, press the **ON/AM** Button. To "un-assign" a station, press the **OFF/PM** Button.		
4. When you have finished assigning all stations, press the **ENTER/NEXT** button to return to the 2**) Pump Setup** menu.		

To assign ALL stations, press the ON/AM button + 9 button simultaneously.
To "unassign" all stations, press the OFF/PM button + 9 buttons simultaneously.
Flashing numbers are DISABLED and steady ON numbers are ENABLED.

3) Sensor Setup

Setup Local Sensors 1-2

Sensor Types

This feature allows you to setup sensors that the field controller will track directly from this controller.

There are 12 sensor options described in this section:

NONE:	Choose this option for no sensor connection.
FLOW:	Manage over-flow and under-flow conditions at the Field Controller.
ET GAUGE:	Provides daily Evapotransperation data.
RAIN BKT:	Provides daily rainfall data.
RAIN SW:	NO/NC switch that changes the state of the switch when a preset amount of rain has fallen.
STOP:	NO/NC switch stops program when state is changed.
START:	NO/NC switch starts a program when state is changed.
PUMP/MV:	Pressure switch used to turn off a remote pump if the communication links fails.
OXYGEN:	Provides oxygen levels in the soil.
MOISTURE:	Provides soil moisture levels.
TEMPERATURE:	Provides temperature levels.
PRESSURE:	Provides pressure levels.

Any of the sensors can be assigned to either Sensor 1 or Sensor 2, which are wired directly into the field controller. The field controller can track up to 4 other sensors from any of the other field controllers in the network.

Flow Sensor

Procedure	Keypad	Display
1. From the **Main Menu** press down arrow to option **6) Controller Setup**, and press the **ENTER/NEXT** button.		5) Status Logs →**6) Controller Setup** 7) Remote Link
2. Press down arrow to option **3) Sensor Setup** and press the **ENTER/NEXT** button once.		1) Set Date/Time 2) Pump Setup →**3) Sensor Setup** 4) Advanced Setup
3. At menu option **1) Sensor 1** (change the 1 to a 2 if the flow sensor is wired to the sensor 2 position). Press down arrow to option **2) Type**, press right arrow until "**Flow**" appears as the **Type**. 4. Press the **ENTER/NEXT** button to setup Sensor.		→**1) Sensor 1** 2) Type : FLOW Press NEXT to setup Sensor
5. At menu option **1) Units**, press right arrow until "**Gallons**" (or "Liters") measurement appear as **Unit**.		→**1) Units : Gallons** 2) K : 0000.000 3) Offset : 000 4) Alarms : DIFF
6. Press down arrow to option **2) K** to enter the K Factor for the sensor based on the manufacturer's specifications. The "K" Factor table will specify the K Factor by model number, given the pipe size and material type. 7. Leave the **Offset** field set to **000**.		1)Units : Gallons → **2) K : 0000.000** 3) Offset : 000 4) Alarms : DIFF

You may need to convert the flow sensors K Factor to match our Pulses per Gallon. Some manufactures K Factors are in Pulses per Second.
To convert the formula would be:
(Manufacture K * 60) / Average gallons per minute = K Factor

Procedure	Keypad	Display
8. Press down arrow to **4) Alarms** use right arrow until **DIFF** is Alarm Type. (ABS and NONE are also available). 9. Press the **ENTER/NEXT** button.		

Description of the Alarm types:

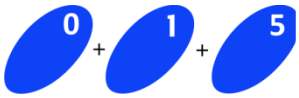
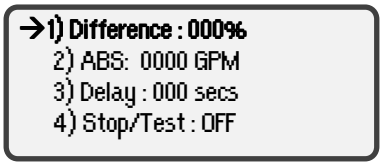
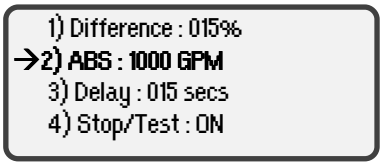
ABS Alarm at the Absolute flow designated.

This option generates overflow alarms only. Use this option if more than one Field Controller uses the information from one or more flow sensors.

DIFF Alarm is a percentage differential from the learned flow when the flow table was built.

This option generates overflow and underflow alarms. Use this option if only one Field Controller is attached to one flow sensor at one point of connection.

NONE is not active or OFF.

10. Enter the **Difference** percentage. For example, press keys 015 for a 15% Difference value. The Field Controller uses the Difference percentage to determine the under-flow and over-flow conditions. 11. Press down arrow to option **2) ABS** and enter the **ABS GPM** value. For example, press keys 1000 for a 1000 GPM (absolute) value. 12. The Field Controller uses the Absolute GPM setting to determine if the maximum flow of water has been exceeded.	Press keys:  Press keys: 1000	 

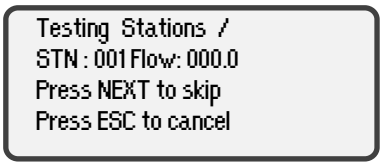
WARNING!

The ABS GPM Flow should NOT be faster than a velocity of 7 fps. If this Absolute is set too low, the system could send an Over-flow Alarm even when an over-flow condition did NOT exist.

If the Absolute were set too high, the Field Controller would never send the Over-flow Alarm.

Procedure	Keypad	Display
13. Press down arrow to option **3) Delay** to set a delay time, press right arrow to scroll over and press number keys “015” to set a 15 second delay. If you set the delay higher than 000 the system will delay sending an alarm and allow the flow to correct. If the flow is still in an alarm state when the delay times out, an alarm will be sent. The delay is used to allow time for empty pipes to fill up. In the case on drip irrigation it may take 2 to 3 minutes to fill the lines, which will cause invalid alarm messages. This value is in seconds and will delay the sampling of the flow. This delay is only for the first sample right after the station is turned on then the sampling takes place every 15 seconds after the first.	 Press keys 015	1) Difference : 015% 2) ABS : 0500 GPM →**3) Delay : 015 secs** 4) Stop/Test : ON
14. Press down arrow to option **4) Stop/Test** and press right arrow until the **Stop/Test** is **ON**. When the Stop/Test feature is **ON**, the Field Controller will evaluate the High or Low flow condition. When a Flow Alarm is triggered, the Field Controller will shut **DOWN** ALL active stations on the Field Controller. Then, one by one, the Field Controller will turn on those stations that had been active and check the flow of each one against the flow table in the Field Controller. When the Field Controller determines the faulty station, the Field Controller will shut **DOWN** that station and send an Alarm to the Field Controller Alarm Log. Then the Field Controller will re-activate all the stations that had been active when the High Flow or Low Flow condition was detected, excluding the problem station.		1) Difference : 015% 2) ABS : 0500 GPM 3) Delay : 015 secs →**4) Stop/Test: ON**
15. Press the **ENTER/NEXT** button, and return to the **4) Alarm: DIFF** display.		1) Units : Gallons 2) K : 0000.000 3) Offset : 000 →**4) Alarms : DIFF**
16. Press down arrow to option **5) Build Flow Table**, and press **ENTER/NEXT** button to build the flow table.		→**5) Build Flow Table** 6) View Flow Table 7) Save and Exit

The resulting display with time lapse slash "/" and dash "-", shows the testing stations are running and building a Flow Table.

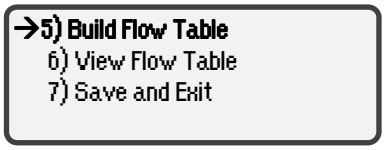


The Field Controller is now building a flow table for ALL stations on the Field Controller. The stations will be activated in numerical sequence and runs for 90 seconds each. This may take a few minutes.

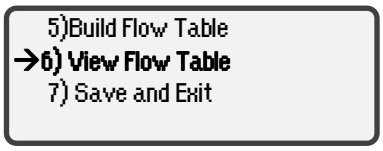
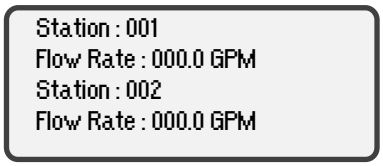
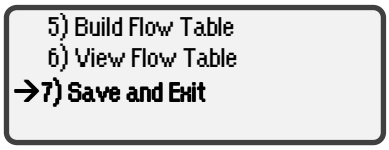
To skip a station, simply press the **ENTER/NEXT** button (when a station is skipped, the characteristic flow is set to 0).

To stop the Building of the Flow Table, press the **ESC/PREVIOUS** button.

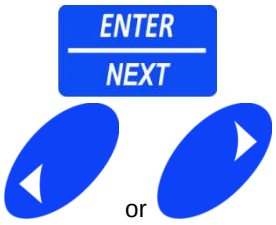
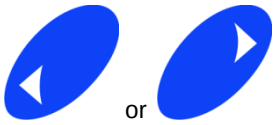
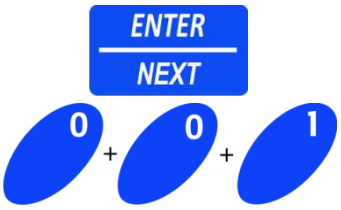
17. When the Building of the Flow Table is finished, the display reappears.



Viewing the Flow table

Procedure	Keypad	Display
1. To view the saved Flow Table, press down arrow to option **6) View Flow Table**, and press the **ENTER/NEXT** button. 2. The Flow Table displays all data saved during the build. 3. Press the **Up** or **DOWN** arrow buttons to scroll through all stations on the Field Controller to view data. 4. Press down Arrow to option **7) Save and Exit** to save the table data, and press the **ENTER/NEXT** button to exit.	 	 
5. Press down arrow to option **7) Save and Exit** to save the table and press the **ENTER/NEXT** button to exit.	 	

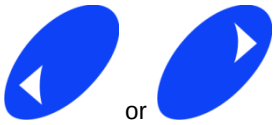
ET Gauge and Rain Bucket Sensors

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		5) Status Logs →**6) Controller Setup**
2. Press down arrow to option **3) Sensor Setup** option and press the **ENTER/NEXT** button once.		1) Set Date/Time 2) Pump Setup →**3) Sensor Setup** 4) Advanced Setup
3. In option **1) Sensor 1** select sensor 1 or 2. Press the **ENTER/NEXT** button. 4. Press down arrow to option **2) Type** and press the right or left arrow buttons until **ET GAUGE** appears as the **Type**.		1) Sensor : 1 →**2) Type: ET GAUGE** Press NEXT to setup Sensor
5. Or, press the right or left arrow button until **RAIN BKT** appears as the **Type**. 6. The same type of information is programmed for both **ET GAUGE** and **RAIN BKT** sensors.		1) Sensor : 1 →**2) Type: RAIN BKT** Press NEXT to setup Sensor
7. Press the **ENTER/NEXT** button. 8. Enter the **inch/pulse** value. For example, to enter 0.01 inch /pulse value, press keys 001. 9. The ET Gauge or Rain Bucket owners' manual should have this information.		→**1) 0.01 inch/pulse** 2) Global: OFF 3) LOG: 11 : 59 : 59 P 4) Save and Exit

Procedure	Keypad	Display
10. Press down arrow to option **2) Global: OFF.** The Global setting is set to OFF for GAL and cannot be changed.		1) 0.01 inch/pulse →**2) Global : OFF** 3) LOG : 11 : 59 : 59 P 4) Save and Exit
11. Press down arrow to option **3) LOG**.		1) 0.01 inch/pulse 2) Global : ON →**3) LOG : 11 : 59 : 59 P** 4) Save and Exit
Tthe **LOG** time is the time the ET or Rain Bucket data will be logged to memory. The log time should be about 15 seconds before any programs that are to be adjusted by ET to allow the network time to get the update and calculate the new run times.		
12. Enter the **LOG** time in hours: minutes: and seconds.	Press keys 023000 A 	1) 0.02 inch/pulse 2) Global : OFF 3) LOG : 02 : 30 : 00 A →**4) Save and Exit**
13. Press the **ENTER/NEXT** button and return to 1) Sensor 1 display.		→**1) Sensor: 1** 2) Type : RAIN BKT Press NEXT to setup Sensor.

RAIN SW or STOP Sensor

Setup Rain Switch or STOP Sensor

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		5) Status Logs →**6) Controller Setup** 7) Remote Link
2. Press down arrow to option **3) Sensor Setup** option and press the **ENTER/NEXT** button once.		1) Set Date/Time 2) Pump Setup →**3) Sensor Setup** 4) Advanced Setup
3. At menu option **1) Sensor**, enter number of Sensor and press down arrow to option **2) Type** and press the right or left arrow buttons until **RAIN SW** appears as the **Type**. 4. At menu option **1) Normally:** use the right arrow to toggle between **OPEN** and **CLOSED** select the state the switch is in when the sensor is dry.	 	1) Sensor : 1 →**2) Type: RAIN SW** Press NEXT to setup Sensor. →**1) Normally : OPEN** 2) Global : OFF 3) Station Enables 4) Save and Exit
5. At menu option **1) Normally** use the right arrow key to toggle between **OPEN** and **CLOSED**. This should be set at the state the pressure switch is in when the pipeline pressure is acceptable. 6. Press down arrow to option **2) Global: OFF.** The global setting is set to OFF for GAL and cannot be changed.	 	1) Normally : OPEN →**2) Global : OFF** 3) Station Enables 4) Save and Exit
7. To assign and enable **RAIN SWITCH** Stations press down arrow to option **3) Station Enables** and press **ENTER/NEXT** button.		1) Normally : OPEN 2) Global : OFF →**3) Station Enables** 4) Save and Exit

Procedure	Keypad	Display
This screen lists the stations on the Field Controller. Each screen will show a maximum of twenty stations. If the Field Controller has more than twenty stations, it will be necessary to use the down or up arrows to view the next twenty stations. To ASSIGN a station to the sensor, press the **ON/AM** button. To advance to another station, press arrow buttons to move the cursor to next station, and press the **ON/AM** button to enable. To REMOVE a station from a sensor, press the **OFF/PM** button. To advance to another station, press arrow buttons to move the cursor to the station correct, and then Press the OFF/PM button to remove. To turn ALL stations ON, press the **ON/AM** button + 9 buttons. To turn ALL stations OFF, press the **OFF/PM** button +9 button.		001 002 003 004 005 006 007 008 009 010 --- --- --- --- --- --- --- --- --- --- Steady ON numbers are ENABLED. Flashing numbers are DISABLED.
8. Press down arrow to option 4**) Save and Exit** and press the **ENTER/NEXT** button.		1) Normally OPEN 2) Global: OFF 3) Station Enables →**4) Save and Exit**

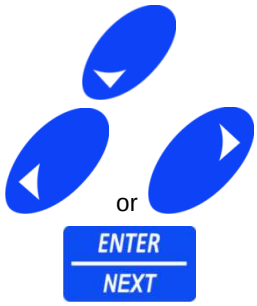
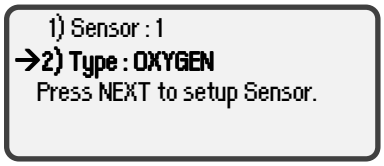
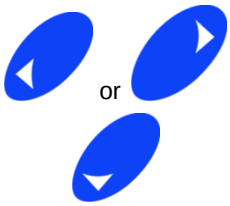
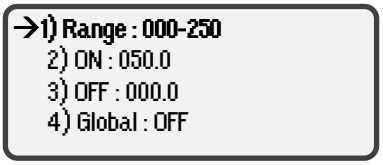
PUMP and Master Valve (PUMP/MV) and START Sensor

Pump/Master Valve and START Sensor Setup

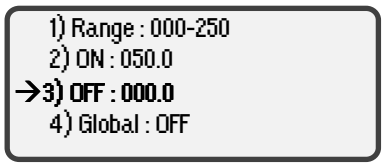
Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		5) Status Logs →**6) Controller Setup** 7) Remote Link
2. Press down arrow to option **3) Sensor Setup** and press the **ENTER/NEXT** button once.		1) Set Date/Time 2) Pump Setup →**3) Sensor Setup** 4) Advanced Setup
3. At option **1) Sensor 1** select sensor 1 or 2. Press the **ENTER/NEXT** button. 4. Press down arrow to option **2) Type** and press right arrow button until **PUMP/MV** appears as the **Type**.		1) Sensor : 1 →**2) Type : PUMP/MV** Press NEXT to setup Sensor.
5. At menu option **1) Normally** use the right arrow key to toggle between **OPEN** and **CLOSED**. This should be set at the state the pressure switch is in when the pipeline pressure is acceptable. 6. Press down arrow to option **2) Global: OFF.** The global setting is set to OFF for GAL and cannot be changed. 7. Press down arrow to option **4) Save and Exit**, press the **ENTER/NEXT** button to save and exit setup.		→**1) Normally : OPEN** 2) Global : OFF 3) Station Enables 4) Save and Exit

OXYGEN

Oxygen Sensor Setup

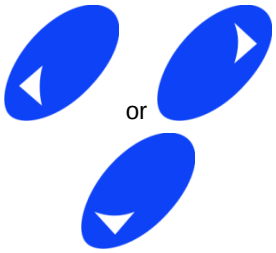
Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		
2. Press down arrow to option **3) Sensor Setup** and press the **ENTER/NEXT** button once.		
3. Press down arrow to option **2) Type** and press right or left arrow buttons until **OXYGEN** appears as the **Type**. 4. Press the **ENTER/NEXT** button		
5. At menu option **1) Range,** press right or left arrow buttons to change setting values from 000 to 250. Refer to the sensor manual for the proper range settings. 6. Press down arrow to option 2) ON and enter values 000.0. This setting is the percent oxygen in the soil when a program should start. Format is 000.0% (cannot be higher than the max range set in step 5.)		

7. Press down arrow to option **3) OFF** and enter values 000.0. This setting is the percentage oxygen in the soil when the program should stop. Format is 000.0% (cannot be higher than the max range set in step 5.)
8. Press down arrow to option **4) Global,** press the right or left arrow buttons until **ON** appears.
9. Press down arrow to option **3) Save and Exit,** press the **ENTER/NEXT** button to save and exit setup.



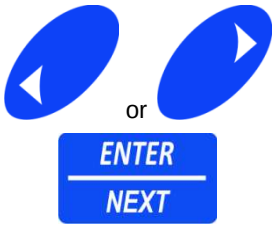
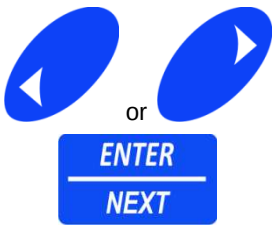
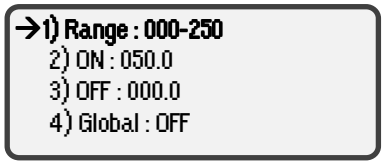
MOISTURE

Moisture Sensor Setup

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		5) Status Logs →**6) Controller Setup** 7) Remote Link
2. Press down arrow to option **3) Sensor Setup** and press the **ENTER/NEXT** button once.		1) Set Date/Time 2) Pump Setup →**3) Sensor Setup** 4) Advanced Setup
3. Press down arrow to option **2) Type** and press right or left arrow buttons until **MOISTURE** appears as the **Type**. 4. Press the **ENTER/NEXT** button		1) Sensor : 1 →**2) Type : MOISTURE** Press NEXT to setup Sensor.
5. At menu option **1) Range,** press right or left arrow buttons to change setting values from 000 to 250. Refer to the sensor manual for the proper range settings. 6. Press down arrow to option **2) ON** and enter values 000.0. This setting is the percent moisture in the soil when a program should start. Format is 000.0% (cannot be higher than the max range set in step 5.)		→**1) Range : 000-250** 2) ON : 050.0 3) OFF : 000.0 4) Global : OFF
7. Press down arrow to option **3) OFF** and enter values 000.0. This setting is the percentage moisture in the soil when the program should stop. Format is 000.0% (cannot be higher than the max range set in step 5.) 8. Press down arrow to option **2) Global: OFF.** The global setting is set to OFF for GAL and cannot be changed. 9. Press the **ENTER/NEXT** button.		1) Range : 000-250 2) ON : 050.0 →**3) OFF : 000.0** 4) Global : ON

TEMPERATURE

Temperature Sensor Setup

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		
2. Press down arrow to option **3) Sensor Setup** and press the **ENTER/NEXT** button once.		
3. Press down arrow to option **2) Type** and press right or left arrow buttons until **TEMPERATURE** appears as the **Type**. 4. Press the **ENTER/NEXT** button	 	
5. At menu option **1) Range,** press right or left arrow buttons to change setting values from 000 to 250. Refer to sensor manual for these settings. 6. Press down arrow to option **2) ON** and enter values 000.0. This setting is the temperature in "F" when a program should start. Format is 000.0 (cannot be higher than the max range set in step 5.) 7. Press down arrow to option 3) OFF and enter values 000.0. This setting is the temperature in "F" when a program should stop. Format is 000.0 (cannot be higher than the max range set in step 5.) 8. Press down arrow to option **2) Global: OFF.** The global setting is set to OFF for GAL and cannot be changed. 9. Press the **ENTER/NEXT** button.	 	

PRESSURE

Setup Pressure Sensor

Procedure	Keypad	Display
1. Press down arrow to menu option **6) Controller Setup**, and press the **ENTER/NEXT** button.		5) Status Logs →**6) Controller Setup** 7) Remote Link
2. Press down arrow to option **3) Sensor Setup** and press the **ENTER/NEXT** button once.		1) Set Date/Time 2) Pump Setup →**3) Sensor Setup** 4) Advanced Setup
3. Press down arrow to option **2) Type** and press right or left arrow buttons until **PRESSURE** appears as the **Type**. 4. Press the **ENTER/NEXT** button		1) Sensor: 1 →**2) Type : PRESSURE** Press NEXT to setup Sensor.
5. At menu option **1) Range,** press right or left arrow buttons to change setting values from 000 to 250. Refer to the Sensor manual for these settings. 6. Press down arrow to option **2) ON** and enter values 000.0. This setting is the pressure in "psi" when a program should start. Format is 000.0 (cannot be higher than the max range set in step 5.) 7. Press down arrow to option **3) OFF** and enter values 000.0. This setting is the pressure in "psi" when a program should stop. Format is 000.0 (cannot be higher than the max range set in step 5.) 8. Press down arrow to option **2) Global: OFF.** The global setting is set to OFF for GAL and cannot be changed. 9. Press the **ENTER/NEXT** button.		→**1) Range :000-250** 2) ON: 050.0 3) OFF: 000.0 4) Global: OFF

4) Advanced Setup

Setup the Field Controller Bus Port and Passwords

The 4) Advanced Setup menu allows you to configure the communication ports and assign a password for this setup area.

The Bus Port and Repeat settings are used to set the communication path between this field controller and the network. This is important when the Field Controllers are going to be used in a "Central System or Network System" environment.

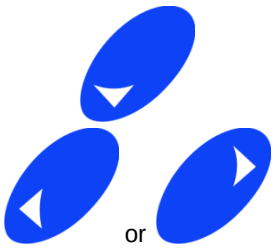
1) Bus Port

Procedure	Keypad	Display
1. Press the down arrow button to menu option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **4) Advanced Setup**. 3. Press the **ENTER/NEXT** button to option **1) Bus Port**, press right or left arrows until the correct primary communication port appears. 4. Press the down arrow once to move to option **2) Repeat**.		

CAUTION!

Bus Port settings are set at the same time of site commissioning. Changing these settings can disable the entire network. Please contact your local distributor for details on setting Bus Port for your specific site requirements.

2) Repeat

Procedure	Keypad	Display
1. Set the Repeat Port, press the **DOWN** arrow once. 2. Pressing either the left or the right arrow buttons will scroll through the Repeat Port setting options.		1) Bus Port : P1 →2) **Repeat : P1-P2** 3) Password : 000000
3. When the correct Repeat Port setting is visible, press the down arrow to move to menu option **3) Password.**		1) Bus Port : P1 2) Repeat : P1-P2 →3) **Password : 000000**

The repeat setting is used to repeat communication messages between bus ports. This setting has NOTHING to do with a Radio repeat, which is programmed independantely from this function.

CAUTION!

Repeat Port settings are set at the same time of site commissioning. Changing these settings can disable the entire network. Please contact your local distributor for details on setting Repeat Port for your specific site requirements.

3) Advanced Setup Password

Procedure	Keypad	Display
1. Set an optional Advanced Setup password. See Caution note. 2. Press **ENTER/NEXT** button to save and exit.		1) Bus Port : P1 2) Repeat : P1-P2 →3) **Password : 000000**

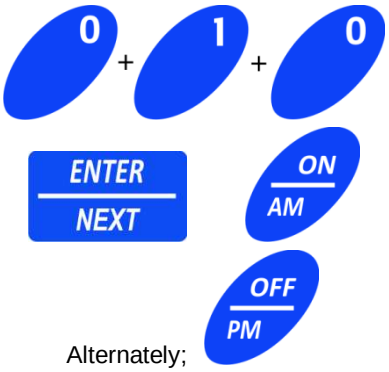
CAUTION!

If you enter a password you will need to enter it each time you want to change the Advanced settings.

5) Set Smart Switch

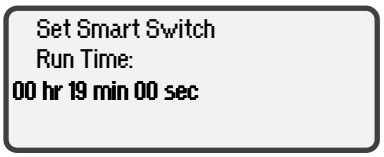
Using the Smart Switch to Activate Stations

The Smart Switch is a short cut to turn stations on manually for a preset time directly from the main screen without having to go to the Manual Operations menu.

Procedure	Keypad
1. On the **Startup** screen, enter the three-digit station number for the station you want to operate. 2. Press the **ENTER/NEXT** button. 3. Press the **ON/AM** button. The station that was entered will manually operate the amount of time specified in the Set Smart Switch feature. 4. To turn the station off before the time expires repeat the steps above except press the **OFF/PM** button instead of the **ON/AM** button.	Press keys:  Alternately;

Set Default Time for the Smart Switch

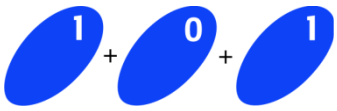
The default time for the Smart Switch is set at ten minutes.

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **5) Set Smart Switch**.		
3. Press the **ENTER/NEXT** button and enter the amount of time you want the station running in hours: minutes: and seconds format.		
4. Press the **ENTER/NEXT** button to return to the menu.		

6) Setup Decoders

Setup Stations

In order to set up decoders, at least one decoder modulator board must be connected. For more information on Decoders, refer to the *Decoders Manual*.

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **6) Setup Decoders**.		5) Set Smart Switch →**6) Setup Decoders** 7) Test Stations 8) Set Passwords
3. Press the **ENTER/NEXT** button and press down arrow button to option **1) Setup Stations** and press **ENTER/NEXT** button.		→**1) Setup Stations** 2) Setup Modulator
4. At option **1) Station** enter a three digit station number that you want to assign to a valve.	Press keys: 	→**1) Station: 101** 2) Decoder : --- 3) Modulator : --- Range = 100-999

Station numbers can be a value between 100 and 999. **DO NOT** assign the same Station number to multiple Decoder addresses.

5. After you enter the Station number, press the down arrow once.		1) Station : 101 →**2) Decoder : ---** 3) Modulator : --- Range = 100-999

Procedure	Keypad	Display
6. At menu option **2) Decoder**, enter the three-digit decoder address as determined by the address programmed into the decoder. 7. The number can be a value between 001 and 125. 8. This number is determined by the address programmed into the decoder that is wired to the valve associated with the station number,	Press keys 	1) Station : 101 →2) Decoder : 050 3) Modulator : --- Range = 100-999

A modulator can have the same Decoder addresses as other modulators, but **DO NOT** use the same Decoder Address on a single Modulator.

9. After you enter the Decoder address, press the **DOWN** arrow once to option **3) Modulator** and enter the one-digit modulator address that corresponds to the physical location of the modulator within the Field Controller.		1) Station : 101 2) Decoder : 050 →3) Modulator --- Range = 100-999

- For Pedestals, the location can be a value between 1 and 6.
- For wall mount enclosures, the location can be a value between 1 and 3.
- If the Decoder modulator is connected directly to the CPU/Power supply board with a ribbon, the location is 1.
- If this Decoder modulator is connected to another Decoder modulator OR Valve module and didn't connect directly to the CPU/Power Supply board, the designation is 2 because it is physically the second module inline.

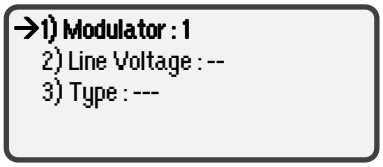
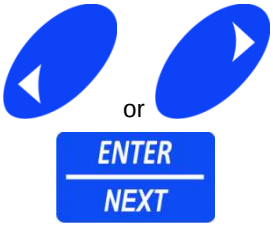
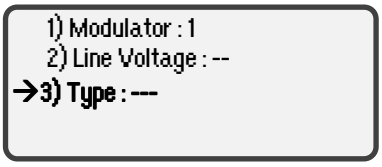
After you enter the Modulator address, press the **ENTER/NEXT** button. The cursor returns to the Station field menu.

Repeat the steps above to program each Modulator and Decoder address with a station number.

When finished, press the **ESC/PREVIOUS** button to exit.

Setup Modulator

Setup Modulator Boards

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **6) Setup Decoders**.		
3. Press the **ENTER/NEXT** button and press down arrow button to option **2) Setup Modulators** and press **ENTER/NEXT** button.		
4. At menu option **1) Modulator**, enter number for the physical location of the modulator within the Field Controller.	Press key 1 	
5. Press down arrow to option **2) Line Voltage**, and press right or left arrow buttons until "**LV**" for the line voltage. 6. Press the **ENTER/NEXT** button.		
7. Press down arrow to option **3) Type,** and press right or left arrow buttons until "**SCS**" or "Three Wire" or Two Wire" for the Type. 8. Press the **ESC/PREVIOUS** button to exit this procedure.		

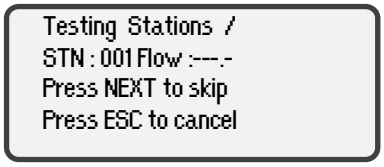
- For Pedestals, the location can be a value between 1 and 6.
- For wall mount enclosures, the location can be a value between 1 and 3.
- If the Decoder modulator is connected directly to the CPU/Power supply board with a ribbon, the location is 1.
- If this Decoder modulator is connected to another Decoder modulator OR Valve module and didn't connect directly to the CPU/Power Supply board, the designation is 2 because it is physically the second module inline.

WARNING!

DO NOT mix the type of Decoders on any one modulator.
However, each modulator within a Field Controller can be assigned different types.

7) Test Stations

The station flow is not active in this procedure

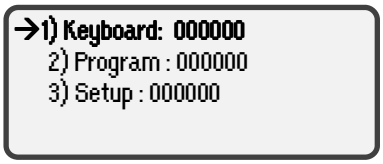
Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **7) Test Station**.		
3. Press the **ENTER/NEXT** button. The controller will begin testing each station, approximately 60 second per station.		
4. Press the **ENTER/NEXT** button to skip forward to the next station at any time, or press **ESC** to escape from this option at any time.	 or 	

8) Set Passwords

Set Passwords used for Security

There are four different passwords in the Field Controller. These are set at 000000 at the factory; ALL zeros will disable the password. Any non-zero number in the Set Password window will enable the password for that particular area.

TAKE YOUR TIME AND CAREFULLY ENTER THE NUMBERS.

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **8) Set Passwords**.		
3. Press the **ENTER/NEXT** button.		
4. When finished entering passwords, press the **ENTER/NEXT** button to save settings and exit.		

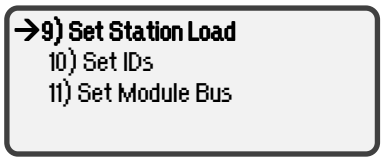
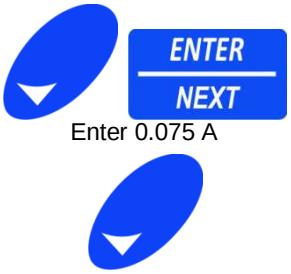
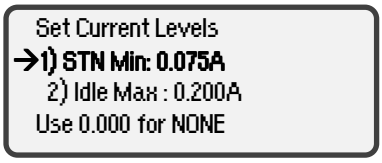
9) Set Station Load

The Station Load is the amount of current difference the Field Controller uses to determine if there is a Station ON Fault or a Station OFF Fault. The default setting from the factory is 0.075 A. This setting can be changed to accommodate relays and other electrical items attached to the valve modules that have amperage drawing less than 0.075amp.

WARNING!

A setting of 0.0000 Amps would allow the Field Controller to operate without the Station ON Fault/Station OFF Fault detection. However, this is not a recommended option since it disables some of the safety features in the controller and can cause the controller to be damaged.

1) Station Minimum (STN Min)

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. Press the **ENTER/NEXT** button.		
2. Press the down arrow button to option **9) Set Station Load**. Press the **ENTER/NEXT** button. 3. Use the numbers to enter the minimum Station current in amps. 4. Press the **DOWN** arrow button.		
5. At menu option **2) Idle Max,** enter the **Idle Max** setting of "0.200". Press the **ENTER/NEXT** button. Refer to idle max below for detailed information on current values.		

2) Idle Maximum (Idle Max)

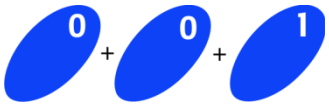
The current "0.200 A" is the **maximum** allowable idle value with **no active stations**, if this value is exceeded, it will cause a station to be frozen in an "**ON**" state, forcing an inactivity alarm message to be sent to the Alarm Log. The controller will perform an **all stations off** command and search for corrective actions to resolve the excess current consumption condition.

The system attempts to shutdown the running stations or fix what is causing the excess current consumption. If after three attempts, there is still an excess current condition, the valve common will be disabled and a **VCOM** error is sent to the Alarm Log; and the message **SYSTEM FAULT** displays on the main screen.

The controller at this point is inoperable, and the power needs to be recycled for the controller to operate, if the fault has not been corrected the same system fault will occur again.

10) Set ID#s

Setup Field Controller IDs

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **10) Set IDs**.		
3. Press the **ENTER/NEXT** button. 4. Enter a unique three-digit number to identify a Field Controller. The ID# may be between 001 and 989. See warning below for important Information about this function. If the Field Controller is in a "Central System" environment, DO NOT duplicate Field Controller ID#'s. If the Field Controller is going to be a "Stand Alone" environment, ID # is not required. 5. After entering the last digit, the cursor moves to the **Send Alarm** option.	 Press keys: 	

If Field Controllers are used in a "Central System" environment, the **Send Alarm** option allows you to send the alarms of the selected Field Controller to a different Field Controller. Multiple Field Controllers can send alarms to the same location.

Enter the three-digit number of the Field Controller to which to want to send the alarms for the selected Field Controller. The number may be between 001 and 989.

If the Field Controller is used in a "stand alone" environment or you do not want to send the alarms to a different Field Controller, set the **Send Alarms** option to the same value as the ID#.

WARNING!

For sending alarms and events, the values 001-989 must be set to an existing controller or to itself when in a network or it will cause problems with network communications.

It is recommended that the values be set to the same ID as the controller for initial setup.

989 is usually the designation for the Central Base Interface. This address is not unique for that Field Controller. Technicians have used this number for consistency in the field. Refer to warning note on previous page for more information about entering addresses.

6. After entering the last digit, the cursor moves to the **Send Event** option.

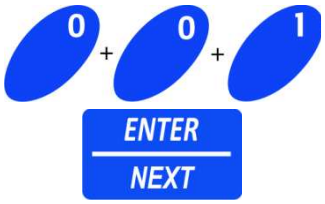
If Field Controllers are used in a "Central System" environment, the **Send Events** option allows you to send the events of the selected Field Controller to a central computer. Multiple Field Controllers can send events to the same computer.

7. Enter the three-digit address. The number may be between 001 and 989.

   If a Central Base is not used, set the **Send Events** option to the same value as the ID#.

8. To exit this screen, press the **ENTER/NEXT** button on the keyboard.

Press keys:



We recommend leaving the event log on the local controller so that you can get the full 125 events if you send this log to another controller on the network you will reduce the number of events per controller at the receiving controller.

11) Set Module Bus

Configure Available Valve Modules

The Field Controller does not automatically accept the valve module configuration, you must first accept the configuration to have the field controller show the correct station count in the main screen.

Procedure	Keypad	Display
1. Press the down arrow button to option **6) Controller Setup**. 2. Press the **ENTER/NEXT** button, and then press the down arrow button to option **11) Set Module Bus**.		9) Set Station Load 10) Set ID#s →**11) Set Module Bus**
3. Press the **ENTER/NEXT** button. The S) line will show you what the controller had as far as valve modules the last time this option was run. The C) line shows what valve modules are currently being recognized. 4. Press the **ENTER/NEXT** button to save the current Module Bus and exit.		S)aved & C)urrent S) 08-00-00-00-00-00 C) 08-00-00-00-00-00 NEXT to save Current

You will see 08, 16 and/or 99 depending on if you have an 8 or a 16 zone valve module and a 99 if you have a decoder module.

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Appendix

Field Controller Features; Alarm Code and Event Code Definitions Table

This Appendix consists of Field Controller features, control panel indicators, startup screen, and how to setup time/date/language preferences. Also, refer to Figure 1 “Field Controller Menu Tree” as a reference to navigate program menus.

Tables defining Alarm and Event codes are at the end of this chapter to assist in troubleshooting display messages and codes that may appear during normal operation.

Field Controller Features

The Field Controller offers the most versatile and flexible irrigation programming and control on the market today. It has a myriad of features that offer the kind of high performance, ease of use and cost-effectiveness you need for unprecedented control and unparalleled value.

Field Controller Features and Capabilities

- Multilingual interface.
- Enable and disable commands with delay timer.
- User-selectable, 12-hour or 24-hour clock format.
- Semi-automatic, manual and delayed manual station control.
- Global water budgeting from 0-999%.
- User-selectable Water Budget or ET-adjusted control for each irrigation schedule.
- Programmable master valve, pump start, and local and remote pump capabilities.
- Open, Overload and short-circuit protection.
- Accommodates up to two sensors and shares an additional 4 sensors across a network.
- Flow monitoring and reporting of over-flow or under-flow conditions.
- Generates alarms, flow and status reports which can be transmitted to a user defined-location and/or stored in the local alarm log.
-

(Field Controller Features and Capabilities continued)

- Controls up to 750 decoder stations or 96 traditional stations.
- Manages 32 fully independent, customized schedules/programs:
- Each schedule has eight start times and can accommodate up to 48 events. You can run the same station more than one time within the same program.
- Each program has a completely independent watering calendar.
- Virtually unlimited flexibility for cycle and soak programming.
- User selectable sequential-run or parallel-run mode.
- Multiple repeats and pauses.
- Control of stations in any sequence.
-

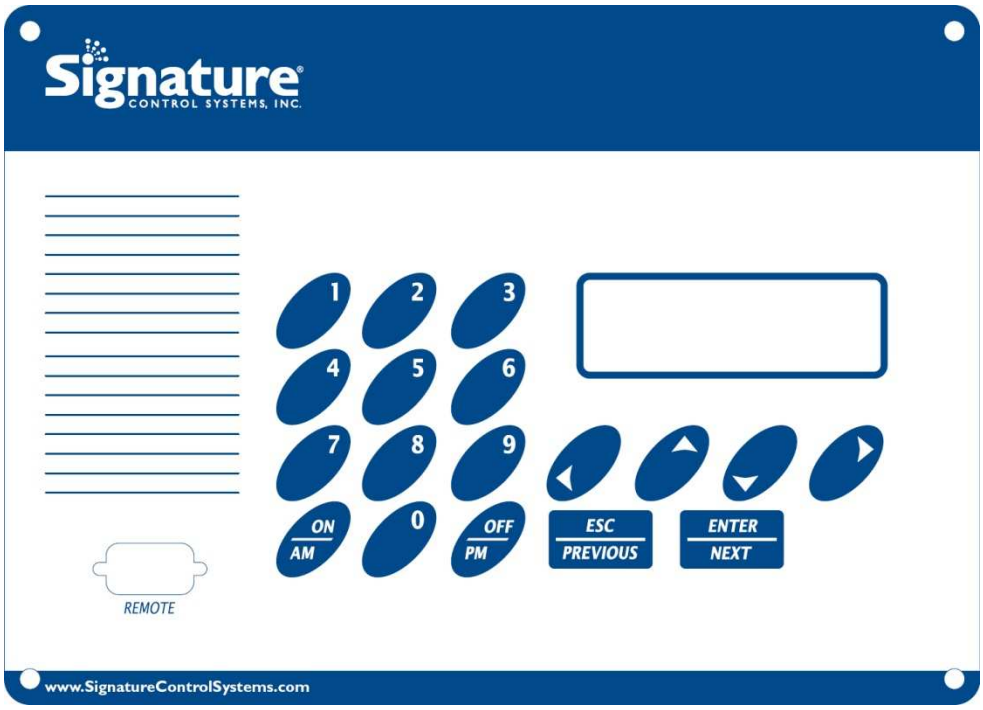
Security Levels

The Field Controller is divided into four distinct security levels.

Keyboard:	All Field Controller functions.
Programming:	Watering Schedules.
Field Controller Setup:	Field Controller Configuration, pump Setup, Sensor Setup, Decoder Setup and Smart Switch Setup.
Advanced Setup:	Field Controller Address, Alarm and Event Log Addresses, Field Controller Communications and Set Passwords.

Field Controller Control Panel

Menu Displays and Keypad Descriptions



ON/AM Activates watering days and/or pump stations. Sets the clock to AM when using the 12-hour format, and turns stations on with the smart switch.

OFF/PM Deactivates watering days and/or pump stations. Sets the clock to PM when using the 12-hour format, and turns stations off with the smart switch.

ESC/PREVIOUS Exits the current menu or data entry position without saving entries.

ENTER/NEXT From the Startup screen, this button activates the Main menu for programming the controller. From the Main menu, this button saves the current information in the highlighted menu option.

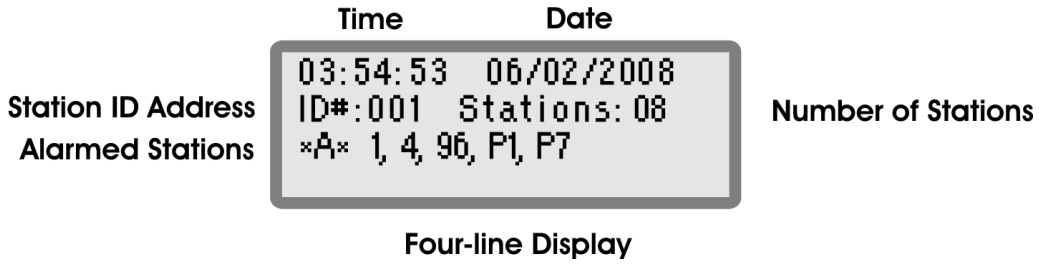
UP, DOWN, RIGHT and LEFT ARROWS

Moves the cursor in the direction indicated. The right and left arrows are also used to scroll through predefined options when setting up sensors, watering schedules or changing languages.

0 thru 9 Data entry keypad buttons.

DISPLAY Displays status information from the Startup screen. Displays Field Controller options during programming.

Startup Screen



(The display figures are in gray tone for clarity.)

The **Startup Screen** shows the following information:

03:54:53 Current Time / 12/25/2008 Current Date.

ID#:001 Displays the unique 3-digit number that identifies the Field Controller on the Field Controller network (i.e. address). If the unit is also used as a repeater, **REP** appears in the ID# field.

A This icon is only an indication that an alarm occurred in the controller.

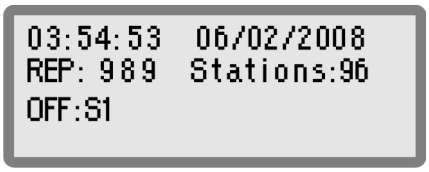
Stations: 08 Displays the total number of stations configured for the Field Controller. If the unit also controls decoders, then the number of stations and decoders appears. For example, STNS: 08 + 274 would indicate that 8 stations and 274 decoders are configured for the Field Controller.

System Status / Current Activity

Displays the current status and activity of the Field Controller as one of the following:

OFF appears if the Field Controller is off or in the rain shut down mode meaning no automatic programs will run. When the word OFF is not there the controller is ON and will run an automatic program if it is triggered by one of its cycle starts.

REP appears in the ID# field if the unit is used as a repeater.

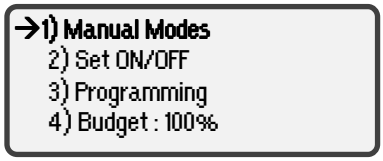


Message Dialogs

Important message dialogs will appear during normal programming functions. This line means that a message came in from controller 990 on port 2; there is no need to acknowledge anything it is only a message that tells you the controller got a message from another controller or the software. To get rid of the message just hit ESC.

Setup Display Preferences

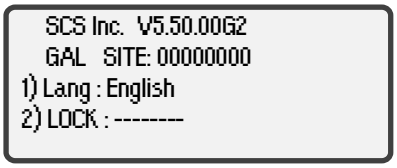
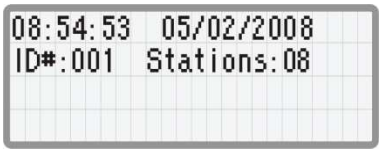
Main Screen



The BOLD text represents the procedure action item.

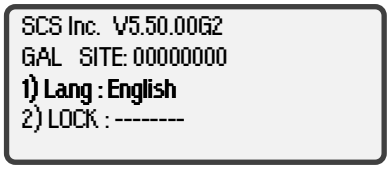
Viewing the Firmware Version Number

To view the firmware version number for your controller

Procedure	Keypad	Display
1. Press any arrow button at the **Startup** screen. The version number appears in the upper right corner of the screen. 2. Press the **ENTER/NEXT** button to return to the **Startup screen**.	 	 

Select the Display Language

Your controller is equipped with two languages: English and Spanish.

Procedure	Keypad	Display
1. Press any arrow button at the Startup screen. 2. Press the right arrow button to toggle the Language field between English and Espanol. 3. After making a language selection, press the **ENTER/NEXT** button. The Main screen (and all menus) will appear in the selected language.	 	

Troubleshooting the Field Controller

Condition	Action Items
No Display	Check the power to the controller Check the transformer output • Replace the transformer if necessary Check the fuses • Replace any bad fuse with the correct fuse Check the connection on the faceplate cable • Replace the faceplate if you still don't have a display • Replace the PSU/CPU
Incorrect station count	WHAT DOES THE ALARM LOG SAY? • If you have a module failure use the long ribbon cable and test just that module • If you have multiple failures test each module individually • Recycle power [leave the controller off for at least 30 seconds] Check the ribbon wires for corrosion • Always turn off the power before removing or changing any wire or components If this doesn't work with all of the modules connected, try turning on the first station on each module board until one fails to turn on and this will most likely be the bad board.
No station count	WHAT DOES THE ALARM LOG SAY? • Recycle power [leaving the controller off for at least 30 seconds] • Read the alarm log again • Verify the transformer output Check the 24 volt fuse • Replace the fuse if necessary using the correct fuse • Remove the first ribbon cable and use the test cable to test the valve module voltage • This should be no more than 5.1 volts • If this this too high replace the PSU • If this doesn't work use the long ribbon cable and test each module individually • Be sure to turn off the power before switching the ribbon cable

Condition	Action Items
Station doesn't come on	WHAT DOES THE ALARM LOG SAY? Check the main screen to see it there is a sensor that is active that can be stopping the station from coming on Check the alarm log for any causes: • Station On Fault o Broken wire o Bad solenoid o Bad splice o Station load is set too high • Current overload o Bad solenoid o Bad splice o Too many solenoids being turned on at one time • Short circuit o Bad solenoid o Field wire short • Max stations ON o Too many stations being turned on at one time
The program doesn't run	WHAT DOES THE ALARM LOG SAY? • Make sure the controller is turned on for watering • Make sure the controller is not LOCKED! Check the main screen to see it there is a sensor that is active that can be stopping the station from coming on Check the alarm log for any causes • Station On Fault o Broken wire o Bad solenoid o Bad splice o Station load is set too high • Current overload o Bad solenoid o Bad splice o Too many solenoids being turned on at one time • Short circuit o Bad solenoid o Field wire short • Max stations ON o Too many stations being turned on at one time • Check the program usage screen to see it is a valid program with a valid schedule • Check to see if the program was supposed to run today

Condition	Action Items
The controller doesn't communicate	WHAT DOES THE ALARM LOG SAY? See if there is a checksum error in the log • If so see if there is an excessive number of these errors in the log • If so this will require some deep troubleshooting to see why communications are failing • Check the bus port settings • Check the repeater port settings. Hardwire Communications Check to see if you have a loose com wire • Makes sure A is on A and B is on B Check the wire for continuity • Try a remote link to another controller and see if you get the port message • If you do try the same thing from that controller back to the first o This will tell you if a controller is transmitting or not. o On G1 hardware replace the CPU o On G2 switch the wires to the other port if it is not used if it is replace the CPU Radio Network • Check the cables • Check the jumper configuration • Check the bus port settings • Check the repeater port settings On Spread Spectrum make sure the slave radio have a red and a green light This will tell you if the slave sees the master on the network Cell phone modem Make sure you have the correct version of firmware [cell support is only available in the plus versions and future Galaxy] Make sure the cell modem has service Make sure it picks up when called.

Field Controller Quick Reference Menu Tree

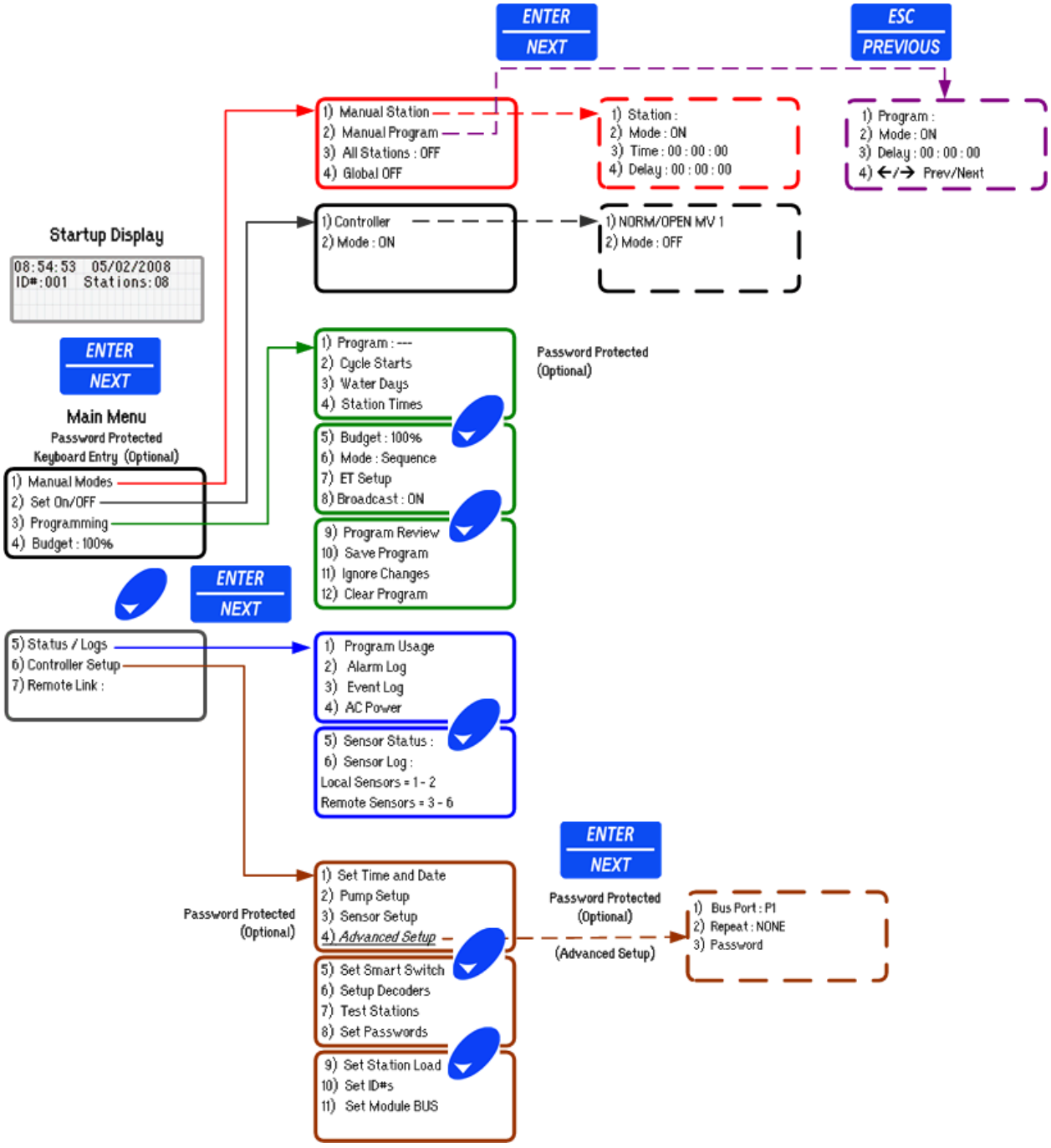


Figure 1 Galaxy Field Controller Menu Tree

Alarm Code Definitions

Alarm Log Text	Definition	Fault Designator
DIFF Overflow	2 consecutive flow samples @ 15-second intervals determined a DIFF Underflow.	Faulty Station OR 000
DIFF Underflow	2 consecutive flow samples @ 15-second intervals determined a DIFF Overflow.	Faulty Station OR 000
ABS Overflow	2 consecutive flow samples @ 15-second intervals determined an ABS Overflow.	Faulty Station OR 000
Current Overload	Field Controller amperage draws 2.5 amps for the duration of 300 ms. ***(G1 Hardware).*** Field Controller amperage draws 3.15 amps for the duration of 300 ms. ***(G2 Hardware).***	Last Station Turned ON OR 000.
SHORT Circuit	Field Controller amperage draw of >6 amps for the duration of 2.5 ms.	Last Station Turned ON OR 000.
Module Failed	No response from the module	Failed Module Address
Stacked Overflow	2^{nD} command to start the same program simultaneously	Program Number
Max. Stations Active	9 Stations + Pump station exceeds the maximum. ***(G1 Hardware).*** 14 Stations + Pump station exceeds the maximum. ***(G2 Hardware).***	Station Number
SW Sensor Active	Switch Sensor ~ Normally OPEN switch has CLOSED OR Switch Sensor ~ Normally CLOSED switch has OPENNED.	0
SW Sensor Normal	Switch Sensor ~ Normally OPEN switch has returned to the OPEN position OR, Switch Sensor ~ Normally CLOSED switch has returned to the Closed position.	0
ET Sensor = 0	Local ET gauge sensor accumulated 0 ET over the 24-hour measurement period.	0
Remote ET gauge did not report with 24 hr period	Remote ET gauge OR Remote Rain Bucket did NOT report measurement data in the 24-hour measurement period.	0

Alarm Log Text	Definition	Fault Designator
STN ON Fault	Field Controller checked current draw prior to activating station, checked current draw after activating station. The current draw did NOT exceed the expected value in the Station Load Menu.	Station Number
STN OFF Fault	Field Controller checked current draw prior to de-activating station, checked current draw after de-activating station. The current drop did NOT exceed the expected value in the Station Load Menu.	Station Number
Inactivity Fault	An inactivity fault is when the amperage of the controller exceeds the value set in the Idle Max setting; typically, when a station sticks on when nothing is supposed to be running.	Station
VCOM Disabled	VCOM means that the valve common has been disabled due to 3 short circuits in a 24 hour period or if the controller could not correct the Inactivity fault condition. In order for the controller to operate again after getting this error you will need to recycle the controller's power.	Station

Event Code Definitions

EVENT Log Text	Definition
Keypad Manual OFF	Station was shut OFF by using the keypad on the Field Controller.
Keypad Manual ON	Station was turned ON by using the keypad on the Field Controller.
Keypad Manual Delay	Station Delay prior the station activation, using the keypad on the Field Controller.
Remote Manual OFF	Station was shut OFF by using the keypad on a Remote Linked Field Controller.
Remote Manual ON	Station was turned ON by using the keypad on a Remote Linked Field Controller.
Remote Manual Delay	Station Delay prior the station activation, using the keypad on Remote Linked Field Controller.
DTMF Manual OFF	Station was shut OFF by using a DTMF Hand Held Radio.
DTMF Manual ON	Station was turned ON by using a DTMF Hand Held Radio.
DTMF Manual Delay	Station Delay prior the station activation, using a DTMF Hand Held Radio.
Run Time Elapsed	The station activated for the programmed length of time.
Start after Delay	Station activation after a programmed delay
Station ON Fault	Field Controller Checked current draw prior to activating station, checked current draw after activating station. The current draw did NOT exceed the expected valve in the Station Load Menu.
Station OFF Fault	Field Controller checked current draw prior to de-activating station, checked current draw after de-activating station. The current drop did NOT exceed the expected valve in the Station Load Menu.
Sensor Active: OFF	The station was shut OFF due to sensor switch activation.
Flow Sensor Test OFF	The station was shut OFF during either a Build Flow operation OR a Stop/Test operation.
Flow Sensor Test ON	The station was activated during either a Build Flow operation OR a Stop/Test operation.
Pump Shut OFF	The pump retired because the stations active were NOT assigned to the pump.

EVENT Log Text	Definition
Pump Start	The pump started because the station activated was assign to the pump.
Keypad ALL Stations OFF	All stations were shut OFF by using the keypad to initiate the ALL Stations OFF **OR** GLOBAL OFF command on the Field Controller.
Remote ALL Stations OFF	All stations were shut OFF by using the keypad to initiate the ALL Stations OFF **OR** GLOBAL OFF command on the Field Controller through a remote link.
DTMF ALL Stations OFF	All stations were shut OFF by using a Hand Held DTMF radio to initiate the ALL Stations OFF **OR** GLOBAL OFF command on the Field Controller.
System ALL Stations OFF	All stations were shut OFF by the Field Controller for one of the following reasons: * Field Controller Timer expired. * Build Flow Table was initiated. * SHORT / OVER current detected. * Stop/Test was initiated. * Modification of existing PUMP Setup.
Keypad Semi-Auto XXX	A Semi-Auto program was started using the Field Controller keypad.
Remote Semi-Auto XXX	A Semi-Auto program was started using a remote linked Field Controllers' keypad.
DTMF Semi-Auto XXX	A Semi-Auto program was started using a Hand Held DTMF Radio.
Program Sequence XXX	An Automatic program started. XXX will designate which program number.
Delay Semi-Auto XXX	The delay time of a semi-auto program start expired, starting the first valid event of the program. The XXX refers to the program number.
Sensor Semi-Auto XXX	A semi-auto program start occurred because a START Sensor was activated. The XXX refers to the program number.
Keypad Stop PGM XXX	An active program was stopped via the manual program control from the keypad. The XXX refers to the program number.
Remote Stop PGM XXX	An active program was stopped via a remote Field Controller. The XXX refers to the program number.
Stop Time PGM XXX	An active program was stopped because of the programmed STOP time. The XXX refers to the program number.

Notes

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