

General Introduction & Key Features

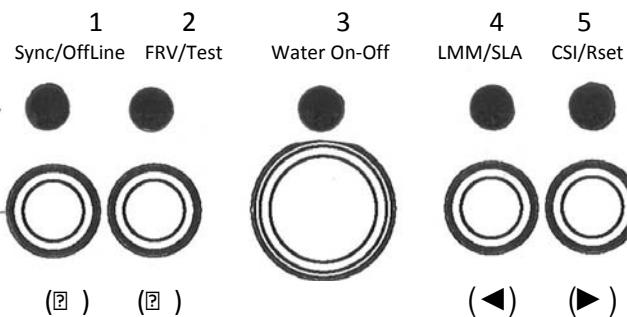
Quick Setup Guide

Installation:

Precautions

General Tools Needed

Pipe Burst Pro - Getting Started



1. VIP: Valve Interface Panel_ VP100

Installation Guide

Quick Setup

Detailed Setup Instructions (include how to connect to your alarm system, etc)

LED Signals & Alerts

Trouble Shooting

A. Use cases will document the operation of the Valve Interface Panel (VIP) module in:

1. LAM: "Leak Active Mode" (Normal Operation with TickerValve)
2. LMM: "Leak Monitor Mode" (PB256 Notifier system w/o TickerValve)
3. Sync Mode

The VIP is normally in Leak Active Mode and uses the five LEDs above their respective keys to display information about the state of the system and current settings of options.

B. Leak Active Mode – Active Mode will be entered when a VIP is first powered up and is considered the Normal Mode of operation for the VIP.

1. The following will be displayed on the five LEDs in the Leak Active Mode:

1. GREEN = System OK – Sync Progress - Active Mode – All On-Line – or: Blink RED = Lost Sync – or: Blink GREEN = None Sync'd: The LED above the #1

(▲) button is used to indicate the sync state. This LED is used during the sync process to indicate sync progress (defined later in this document) and also in the Leak Monitor Mode to indicate all devices are on-line (green) or that a previously sync'd FloodBug (FB) or FloTrax (FT) has gone off-line (blinking red). If no devices are sync'd with the VIP then this LED will blink green.

2. GREEN = Freeze Relief Valve (FRV) Closed. RED Blink = FRV Open. UNLIT = No FRV present in system. HOLD 7 Seconds to cycle FRV simultaneously with (TV). The second LED above the (▼) button is used to indicate the state of the FRV (if one is installed). A red blinking LED indicates the FRV is Open and a green LED indicates the FRV is Closed (*its normal operating position*). An unlit LED indicates an FRV is not present in the system (determined by the cycling of the main TickerValve (TV) and FRV). The (▼) button is used to initiate an immediate test cycle of both valves (by holding down the button for more than 7 seconds).
3. GREEN = TV Open. RED = TV Closed. Green/Red Blink = No TV detected, are using Leak Monitor Mode. The center LED displays the state of the main TV (TickerValve) (green for ON, and blinking red for OFF). This large center button gives the ability to toggle the ON-OFF TV state. If no TV is detected (tested only when valve is cycled) this LED will blink red and green (as when used in Leak Monitor Mode only without a TV connected).
4. GREEN = LAM selected. Green Blink = LMM selected; Hold 7 seconds (no TV in system). Red Blink = Check SLA battery. Green/Red = No AC power. The fourth LED above the (◀) button is used to indicate whether LAM (Leak Active Mode, normal) or LMM (Leak Monitor Mode, auxiliary) has been selected and will also display an indication of a weak or missing SLA back-up battery.
 1. Under normal operation this LED will be continuously green, unless an SLA alarm condition exists.
 2. When LMM has been selected by holding the (◀) button for a period of more than 7 seconds (meaning that a main TV (TickerValve is not connected to the VIP), then this LED will be blinking green. If an SLA alarm condition exists it will blink red.
 3. If AC power is present and the SLA battery is weak and needs to be replaced, (or is not even present), this LED will blink red regardless of the LEAK MODE setting.
 4. When AC power is lost this LED will blink red and green regardless of the LEAK MODE setting.
5. GREEN = CSI OK. Red Blink = Fault. Press 7 seconds to clear fault or to do master reset/clear system. The rightmost LED indicates the CSI (Critical System Indication) state and the (►) button gives the ability to perform a master reset of the VIP. A master reset will be performed after this button is held down for at least 7 seconds. The master reset clears (turns green) all faults including the CSI.

(1) ENTER SYNC MODE: Press 2 seconds. Press 7 seconds to CLEAR ALL SYNC'D DEVICES: (Note: cannot be undone!). SYNC MODE – The VIP Sync Mode can be initiated using a remote FloTrax (FT), to perform either a FT sync or a FloodBug (FB) sync, or from the VIP by pressing the (▲) button for more than 2 seconds; but not more than 7 seconds for a FB sync.

(4) IN SYNC MODE: Red Blink until sync request is received. Red/Green + Chirp = sync confirmed. Repeat for each device. 5 minute timeout. Once the VIP is in sync mode the (◀) LED will blink red until it receives a Sync Request Message. Once the VIP receives a Sync Request Message it will send a Sync Pending Message to the device's (FB or FT) serial number it received during the Sync Request Message. The VIP will then begin to blink this LED red and green and also audibly "chirp" before a Sync Complete Message is sent. The VIP will then return to its previous monitor mode (default is LAM).

A. If no Sync Request Message is received within 5 minutes of initiating the sync, the sync process will be aborted. Then the sync LED (◀) will blink red for 10 seconds and the VIP will return to previous monitor mode.

B. The (▲) button is also used to clear all sync information from the VIP, FT, and FB. This clear sync function is accessed by pressing the sync button (▲) for more than 7 seconds.

Print for VIP Faceplate – Quick Reference Guide

1. ▲ GREEN = System OK – Sync Progress - Active Mode – All On-Line – or: Blink RED = Lost Sync – or: Blink GREEN = None Sync'd.

ENTER SYNC MODE: Press 2 seconds. Press 7 seconds to CLEAR ALL SYNC'D DEVICES: (Note: cannot be undone!).

2. ▼ GREEN = Freeze Relief Valve (FRV) Closed. RED Blink = FRV Open. UNLIT = No FRV present in system. HOLD 7 Seconds to cycle FRV simultaneously with TV.

3. (CENTER BUTTON PICTURE HERE) GREEN = Water ON. RED = Water OFF. Green/Red Blink = No TV detected, are using Leak Monitor Mode.

4. ◀ GREEN = LAM selected. Green Blink = LMM selected; Hold 7 seconds (no TV in system). Red Blink = Check SLA battery. Green/Red = No AC power.

IN SYNC MODE: Red Blink until sync request is received. Red/Green + Chirp = sync confirmed. Repeat for each device: 5 minute timeout.

5. ► GREEN = CSI OK. Red Blink = Fault. Press 7 seconds to clear fault or to do Master reset/clear system: Determine-repair fault condition.

2. FloodBug w/SideKick_FB100K

Quick Setup

Key locations for FloodBugs

Detailed Setup Instructions

Trouble Shooting

A. These use cases document the various operations of the FloodBug (FB) module in

1. Normal Operation
2. Sync Mode

B. Normal Operation – When the FB is first powered up it will chirp and then enter the normal operating mode where it will perform the following functions:

1. Wait for an interrupt signal caused by water between either the sensor pins on the FB or an attached SideKick.
 1. Upon receiving an interrupt signal the FB will send a WATER DETECTED message to the VIP. The FB will chirp the alarm for 2 seconds and then resume Low Power Mode (LPM) with a repeat chirp timer set for 30 seconds.
 2. After 30 seconds, the FB will wake up and check the state of the water interrupt.
 1. If still indicating water the FB will again send the WATER DETECTED message, begin chirping and go back to sleep with a timer set for another 30 seconds.
 2. If no water is detected the FB will then go back into LP mode with an interrupt timer set for 24 hours.
2. Wait for interrupts caused by a button press.
 1. The button press (on the underside of FB) is timed and if held for 7 seconds or more the sync mode will be entered. If held for less than 7 seconds but more than 2 seconds then a FB TEST message will be sent to the VIP and its alarm will chirp 3 times if the two AA batteries are at or near full strength, twice if at medium strength, and once if the batteries are weak and need replacing. If the VIP receives this FB TEST message from a synced FB then it will chirp 3 times and respond with a test received message. The FB will wait for up to 10 seconds for the FB TEST RESPONSE message before it returns to LP mode. If the FB receives a TEST RESPONSE message addressed to it, it will chirp again indicating the battery strength.
 3. Wait for interrupts caused by the FB Tilt Switch.
 1. Upon receiving this interrupt the FB will set a 3 minute interrupt timer. At the end of this time period if the bug is still tilted improperly (ie: not laying flat), then it will send a TILT DETECTED message to the VIP. The FB will then chirp for 2 seconds and then resume Low Power Mode (LPM) with a timer set for another 30 seconds.
 2. Then the FB will wake up and check the state of the tilt switch input.

1. If still indicating tilt the FB will again send the TILT DETECTED message, chirp for 2 seconds and then resume Low Power Mode (LPM) with a timer set for 30 seconds.
2. If no tilt is detected the FB will then go back into LP mode with an interrupt timer set for 24 hours.
4. Wait for an interrupt caused by the FB's wake on radio capability (WRC).
 1. Upon receipt of a WRC interrupt the FB will wake up enough to inspect any digital information packet received.
 1. If the FB received a packet which is determined to be a LOCATE FLOODBUG packet then the FB will wake up long enough to chirp for 2 seconds and will then continue to listen for the LOCATE FLOODBUG message for 5 more seconds at which time it will return to LP mode. If additional LOCATE FLOODBUG packets are received then the FB will wake up and chirp again.
 2. If the FB did not receive a valid LOCATE FLOODBUG packet then it will immediately re-enter the LP mode.
5. Wake up periodically (each 24 hours) to check battery condition and initiate a STATUS MESSAGE transmission which also reports the battery condition data to the VIP.

C. Sync mode – Sync can be initiated by a FloTrax (for either the FloTrax sync or the FloodBug sync) by pressing the UP (ADD SYMBOL) button on the VIP for a FloodBug sync (SEE VIP INSTRUCTIONS).

1. Once the VIP is in sync mode the left most LED will blink red until it receives a sync request message. Once the VIP receives a sync request message it will send a sync complete message to the device serial number it received on the sync request message and blink the LED alternatively red and green and also chirp the sounder before the sync complete message is sent. If no sync request message is received within 5 minutes of initiating sync or if no response to the sync pending message is received within one (1) minute then the sync process will be aborted, the sync LED will blink red for 10 seconds and then the VIP will return to monitor mode.
2. The UP button is also used to clear all synchronization information from the VIP (FloTrax and FloodBug). This clear sync function is accessed by holding the synchronization (UP) button down for more than seven (7) seconds. REMOVE ALL HIGHLIGHTED HERE, IS DUPLICATED IN VIP INSTR.

3. FloTrax: Optional Remote User Interface_FT100



Installation Guide

Quick Setup

Detailed Setup Instructions

On-Screen Alerts & Notifications

System Trouble Shooting

A. These Use Cases will document the operation of the FloTrax (FT) module in 6 major states. These states include:

1. Monitor mode (Normal Operation)
2. Program Mode
 1. Time Set mode
 2. Sprinkler Delay Start/Stop Set mode
 3. Sync mode
 4. Location Setup mode
 5. Set Water Off Delay Time mode
 6. Set Power Failure Delay mode
 7. Set Power Fail Disable mode
3. Demo Mode
4. Sync mode
5. Locate FloodBug mode
6. Valve Operation Mode (Large center button functions)

B. Valve Operation Mode is entered upon a press of the large center button while in normal, monitor mode.

1. Initial state: WATER OFF. The center button will require a minimum press of approximately 1 second to initiate action. If the water is currently OFF then after 1 second of holding down the center button the display will blink the WATER ON segment. Releasing the button will cause the FT to begin sending OPEN VALVE messages to the VIP. Once the VIP has responded with a VALVE OPEN message then the FT will revert to monitor mode.
2. Initial state: WATER ON. The center button will require a press of approximately 1 second to initiate action. Once the button has been pressed for 1 second the segments on the LCD will extinguish with the exception of the WATER OFF segment which will be blinking.
3. Continuing to hold the center button down for 1 more second will initiate a count-up for the Quick Delay setting. The display will change to a blinking DELAY TIME segment as well as the time segments with the value 1:00 hour on them.
 1. For each additional second the center button is held down the value on the time segment will go up by 1 hour; up to 4 hours. Releasing the button during this count-up will result in the initiation of a countdown to valve closure with the starting time value being the one displayed when the button is released.
 2. If the button is held for an additional 1 second after the 4:00 hour delay time has been displayed, either the display will "wrap around" and display no time numerals but blink the WATER OFF segment (to indicate immediate valve closure) followed by the count-up behavior described previously. If a delay time has been set this value will then be displayed for 1 second. If the delay time is not selected then the "wrap around" action will continue.
- C. Once the center button has been released the FT will either send a message to the VIP to immediately turn the water OFF, or if a delay time was selected will send this value to the VIP. The VIP will confirm with a DELAYED SHUTOFF SET message returned to the FT. The FT will alternately display time and time left on its' countdown along with the DELAY TIME segment on the LCD readout until the countdown time has expired. The FT will not display WATER OFF during this countdown but rather only on receiving an actual VALVE CLOSED message from the VIP upon timeout. [for copy use (▲) (▼) (◀) (▶)]
- D. Sync mode is the initial state for a FT which has not been sync'd to a VIP. A FT will initially blink the FLOTRAX OFFLINE segment to indicate that it must be sync'd prior to use.
 1. At this point the installer will press the center button to initiate the FT sync to the VIP. Once this button is pressed the FT sends a series of sync messages to any VIP which will respond back with a sync pending message. Upon receipt of a sync pending message from one or more VIPs the FT will then stop displaying the FLOTRAX OFFLINE segment and will blink the PRESS SYNC segment on its' display. Next, press the sync button (▲) on the VIP. If no sync pending message is received from a VIP within 10 minutes the FT will revert to blinking the FLOTRAX OFFLINE segment and will again require the sync button (▲) press to initiate the FT to sync with a VIP. [for copy use (▲) (▼) (◀) (▶)]
 2. After pressing the sync button (▲) on the VIP, the VIP will save the FT serial number and address further messages to the FT using its' serial number. The FT will not save the VIP serial number but all messages other than the sync pending message will have the FT

serial number in the message and the FT will only respond to messages specifically addressed to it.

3. Once sync'd the FT will revert to normal monitor mode.

E. MONITOR MODE – Monitor mode will be entered when the FT is first powered up and is considered its' normal mode of operation.

1. The following will be displayed on its' LCD in this mode:
 1. Nothing in the PROGRAM MODE column will be displayed while in monitor mode.
 2. The current time will be displayed.
 3. If the WATER DETECTED message has been sent by the VIP then WATER DETECTED will be displayed.
 1. The WATER DETECTED message contains the serial number of the FloodBug (FB) which initiated the alarm. The location and the serial number of the FB will be displayed. If the VIP sends more than one message with different FB serial numbers then the serial numbers and locations of all FB for which this message has been received will be displayed one after another in a continuous loop or may be manually scrolled through using the buttons (▲) (▼) (◀) (▶). Note: (scrolling disables the loop for 1 minute). These will be cleared when the VIP sends a CLEAR WATER DETECTED message for a given FB.
 4. If the FREEZE WARNING state has been sent by the VIP or the FT(?), then the segment reading FREEZE WARNING will be displayed.
 5. If the VIP has sent a positive indication on the overall system status, the SYSTEM OK segment will be displayed. If there is a problem the SYSTEM FAULT will be displayed. This means that a Critical System Indication (CSI) exists. The CSI state means a fault exists which cannot be cleared normally by the homeowner. These faults are: 1) an over-current situation has occurred on the TickerValve or Freeze Relief Valve motors; 2) an under current (zero current) was detected when the motor for one or both of the valves was enabled.
 6. If the VIP has sent a positive indication about the valve state the WATER ON or the WATER OFF segment will be displayed on the FT. (Note, the WATER OFF SEGMENT will always blink when it's displayed).
 1. If the VIP has sent a FloodBug (FB) fault to the FT, the FLOODBUG OFFLINE segment will display and the location and the serial number of the FB will also be displayed. If the VIP sends more than one fault message with different FB serial numbers then the serial numbers and locations of all FB for which this message has been received will be displayed one after another in a continuous loop or may be scrolled through using either the up (▲) and down (▼) or left (◀) and right (▶) buttons; (scrolling disables the loop for 1 minute). These fault readouts will be cleared when the problems have been corrected and the VIP then sends a CLEAR FLOODBUG OFFLINE message for any given FB serial number. [for copy use (▲) (▼) (◀) (▶)]

F. PROGRAM MODE (PM) – To enter program mode press the up button (▲) and down button (▼) together on the FloTrax (FT) for at least 3 seconds.

1. Upon entry into program mode the FT will extinguish all of the display segments except for the segments in the program mode column: (PROGRAM MODE, AUTO CYCLE SET, POWER FAIL DISABLE, POWER FAILURE SET DELAY, POWER FAILURE WATER OFF, SET DELAY TIME, SPRINKLER DELAY, SYNC FLOODBUG, TIME SET).
2. The first program mode option (AUTO CYCLE SET) will blink to indicate that it is the active option.
3. Press the up (▲) or down (▼) buttons to scroll through the various programmable options. The currently selected option will be blinking.
4. If no option is selected for 30 minutes then the FT will reset itself and return automatically to monitor mode, saving all setting made until then.
5. Pressing the left arrow (◀) button while in the select program mode returns the FT to monitor mode.
6. Pressing the right arrow button (▶) enables the currently blinking program mode to be selected.

The FloTrax (FT) has the following options in program mode:

1. AUTO CYCLE SET – Used to set the time of day the valves (main TickerValve and FRV freeze relief valve) auto-test cycle. In most installations the best setting will be in the middle of the night when it is unlikely that a slight pause in water flow will be an inconvenience. The default time is set at 2:00 am.
2. POWER FAIL DISABLE – This feature disables the default setting of automatically closing the TickerValve upon AC power loss.
3. POWER FAILURE SET DELAY – This allows you to set the delay time before water shutoff after an AC power failure. If AC power returns before this delay time has been reached then no water shutoff will occur. However, if the SLA back-up battery in the VIP begins to run low before this delay time is reached, the water will automatically shut off before it is disabled. We recommend setting this delay time so that at a minimum, it exceeds the time of your historical power outages. A good SLA battery will normally last for several days, so there is a large margin on this time setting.
4. POWER FAILURE WATER OFF – This enables the system to initiate a water shutoff if AC power fails (after preset delay time has elapsed).
5. SET DELAY TIME – This allows you to set a custom delay time for water shutoff after the Large center water OFF button on either the VIP or the FT has been pressed.
6. SPRINKLER DELAY – This allows the system to turn the water back ON for running lawn sprinklers during away times. You can set the start and end times for the sprinkler delay setting. (Note this setting has no effect if the water has turned off due to water detected, freeze warning or power failure alarm).
7. SYNC FLOODBUG – This allows you to sync the FB to the system.
8. TIME SET – This allows you to set the master time in the system.

1. If AUTO CYCLE SET is selected:
 1. The AUTO CYCLE SET segment will be on and the previously set AUTO CYCLE SET (default is 2:00 AM) time will be blinking.
 2. Pressing up (▲) or down (▼) buttons at this point will change the time displayed in 15 minute increments. AUTO CYCLE SET TIME will not go above 11:45 PM and will not go below 12:00 AM.
 3. Pressing the left arrow (◀) button while in this AUTO CYCLE SET mode cause the FT to display the old setting of the AUTO CYCLE SET TIME for 2 seconds and will then return to monitor mode without changing the AUTO CYCLE SET TIME settings.
 4. Pressing the right arrow button (▶) will display the new setting of the AUTO CYCLE SET TIME along with the AUTO CYCLE SET segment for 2 seconds and will then send the new AUTO CYCLE SET TIME to the VIP where it will save these settings. FT will return to monitor mode once these messages are acknowledged.
2. If POWER FAIL DISABLE is selected:
 1. All other LCD segments will switch off for 3 seconds and the POWER FAIL DISABLE segment will be on solid for those 3 seconds.
 2. The FT will return to monitor mode and the display will be the normal monitor mode display.
3. If POWER FAILURE SET DELAY is selected:
 1. The POWER FAILURE SET DELAY segment will be on and the time display will blink 00:00 (no AM or PM will be displayed).
 2. Pressing up (▲) or down (▼) buttons will change the time displayed in 15 minute increments. Delay time will not go above 99 hours and 45 minutes and will not go below 00:00.
 3. Pressing the right arrow button (▶) causes the currently displayed delay time to be saved to the VIP, as well as displayed (non-blinking) on the LCD for 3 seconds before it will return to monitor mode.
 4. Pressing the left arrow (◀) button while in this POWER FAILURE SET DELAY mode will cause the FloTrax to display the old setting of the POWER FAILURE DELAY for 3 seconds and will then return to monitor mode without changing the POWER FAILURE SET DELAY time.
 5. *NOTE: Even if POWER FAIL DISABLE is set and enabled and the SLA battery is not in good condition and is discharged to the point where further discharge may make it impossible to close the main TickerValve, the system will initiate a water shutoff by closing the TickerValve. This is a failsafe of the system whereby the system, sensing it is about to become inoperable will not leave the water on.*
4. If POWER FAILURE WATER OFF is selected:
 1. All other LCD segments will switch off and the POWER FAILURE WATER OFF segment will blink.

2. Pressing the right arrow button (►) causes the POWER FAILURE WATER OFF message to be saved to the VIP memory. The POWER FAILURE WATER OFF segment will display (non-blinking) on the LCD for 3 seconds and the FT will then return to monitor mode.
3. Pressing the left arrow (◀) button while in this POWER FAILURE WATER OFF set mode causes the FT to return to monitor mode without changing the POWER FAILURE WATER OFF setting.
5. If SET DELAY TIME is selected:
 1. The SET DELAY TIME segment will be on and the time display will blink 00:00 (no AM or PM will be displayed).
 2. Pressing up (▲) or down (▼) buttons at this point will change the time displayed in 15 minute increments. Delay time will not go above 99 hours and 45 minutes and will not go below 00:00.
 3. Pressing the right arrow button (►) causes the currently displayed delay time will be saved to the VIP as well as displayed (non-blinking) on the LCD for 3 seconds and will then return to monitor mode.
 4. Pressing the left arrow (◀) button while in this SET DELAY TIME mode causes the FT to display the old setting of the SET DELAY TIME for 3 seconds and will then return to monitor mode without changing the SET DELAY TIME.
6. If SPRINKLER DELAY is selected:
 1. The SPRINKLER DELAY segment will be on and the previously set SPRINKLER DELAY ON TIME (default is 12:00 AM) will be blinking and the SPRINKLER START segment will be on.
 2. Pressing up (▲) or down (▼) buttons will change the time displayed in 15 minute increments. Delay start time will not go above 11:45 PM and will not go below 12:00 AM.
 3. Pressing the left arrow (◀) button while in this SPRINKLER DELAY ON TIME mode causes the FT to display the old setting of the SPRINKLER DELAY ON TIME along with the SPRINKLER START segment for 2 seconds and will then display the old setting of the SPRINKLER DELAY OFF TIME along with the SPRINKLER STOP segment for 3 seconds before returning to monitor mode without changing the SPRINKLER DELAY settings.
 4. Pressing the right arrow button (►) causes the SPRINKLER DELAY segment to be on and the previously set SPRINKLER DELAY OFF TIME (default is 12:00 AM) will be blinking and SPRINKLER STOP segment will display.
 5. Pressing up (▲) or down (▼) buttons will change the time displayed in 15 minute increments. Delay stop time will not go above 11:45 PM and will not go below 12:00 AM.
 6. Pressing the left arrow (◀) button while in this SPRINKLER DELAY ON TIME mode causes the FloTrax to display the old setting of the SPRINKLER DELAY ON TIME along with the SPRINKLER START

segment for 2 seconds and will then display the old setting of the SPRINKLER DELAY OFF TIME along with the SPRINKLER STOP segment for 2 seconds before returning to monitor mode without changing the SPRINKLER DELAY settings.

7. Pressing the right arrow button (►) causes the FT to display the new setting of the SPRINKLER DELAY ON TIME along with the SPRINKLER START segment for 2 seconds and will then display the new setting of the SPRINKLER DELAY OFF TIME along with the SPRINKLER STOP segment for 2 seconds. It will then save the new SPRINKLER DELAY ON TIME and SPRINKLER DELAY OFF TIME to the VIP. FT will return to monitor mode once these messages are acknowledged.

7. If SYNC FLOODBUG is selected:

1. The SYNC FLOODBUG segment will be on.
2. The FT will signal the VIP to enter SYNC MODE and wait for the message back from the VIP that it has entered SYNC MODE.
3. At receipt of the message back from the VIP the PRESS SYNC will begin blinking which will require you to press the sync button on the FB.
4. The FB will begin sending messages to the VIP (and chirp as each message is sent). The VIP will respond with a message back to the FB which acknowledges the sync message (also chirping as each message is sent). This happens 6 times at which time sync is complete. The FT will also chirp as it receives each of the VIP's acknowledgements back to the FB.
5. Once sync is complete the VIP sends a message to the FT that sync has been established. This message includes the full FB serial number. The FT then displays the segment SYNC OK and the last 4 digits of the serial number of the FB (also found on the underside of the FB) and a programmable location code of AAA000 where the first character is blinking.
6. Pressing up (▲) or down (▼) buttons at this point will change the blinking character LOCATION (from the set A-Z, 0-9 and ('-') for the first 3 characters, and 0-9 for the last 3 characters).
7. Pressing the left arrow (◀) button while in this LOCATION SET mode will result in the FT displaying the LOCATION and SERIAL NUMBER as currently set and will blink the NOTE LOCATION AND SER. NO. segment for 30 seconds or until the right arrow button (►) is pressed. (This allows you time to write down the Ser. No. and location code for your records).
8. Once the right arrow button (►) is pressed the next character will begin to blink and the process will begin at step 6 for that character. If the last character was the one set, then the FT will proceed on to the next step.
9. This case is entered when either the left arrow button (◀) is pressed in step 7 (early termination of the location setup) or the right arrow button (►) was pressed after setting the last character of the location. The FT will send the LOCATION SET message to the VIP along with the serial number and location code of the FB just sync'd. The FT will indicate

location has been set by displaying the LOCATION and SERIAL NUMBER as currently set and blinking the NOTE LOCATION AND SER. NO. segment for 30 seconds or until the right arrow button (►) is pressed, at which time the FT will return to monitor mode.

8. If TIME SET is selected:

1. The TIME SET segment will be on and the current time HOURS DIGITS will be blinking.
2. Pressing up (▲) or down (▼) buttons will change the time displayed in 1 hour increments (range is 1-12).
3. Pressing the left arrow (◀) button while in this TIME SET mode causes the FloTrax to display the current time and will then return to monitor mode without changing the current time.
4. Pressing the right arrow button (►) causes the FT to display the new hours setting and blink the tens digit in the minute part of the display.
5. Pressing up (▲) or down (▼) buttons will change the time displayed in 10 minute increments (range is 0-5).
6. Pressing the left arrow (◀) button while in this TIME SET mode causes the FT to display the current time and will then return to monitor mode without changing the current time.
7. Pressing the right arrow button (►) causes the FT to display the new tens digit setting and blink the ones digit in the minute part of the display.
8. Pressing up (▲) or down (▼) buttons will change the time displayed in 1 minute increments in the ones place only (range is 0-9).
9. Pressing the left arrow (◀) button while in this TIME SET mode causes the FT to display the current time and will then return to monitor mode without changing the current time.
10. Pressing the right arrow button (►) causes the FT to display the new ones digit setting and blink the currently set AM or PM indicator part of the display.
11. Pressing up (▲) or down (▼) buttons will toggle between AM and PM with one blinking and the other off.
12. Pressing the left arrow (◀) button while in this TIME SET mode causes the FT to display the current time and will then return to monitor mode without changing the current time.
13. Pressing the right arrow button (►) causes the FT to display the new time for 2 seconds and then send a message to the VIP with the new time so that the VIP can set the Real Time Clock (master system clock).

G. LOCATE FLOODBUG MODE:

1. This mode is used to locate the FB. In this mode the FT transmits locate signals to all FB. Any FB which receives this message responds by sounding a chirp for 2 seconds every time a locate signal is received.
2. LOCATE FLOODBUG MODE is entered by holding down the (▲) (▼), (◀) (►) buttons of the FT for a period of 7 seconds. While in this mode the location code will display the word LOCATE (the T will look like a backwards 7).

3. During locate mode the FT will send a LOCATE FLOODBUG message. Each FB which receives this special message will respond by chirping for 2 seconds and then will be silent for 2 seconds. The FB will continue to chirp as long as it receives the LOCATE FLOODBUG message.
4. To quit LOCATE FLOODBUG MODE repeat the step of holding the (▲) (▼) (◀) (▶) buttons for a period of 7 seconds.

H. FloTrax DEMO MODE: CONFIDENTIAL: NOT FOR PUBLIC RELEASE

1. This is to enable the potential customer to see how the system would work once installed without the need for the salesperson to carry a VIP on sales calls.
2. DEMO MODE is entered by holding down the first, second and fifth buttons for a period of seven seconds. To quit demo mode repeat the step of holding the first, second and fifth buttons for a period of seven seconds.
3. The FloTrax has a software clock. Upon entering DEMO MODE this clock will default to 00:00 AM. Once the time is set using the program mode then the FloTrax will keep reasonably accurate time.
4. In DEMO MODE FloTrax will respond to any FloodBug messages sent and simulate selected functions which would normally be performed by a VIP.
5. However, every FloodBug serial number will be associated with the Location DEM0 (DEM zero) while in DEMO MODE.
6. The SYNC FLOODBUG menu will be simulated in DEMO MODE and will display each step but serial number will be 0000 in all cases and no location data will be saved.
7. In DEMO MODE FloTrax will not respond to or initiate communications to or from any VIP that may be in the area.
8. In DEMO MODE all settings will work the same as documented in the Program Mode with the exception that no settings will be sent to a VIP. All setting values will be kept in memory on the FloTrax and will be reset upon loss of FloTrax power. Settings may also be reset by reinitiating the DEMO MODE from the PROGRAM MODE menu.

Support

GreenField Direct, LLC
14015 238th Street
Greenwood, NE 68366

<http://www.greenfielddirect.com/contact.php>

Fax: (402) 944-2402
Phone: (800) 246-LEAK (800-246-5325)

Operating Hours: Monday - Friday, 9:00am - 4:00pm CST (Excludes Major Holidays)

Warranty - PipeBurst Pro Products 7 Year Limited Warranty

GreenField Direct, LLC of 14015 238th St, Greenwood, NE 68366 ("Warrantor"), warrants to the original purchaser and installed location of the PipeBurst Pro, manufactured by Warrantor, and to any person to whom such originally installed equipment is transferred to via the transfer of said real property that original installation was made, that such equipment shall be free from defects in materials and workmanship during a two (2) year period; additionally the electric valve actuator enclosure and its' electronic components inside, shall be free from interior moisture damage for a period of seven (7) years; both periods commencing upon the receipt of order date for such equipment from the original purchaser thereof; (the "warranty periods").

Warranty Details, Exclusions and Limitation of Liability

I. Warrantor's obligation under this warranty is specifically limited to replacing or repairing its equipment or parts thereof which are shown by Warrantor's examination to be in a defective condition attributable hereunder to Warrantor. To qualify for this warranty, alleged defective equipment MUST have been officially registered with the Warrantor and MUST be returned to Warrantor at its address listed below, transportation charges prepaid, within a reasonable time after discovery of an alleged defect, and in no event later than thirty (30) days beyond the expiration of the warranty period. If, as a result of Warrantor's examination of the returned equipment, Warrantor concludes that a product defect attributable hereunder to Warrantor exists, Warrantor shall cure such defect within a reasonable time, after such examination. Normal, in-factory expenses in curing such defect, except for transportation charges and shipping expenses incurred in delivering such equipment to *and* from Warrantor, shall be paid by Warrantor. All claims must be made directly to Warrantor along with proof of purchase. In the event that a defect in such equipment is found to be attributable hereunder to Warrantor and Warrantor is unable to provide replacement and repair is not commercially practicable or cannot be made in a timely manner, Warrantor may elect, at its sole discretion, to refund to claimant the purchase price of such equipment actually received by Warrantor, less reasonable depreciation, in complete discharge of its obligations hereunder. If

Warrantor elects to comply with this warranty by means of such refund, as a condition precedent to such compliance, the claimant shall return such equipment to Warrantor free and clear of liens and other encumbrances.

II. THE ORIGINAL PURCHASER OF SUCH EQUIPMENT, ANY PERSON TO WHOM SUCH EQUIPMENT IS TRANSFERRED, AND ANY PERSON WHO IS AN INTENDED OR UNINTENDED BENEFICIARY OF SUCH EQUIPMENT, SHALL NOT BE ENTITLED TO RECOVER FROM WARRANTOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR INJURY TO PERSON AND/OR PROPERTY RESULTING FROM ANY DEFECTIVE EQUIPMENT MANUFACTURED BY WARRANTOR.

III. Misuse or neglect (including failure to provide reasonable maintenance) of, or accident or unauthorized repairs or alterations to, such equipment, shall release and discharge Warrantor from any obligation under this warranty or otherwise. During the aforementioned warranty period, customer expressly waives with respect to such equipment all implied warranties of merchantability and all implied warranties of fitness for a particular purpose as such legal rights are limited to the terms of Warrantors Limited Warranty. AFTER EXPIRATION OF THE WARRANTY PERIOD, WARRANTOR EXPRESSLY DISCLAIMS WITH RESPECT TO SUCH EQUIPMENT ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. THERE IS NO WARRANTY OF ANY NATURE MADE BY WARRANTOR BEYOND THAT WHICH IS CONTAINED HEREIN.

IV. The PipeBurst Pro 7 Year Limited Warranty is governed by Nebraska law. The venue and jurisdiction for any disputes are agreed by the Purchaser and Warrantor to be Saunders County, Nebraska. NO PERSON HAS AUTHORITY TO AMEND OR MODIFY THIS WARRANTY. If any provision of this Warranty shall be found to be illegal, invalid, or unenforceable under present or future laws, such provision shall be fully severable and the remaining provisions shall remain in full force and effect. Any provision of this Warranty held illegal, invalid, or unenforceable shall remain in full force and effect to the extent not so held. In lieu of the provision held illegal, invalid, or unenforceable, there shall be automatically added as part of this Warranty a provision as similar in its terms to such invalid provision as may be possible and may be legal, valid, and enforceable.

V. Warrantor reserves the right to change the parts or design of its products from time to time without notice, and with no obligation to maintain spare parts or to make corresponding changes in the products previously manufactured. Product registration must be completed to activate warranty; to register for your PipeBurst Pro 7 Year Limited Warranty go to the Register Your System page at www.PipeBurstPro.com

Warranty Disclaimer - GreenField Direct, LLC is not responsible for any failure if: (1) the failure resulted from deterioration or failure of project materials other than the PipeBurst Pro or PipeBurst Pro Jr., or to improper use or installation of an element of the project other than the PipeBurst Pro or PipeBurst Pro Jr.; (2) the PipeBurst Pro or PipeBurst Pro Jr. has been used or installed other than in complete accordance with the installation procedures specified by GreenField Direct, LLC, or has been altered or modified in any way; or (3) the failure is due to an act or condition outside of the control of GreenField Direct, LLC, including but not limited to tornado, hurricane, earthquake or other Acts of God. Further, the PipeBurst Pro Year Limited Warranty extends to any person to whom such originally installed equipment is transferred to via the transfer of said real property that original installation was made, for so long as such person(s) own that PipeBurst Pro or PipeBurst Pro Jr. Any claim for failure of a PipeBurst Pro or PipeBurst Pro Jr. must be made within a reasonable time after discovery of an alleged defect, and in no event later than thirty (30) days beyond the expiration of the warranty period to: GreenField Direct, LLC 14015 238th Street Greenwood, NE 68366 <http://www.greenfielddirect.com/contact.php>

FCC Disclaimer

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.



- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Compliance Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.