1.0 Function

Controller software version 6.0 offers a new flow monitoring feature called "Learned Flow." This feature compares individual station flows against a previously "learned flow" value and will trigger an alert message if a defined flow threshold and delay period is exceeded.

⚠ Note: To determine the current controller software version, turn the (M) knob to the "Services" menu and turn the (U) knob twice until the software version is displayed. This feature will operate on software 6.0 and higher versions only. This software version is backward compatible with any ET Pro2 series product in both Basic (one-way) and Central (two-way) communication modes. To upgrade your controller, call HydroPoint Customer Support, toll-free (800) 362-8774.

2.0 Setup

All of the Learned Flow setup functions can be found in the "Flow" menu. In version 6.0, these functions are configured and executed from the controller only. To utilize this feature, a compatible flow sensor must be installed and setup properly.

⚠ WeatherTRAK ET Pro2 series is compatible with Data Industrial "IR" series and Creative Sensor Technology flow sensor models in various sizes.

To configure flow monitoring and learned flow functions, follow the enclosed sequence of screens and submenus. Start by turning the (M) knob to the "Flow" menu position.

Measured Flow
This screen displays measured flow at all times, regardless of how many stations are currently operating. If more than one station is operating (scheduled or manual stations), the display will indicate the combined flow rate. If no irrigation is currently operating, but flow is being indicated, the value may indicate a leak situation that needs attention. Turn the (U) knob to move to the next screen.

Select Flow Meter Mode
To initiate any flow monitoring functions, the flow meter mode must first be changed from the factory default setting of "Off". Turn the (L) knob to change the flow meter mode from "Off" to "1." Turn the (U) knob to move to the next screen.

Flow Alert Clearing
This screen provides a choice between (a) allowing the controller to automatically clear flow alerts at the beginning of the scheduled Program A start time, or (b) requiring the user to clear flow alerts manually. If manual operation is selected, irrigation will not occur on alerted stations until the field issue is found and resolved. If there is a flow alert on the master valve, all irrigation will be suspended until the issue is resolved and alerts cleared.

Turn the (L) knob to change this value as needed. Turn the (U) knob to move to the next screen.

Set Flow Meter Size
The choices of flow meter sizes are 1", 1.25", 1.50", 2.00", 3.00", 4.00" and Insert Type. Turn the (L) knob to select the size that matches the flow sensor installed. If a flow sensor smaller than 1" is used, then select "Insert-Type" and enter the K and Offset value for the size being used as found in the manufacturer's installation manual. Turn the (U) knob to move to the next screen.

View /Edit K and Offset Values
When a flow sensor size is selected, its corresponding default K and Offset values are displayed in two consecutive screens and represent PVC piping values. If another piping material is being used, these values can be edited. When edited, the controller will display the default and edited values for comparison.

⚠ If a flow sensor's K or Offset value is edited and a different size flow meter is selected, the edited value will replace the default value until revised.

Use the (L) knob to select "Edit". Then use the (U) knob to enter the submenu. All characters can be edited including the "+" and "-"values. Turn the (L) knob to change the value and the (U) knob to move to the next value. Turn the (U) knob to the end (either direction) to exit the submenu.

If using other compatible flow sensors as identified in the chart below, edit the K Factor and Offset values from the controller's default settings.

Compatible Flow Sensor – K and Offset Values

Manufacturer	Flow Sensor or Hydro–Meter Size	K Factor	Offset
Creative Sensor Technology (001 series)			
	1"	+00.320	+00.022
	1-1/2"	+00.650	+00.750
	2"	+01.192	+00.938
Data Industrial PVC models			
735 series	½"	+00.07800	+00.90
735 series	¾"	+00.1563	+00.90
735 series	1"	+00.261119	+01.200
228 series	1-/12"	+01.697	-00.316
Netafim (Register-Type only)			
	1"	+06.00	+00.0000
	1-1-/2", 2", 3" & 4"	+60.00	+00.0000

Edit Excluded Stations from No Flow Alerts

In some applications the flow rate varies widely based on the type of sprinklers installed. In some cases the flow rate of the drip emitters is too low to be read accurately. The controller will operate stations, but will not be able to record an accurate flow rate and may falsely post a No Flow Alert. To avoid this occurrence, select stations to be excluded from No Flow Alerts.

Turn the (L) knob to change the underlined value of "Skip" to "Edit". Turn the (U) knob to enter the submenu and view the first 8 stations. Turn the (L) knob to change the value from "-"to "EX" for exclude. Turn the (U) knob to move to the next station or next set of 8 stations up to the controller's max active stations. Pressing the * button on these screens will alternate between selecting all stations and selecting no stations. Turn the (U) knob to the end (either direction) to exit the submenu.

Setting flow thresholds accurately will reduce the potential for false flow alerts. The following rules of thumb are suggestions to reduce this occurrence. Taking a few moments to record each stations flow rate will provide a reference to make threshold decisions easier and faster.

- Mainline Break Threshold – Generally, selecting a value 20% higher than the station with the highest flow rate will suffice. This value is set in GPM. If two or more stations are being operated at one time, select a GPM that combines the station(s) with the highest flow rate.

- Station High Flow Threshold – Two choices are available; 1) select a % above the "learned flow" rate. The % is applied to all stations globally. 2) Enter individual station high flow thresholds in GPM. Either method can be used for each station.
- No Flow Threshold –Selecting a flow value at least 15-20% less than the station with the lowest flow rate will suffice. Reference the learned flow values to make this determination.
- Leak Detect Threshold – If a site incorporates quick couplers, hose bibs or a fill pipe for a pond, select a threshold GPM higher than this demand.
- Setting a Delay Period – This represents a time length of how long the controller will wait for flow to stabilize. When the delay expires and a flow threshold is exceeded, the controller will raise an alert and take corrective measures. The factory default period is 3 minutes. The range is 1-6 minutes in 1 minute increments.

Set Mainline Break Threshold and Delay

The mainline break threshold should be higher than the station(s) with the highest flow rate. For example if the station with the highest flow is 60 GPM, then 20% higher would be approximately 75 GPM. For thresholds of 30 GPM and lower, the GPM value can be set in 1 GPM increments, and for GPM values higher than 35 GPM, the increment is 5 GPM.

Turn the (L) knob to increase or decrease the factory default value of 50 GPM. Turn the (U) knob to select the Delay Period. This value can be changed by turning the (L) knob in either direction. Turn the (U) knob to move to the next screen.

⚠ Any Flow Monitoring feature can be turned "Off" independently of other flow monitoring functions by turning the threshold to the zero value, which will display as "Off".

Set No Flow Threshold and Delay

The No Flow Threshold is intended to notify a user if a pump station fails, the backflow device has been shut-off, a remote control valve fails to open, or if an isolation valve in the mainline has been turned off. Set the No Flow threshold at least 15% lower than the station with the lowest flow value.

Turn the (L) knob to increase or decrease the factory default value of 5 GPM. Turn the (U) knob to select the Delay Period. This value can be changed by turning the (L) knob in either direction. Turn the (U) knob to move to the next screen.

Set Leak Detect Threshold and Delay

The controller will continuously monitor for leaks when irrigation is off and during scheduled irrigation with long soak periods when no irrigation is actually operating. The controller will simply post

an alert of a leak, but the controller will not take further action. Use the "Extended Leak" feature to isolate the mainline when normally open master valves are in use.

Turn the (L) knob to increase or decrease the factory default value of 15 GPM. Turn the (U) knob to select the Delay Period. This value can be changed by turning the (L) knob in either direction. Turn the (U) knob to move to the next screen.

Set Extended Leak Delay

This feature is exclusive to irrigation systems that incorporate normally open master valves where a leak is detected. Corrective action is needed to prevent water wastage or property damage from saturated soil from a continuous leak.

If a leak persists beyond the Leak Detect delay period and then beyond the Extended Leak Delay period, the controller will immediately post an Extended Leak Alert and close a normally open master valve.

An example of how this works might be when a window washer connects into a quick coupler on the irrigation main to fill buckets of water in order to wash windows. Filling the buckets initially may cause a Leak Detect Alert. If the water is left on beyond the Extended Leak delay time period, the controller will take corrective action.

The Extended Leak alert allows normal irrigation to occur as scheduled. If the window washer corrects the condition by turning the water off, the controller will automatically clear the alert after the next irrigation cycle.

While remaining in the "Leak Detect" screen turn the (U) knob to the field following "+" to select the Extended Leak Detect Delay Period. This value can be changed from "Off" to a selected value by turning the (L) knob in either direction. . The range is 1-240 minutes in one-minute increments. Turn the (U) knob to move to the next screen.

Set Station High Flow Offset %

The station high flow threshold value can be set using a percentage that applies globally for all stations. The percentage ranges from 5% to 80% above each station's "Learned Flow" or "Assigned Station Flow" (ASF) value. The percentage value can be set in 5% increments.

Turn the (L) knob to increase or decrease the station high flow offset %. Turn the (U) knob to move to the next screen.

⚠ The Station High Flow Offset is used in the following "Station Flow" submenu. This submenu lets the user configure each station with a "learned flow" value using the offset, or with a specific user-defined threshold GPM.

View Station Flow

In this submenu the controller will display a "learned flow" value or "Assigned Station Flow" (ASF) for each station. This value can be (a) a value measured during learning, or (b) a user-defined value. If the station screen displays "Unk", the value is not learned or user-defined, and is "unknown."

Use the (U) and (L) knobs to navigate as follows: If the "Assigned Station Flow" is to be edited, turn the (L) in either direction to set a user-defined value. If a value has been "learned" and the ASF is not currently the "learned" value, this will be indicated on the third display line. The "learned" value can be set by pressing the * button.

Use the (U) knob to select Station High Flow Threshold (SHFT). This value can be set to (a) the ASF value plus the Offset set previously, or (b) a user-defined value. Use the (L) knob to set a user-defined value. If the ASF value is not "Unk", pressing the * button sets SHFT to the ASF plus offset value. Use the (U) knob to move to the next station.

3.0 Learning Station Flow

Select Stations to Learn Flow
This submenu lets the user select stations on which to Learn Flow. The factory default is "No Learn Stations." Learning each station's flow rate is required for the controller to operate, store and then compare for accurate flow monitoring. One or more stations can be selected. Pressing the * button will alternate between selecting all stations and selecting no stations.

⚠ If a station's flow rate has been previously learned, the controller will only display the most recently learned value. The global station offset percentage is applied to this value.

To select a station to Learn Flow, turn the (L) knob to change the displayed value from "Skip" to "Edit". Turn the (U) knob to enter the submenu and display the first 8 stations. Turn the (L) knob to change the value under the corresponding station number of "—"to "LF" for Learn Flow. Turn the (U) knob to move to the next station. Repeat this process as often as needed. Turn the (U) knob to the end (in either direction) to exit the submenu.

Set Delay Before Learning

This delay time corresponds to how long the controller will allow flow to stabilize before recording a station's learned flow value. Another way to think about this is selecting the stations run-time. This is a global setting applied to all stations that are learning. If some stations require a longer delay period to ensure accurate recording, they will need to be learned separately with a longer delay period. Allowing too little time for learning could lead to false High Station Flow Alerts.

The range of the delay period is 3-10 minutes in 1-minute increments and the factory default value is 3 minutes.

⚠ For some stations that are end-fed from a valve with long lateral runs, the delay time may need to be extended to ensure the system has balanced before a flow value is recorded.

Turn the (L) knob to increase or decrease the delay period in 1 minute increments. Turn the (U) knob to move to the next screen.

Learn Flow (On/Off)

Now that all of the Learned Flow requirements are configured, the controller can operate each station independently to record station's learned flow rate.

⚠ No other irrigation should be operating during the Learn Flow time period whether it is scheduled or manual irrigation. This keeps the controller from recording false flow values.

To start the Learn Flow operation, turn the (L) knob to change the value from "Off" to "On". This operation can be interrupted at any time by turning the (L) knob back to "Off". If this task is interrupted, the controller will preserve the previously selected stations that have yet to be operated and will continue learning when turned back "On". The controller will display the station number, the remaining time left to record the station learned flow value, and the actual flow value in real time.

⚠ Is it suggested that the (M) knob be left in the "Flow" menu position until this operation is completed. When learning is in progress, the text "LRNXX" (where XX = station number) is shown in the lower right-hand corner of the screen.

If no stations have been selected to Learn Flow, the second line of the screen will display (No Learn Stations).

Turn the (U) knob to move the display to the last Flow submenu screen or "Flow Menu Complete," then turn the (M) knob to the Run or another position as needed.

Need Help?

For more detailed information on flow monitoring, Alerts, Alert clearing; download and print the Owner's Manual from www.hydropoint.com or call HydroPoint Customer Service toll-free (800) 362-8774.