

OptiFlow

COMMISSIONING PROCESS

TABLE OF CONTENTS

Overview

OptiFlow Certification Training Courses	3
Optiflow Commissioning Phases	4

OptiFlow Commissioning Process

Phase 1: Assess	5
Site Assessment Overview	5
Required Information for the Site Assessment	5
General Site Assessment	6
Phase 2: Install	7
Installation Overview	7
Installation Process	7
Estimating Station Flow Rates	8
Phase 3: Optimize	10
Optimization Overview	10
Optimization Process	10
Check Optimization	11

OptiFlow Certification Training and Field Services

HydroPoint provides a full, turn-key commissioning service, or commissioning review service, that may be ordered via distributors. Select preferred distributors and partners may provide this service. Please check with your distributor. If they do not provide these services, then they will pass this order to HydroPoint. Upon receiving orders, the HydroPoint services team will coordinate a schedule for this service.

The cost per service varies by job based on location, number of POCs and number of controllers. Contractors are able to get certified to conduct their own commissioning and thus avoid any added charges.

OptiFlow Certification Training Courses (Free)

Level 1

OptiFlow Introduction Training

Purpose: Introduce basic OptiFlow concepts and process

Homework: Identify site to perform Site Assessment for OptiFlow

Level 2

OptiFlow Assessment Training (webinar available by appt.)

Purpose: Learn core OptiFlow terminology and how to complete OptiFlow Site Assessment review

Homework: Complete OptiFlow SAR on selected site

Level 3

OptiFlow Installation Training (webinar available by appt.)

Purpose: Categorize and configure site for OptiFlow in WeatherTRAK.net

Homework: Install OptiFlow on site

Certified Site Inspection

Site Training by a HydroPoint accredited technician

Level 4

OptiFlow Optimization / Management Training (webinar available by appt.)

Purpose: Review best management practices

Upon completion: HydroPoint OptiFlow certified

Optional

OptiFlow Assessment Training (available by appt.)

Purpose: Understand how to configure complex site configurations

Commissioning Process Overview

OptiFlow is typically installed on sites with more complex flow requirements. To ensure a site's success, OptiFlow requires a commissioning process. This document outlines the three phases that make up the commissioning process.



ASSESS



INSTALL



OPTIMIZE

OptiFlow Commissioning Phases

	Goal	Documented Report
Assess	Assess site hydraulic and controller requirements.	OptiFlow Site Assessment Report
Install	Managed or turnkey physical installation, programming, and learned flow. Existing sites with a large number of controllers may need a transition plan to minimize downtime	OptiFlow Controller Installation Report
Optimize	Optimize flow rates and verify coverage based on actual site conditions.	OptiFlow Site Optimization Report

Phase 1: Assess

Site Assessment Overview

The goal of the site assessment phase is to determine site requirements including the site's irrigation pipe infrastructure, pressure, water window, and landscape requirements as well as any other site specific requirements. During this phase, the person doing the assessment should also verify that the site's irrigation system is in good working order. If the irrigation system has issues, such as leaks or breaks, resolve the issues before completing the site assessment.

Use one of the following two methods to complete and submit the site assessment:

Collect and submit manually: Gather the required information for the site assessment and then email the information to support@hydropoint.com.

Complete the OptiFlow Site Assessment Survey Form: The online form is the fastest and easiest way to complete the site assessment. Just pull up the form on your mobile device, and then complete and submit it.

When the HydroPoint OptiFlow review team receives your site assessment, they will determine the best OptiFlow configuration based on your site's requirements and available pipe infrastructure.

Required Information for the Site Assessment

Controller Details

Determine the number of planned WeatherTRAK OptiFlow XR controllers on the site. Please account for existing controllers being consolidated into larger station count WeatherTRAK controllers. Only WeatherTRAK ET Pro3 and WeatherTRAK ET Pro3 2-Wire controllers can be upgraded, and only OptiFlow XR and OptiFlow XR 2-Wire controllers can be connected to a flow sensor.

Water Window Requirements

Define the site's water window requirements. Make notes if different stations on the site have different water window requirements or order prioritization. This might include stations near sidewalks or parking lots requiring shorter water windows and stations irrigating with drip requiring longer water windows.

Hydraulic Configurations

For each mainline on the site, determine the following information:

1. How many WeatherTRAK controllers are using the mainline?

One: One controller on mainline,

Group: Group of controllers sharing the mainline?

2. How many managed Points of Connection are feeding the mainline?

None: No flow sensor, master valve, or pump at site,

One: One flow sensor, master valve, and optional pump at site,

Multiple: More than one flow sensor, master valve, and optional pump at site?

Note: OptiFlow does not currently support sub-managed POCs.

4. Is the POC accessible directly from a controller or from FlowLink?

5. Are the mainline flow rate requirements uniform or do they vary?

Uniform: The mainline size is uniform across the entire mainline pipe infrastructure and all areas of the mainline can support the same specified max flow rate.

Varying: The mainline size varies across the mainline pipe infrastructure or some areas of the mainline must be managed to a different max flow rate. Examples include, changes to mainline size, elevation changes, or long pipe runs.

Note: Group the stations that must have a different max flow rate. Stations must be grouped into programs with the same max flow rate requirement.

General Site Assessment

For each mainline on the site, determine the following information:

1. Is there any evidence of leaks or breaks?
2. Are there any independent, battery-operated valves?

Note: OptiFlow is not able to manage valves that are not connected to an OptiFlow enabled controller.

Phase 2: Install

Installation Overview

After the site assessment is complete and the Site Assessment Report is provided, the WeatherTRAK OptiFlow XR controllers can be installed and/or existing WeatherTRAK ET Pro3 and WeatherTRAK ET Pro3 2-Wire controllers can be upgraded using an OptiFlow Key (model # **WTOF-KEY**).

Note: Only OptiFlow XR controllers that are connected to a flow sensor can achieve multi-controller flow alerts.

Installation Process

Installing New WeatherTRAK Controllers

Install the WeatherTRAK OptiFlow XR controller following the installation instructions in the WeatherTRAK OptiFlow XR Getting Started Guide. Be sure to run the manual valve test outlined in the guide to ensure that all valves are operating properly. Also, be sure to change the station mode to OFF for all non-operational valves during the programming process.

Upgrading Existing WeatherTRAK Controllers

If the site has existing WeatherTRAK ET Pro3 or WeatherTRAK ET Pro3 2-Wire controllers installed and programmed, you can upgrade the controllers to OptiFlow using an OptiFlow Key (model # **WTOF-KEY**).

Note: Do not install the OptiFlow Key until the Optimize Phase on page 9.

Activate

Activate the controller by calling HydroPoint Customer Service at (800) 362-8774. For a faster call, complete the blue activation card included in the controller literature pack before calling HydroPoint Customer Service.

Program

Complete the programming worksheet, then from WeatherTRAK.net, program the controller based on the site's requirements. Follow the Quick Start Programming Guide instructions included in the WeatherTRAK OptiFlow XR Getting Started Guide.

Configure Flow Information

Determine the following:

Flow Sensor and Master Valve Installed: If a flow sensor and/or master valve is installed on at least one controller, complete the flow setup process. Be sure to learn flow on all stations. If the flow sensor cannot learn flow on a station, you must enter a user-estimated flow rate to enable that station to irrigate when using OptiFlow.

Note: If multiple controllers share one or more flow sensors, flow can be learned on those stations from the OptiFlow XR controllers.

No Flow Sensor Installed: If no flow sensor or master valve is installed, you must manually enter station specific flow rates for every station in WeatherTRAK.net. Stations without a flow rate entered will not operate when using OptiFlow. (see estimating station flow rates below)

Estimating Station Flow Rates

The following methods are available for estimating station flow rate without using a flow sensor. The methods are described below in order of accuracy.

Water Meter Method

The water meter method uses a site's built-in flow sensor, and water meter. If the water meter is not dedicated to irrigation or if there are multiple water sources feeding the mainline, this method is not ideal.

First: Test for leaks by performing the below procedure with no irrigation running. If the leak flow rate is higher than 10% of the expected flow rate, the water meter method cannot be used.

Second: Turn on every station one at a time while performing the below procedure. Begin with running station 1, then:

1. Look at the water meter register and write down a start reading.
2. Wait for 5 minutes.
3. Look at the water meter register again and write down the end reading.
4. Subtract the start reading from the end reading.
5. Convert the reading difference to gallons.
6. Divide the reading difference by 5.
7. The resulting number is the leak, or station, flow rate in gallons per minute.
8. For all remaining stations, repeat from step 1 taking note of each flow rate.

Counting Heads Method

The counting heads method uses the estimated flow per sprinkler head multiplied by the number of sprinkler heads to estimate the station flow rate.

1. Connect a pressure gauge to measure the station's dynamic pressure.
2. Manually turn on a station.
3. Measure the pressure.
4. Count the number of heads on the station.
5. Determine the sprinkler head nozzle type. If there are multiple nozzle types, estimate the number for each nozzle.
6. Look up the sprinkler nozzles flow rate in GPM at the measured pressure.
7. Multiply the number of sprinkler nozzles by the nozzle flow rate.
8. Add up all the different sprinkler nozzle type flow rates.
9. The resulting number is the station flow rate in gallons per minute.
10. Repeat from step 1 for all stations.

Station Valve Method

The station valve method calculates the maximum flow rate assuming the pipe is the same size as the valve, and the pipe type is Schedule 40 with water running at a velocity of 5 feet per second.

1. Determine the size of the station's valve.
2. Look up the estimated flow rate in the table below.
3. The resulting number is the estimated flow rate in gallons per minute.
4. Repeat from step 1 for all stations.

Valve Size	Flow Rate (GPM) Assume Schedule 40 pipe at 5fps
1/2"	4
3/4"	8
1"	13
1-1/2"	31
2"	51
3"	113
4"	196
6"	445

Phase 3: Optimize

Optimization Overview

After all WeatherTRAK OptiFlow XR controllers are installed and/or existing ET Pro3, ET Pro3 2-Wire controllers upgraded, and Site Assessment completed, the next phase is to optimize the site.

During this phase existing ET Pro3 and ET Pro3 2-Wire controllers are upgraded to OptiFlow via the OptiFlow Key (model # **WTOF-KEY**), and new functionality will be enabled in WeatherTRAK Central.

Optimization Process

Verify Readiness

Before starting the optimization stage, be sure that the OptiFlow Site Assessment is complete and all new, and existing controllers being upgraded, are working well.

1. Verify all existing controllers are compatible with OptiFlow.
 - WeatherTRAK OptiFlow XR
 - WeatherTRAK OptiFlow XR 2-Wire
 - WeatherTRAK ET Pro3
 - WeatherTRAK ET Pro3 2-Wire
2. Check alerts.
 - No electrical alerts
 - No flow alerts
 - No hardware alerts
 - No comm or subscription alerts. Make sure that the controllers are online and activated with a valid WeatherTRAK Central subscription
3. Verify that every active station has a valid flow rate.
4. Verify all stations are properly programmed.

Note: After an existing controller is upgraded to OptiFlow, changes to settings must be made using WeatherTRAK Central or the WeatherTRAK Mobile app. OptiFlow requires the latest WeatherTRAK Mobile app to perform certain field functions. Please download the latest app or upgrade your existing Mobile2 app.

Install the OptiFlow Key

Installing the OptiFlow Key on an existing OptiFlow compatible WeatherTRAK controller will enable the OptiFlow functionality on the controller and in WeatherTRAK Central. Follow the installation instructions included with the OptiFlow Key. Once installed, do not remove the OptiFlow Key.

Configure Site

After the new OptiFlow XR controllers are installed, the OptiFlow Key is inserted in any existing ET Pro3, ET Pro3 2-Wire controllers, and all controllers are synchronized with WeatherTRAK Central; the next step is to use WeatherTRAK.net to configure the site. See detailed instructions in the OptiFlow User Manual.

Check Optimization

Checking Pressure

After the site is configured, check station coverage at design capacity:

1. Determine the stations with the lowest pressure, such as those furthest from the POC, stations at the highest part of the site or stations with known low pressure issues.
2. Manually open those valves one at a time, using the internal valve bleed to achieve the system-wide design capacity flow rate.
3. Verify that the pressure meets the manufacturer's sprinkler head design guidelines and that the overall coverage of the heads is appropriate for those station.
4. Visually verify that each of the station coverage and design capacity matches when irrigating independently.

OptiFlow

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WT_OptiFlow Commissioning Process_Rev1_S

