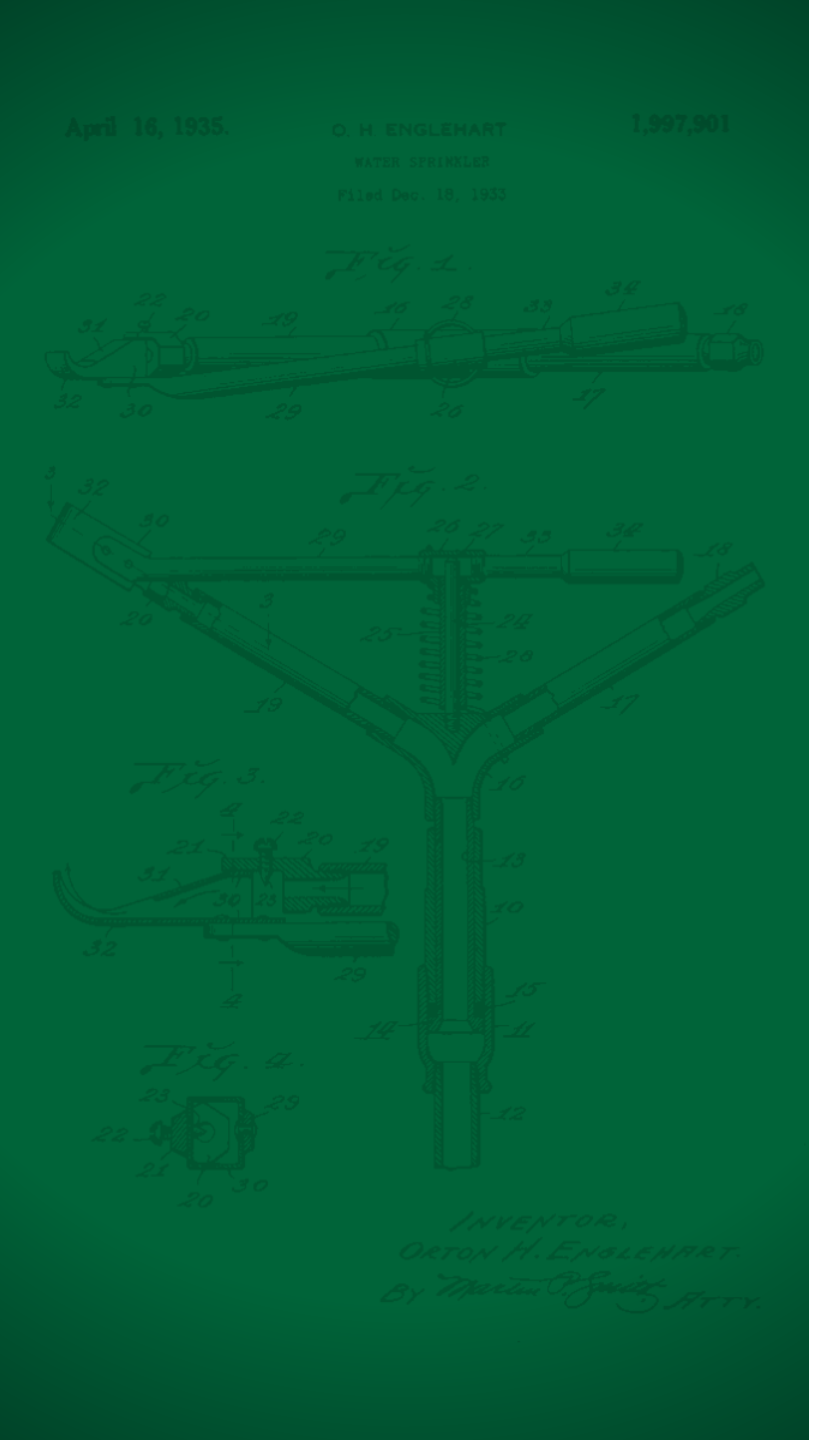


IQ4 Diagnostics

Using Diagnostics in IQ4

Overview

IQ4 Diagnostics allows users to initiate and view diagnostic results without visiting the controller. Each IQ4 controller type has a different set of diagnostics depending on the controller capabilities.

Diagnostic tools are available through the Manual Ops tab in IQ4. It is best practice to connect to a controller first before using diagnostic tools to obtain best results.

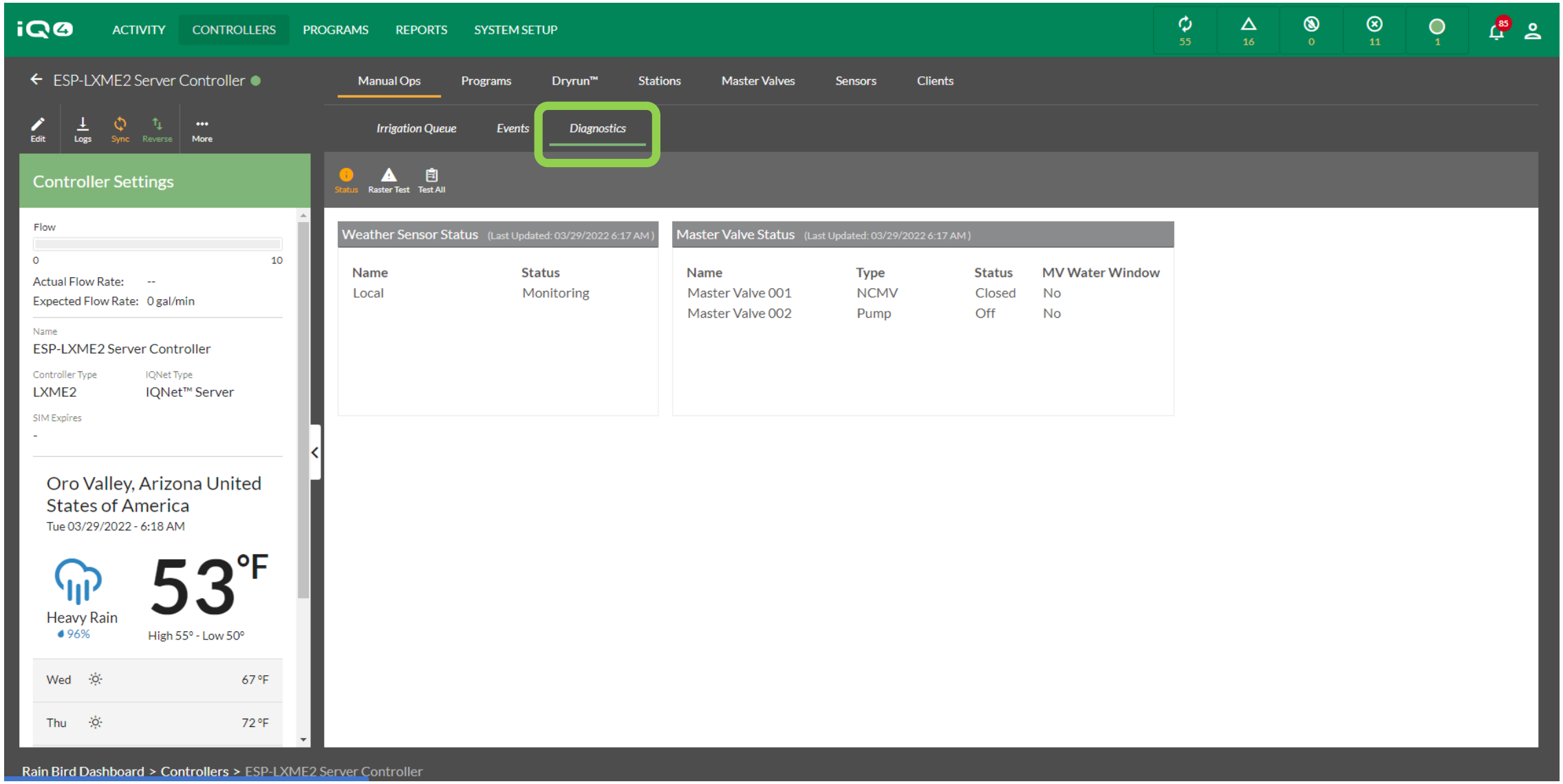
This training will cover each controller type and the diagnostic tools for each.

Learned Flow is a common feature across all controllers. It is part of the Manual Ops page

ESP-LXME2 Diagnostics

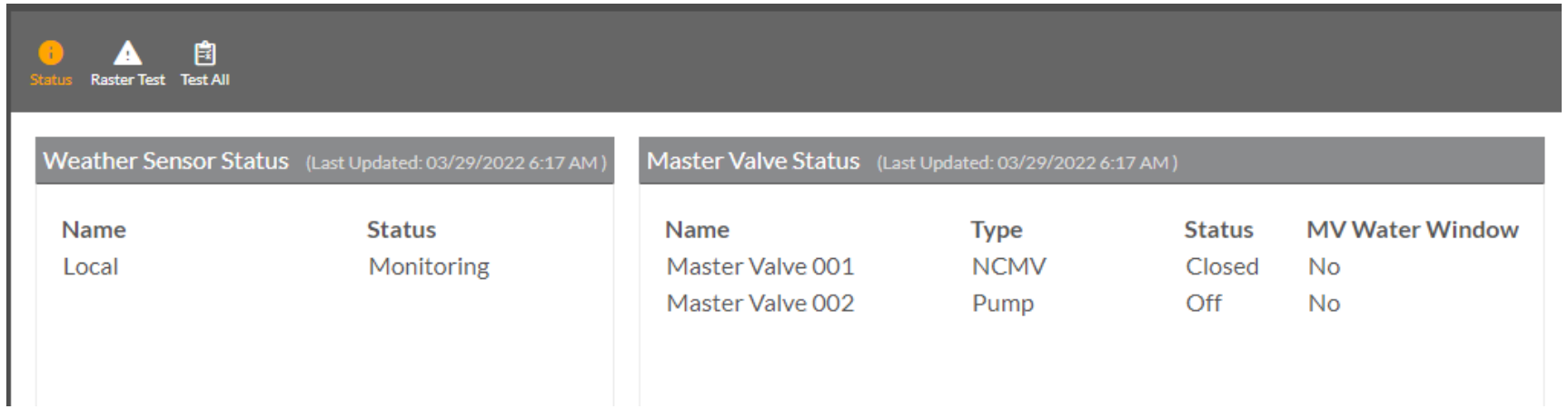
Diagnostics for ESP-LXME/ESP-LXME2 Controllers

ESP-LXME2 - Diagnostics Tool Tab



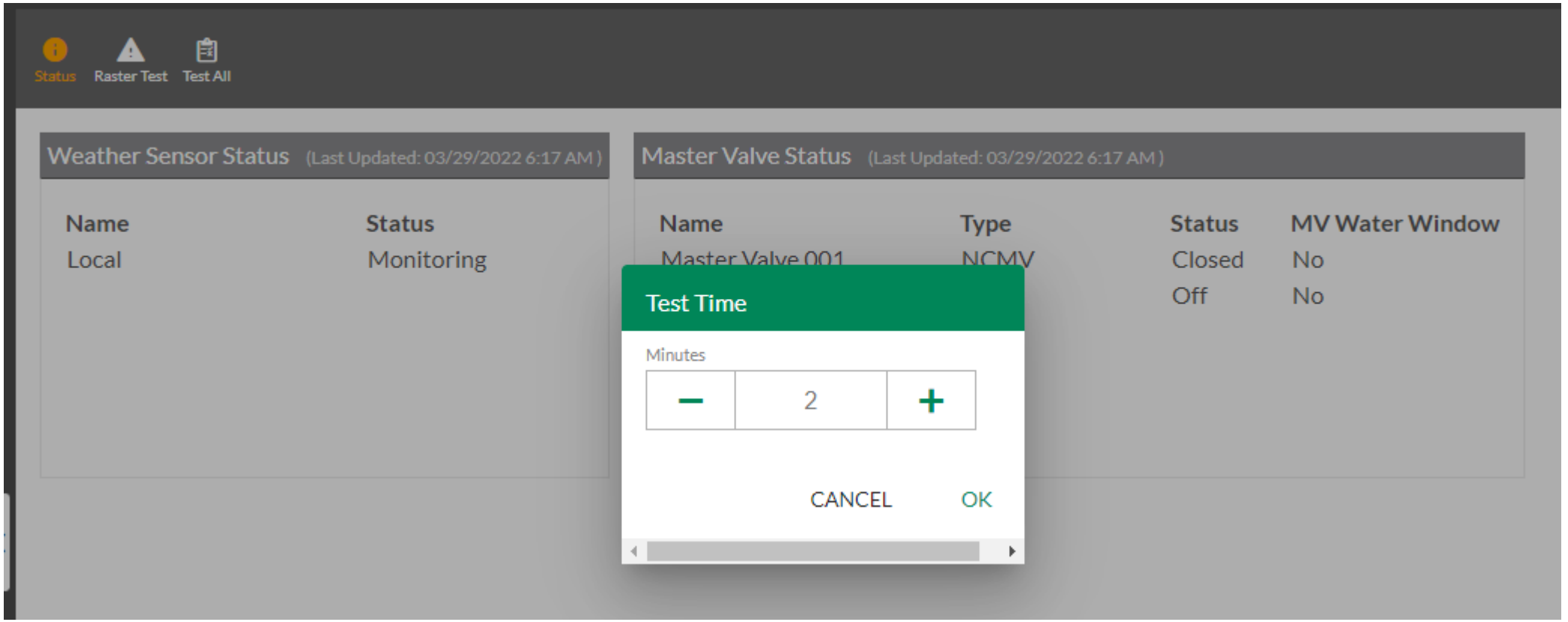
ESP-LXME2 - Diagnostics Tool Tab

- Select the Diagnostics tab after connecting to the controller on the Manual Ops -> Irrigation Queue tab
- Displayed:
  - Local Sensor status – Monitoring or Preventing
  - Manual Valve status – Master Valve Type, Open/Closed/On/Off status and Master Valve Water Window status



ESP-LXME2 - Diagnostics Tool Tab

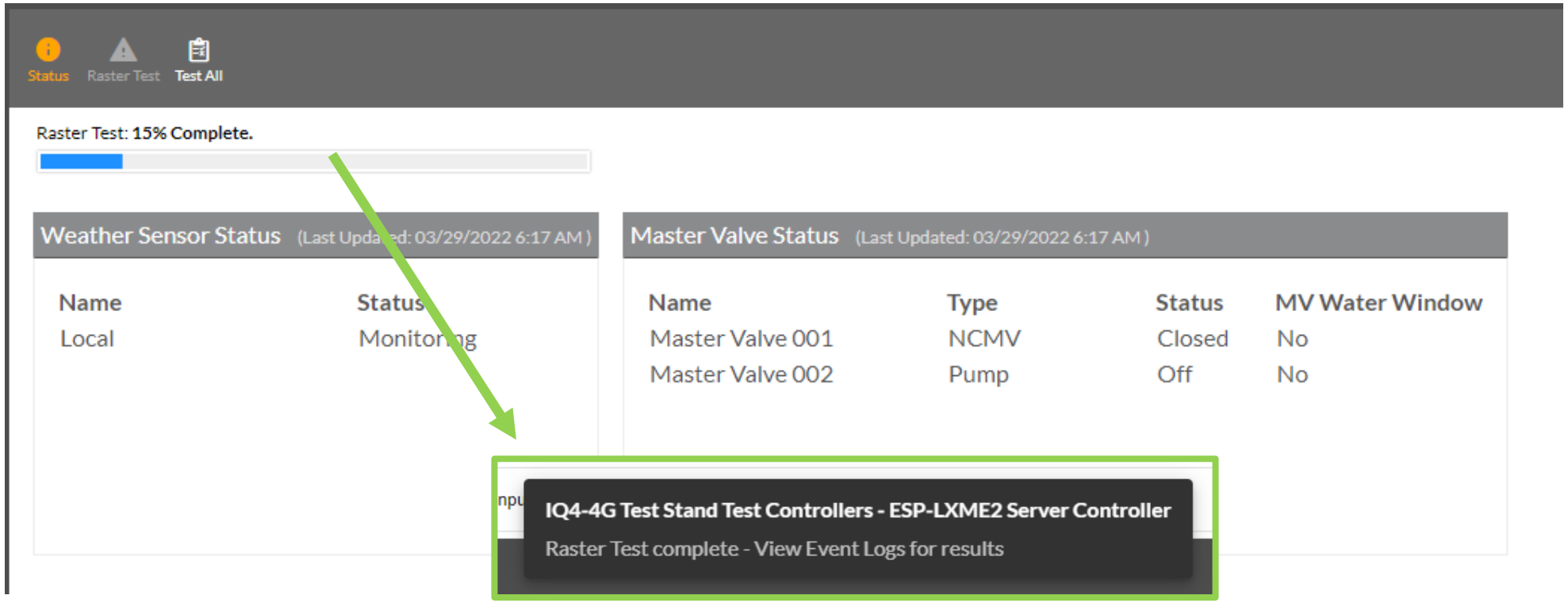
- Test All – click this button to run a timed test of all stations (i.e., for a 2-minute walk through of all stations)



ESP-LXME2 - Diagnostics Tool Tab

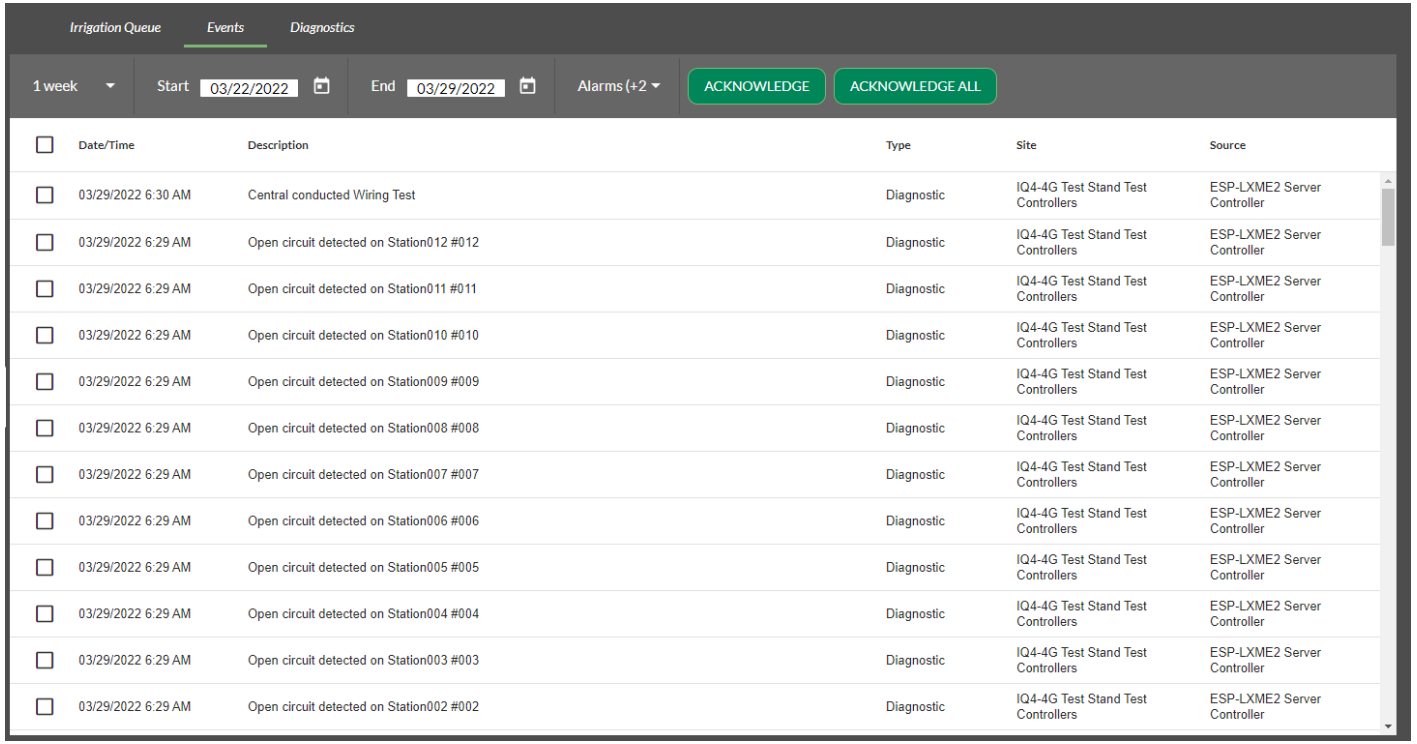
- RASTER Test* – click this button to run a RASTER test of all stations
  - All irrigation will be stopped, each station will be checked for continuity and results displayed

* RASTER = **Ra**pid **S**tation **Te**st **R**outine



ESP-LXME2 - Diagnostics Tool Tab

- RASTER Test results
  - Click on Logs
  - Results will be displayed in the Events log -> Diagnostics selection 2 to 15 minutes after the test is complete

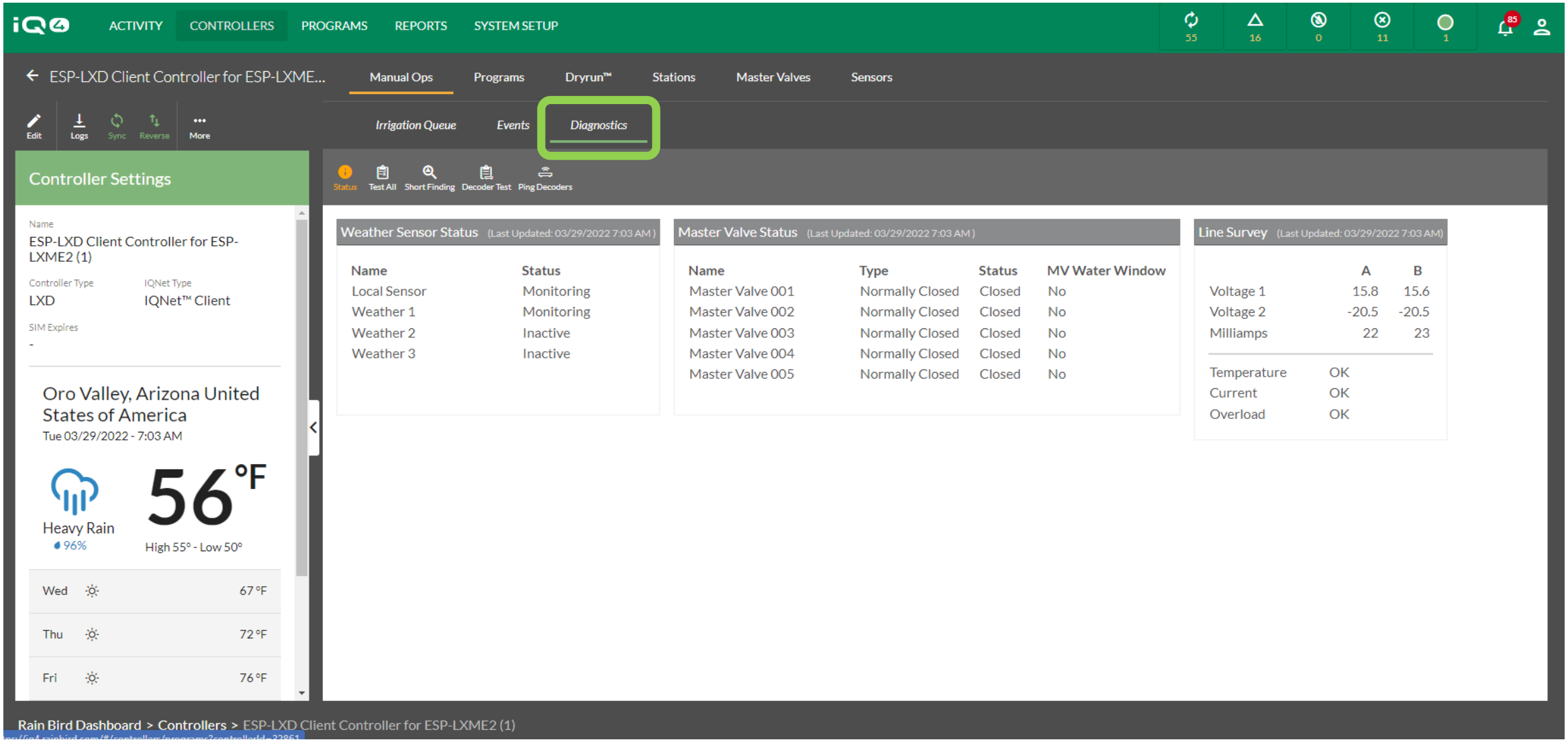


Date/Time	Description	Type	Site	Source
03/29/2022 6:30 AM	Central conducted Wiring Test	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station012 #012	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station011 #011	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station010 #010	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station009 #009	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station008 #008	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station007 #007	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station006 #006	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station005 #005	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station004 #004	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station003 #003	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller
03/29/2022 6:29 AM	Open circuit detected on Station002 #002	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXME2 Server Controller

ESP-LXD Diagnostics

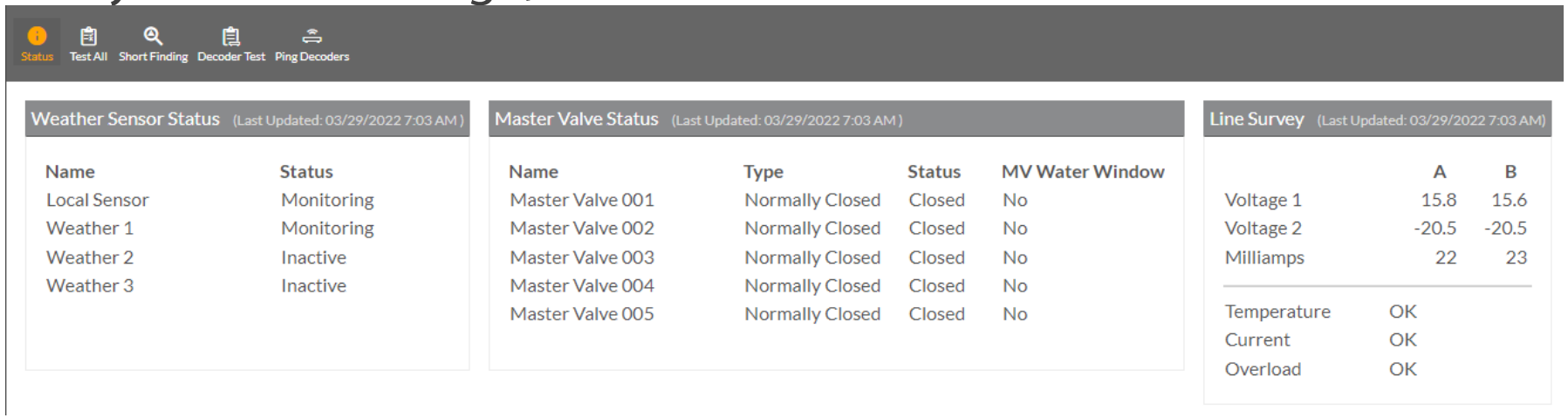
Diagnostics for ESP-LXD Controllers

ESP-LXD - Diagnostics Tool Tab



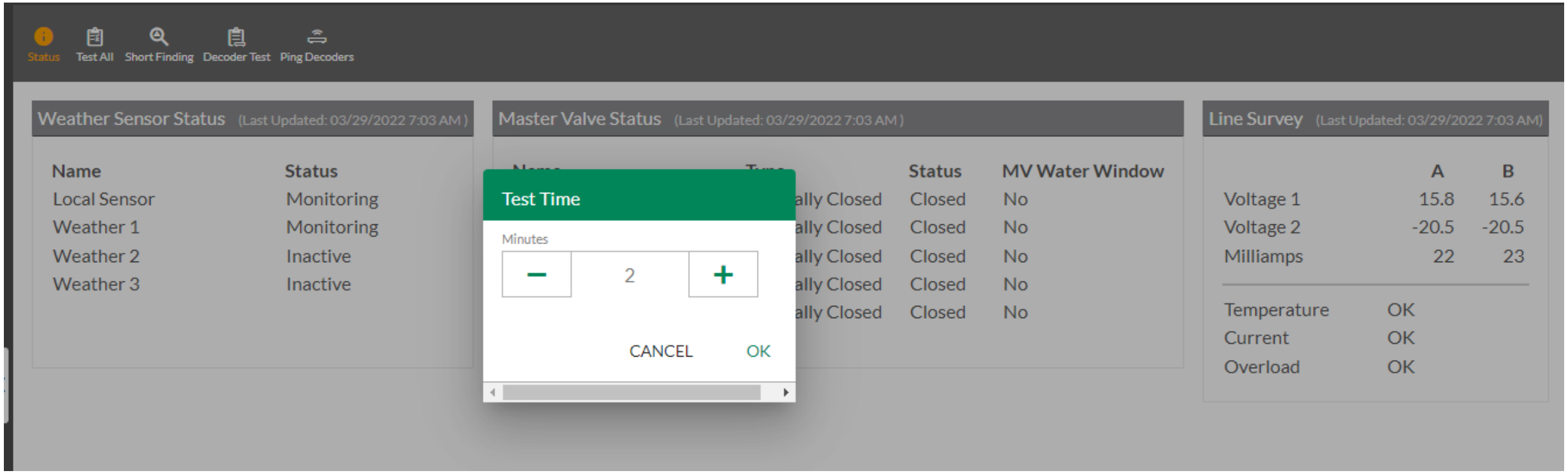
ESP-LXD - Diagnostics Tool Tab

- Select the Diagnostics tab after connecting to the controller on the Manual Ops -> Irrigation Queue tab
- Displayed:
  - Local Sensor status – Monitoring or Preventing
  - Manual Valve status – Master Valve Type, Open/Closed status and Master Valve Water Window status
  - Line Survey results – Voltage, Current and Conditions



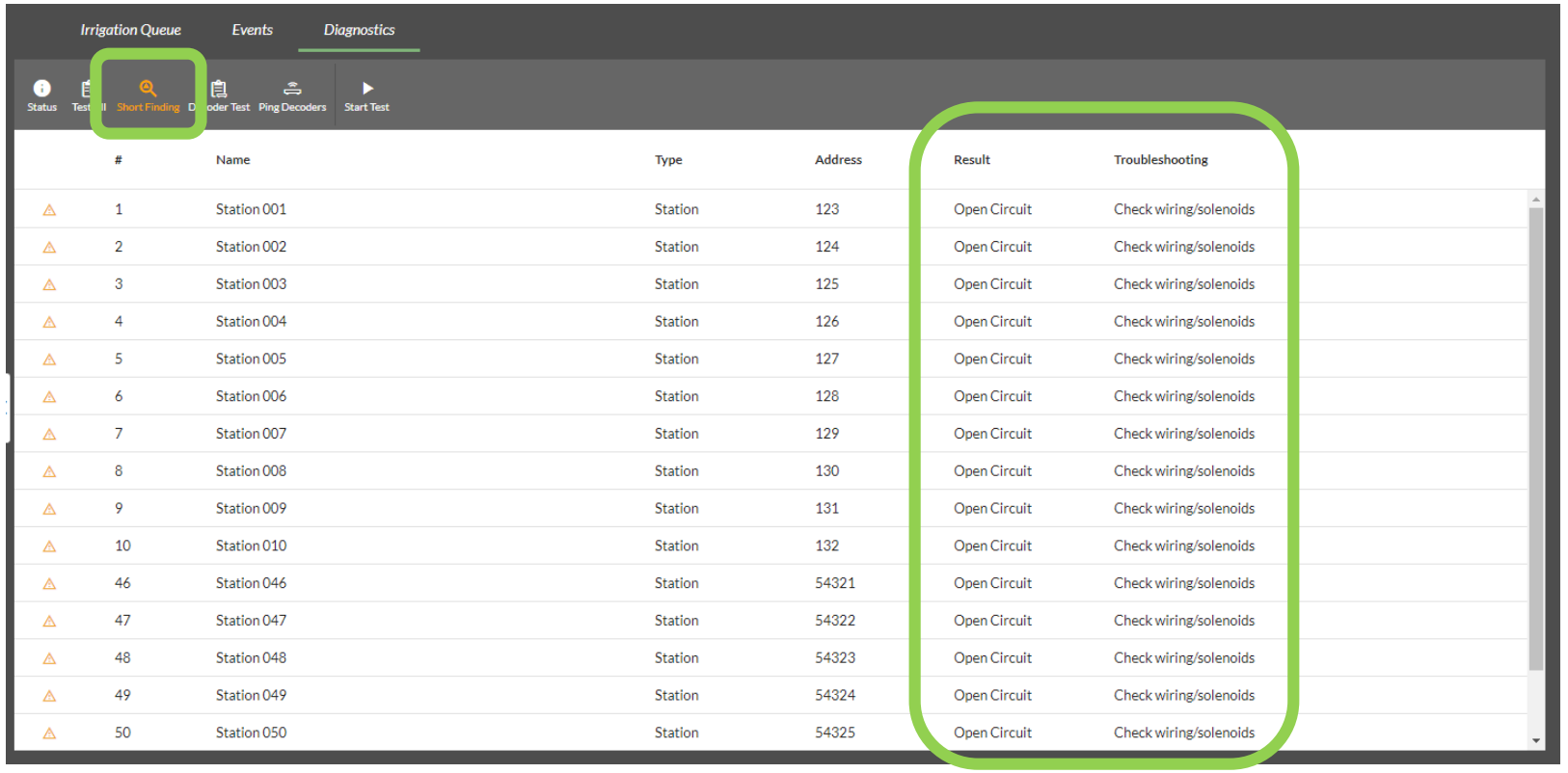
ESP-LXD - Diagnostics Tool Tab

- Test All – click this button to run a timed test of all stations (i.e., for a 2-minute walk through of all stations)



ESP-LXD - Diagnostics Tool Tab

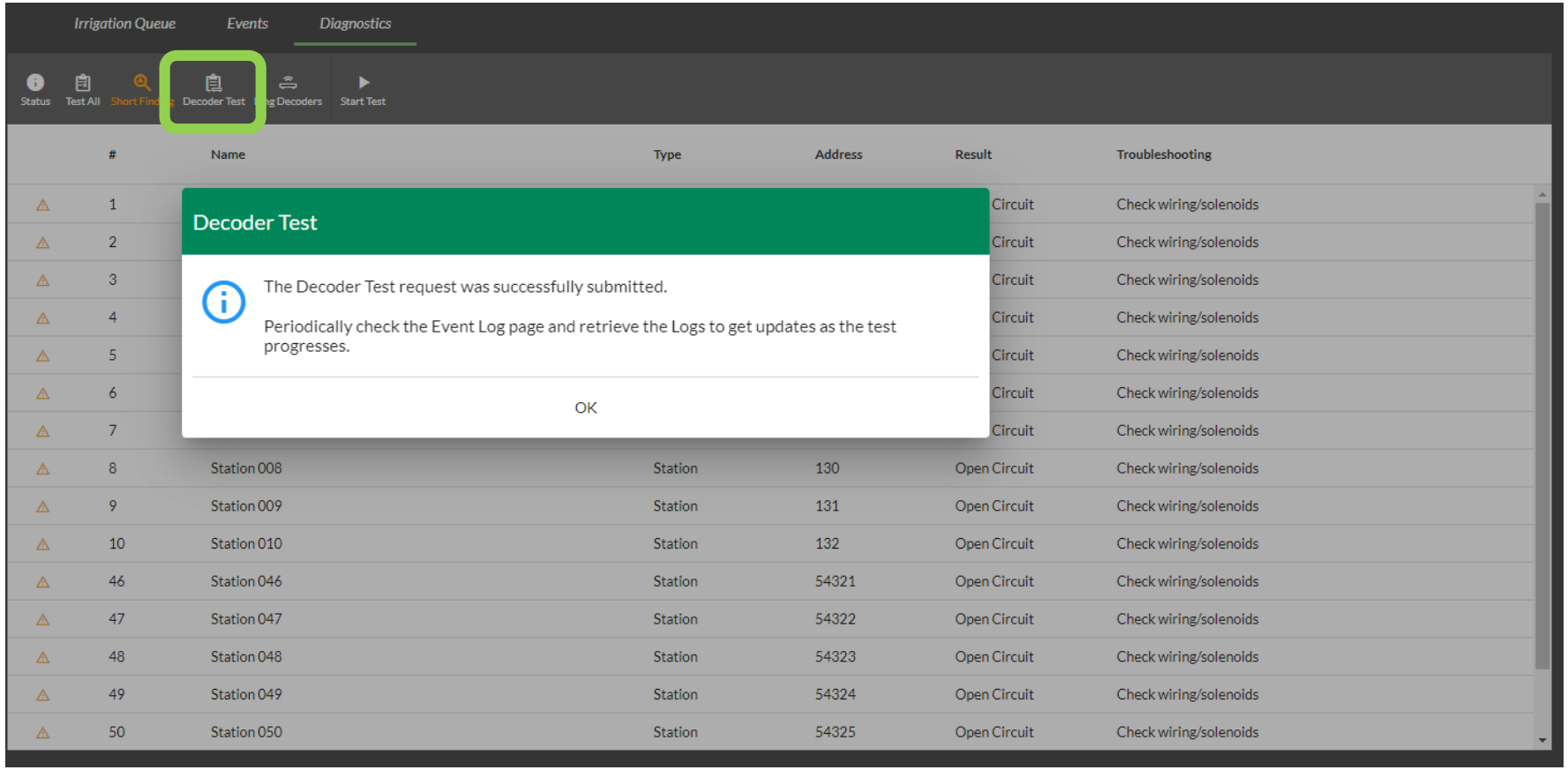
- Short Finding Test – click this button to run a Short Finding test of all stations
  - All irrigation will be stopped, each station will be checked for continuity and results displayed



#	Name	Type	Address	Result	Troubleshooting
1	Station 001	Station	123	Open Circuit	Check wiring/solenoids
2	Station 002	Station	124	Open Circuit	Check wiring/solenoids
3	Station 003	Station	125	Open Circuit	Check wiring/solenoids
4	Station 004	Station	126	Open Circuit	Check wiring/solenoids
5	Station 005	Station	127	Open Circuit	Check wiring/solenoids
6	Station 006	Station	128	Open Circuit	Check wiring/solenoids
7	Station 007	Station	129	Open Circuit	Check wiring/solenoids
8	Station 008	Station	130	Open Circuit	Check wiring/solenoids
9	Station 009	Station	131	Open Circuit	Check wiring/solenoids
10	Station 010	Station	132	Open Circuit	Check wiring/solenoids
46	Station 046	Station	54321	Open Circuit	Check wiring/solenoids
47	Station 047	Station	54322	Open Circuit	Check wiring/solenoids
48	Station 048	Station	54323	Open Circuit	Check wiring/solenoids
49	Station 049	Station	54324	Open Circuit	Check wiring/solenoids
50	Station 050	Station	54325	Open Circuit	Check wiring/solenoids

ESP-LXD - Diagnostics Tool Tab

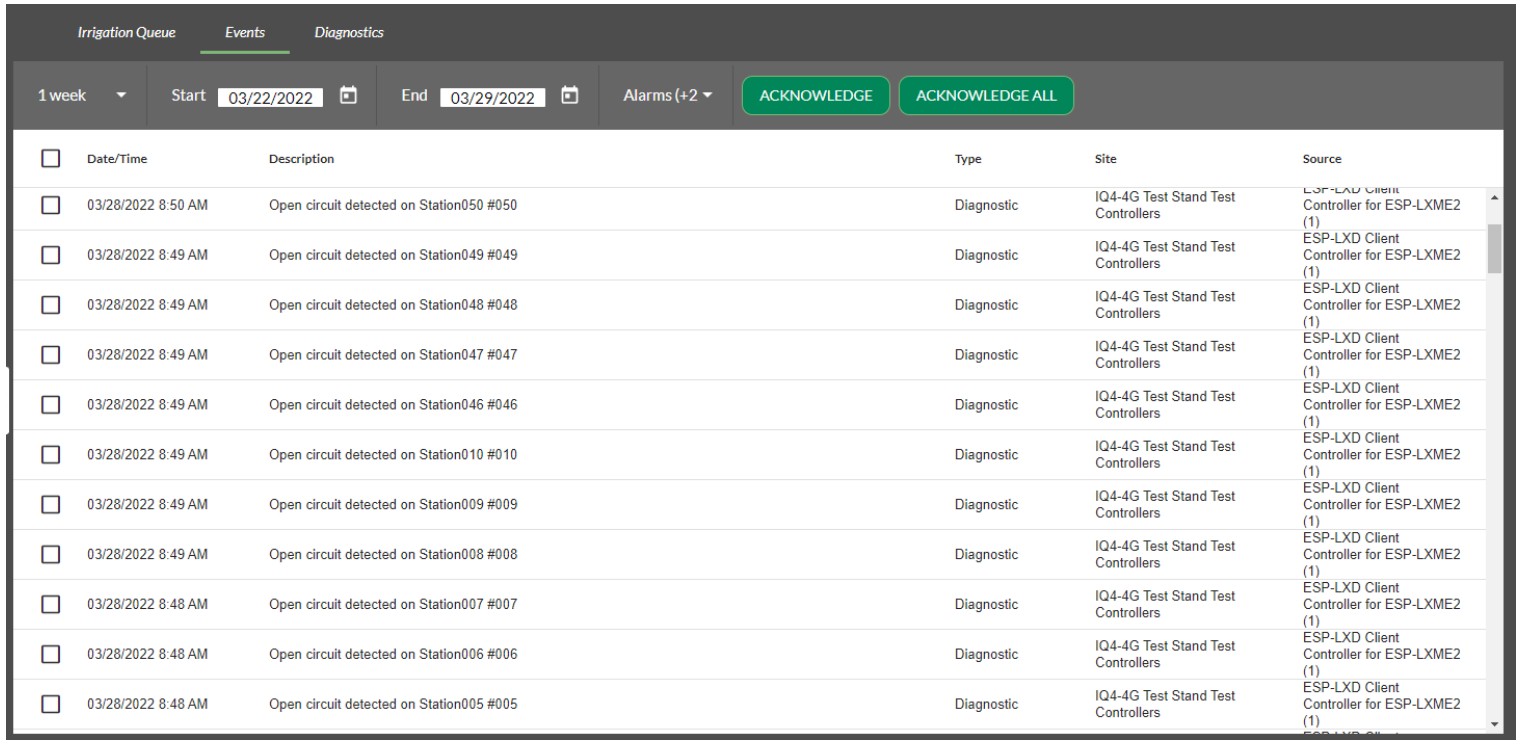
- Decoder Test
  - Decoder Test will check continuity of all decoders and display results



#	Name	Type	Address	Result	Troubleshooting
1				Circuit	Check wiring/solenoids
2				Circuit	Check wiring/solenoids
3				Circuit	Check wiring/solenoids
4				Circuit	Check wiring/solenoids
5				Circuit	Check wiring/solenoids
6				Circuit	Check wiring/solenoids
7				Circuit	Check wiring/solenoids
8	Station 008	Station	130	Open Circuit	Check wiring/solenoids
9	Station 009	Station	131	Open Circuit	Check wiring/solenoids
10	Station 010	Station	132	Open Circuit	Check wiring/solenoids
46	Station 046	Station	54321	Open Circuit	Check wiring/solenoids
47	Station 047	Station	54322	Open Circuit	Check wiring/solenoids
48	Station 048	Station	54323	Open Circuit	Check wiring/solenoids
49	Station 049	Station	54324	Open Circuit	Check wiring/solenoids
50	Station 050	Station	54325	Open Circuit	Check wiring/solenoids

ESP-LXD - Diagnostics Tool Tab

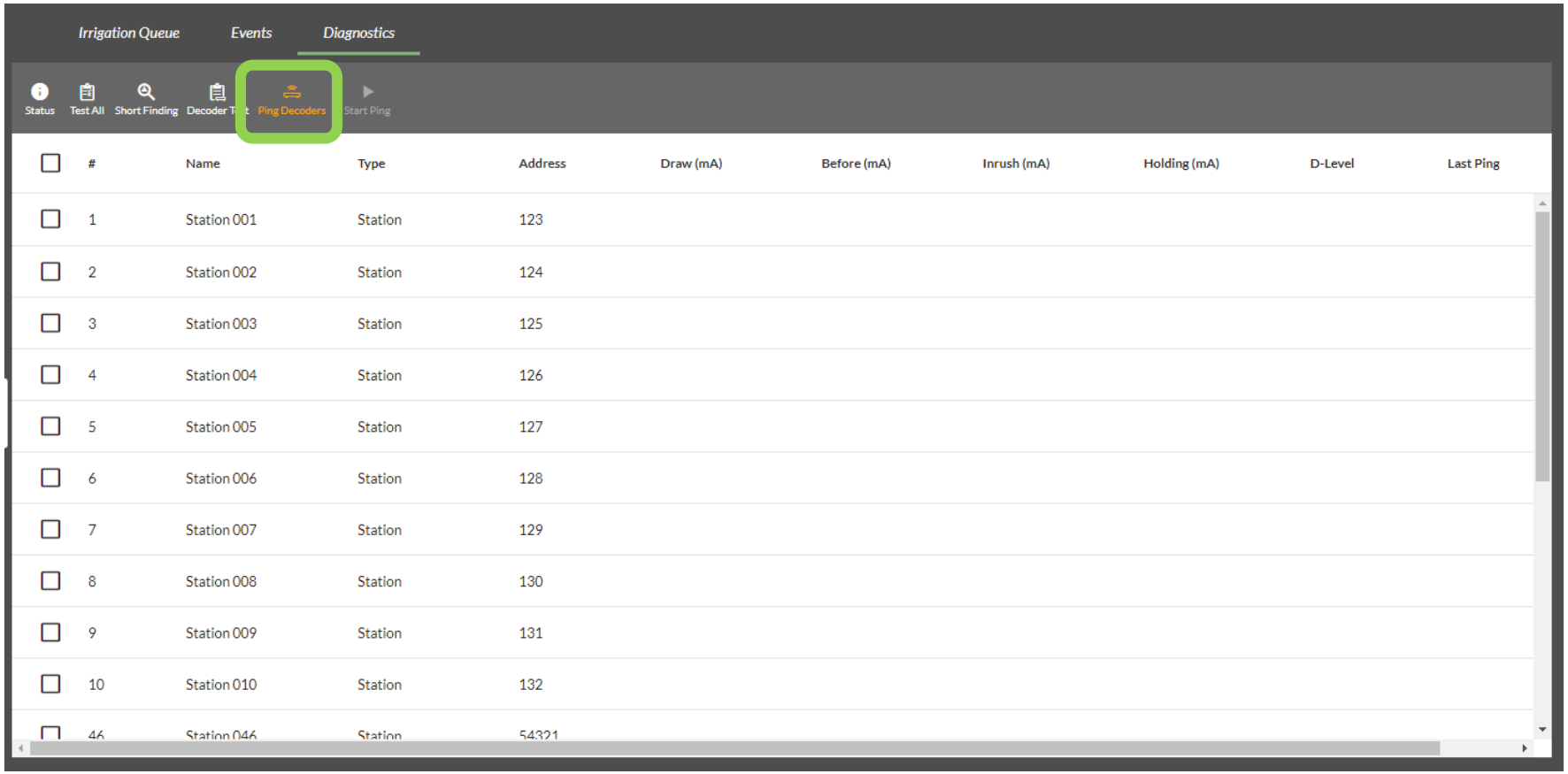
- Decoder Test
  - Click on Logs
  - Results will be displayed in the Events Log -> Diagnostics selection 2 to 15 minutes after the test is complete



Date/Time	Description	Type	Site	Source
03/28/2022 8:50 AM	Open circuit detected on Station050 #050	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station049 #049	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station048 #048	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station047 #047	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station046 #046	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station010 #010	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station009 #009	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:49 AM	Open circuit detected on Station008 #008	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:48 AM	Open circuit detected on Station007 #007	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:48 AM	Open circuit detected on Station006 #006	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)
03/28/2022 8:48 AM	Open circuit detected on Station005 #005	Diagnostic	IQ4-4G Test Stand Test Controllers	ESP-LXD Client Controller for ESP-LXME2 (1)

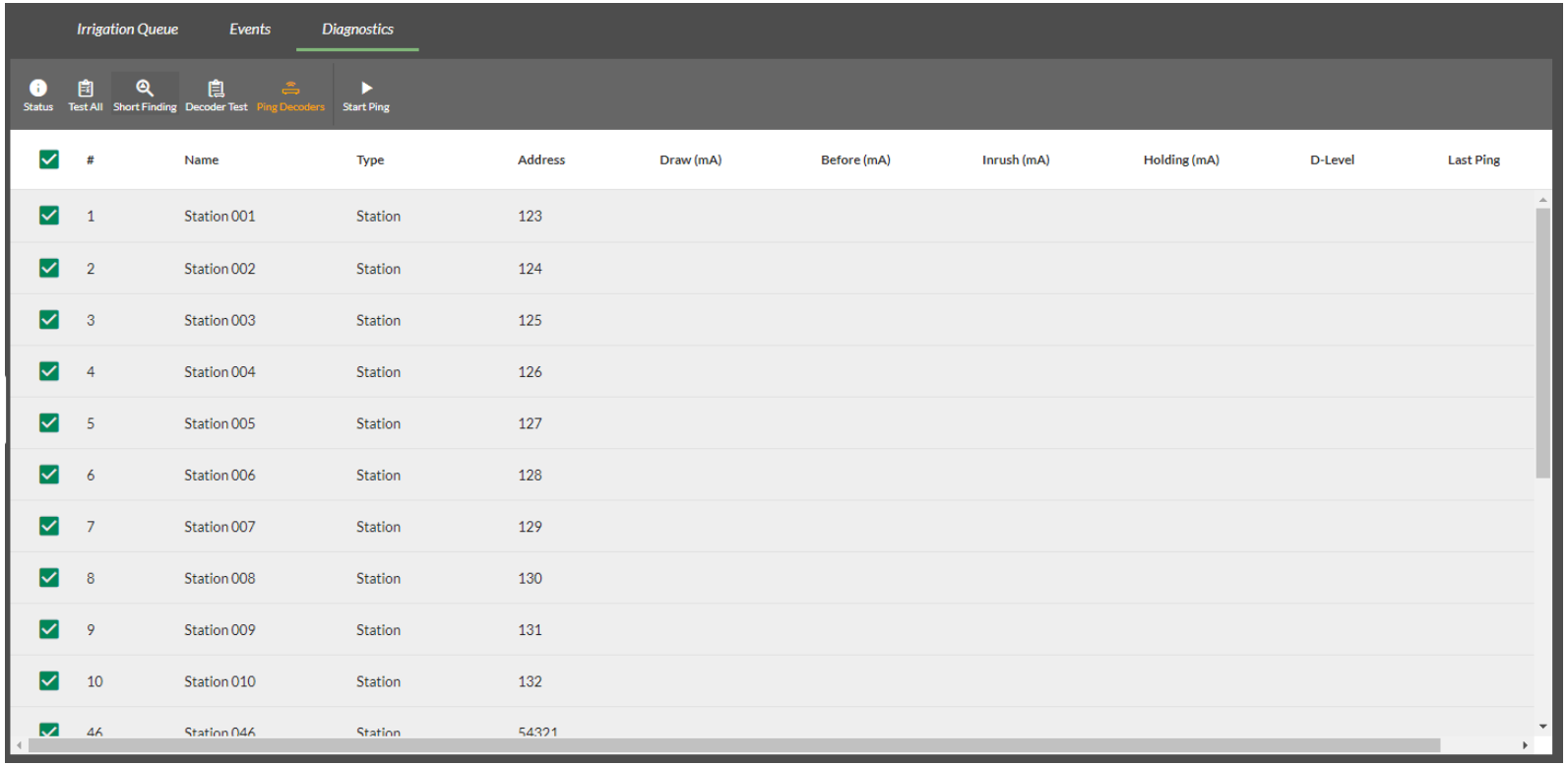
ESP-LXD - Diagnostics Tool Tab

- Ping Test
  - Ping Test will stop irrigation, check continuity of selected decoders and display results



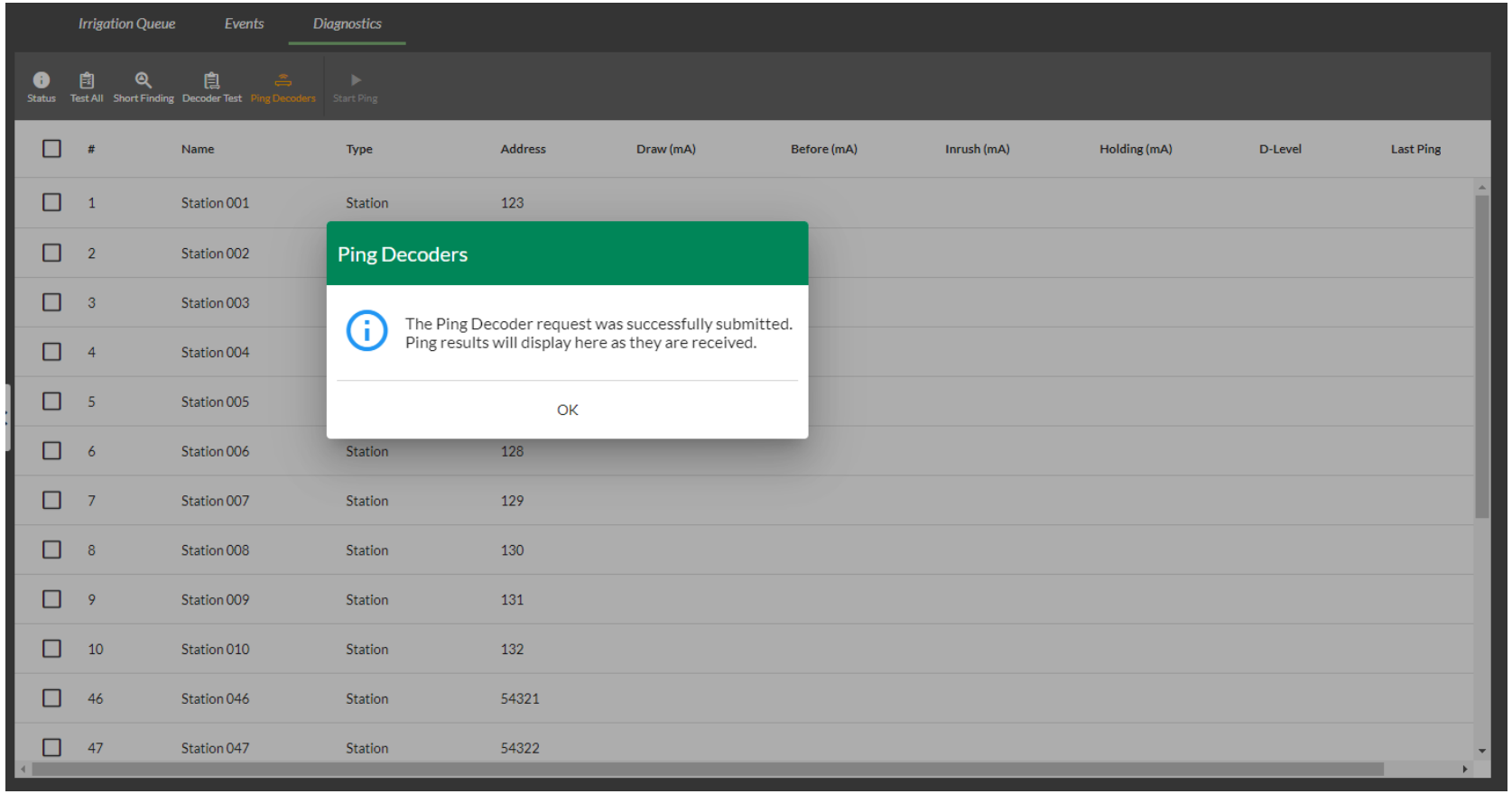
ESP-LXD - Diagnostics Tool Tab

- Ping Test
  - Select the Stations (decoders) that are to be tested
  - Click on Start Ping



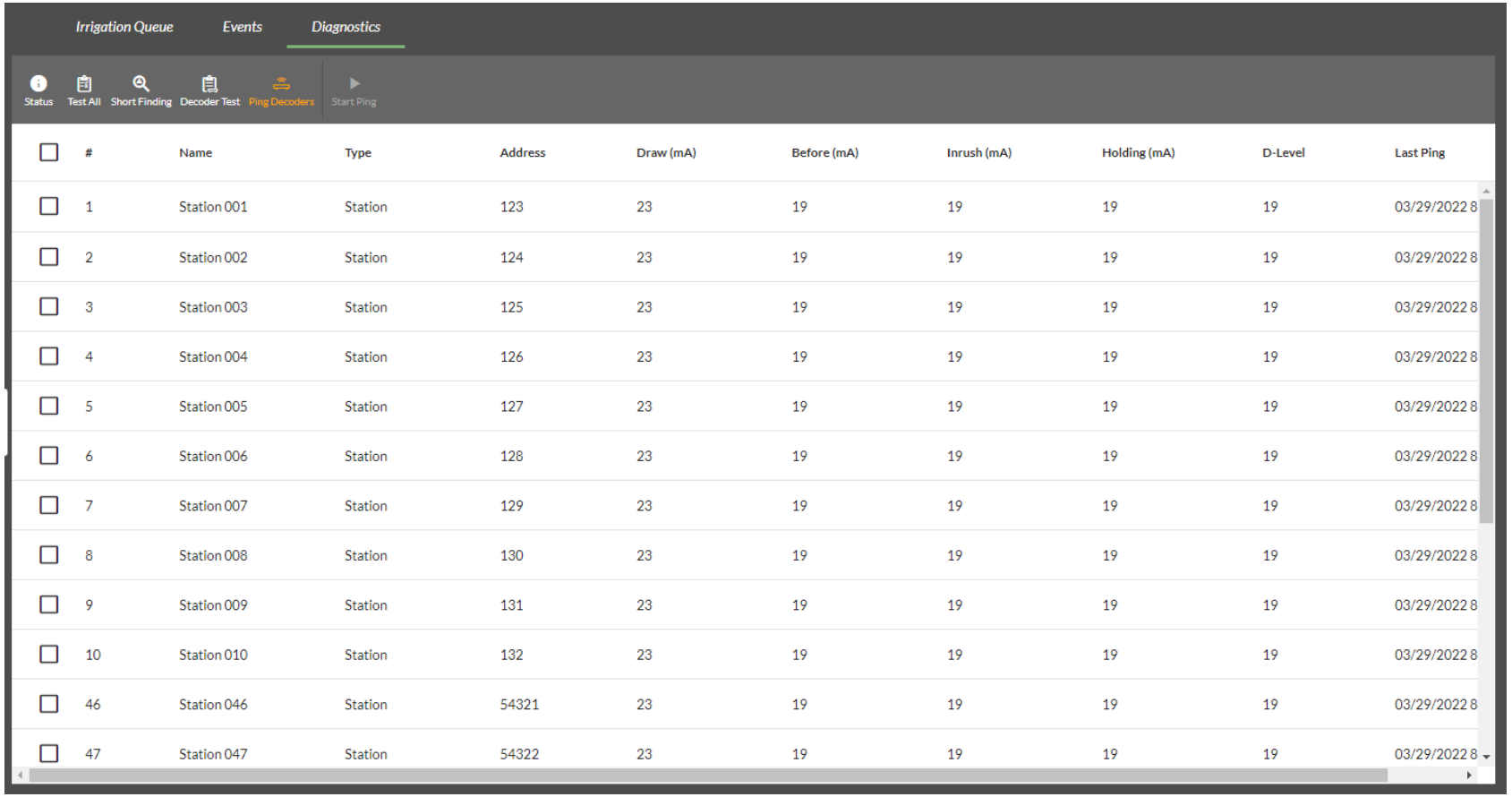
ESP-LXD - Diagnostics Tool Tab

- Ping Test
  - Results will be displayed in the Diagnostics page 2 to 15 minutes after the test is complete



ESP-LXD - Diagnostics Tool Tab

- Ping Test
  - Results will be displayed in the Diagnostics page 2 to 15 minutes after the test is complete

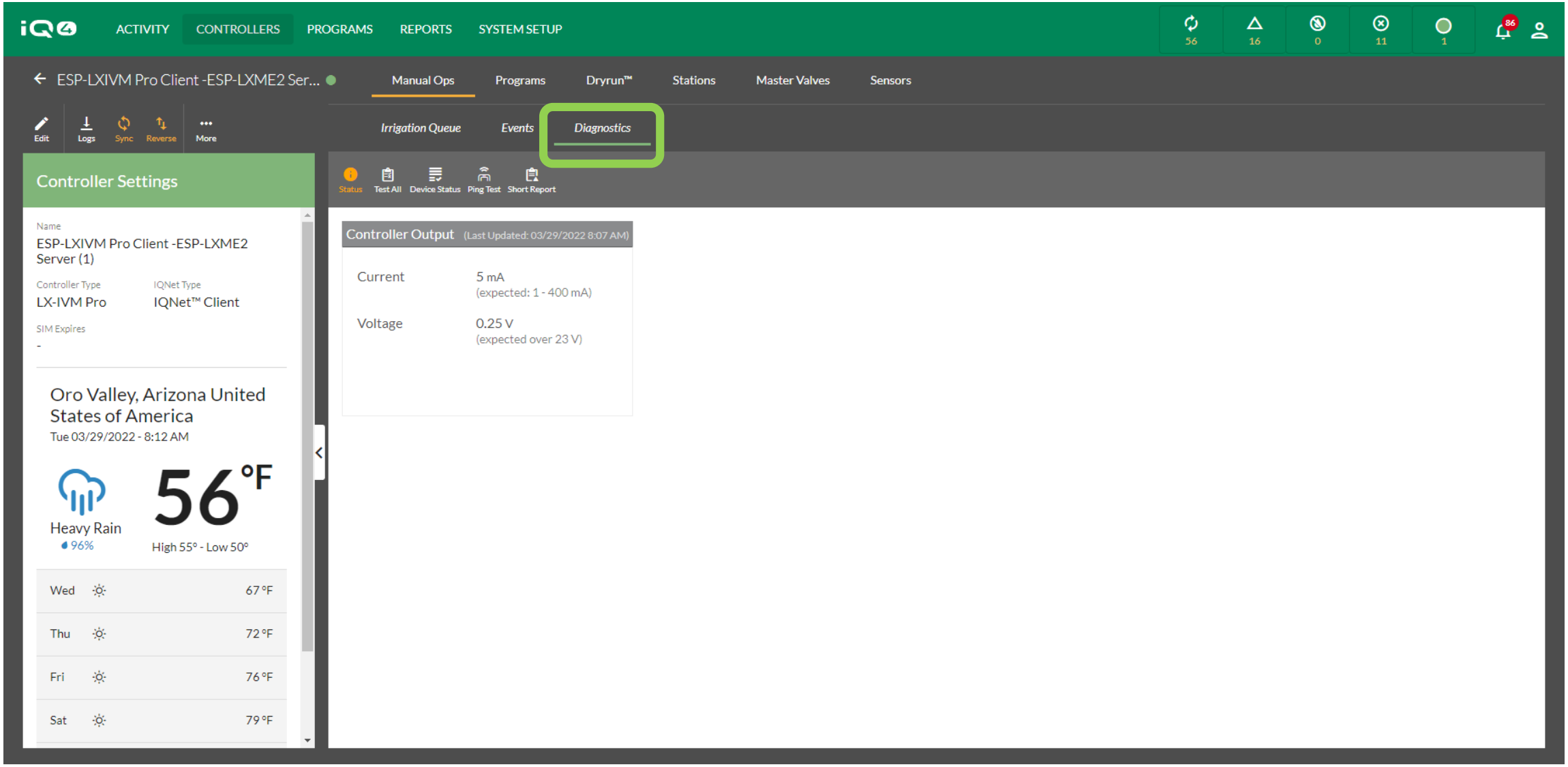


#	Name	Type	Address	Draw (mA)	Before (mA)	Inrush (mA)	Holding (mA)	D-Level	Last Ping
1	Station 001	Station	123	23	19	19	19	19	03/29/2022 8
2	Station 002	Station	124	23	19	19	19	19	03/29/2022 8
3	Station 003	Station	125	23	19	19	19	19	03/29/2022 8
4	Station 004	Station	126	23	19	19	19	19	03/29/2022 8
5	Station 005	Station	127	23	19	19	19	19	03/29/2022 8
6	Station 006	Station	128	23	19	19	19	19	03/29/2022 8
7	Station 007	Station	129	23	19	19	19	19	03/29/2022 8
8	Station 008	Station	130	23	19	19	19	19	03/29/2022 8
9	Station 009	Station	131	23	19	19	19	19	03/29/2022 8
10	Station 010	Station	132	23	19	19	19	19	03/29/2022 8
46	Station 046	Station	54321	23	19	19	19	19	03/29/2022 8
47	Station 047	Station	54322	23	19	19	19	19	03/29/2022 8

ESP-LXIVM Diagnostics

Diagnostics for ESP-LXIVM/LXIVM Pro Controllers

ESP-LXIVM - Diagnostics Tool Tab

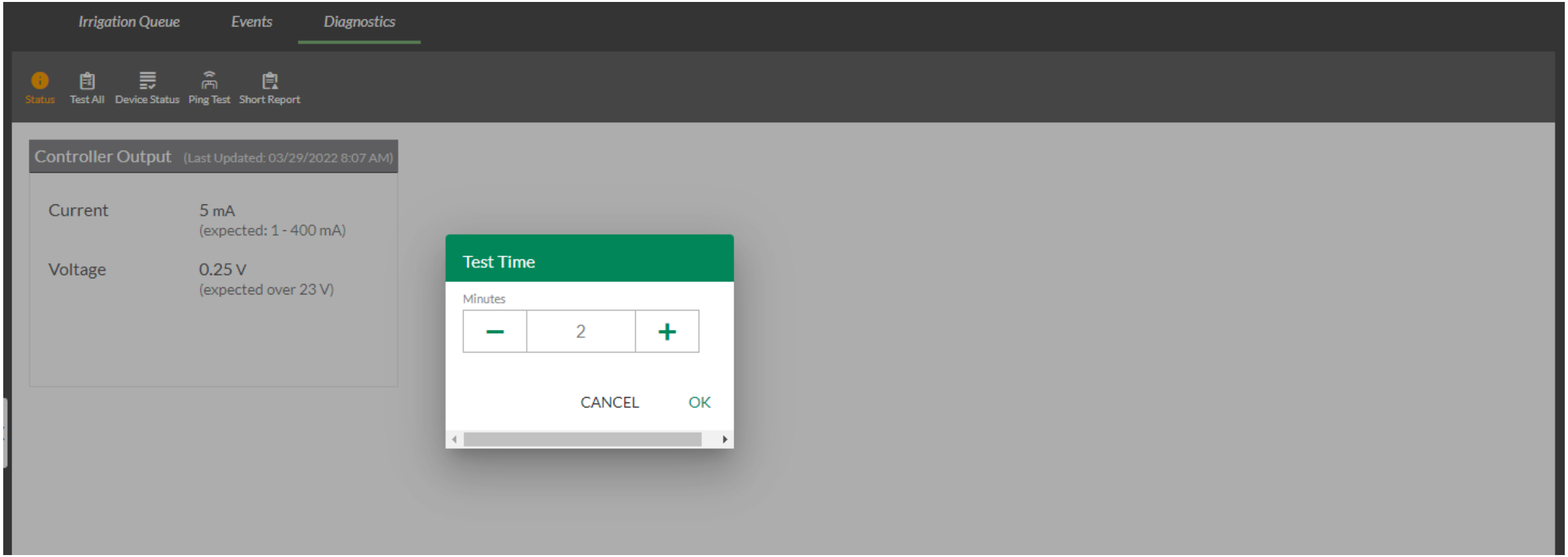


ESP-LXIVM - Diagnostics Tool Tab

- Select the Diagnostics tab after connecting to the controller on the Manual Ops -> Irrigation Queue tab
- Displayed:
  - Controller Output – Voltage, Current and expectations

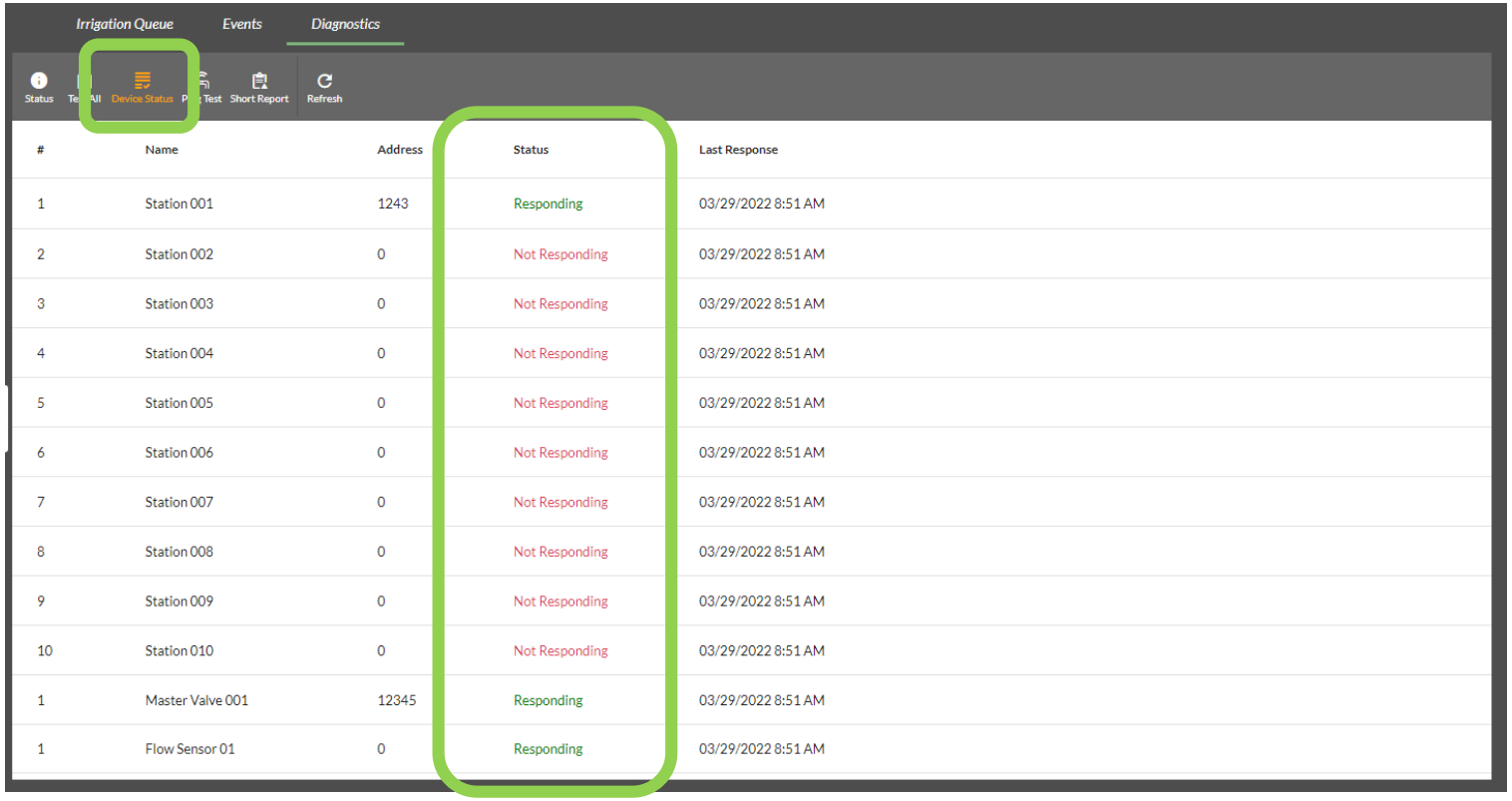
ESP-LXIVM - Diagnostics Tool Tab

- Test All – click this button to run a timed test of all stations (i.e., for a 2-minute walk through of all stations)



ESP-LXIVM - Diagnostics Tool Tab

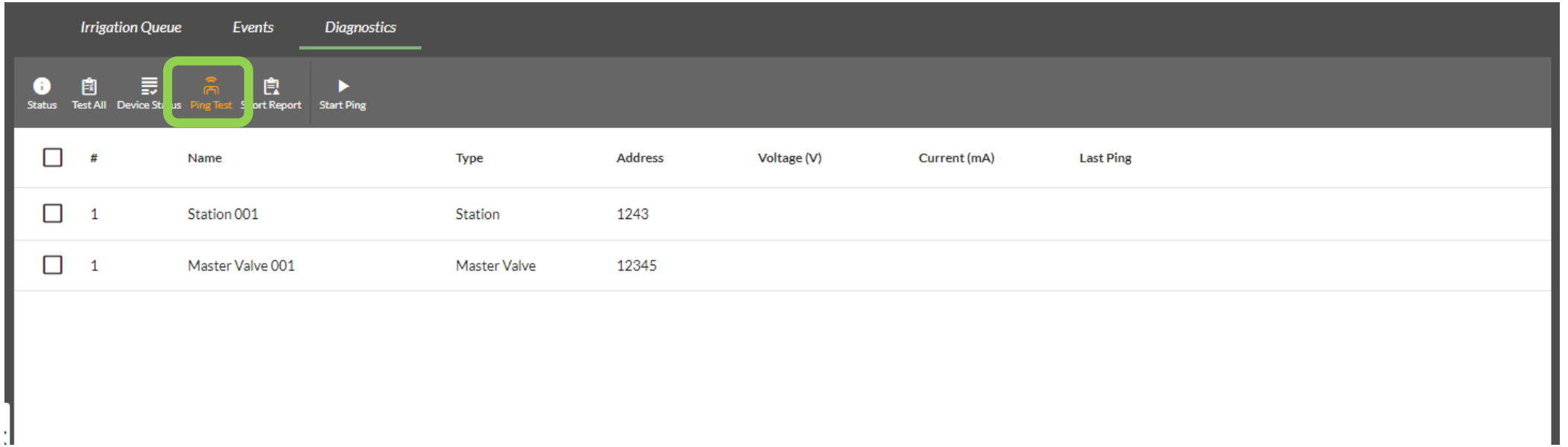
- Device Status - click this button to display a list of all stations responding and all stations not responding
  - All irrigation will be stopped, each station will be checked for continuity and results displayed



#	Name	Address	Status	Last Response
1	Station 001	1243	Responding	03/29/2022 8:51 AM
2	Station 002	0	Not Responding	03/29/2022 8:51 AM
3	Station 003	0	Not Responding	03/29/2022 8:51 AM
4	Station 004	0	Not Responding	03/29/2022 8:51 AM
5	Station 005	0	Not Responding	03/29/2022 8:51 AM
6	Station 006	0	Not Responding	03/29/2022 8:51 AM
7	Station 007	0	Not Responding	03/29/2022 8:51 AM
8	Station 008	0	Not Responding	03/29/2022 8:51 AM
9	Station 009	0	Not Responding	03/29/2022 8:51 AM
10	Station 010	0	Not Responding	03/29/2022 8:51 AM
1	Master Valve 001	12345	Responding	03/29/2022 8:51 AM
1	Flow Sensor 01	0	Responding	03/29/2022 8:51 AM

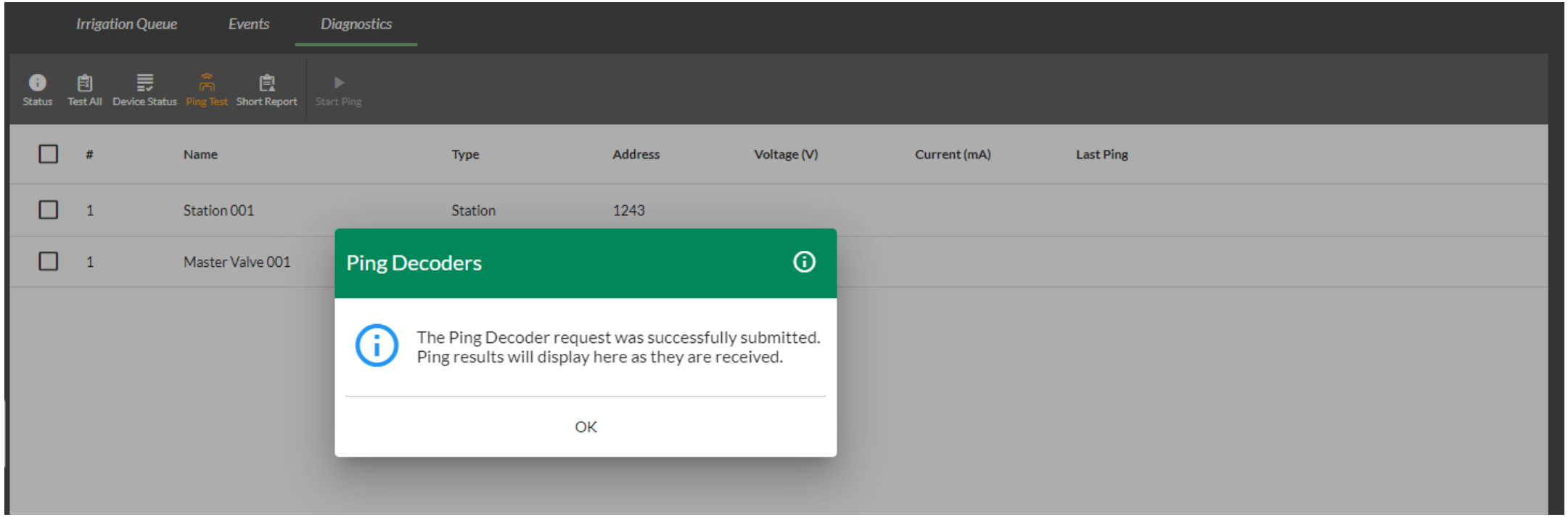
ESP-LXIVM - Diagnostics Tool Tab

- Ping Test
  - Ping Test will stop irrigation, check continuity of selected decoders and display results



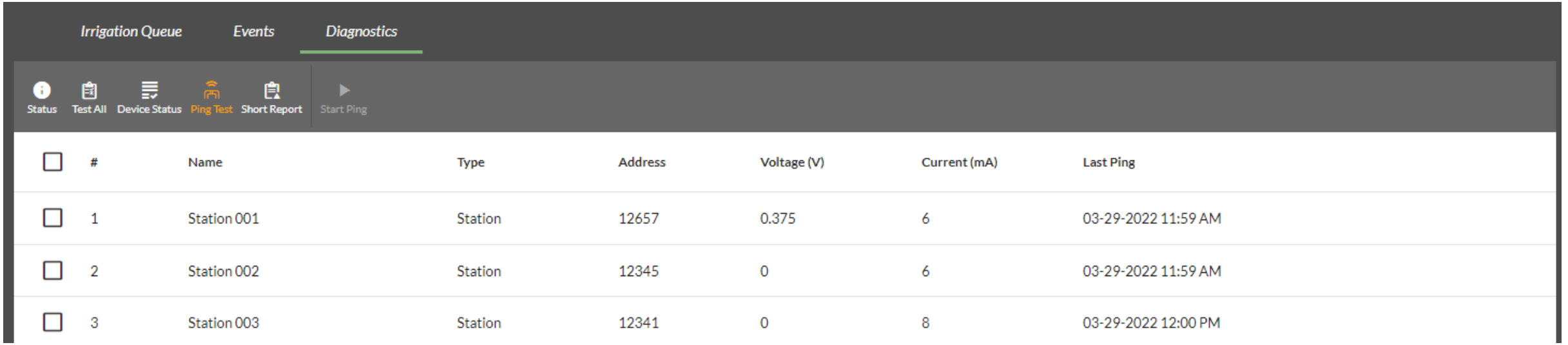
ESP-LXIVM - Diagnostics Tool Tab

- Ping Test
  - Select the Stations (decoders) that are to be tested
  - Click on Start Ping



ESP-LXIVM - Diagnostics Tool Tab

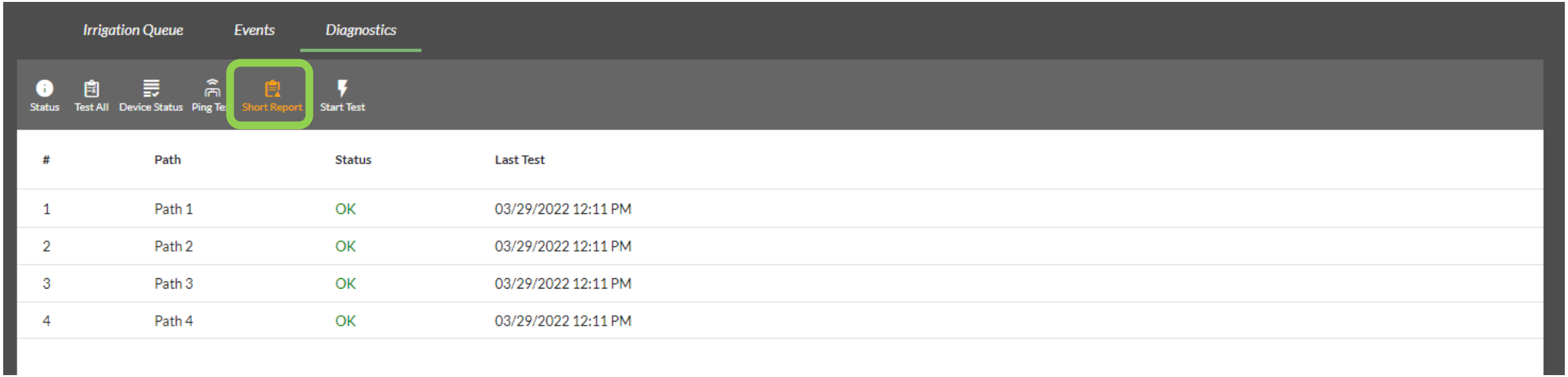
- Ping Test
  - Results will be displayed in the Diagnostics page 2 to 15 minutes after the test is complete



#	Name	Type	Address	Voltage (V)	Current (mA)	Last Ping
1	Station 001	Station	12657	0.375	6	03-29-2022 11:59 AM
2	Station 002	Station	12345	0	6	03-29-2022 11:59 AM
3	Station 003	Station	12341	0	8	03-29-2022 12:00 PM

ESP-LXIVM - Diagnostics Tool Tab

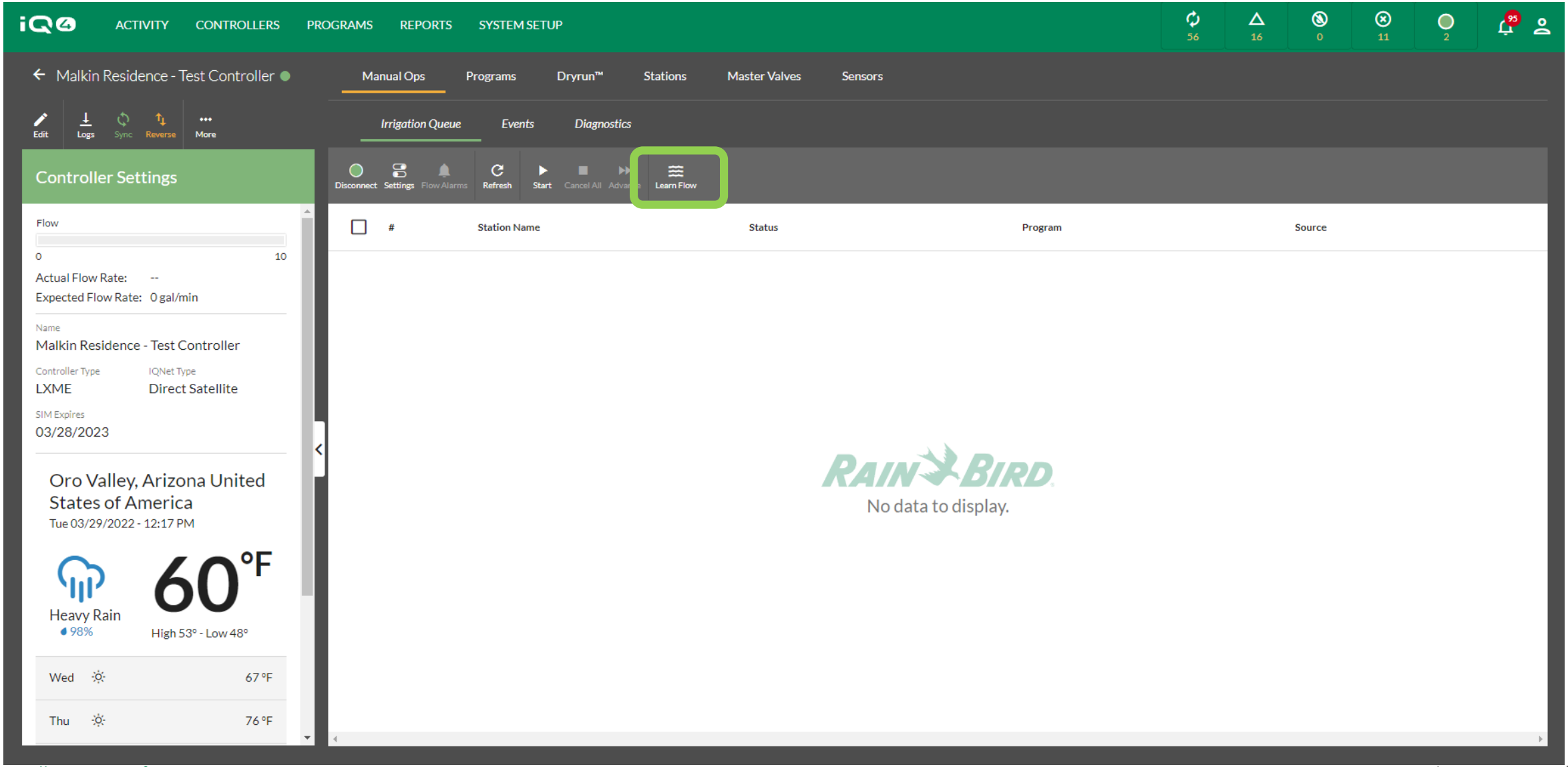
- Short Report
  - Short Report will check continuity of all 2-wire paths and display results



Learned Flow

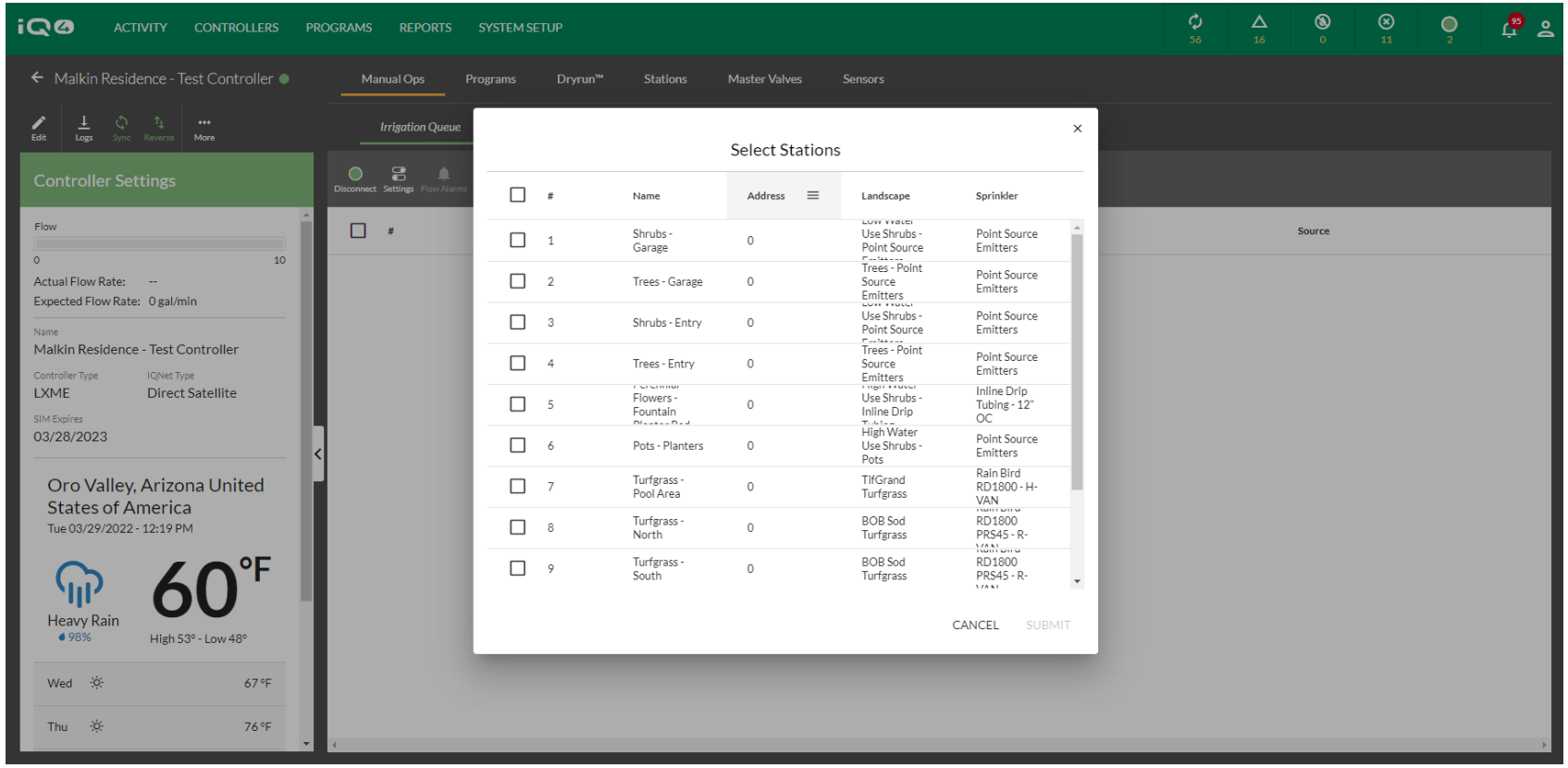
Learned Flow Feature for all ESP-LX Controllers

Learned Flow Feature – Irrigation Queue Tab



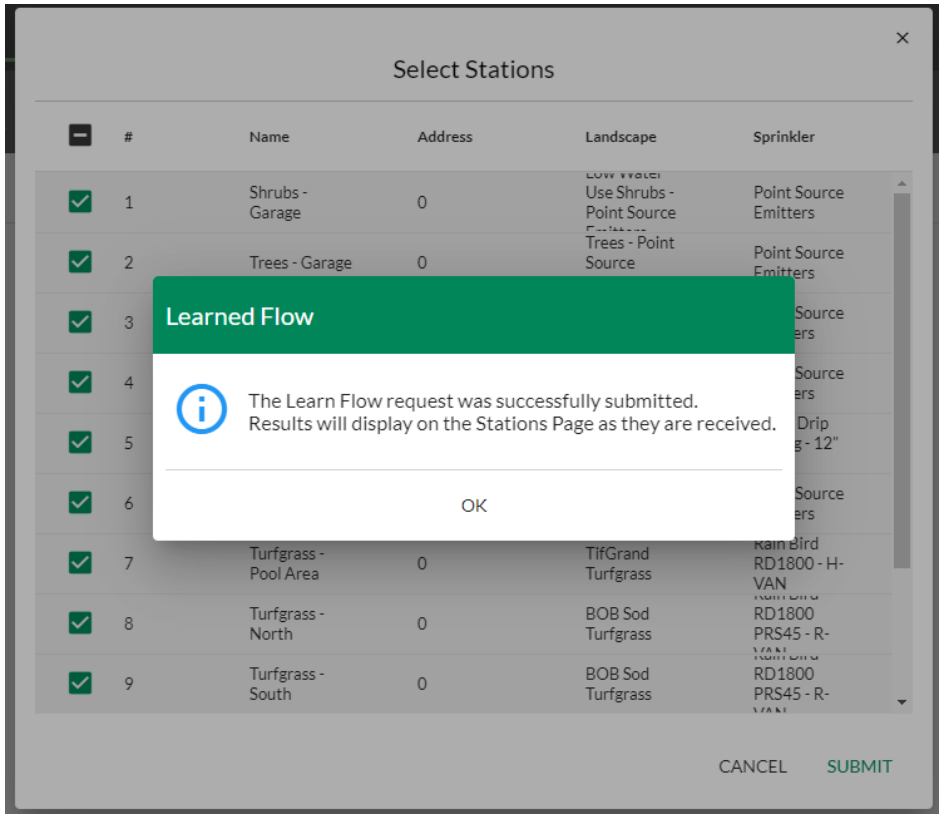
Learned Flow Feature - Irrigation Queue Tab

- Learned Flow
  - Learned Flow will run each selected station for 2 to 4 minutes to determine the average flow. These values are saved into the controller data and relayed to IQ4



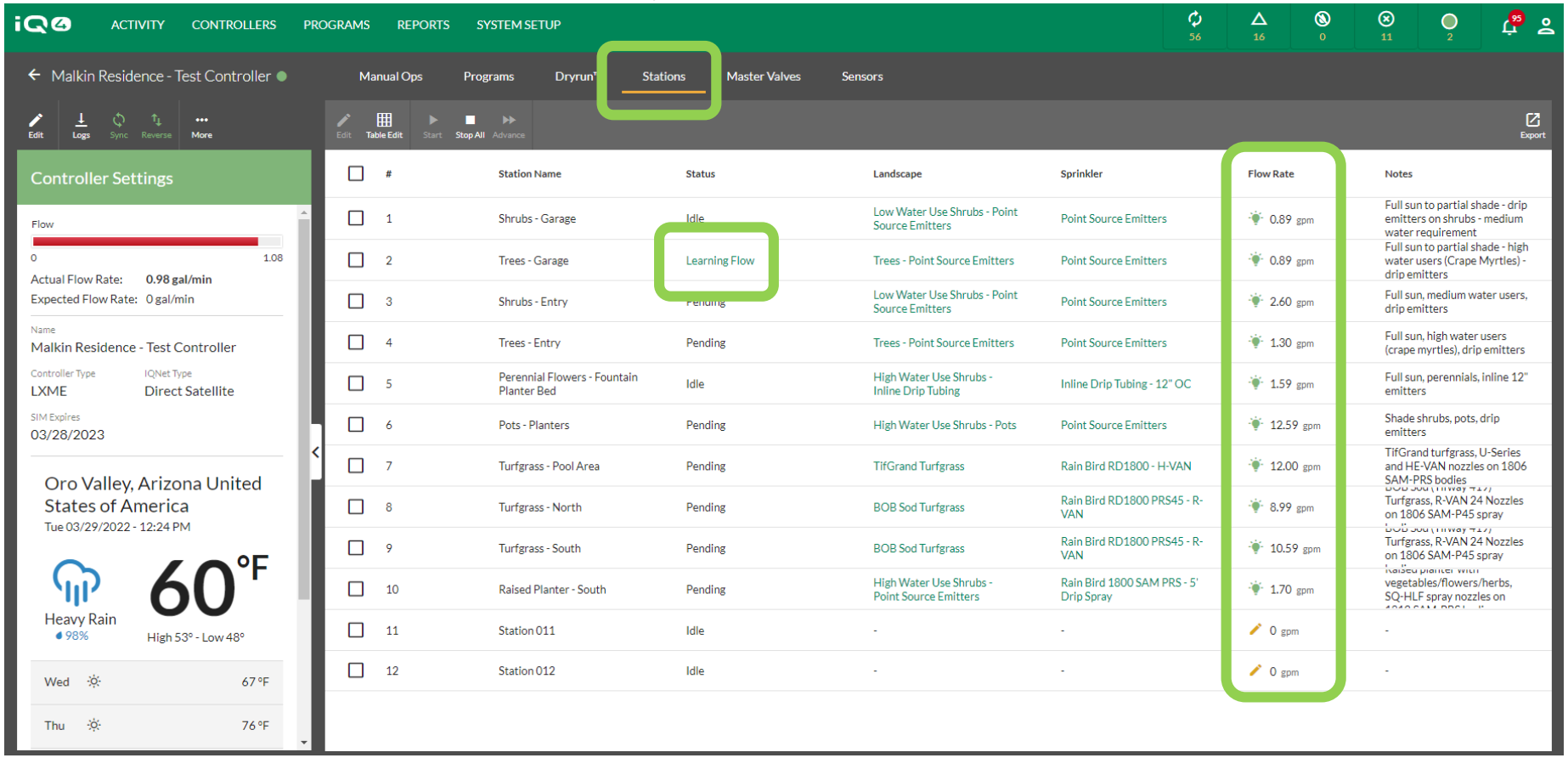
Learned Flow Feature - Irrigation Queue Tab

- Learned Flow
  - The Learned Flow results will be displayed on the Stations page with a 12.59 gpm



Learned Flow Feature - Irrigation Queue Tab

- Learned Flow
  - The Learned Flow results will be displayed on the Stations page with a 12.59 gpm

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