



ESP-LXD Controller Troubleshooting Guide



For product manuals, instructional videos and FAQs, please visit:

www.rainbird.com/esplxseries



For free professional support for programming and troubleshooting, please call: **1-866-544-1406**

Local Rain Bird Contact Information

Distributor Manager:	<input type="text"/>
Email:	<input type="text"/>
Phone:	<input type="text"/>

Area Specification Manager	<input type="text"/>
Public Agency Manager:	<input type="text"/>
Email:	<input type="text"/>
Phone:	<input type="text"/>

Contractor Account Mgr:	<input type="text"/>
Email:	<input type="text"/>
Phone:	<input type="text"/>

Water Conservation Mgr:	<input type="text"/>
Email:	<input type="text"/>
Phone:	<input type="text"/>

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Useful Tools

- **Milliamp Meter**

Recommended Model: Armada Pro 93

- **As-Built Drawing**

Don't have it, make it using a cable locator

- **Wire Stripper**

For video showing proper wire splice instructions and other installation tips, please visit:

www.rainbird.com/landscape/products/controllers/ESP-LXD.htm

- **LXD Troubleshooting Tools**

Like the one you are holding in your hands



**Milliamp
Meter**

We recommend using:

- **Rain Bird MAXI Cable** as your 2-Wire communications cable.
- **Rain Bird DBR/Y splice kits** for ALL electrical wiring connections.



**Wire
Stripper**



NOTE: If installing or repairing communications wiring for IQ Software, do not install the communications cables in the same conduit as the 2-Wire path wiring.



NOTE: Rain Bird HV, DV, and JTV Series residential valves are not compatible with ESP-LXD decoders.

Use only Rain Bird commercial series valves for ESP-LXD installations:

- **PGA Series**
www.rainbird.com/landscape/products/valves/PGA-series.htm
- **PEB Series**
www.rainbird.com/landscape/products/valves/PEB-PESBseries.htm
- **EFB-CP Series**
www.rainbird.com/landscape/products/valves/EFB-CP.htm
- **BPE Series**
www.rainbird.com/landscape/products/valves/BPES.htm

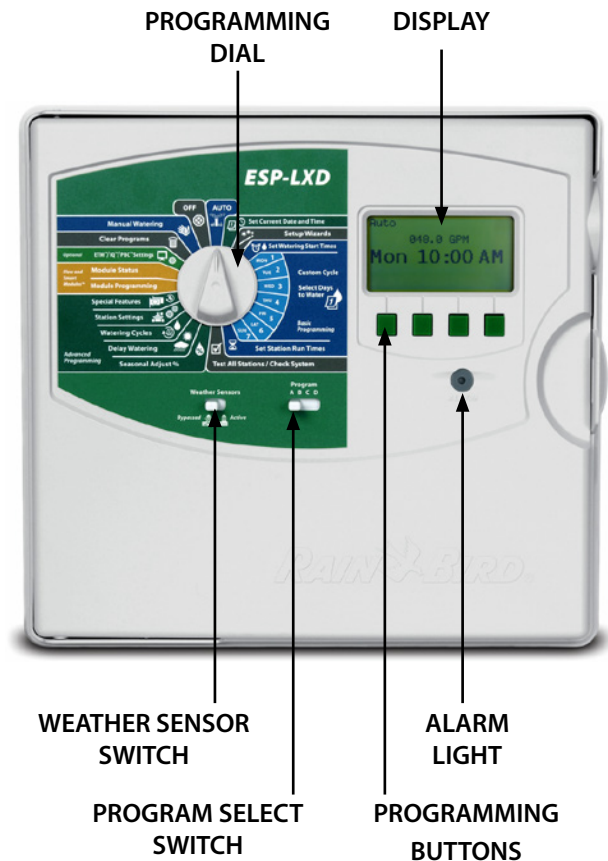
A list of ESP-LXD Controller Troubleshooting Videos can be found here:

[ESP-LXD Controller Troubleshooting](#)

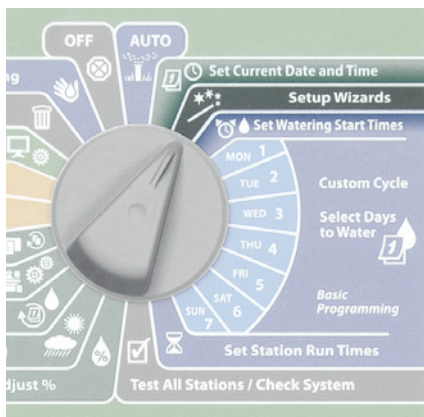
www.youtube.com/playlist?list=PLKH-77cPRcpnuhsym3t_NbUjAqLu1G-9He

Controller Features

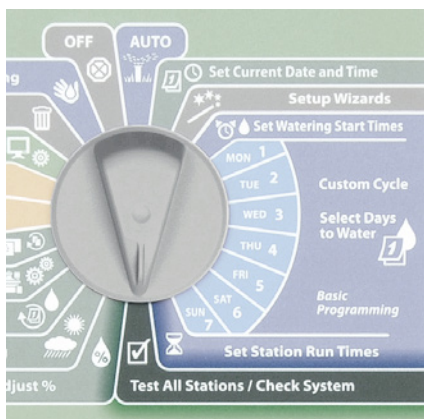
Front Panel



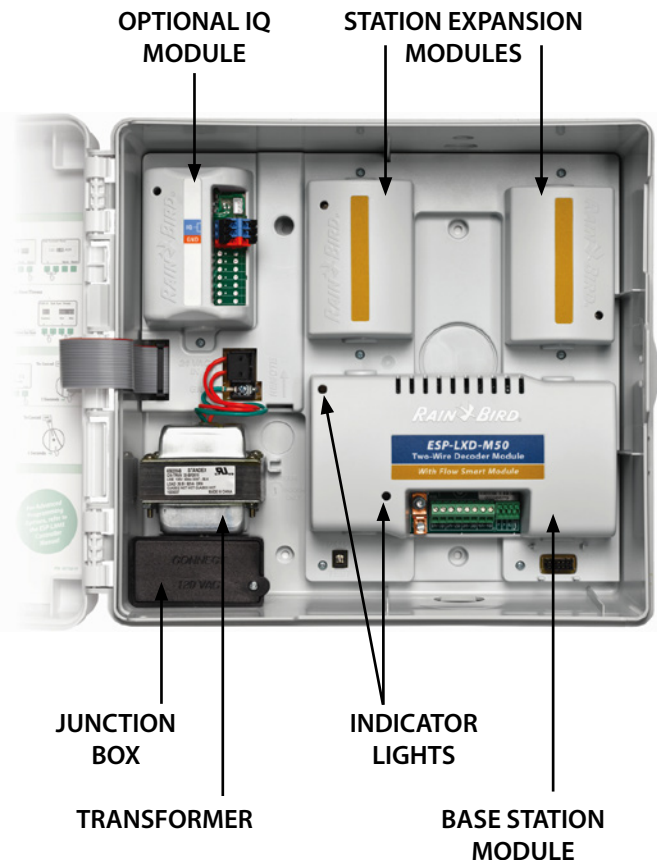
Setup Wizards



Test All Stations/Check System



Cabinet Components



Basic Programming

The ESP-LXD Controller offers Setup Wizards to help get you started and guide you through each step of the installation and hardware setup process.

It's most effective to use the Setup Wizards in the order in which they appear on the screen, as follows:

1. Valve Types
2. Master Valves
3. Weather Sensors (if present)
4. Station Setup
5. Flow Sensors (if present).

For more information see the
**Installation, Programming &
Operation Guide**

that came with the ESP-LXD Controller.

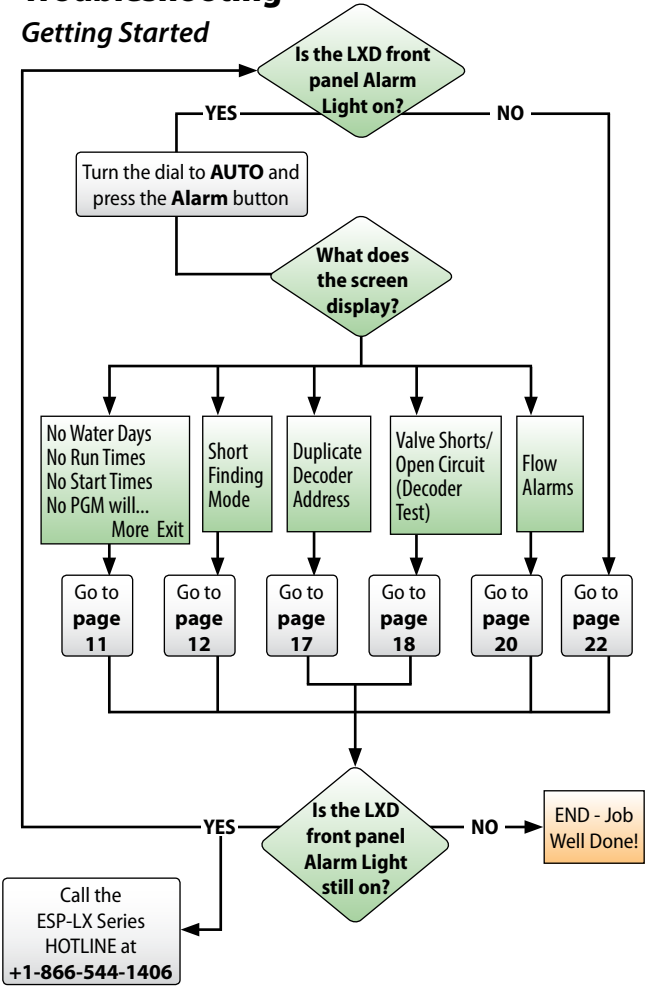


Or else download the Programming Guide at:

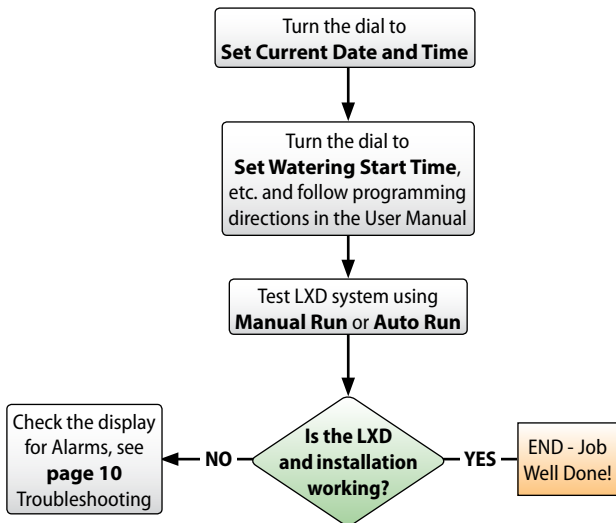
www.rainbird.com/esplxseries

Troubleshooting

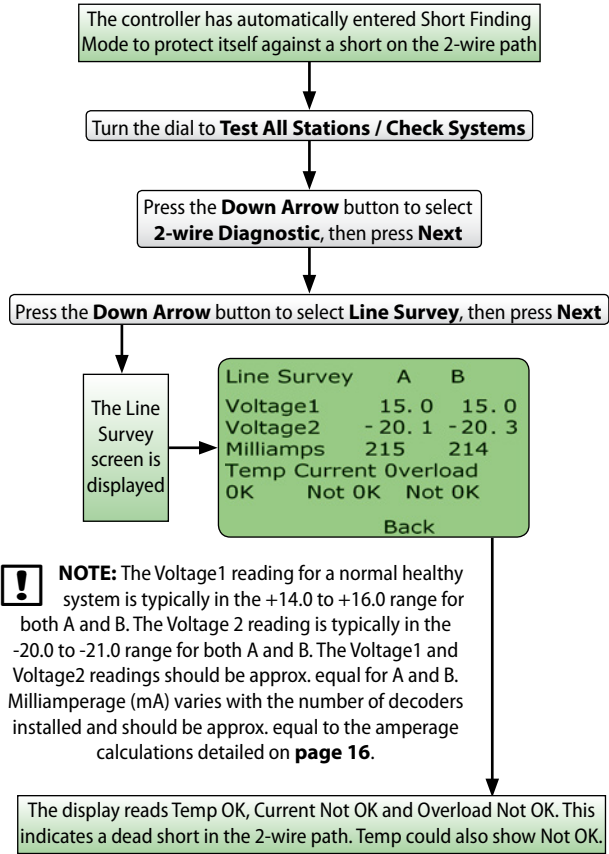
Getting Started



Alarm: No Water Days, No Run Times, ...

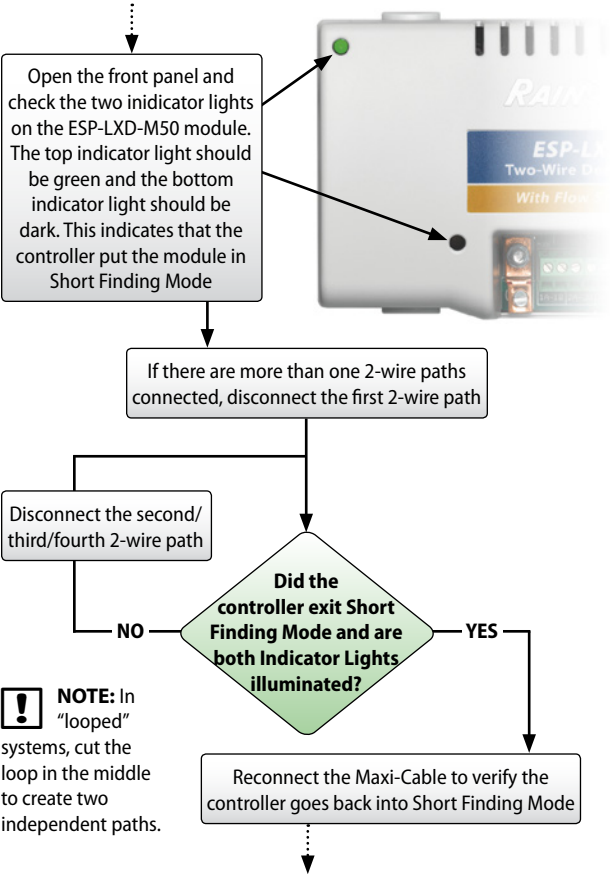


Short Finding Mode



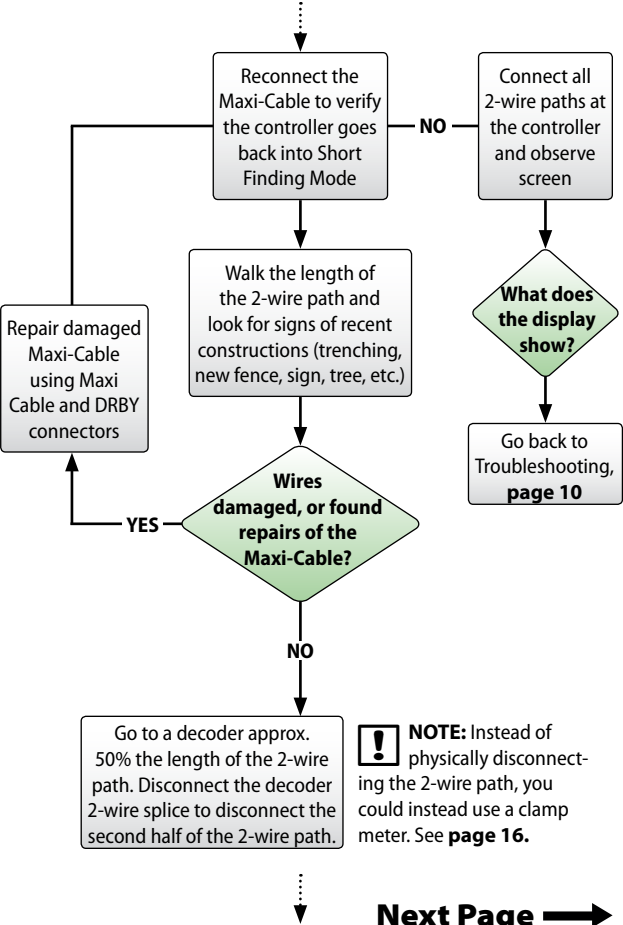
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Short Finding Mode cont.

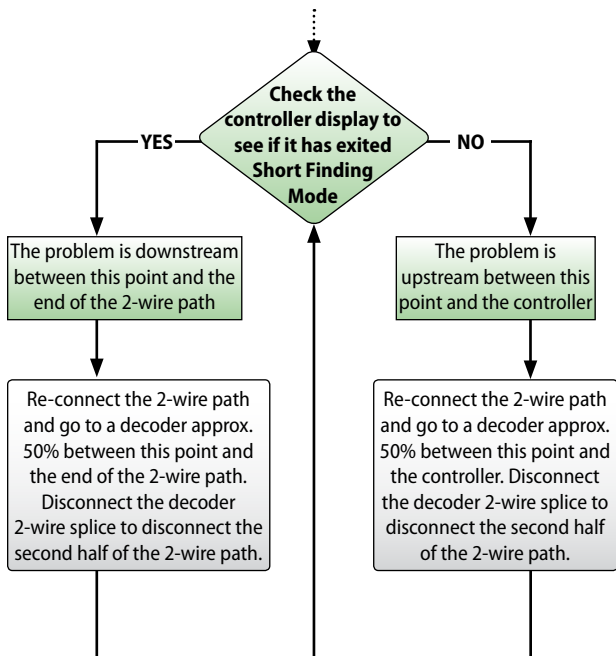


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Short Finding Mode cont.



Short Finding Mode cont.




For video instructions on **Automatic Short Finding Mode**, please visit:

<https://youtu.be/khFodRFUOXs>

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Short Finding Mode cont.

Alternatively, if you have a clamp meter you can also measure the amperage:

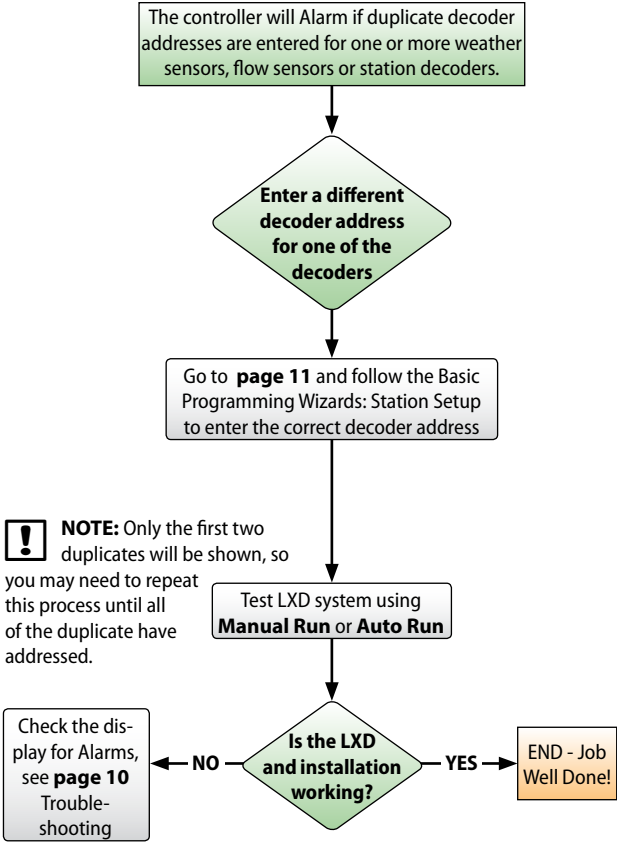
 **NOTE:** Before measuring the amperage, calculate the approximate current that the 2-wire path is consuming.

System Amperage Calculation			
	Quantity of single address station decoders	X	0.5 mA
+	Quantity of multiple address decoders	X	1.0 mA
+	Quantity of active decoders	X	17.5 mA
+	Quantity of other SD210 decoders	X	8.0 mA
<hr/>			
=	Approximate total system amperage in mA		

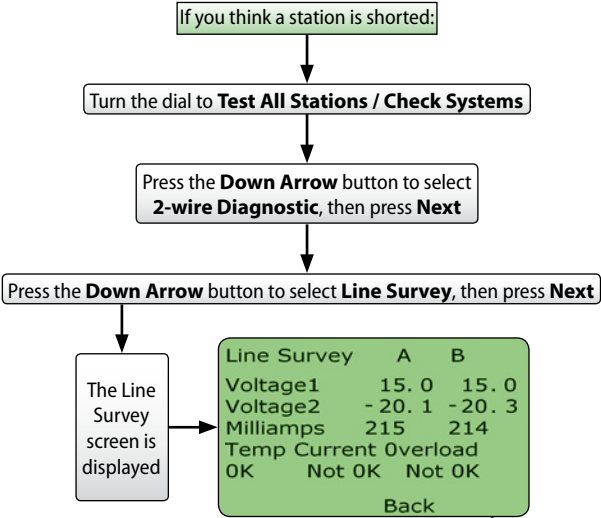
- * Single address station decoders include the FD-101 and FD-102 decoders
- ** Multiple address station decoders include the FD-202, FD-401 and FD-601 decoders

For video instructions on **Locating a Short on the Two-Wire Path**, please visit:
<https://youtu.be/6qDx-0K0aC0>

Duplicate Decoder Address



Manual Short Finding Mode

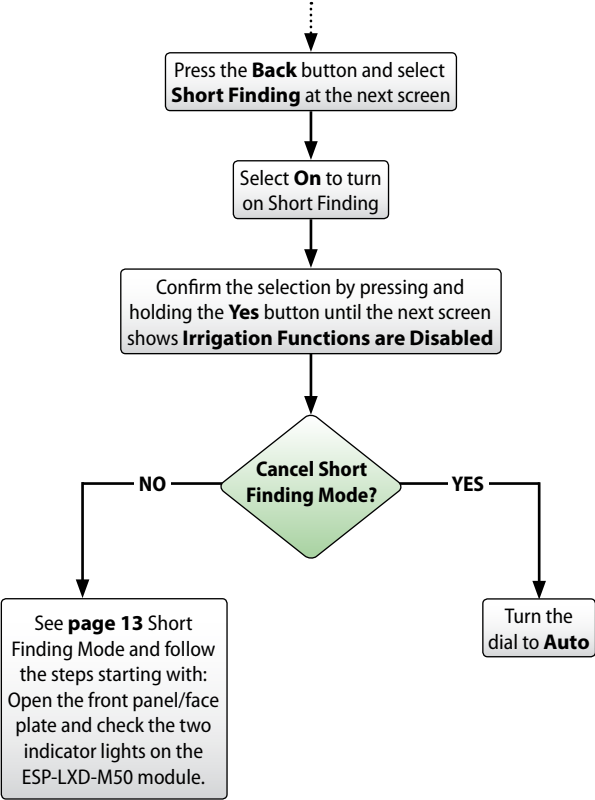


NOTE: The Voltage1 reading for a normal healthy system is typically in the +14.0 to +16.0 range for both A and B. The Voltage 2 reading is typically in the -20.0 to -21.0 range for both A and B. The Voltage1 and Voltage2 readings should be approx. equal for A and B. Milliampage (mA) varies with the number of decoders installed and should be approx. equal to the amperage calculations detailed on **page 16**.

The display reads Temp OK, Current Not OK and Overload OK. This indicates a possible short in the 2-wire path.

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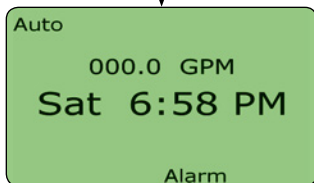
Manual Short Finding Mode cont.



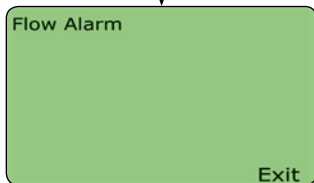
For video instructions on **Manually Putting ESP-LXD Into Short Finding Mode**, please visit:
<https://youtu.be/BT8UgNxhSCU>

Flow Alarms

The display shows the following:



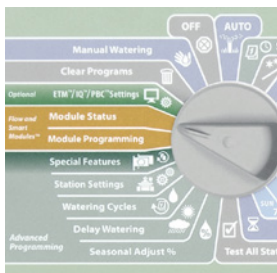
Press the **Alarm** button



Press the **Exit** button

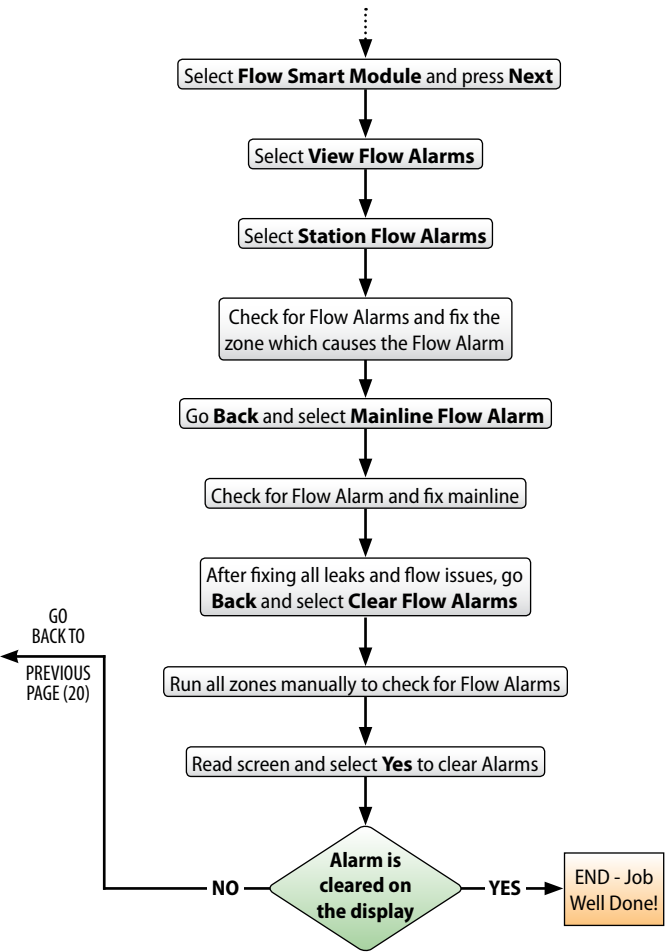
Turn the dial to **Module Status**

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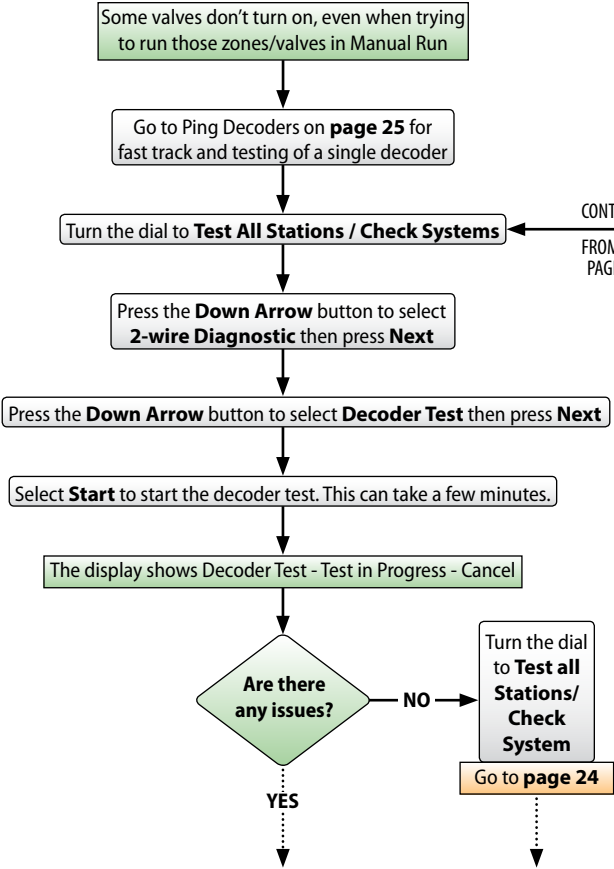


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Flow Alarms cont.



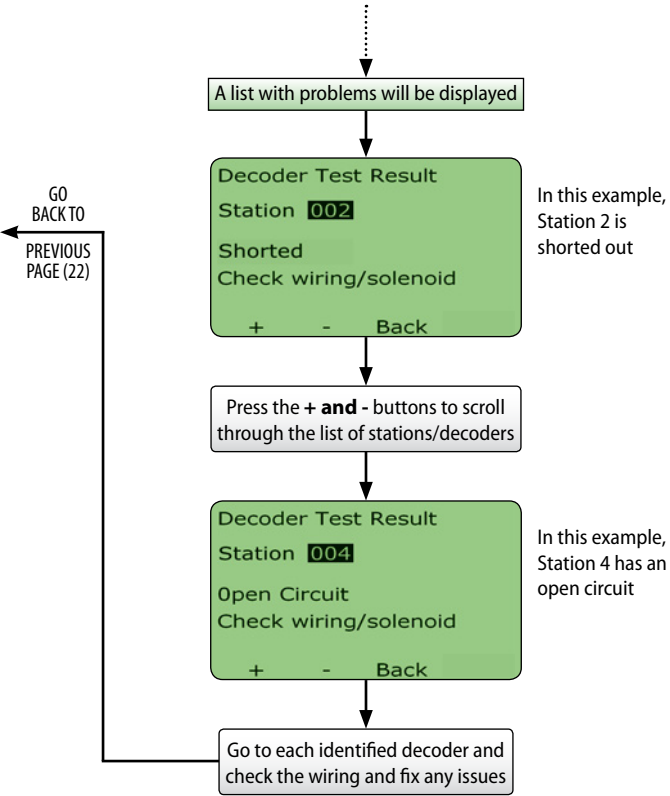
Decoder Test



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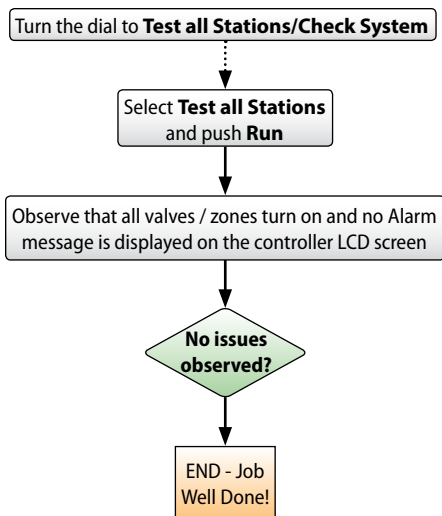
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Decoder Test cont.



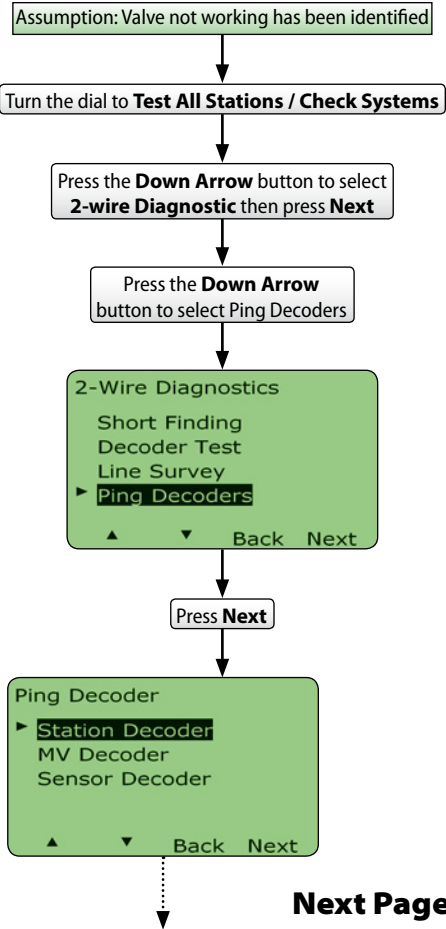
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Decoder Test cont.

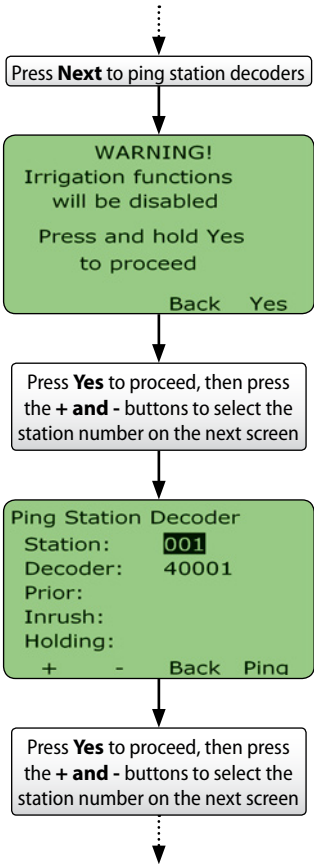


For video instructions on **Using Decoder Test & Ping Decoders to Troubleshoot Valves**, please visit:
<https://youtu.be/wkZBaBo08W0>

Decoder Ping Test



Decoder Ping Test cont.



Decoder Ping Test cont.

Turn the dial to
**Test All Stations
/ Check Systems**



NOTE: A good ping test will show values for prior, inrush and holding current. The LXD front panel Alarm Light will turn off.

Select **Ping** and wait for the result of the ping test to display

Ping Station Decoder			
Station:	001		
Decoder:	40001		
Prior:	13 mA		
Inrush:	195 mA		
Holding:	12 mA		
+	-	Back	Ping

Inrush current is typically less than 200 mA. Readings of 100 mA or less indicates an open output.
Holding current is typically 10mA. Reading of 50 mA or greater typically indicates a shorted decoder output.

Prior amperage is based on line current for your system and should be about the same as the calculated System Amperage on "Short Finding Mode 5" on **page 16**

Check the wires and fix an open or short circuit

YES

Is there still a problem with this station? The controller will indicate whether there is an open or short circuit. Is the Alarm Light still on?

NO

END - Job Well Done!

For video instructions on **Using Decoder Test & Ping Decoders to Troubleshoot Valves**, please visit:
<https://youtu.be/wkZBaBo08W0>



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Questions?

Call the Rain Bird Professional Support Line at

+1-866-544-1406

or else visit our web site at

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