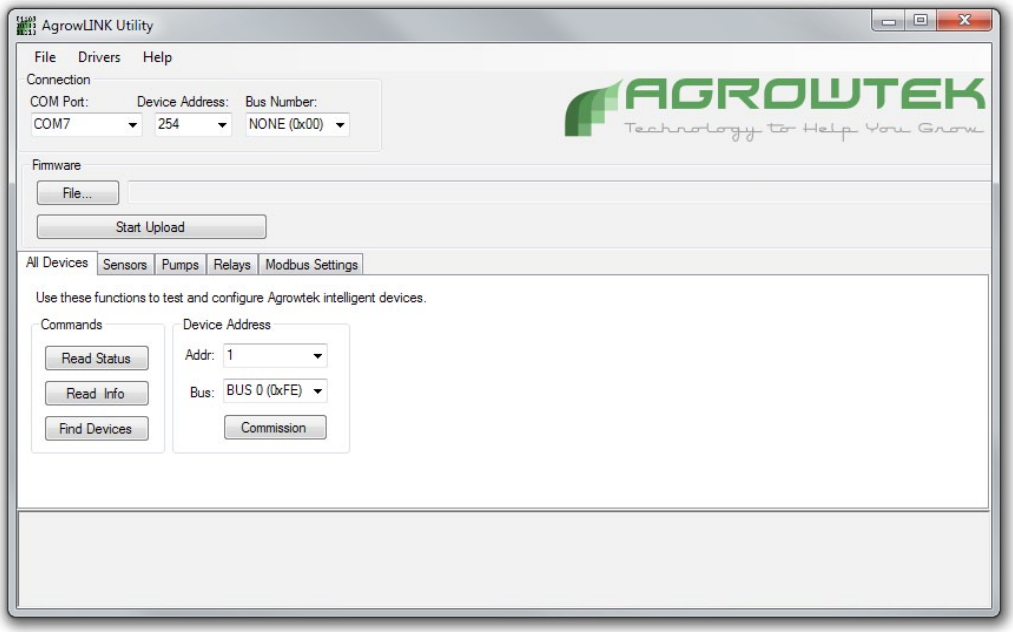
Firmware Update & Configuration Software

Contents

Introduction 1
Connections 2
Software Installation 2
Using the AgrowLINK Utility 4
Connection Box 4
USB Link Driver Installation 5
Firmware Update 6
General Commands 7
Device Address 7
Find Devices 8
Sensor Diagnostics & Configuration 9
Pumps Diagnostics & Configuration 10
Relays Diagnostics & Configuration 11
LX2 ModLINK MODBUS Configuration 12

Introduction

AgrowLINK is free software for updating, testing and configuring Agrowtek's intelligent GrowNET™ sensors, relays and peristaltic dosing pumps. AgrowLINK software requires the LX1 USB Link to connect GrowNET™ devices with to a PC USB port.

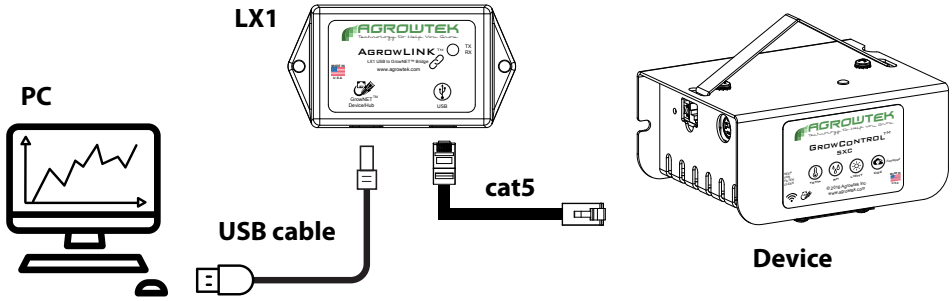


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Connections

The LX1 USB Link can be connected to a device to provide 5V power to the device from the USB port which is sufficient for updating firmware. (Dosing pumps require a power supply.)

Standard Ethernet cable with RJ-45 connections are used to connect the USB link to the GrowNET port on the device.

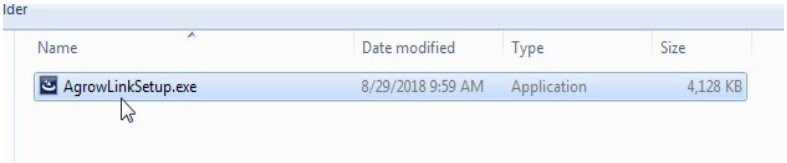


1. Connect the LX1 USB AgrowLINK to a USB port on your PC. The drivers should install automatically.
   If drivers are not automatically installed, see "Installing Drivers" section.
2. Connect the GrowNET (Ethernet) cable from the AgrowLINK to the device GrowNET port.
3. Connect a power supply to the device if required.

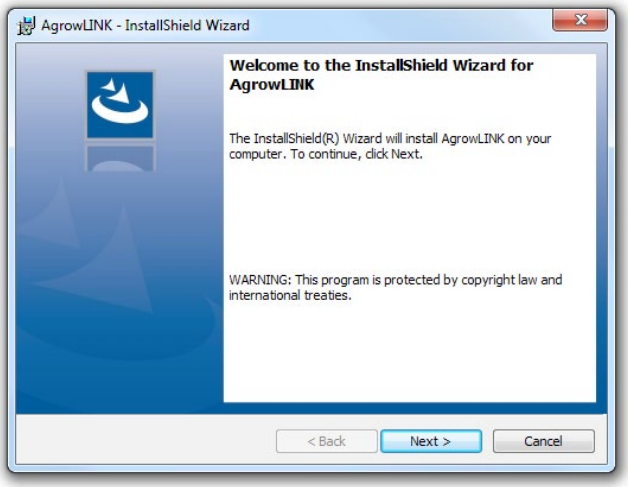
Software Installation

[Download AgrowLINK Utility]

1. Download the utility from the link above or visit the DOWNLOADS link at: www.agrowtek.com
2. Execute the installer program.

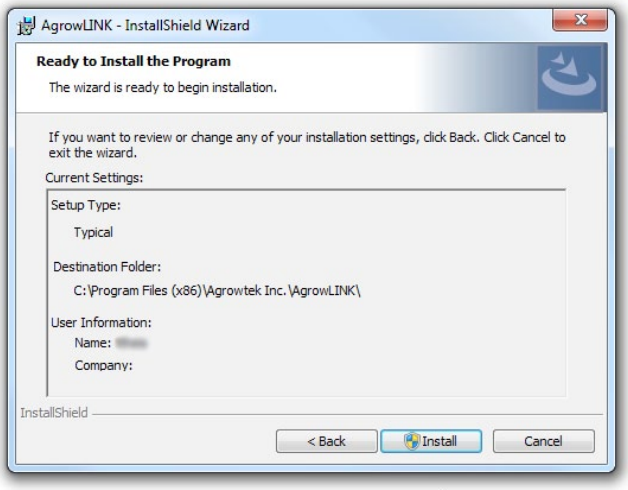


3. Click "Next" to prepare the installer.

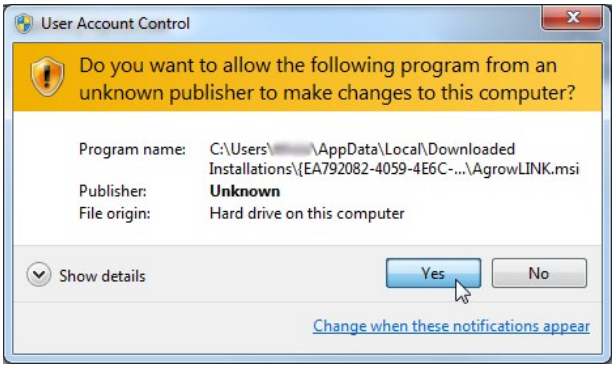


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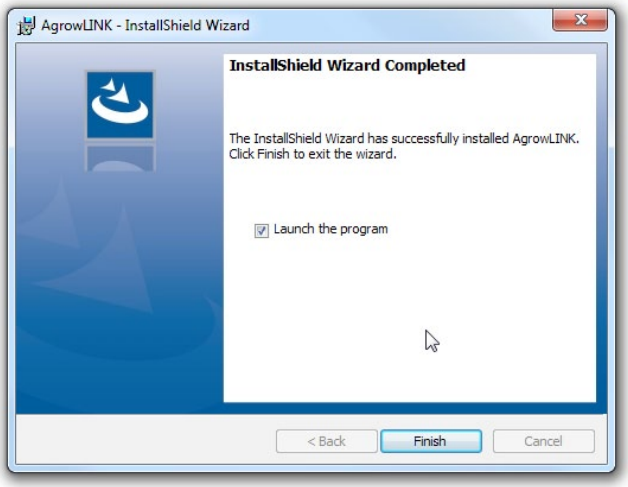
4. Click "Install" to begin installation.



5. On systems with UAC, click "Yes" to the security prompt to allow the software to install.



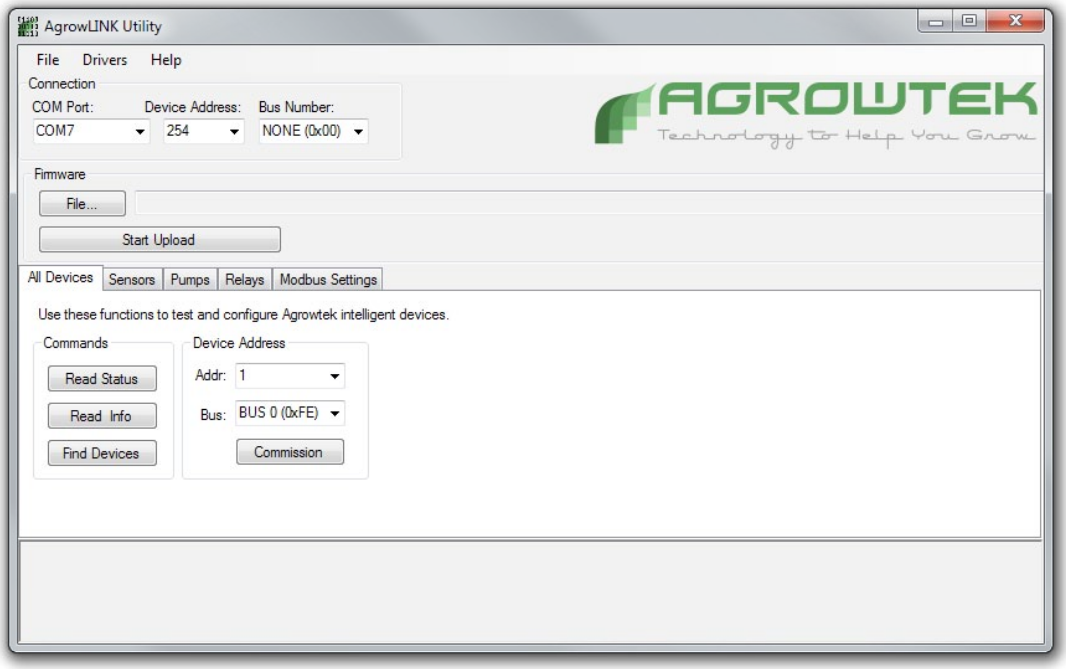
6. Click "Finish" to exit the installer and open the AgrowLINK utilty.



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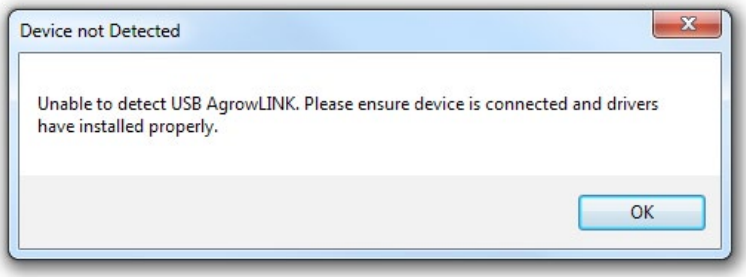
Using the AgrowLINK Utility

AgrowLINK software allows simple firmware updates of devices in addition to configuration options and diagnostic functions. The connection box will automatically popluate the COM port number of the attached LX1 USB Link. Each type of device has a specific 'tab' with features unique to the device type, and a message buffer at the bottom of the window provides responses from the functions in the program.



Connection Box

The COM port should be automatically populated if the LX1 USB link is connected to the PC and the drivers have been installed successfully.



If a "Device not Dected" message is shown, please check the USB link is connected and drivers are installed.

Note: See next section for driver installation instructions.

Device Address:

Set the device address to "254" (universal broadcast address) which all devices will reply to regardless of their unique device address setting.

Bus Number:

Bus number may be set to "None" or to the bus number that is set on the device for testing purposes.

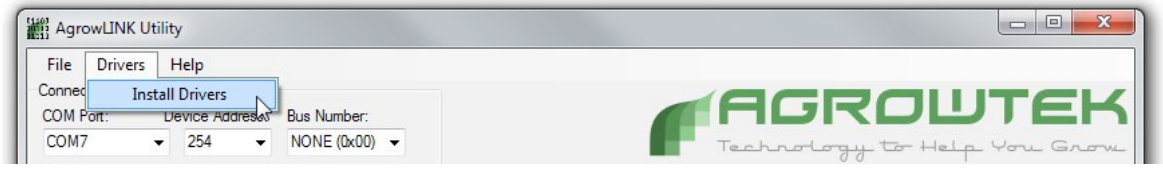
Note: LX2 ModLINK updates and configuration must be done with bus number 1 (0xFE).

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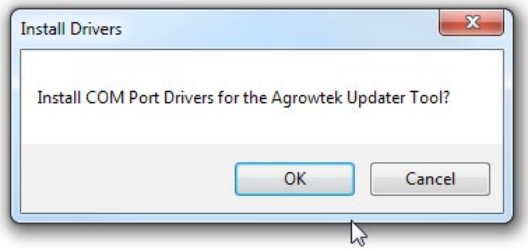
USB Link Driver Installation

USB Link drivers normally install automatically from Windows, however, if they do not the drivers can be installed manually.

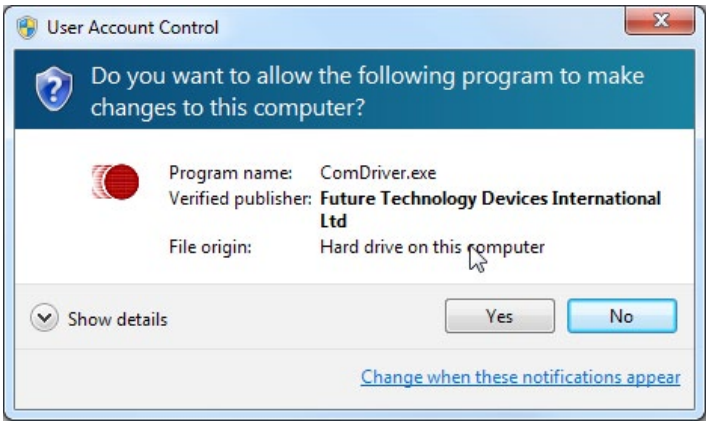
1. Click: "Drivers" menu >> Install Drivers



2. Click: "OK" to continue opening the driver installer.



3. Click: "Yes" to install the drivers.

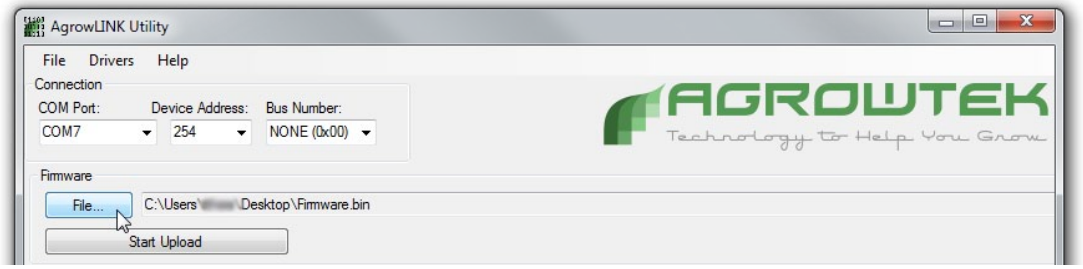


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Firmware Update

Firmware updates are fast and easy on Agrowtek devices. Firmware files have a ".bin" extension.

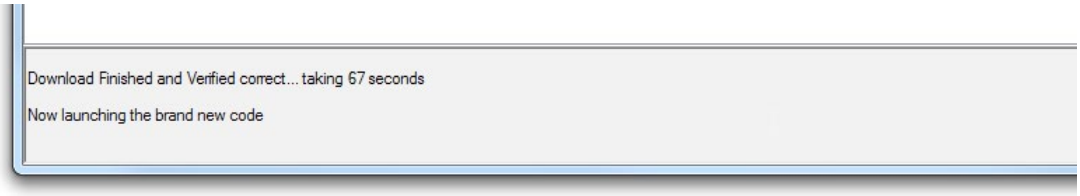
1. Click: "File..." button and select the .bin firmware file.



2. Ensure the device is powered on and connected to the LX1 USB Link.
3. Click the "Start Update" button.

IMPORTANT NOTE:
Firmware update capabilities are disabled 30 seconds after a device is powered on.
If the utility fails to synchronize with the device; un-plug the USB Link and power, then try again.

4. The firmware will begin downloading onto the device.
5. When complete, the message "Now launching the brand new code" will be displayed.



The firmware download is complete.

Allow 10 seconds for the device to reboot, then perform tests according to the device type to verify the device is working properly after the update.

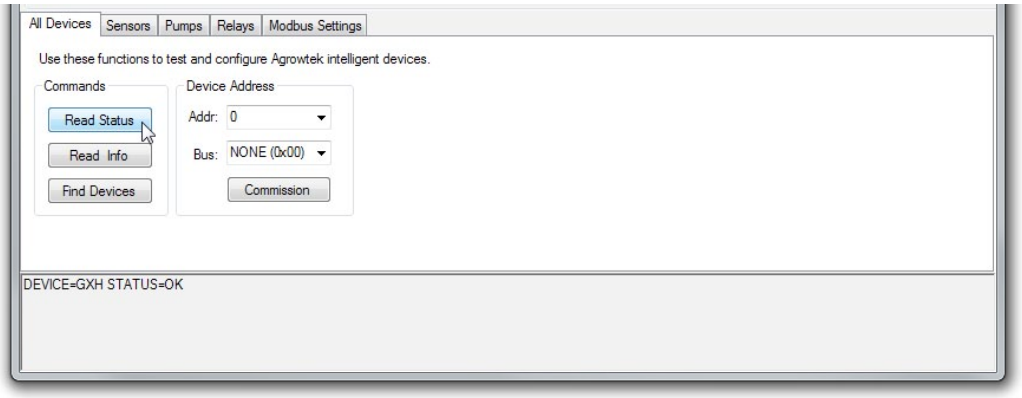
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General Commands

General functions exist for all devices incuding reading the device's status, manufacturing info, and current device address, as well as setting a device address.

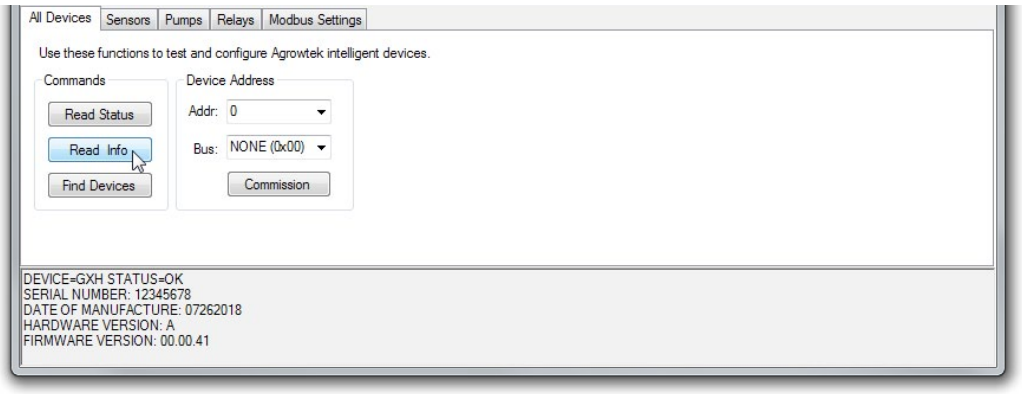
Device Status

The "Read Status" button will provide the last status update in the sensor's memory. "OK" is a typical status.



Manufacturing Info

The "Read Info" button will provide the manufacturing info for the specific device including serial number, date of manufacture, and hardware and firmware version numbers.



Device Address

GrowNET™ devices are intelligent and addressable for use on GrowNET™/MODBUS serial networks.

Device Address

A device's address may be set for use with multiple devices on a GrowNET™ serial network or MODBUS network.

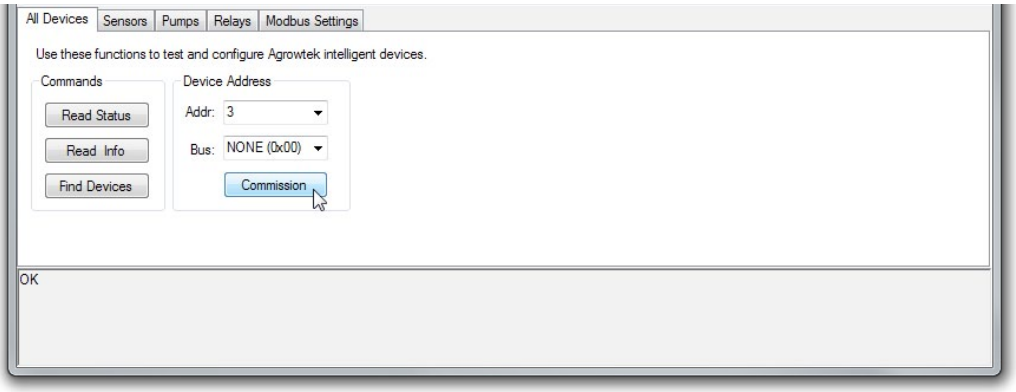
Bus Number

Devices are assignable to four different bus numbers to allow more than 249 devices on a network. If less than 249 devices are in use, the bus number may be set to "none."

Note: MODBUS allows addresses in the range of 1-247 and does not use a bus number.

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Press the "Commission" button to set the device address and bus number. The device should reply "OK" indicating the command was accepted.



Verify the device address is correct by changing the connection settings to the new address, then press the "Read Status" button. The device should reply with the last status which indicates the address has been changed.



Find Devices

AgrowLINK can scan the for connected devices. Press the "Find Devices" button and wait for the scan to complete.

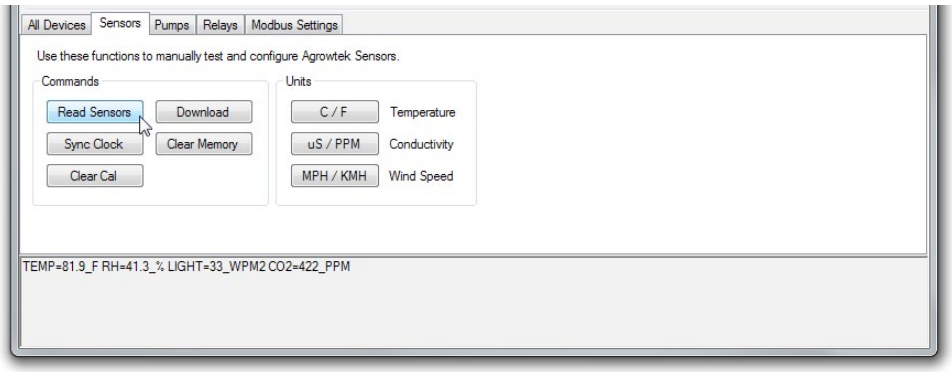
If a device's address is unknown, it can be accessed using the universal broadcast address of "254" on any bus. The device address can be set from this addresses to overwrite any previous address settings.

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Sensor Diagnostics & Configuration

GrowNET™ digital sensors can be tested and configured on the "Sensors" tab.

To poll the current sensors and read their values, press the "Read Sensors" button. The sensor values will be written in the message buffer.



Sync Clock
Synchronizes the device's clock to the PC's system time and date.

Clear Cal
Resets all calibration values to factory defaults.

Download
Download the data log from memory and save to CSV file.

Clear Memory
Clears the data log memory in the device.

Units
The units buttons toggle the type of units that the sensor displays, reports, and records data in.

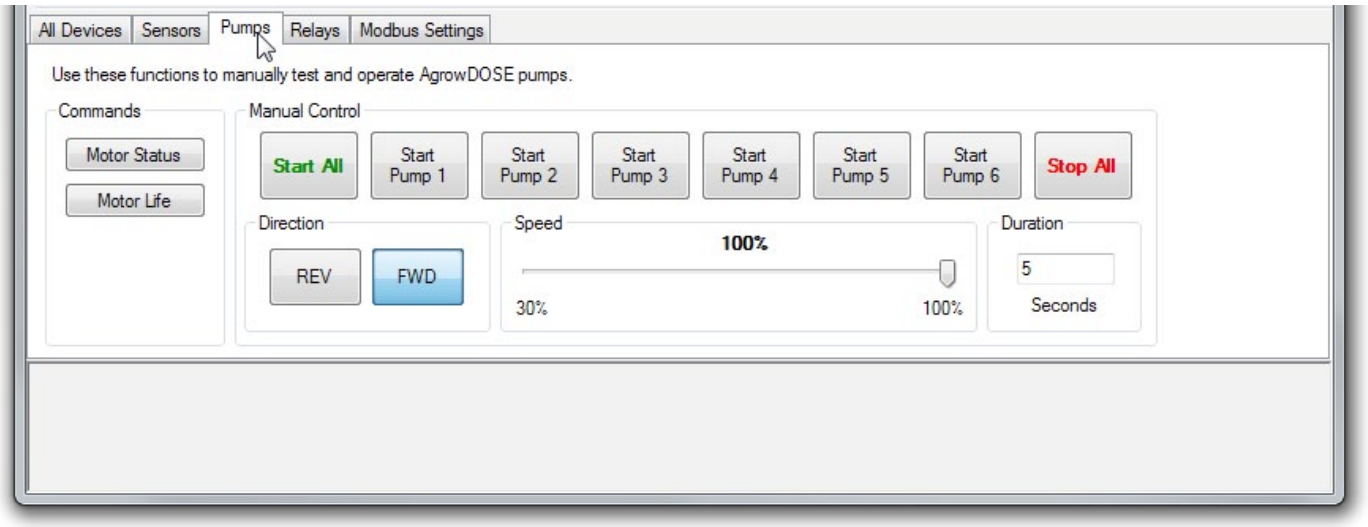
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Pumps Diagnostics & Configuration

GrowNET™ digital pumps can be manually operated and the pump motor life can be checked on the "Pumps" tab.

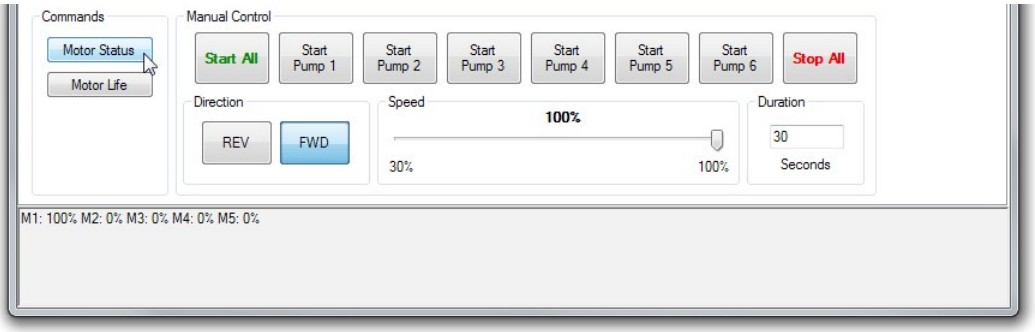
Manual Control

To manually operate a pump motor: select a direction, set the pump speed on the speed slider, enter a time to run and then press the "Start Pump ..." button for the desired pump.



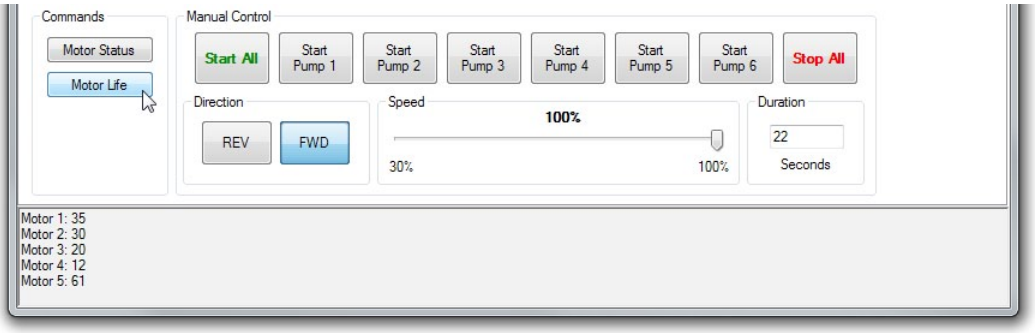
Motor Status

Reports the current speed of each motor (%).



Motor Life

Reports the total number of seconds each motor has run in it's life time. Use these values for monitoring when tubing may need replacement or when motors are nearing the end of their useful life.

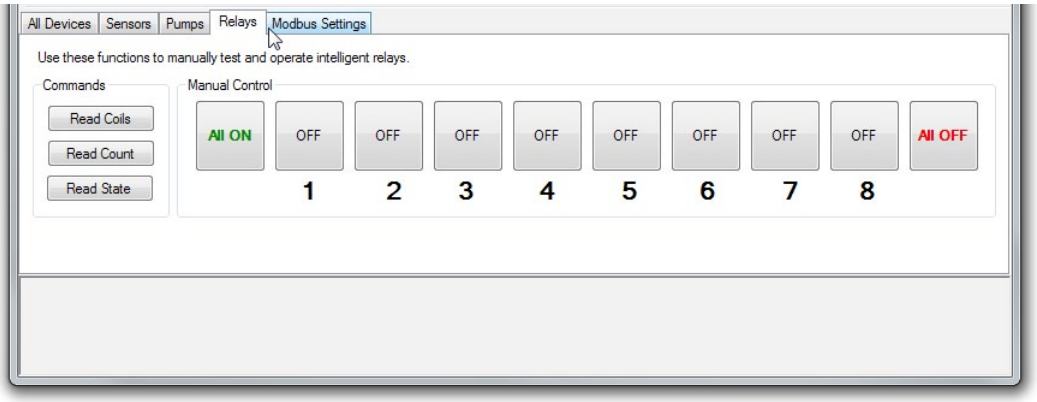


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Relays Diagnostics & Configuration

GrowNET™ digital relays can be manually operated and the relay contact life can be checked on the "Relays" tab.

To manually operate a relay contact, click the desired relay number and toggle the relay on or off.



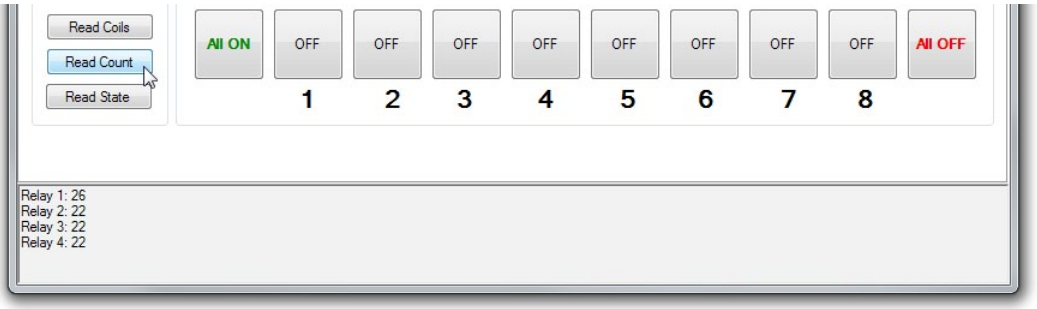
Read Coils

Reports the current status of each relay coil (on or off.)



Read Count

Reports the total number of contact closures for each relay point. Use the value for tracking life expectancy of the contacts or for revieing how frequently a contact closes.



Read State

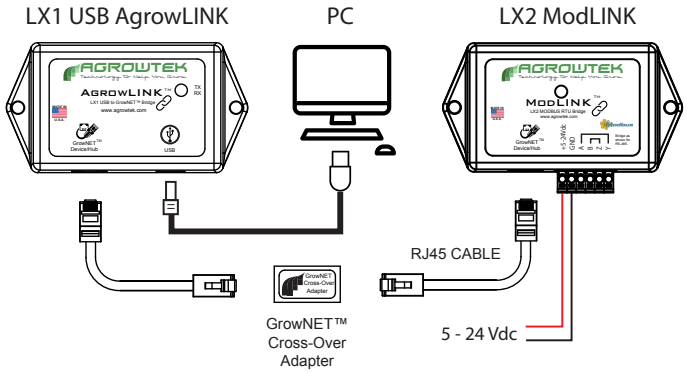
Reports the current position (%) of a motor control relay (MX1i.)

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LX2 ModLINK MODBUS Configuration

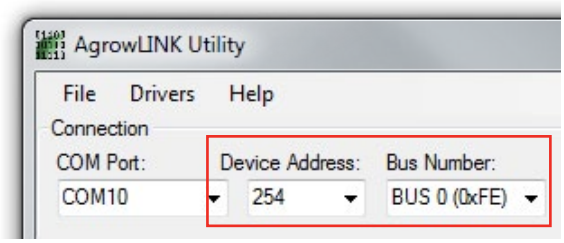
Agrowtek's intelligent devices feature the MODBUS RTU communication protocol for PLC and industrial control applications. The LX2 ModLINK is a RS-422/485 serial interface for GrowNET networks with configurable communication speeds as required by the master controller. Configuration of the LX2 serial settings requires an LX1 USB Link, cross-over adapter, and the AgrowLINK software.

IMPORTANT NOTE:
Connection address must be address "254" and "Bus 1 (0xFE)" to communicate with the LX2 ModLINK.
GrowNET™ Cross-Over adapter required to connect LX1 USB Link to LX2 ModLINK.



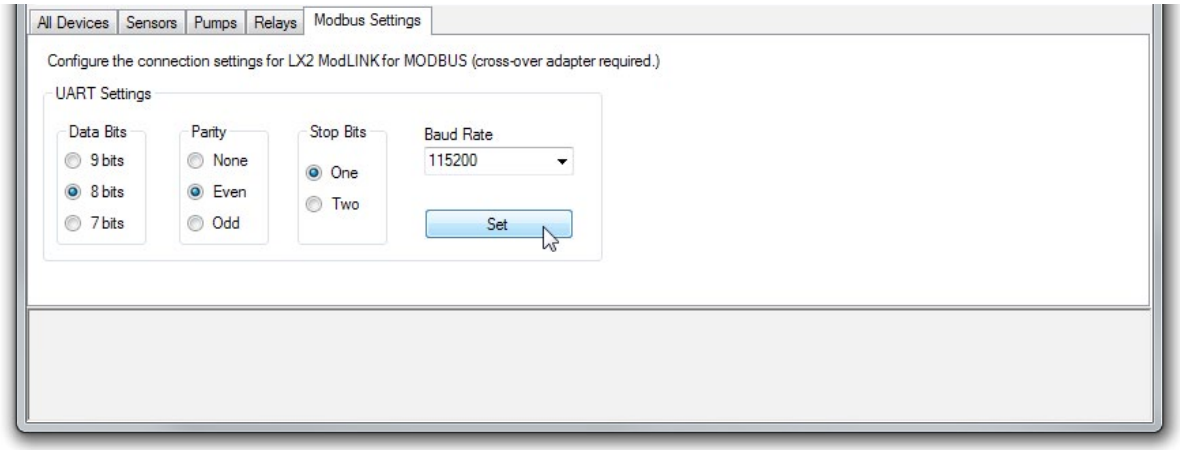
Open the AgrowLINK utility and set:
Device Address = 254
Bus Number = Bus 0 (0xFE)

These settings are necessary to communicate with the LX2.



Select the communication settings for your master device, then press the "Set" button.

The LX2 ModLINK will reply with "OK" to confirm the settings have been configured.



END

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