

# **PULSAlink**

## **Installation Operation Manual**

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# Introduction

PULSAlink is a cloud communications interface designed for *MicroVision<sup>EX</sup>* controllers. The web browser based interface allows for easily changing settings, viewing real time readings, downloading historical data and much more. This manual covers the navigation of the PULSAlink webpages and functions. For a detailed explanation of the controller operation please see the *MicroVision<sup>EX</sup>* IOM available for download from [www.pulsatron.com](http://www.pulsatron.com)

In order to access the device, activation and a user name and password are required. An activation certificate is included with your controller or activation kit that identifies the current activation status of the controller. The controller can be ordered and supplied as follows:

- 1) Preconfigured from the factory with the Ethernet connection installed.
- 2) Preconfigured from the factory without the Ethernet connection installed.

If you are not sure what your username and password are, contact your equipment supplier or system administrator.

## 1. GENERAL WARNINGS

- ⚠ Symbol hereinafter and upon the unit means WARNING!
- ⚠ If the equipment is used in a manner not specified by the manufacture, the overall safety may be impaired.

## 2. INSTALLATION

### 2.1 Connections

Two versions of the controller may be supplied. One version includes the RJ-45 Ethernet cable and the other version does not. If you have the version without the Ethernet cable installed an activation kit part number ACT-PULSALINK must be ordered and installed. The activation kit includes the proper cable and instructions.



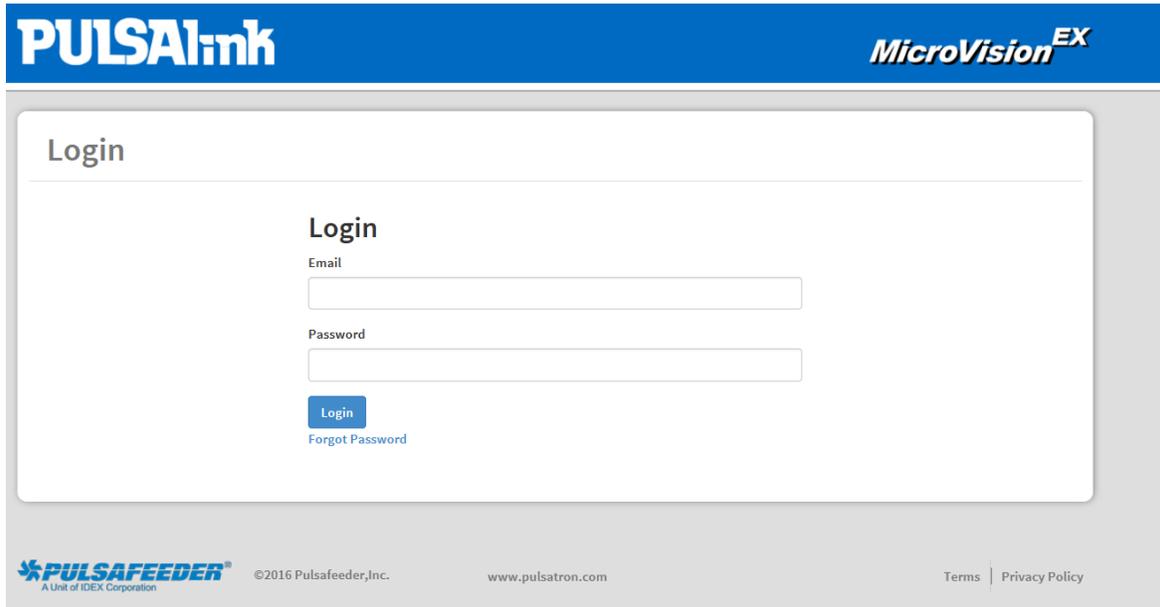
Connect the RJ-45 cable to a router or cell modem with an internet connection. The *MicroVision<sup>EX</sup>* will automatically detect and assign an IP address and will connect to [www.PULSAlink.net](http://www.PULSAlink.net) automatically.

The most reliable and robust way to install your MicroVision EX would be a hard wired connection. The MVEX utilizes IEEE 802.3 and communicates via TCP/IP. The controller uses DHCP and ICMP to find an available IP address, it is not a static IP. In most cases, the controller should not require any special adjustments to a network in order to connect to PULSAlink, Pulsafeeder's cloud solution.

# 3. PULSAlink FEATURES

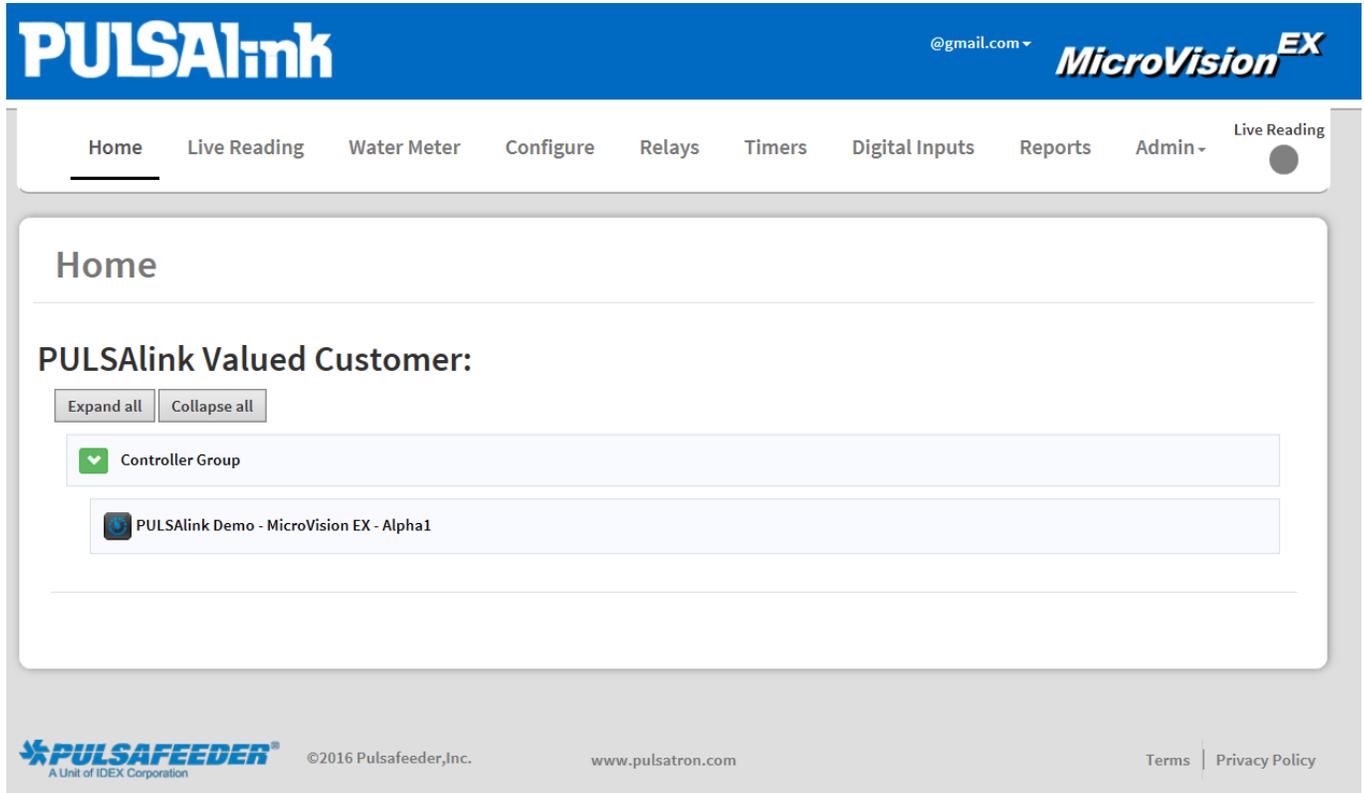
## 3.1 Login

MicroVision<sup>EX</sup> controllers are accessed by going to <https://www.PULSAlink.net> and entering your e-mail and Password. If you do not have your login e-mail and password, contact your company administrator or equipment supplier.



## 3.2 Home Screen

The PULSAlink home screen displays the list of controllers that are available for remote access. Depending on the controllers available to you, the home screen will look similar to the below.



### Group expansion button

Used to expand the group of controllers in each group.



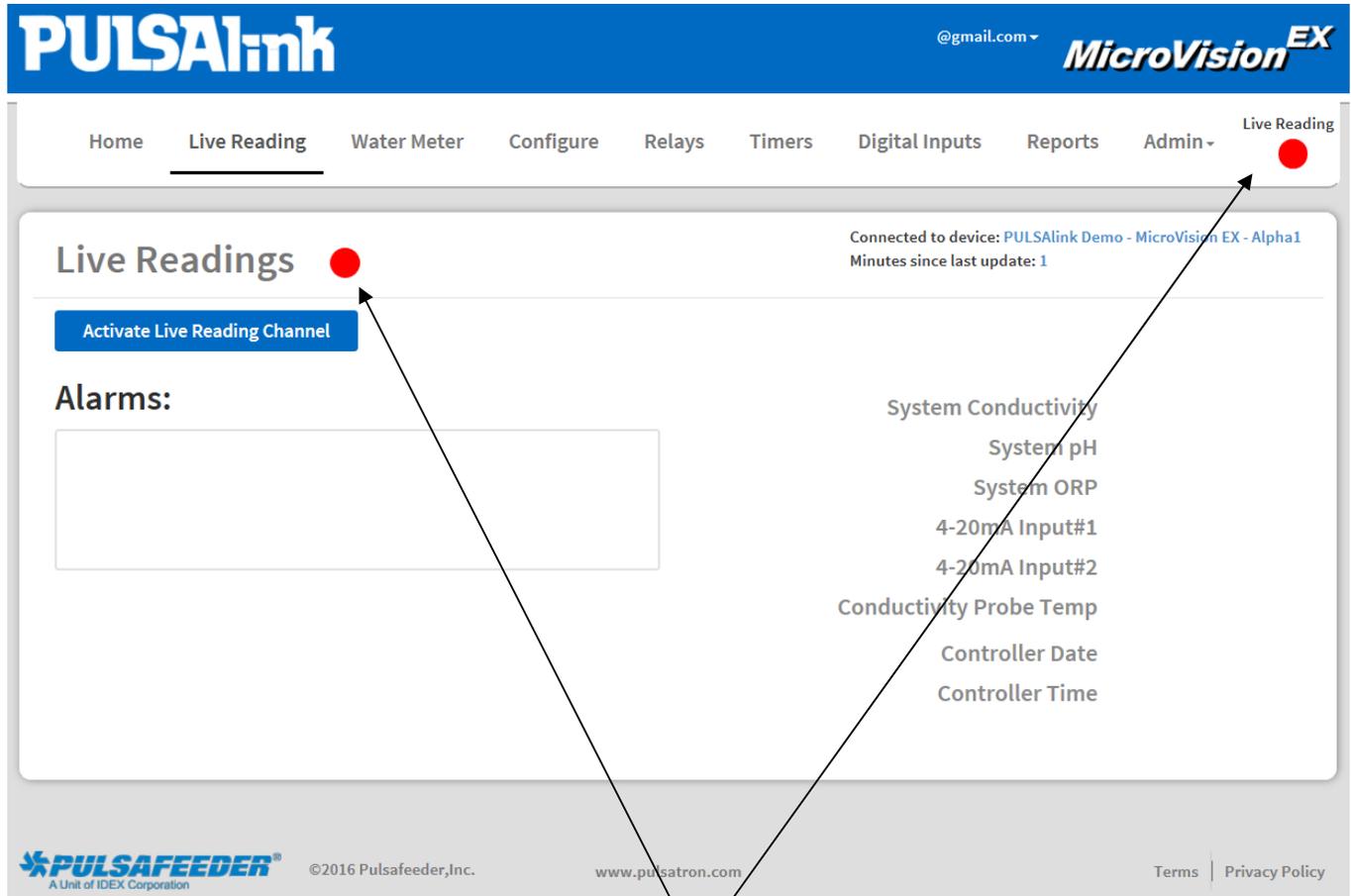
### Controller select button

Used to connect to a controller.

Each controller is identified by a controller select button followed by the display line 1 and display line 2 settings in the controller. Since the factory default for every controller is "Pulsafeeder" for Display line one and display line 2 is "MicroVision EX), the serial number is also provided at the end of the description ("Alpha1" in the above example). The serial number is also located on the controller's data label. Click the controller select button to establish communication with a controller.

### 3.3 Live Readings Screen

When the controller select button is clicked the Live Readings page is displayed.



#### Live readings status indicator

-  RED – Live data is not on
-  YELLOW – Live data Transitioning
-  GREEN – Live Data on



Used to activate or deactivate live data.



to initiate a live readings channel

### 3.4 Live Readings Mode

When the live readings mode activates, the controller will begin streaming data to the cloud approximately every 10 to 15 seconds. The live data stream will time-out after five minutes unless the stay connected check box is selected.

Home   Live Reading   Water Meter   Configure   Relays   Timers   Digital Inputs   Reports   Admin -   Live Reading

## Live Readings

Connected to device: PULSAlink Demo - MicroVision EX - Alpha1  
Minutes since last update: 1

[Deactivate Live Reading Channel](#)    Stay Connected   Time Out: 4:18s

### Alarms:

- Conductivity Low Alarm
- Drum Level 1 Alarm
- Drum Level 3 Alarm
- pH Limit Time Exceeded Alarm

System Conductivity	1046 uS/cm
System pH	7.79 pH
System ORP	189 mV
4-20mA Input#1	71 PPB
4-20mA Input#2	0.08 mA
Conductivity Probe Temp	37.0 C 98.6 F
Controller Date	Sep 20, 2016
Controller Time	03:22:10 PM

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**Connected to device:** - This is the name of the device that is currently sending and receiving data. The name is the display line 1, display line 2 settings (see “configure”) and the serial number of the controller.

**Minutes since last update:** - This is the number of minutes that has elapsed since the controller has sent updated information to the website. By default the controller will send a data file every one minute. However, this setting can be changed locally at the controller in the **Communications>USB>Data Log interval** screen, or viewed on the website on the **Configure>Communications** page. The minutes since last update should not exceed the data log interval setting unless communications to the controller has been lost.

## 3.5 Water Meter

On the water Meter page each water meter total value is displayed along with the date since last reset.

## 3.6 Configure

On the configure page the following controller menu options are available:

**Configure:** Set how many optional 4-20mA inputs or outputs are installed, the system units in gallons or liters and the system language (English only).

**Display Setting:** Set the LCD brightness on the controller, display line 1, display line 2, the home screen scroll rate, alarm display size and the display dampener settings.

**Password:** Set the local device security password. This is the controller keypad access password only.

**Settings:** Sets all of the system set points for conductivity, pH, ORP, 4-20mA inputs and outputs.

Consult the *MicroVision<sup>EX</sup>* IOM for details on the above functions. The following PULSAlink specific options also appear in the configure menu and will be explained in further detail.

### 3.6.1 Configure Alerts:

This menu configures how PULSAlink will send e-mail notifications for system alarms and Live readings reports. The below is the default screen:

Connected to device: Pulsafeeder - Microvision EX - 123456789  
Minutes since last update: 1

### Configure Alerts

#### Email Settings

Subject

Recipients

Email Individual Users Manually

Enter Email ID  +

Alarms

Enable Alarm Notifications

Live Reading

Enable Live Reading Report

**Subject:**

Enter the desired subject line content for every e-mail sent from this controller

**Recipients:**

Enter the e-mail addresses for everyone that should receive the e-mails. (Use the + symbol to add the e-mail after you type it in the box).

### 3.6.2 Alarm E-Mails

Click the check box for "Enable alarm notifications" and the following screen will appear:

**Alarms**

**Enable Alarm Notifications**

For Alert Types

- Flow Switch Alarm
- Cond. High Alarm
- Cond. Low Alarm

Select every alarm condition that should result in an alarm e-mail being sent, then click save changes.

### 3.6.3 Live Readings Report

Click the check box to enable live readings reports. The live readings report will e-mail the parameters from the controllers live readings page on either a daily, weekly, or a monthly basis. The actual time that the e-mail is sent is based on the PULSAlink server time, which is currently Eastern US and Canada, not the controller time.

**Live Reading**

**Enable Live Reading Report**

**Daily**     **Weekly**     **Monthly**

Start Date and Time

09/02/2016  11 : 34 AM Eastern Time (US & Canada)

**Save Changes**

### 3.6.4 Communications

The controller has two primary methods of data collection, server data and controller data.

**Server Data Log:** This data is reported to the PULSAlink server by the controller over an internet connection. The frequency of the records is the same as the "data log interval setting" in the controller. The server is currently set to record up to 3 years of data.

**Controller Data Log:** This data is recorded by the controller on its internal memory; the frequency of the records is based on the data log interval settings in the controller.

**Configuration File:** The controllers programming and set points can be down loaded for duplication of the program on other *MicroVision<sup>EX</sup>* controllers or as a record of the current settings.

**Erase Data Log:** Use this function to reset the controllers data log records. The current data log will be erased and cannot be recovered

**Data Log Name:** Use this setting to give the exported data files from the controller via direct USB download a unique file name for each controller. The file name length is fixed at 16 characters.

**Data Log Interval:** Use this setting to define how much data the controller will store. Options are "Custom", 30 days, 60 days, 90 days, 120 days, 1 year or 2 years. All Data Log Interval ranges still record controller data every 1 minute; however, the "custom" setting allows for a range from 2 to 120 minutes to make exporting the data file to a USB drive or downloading faster. Because the custom range always uses the same size memory block it stores various ranges of data.

Example:

Custom range @ 2 Minutes = 60 Days

Custom range @ 120 minutes = 9.8 Years

Normal data log interval settings create a file that could be as large as 350MB in size. The custom range settings create a file that could be as large as 40MB.



NOTE

**In order to access the data stored on the controller remotely the data log interval must be set in either 30 days @ 1 minute or any setting in the custom menu.**



NOTE

**Changing the Data log interval erases the existing data log file in the controller to create a new one. To avoid losing data, download the current log file before changing this setting.**

### 3.6.5 PULSAlink Graphing Tool

The MicroVision EX data log file is output as a CSV file. This file can be opened for easy viewing and graphing of data using our provided graphic tool. Visit: [www.pulsatron.com/support/pulsaworks](http://www.pulsatron.com/support/pulsaworks) to download the tool and instructions on its use.

## 3.7 Relays

On the relays page each relay of the controller is displayed including its assigned function, the current HOA (Hand Off Auto) mode and the current relay status. On this screen the relays can be changed from manual on for five minutes, forced off indefinite or automatic modes. When changing relay HOA modes the Live Readings mode must be activated.

## 3.8 Timers

On the timers page each timer on the controller can be programmed for the various modes of operation.

## 3.9 Digital Inputs

On the digital inputs page each timer on the controller can be programmed for the various modes of operation.

## 3.10 Reports

On the reports page there is a link for downloading the PULSAlink graphing tool which is very useful for creating charts and graphs from the data downloaded from the controller or the server.

## 3.11 Admin

The administration page is used for setting up user names and groups and managing controllers for users and groups. PULSAlink has different levels of administration as follows:

### **Company Administrator**

This role is created by Pulsafeeder when the account is first setup. This role Manages all levels of users and controllers; they can add all levels of users and can create groups for easier management at the management level.

### **Manager**

Can add technicians and users and can create technician groups for easier management

### **Technician**

Can add users and can create subgroups for easier management

### **User**

Can access controllers that they are assigned

If you are not the company administrator, when you log into to PULSAlink you will see the groups and controllers assigned to you by the company administrator. Contact your equipment supplier or company administrator for a user name and password, if you do not have one.

If you have been setup as the Company Administrator and at least one controller has been activated in your account, you will see a screen similar to the one below when you log into the system.

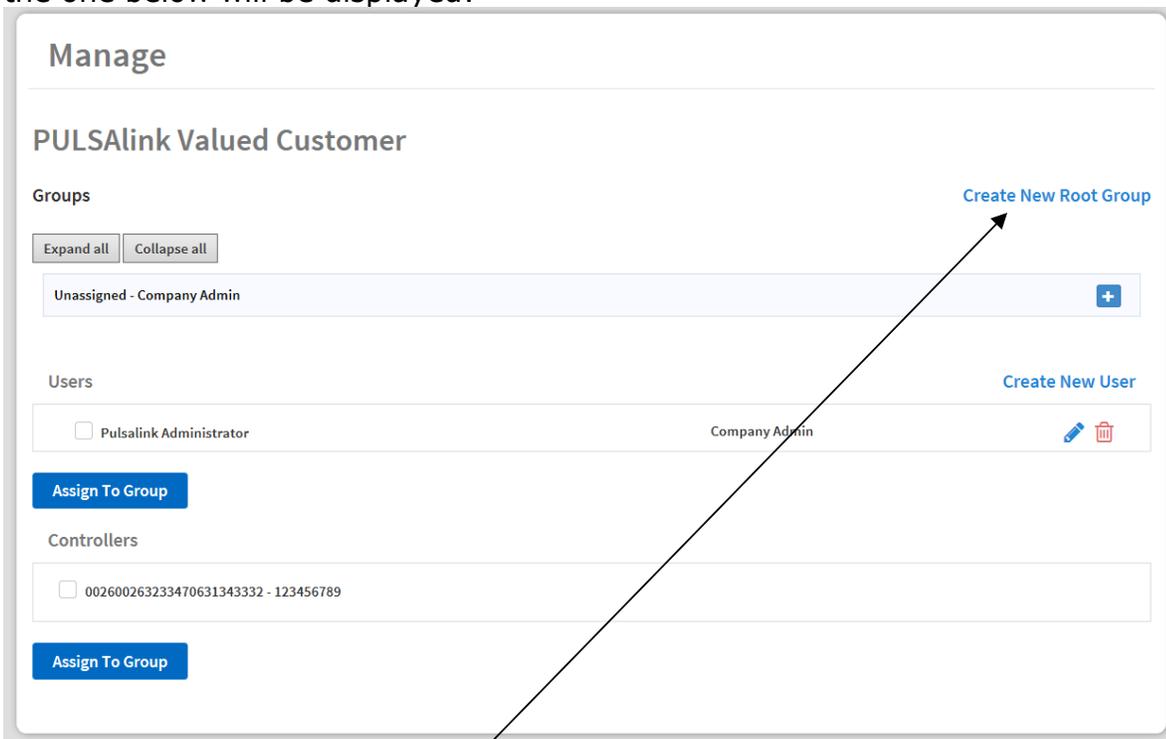


When a controller is activated, it is added to a new group called "unassigned". The controllers default name is "Pulsafeeder – Microvision EX" followed by the serial number of the unit itself. The serial number is printed on the data label of the controller, or the box the controller is shipped in for identification.

### 3.11.1 Manage

#### Create a new group

Login into PULSAlink and then go to "Admin", then click on "Manage" a screen similar to the one below will be displayed:



**Click on Create Root Group**

### Create New Group

**Group Name**

**Security Access Level Role**  
 

[Cancel](#) [Save](#)

Type in the desired group name –“Group One” in this example; then click save. The new group will now be displayed. Note that the new group is a company admin level group, only company administrators can view this group.

## Manage

### PULSAlink Valued Customer

**Groups** [Create New Root Group](#)

Unassigned - Company Admin	
Group One - Company Admin	 

**Users** [Create New User](#)

<input type="checkbox"/> Pulsalink Administrator	Company Admin  
--	---

**Controllers**

<input type="checkbox"/> 002600263233470631343332 - 123456789
---

**Click the + symbol to create a manager level group.**

## Create Users

Click Create new user

### Create New User

Email  
Manager@pulsalink.com

First Name  
Pulsalink

Last Name  
Manager

Password  
\*\*\*\*\*

Password Strength  
  
Minimum length 8, 1 Special Character (Symbol), 1 Number, 1 Capital Letter

Confirm New Password  
\*\*\*\*\*

Phone (optional)  
Enter Phone Number

Role  
▼

Cancel

Enter the user information, the e-mail address is used for login purposes. Assign the user a role that is appropriate for the group access they should have and then click save.

## Assign users and controllers to groups

Select the group that you want to assign users to by clicking on it, the group background will highlight gray. Then place a check mark next to each user and controller for that group and click "Assign to group"

### Manage

#### PULSALink Valued Customer

Groups [Create New Root Group](#)

Unassigned - Company Admin	<input type="checkbox"/>		
<input checked="" type="checkbox"/> Group One - Company Admin	<input type="checkbox"/>		
Manager - Manager	<input checked="" type="checkbox"/>		

Users [Create New User](#)

<input type="checkbox"/> Pulsalink Administrator	Company Admin		
<input checked="" type="checkbox"/> Pulsalink Manager	Manager		

Controllers

<input checked="" type="checkbox"/> 002600263233470631343332 - 123456789
--

## 3.12 Company

As company administrator the company contact information can be changed or updated. In this section the company shared token can also be set.

**⚠ Changing the shared token setting can cause controllers to stop communicating.**

**Shared Token:** The shared token is an added level of security that can be implemented or the default value can be used. If a token other than 000000001 is used in this screen, the same token **MUST** be entered into the communications settings locally on the controllers for your account. If the token settings do not match, the controllers cannot connect to your account.

# 4. TROUBLE SHOOTING

## Troubleshooting the MicroVision EX Cloud Connection

Occasionally, the MicroVision EX's network communication will be interrupted or require some additional attention during setup. Unexpected power outages and networking issues could prevent the controller's access to PULSAlink. Controllers installed on a modem could experience a poor network signal in remote areas or inside facilities with metal roofs or a basement installation. These steps will help identify any issue which the MicroVision EX might have communicating with PULSAlink.

### 4.1.1 Network Connection

Unfortunately, network issues could interrupt the MicroVision EX from communicating with PULSAlink. If this is the case, contact the site network administrator for advice on this issue. The local IP address of the controller can be located under Menu->Communications->Networking->MAC/TCP. If a modem is used, log into the gateway of the device. Many modems and network jacks have lights which indicate their operation state. These can also be useful tools in debugging your network connections.

### 4.1.2 Token

Please remember the controller has a unique token which provides you with an additional layer of security. Make sure the token is either set to "000-000-001" if a generic token is used. If a company specific token is used, enter the token on the controller locally for communication. This must match the token define on PULSAlink to establish communication. Once the token has been changed, the device will need to be rebooted to establish connection (Menu->Communications->Networking->Token).

### **4.1.3 wDC Screen**

Pulsafeeder provides a powerful tool for the user. Our wDC screen gives the user insight on the connection status of the controller. This screen can be accessed under Menu->Communication->Networking->wDC Info

This screen upon boot-up will say initializing.

Once boot up is complete the screen should say "Norm Conn" on the top line under the header.

If live communication mode has been enabled, the screen says "Live Conn"

These two states indicate the controller has authenticated with PULSAlink and should be accessible to users who have been granted access.

If this screen is either blank or in "norm disconn" mode please check the token and the network connection.

### **4.1.4 E-Mails**

If you are not receiving the e-mails from PULSAlink, check your e-mail SPAM system or junk mail settings.

## **5. FORSEABLE MISUSE**

The unit has many relays which can be programmed to operate on a variety of inputs and timers. It is important to verify the system is set up properly through testing, and that relays are actuated by the correct timer or input. It is important to verify all unit readings match a known value. Operating outside design intent may cause hazard. Connecting receptacles to unapproved hardware, e.g., drills, power tools, motor driven pumps, may cause a hazard. Use only as directed. Unit has been designed for cooling tower applications and any other application should be discussed with the factory prior to install. Do not operate off another controller. Do not use with extension cords.



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