



SubStation Quick Start Guide

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Introduction

The SubStation provides access to the industry-leading BaseStation 3200™ controller using a local area network (LAN), or using cloud-based communication. This wireless functionality means you can consolidate multiple existing controllers into a single BaseStation 3200 controller without running expensive wire across long distances.

After the SubStation is connected, you can take full advantage of the powerful BaseStation 3200 capabilities to program devices connected to the SubStation from any location. All devices that are physically connected to the SubStation are configured and assigned to programs in the BaseStation 3200 controller or in BaseManager™ (if the associated BaseStation 3200 controller is connected to BaseManager).

The BaseStation 3200 has 8 available addresses for TCP/IP-based performance components. Each SubStation connection uses one of these addresses. The connections can be a combination of wired ethernet, Wi-Fi, cell modem and ethernet radios.

The BaseStation 3200 communicates with a SubStation using either a LAN-based or a cloud-based communication path.

The LAN option utilizes a local area network at the site, or one can be created using a cell modem gateway with ethernet radios. In this configuration all communication between a BaseStation 3200 and SubStation remains local to the site.

The cloud-based option utilizes the cloud to allow the BaseStation 3200 and the SubStation to pass information to one another. This configuration can be supported using a local area network or it can be set up using cell modems connected to the BaseStation 3200 and to each SubStation.

The BaseStation 3200 can support communication with SubStations using the LAN while simultaneously supporting communication with additional SubStations using the cloud.

This quick start guide helps you get familiar with the SubStation interface, the menus, and the buttons on the front panel. It walks you through the basic steps for getting the SubStation connected to the other devices in the irrigation system. Keep in mind that this guide is intended as a basic overview of the setup. You will find complete instructions for all of the SubStation's features in the SubStation User Manual.

The SubStation Interface

Because all devices connected to the SubStation's wire path are assigned and configured on the connected BaseStation 3200 irrigation controller, the SubStation has a streamlined interface.

Display – The display indicates the current state of the SubStation and is used to program the SubStation. Refer to Setting Up the Screen Display in the User Manual for information about improving image quality in outdoor conditions including direct sunlight and low light.

Main Menu Buttons – The buttons are used to select the various operating or programming menus of the SubStation. An indicator light is illuminated on the active button.

Buttons – The buttons are used to select programming elements, change their values, and initiate operations.



- +** Increase the value of the selected field, or sequence through the available options in the selected field
- Decrease the value of the selected field, or sequence through the available options in the selected field
- ↑↓↔** Move within a screen
- OK** Select an option or perform an action
- BACK** Return to a previous screen or cancel an action

Controller Status Report

When the SubStation is in the RUN menu, the Controller Status report typically displays on the screen.

If you do not see "CONTROLLER STATUS" at the top of the screen, press the **RUN** button to make sure that the controller is in the RUN menu, and then press the **BACK** button to display the Status Report menu. Select the Controller Status option from the menu.

IDLE	1:43:46P
CONTROLLER STATUS	
STATUS	REGISTERING
CONTROLLER IP	10.11.12.115
CONNECT TIME	Dec 11,1:13P
MAC	000BEE403A02
SERIAL NUMBER	3K01234
DATA (IN/OUT)	465/12510

Understanding Controller Status Information

When the SubStation is connected to the network and to a BaseStation 3200 irrigation controller, the Controller Status screen shows the details of the connection.

- **Status** – Indicates whether the SubStation is connected to the BaseStation 3200 irrigation controller
- **Controller IP** – Shows the Internet Protocol address (IP address) of the connected BaseStation 3200 irrigation controller
- **Connect Time** – Shows the date and time when the connection between the SubStation and the BaseStation 3200 was established
- **MAC** – Shows the Media Access Control address (MAC address), which is a unique identifier for BaseStation 3200's network connection
- **Serial Number** – Shows the serial number of the BaseStation 3200
- **Data (In/Out)** – Shows the amount of data in KB that has been transferred between the SubStation and the BaseStation 3200

Overview of SubStation and BaseStation 3200 Setup

Step 1 – Install the SubStation.

Step 2 – Power up the SubStation’s communication module and verify that it is communicating with the network.

Step 3 – Configure the network settings on the SubStation.

Step 4 – Install the BaseStation 3200 controller that the SubStation will connect to.

Step 5 – Install and connect all devices to the SubStation’s wire path.

Step 6 – Power up the communication module in the BaseStation 3200 controller and verify that it is communicating with the network.

Step 7 – Configure the network settings on the BaseStation 3200 controller.

Step 8 – Connect the SubStation to the BaseStation 3200 controller.

Step 9 – Check the SubStation–BaseStation connection status.

Step 10 – Configure the SubStation’s devices on the BaseStation 3200.

Step 11 – Assign the SubStation’s devices to programs on the BaseStation 3200.

Quick Start for the SubStation and BaseStation 3200

These instructions walk you through the basic steps for getting your SubStation and BaseStation 3200 controller set up. Refer to the User Manuals for complete instructions for all of the features on the SubStation and the BaseStation 3200 controller.

STEP 1 – Install the SubStation

Install the SubStation and connect it to power according to the instructions in the installation guide.

STEP 2 – Power Up the Communication Module in the SubStation

Power up the communication module in the SubStation and make sure it is communicating with the network. Baseline includes instructions for the specific type of communication module you purchased with your SubStation.

STEP 3 – Configure the Network Settings on the SubStation

The Substation can be connected and configured through a Local Area Network (LAN) using a static IP address, through a LAN using a dynamic IP address, or through a cloud-based network using a dynamic IP address. Choose the method(s) that works best for your site.

Note: Before proceeding, please make sure the Substation is running on the latest firmware. Instructions on updating firmware are found in the Substation User Manual.

Method 1: Configuring a LAN Connection for the SubStation:

If the SubStation will connect to an existing network that is managed by a network administrator, you need to ask your admin to set up a static IP address for the SubStation. Also ask your admin for the Subnet Mask and the Gateway settings for the network.

If the SubStation will connect to a stand-alone network, the static IP address for the SubStation will be based on the IP addresses that are assigned to other devices in the network.

1. Make sure the communication module in your SubStation is powered up and communicating with the network.
2. On the SubStation, press the **Setup** button. The System Setup menu displays.
3. Press the **↓** button to highlight the **Network Setup** option, and then press the **OK** button to select it. The Network Setup menu displays.
4. The **IP Setup** option should be highlighted. If it is not highlighted, press the **↑** or **↓** button to highlight it, and then press the **OK** button. The IP Setup screen displays.

5. Press the **+ or –** button to remove the checkmark in the **DHCP Enabled** field. The fields for the network settings display.

Note: For an explanation of the settings, refer to Viewing the IP Information Screen in the SubStation User Manual.

IP Setup	
DHCP Enabled:	<input type="checkbox"/>
IP Addr:	10.11.12.79
Mask:	255.255.255.0
Gateway:	10.11.12.3
DNS 1:	10.11.12.3
DNS 2:	0.0.0.0

6. Determine the static IP address that you will assign to the SubStation. The IP address is based on the IP addresses of the other devices on the network, but **it must have a unique last digit.**

Example: The SubStation and BaseStation 3200 are connected to a stand-alone network that does not have Internet access. The devices on this stand-alone network have IP addresses in the range 192.168.111.100 - 192.168.111.105. You can set the static IP address on the SubStation to 192.168.111.106.

7. Press the **↓** button to highlight the first digits in the **IP Addr** field.
 - Press the **←** or **→** button to move to the digits that you want to change.
 - Press the **+ or –** button to change the value in the field.

Note: To rapidly increase or decrease the value, press and hold the **+** button or the **–** button.

8. Press the **↓** button to move to the **Mask** field. Use the procedure described in step 7 to move within the digits and change the values. A typical value for the Subnet Mask is 255.255.255.0
9. Press the **↓** button to move to the **Gateway** field. Use the procedure described in step 7 to move within the digits and change the values.

Example: For the IP addresses in the example for step 6, the value for the Default Gateway would be 192.168.111.1.

10. Press the **↓** button to move to the **DNS 1** field. Use the procedure described in step 7 to move within the digits and change the values to match the Gateway setting.

11. Leave the **DNS 2** field set to zeros.

Method 2: Connecting the Substation to the Cloud Using a LAN:

The following steps will allow you to connect to the cloud using a LAN (Local Area Network). Make sure the communication module in your SubStation is powered up and communicating with the network.

1. On the SubStation, press the **Setup** button. The System Setup menu displays.
2. Press the **↓** button to highlight the **Network Setup** option, and then press the **OK** button to select it. The Network Setup menu displays.
3. Press the **↑** or **↓** button to highlight **IoT Server Set-Up**, and then press the **OK** button. The IOT Server Setup screen displays.
4. Press the **+** or **-** button to place a checkmark in the **Use IOT Server** field.
5. Press the **Back** button.
6. Press the **↓** button to highlight the **IOT Server Info** option, and then press the **OK** button to select it. The IOT Server Info screen displays.
7. Press **OK** to connect to the server.



Method 3: Connecting a Substation to the Cloud using a Cell Modem:

The following steps will allow you to connect to the cloud using a Cell Modem.

1. Make sure the communication module in your SubStation is powered up and communicating with the network.
2. On the SubStation, press the **Setup** button. The System Setup menu displays.
3. Press the **↓** button to highlight the **Network Setup** option, and then press the **OK** button to select it. The Network Setup menu displays.
4. The **IP Setup** option should be highlighted. If it is not highlighted, press the **↑** or **↓** button to highlight it, and then press the **OK** button. The IP Setup screen displays.
5. Press the **+** or **-** button to place a checkmark in the **DHCP Enabled** field.
6. Press the **Back** button.
7. Press the **↓** button to highlight the **IP Info** option, and then press the **OK** button to select it. The IOT Server Info screen displays.
8. Press **OK** to connect.

STEP 4 – Install the BaseStation 3200 Controller

Install the BaseStation 3200 according to the instructions that came with the controller.

IMPORTANT NOTE! If you are connecting a SubStation to a BaseStation 3200 controller that is already in service, make sure that the controller has been updated to the most current firmware version. The current firmware version is listed on the Firmware Updates page on the Baseline website (www.baselinesystems.com). Refer to the BaseStation 3200 User Manual to find instructions for updating the controller firmware.

STEP 5 – Install and Connect All Devices to the SubStation’s Wire Path

Install all of your irrigation devices and connect them to the SubStation’s wire path according to the instructions that came with the devices.

STEP 6 – Power Up the Communication Module in the BaseStation 3200

Power up the communication module in the BaseStation 3200 controller and make sure it is communicating with the network. Baseline provides instructions for the specific type of communication module you have purchased with your controller.

STEP 7 – Configure the Network Settings on the BaseStation 3200

If the controller that the SubStation is connected to will connect to an existing network that is managed by a network administrator, ask the admin for the network settings.

If the controller that the SubStation is connected to will connect to a stand-alone network, make sure the communication module in the controller is powered up and communicating. The controller can use either DHCP mode or a static IP address for the network connection. If you need to set up an IP address on the controller, refer to the instructions in the BaseStation 3200 User Manual.

After the SubStation and the BaseStation 3200 are on the network, you can connect the SubStation to the controller.

STEP 8 – Connect the SubStation to the BaseStation 3200

When your SubStation is powered up and connected to the network, you need to connect the SubStation to the BaseStation 3200 irrigation controller. You can connect the BaseStation 3200 from the controller or from App Manager.

Connecting the Substation to the BaseStation 3200 from the Controller:

1. Get the IP Address from the SubStation.
 - a. On the SubStation, press the **Setup** button.
 - b. Press the **↓** button to select the **Network Setup** option, and then press the **OK** button. The Network Setup menu displays.
 - c. Press the **↓** button to select the **IP Info** option, and then press the **OK** button. The IP Info screen displays.
 - d. Find the IP address of the SubStation in the **IP ADDR** field, and then write it down.

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- If you are connected to the SubStation using a LAN, make sure the BaseStation 3200 is connected to the same network. If you are connecting to the cloud using Cell Modem, this is not a requirement.
- On a BaseStation 3200 irrigation controller that you want to connect the SubStation to, turn the dial to the **Network** position.
- Press the **Next** button to highlight the **SubStation Setup** option.
- Press the **Enter** button. The Network screen displays.
- In the **SubStation ID** field, press the + button to set the ID to a number 1 through 8.
- Press the **Next** button to move to the **Connect/Disconnect** field, and then press Enter to either connect or disconnect the SubStation.
- If connecting to the cloud, press + to place a checkmark in the IOT Server field.
- Press the **Next** button to move to the first cell of the **SubStation IP** field.
- Press the + button to change the number to match the first group of numbers in the IP address of the SubStation.

SubStations	Network
SubStation ID	1
Press Enter to	Disconnect
IOT Server	<input checked="" type="checkbox"/>
SubStation IP	1.0.0.0
SubStation Status:	Connected
SubStation MAC:	001EC0E2FCC4
IOT Server Status:	Connected
	Help

Note: Press and hold the + button or the – button to rapidly increase or decrease the number in the field.

- Complete the IP address by pressing the **Next** button to move to the next cell of the **SubStation IP** field, and then pressing the + button to change the number.
- Repeat the procedure for each SubStation that you are connecting to the controller. The BaseStation 3200 irrigation controller can communicate with up to 8 SubStations over a network.

Connecting the Substation to the BaseStation 3200 from AppManager:

- From the AppManager home page, select **Admin**.
- Select **Manage BaseStation 3200's**. Select the name of the controller you want to connect the SubStation to. A popup displays. Select **Edit**.
- In the 3200 Managed Substations field, select **Add SubStation**.
- Use the drop down tab to add the desired SubStation.
- If using the connection through the cloud, place a checkmark in the **IoT Server** box. The IoT server IP field will automatically populate.
- If not using the IoT server, enter in the SubStation IP address.
- Select **Save**. A green “Success” bar displays at the top of the screen, letting you know that the change was successfully made.

STEP 10 – Check the SubStation-BaseStation Connection Status

1. On the BaseStation 3200 irrigation controller that the SubStation is connected to, turn the dial to the **Network** position.
2. Press the **Next** button until the **SubStation Setup** option is highlighted.
3. Press the **Enter** button. The Network screen displays.
4. In the **SubStation ID** field, press the **+** button to choose the SubStation that you want to see the connection status for.

SubStations	Network
SubStation ID	1
Press Enter to	Disconnect
IOT Server	<input checked="" type="checkbox"/>
SubStation IP	1 0 0 0
SubStation Status:	Connected
SubStation MAC:	001EC0E2FCC4
IOT Server Status:	Connected
<input type="button" value="Help"/>	

The connection status displays **SubStation Status** field.

STEP 11 – Configure the SubStation’s devices on the BaseStation 3200

You configure the devices that are physically connected to the SubStation’s wire path on the BaseStation 3200 irrigation controller.

The SubStation’s devices are included in the total device count for the BaseStation 3200. If the total number of devices exceeds the BaseStation 3200 specifications, the additional devices will be ignored. There is no way to select which devices show up on the BaseStation 3200 if the maximum is exceeded.

To find the instructions for assigning and configuring the devices, refer to the section on Configuring Devices in the BaseStation 3200 User Manual.

STEP 12 – Assign the SubStation’s Devices to Programs on the BaseStation 3200

After you have assigned and configured the SubStation’s devices in the BaseStation 3200, you can add those devices to programs in the BaseStation 3200. By default, the SubStation zones and devices are identified by their serial numbers, and there is no indication that they are attached to the SubStation. However, if your BaseStation 3200 is connected to BaseManager, you can add descriptions to the zones and other devices to label them as SubStation devices. You can also add a program description to help you keep track of the SubStation program(s). The illustration below shows an example of how the descriptions in BaseManager help identify a SubStation zone and program in the BaseStation 3200 Zones screen.

To find the instructions for programming tasks, refer to the section on Initial Programming in the BaseStation 3200 User Manual.

Program 4	SubStation	Zones
4	Zone [D003329] (Substation Zone 1)	24
Program	Zone Mode	Primary
	Water Time (h:mm)	1:00
	Cycle Time (h:mm)	0:20
	Soak Time (h:mm)	0:40
	Flow	0.00
	Enabled	YES
	Use ET Deficit Water Times	NO
Programs: 3,4		
<input type="button" value="Help"/>		