

Baseline FlowStation is an advanced flow management controller that simplifies the most complex flow and system hydraulics to deliver the required amount of water in the shortest amount of time. A single FlowStation supports shared-flow programming for up to 20 BaseStation 3200 irrigation controllers.



FlowStation

Configuration & Specification Guide

BETTER DATA FOR BETTER PERFORMANCE

FlowStation dynamically balances system hydraulics using multiple control points to supply water to the downstream irrigation system, automatically selecting the control point with the best flow resolution for a zone's flow requirements. This ensures that the system always has the best flow data to maximize system performance and to protect against leaks.

The FlowStation

The FlowStation is an advanced flow management controller that allows up to 20 BaseStation 3200 Irrigation controllers to share water resources.

Whether you have multiple controllers drawing from one mainline across a property, or you are managing multiple controllers across multiple mainlines, the FlowStation offers the features and flexibility to tackle the job. The FlowStation can manage up to:

- 20 Water Sources
- 20 Control Points
- 40 Mainlines



Users can still take advantage of the advanced features of the BaseStation 3200 like program priorities, start, stop, and pause conditions, and even empty conditions.

With the FlowStation you don't lose the ability to monitor each control point for high and unexpected flow events--the BaseStation 3200 continues to monitor each control point that is connected to it for flow-related faults and reports a fault to the FlowStation so appropriate action can be taken.

The FlowStation has a built-in Ethernet port and it is also compatible with Wi-Fi and Ethernet radios. If an existing local network is not available, Ethernet radios can be used to create a stand-alone network for just the BaseStation 3200 controllers and the FlowStation. The FlowStation does not require a connection to the Internet unless you plan to use the FlowStation App, so stand-alone sites are easy to implement.

Part Number: BL-FLOWSTN

Designate an enclosure option by adding "-X", "-XS" or "-P" to the FlowStation part number.

Example:

BL-FLOWSTN-X

How Communication Works

The FlowStation and the BaseStation 3200 communicate over an IP based network. The FlowStation requires a static IP address on the network and each BaseStation 3200 needs to have an IP address on the network. The BaseStation 3200 can be assigned a static IP address or it can operate in DHCP mode. Each BaseStation 3200 is assigned to a FlowStation by programming the IP address of the FlowStation into the controller.

Where an existing network is not available, a radio network can be set up using Baseline Ethernet radios. Access to the Internet is not required. Please see the Ethernet Radio Technical Specification for more information about Baseline Ethernet radios.

How it Works

A FlowStation and up to 20 BaseStation 3200 controllers make up a shared flow group. The FlowStation takes over management responsibilities for hydraulic components within the shared flow group. A hydraulic component can be a water source, a control point, a mainline, and a zone.

A water source is what supplies the system with water. A single BaseStation 3200 can manage up to 8 water sources. A FlowStation can manage up to 20 water sources. Empty conditions, monthly budgets, and water rationing features work with both the BaseStation 3200 and the FlowStation.

A control point is the point in the hydraulic structure that either allows water into the system, or it's the point in the system where flow-related data is captured, or it's a combination of both. A control point can be a master valve, a pump, a flow sensor, a pressure sensor, or any combination of these devices. A single BaseStation 3200 can manage up to 8 control point devices. A FlowStation can manage up to 20.

A mainline is what transports water from one point of the site to another point of the site. A single BaseStation 3200 can manage up to 8 mainlines. A FlowStation can manage up to 40 mainlines. Zones are where the water leaves the system. A zone, or a group of zones, is assigned to a mainline in a BaseStation 3200.

A BaseStation 3200 can manage its own hydraulic components or it can share the components with the FlowStation. Once shared with the FlowStation, the BaseStation 3200 will no longer manage those components.

The BaseStation 3200 requests water from the FlowStation when a program starts. The FlowStation analyzes the water resources that are available and determines what can run based on what is being requested. The FlowStation allows as much watering to occur as possible within specified water windows. If there is not enough water to supply the program with water, that program goes into a waiting mode until there is sufficient water available.

The BaseStation 3200 continues to monitor the components of the hydraulic structure and reports back to the FlowStation important data for the water source, control point, mainline, and zones. When a controller determines that a fault, an empty condition, or a start, stop, or pause condition has been triggered, the FlowStation will discontinue use of that component until the problem is corrected and the error is cleared.

Data Collection for Advanced Flow Management

A FlowStation is designed to read data from multiple flow management devices, which gives you the ability to:

- Capture flow rate and usage
- Set high flow and low flow alerts
- Capture pressure readings
- Set alerts for both high and low pressure
- Shut down master valve for high-and low-flow events
- Shut down master valve for high-and low-pressure events
- Set operational delays based on pressure
- Program shutdowns based on usage and budgets
- Monitor for leaks or mainline breaks as they occur
- Set design flow parameters
- Stabilize flow based on time or pressure
- Set flow variance limitations with shutdown capabilities

Cloud-based Management

With Baseline's AppManager, FlowStation users can access multiple applications to configure, monitor, and manage every component of their site's irrigation system.



BaseManager

BaseManager is a powerful cloud-based central control and remote access platform that allows any BaseStation 3200 controller to be managed remotely over the Internet. With BaseManager, you'll be able to do everything you normally have to do at the controller, from the convenience of any Internet connected device.

PipeView

PipeView is a real-time digital model that represents the allocation of water through a site's hydraulic structure managed by a BaseStation 3200. It provides at-a-glance, color-coded status indicators that highlight flow dynamics plus clickable Water Source, Control Point, Mainline, and Zone screens.

FlowStation App

With the FlowStation App you can remotely configure and manage your FlowStation from a desktop, tablet, or mobile device. Get quick access to program controllers, share flow between them, and then manage the entire scope of hydraulics.

How to Specify BaseManager with PipeView:
BL-BMW2-PLUS

How to Specify FlowStation app:
BL-APPMGR-FLOW-X

Intelligent Flow Allocation

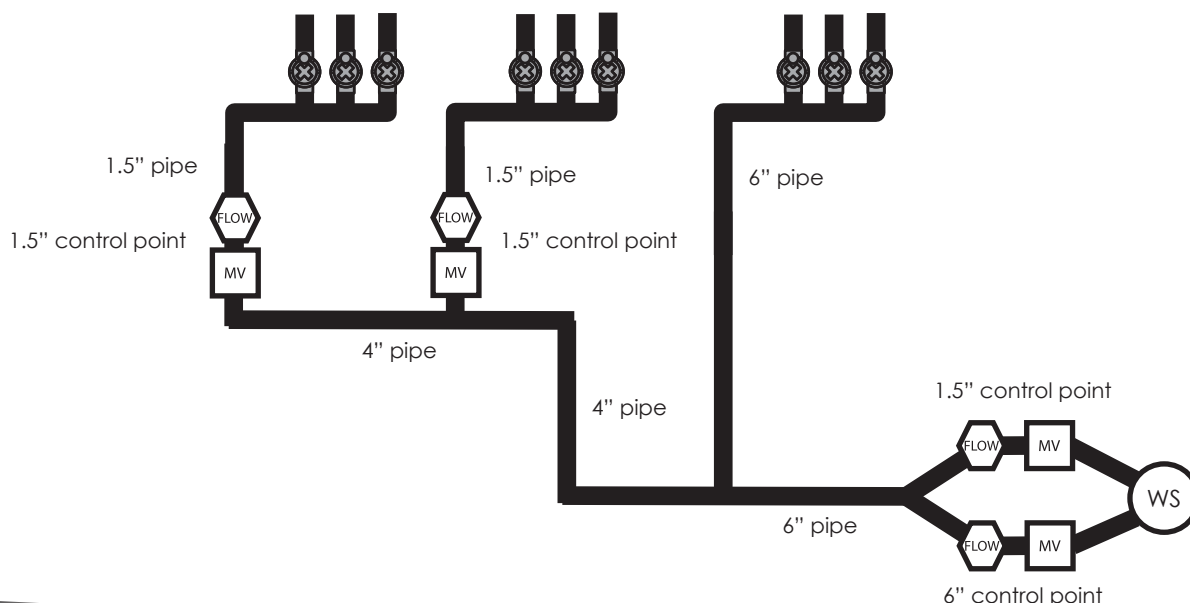
The Baseline system automates how water can be allocated at a site. It controls the flow of water in real-time using a master valve or a pump based on data using a flow sensor or a pressure sensor or both. This opens the door for two very powerful control point features.

The first feature called “dynamic flow allocation.” This feature enables a BaseStation 3200 to automatically turn on or turn off irrigation pumps that supply the system with water based on the amount of flow required to supply the downstream zones with water. For example, if the downstream zones require 50 gpm, the 3200 will turn on the first pump that can supply 50 gpm. Suppose more zones call for water and they require an additional 100 gpm. The 3200 will automatically turn on the next pump that can supply an additional 100 gpm. This means the system is operating according to what’s needed and it won’t run pumps unnecessarily which wastes costly electricity and diminishes the lifespan of the pump.

The second feature is called, “control point grouping.” This FlowStation feature comes into play for a bypass scenario where you may have a 6” hydrometer and a 1.5” hydrometer acting as a bypass. This is important for properly irrigating smaller zones such as drip zones and managing the data collected at the control point. If a downstream drip zone calls for water and its learned-flow value is only 4 gpm, the 6” hydrometer does not have sufficient flow resolution to read that level of flow. The Baseline system knows this so it will activate the 1.5” hydrometer automatically. This enables the system to optimize the flow resolution and to collect the best data possible. As more zones call for water, the system will automatically turn on the 6” hydrometer when the requested flow exceeds what the 1.5” hydrometer can supply.

Pipe downsizing and sub-mainlines

The FlowStation not only supports shared-flow configurations and powerful flow allocation features, but it also supports complex hydraulic structures. With the FlowStation you can create mainline-to-mainline assignments to account for pipe-downsizing. You can even create control point-to-mainline-to-control point assignments for true sub-mainline flow management.



“X” Series Cabinets

Large Metal Wall Mount Enclosure

- Stand-alone shared flow controller
- 15.50" W x 12.38" H x 6.40" D
- Available in aluminum & powder coated (X) & 16 gauge 304 Stainless steel (XS)
- Interior/exterior mount
- Ethernet port included
- Compatible with Wi-Fi and Ethernet radio communication modules

How to Specify:
BL-FLOWSTN-X

Pedestal Base for “X” Series Cabinets

- 15.50" W x 23.00" H x 6.40" D
- Available in 16-gauge steel & powder coated (XP) & 16 gauge 304 stainless steel (XSP)

How to Specify:
BL-XP



Module for “P” Series Pedestals

Add-on Module for Stainless Steel Pedestal Enclosures

- Ethernet port and Ethernet switch (BL-ETH-SW) included
- Compatible with Wi-Fi and Ethernet Radio communication modules

How to Specify:
BL-FLOWSTN-P



Communication Options

FlowStations in the “X” and “XS” enclosures are large enough to hold the controller and a communication module. The communication module will be built into the enclosure at the factory when ordered together. When adding a FlowStation into the enclosure of a BaseStation 3200 Pedestal, the communication module should be specified as part of the controller. Refer to the BaseStation 3200 Configuration and Specification Guide for more information.



“WL” Ethernet

Every FlowStation has a built-in Ethernet port. No additional hardware is required for Ethernet-based communication.



“WF” Wi-Fi Communication Modules

The FlowStation is compatible with a Wi-Fi Module. To add a Wi-Fi module to a FlowStation in an X enclosure, specify the following part number:

Part Number BL-FLOWSTNWF-X



“ER” Ethernet Radio (Spread Spectrum) Communication Modules

The FlowStation is compatible with Baseline Ethernet Radio modules. To add an Ethernet Radio module to a FlowStation in an X enclosure, specify the following part number.

Part Number BL-ER-X

Every Ethernet radio configuration requires at least one radio that is configured as a gateway. The BL-ER-C is an Ethernet radio in a “C” series enclosure with factory default settings as a gateway. It can also be configured as a repeater. One repeater may be inserted between a gateway and endpoint if required.

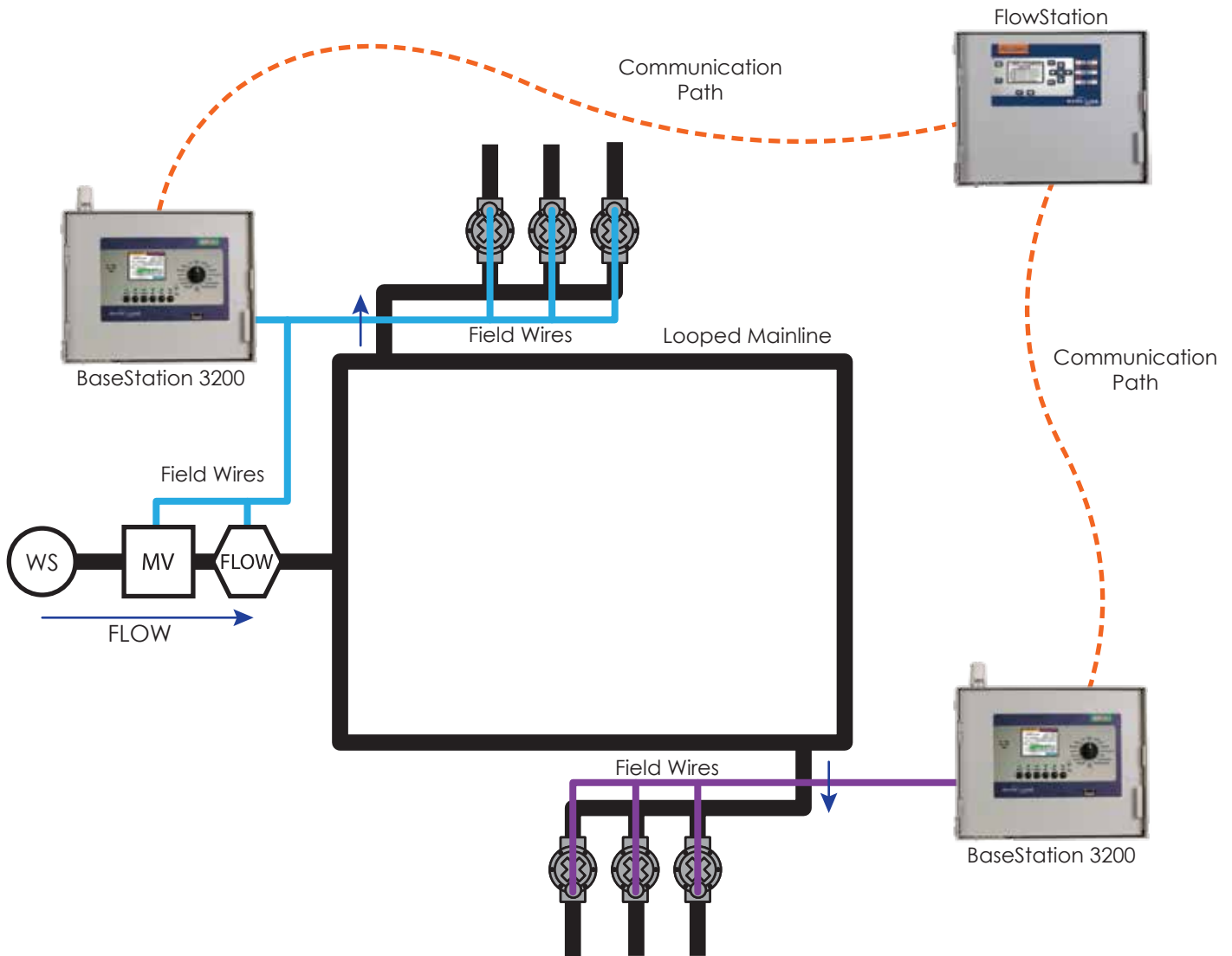


3-Port Ruggedized Ethernet Switch

When there are multiple devices that require an Ethernet connection, a 3-port Ethernet switch should be specified along with the BaseStation 3200 or the FlowStation. To determine if an Ethernet switch is required, count the number of devices in an enclosure that have an Ethernet Port. If there is more than one device that has an Ethernet port and only one Ethernet connection is available, an Ethernet switch is required. The FlowStation, BaseStation 3200 controllers, Ethernet Radios, and Wi-Fi modules all have Ethernet ports. When a FlowStation is specified for a BaseStation 3200 controller in a stainless-steel pedestal (BL-FLOWSTN-P) an Ethernet switch is included.

Part Number BL-ETH-SW

Single Point of Connection on a Shared Looped Mainline



How to Specify:

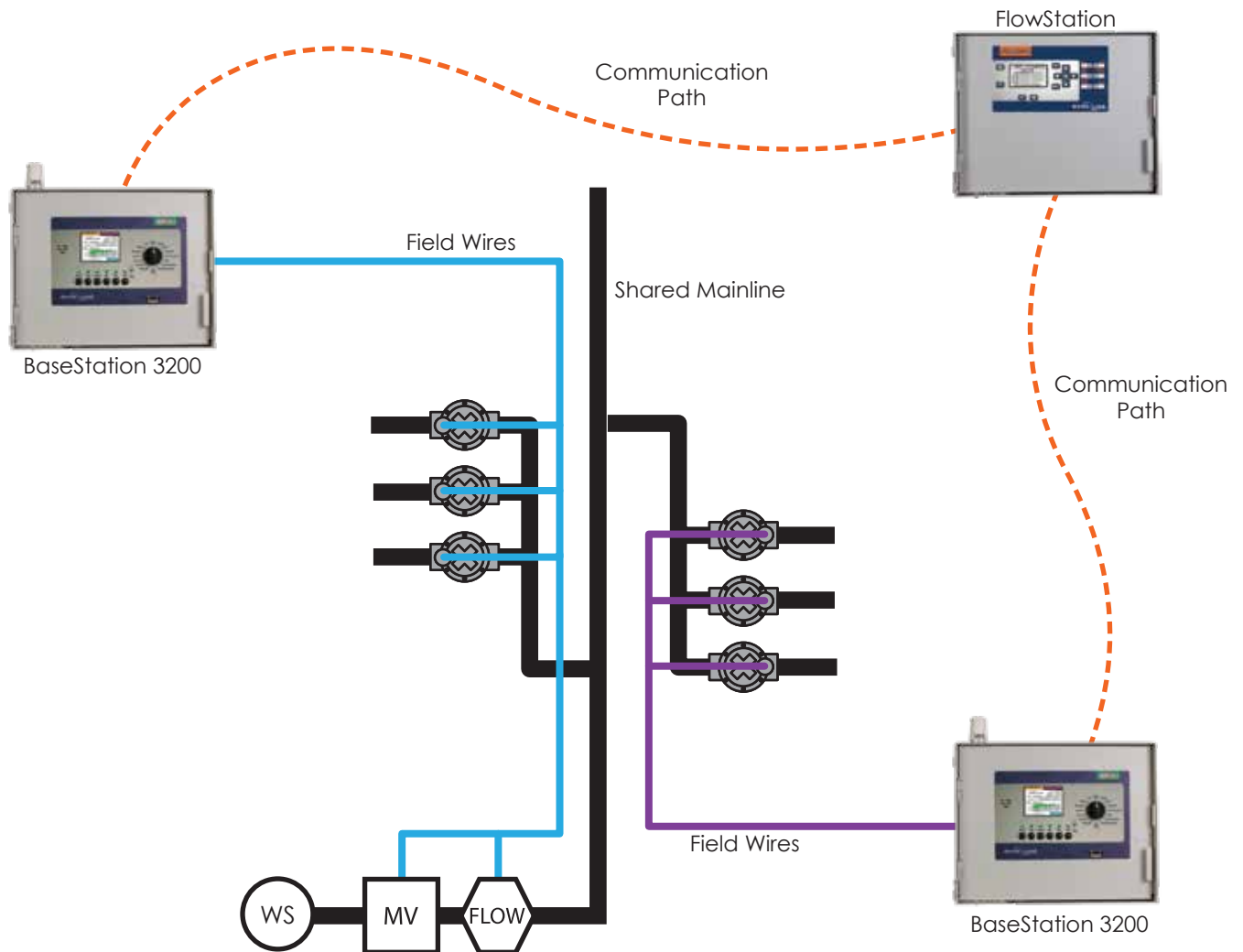
BL-FLOWSTN-X - FlowStation Shared Flow Controller

- Designate a pedestal enclosure by substituting a P
- Include communication module as required
Example: BL-ER-P
- Add a 3-port Ethernet switch as required
Part Number: BL-ETH-SW

BL-3200 - BaseStation 3200 controllers

- See the BaseStation 3200 Configuration & Specification Guide for more information on specifying BaseStation 3200 systems

Single Point of Connection on a Shared Mainline



How to Specify:

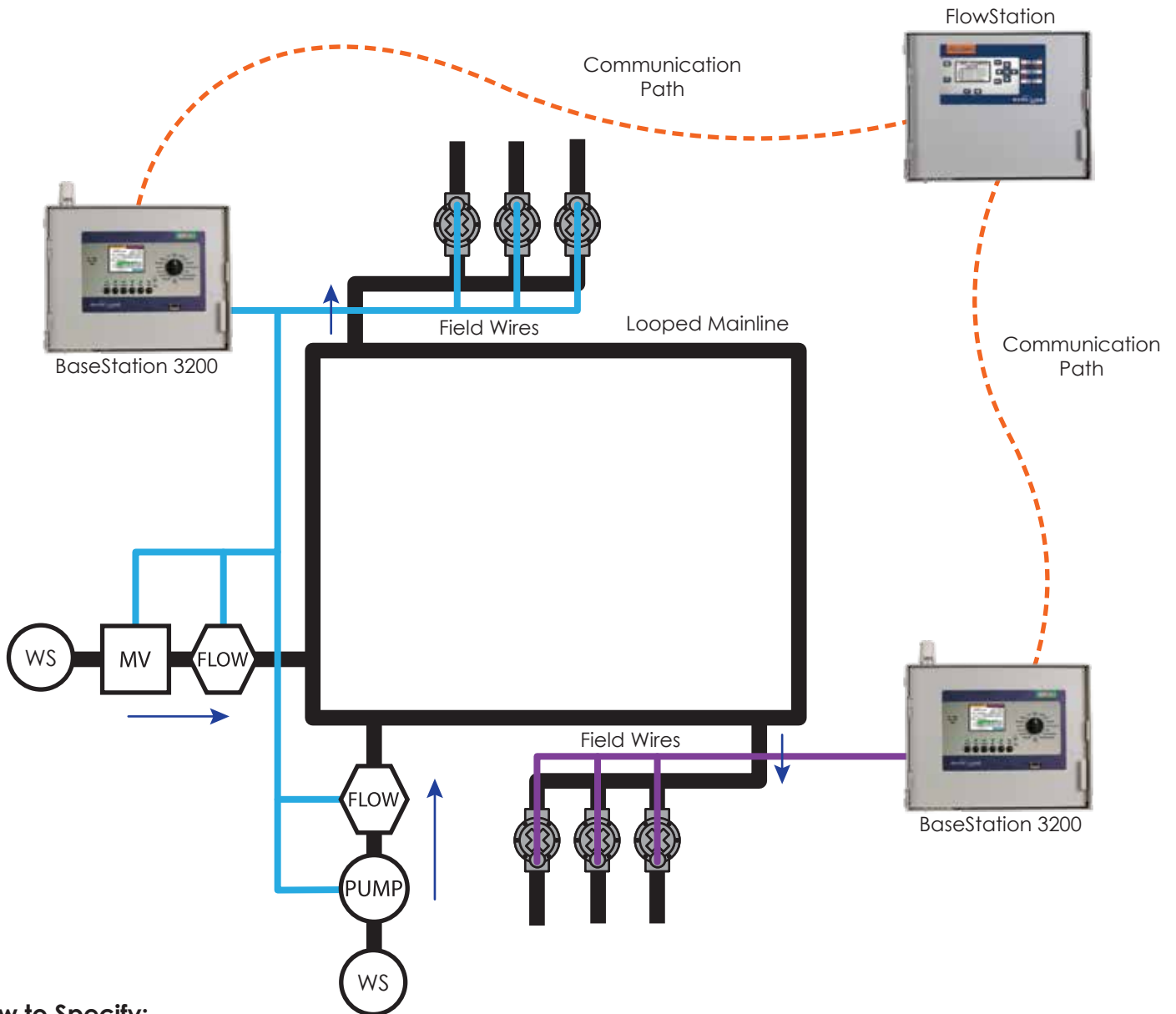
BL-FLOWSTN-X - FlowStation Shared Flow Controller

- Designate a pedestal enclosure by substituting a P
- Include communication module as required
Example: BL-ER-P
- Add a 3-port Ethernet switch as required
Part Number: BL-ETH-SW

BL-3200 - BaseStation 3200 controllers

- See the BaseStation 3200 Configuration & Specification Guide for more information on specifying BaseStation 3200 systems

Multiple Points of Connection on a Shared Looped Mainline



How to Specify:

BL-FLOWSTN-X - FlowStation Shared Flow Controller

- Designate a pedestal enclosure by substituting a P
- Include communication module as required

Example: BL-ER-P

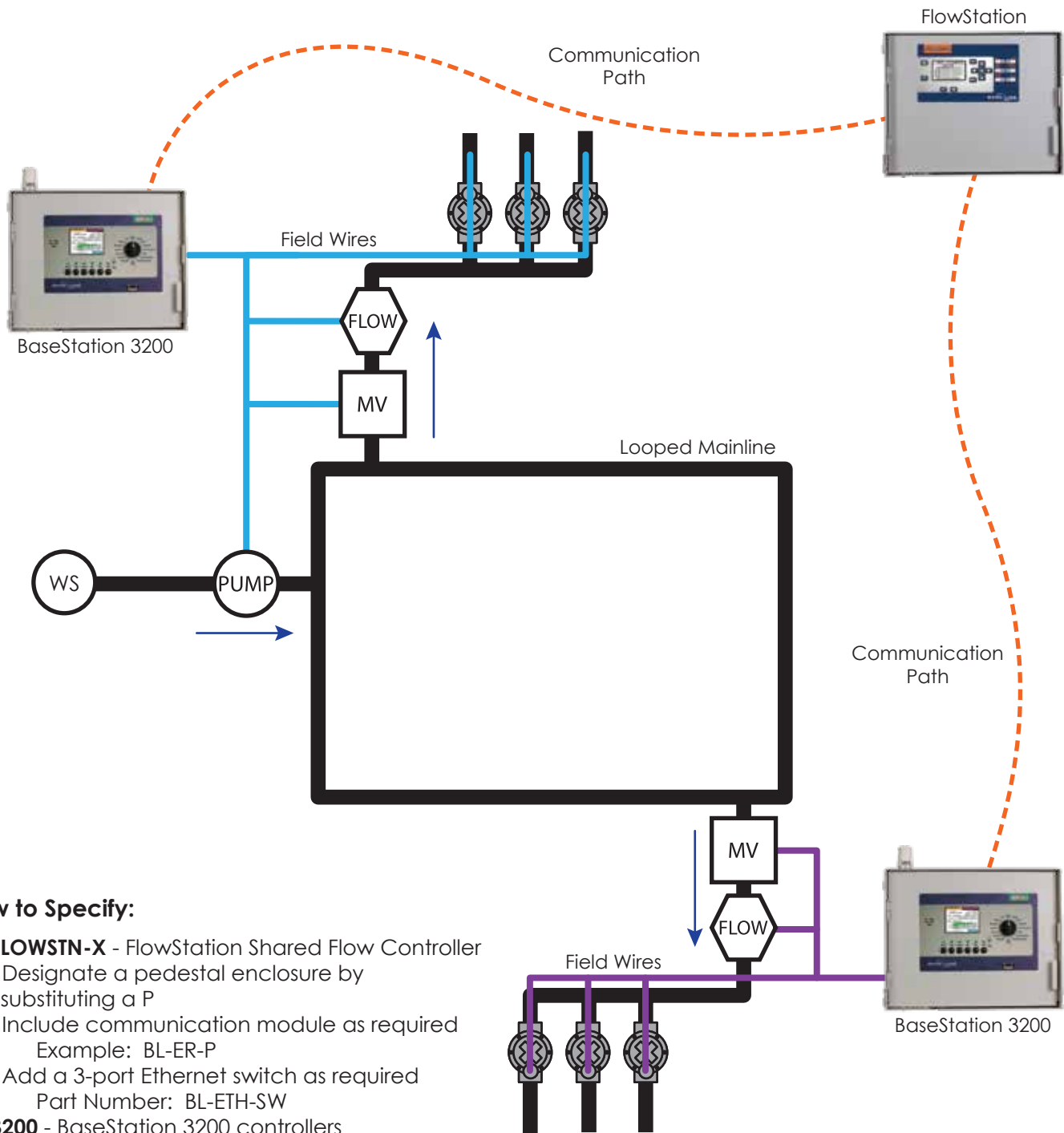
- Add a 3-port Ethernet switch as required

Part Number: BL-ETH-SW

BL-3200 - BaseStation 3200 controllers

- See the BaseStation 3200 Configuration & Specification Guide for more information on specifying BaseStation 3200 systems

Multiple Points of Connection Pulling from a Single, Shared Point of Connection



How to Specify:

BL-FLOWSTN-X - FlowStation Shared Flow Controller

- Designate a pedestal enclosure by substituting a P
- Include communication module as required
Example: BL-ER-P
- Add a 3-port Ethernet switch as required
Part Number: BL-ETH-SW

BL-3200 - BaseStation 3200 controllers

- See the BaseStation 3200 Configuration & Specification Guide for more information on specifying BaseStation 3200 systems

FlowStation

Configuration & Specification Guide



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