

SubStation

The SubStation™ is the perfect solution for difficult retrofitting situations or complex irrigation sites. The SubStation provides access to the industry-leading BaseStation 3200™ controller using a local area network (LAN). This wireless connectivity means you can consolidate multiple existing controllers into a single BaseStation 3200 controller without running expensive wire across long distances. You can also establish new irrigation zones in areas separated from the main controller by obstacles such as driveways or parking lots.

After the SubStation is connected to the preferred LAN, you can take full advantage of the powerful BaseStation 3200 capabilities to program the SubStation's zones from any location.

Display Features

- High contrast 3.25" backlit mono LCD screen
- Screen resolution 128x64 pixels
- Screen LCD brightness of 250 lumens for easy viewing in direct sunlight

SubStation Features

- Supports up to 100 zones in any combination of two-wire and conventional wire
 - Normally open or normally closed master valves and pump starts are included in the zone count.
- Supports up to 20 biSensor soil moisture sensors
- Supports up to 3 event switches
- Supports up to 3 flow sensors or meters
- Supports up to 3 temperature sensors
- Supports Baseline's documented two-wire run lengths. See Baseline's Two-Wire Technical Specification for details.
- Provides a simple interface for networking setup
- Displays status of devices and the connected BaseStation 3200

BaseStation 3200 Features

- The BaseStation 3200 has 8 available addresses for TCP/IP-based performance components. Each SubStation connection uses one of these addresses.
- Total device counts, including the devices connected to all SubStations must remain within the BaseStation 3200 specifications.
 - SubStation devices that exceed the BaseStation 3200 limits are ignored.
- All search and assign operations for SubStation devices are performed from the BaseStation 3200 or from BaseManager.
- All programming operations for SubStation devices are performed from the BaseStation 3200 or from BaseManager.
- All test operations for SubStation devices are performed from the BaseStation 3200 or from BaseManager.
- Displays status of the SubStation connection and reports the number of each type of device from last search
- For SubStation compatibility, ensure that the BaseStation 3200 is running firmware version 12.32 or greater.

Communication Requirements

- The SubStation communicates with a BaseStation 3200™ irrigation controller over a wired or wireless TCP/IP-based connection.
- The SubStation must be connected to the same subnet as the BaseStation 3200.
- A SubStation is assigned to the BaseStation 3200 by programming the IP address of the SubStation into the controller.
- The SubStation can be assigned a static IP address or it can operate in DHCP mode.
 - Choose the strategy that will ensure the most stable connection between the SubStation and the BaseStation 3200.
- Where an existing network is not available, a radio network can be set up using Baseline Ethernet radios or Wi-Fi communication modules. Access to the Internet is not required. Please see the Ethernet Radio Technical Specification and the Wi-Fi Module Technical Specification for more information.

Communication Options

>Ethernet Cable

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

>Wi-Fi Communication Modules

- The SubStation is compatible with Baseline's Wi-Fi module.

>Ethernet Radio (Spread Spectrum) Communication Modules

- The SubStation is compatible with Baseline's Ethernet Radio modules.
- 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.

>Ethernet Switch

- When there are multiple devices that require an Ethernet connection, an Ethernet switch should be specified along with the BaseStation 3200 or the SubStation. To determine whether an Ethernet switch is required, count the number of devices in an enclosure that have an Ethernet Port. If more than one device has an Ethernet port and only one Ethernet connection is available, an Ethernet switch is required. The SubStation, BaseStation 3200 controllers, Ethernet Radios, and Wi-Fi modules all have Ethernet ports.

Electrical Specifications

>Transformer Input

- Requires 120 VAC, 50 Hz to 60 Hz and a minimum of a 5 amp breaker
- Requires a certified electrician for hard-wire installation

>Power Output

- Station Output: 30 VAC RMS over two-wire
- Supports up to 1.45 amp output
- The controller powers down the two-wire after one minute of idle time
- Drive current to a decoder is 100 to 250 milliamps (depending on the solenoid)
- Supports up to 110 device loads on a two-wire path
 - 1, 2, and 4 station biCoders = 1/2 load
 - 12 to 24 station Powered biCoder = 2 loads
 - Soil Moisture Sensor = 1 load
 - Flow biCoder or Flow Sensor = 3 loads

>Solenoid Specification

- Requires a typical solenoid with approximately 400 milliamps of inrush current and approximately 200 milliamps holding current

>Surge

- 10 levels of surge protection
- Up to 5 levels of surge protection built into the controller boards
- Minimum surge response time of 1 picosecond

SubStation Enclosure Options

“X” Cabinet—Wall Mount Enclosure

- Dimensions: 15.50" x 12.38" x 6.40"
- 16 Gauge, powder-coated

“XS” Cabinet—Wall Mount Enclosure

- Dimensions: 15.50" x 12.38" x 6.40"
- 16 Gauge, 304-grade stainless steel

“P” Pedestal Enclosure

- Dimensions: 17.38" x 36.25" x 12.63"
- 16 Gauge, 304-grade stainless steel

Enclosure Notes

SubStations 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 by the factory when ordered together.

Baseline recommends that “X” or “XS” enclosures be specified when a wall-mount enclosure and communication modules are required.

The SubStation is available as a stand-alone unit in a pedestal enclosure.

Conventional Wire Options

12 Zones	'-R12'
24 Zones	'-R24'
36 Zones	'-R36'
48 Zones	'-R48'

Examples:

BL-SUBSTN-X-R24

BL-SUBSTN-P-R48

Device Options

The SubStation is compatible with all Baseline two-wire devices, including:

- BL-5200R Powered Retrofit biCoders
- BL-5201, BL-5202, and BL-5204 Valve biCoders
- BL-5201PR Pump Start/Relay biCoders
- BL-5201DC and BL-5202DC DC-latching Valve biCoders
- BL-5303 Air Temperature Sensors
- BL-5308 and BL-5309 Flow biCoders
- BL-PFS Flow Sensors and BL-BHM Hydrometers
- BL-5401 and BL-5402 Event biCoders
- BL-5315B biSensor Soil Moisture Sensors
- BL-LA01 Lightning/Surge Arrestors

How to Specify

Start with the SubStation:

BL-SUBSTN

Designate the enclosure for the SubStation with one of the following codes:

'-X', '-XS', '-P'

Add a communication option for the SubStation:

Ethernet Included

Wi-Fi '-WF'

Ethernet Radio '-ER'

Example:

BL-SUBSTNWF-X

Note: Communication modules may also be ordered separately.

Specify the BaseStation 3200 irrigation controller:

BL-3200

Designate the enclosure for the BaseStation controller with one of the following codes:

'-X', '-XS', '-P'

Add a communication option for the BaseStation controller:

Ethernet Included

Wi-Fi '-WF'

Ethernet Radio '-ER'

Example:

BL-3200X-WF