BaseStation 3200
Configuration & Specification Guide
BaseStation 3200 Intelligent Irrigation Controller

The BaseStation 3200™ irrigation controller is the most advanced smart irrigation controller available today because it offers irrigation and landscape management tools that are unmatched by any controller on the market. The BaseStation 3200 can operate AC and DC solenoids and is available in a completely solar powered configuration.

Part Number: BL-3200
- Supports up to 200 zones
- Supports up to 25 biSensors
- Supports up to 8 master valves and 8 flow meters
- Built-in Ethernet port
- Automated water source and flow management
- Intelligent Water Rationing™
- Prioritized programs & water sources
- Compatible with the FlowStation

Two-Wire & Conventional Wire

Each BaseStation 3200 has the flexibility to support both two-wire and conventional wire. A controller could be strictly two-wire or completely conventional wire. Or, combine the two! The BaseStation 3200 is a great solution for retrofitting existing sites where two-wire will be added in the future.

Central Control & Remote Access

Every BaseStation 3200 includes a built-in Ethernet port so they are Internet-ready out-of-the-box. Using the built-in Ethernet port or adding one of the other available communication options allows for real-time access and remote connectivity through BaseManager central control and LiveView™. Remotely control any BaseStation 3200 with Mobile Access™, which turns any mobile smart phone into the ultimate irrigation remote. The BaseStation 3200 can also be seamlessly integrated into a building management system with BACnet Manager™.
BaseManager

BaseManager™ is Baseline’s new cloud-based central control technology. It features an incredibly easy to use map-based interface and programming tools that allow for complete, real-time access to any BaseStation 3200. In addition, BaseManager features comprehensive reports, graphs and diagnostic features. BaseManager also features LiveView™. LiveView provides access to a BaseStation 3200 just like standing in front of the controller from any web enabled device.

Baseline’s Mobile Access™ is a mobile web application that turns any web-enabled cell phone or other mobile device into the ultimate remote control. Mobile Access gives users full control of their BaseStation 3200 irrigation systems. Mobile Access Advanced offers advanced features like real-time device testing, device geo-location, and more.

BaseManager is also compatible with BACnet Manager™. Baseline’s BACnet Manager for BaseManager is the industry’s first solution for integrating your irrigation system with a building management system. With BACnet Manager, any BACnet compatible Building Management System can display important information like water-use data and system alerts from BaseStation 3200 irrigation controllers.

BaseManager Web Service is available in two ways:
- BaseManager: Includes BaseManager Service and Mobile Access
- BaseManager Plus: Includes BaseManager Service and Mobile Access Advanced

Every BaseStation 3200 includes 6 Months of FREE BaseManager Plus service.

Cloud-based Options

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-BMW2-LITE</td>
<td>LiveView only and Mobile Access Lite - Included with Every BaseStation 3200</td>
</tr>
<tr>
<td>BL-BMW2-1</td>
<td>1 year of BaseManager service and Mobile Access for 1 controller</td>
</tr>
<tr>
<td>BL-BMW2-PLUS</td>
<td>1 year of BaseManager service and Mobile Access Advanced for 1 controller</td>
</tr>
</tbody>
</table>

Self-hosted Server Options

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-BM2-SW</td>
<td>BaseManager Server Software for self-hosted server applications</td>
</tr>
<tr>
<td>BL-BM2-COM</td>
<td>BaseManager Server Software for self-hosted server pre-installed on a computer</td>
</tr>
<tr>
<td>BL-BMW2-MAA</td>
<td>Mobile Access Advanced Plug-in for self-hosted BaseManager Server</td>
</tr>
</tbody>
</table>

Building Management System Options

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-BM2-BACNET-SW</td>
<td>BACnet Manager Software for BaseManager</td>
</tr>
<tr>
<td>BL-BM2-BACNET-VM</td>
<td>BACnet Manager Virtual Machine Image for BaseManager</td>
</tr>
<tr>
<td>BL-BMW-BACNET-COM</td>
<td>BACnet Manager pre-installed on a server</td>
</tr>
</tbody>
</table>
“X” Series Cabinets

Large Metal Wall Mount Enclosure
- 15.50" W x 12.38" H x 6.40" D
- Available in 16-gauge steel & powder coated (X) & 16 gauge 304 stainless steel (XS)
- Interior/exterior mount
- Compatible with R-Series Powered biCoders - Can hold up to 48 conventionally wired zones
- Compatible with any communication module

How to Specify:
BL-3200X

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

“P” Series Pedestals

Stainless Steel Pedestal Enclosure
- 17.38" W x 36.25" H x 12.63" D
- 16 gauge 304 grade stainless steel
- Interior/exterior mount
- Compatible with R-Series Powered biCoders - Can hold up to 48 conventionally wired zones
- Compatible with any communication module

How to Specify:
BL-3200P
Communication Options

BaseStations in the “X”, “XS”, and “P” enclosures are large enough to hold the controller, up to 48 conventionally wired stations, 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 module is required.

“WL” Ethernet
Every BaseStation 3200 has a built-in Ethernet port. No additional hardware is required for Ethernet-based communication.

“WF” Wi-Fi Communication Modules
Part Numbers: BL-3200WF-X
BL-3200WF-P

“CM” Cell Modem Communication Modules*
Part Numbers: BL-CM-X
BL-CM-P

“ER” Ethernet Radio (Spread Spectrum) Communication Modules
Part Numbers: BL-ER-C
BL-ER-X
BL-ER-P

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.

Cell Modem Gateway
Connect up to 20 controllers to the Internet through a Cell Modem Gateway. Connect the controllers to the Cell Modem Gateway with an Ethernet Radio Network.
Part Numbers: BL-CM3G-GW

Cell Modem Gateways require a larger cellular data plan. Use BL-CM-SVC1-EXT5 for up to 5 controllers and BL-CM-SVC1-EXT20 for up to 20 controllers. For BaseStations in “X” series enclosures, the Cell Modem Gateway is a standalone unit in its own enclosure and will require its own power source. For BaseStations in “P” series pedestals, the Cell Modem Gateway can be installed inside the unit.

NOTES: Cell modems operate on the AT&T network and require a yearly data fee. Ethernet and Wi-Fi modems may require some network/IT setup. Ethernet connections require a physical connection to the local network, so an Ethernet drop should also be specified. An Ethernet Radio is a spread spectrum radio that operates between 902 MHz and 928 MHz. Ethernet Radios require line-of-sight communications and can typically communicate up to 1 mile when properly configured with appropriate radio locations and antennas.
Conventional Wire

Add up to 48 conventionally wired terminal stations to any BaseStation 3200. Baseline BL-5200 Series Powered biCoders are available in 12 and 24 station configurations. Specify the conventional wire station count by adding “-R12”, “-R24”, “-R36”, or “-R48” to any BaseStation 3200 part number.

Example: BL-3200X-R48

Baseline Powered biCoder Conventional Wire Module

Powerful Retrofit Solutions

Every BaseStation 3200 is capable of controlling up to 200 zones in any combination of two-wire and conventional wire. Combine multiple existing small-station-count controllers into one controller by replacing one of the old controllers with a BaseStation 3200, and one or more old controllers with Powered biCoders in their own enclosure.*

Example: BL-5200X-R36

“X” Series Enclosure Part Numbers:  
BL-5200X-R12  
BL-5200X-R24  
BL-5200X-R36  
BL-5200X-R48

“P” Series Enclosure Part Numbers:  
BL-5200P-R12  
BL-5200P-R24  
BL-5200P-R36  
BL-5200P-R48

NOTES: Each BL-5200 Series Powered biCoder must be connected to a BaseStation 3200 with a two-wire path. Please see the Two-Wire Specifications document for information on wire specifications.
## Two-Wire Devices

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-5201</td>
<td>1 valve direct burial biCoder</td>
</tr>
<tr>
<td>BL-5202</td>
<td>2 valve direct burial biCoder</td>
</tr>
<tr>
<td>BL-5204</td>
<td>4 valve direct burial biCoder</td>
</tr>
<tr>
<td>BL-5201MV</td>
<td>Master valve direct burial biCoder</td>
</tr>
<tr>
<td>BL-5201PR</td>
<td>Direct burial pump start/stop relay switching biCoder</td>
</tr>
<tr>
<td>BL-5303</td>
<td>External air temperature sensor</td>
</tr>
<tr>
<td>BL-5308</td>
<td>Direct burial standard flow biCoder</td>
</tr>
<tr>
<td>BL-5309</td>
<td>Direct burial flow biCoder for use with low power flow meters such as mag meters</td>
</tr>
<tr>
<td>BL-5315B</td>
<td>1.5’ direct burial biSensor soil moisture sensor. Includes 50’ of wire.</td>
</tr>
<tr>
<td>BL-5401</td>
<td>Outside operation button in plastic wall mount enclosure. “Coach’s Button”</td>
</tr>
<tr>
<td>BL-5402</td>
<td>Direct burial event biCoder</td>
</tr>
<tr>
<td>BL-LA01</td>
<td>Direct burial lightning arrestor</td>
</tr>
</tbody>
</table>

### Baseline Flow Sensor Options

When a flow meter is added to a BaseStation 3200 system, the controller can do more to manage the water for a site. The controller can learn the flow for each zone and maximize the number of zones it turns on at once to help shorten water windows. In the event of unexpected high or low flow, the controller will automatically determine which zone is at fault and alert the user without interrupting the rest of the watering cycle. The controller can also help to protect the site from mainline breaks with configurable high and low flow shutdown settings.

Baseline offers several two-wire ready flow sensor and biCoder combinations. The BaseStation 3200 is also compatible with most third party flow meters.

### Third-Party Flow Meter Options

Baseline Flow biCoders make most third-party flow meters/sensors compatible with a BaseStation 3200.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-5308</td>
<td>For use with most flow sensors (such as Data Industrial and Netafim type sensors). The BL-5308 accepts a 5 millisecond low pulse at 200 hertz and a maximum of 200 pulses per second.</td>
</tr>
<tr>
<td>BL-5309</td>
<td>For use with mag type meters, or when a second system (such as a pump station) needs to share a connection to the flow meter. The BL-5309 accepts a 5 millisecond low pulse at 200 hertz and a maximum of 200 pulses per second.</td>
</tr>
</tbody>
</table>
Baseline Flow Sensor Options

PFS Series Flow Sensors

The PFS Series Flow Sensor is a PVC T-type sensor. Every Baseline PFS Series Flow Sensor is two-wire ready with a flow biCoder built into the tee insert. Each sensor is pre-configured with the correct K and offset values. The PFS Series Flow Sensors are available in 1” to 4” sizes.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Size</th>
<th>Max Pressure</th>
<th>Operating Range (GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-PFS100</td>
<td>1&quot;</td>
<td>240</td>
<td>.75 to 40</td>
</tr>
<tr>
<td>BL-PFS150</td>
<td>1.5&quot;</td>
<td>240</td>
<td>1.5 to 100</td>
</tr>
<tr>
<td>BL-PFS200</td>
<td>2&quot;</td>
<td>240</td>
<td>3 to 150</td>
</tr>
<tr>
<td>BL-PFS300</td>
<td>3&quot;</td>
<td>150</td>
<td>6 to 300</td>
</tr>
<tr>
<td>BL-PFS400</td>
<td>4&quot;</td>
<td>150</td>
<td>10 to 480</td>
</tr>
</tbody>
</table>

BHM Series Hydrometer & Master Valve Combination

The BHM Series Hydrometer is a flow meter and master valve combination available in normally open and normally closed configurations. The Hydrometer is available in 1½” to 4” pipe sizes and every Hydrometer is two-wire ready with a built-in flow biCoder and pre-configured K and offset values.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Size</th>
<th>Max Pressure</th>
<th>Operating Range (GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL-BHM150</td>
<td>1.5&quot;</td>
<td>230</td>
<td>1.8 to 55</td>
</tr>
<tr>
<td>BL-BHM200</td>
<td>2&quot;</td>
<td>230</td>
<td>5.3 to 95</td>
</tr>
<tr>
<td>BL-BHM300</td>
<td>3&quot;</td>
<td>230</td>
<td>14 to 220</td>
</tr>
<tr>
<td>BL-BHM400</td>
<td>4&quot;</td>
<td>230</td>
<td>21 to 380</td>
</tr>
</tbody>
</table>

For normally open configurations, add “-NO” to the end of the part number.

Flow Sharing Options

The Baseline FlowStation allows up to 30 BaseStation 3200 Irrigation controllers to share water resources.

Whether you have multiple controllers drawing from one large mainline across a property, or you are combining controllers across multiple mainlines, the FlowStation offers the features and flexibility to tackle the job. With the FlowStation, controllers can share up to 20 separate points of connection and each point of connection can be assigned to one of 20 shared mainlines. The FlowStation will intelligently manage each mainline and allocate water resources among BaseStation 3200 controllers in the shared flow group.

Please refer to the FlowStation Configuration & Specification Guide for more information.
biSensor Soil Moisture Sensors

A properly configured soil moisture sensor can reduce outdoor water use by up to 62 percent or more over traditional irrigation methods. By watering your plants when needed, you can increase landscape health, promote deeper root growth, and make your plants more disease resistant.

Part #  BL-5315B
Description  biSensor Soil Moisture Sensor
Measures Volumetric Moisture Content (VMC)
Technology  Patented Time Domain Transmission (TDT)
Sensitivity  Measures VMC changes of less than 0.1%
Accuracy  ± 3% of actual VMC

A biSensor should be placed in the effective root zone of the plant it is monitoring. Usually the sensor will be making the irrigation decision for a group of zones (hydrozone) made up of plants with similar water needs, so it should be placed in the effective root zone of a representative plant.

For most sites, place one sensor in the lawn, one in the shrubs, and one in the trees if these plant types are in separate zones. Bury the sensor in the zone that needs to be watered the most frequently (the one that dries out the quickest). Place the sensor in an average to slightly dry area (a spot that receives an average amount of water for that zone). Bury the sensor in the top third of the root zone, usually 2 - 3 inches deep for turf. biSensors are compatible with two-wire and conventional wire applications.

In addition to traditional landscape applications, biSensors can also be used to manage cisterns, ponds, and water features. biSensors are also exceptional tools for green walls and green roofs.

Watering with Soil Moisture Sensors
Available for download from www.baselinesystems.com

Moisture Sensor CAD Details
Available for download from www.baselinesystems.com
Two-Wire BaseStation 3200

How to Specify:

BL-3200 - BaseStation 3200 controller
Designate enclosure by adding X, XS, or P
Example: BL-3200X
Two-wire biCoders, Soil Moisture Sensors, Flow biCoders, etc.

Conventional Wire BaseStation 3200

How to Specify:

BL-3200 - BaseStation 3200 controller
Designate enclosure by adding X, XS, or P
Add conventional wire stations with -R12, -R24, -R36, -R48
Example: BL-3200X-R24
Soil Moisture Sensors, Flow biCoders, etc.
Combining Multiple Conventional Wire Systems into one BaseStation 3200

How to Specify:

**BL-3200** - BaseStation 3200 controller
Designate enclosure by adding X, XS, or P
Add conventional wire stations with -R12, -R24, -R36, -R48
Example: BL-3200X-R48

**BL-5200** Series Powered biCoders
Designate enclosure by adding X, XS, or P
Add conventional wire stations with -R12, -R24, -R36, -R48
Example: BL-5200X-R48

Combining Multiple Conventional Wire Systems and Two-wire Devices into one BaseStation 3200

How to Specify:

**BL-3200** - BaseStation 3200 controller
Designate enclosure by adding X, XS, or P
Add conventional wire stations with -R12, -R24, -R36, -R48
Example: BL-3200X-R48

**BL-5200** Series Powered biCoders
Designate enclosure by adding X, XS, or P
Add conventional wire stations with -R12, -R24, -R36, -R48
Example: BL-5200X-R48

Soil Moisture Sensors, Flow biCoders, etc.
Connecting a BaseStation 3200 to BaseManager with the Built-in Ethernet Port

**How to Specify:**

- **BL-BMW2-1** - BaseManager Web Service
- **BL-3200** - BaseStation 3200 controller
  - Designate enclosure by adding X, XS, or P
  - Add conventional wire stations with -R12, -R24, -R36, -R48
  - Example: BL-3200X-R48
- Soil Moisture Sensors, Flow biCoders, etc.

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Connecting a BaseStation 3200 to BaseManager with a Wi-Fi Module

**How to Specify:**

- **BL-BMW2-1** - BaseManager Web Service
- **BL-3200** - BaseStation 3200 controller
  - Designate enclosure by adding X, XS, or P
  - Add conventional wire stations with -R12, -R24, -R36, -R48
  - Example: BL-3200X-R48
- **BL-3200WF-X** - Wi-Fi Module for BaseStation 3200
  - Designate a different enclosure type by substituting a XS, or P
  - Soil Moisture Sensors, Flow biCoders, etc.
Connecting a BaseStation 3200 to BaseManager with a Cell Modem

How to Specify:

**BL-BMW2-1** - BaseManager Web Service  
**BL-3200** - BaseStation 3200 controller  
Designate enclosure by adding X, XS, or P  
Add conventional wire stations with -R12, -R24, -R36, -R48  
Example: BL-3200X-R48  
**BL-CM-X** - Cell Modem Module for BaseStation 3200  
Designate a different enclosure type by substituting a XS, or P  
Soil Moisture Sensors, Flow biCoders, etc.

Connecting a BaseStation 3200 to BaseManager with a Cell Modem Gateway & Ethernet Radios

How to Specify:

**BL-BMW2-1** - BaseManager Web Service  
**BL-3200** - BaseStation 3200 controller  
Designate enclosure by adding X, XS, or P  
Add conventional wire stations with -R12, -R24, -R36, -R48  
Example: BL-3200X-R48  
**BL-CM3G-GW** - Cell Modem Gateway  
Designate a different enclosure type by substituting a X or P  
**BL-ER-X** - Ethernet Radio Module for BaseStation 3200  
Designate a different enclosure type by substituting X for P  
**BL-ER-C** - Ethernet Radio Gateway  
Soil Moisture Sensors, Flow biCoders, etc.
Connecting a BaseStation 3200 to BaseManager with Ethernet Radios

How to Specify:

**BL-BMW2-1 x** Qty BaseManager Web Service  
**BL-3200** - BaseStation 3200 controller  
  Designate enclosure by adding X, XS, or P  
  Add conventional wire stations with -R12, -R24, -R36, -R48  
  Example: BL-3200X-R48  
**BL-ER-X** - Ethernet Radio Module for BaseStation 3200  
  Designate a different enclosure type by substituting a X or P  
**BL-ER-C** - Ethernet Radio Gateway  
Soil Moisture Sensors, Flow biCoders, etc.
Solar Powered BaseStation 3200 Connected to BaseManager

How to Specify:

**BL-3200P-DC** - Solar Powered BaseStation 3200 Pedestal controller
**BL-85W-PANEL** - 85 Watt Solar Panel
Communication Module (-WF, -ER, -CM)
**5201DC & 5202DC** - DC Two-wire Valve biCoders, Soil Moisture Sensors, Flow biCoders, etc

**NOTES:** The BL-3200P-DC Pedestal includes the solar charge controller and a shelf for a battery. Baseline does not sell batteries. The Solar Powered BaseStation 3200 is only available in two-wire configurations. See BaseStation 3200DC Specification for complete details.