BaseStation 3200™

Baseline's BaseStation 3200 with V18 firmware is an advanced smart controller that is ideal for everything from high-end residential properties to large commercial projects. The comprehensive features of the BaseStation 3200 include patented two-wire technology and conventional wire and retrofit solutions, advanced soil moisture sensor-based smart watering, weather-based watering, advanced flow management options, and flexible central control communication options.

Display Features

- High contrast 3.5 inch TFT LCD screen

- Screen resolution is 320x240 at 65,536 colors

- Screen brightness of 200 lumens for easy viewing in direct sunlight

Smart Watering Modes

In addition to time-based watering, the BaseStation 3200 also operates in the following smart watering modes:

Soil Moisture Sensor-Based Watering

If you have a Baseline soil moisture sensor (biSensor™) installed in your landscaping and connected to your BaseStation 3200 irrigation controller, you can program the controller to water based on the moisture levels in the soil.

Weather-Based Watering

When operated in WeatherAccess™ mode with an active BaseManager™ Plus subscription, the BaseStation 3200 irrigation controller meets the EPA WaterSense program's water-efficiency and performance criteria.

WeatherAccess applies real-time weather data from a weather station in your area (available in Weather Underground's weather station network), and configurable zone properties to a standardized evapotranspiration (ET) equation.

This calculation estimates the loss of moisture from the root zone, and then the BaseStation 3200 uses the calculated value to adjust the runtime in order to apply just enough water to replace that lost moisture.

With the BaseStation 3200, you can combine Baseline's soil moisture sensor-based smart watering technology with the industry's best practices for weather-based irrigation.

Operating Features

- Supports up to 200 zones along a two-wire path and/or a conventional wire path

- Supports up to 25 moisture sensors

- Supports up to 8 temperature sensors, which monitor and control program operation based on temperature thresholds

- Supports up to 8 devices with contacts that alternate between open and closed (known in Baseline terminology as event switches)

- Supports up to 8 water sources

- Supports up to 8 independent mainlines for control and management of separate water delivery systems

- Supports up to 8 hydraulic components known as "control points." The control points accept input from:
  - Up to 8 normally open or normally closed master valves
  - Up to 8 pump starts
  - Supports up to 8 flow sensors or meters, including indoor flow sensors and hydrometers
  - Up to 8 pressure biCoders, which accept 4-20 mA inputs from pressure sensor devices

- Supports up to 99 completely independent programs

- Supports up to 8 available addresses for TCP/IP-based connections. These addresses are used to connect the following performance components:
  - Baseline's FlowStation
  - Baseline's SubStation
  - The Munro Pump Station

- The controller supports concurrent zone operation.
  - In stand-alone operation, the controller's transformer supports a maximum of 15 concurrent zones.
  - When operated in conjunction with Baseline's SubStation, the number of concurrent zones will increase by 15 zones with each additional SubStation. With 8 SubStations, the controller supports a maximum of 99 concurrent zones.
  - Over conventional wire, the controller operates up to 2 typical solenoids per 12-station powered biCoder or up to 4 typical solenoids per 24-station powered biCoder plus 2 additional solenoids using the VE00001 and VE00002 ports.

This specification is subject to change without notice.

- Device Assignments
    □ The controller searches for and identifies all devices connected to the two-wire and lists them according to device type and serial number.
    □ The controller is capable of addressing or re-addressing any two-wire decoder (biCoder) from the controller by re-assigning the device's serial number to a new zone address.
    □ The controller assigns any station or terminal number on a multi-station biCoder from the controller to any zone address in any order, in any program.
    □ The controller allows any device to be removed, replaced, or reordered.
    □ The controller supports full two-way communication with all devices and monitors two-wire voltage and communication integrity, solenoid voltages, current, and status (reported as open/short/OK).

Programmable Features

- Program up to 8 start times per program in 5-minute increments

- The controller automatically stacks overlapping programs.

- The controller supports program prioritization and progression to allow control of which landscape areas get watered first, and/or to prioritize water rations during restricted water allocations. Program priorities can be set from 1 – 99.

- Each program allows from 1 – 15 concurrent zones. The user can configure a program to ignore concurrent zone settings, which enables the program to run even when the maximum number of concurrent zones are running as long as the system does not exceed electrical and hydraulic limits.

- The user can configure a program to ignore global controller settings such as a rain delay, which enables the program to run even when even when the controller is in rain delay mode.

- Program the run times for zones from 1 minute to 23 hours 59 minutes

- Program the day intervals in even days, odd days, or odd days excluding the 31st, programmable day interval

- Create a custom 7-day calendar

- Create a historical calendar with customizable half-months intervals

- Program unique soak and cycle times (Intelligent Soak Cycles™) for each zone or scheduling group. Cycle times and Soak times can be programmed between 0 minutes and 23 hours 59 minutes.

- Specify hours during each day of the week when water can or cannot be applied (Water Windows) in 1-hour increments for each 24-hour period

- Assign advanced irrigation modes (such as timed, primary, linked, soil moisture-based, or weather-based) to each zone

- Adjust seasonal water budget from 25% to 200% by program

- Schedule 8 controller-wide event dates plus 8 event dates per program during which watering is disabled

- Manually operate one zone, multiple zones, or all zones of a program with programmable concurrent zones and run times

- Manually start or stop a program

- Back up and restore all programming and historical data with any USB flash drive

- Establish 3 levels of 4-digit PIN password protection: operator, programmer, and administrator.

- The controller stores all program and history information in non-volatile memory.

- Manually or automatically configure soil moisture thresholds and make irrigation decisions based on those thresholds

- Schedule soil moisture sensor calibration once, once each month, or never

- The controller allows a program to be started by the following conditions:
    - Start time
    - Moisture percent
    - Temperature value
    - Event switch contacts open/closed
    - Pressure sensor readings

Messages and Alerts

- Provides real-time soil moisture measurements and watering feedback to the user

- Includes integrated tools and software that self-diagnose problems and generate alerts and messages, and then displays the messages on the screen

- Displays an on-screen, historical-run-time chart that includes the time watered for last 6 days by program

- Displays on-screen a historical water used chart that includes the actual water used for the last 6 days by flow meter

- Displays a 6-day scalable soil moisture history graph with integrated run-time bar chart

- Displays all pause and stop conditions in message screens that are accessible from the main screen. The system displays one message for each condition, and the user can clear each message.

- Displays high flow alerts, low flow alerts, pause messages and conditions, and rain delays, wire faults, as well as other operating conditions

Central Control and Remote Control

- Connect the BaseStation 3200 to BaseManager™ and LiveView™ when configured with an approved communication module. Communication options include built-in Ethernet, Wi-Fi, cellular modem, Ethernet radio, and Ethernet long haul communication options.
    - The built-in Ethernet jack is 10/100 Base-TX and accepts a standard RJ45 connector. The jack is compliant with CAT5, CAT5e, and CAT6 Ethernet cables.

- Manually program and operate all configured zones from BaseManager central control software

- Receive email and text message alerts when connected to BaseManager central control software

- Perform manual operations remotely with Mobile Access™ when connected to BaseManager central control software

Information Security Controls

- The BaseStation 3200 includes information security controls that enable secure networking with other Baseline products.
    - To learn more about the BaseStation 3200 security controls, refer to the Baseline Security Controls Technical Specification available on the Baseline website.

Compatible Devices

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-5303 Air Temperature Sensors

- BL-5308 and BL-5309 Flow biCoders

- BL-PFS Flow Sensors and BL-BHM Hydrometers

- IDFS Indoor Flow Sensor

- BL-5401 and BL-5402 Event biCoders

- BL-5406 Pressure Sensor biCoder Kit

- BL-5407 Precip Sensor biCoder Kit

- BL-5311 Compact Soil Moisture Sensor

- BL-5315B biSensor Soil Moisture Sensor

- BL-LA01 Lightning/Surge Arrestors

Supported Flow Management Devices

- Up to 8 flow sensors or meters
  - Flow meters are assigned to control points.
  - Flow meters take flow rate readings twice per minute.
  - Flow meters take water used readings once per minute.

- Up to 8 master valves
  - Each master valve is assignable to any control point.
  - The controller can operate normally open and normally closed master valves.

- Up to 8 pumps
  - The controller can manage a pump or other loads switched with a relay on a per program basis.

- Up to 8 pressure sensors
  - The controller can react to high- and low-pressure settings on the mainline with a pressure sensor.
  - The controller can ramp up or down the delay between zones starting and stopping with a pressure sensor.

Flow Management Components

- Up to 8 control points, to which any of the following devices can be assigned:
  - Flow meter
  - Master valve
  - Pump
  - Pressure sensor

- Up to 8 mainlines
  - The controller allows a zone to be assigned to any one mainline.

- The controller supports a connection to Baseline's FlowStation.
  - The FlowStation and up to 20 BaseStation 3200 controllers become a shared flow group where water is shared and managed among all controllers.

This specification is subject to change without notice.

Flow Monitoring & Management Functionality

- The controller displays real-time flow updated every 15 seconds when watering.

- The controller can learn flow for programs and sets of zones.
    - The operator can perform the learn flow operation while normal irrigation continues.
    - The operator can schedule learn flow cycles for individual zones or for programs during a time when the system is not irrigating.

- The controller intelligently schedules watering based on available flow or design flow to maximize concurrent valve operation and minimize total water time by mainline.

- The controller limits the number of concurrent zones using the design flow.

- The controller detects flow variance at the control point level and/or the mainline level.
    - In an "overflow event," the controller halts all irrigation on the faulty control point or on the mainline.

- The controller can dynamically allocate flow by turning on only those control points needed to supply water to a mainline with running zones.

- When a pressure sensor is associated with a control point, the controller can respond to high/low limits based on pressure readings.

- The operator can set a separate variance percentage in 4 GPM ranges.
    - Flow below 25 GPM
    - Flow from 25 to 100 GPM
    - Flow from 100 to 300 GPM
    - Flow above 300 GPM

- The operator can set delays based on time or pressure before and after running zones on a mainline.

Hydraulic Layout

Users can make the following connections in order to model their actual hydraulic system on the controller:

- Connect a water source to a control point

- Connect a control point to a mainline

- Assign zones to their mainlines

Water Management

- The controller supports 8 water sources. A water source is assigned to a control point.

- The controller supports water source prioritization and intelligent secondary water source management to control which water sources are used first.

- The controller supports empty and full indicators from moisture sensors, switches, and pressure sensors to optimize management of cisterns, ponds, rainwater catchment, and other water storage systems.
    - The controller supports a settable wait time after an empty condition is met.

- The controller supports a monthly water budget per water source. The controller can shut down the water source when the budget has been exceeded.

- The controller supports daily water rationing across multiple water sources.

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

- UL Listed

- 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 biCoders = 2 loads
    - Soil moisture sensor = 1 load
    - Flow biCoder = 3 loads
    - Event device = 1 load
    - Pressure biCoder = 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

Enclosure Options

"X" Cabinet—Wall Mount Enclosure

- Dimensions: 15.50" x 12.38" x 6.40"

- Powder-coated, 16 gauge steel

"XS" Cabinet—Wall Mount Enclosure

- Dimensions: 15.50" x 12.38" x 6.40"

- 16 Gauge, 304-grade stainless steel

"P" Standard Pedestal Enclosure

- Dimensions: 17.38" x 36.25" x 12.63"

- 16 Gauge, 304-grade stainless steel

"PSS" Super Strong Pedestal Enclosure

- Dimensions: 16" x 38" x 15.5"

- 16 Gauge, 304-grade stainless steel

Warranty

The controller and installed equipment carry a standard warranty of 5 years from the date of installation.

Please review the Baseline Warranty Statement available on the Baseline website (www.baselinesystems.com).

The user can apply for an extended warranty of 10 years from the date of installation. Approval of the extended warranty is based on:

- Fully completed extended warranty application
- Successful site inspection completed by an authorized Baseline representative

The extended warranty shall include coverage of surge damage, even from a direct lightning strike. However, surge protection equipment must be installed according to specification.

How to Specify

Start with the controller:

BL-3200

Designate the enclosure with one of the following

codes: '-X', '-XS', '-P', '-PSS'

If needed, add conventional wire options:

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

Examples:

BL-3200X-R24

BL-3200XS-R36

BL-3200P-R48

Add a communication option:

Note: Communication modules may also be ordered separately. Ethernet is included with all controllers.

LTE CELL MODEM

BL-CLOUD-LTE-AT-X
BL-CLOUD-LTE-VZ-X
BL-CLOUD-LTE-AT-P
BL-CLOUD-LTE-VZ-P
BL-CLOUD-LTE-AT-PSS
BL-CLOUD-LTE-VZ-PSS

2.4 GHz Wi-Fi

BL-CLOUD-WFE-X
BL-CLOUD-WFE-P
BL-CLOUD-WFE-PSS

Ethernet Radio

BL-ER-X
BL-ER-P

Example:
BL-3200P-R36
BL-CLOUD-LTE-VZ-P

This customer is getting a BaseStation 3200 in a Pedestal enclosure with 36 conventional stations. They are going to use the Cloud Network Module with the Verizon Cell Modem installed in the Pedestal.