

BaseStation 1000™

The BaseStation 1000™ is part of Baseline's family of intelligent irrigation controllers. It is easier to use and program than any other controller on the market, and yet it still provides you the essentials of intelligent irrigation management, including Baseline's patented soil moisture technology, weather-based watering, powerful central control, and mobile device compatibility that will save you time, money, and water.

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

Smart Watering Modes

In addition to time-based watering, the BaseStation 1000 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 1000 irrigation controller, you can program the controller to water based on the moisture levels in the soil.
- **Weather-Based Watering**
When operated in conjunction with BaseManager™ Plus* and WeatherAccess™, the BaseStation 1000 irrigation controller meets the EPA WaterSense program's water-efficiency and performance criteria.

With the BaseStation 1000, you can combine Baseline's soil moisture sensor-based smart watering technology with the industry's best practices for weather-based irrigation.

* Requires optional BL-1000MEXP-BM memory expansion module for access to all BaseManager features.

Operating Features

- Supports up to 100 zones in any combination of two-wire and conventional wire*
- Supports up to 40 separate programs with overlapping run times*
- Supports up to 20 biSensor soil moisture sensors*
- Supports up to 3 points of connection (POC). Each POC supports a flow sensor or meter, which manages and monitors flow across a site as independent or connected hydraulic systems*
- Operates up to 7 normally open or normally closed master valves and pump starts for the entire system including booster pumps*
- Supports up to 7 separate normally closed or normally open pause or event devices—each device can be used to control per-program start, stop or pause behavior*
- Concurrently operates up to 15 typical solenoids over two-wire or up to 2 typical solenoids over conventional wire per 12-station Powered biCoder plus 2 additional solenoids using the VE00001 and VE00002 ports

* Requires optional BL-1000MEXP-50 memory expansion module for maximum totals.

Operating Features, continued

- Assign and configure any zone to one or more programs
- Maximizes watering efficiency and minimizes total irrigation time by using Intelligent Soak Cycles™ to prioritize cycles for zones that have already started to water over zones that have not started
- Automatically stacks up to 10 overlapping programs. The system can run any number of programs concurrently if permitted by the zone concurrency settings.
- Learns the actual flow for each zone when one or more flow meters are configured in the system
- Executes a high-flow shutdown based on total system flow or on flow per flow meter
- Intelligently schedules watering based on available flow to maximize concurrent valve operation and minimize total water time
- Runs a diagnostic test weekly on normally open master valves to help prevent a normally open master valve from “sticking” open
- Detects and repairs all address conflicts for devices that are connected to the two-wire from the controller
- Supports two-way communication with two-wire decoders (biCoders) to gather information about the two-wire voltage and communication integrity, the solenoid voltage and current, and status (open circuit, short circuit, or ok)
- Stores all program and history information in non-volatile memory

Programmable Features

- Program up to 8 start times per program in 10-minute increments
- Program the run times for zones from 1 second to 18 hours in 1 second increments
- Program the day intervals in even days, odd days, or odd days excluding the 31st
- Create a custom 7-day calendar, and historical calendar with customizable half-months
- Program unique soak and cycle times (Intelligent Soak Cycles™) for each program. Soak times can be programmed between 0 minutes and 18 hours.
- 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 start, stop & pause irrigation modes to each program, including timed-based, event-based, and soil moisture sensor-based behaviors
- Manually enter a design flow for each zone, with or without an installed flow meter
- Automatically calibrate soil moisture thresholds and make irrigation decisions based on those thresholds
- Adjust seasonal water budget from 10% to 200% by program
- Schedule up to 8 future “event” dates when no watering will occur
- Manually operate one zone, or all zones of a program, with programmable run times, delay before starting first zone, and time between zones
- Search for and identify all devices connected to the two-wire and list them according to device type and serial number
- Address two-wire decoders (biCoders) by serial number by assigning each zone address a device serial number

Programmable Features, continued

- Re-address any two-wire decoder (biCoder) from the controller by re-assigning the device's serial number to a new zone address
- Assign any station or terminal number on a multi-station biCoder from the controller to any zone address in any order
- Back up all programming and historical data with any USB flash drive
- Establish 3 levels of local and remote PIN protection: status & stop, manual runs, and full programming access
- Configure pipe-stabilization time for flow management

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 and remotely
- Displays on-screen historical run time information that includes total run time and water used for the last two watering days
- Displays actual or estimated flow values
- Displays a 7-day scalable soil moisture graph with 12 readings per day
- 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 independently.
- Displays high flow alerts, low flow alerts, pause messages and conditions, and rain delays, wire faults, as well as other operating conditions

WeatherAccess™

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 1000 uses the calculated value to adjust the runtime in order to apply just enough water to replace that lost moisture.

Central Control and Remote Control

- Connect the BaseStation 1000 to BaseManager™ central control when configured with an approved communication module. Communication options include built-in Ethernet, Wi-Fi, cellular modem, Ethernet radios, and Long Haul Ethernet wired communications.
 - The built-in Ethernet jack is 10/100 Base-T and accepts a standard RJ45 connector. The jack is compliant with CAT5, CAT5e, and CAT6 Ethernet cables.
- Program and operate a BaseStation 1000 from BaseManager* central control and LiveView™
- Receive email and text message alerts when connected to BaseManager central control
- Perform manual operations remotely with Mobile Access™ when connected to BaseManager central control

** Requires optional BL-1000MEXP-BM memory expansion module for access to all BaseManager features.*

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

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

How to Specify

Start with the controller:

BL-1000

Designate the enclosure with one of the following codes:

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

If needed, add conventional wire options:

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

Add a communication option:

Ethernet Included
 Wi-Fi '-WF'
 Cellular '-CM'
 Cellular Gateway** '-CMGW'
 Ethernet Radio '-ER'

** (Allows multiple controllers to share a single cellular connection)

Examples:

BL-1000X-R24
 BL-1000X-WF
 BL-1000P-R48-CM

Note: Communication modules may also be ordered separately.

Base program memory supports:

50 zones
 20 programs
 10 biSensor™ soil moisture sensors
 1 point of connection (POC)
 Including 3 master valves/pump starts & 1 flow sensor
 Up to 3 pause or event devices

Add up to 2 Program and Memory Expansion Modules for increased capability:

Total Supported Devices	With the BL-1000MEXP-25 Module	With the BL-1000MEXP-50 Module
Zones	75	100
Programs	30	40
Moisture Sensors	15	20
POCs	2	3
Event Switches	5	7

The **BL-1000MEXP-BM** module provides full support for BaseManager.

Compatible with all Baseline two-wire devices, including:

BL-5200R Powered Retrofit biCoder™
 BL-5201, BL-5202, and BL-5204 Valve biCoder™
 BL-5201PR Pump Start/Relay biCoder™
 BL-5201DC and BL-5202DC DC-Latching Valve biCoder™
 BL-5303 Air Temperature Sensor
 BL-530x Flow biCoder™
 BL-PFS, BL-BFM Flow Sensor & BL-BHM Hydrometer
 BL-540x Pause and Event biCoder™
 BL-5315B biSensor™ Soil Moisture Sensor
 BL-LA01 Lightning/Surge Arrestor