

Powered biCoders™ for Conventional Wire

The BL-5200R Series Powered biCoder is the best way to make any conventional wire site compatible with the world's smartest irrigation controllers from Baseline. With the BL-5200R Series, you get all the functionality available from Baseline controllers. Baseline biSensor™ soil moisture sensors work over existing valve wire when connected to a Powered biCoder. Powered biCoders are two-wire ready, so you can easily expand or upgrade an existing site to two-wire without interrupting the existing irrigation. The BL-5200R Series Powered biCoders are available in 12, 24, 36, and 48 station count configurations.

Features

- Each Powered biCoder has 26 built-in addresses for assigning terminals to zones per circuit board.
- The Powered biCoder establishes two-way communication between the valve and the controller.
- The Powered biCoder can activate an irrigation solenoid and/or read a soil moisture sensor over the same existing field common and station wires when connected to a “sensor-over-valve-wire” terminal.
 - A 12-station biCoder can concurrently operate up to 2 typical solenoids, plus 2 master valves.
 - The 24-station, 36-station, and 48-station biCoders can concurrently operate up to 4 typical solenoids — each 12-station biCoder operating 2, plus 2 master valves.
- The Powered biCoder has two “sensor-over-valve-wire” terminals per 12 stations. The Powered biCoder communicates with a Baseline biSensor™ soil moisture sensor connected on each of these two terminals.
 - The Powered biCoder has a test button that verifies electrical connection and communication with the moisture sensors on all “sensor-over-valve-wire” terminals.
 - Each “sensor-over-valve-wire” terminal on the Powered biCoder has an LED that indicates proper electrical connection and communication with the moisture sensor that is connected on that terminal.
- Valves can be located up to 1500 feet from the Powered biCoder.
- The electronics are enclosed in a drip-proof enclosure.
- Shock resistant
- Freeze/heat resistant -4°F to 140°F (-20°C to 60°C)
- Compatible with most common solenoids.

Diagnostic Functions

- The Powered biCoder measures the current used by each solenoid. Changes in this measurement can be used to determine failing solenoids.
- If a solenoid has failed, the Powered biCoder senses an open circuit or an over current condition and shuts down the valve.
- Each Powered biCoder shuts down if communication is lost to the BaseStation.

Powered biCoder Specifications

Electrical Specifications

- 110 VAC ±10% 60Hz
- 24 VAC for valve activation
- Sealed electrical and a sealed enclosure is suggested for outside installation
- Requires 110-120 VAC (115 VAC nominal) service at the Powered biCoder location

Dimensions

- 12- or 24-valve Powered biCoder
 - 10" x 12" x 5"

Wire Connection Specifications

- Use 3M™ DBR/Y-6 or equivalent moisture-resistant connectors for all wire connections. Install all connections according to the manufacturer's instructions.
- Run the conventional wire between valve boxes without damage including nicks, cuts, or abrasions to the outer jacket.
- Allow at least a 24-inch slack loop in the wire at every valve box for making connections.
- Connect the red and black wire from the two-wire to the unit terminals.
- Connect a single valve wire from one typical solenoid to each terminal and connect all commons to the appropriate common terminal.
- Test the wire before installing the solenoids.
- The distance from the controller to the end of any one wire run must not exceed the maximum distance specified for the gauge of wire in the Wire Distance Chart on the following page.

Maximum Wire Distance between Powered biCoder and Valve - in feet

Common Wire #	Valve Wire # (Gauge)						
	18	16	14	12	10	8	6
18	800	1000	1200	1300	1400	1500	1500
16	1000	1300	1600	1900	2100	2300	2400
14	1200	1600	2100	2600	3000	3400	3700
12	1300	1900	2600	3300	4100	4800	5400
10	1400	2100	3000	4100	5400	6600	7600
8	1500	2300	3400	4800	6600	8700	10500
6	1500	2400	3700	5400	7600	10500	13300

Note: Moisture sensors can communicate over valve wire distances equal to 1/2 the values of the chart above up to a maximum distance of 1500ft.

Enclosure Options

“X” Cabinet—Wall Mount Enclosure

- Dimensions: 15.50” x 12.38” x 6.40”
- 16 gauge, powder-coated
- Include up to 48 stations

“XS” Cabinet—Wall Mount Enclosure

- Dimensions: 15.50” x 12.38” x 6.40”
- 16 gauge, 304-grade stainless steel
- Include up to 48 stations

“P” Pedestal Enclosure

- Dimensions: 17.38” x 36.25” x 12.63”
- 16 gauge, 304-grade stainless steel
- Include up to 48 stations

How to Specify

Add up to 48 zones to a BaseStation 1000 or BaseStation 3200 enclosure. Include “-R12”, “-R24”, “-R36”, “-R48” at the end of the controller part number.

Examples:

BL-1000X-R24

BL-3200P-R48

Add more conventionally wired zones without increasing the controller count by adding Powered biCoders in a separate powered enclosure. Designate up to 48 zones in any available enclosure. See the table below.

Part Numbers for Powered biCoders in Separate Enclosures

Zone Count	Enclosures	
	“X”/“XS”	“P”
12 Stations	BL-5200X-R12	BL-5200P-R12
24 Stations	BL-5200X-R24	BL-5200P-R24
36 Stations	BL-5200X-R36	BL-5200P-R36
48 Stations	BL-5200X-R48	BL-5200P-R48