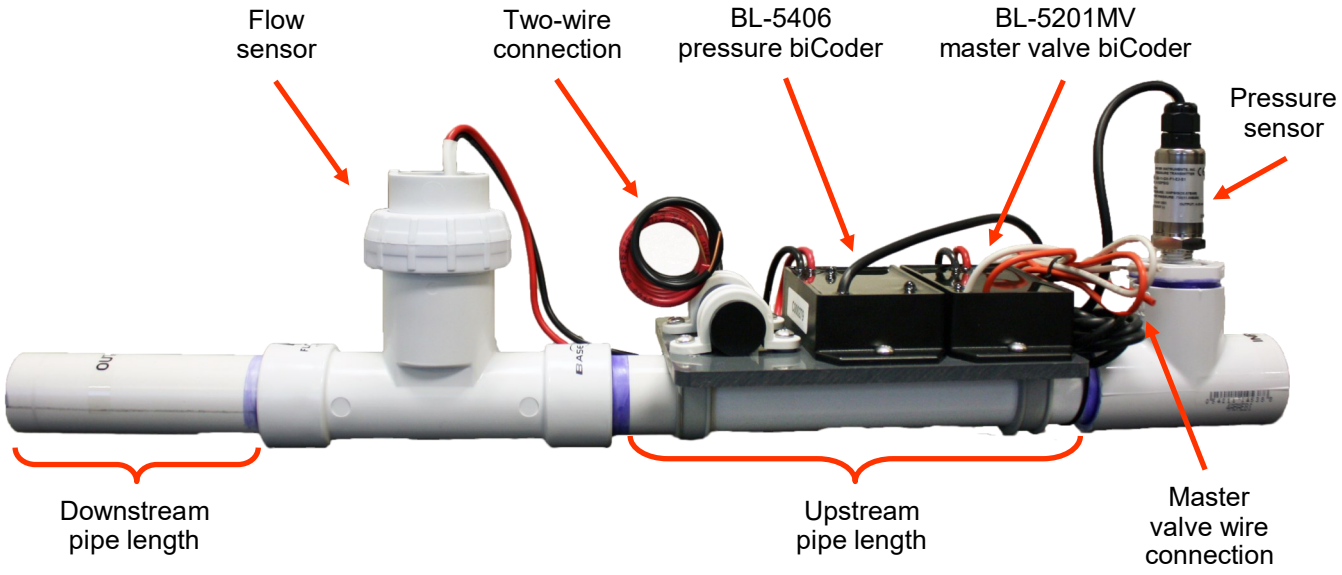
BL-CP-PFS100, BL-CP-PFS150, & BL-CP-PFS200

Two-Wire Ready ControlPoint PFS™ Installation

Baseline's ControlPoint PFS™ is a two-wire ready assembly for use with the BaseStation 3200 irrigation controller. The assembly includes the following components:

- BL-5201MV master valve biCoder (master valve not included)
- BL-5406 pressure sensor biCoder
- Pressure sensor device
- PVC tee-type, impeller flow sensor that provides accurate digital output signals proportional to the velocity of the liquid flowing through the pipe
- The proper length of upstream and downstream pipe for the flow sensor size
- A service wire loop for maintenance needs

The ControlPoint PFS is available in 1", 1.5", and 2" configurations.



Installation Overview

All components are cemented and factory-wired to ensure quick and simple installation in the field.

1. Choose the proper location and orientation.
2. Install the ControlPoint PFS in the pipe.
3. Make the wire connections.
4. Program the controller.

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Choosing the Proper Location and Orientation

IMPORTANT! Install the ControlPoint PFS so water flows through the master valve and directly into the assembly.

- Always install with the input and output indicators in the proper orientation.
- Allow 3¾" clearance to remove the flow sensor housing from the tee for service. The tee is usually installed with the housing up in the vertical or 12 o'clock position. However, if necessary, it may be installed with sensor housing at an angle from vertical to provide clearance.
- The ControlPoint PFS may be installed inside a building, outside above grade or underground. If installed above grade, provide adequate security to prevent damage or disassembly. If installed below grade, provide access for service.
- The ControlPoint PFS is most typically installed below grade in a horizontal section of pipe with the sensor housing up. Do not direct bury the ControlPoint PFS. Provide a meter pit or valve box of adequate size and drainage to service the sensor. Provide a service loop in the wire connections to allow the sensor housing to be brought above grade.
- The ControlPoint PFS may be installed on vertical sections of pipe providing that the piping is full and does not contain trapped air. A vertical pipe with rising flow is preferred over falling flow. The sensor housing may be oriented in any direction radially around the pipe.
- Because an impeller sensor measures the velocity of the liquid and converts it to a flow measurement based on area, proper flow measurement depends on the condition of the pipe interior and the sensor's location in the piping system. The pipeline must be full, free from trapped air, floating debris and built-up sediment.

Installing the ControlPoint PFS in the Irrigation System Pipe

The ControlPoint PFS features a slip fitting on the input connection and straight PVC on the output connection intended for solvent welding into PVC piping systems. Use best industry practices to ensure that the ControlPoint PFS is installed in the correct position with strong permanent joints.

1. Obtain the proper fitting for the output connection.
2. Measure the length of the ControlPoint PFS pipe. The assembly has the proper length of upstream and downstream pipe for the flow sensor size. Do not shorten the upstream or downstream pipe.
3. Use appropriate tools to cut and remove the section of irrigation system pipe. Remove all chips, filings, or cuttings from the pipe ends.
4. Solvent weld the fitting for the output connection to the irrigation system pipe.
5. Connect the ControlPoint PFS and solvent weld the connections to the pipe using manufacturer's recommendations.

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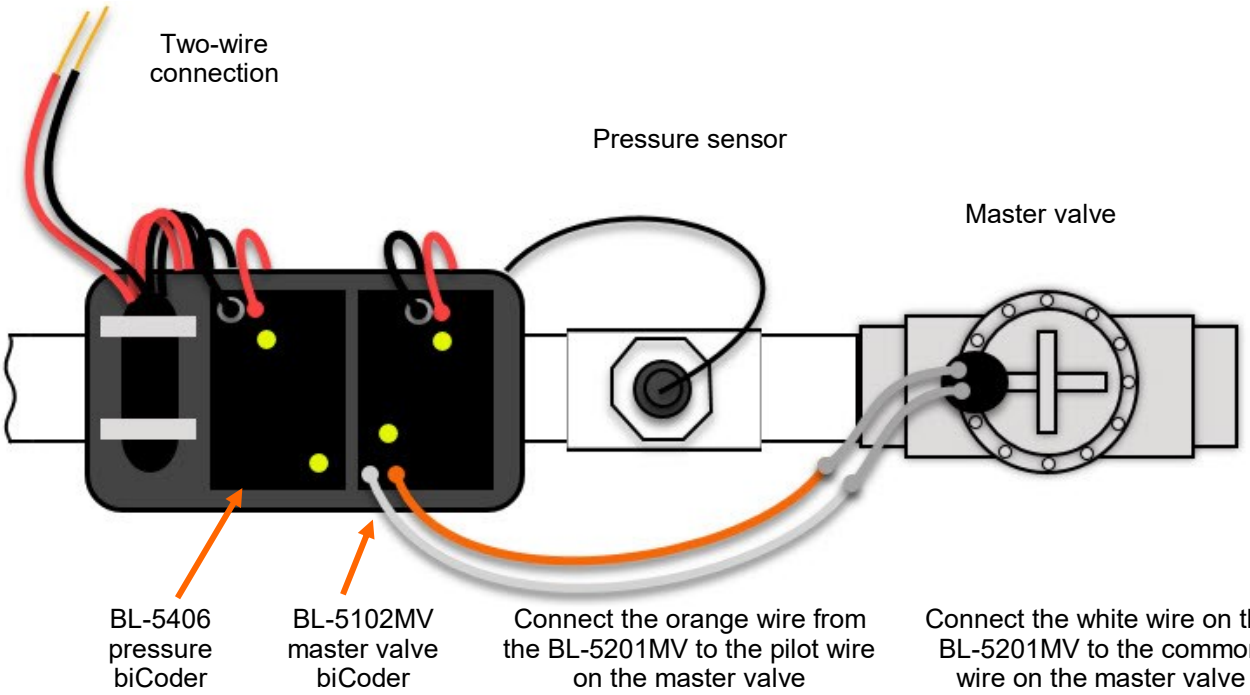
Making the Wire Connections

1. Power off the two-wire when installing devices. Leave 24 to 36 inches of slack on the two-wire to allow the ControlPoint PFS assembly to be removed from the pipe and brought above grade for servicing.
2. Connect the red and black wire from the ControlPoint PFS to the corresponding red and black wires on the two-wire. It is critical that polarity is maintained.
3. Connect the orange wire to the pilot wire from the master valve and the white wire to the common wire from the master valve.

   Note: The common wires cannot be shared between different biCoders.
4. Use wire nuts for your initial connections. After you verify communications between the BaseStation and the ControlPoint PFS, replace the wire nuts with 3M™ DBR/Y-6 or equivalent moisture-resistant connectors for all two-wire path connections.
5. Using the controller, test the connections and assign the biCoder addresses as instructed in the controller's user manual. For normally open master valves, configure the master valve as normally open in the controller as instructed in the controller's user manual.



WARNING!

The biCoder wires must not have electrical contact with soil or water. All connections must use 3M™ DBR/Y-6 or equivalent moisture-resistant connectors. Install all connections correctly. Damage to the system will occur if these specifications are not followed.

Surge arrestors are required for proper operation and for warranty coverage. Ensure that surge arrestors and grounding are installed in compliance with Baseline's Grounding Specification.

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Two-Wire Ready ControlPoint PFS™ Installation

Programming the Controller

Make sure the BaseStation 3200 irrigation controller has been updated to firmware version V16 or higher.

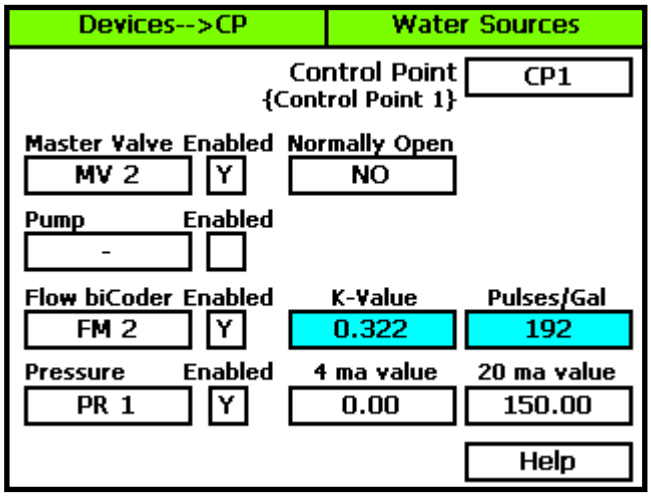
In the BaseStation 3200 irrigation controller, search and assign the following devices. Refer to Searching for and Assigning Devices in the user manual.

- Master valve (MV)
- Flow sensor (FM)
- Pressure sensor (PR)

If you want to assign these devices to a control point, refer to Assigning Devices to a Control Point in the user manual.

BL-CP-PFS100, BL-CP-PFS150 & BL-CP-PFS200 Calibration Table

Model	K Value	Pulses/Gal
BL-CP-PFS100	0.322	192
BL-CP-PFS150	0.650	92.3
BL-CP-PFS200	1.192	59.2



Operation Notes

- Make sure the flow sensor is assembled and the retaining nut is tightened (hand tight) before pressurizing the system.
- Do not use sealant or Teflon tape on the flow sensor retaining nut threads.
- Fill the pipeline and eliminate all trapped air.
- The flow sensor should begin transmitting flow immediately; however, it may take up to a minute for the flow readings to display in the appropriate screens on the BaseStation controllers.
- Always wait for flow to stabilize before setting control limits. Stabilization may take several minutes in large piping systems.