

SubStation CP™

The Baseline SubStation CP™ is designed to work with most flow sensors and flow meters that produce a pulsed output. The SubStation CP transmits the pulse data between the flow device and a BaseStation controller. The SubStation CP also supports most 24VAC master valves (normally open or normally closed).

Features

- The SubStation CP is capable of self-identifying to the BaseStation 3200 and will report pre-configured unique serial numbers and zone addresses.
- The SubStation CP serial numbers are printed on the inside of the enclosure.
- The SubStation CP can be connected to flow devices with either 2 or 3 wires.
- The SubStation CP reads a minimum of a 1-millisecond low pulse at 400 hertz and a maximum of 400 pulses per second.
- The SubStation CP is able to search for a flow meter.
- The SubStation CP is able to run a pulse-output flow meter up to 1,500 feet away.
- The SubStation CP is able to run a 24VAC master valve up to 1,500 feet away.
- Search for and assign each decoder serial number to a zone address report whether or not a solenoid is present.
- Re-address any device from the controller by re-assigning the devices serial number to a new zone address.
- Detect and repair from the controller all address conflicts for devices that are connected to the two-wire.
- Provides diagnostic LEDs for simple installation and troubleshooting
- Displays status of device and the connected status of the BaseStation 3200
- “Cloud-display” offers controller-like display accessible in BaseManager
- High-speed LTE cellular communication
- NEMA 6P (IP68) waterproof lockable enclosure
- Supports firmware updates over the air

Electrical Specifications (AC Power)

- 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
- The SubStation CP has a built-in amperage meter to accurately measure and diagnose flow meter electrical problems such as “no current,” “station short,” or “over current.”
- Does not support other Baseline flow management products with integrated 2-wire technologies
- The SubStation CP can supply up to 20mA of current and 13v.
- Requires a typical solenoid with approximately 400 milliamps of inrush current and approximately 200 milliamps holding current
- 10 levels of surge protection
- Up to 5 levels of surge protection built into the controller boards
- Minimum surge response time of 1 picosecond
- The flow meter output wires of the SubStation CP has up to 470 volts of isolation. This isolation provides the following benefits:
 - Prevents high voltages from affecting the system that is receiving the signal
 - Prevents electrical paths from crossing when multiple flow meter devices are connected

Pulse Sensor Output

Max Current	1.4mA
Max Voltage	7Vdc
Minimum Low Pulse Width	1mS
Minimum High Pulse Width	1mS
Minimum Pulse Period	2.5mS
Maximum Frequency	400 Hz
Maximum Pulse Rate	400 pps
Maximum Pulse Width	1 min 50 sec
Surge Clamping Voltage	47V
Surge Current - Peak Pulse (10/1000µs)	200A
Voltage - Isolation to 2-Wire	470V

Voltage Output

Series Internal Restistance	0ohm
Max Current	20mA
Max Voltage	13Vdc
Surge Clamping Voltage	47V
Surge Current - Peak Pulse (8/20µs)	200A
Voltage - Isolation to 2-Wire	470V

Electrical Specifications (Solar Power)

Electronic Protections

- Solar: Overload, short-circuit, high voltage, transient surges
- Load: None
- Battery: High Voltage

Battery Specifications - 50E 21700

Amp Hours	5000 mAh per battery
Nominal Voltage	3.6 V
Max Charge Voltage	4.20 V
Standard Charge Current	2.45 A
Optimal Discharge Temp	-20°C - 60°C
Optimal Charging Temp	0°C - 45°C
Over Current Range	6.0 A - 12.0 A

BaseStation 3200 Features

- Learn the flow for each zone
- Use flow data to maximize the number of zones the controller can turn on at once to help shorten water windows
- In the event of unexpected high or low flow, automatically determine which zone is at fault and alert without interrupting the rest of the watering cycle
- Protect site from mainline breaks with configurable high and low flow shutdown settings
- The BaseStation 3200 supports up to 8 SubStation CP devices
- Total ControlPoint counts, including the flow sensor and master valves connected to all SubStation CPs must remain within the BaseStation 3200 specifications.
 - SubStation CP devices that exceed the BaseStation 3200 limits are ignored.
- All search and assign operations for SubStation RV zones are performed from the BaseStation 3200 or from BaseManager.
- All programming operations for SubStation RV zones are performed from the BaseStation 3200 or from BaseManager.
- All test operations for SubStation RV zones are performed from the BaseStation 3200 or from BaseManager.
- Displays status of the SubStation RV connection and reports the number of each zone from last search
- For SubStation RV compatibility, ensure that the BaseStation 3200 is running firmware version 18.0 or greater.

Communication Specifications

- The SubStation CP communicates with a BaseStation 3200™ irrigation controller over a 256-bit encrypted cellular network.
- The SubStation CP supports AT&T and Verizon service providers.

Enclosure Options

SubStation CP enclosures are large enough to hold the processor board, the terminal board, power supply, and a communication module.

- High impact polycarbonate low profile hinged enclosure with integrated locking latch, opaque cover and integrated mounting flange.
- The enclosure is 8 inches tall by 6 inches wide by 3 inches deep
- Includes enclosure mounting tabs
- Includes three openings in the bottom of the enclosure to accommodate field and power wires
- NEMA 6P (IP68) Waterproof
- Freeze/heat resistant -4°F to 140°F
 - (-20°C to 60°C)
- NEMA 6P (IP68) Waterproof

Warranty

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

The SubStation CP supports flow sensing devices with a pulse-output. The SubStation CP will not support flow sensing devices that already have 2-wire integrated technology. The following product series are not compatible with the SubStation CP: **BL-PFS-XXX**, **BL-BHM-XXX**, **BL-CP-PFS-XXX**

BL-SUBSTN-CP-DP-VZ = Direct Power SubStation CP with Verizon cellular service provider

BL-SUBSTN-CP-DP-AT = Direct Power SubStation CP with AT&T cellular service provider

BL-SUBSTN-CP-SP-AT = Remote Master valve and Flow sensor SubStation in IP-68 ruggedized enclosure with integrated Solar power and AT&T cellular communication

BL-SUBSTN-CP-SP-VZ = Remote Master valve and Flow sensor SubStation in IP-68 ruggedized enclosure with integrated Solar power and Verizon cellular communication

To specify the BaseStation 3200 irrigation controller, refer to the BaseStation 3200 Technical Specification.