# HPC Irrigation Controller Product Specification

**Part 1 – General**

* 1. The controller shall be a full-featured residential and light commercial product for the purpose of irrigation operation, management, and monitoring of control valves and sensors. The controller shall be fully integrated with Wi-Fi connectivity to the internet and Hydrawise irrigation management software. The controller shall be of a modular design that is provided with a standard 4-station output module. The controller shall be expandable with 3-, 9-, or 16-station modules to a maximum of 23 conventional stations. The controller shall also accommodate a PC-DM decoder output module for use with EZ-1 decoders, up to 32 total stations.

**Part 2 – Controller Enclosures**

* 1. Controller shall be available in following the options:
1. Plastic wall-mount indoor/outdoor enclosure
2. The controller shall be Hunter Industries model HPC-400.
3. Pre-assembled controller shall have a height of 9" (22.9 cm), width of 10" (25.4 cm), and a depth of 4 ½" (11.4 cm).
4. The controller shall be furnished in an indoor/outdoor, weather-resistant, wall-mount plastic enclosure, suitable for remote control, with a key lock.
5. The controller shall provide modular expansion up to 23 conventional stations, 28 stations for two-wire only, or 32 hybrid conventional/two-wire stations.
6. All station outputs shall have MOV and copper induction coil surge suppression.
7. Cabinet is NEMA 3R, IP44 rated.
8. A 751CH key shall be mounted in the enclosure door for security.
	1. Two (2) keys shall be provided per each controller.
	2. Warranty
9. The controller shall be installed in accordance with the manufacturer’s published instructions. The controller shall carry a conditional 2-year exchange warranty. The automatic controller(s) shall be the HPC series controller as manufactured for Hunter Industries Incorporated, San Marcos, California.

**Part 3 – Controller Hardware**

* 1. Control display
1. Display shall be 2.9", full-color graphical touch screen interface allowing for programming and manual operation.
2. All programming shall be accomplished by use of the touchscreen or with smartphone, tablet, or PC.
	1. Control panel
3. Operation from the control panel shall be via touchscreen only, with no available buttons or dials.
4. The control panel door shall fully close and protect the wiring and internal components from moisture and dust.
	1. Controller power
5. Depending on requirements, transformer input shall be 120 VAC, 60 Hz or 230 VAC, 50 Hz.
6. Transformer output shall be 24 VAC, 1 A. Maximum output per station (at 24 VAC) shall be up to 0.56 A. Maximum output per P/MV terminal (at 24 VAC) shall be up to 0.28 A.
	1. Controller surge protection

A. The controller transformer shall be equipped with an internal, self-resetting thermal circuit breaker to protect against overheating.

* 1. Station modules
1. The controller shall have a base model capacity of 4 stations, consisting of one 4-station output module.
2. Controller shall provide 3 additional station module slots.
	1. Controller shall be expandable to a maximum of 32 stations.
	2. Controller shall use a maximum of 4 station output modules.
	3. Station modules shall be secured against field wiring tension by the power lock.
	4. Compatible station modules include PCM-300 (3-station), PCM-900 (9-station), PCM-1600 (16-station), and PC-DM (EZ Decoder Output Module)
3. Each station output shall supply up to 0.56A (at 24 VAC) for solenoid activation.
4. Each station output shall have metal oxide varistor (MOV) surge protection, supplemented by copper induction coils.
5. The controller shall have self-diagnostic, electronic short-circuit protection that detects a faulty circuit, continues watering the remainder of the program, and reports the faulty station on the display. The diagnostic function shall also be capable of being initiated manually by the user.

	1. Sensor inputs
		1. The controller shall be equipped with one dedicated general-purpose sensor port.
			1. The sensor input shall be compatible with any standard normally closed or normally open “Clik-type” sensors for automatic shutdown during rain, freeze, soil moisture, and/or wind events.
			2. The sensor input shall also be compatible with the Hunter HC Flow Meter (wired or wireless) for flow monitoring, alerts, and reporting.
	2. P/MV outputs
		* 1. The controller shall have one built-in P/MV (24 VAC) output with a capacity of up to 0.28 A.
			2. The P/MV output shall be selectable as active or disabled per each individual station.
	3. Common wire
6. One fixed common wire terminal available within the controller chassis to be used in conjunction with station output and P/MV wiring.
	1. SmartPort®

A. The controller shall be compatible with a SmartPort connector for easy connection of optional wireless remote controls.

B. For international or short-range uses, the wireless remote control shall be the Hunter model ROAM with a useful range of up to 1,000' (330 m).

C. For use in the United States or long-range uses, where permitted, the wireless remote shall be Hunter model ROAM-XL with a useful range of up to 2 mi. (3.2 km).

* 1. Wi-Fi information
1. Controller shall be equipped with built-in Wi-Fi.
2. Operation shall be 802.11 b/g/n protocol.
3. Wi-Fi frequency is 2.4 GHz only.
4. Security shall have the ability to auto detect and offer the following security settings: WPA2, WPA Personal, and WPA Auto.

**Part 4 – Programming and Operational Software**

4.1 General

1. The control panel shall be available in an English language display. The display shall include selectable settings for date, time, and units of measure.
2. The Hydrawise software shall be fully translated and available in English, Spanish, French, Italian, German, Portuguese, Turkish, Russian, Chinese, Czech, Greek, Hungarian, Polish, and Thai.

4.2 Programming

1. Standard programming option allows for 6 independent irrigation programs and 6 Start Times per program.
2. The controller shall be capable of running any one station (+P/MV) at a time.
3. The controller programs shall have 5 weekly schedule options to choose from:
4. 7-day calendar
5. Up to 31-day interval calendar
6. Odd-day/even-day programming
7. Odd-week/even-week programming
8. 365-day calendar clock to accommodate true odd-even watering
9. Each station shall be programmable in minutes of run time, from 1 minute to 24 hours.
10. The controller shall be equipped with programmable Non-Water Days to prevent watering on selected days of the week.
11. Each zone may be assigned a programmable Delay Between Stations, to allow for slow-closing valves or pressure recharging.
12. Delays between stations shall be programmable in 1-second increments from 0 to 3,600 seconds (60 minutes).
13. A P/MV delay shall be programmable in 1-second increments from 0 to 3,600 seconds (60 minutes).

4.3 Software

1. The controller shall be connected to Hydrawise software. See Hydrawise Written Specifications for more detailed software information.
	* + 1. Hydrawise software is available via web login, and as a mobile application that is downloadable via the Apple® iOS App Store and Google Play™.
2. The controller shall utilize Predictive Watering™ adjustments to automatically modify irrigation scheduling based on local weather data and forecast information.
3. The controller also has Seasonal Adjust settings from 0% to 300% for offline programming.

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