# Pro-C® Irrigation Controller Written Specifications

**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 comprise a modular design with a base 4-station module, and it can be expanded in increments of 3, 9, or 16 stations. The modular controller shall also accommodate a PC-DM Decoder Output Module for use with EZ-1 Decoders. The modular controller shall be expandable up to 23 conventional stations or up to 32 stations when used with the EZ Decoder System. The controller shall be available in outdoor-rated models for U.S., Australian, European, and Japanese applications.

**Part 2 – Controller Enclosures**

* 1. The controller shall be available in the following options:
1. Plastic wall-mount enclosure, modular 4-station base
2. The indoor/outdoor option shall be Hunter Industries model P2C-400.
3. The preassembled controller shall have a height of 9" (22.9 cm), width of 10"
(25.4 cm), and depth of 4½" (11.4 cm).
4. The controller shall be furnished in a weather-resistant, plastic wall-mount enclosure with a key lock.
5. The controller shall provide modular expansion for up to 23 conventional stations, 28 stations for two-wire only, or 32 hybrid conventional/two-wire stations.
6. The controller shall be prewired with a 6' (1.8 m) power cord and Type B plug.
7. All station outputs shall have a metal oxide varistor (MOV) and copper induction coil surge suppression.
8. The controller enclosure shall be NEMA 3R, IP44 rated.
9. A 751CH key shall be mounted in the enclosure door for security.
	1. Two (2) keys shall be provided per controller.
	2. Warranty
10. The controller shall be installed in accordance with the manufacturer’s published instructions. The controller and all accompanying station output modules shall carry a conditional 2-year exchange warranty. The automatic controller(s) shall be the Pro-C Controller, as manufactured for Hunter Industries Incorporated, San Marcos, California.

**Part 3 – Controller Hardware**

* 1. Controller display
1. Display shall be a 2½" (6.4 cm) diagonal, monochrome, backlit LCD.
2. All programming shall be accomplished with the use of a programming dial and selection buttons. User feedback shall be provided by an LCD display.
	1. Control panel
3. The front panel of the controller shall be removable to allow for programming without AC power, via a 9 V DC battery.
4. The front panel shall include a replaceable CR2032 battery for date/time backup during power outages.
	1. Controller power
5. Depending on requirements, the transformer input shall be 120 VAC; 60 Hz or 230 VAC; 50 Hz.
6. The transformer output shall be 24 VAC, 1A maximum. The output per individual station shall be 24 VAC, 0.56 A maximum.
	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 four stations, consisting of one 4-station output module.
2. The controller shall provide three additional station module slots.
	1. The controller shall be expandable to a maximum of 32 stations.
	2. The controller shall use a maximum of four station output modules.
	3. The station modules shall be secured against field wiring tension by the power lock.
3. Each station output shall supply up to 0.56 A (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
6. The controller shall be supplied with two sensor inputs.
7. The controller shall be compatible with an external weather sensor that can make automatic seasonal adjustments based on local weather conditions for maximum water conservation. The external weather sensor shall include rain and freeze shutoff functions.
	* + 1. The wireless external weather sensor shall be Hunter Industries model WSS-SEN.
			2. The wired external weather sensor shall be Hunter Industries model SOLAR-SYNC-SEN.
8. The sensor input shall be compatible with standard, normally closed rain, freeze, soil moisture, or other sensors for automatic shutdown purposes. Additional compatible sensors from Hunter Industries shall include: Rain-Clik®, Wireless Rain-Clik®, Rain/Freeze Clik, Mini-Clik®, Soil-Clik®, and Flow-Clik® Sensors.
	1. Pump/Master Valve (P/MV) outputs
9. The controller shall have one built-in P/MV (24 VAC) output with a capacity of up to 0.28 A.
10. The P/MV output shall be selectable as “active” or “disabled” per each individual station.
	1. Common wire
11. One fixed common wire terminal shall be available within the controller chassis for use in conjunction with station outputs, P/MV connections, and sensor inputs.
	1. SmartPort® Wiring Harness

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

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

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

**Part 4 – Programming and Operational Software**

4.1 General

1. The controller shall have optional language customization kits that allow the front panel, display, and programming instructions inside the door to be changed from English to French, German, Italian, Portuguese, Russian, Spanish, Turkish, or Japanese.

4.2 Programming

1. The controller shall have three independent programs with unique day schedules, start times, and station run times.
2. Each program shall offer up to four start times.
3. The controller programs shall have four weekly schedule options to choose from:
4. 7-day calendar
5. Up to 31-day interval calendar
6. Odd-day and even-day programming
7. 365-day calendar clock to accommodate true odd-even watering
8. Each station shall be programmable in minutes of run time, from 1 minute to 6 hours.
9. The controller shall also offer the ability to be set to Seconds Mode, which enables 1-second intervals for station run times up to 5 minutes.
10. The controller shall be equipped with programmable non-water days to prevent watering on selected days of the week.
11. Each program shall 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 59 seconds, and then in 1-minute increments from 60 seconds to 4 hours.
13. The controller shall be equipped with a 24-hour rain sensor bypass switch that allows the user to override a sensor that has suspended watering. The controller shall revert to an active sensor status after 24 hours of bypass.
14. The controller shall allow the sensor input to be programmed by station to exempt specified stations from sensor shutdowns.
15. Program backup shall be provided by a non-volatile memory circuit that will hold the program data indefinitely.
16. The controller shall also track date and time of day during power outages by means of a replaceable, commonly available CR2032 lithium battery.

4.3 Software

1. The controller shall have a manual Seasonal Adjust setting from 5% to 300% in 5% increments.
2. The controller shall have an automatic Seasonal Adjust setting when installed with a Solar Sync® Sensor.
3. The controller shall have the capability to determine and display the total run time input for each program.
	* + 1. The controller shall have the capability to store a program in backup memory for easy retrieval, and it shall also have a test program for quick system checks.
4. The controller shall allow Easy Retrieve® Memory backup of all programming and configurations to preserve the original configuration, which may be restored at any time.

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