

The ESP-Modular Controller

Maximize Your Productivity

A member of the popular ESP family of controllers, the ESP-Modular is designed to maximize your productivity by saving you time and money. The large, easy to read display and intuitive programming sequence make this the most user-friendly controller in its class. The spacious cabinet and terminal locations make installation and wire-up a snap. And features like the Contractor Default™ program make service calls more efficient and earn you more money by taking less time! The ESP-Modular: Maximizing your Productivity.

Features

- ESP Programming: Extra-Simple Programming with large numbers and text in the LCD to aid user programming
- Three independent programs with 4 start times each for a total of 12 start times
- Four station base model with the capacity to receive plug-in station modules of three stations each allows the controller to expand from 4 to 13 stations
- Hot swappable modules can be installed while in operation and in any position
- Station 13, called an “Auxiliary Station™” can bypass an active sensor to allow watering even if the other stations are disabled or can operate as a normal station
- Contractor Default™ setting allows the contractor to set his own default program and can be accessed with the push of a button. Useful in easily restoring a schedule that has been altered by a homeowner or to replace a temporary schedule for new seed or sod
- 5-year lithium battery maintains time and date during a power outage.
- 365-day calendar with leap year intelligence means that you can set an “Odd” or “Even” day watering schedule and not worry about changing the date on leap years
- Four irrigation cycle modes for maximum flexibility and compliance to all major watering restrictions (Custom 7-day calendar, 1-31 day cycle and odd/even cycles)
- Non-volatile memory maintains the irrigation schedule indefinitely during a power outage

- Permanent day off feature prevents watering on any day of the week in any cycle mode
- Global Season Adjust (0-200%) allows the user to alter the run time of all the valves in every program with the push of a button
- Dedicated sensor terminals allow the user to easily connect a sensor to the controller for maximum water efficiency. A light (LED) and a message on the LCD indicates when a sensor is active
- Sensor bypass switch allows the user to override an active sensor
- Diagnostic self-setting circuit breaker identifies a valve or wire fault and continues to water operable stations
- Enhanced Diagnostic Feedback™ alerts the user to programming errors and other conditions that may render a schedule inoperable
- “Valve Test Terminal” allows the installer to test the valve wires during installation to determine the valve that each wire is connected to
- Master valve/pump start circuit programmable by station allows operation of connected pump as needed.
- Programmable Delay between station feature allows additional time between zones for water well recovery or slow closing valves
- Spacious heavy-duty cabinet with internal junction box provides lots of room for wiring and eliminates the need to purchase an external j-box for a clean and professional looking installation. Outdoor model comes with key-locking cabinet
- Remote ready connector enables the controller to be used with RM1 and RMX1 remote control systems where available.

Operating Specs

- Station timing: 0 to 6 hours for all stations
- Automatic Starts: 4 start times per program on the quarter hour for up to a total of 12 start times per day if using all three programs
- Independent programming schedules:
 - ♦ Custom (water by day of the week)
 - ♦ Odd (water on odd days of the month except 31st or 29th if leap year)
 - ♦ Even (water on even days of the month)
 - ♦ Cyclic (1-31 days: Water from every other day to once every 31 days)



Electrical Specifications

- Input required: 120 VAC ±10%, 60Hz or 230VAC/240VAC ±10%, 50Hz.
- Output: 25.5 VAC 1A
- Surge Protection: Primary input side has 2 built in MOVs (metal oxide varistors) to protect microcircuitry. Output side has 2 built in MOVs for each valve station.
- Power back-up: Lithium coin-cell battery maintains time and date while non-volatile memory maintains the schedule
- Multi-valve station capacity: Up to two 24 VAC, 7VA solenoid valves per station plus a master valve

Dimensions

- Width: 10.7 in. (27,2 cm)
- Height: 7.7 in. (19,5 cm)
- Depth: 4.4 in. (11,2 cm)

Models

- ESP-4Mi: 4 station indoor model
- ESP-4M: 4 station outdoor model*
- ESP-SM3: 3-station module

*Available in 120VAC, 230VAC and 240VAC models.

How to Specify

ESP-4Mi **ESP-SM3**

Controller
Base Model

ESP-4Mi: Indoor
ESP-4M: Outdoor

Modules

3-Station Module



Specifications

The controller shall be of a hybrid type that combines electro-mechanical and microelectronic circuitry capable of fully automatic or manual operation. The controller shall be housed in a wall-mountable, weather-resistant plastic cabinet with a key-locking cabinet door (outdoor models only) suitable for either indoor or outdoor installation.

The controller shall have a base unit with 4 stations as well as three expansion slots capable of receiving station modules of three stations each to create a controller of up to 13 stations. Station 13 shall be called an "auxiliary station" and shall have the capability of bypassing an active rain sensor or of functioning as a normal station output. Station timing shall be from 0 minutes to 6 hours. Run time resolution shall be in 1-minute increments from 0 to 59 minutes and 10 minutes from 1 to 6 hours. The LCD shall display "No Run Times" or equivalent icon for 230 VAC models if no run time has been entered for any station in any program.

The controller shall have three separate and independent programs which can have different start times, station timing and watering days. Each program shall have up to 4 start times available. The controller shall stack multiple start times in sequence to prevent hydraulic overload. The LCD shall display "No Start Times" or the equivalent icon for 230VAC models if no start time has been entered for any program. The controller shall be capable of operating two 24 VAC solenoid valves per station plus a master valve or remote pump start relay. The controller shall operate on 120 VAC± 20% at 60Hz (230VAC ± 20% at 50Hz for international models). The controller shall have an electronic, diagnostic circuit breaker that shall sense a station with an electrical overload or short circuit and shall bypass that station and continue operating all other stations.

The controller shall have a 365-day calendar with a permanent day off feature that allows a

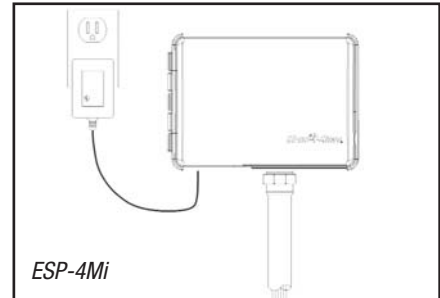
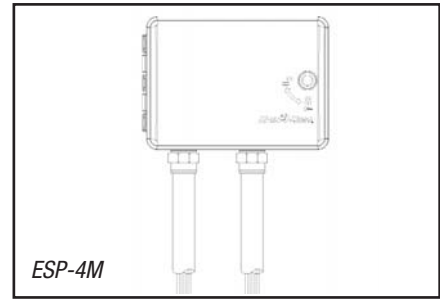
day(s) of the week to be turned OFF on any cycle (odd/even/1-31 day cycle). A day set to "Permanent Off" shall override the normal repeating schedule and shall display the words "Day Always Off/Day Off" in the LCD screen. The controller shall have a seasonal adjust feature adjustable from 0% to 200% in increments of 10%. Seasonal adjust shall effect all programs simultaneously. If seasonal adjust is set to 0% the LCD shall display "SEASONAL ADJ" (equivalent icon for 230 VAC models).

The controller shall have a 12-hour AM/PM or 24 hour military (for 230VAC models) clock with a midnight day change over. The controller shall have a sensor circuit for connection to a rain sensor or to an underground moisture sensor system that will interrupt a scheduled watering under "wet" or "moist" conditions. The controller shall have an indicator on the LCD screen and one LED light to indicate that a sensor is connected and active and that watering has been temporarily disabled.

The controller shall have access to a variety of "hidden features" by turning the dial to a specific location on the dial and pushing the ON OFF buttons simultaneously. These features shall include: 1) save a custom default program 2) retrieve a custom default program 3) bypass an active rain sensor on the Auxiliary Station 4) allow the Auxiliary Station to be interrupted by an active rain sensor 5) Clear memory 6) Set a day as "Permanently Off" 7) Set master valve/pump start circuit by station 8) Set programmable delay between station.

The controller shall have the following manual operations and manual advances for semi-automatic control:

- Run a single valve
- Run multiple manually stacked valves
- Run a semi-automatic program
- Run a test on all valves (all stations with any time assigned regardless of the program) from 1 to 10 minutes



The controller shall have a removable, battery programmable front panel (uses a 9 volt battery [not included]) for conveniently programming the controller away from the installation site or for teaching irrigation scheduling.

The controller shall have the capacity for the program to be erased allowing the user to start programming with a blank controller. The controller shall have multiple knockouts, sizes and locations, including the back of the cabinet, to facilitate installation and provide a clean professional look. The controller shall have a factory default program that runs 10 minutes every day beginning 8 hours after power resumption.

The controller shall have a reset button to reset the controller in the case of micro-controller "lock-up" due to power surges or frequent interruption to the power supply.

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