ESP-2WIRE Controller

TECHNICAL SPECIFICATIONS



2W-1 DECODER

look for WaterSense Meets EPA Criteria

WaterSense certified when installed with Rain Bird LNK2 WiFi Module

Rain Bird's controller lineup has been expanded to offer an entry-level, easy to use irrigation controller for residential and light commercial applications. The ESP-2WIRE Controller will accommodate up to 50 stations plus master valve/pump start relay and is suitable for indoor or outdoor applications. The ESP-2WIRE Controller provides flexible scheduling features to accommodate a wide variety of landscape applications. Powerful advanced irrigation features help meet any type of regional watering restrictions.

EASY TO USE AND INSTALL:

The ESP-2WIRE Controller features decoder auto-address for the controller to detect decoder addresses that are connected to the 2-wire path and automatically assign them to station numbers for significant time savings.

The ESP-2WIRE Controller is compatible with standard direct burial wire between 18 AWG (0.75mm^2) and 10 AWG (6.0 mm^2) and standard weatherproof irrigation wire connectors. To further simplify installation, there is a grounding lug provided at the controller and field grounding the 2-wire path is not required. Although not required, grounding the 2-wire path is possible with the use of the IVM-SD.

The ESP-2WIRE Controller mounts with as few as two mounting screws. A guide for 1/2" or 3/4" conduit fittings allows for professional installation of field wires into the cabinet. For larger field wire needs, remove the knockout for a 1" diameter opening.

FEATURES:

- 50-station capacity standard without the need for expansion modules
- Compatible with standard direct burial irrigation wire and standard irrigation wire connectors
- Decoder Auto-Address to detect and assign decoder addresses to stations
- Large LCD display with easy to navigate user interface
- Rain sensor input with bypass capability
- Master valve/pump start compatibility
- Nonvolatile (100 year) storage memory
- Supports two 2-wire paths
- Diagnostic LEDs on the back plane and on each 2W-1 Decoder
- Electronic diagnostic circuit breaker
- Compatible with 2W-1 single station decoders

SCHEDULING FEATURES:

- Program based scheduling with 4 individual programs and 6 independent start times per program for 24 total start times
- Watering schedule options: Custom Days of the week, ODD or EVEN calendar days, or Cyclic (every 1 – 30 days)

OPERATING SPECIFICATIONS:

Station timing
1 minute to 6 hours

Seasonal Adjust
5% to 200%

Max operating temperature
149°F (65°C)

CONTROLLER HARDWARE:

- Plastic wall-mount cabinet with door
- Robust set screw terminals to accommodate up to two 2-wire paths
- Mounting screws with anchor shields
- Factory installed pigtail on 120V and AUS models

ELECTRICAL SPECIFICATIONS:

Input required
120VAC (±10%) @ 60Hz
230VAC (+/- 10%) @ 50/60Hz (International Models)

Output
1.0A at 25.5VAC

- Master Valve/Pump Start Relay
- External battery back-up not required. Nonvolatile memory permanently saves the current programming.

DIMENSIONS:

Width: 10.7 in. (27.2 cm)
Height: 7.7 in. (19.5 cm)
Depth: 4.4 in. (11.2 cm)

CERTIFICATIONS

- **120 VAC Models:** cULus, FCC Part 15, NOM
- **230VAC Models:** CE, UKCA, RCM, IRAM, CMIM, NRCS, ECAS
- IPX4
- WaterSense certified when installed with Rain Bird LNK2 WiFi Module
- Meets EPA criteria for high-performing, water-efficient products.

HOW TO SPECIFY:

ESP-2WIRE Models Compatible Decoder: 2W-1
ESP-2WIRE (120V)
ESP-2WIRE-230V
ESP-2WIRE-AUS

RAIN BIRD

ADVANCED FEATURES:

- Advanced diagnostics and short detection with LED alert
- Contractor Default™ Program Save/Restore saved programs
- Delay Watering up to 14 days (applies only to stations set to obey Rain sensor)
- One touch manual watering
- Rain sensor bypass by station
- Manual watering option by program or station
- Seasonal adjust applied to all programs or individual programs
- Adjustable delay between valves (default set to 0)
- Master valve ON/OFF by station

SPECIFICATIONS:

The ESP-2WIRE Controller shall be 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 suitable for either outdoor or indoor installation.

The controller shall include a base unit module including connections for up to two 2-wire paths, weather sensor, flow sensor and controller grounding.

The controller shall include a 50-station capacity without the need for expansion modules.

Station run times shall range from 1 minute to 6 hours. The controller shall be set with a factory default start time of 8 AM.

The controller shall automatically detect all decoders connected to the 2-wire path and assign them to station numbers in sequential order with the ability to change the decoder address/station configuration from the controller interface without the need to disconnect decoders.

All compatible station decoders shall include a red/green/blue LED for diagnostic capability.

The controller shall have a Seasonal Adjust feature to adjust the run time for all stations from 5% to +200% in 5% increments. Seasonal Adjust can be applied to all programs simultaneously or individually.

The controller shall have 4 independent programs that can have 6 different start times. The controller shall stack multiple start times in sequence to prevent hydraulic overload. All programs run consecutively.

The controller shall be capable of operating up to two 24VAC station valve solenoids simultaneously with or without a master valve or pump start relay.

The controller shall operate on 120VAC± 10% at 60Hz (230VAC ± 10% at 50Hz for international models). A master valve or pump start relay shall operate on 24VAC at 50/60Hz. See suggested accessories section for compatible pump start relay.

Watering day cycles shall be: By Day of the week, Odd, Even and Cyclic (Every # day). Odd, Even, and Cyclic shall support permanent days off. A day set to "Permanent Off" shall override the normal repeating schedule.

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 to operate all other stations. When an electrical condition exists that is preventing normal operation the red LED shall illuminate continuously and scroll a message across the LCD as to what the problem is. When an alert condition is present that is related to programming errors or flow detection, the red LED shall continuously blink and scroll a message.

The controller shall have a 12-hour AM/PM or 24 hour military (for 50Hz models) clock with a midnight day change over. The clock shall default to the time format based upon the power detected. The controller shall have a 365-day calendar backed up against power interruptions by an internal lithium battery that will maintain date and time for approximately 10 years.

The controller shall provide the user the ability to bypass the Rain Sensor or flow sensor for each station independently.

The controller shall be equipped with a variety of Special Features (SF) that can be accessed by turning to the appropriate dial position and pressing and holding the two arrow keys simultaneously for 3 seconds.

Special Features include:

- Rain Sensor Bypass by Station
- Flow Sensor Bypass by Station
- Permanent Days Off (Odd, Even, Cyclic only)
- Reset to Factory Defaults
- Set Inter-station Delay timing
- Set Master Valve operation by Station

The features above will be included on a Special Features Card included with every controller.

The controller shall offer manual watering of ALL stations or ONE station at a time. When manual watering is triggered, the unit shall ignore the status of the weather sensor (if connected) and re-enable the sensor when manual watering is completed.

The controller shall display on the LCD the message NO AC to indicate to the user when AC Power is not present (only if 9 volt battery is present).

The controller shall be compatible with Rain Bird's LNK2 WiFi Module, allowing wireless connectivity to the controller.

The controller shall be compatible with Flow Sensors, allowing for flow monitoring which can give alerts and skip automatically scheduled irrigation for problem stations.

The controller shall provide a method for the installer to save the irrigation schedule into nonvolatile memory for easy recall later if unwanted schedule changes are made.

The controller shall provide a method for the installer to restore the schedule to the factory fresh condition in order to start programming from a "blank" state.

The controller shall provide a method to wire the controller through a ½", ¾" and 1" wire conduit fitting to allow for a more professional installation.

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 of power to the power supply.

The controller shall be upgradable to an EPA WaterSense approved smart controller without having to replace the cabinet, nor disconnect station modules.

The controller shall offer an optional metal cabinet and pedestal.

- LXMM: Metal Cabinet
- LXMMPED: Metal Pedestal
- LXMMSS: Stainless Steel Metal Wall Mount Enclosure
- LXMMSSPED: Stainless Steel Metal Pedestal

Note: Metal cabinets and pedestals are not standard and must be purchased separately. LXMMPED requires LXMM, and LXMMSSPED requires LXMMSS.

Suggested accessories for use with this controller:

- 2W-1 Single Station Decoder
- LNK2 WiFi Module (wireless connectivity)
- RSD Series Wired Rain Sensors (wired locally)
- WR2 Series Wireless Rain Sensors (wired locally)
- All Rain Bird rotors, valves, nozzles, sprays and drip products
- IVM-SD for 2-wire path grounding (optional)
- Rain Bird Universal Pump Start Relay (PSR110IC or PSR220IC)

The controller shall be manufactured by Rain Bird Corporation in a USMCA member country.

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