



Medalist Golf Club

## Field Controllers

***Unparalleled Compatibility. Unmatched Quality.***

Compatible with any Rain Bird® Central Control system, Rain Bird field controllers deliver the trusted performance that golf course professionals rely on to maximize course appearance and playability. From best-in-class satellite systems to reliable field decoders, you'll get a full range of solutions that make irrigation scheduling, adjustments and maintenance easier.



## Easy to Use

From pre-coded addressing for easy installation of decoders to the modular configuration for easy expansion on PAR+ES controllers, Rain Bird field controllers are designed for easier installation, programming and expansion.

## Proven Performance

Every Rain Bird field controller is built and tested to endure decade after decade. Controllers feature premium surge protection, extensive diagnostics and a best-in-class pedestal enclosure. Decoders are no exception with industry proven surge containment and water-tight housing.



## PAR+ES Controller

The easy-to-program Rain Bird® PAR+ES Controller is compatible with any Rain Bird® Central Control system and any other Rain Bird Controller. It features up to 72-Station capability, unlimited programs with central control, premium surge protection, extensive diagnostics and best-in-class pedestal enclosure.

### FEATURES AND BENEFITS

**Communication.** Standalone, two-wire and LINK™.

**Central Control Ready.** Works with any Rain Bird® Central Control system. End-users can access controller via The MI Series™ Mobile Controller\* or FREEDOM System™.

- Dynamic Flo-Manager®
- Smart Pump™
- Smart Sensor™
- Smart Weather™

**Easy to Use.** Large, raised control buttons with clear, descriptive icons and a high-contrast Liquid Crystal Display (LCD) panel make programming easy. Lights indicate active schedules and central control status, while unique copy/paste function speeds programming process. An angled keypad aids visibility as well as water drainage, and makes the PAR+ES controller extremely easy to use.

**Greater Water Precision.** The PAR+ES controller allows you to program six (6) automatic and two (2) manual schedules. It allows you to turn on a maximum of 16 solenoids at 60 Hz and 12 solenoids at 50 Hz, and features four (4) control modes — giving you ample programming and operating control.

**Modular Configuration Allows Easy Expansion.** The PAR+ES is available in any configuration and can be easily upgraded in 8-station increments. By simply plugging in an 8-station Output Station Module (OSM) you can expand your PAR+ES controller capabilities to accommodate any configuration.

**Multi Manual with Station and Program Stacking.** Perfect for syringing or putting down fertilizer, multi manual allows you to manually launch up to 16 stations at one time. Split second delayed start prevents water hammer and high inrush current.

**Multiple Schedule Operation.** No schedule limit when operated with Rain Bird Central Control systems.

**Universal Performance Simplifies Installation and Operation.** The intuitive PAR+ES Controller reduces installation and training hassles with its many universal features. For quick electrical hookups, the system automatically senses and adjusts for either a 50 or 60 Hz current; while one (1) transformer accommodates 100 V/120 V, 220 V or 230 V/240 V with the flip of a switch. The PAR+ES Controller also displays system activities and accepts user input in eight (8) different languages. The icon-driven controls and multilingual display eliminate confusion and translation problems.

**Mix and Match.** Mix and match with any other Rain Bird Controller and with any Rain Bird Central Control system.

**Enclosed Electronics.** Provides the best protection against the elements.

**16-Solenoid Simultaneous Operation.** Heavy-duty transformer permits simultaneous operation of up to 16 solenoids (12 at 50 Hz).

**Irrigation Control.** Variable or weekday programming, for weekday cycle or for irrigation every other day, every three (3) days or up to every nine (9) days.

**Water Budget.** Increase or decrease run times on a schedule in 10% increments from 0 to 200%.

**Simplified Installation.** Supplied templates make install easier.

**Front Panel Lighting.** Illumination LEDs and backlit faceplate buttons make programming easy even in poor lighting.

**Large Capacity Terminal Strip.** Accepts up to two (2) 14-gauge wires per station.

**Standard Station Lights and Switches.** OSM lights provide easy identification of active stations — turn stations on or off quickly for easy operation and troubleshooting.

**Premium Surge Protection.** Premium surge protection included in all models.

**Sensor Response.** Sensor activation cancels irrigation at controller.

**Master Valve Activation.** Activate master valve output with station activation.

**Available PAR+ES Retro Kit.** Extends the useful life of older satellites by converting to PAR+ES water-saving technology (see page 37).

**The flexible PAR+ES can be ordered in the following configurations:**

- PAR+ES standalone controller in a plastic pedestal.
- PAR+ES satellite with two-wire module in a plastic pedestal.
- PAR+ES satellite with LINK (wireless) module in a plastic pedestal.

All configurations are offered with a weather-proof and impact-resistant plastic pedestal.

Buy only the control you need today, and increase your operating capabilities or change your communication method at any time.

\*Software required

HOW TO SPECIFY			
<b>PAR ES</b>	<b>- XX</b>	<b>- X</b>	<b>S</b>
MODEL	STATION COUNT	CONFIGURATION	OSM TYPE
PAR ES	16 <sup>‡</sup> 24 32 <sup>‡</sup> 40 48 56 <sup>‡</sup> 64 72	Blank = Standalone 2 = Two-wire L = LINK**	S = OSMs with Station Switches

**NOTE:** Expandable up to 72-Station count by adding OSMs.

\*\*LINK Radios must be ordered separately from controller.

‡ Only options available in standalone configuration.



## SPECIFICATIONS

**Station Capacity:** 72 stations, up to 16 solenoids operating simultaneously (60 Hz) (12 @ 50 Hz)

**Electrical Input:** (50/60 Hz); 117 VAC Nominal 98 to 132 VAC; 220 VAC Nominal 208 to 232 VAC; 240 VAC Nominal 225 to 255 VAC

**Electrical Output:** 26.5 VAC, 5.25 AMP

**Station Load Capacity:** Up to four (4) 24 VAC, seven (7) VA solenoids per station

### Plastic Pedestal Dimensions:

**Width:** 17" (43.2 cm)

**Height:** 34 3/4" (88 cm)

**Depth:** 21" (53.4 cm)

**Programs:** As many programs as possible with Rain Bird Central Control Systems or six (6) automatic (12 start times each) and two (2) manual in standalone mode

**Water Budget:** 0 to 200% in 10% increments



**Station Runtimes:** One (1) to 120 minutes, in one (1) minute increments

**Languages:** English, French, German, Italian, Japanese, Portuguese, Spanish and Dutch

**Grounding Requirements:** Less than 10 ohms

**Compliance:** UL & C-UL Listed, CE approved, C-Tick Compliant and FCC

## PAR+ES Retro Kit

The PAR+ES Retro Kit is the perfect controller upgrade for low budget retrofit to extend the life of your irrigation system.

### FEATURES

**Installation:** Installs in any existing Rain Bird small plastic or stainless steel pedestal.

**Versatile Configurations:** Available as standalone, hardwired<sup>1</sup> or wireless<sup>2</sup>. Hardwired and wireless configurations have real-time two-way communication with central control. In wireless mode, up to four controllers can share a single radio.

**Expandable:** 16-station configuration up to 48-station using plug-in 8-station output station modules with switches and station LED.

### SPECIFICATIONS

**Water Budget:** 0 to 200% in 10% increments

**Station Runtimes:** One (1) to 120 minutes, in one (1) minute increments

**Configurations:** Standalone, hardwired and wireless

**Programs:** No limit with Rain Bird Central Control systems. Six (6) automatic (12 start times each) and two (2) manual programs

**Schedule:** Variable day watering (up to nine (9) days), custom day-of-the-week by program

**Electrical Input:** 117 VAC ±10% (60 Hz); 220 VAC (50 Hz)

**Electrical Output:** 26.5 VAC, 3 AMP

**Station Load Capacity:** Up to four (4) 24 VAC, seven (7) VA solenoids per station

**Languages:** English, French, German, Italian, Japanese, Portuguese, Spanish and Dutch

<sup>1</sup>Requires interface module not included.

<sup>2</sup>Requires additional transformer.

## PAR+ES Sat Decoder Controller

The PAR+ES Sat Decoder combines the features and benefits of a satellite controller with those of a decoder system. The advantages include:

- Easy Installation
- Reduced Installation Costs
- Easy Expansion

### The Idea is Simple:

- Install the controller.
- Install a single two-wire path to control all the sprinklers.
- Install decoder between wire path and each sprinkler head.
  - Uses up to 80 percent fewer wires than conventional controllers
  - Built-in diagnostic tools
  - Compatible with all Rain Bird Golf Decoders (FD-101, FD-102, FD-202, FD-401 and FD-601)
  - Simply attach new decoder to the wire path
  - Operates as a standalone controller or add a Rain Bird® Central Control system for greater control
  - Operates up to 72 decoder addresses
- Program controller with decoder address.

### SPECIFICATIONS

**Station Capacity:** 72 decoder addresses, up to 16 solenoids operating simultaneously (60 Hz)

**Configurations:** Standalone, two-wire and LINK

**Electrical Input:** (50/60 Hz); 115 VAC Nominal 98 – 132 VAC; 220 VAC Nominal 208 – 232 VAC; 240 VAC Nominal 225 – 255 VAC

**Electrical Output:** 26.5 VAC, 5.25 AMP

**Station Load Capacity:** Up to two (2) 24 VAC, seven (7) VA solenoids per station depending on decoder type

#### Plastic Pedestal Dimensions:

**Width:** 17" (43.2 cm)

**Height:** 34¾" (88 cm)

**Depth:** 21" (53.4 cm)

**Programs:** As many programs as possible with Rain Bird® Central Control systems or six (6) automatic (12 start times each) and two (2) manual in standalone mode

**Water Budget:** 0 – 200% in 10% increments

**Station Runtimes:** One (1) – 120 minutes, in one (1) minute increments

**Languages:** English, French, German, Italian, Japanese, Portuguese, Spanish and Dutch

**Grounding Requirements:** Less than 10 ohms

**Compliance:** UL & C-UL Listed, CE approved, C-Tick Compliant and FCC

#### Maximum Wire Length Between Controller and Decoder:

##### #12 AWG:

**Star Design:** 3.8 miles (6.1 km)

**Loop Design:** 15.2 miles (24.4 km)

##### #14 AWG

**Star Design:** 2.4 miles (3.8 km)

**Loop Design:** 9.6 miles (15.2 km)

**Maximum Wire Length Between Decoder and Rotor:** 456 ft (#14 AWG)

**Maximum Wire Paths:** Four (4), plus multiple branches per wire path

### HOW TO SPECIFY

**PAR ES-DEC - X - 72**

MODEL	CONFIGURATION
PAR ES	Blank = Standalone
	2 = Two-wire
	L = LINK*

\*LINK Radios must be ordered separately from controller.



## Decoders

A proven technology on golf courses around the world, Rain Bird decoders provide best-in-class field control on centrally controlled irrigation systems. Installed underground and featuring simple, low-cost wiring, decoders are an aesthetically pleasing, full-featured, economical option for reliable in-field control.

### FEATURES AND BENEFITS

- Improve aesthetics and reduce costs with buried in-field controls.
- Easy system expansion — simply splice into the communication line and add additional decoders.
- Installation requires up to 80 percent less wire than conventional controller systems.
- Electronic components are completely encapsulated to protect against the elements.
- Underground decoders reduce the chance of damage from wildlife, vandals or natural disasters.
- Pre-coded addressing eliminates confusion associated with switch-based addressing.
- With the addition of Rain Bird's Decoder Programming Unit (DPU), decoder addresses can be reassigned if necessary.

### A Cost-Effective Alternative

A simple wiring configuration and absence of valve boxes keeps installation and maintenance costs low. Rain Bird decoders are a "true lower than 30 Volt" system that utilize a two-wire path of 14-gauge wire connecting the central control system, decoders and valves or valve-in-head sprinklers.

### Simple, Reliable Control

If you're looking for an alternative to satellites, Rain Bird decoders may be the right solution for you. These decoders for your central control system are simple, robust and reliable. They work with your central control system just like satellites but are buried underground away from the elements.

### Sensor Capability

If you need information from analog, pulse or switch sensors to manage your irrigation, connect the sensor to the SD-210 sensor decoder and view the data at the central. Using Smart Sensor™, sensor data can even be used to control the irrigation.

### Excellent for Renovations

Thanks to advanced central control technology and simple wiring requirements, decoders are a smart choice for many golf course renovations. Using Cirrus™, Nimbus™ II, and Stratus™ II Central Control systems with Rain Bird's hybrid feature capabilities, Field Control systems and IC can be mixed and matched on one computer. This makes it easy to expand irrigation coverage using a minimal amount of wire and decoders.

\* Additional software required

### Protect Against the Elements

With all electronic components fully sealed within a water-tight enclosure and buried underground, damage from floods, frost, rodents or vandals is virtually eliminated. Rain Bird decoders are an especially good choice for flood plains.

### An Out-of-Sight Solution

Buried decoder systems leave nothing exposed to the elements. With no evidence of in-field control, this aesthetically pleasing alternative works perfectly in situations where satellites are unwanted or impractical.

### In-Field Control Options

The addition of decoders doesn't mean the elimination of in-field control. Decoders can be turned on and off in the field with The FREEDOM System™ or MI Series™ mobile controllers\*. The MI Series mobile controller allows precise control of the decoder system anywhere Internet access is available. Another alternative is The FREEDOM System. This handheld radio remote allows you to signal changes to the central control system from anywhere on the course.

### The Right Amount of Control

Select different decoders to operate one, two, four or six solenoids. Five different decoders let you choose the amount of control you need.

#### HOW TO SPECIFY

##### FD - XXX

MODEL	DECODER TYPE
101	Single Address (1 solenoid)
102	Single Address (up to 2 solenoids)
202	Dual Address (up to 4 solenoids)
401	Four Addresses (up to 4 solenoids)
601	Six addresses (up to 6 solenoids)



## Maximum Critical Path Lengths for Two-Wire Paths

Nominal Wire Size	ohms/1000' ohms/Km	Loop (Nominal Wire Size)		Star	
		Km	Miles	Km	Miles
2.5 mm**	15.00 ohms/Km	12.0	7.5	3.0	1.8
14 AWG	2.58 ohms/1000*	15.2	9.6	3.8	2.4
12 AWG	1.62 ohms/1000*	24.4	15.2	6.1	3.8
10 AWG	1.02 ohms/1000*	39.2	24.4	9.8	6.1

## Characteristic Table for Various Decoder Models

Decoder Model	Number of Address per Decoder	Maximum Number of Solenoids per Address	Maximum Addresses Operating at Once	Current Draw (mA at Rest per Decoder)
FD-101	1	1	1	0.5 mA
FD-102	1	2	1	0.5 mA
FD-202	2	2	2	1.0 mA
FD-401 *	4	1	4	1.0 mA
FD-601 *	6	1	4	1.0 mA

## Design Criteria

Condition	Cirrus™	Nimbus™ II	Stratus™ II	StratusLT™
Maximum resistance in critical path	33 ohms	33 ohms	33 ohms	33 ohms
Maximum number of addresses per wire path **	250	250	250	200
Maximum number of addresses per LDI	500	500	500	300
Maximum number of addresses per SDI	200	200	200	200
Maximum number of active solenoids per wire path	20	20	20	15
Recommended interface unit	LDI	LDI	LDI	SDI
Maximum number of active solenoids per recommended interface <sup>Δ</sup>	40	40	40	15
Golf Black Solenoid (GBS25)	20 mA	20 mA	20 mA	20 mA
Hybrid system max number of interfaces per system (LDI, SDI)	12	8	2	1

## Maximum Wire Lengths for Secondary Path Wire Runs

Wire Size	1.5 mm**	2.0 mm**	2.5 mm**	16.0 AWG	14.0 AWG	12.0 AWG
Meters	100	133	166	88	139	220
Feet	328	436	545	289	456	720

\* Has LSP-1 surge protection built-in. \*\* A wire path is the leg coming off the LDI, SDI or LTB. ΔThe number of decoders on a large system with long wire runs may reduce the number of active decoders that you will be able to operate at one time before the interface maximum current draw is exceeded and the interface shuts down (disconnects from the field wiring).

## WC100 Wire Connectors

### Install Faster

When your installation crew is making countless wire connections on a jobsite, why slow them down with unnecessary work steps? Use Rain Bird® Wire Connectors to get the job done faster.

### Reduce Inventory

This is the only wire connector you'll need. It is ideal for use on two-wire control systems.

- Use for standard controllers, valve boxes and soil moisture sensors.
- Wire combinations ranging from 22ga to 6ga.
- Use on connections from 24 VAC to 600 VAC.
- UL 486D certified for direct burial.

### Avoid Call Backs

Locating and repairing a corroded wire splice costs time and money. Avoid unnecessary service, due to splicing. Use Rain Bird Wire Connectors for reliable connections.

- The strain relief ensures wires are secure and won't pull apart.
- Waterproof silicone sealant protects against corrosion.
- UV-resistant material ensures product performance does not degrade even after long periods of exposure to sunlight.



### HOW TO SPECIFY

WC	-	XXX
WIRE CONNECTOR		PACK
WC		100

### FEATURES AND BENEFITS

- Direct-bury silicone-filled tube with strain relief
- UL 486D listed and 600V rated waterproof and corrosion-proof
- Patented snap-fit lid provides strain relief
- UV- and impact-resistant
- Excellent for above-ground or direct-bury applications
- Pre-filled with silicone that never hardens
- Includes Red Nut Connector
- Wire Range: Red #6 – #22
- Perfect for Two-Wire Decoder Systems, Field Controllers or Integrated Control Systems (ICS)

