

### Rain Bird® Decoders

What You Don't See Is What You Get.

#### Features and Benefits

- Improve aesthetics and reduce costs with buried in-field controls
- Installation requires less wire than conventional satellite systems
- Electronic components are completely encapsulated to protect against the elements
- Simple, two-wire system can be spliced and stored during installation
- Pre-coded addressing eliminates confusion associated with switch-based addressing
- Underground "switch boxes" reduce the chance of damage from animals or vandals

A technology long-since proven on golf courses throughout Europe is quickly gaining popularity in the U.S. Rain Bird decoders have replaced satellites on centrally controlled irrigation systems for many years. Decoders act as switching stations for digitized commands to sprinkler heads. Underground installation and simple, low-cost wiring make decoders an aesthetically pleasing and economical option for reliable in-field control.

#### Simple, Reliable Control

If you're looking for an alternative to traditional in-field satellite control, Rain Bird decoders may be the right solution for you. These self-contained switching stations for your central control system are simple, yet very reliable. They work with your central control system just like conventional satellites but are buried underground away from the elements.

#### A Cost-Effective Alternative

A simple wiring configuration and absence of protective enclosures keeps installation and maintenance costs low. A conventional, 18-hole satellite-based system requires more than 250,000 feet of 24-volt wire. Decoders utilize a two-way path of 14-gauge wire connecting the central control system, decoders and valves or valve-in-head sprinklers. A typical setup rarely uses more than 25,000 feet of wire and 250 to 300 decoders.

#### 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 and in other areas where the risk of satellite damage is high.

#### 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 satellite enclosures are unwanted or impractical.

#### Excellent for Renovations

Thanks to advanced central control technology and simple wiring requirements, decoders are a smart choice for many golf course renovations. With Rain Bird's Cirrus™ and Nimbus™ II central control systems it is now possible to operate satellites and decoders concurrently. This makes it easy to expand irrigation coverage using a minimal amount of wire and decoders.

#### 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 a plug-in Rain Bird Field Transmitter or The FREEDOM™ System. The Rain Bird Field Transmitter is a portable key pad that can be plugged into the system at certain points on the course to provide on-the-spot control. Another alternative is The FREEDOM System. This handheld radio remote allows you to signal changes directly to the central control system from anywhere on the course.



#### The Right Amount of Control

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

#### How to Specify/Order:

<u>Model</u>	<u>Decoder Type</u>
FD-102	Single Address (up to 2 solenoids)
FD-202	Dual Address (up to 4 solenoids)
FD-401	Four Address (up to 4 solenoids)
FD-601	Six Addresses (up to 6 solenoids)



## Specifications

### Model:

FD-102 single field decoder (1 address and up to 2 solenoids)  
FD-202 dual field decoder (2 addresses and up to 2 solenoids per address)  
FD-401 four-in-one field decoder (4 addresses and 1 solenoid per address)  
FD-601 six-in-one field decoder (6 addresses and up to 6 solenoids)

**Mounting:** In valve box or direct burial

### Power Draw:

FD-102: 0.5 mA (idle) 18 mA (per active solenoid)  
FD-202: 1 mA (idle) 18 mA (per active solenoid)  
FD-401: 1 mA (idle) 18 mA (per active solenoid)  
FD-601: 1 mA (idle) 18 mA (per active solenoid)

### Dimensions:

FD-102: Length: 3.35 in. (85 mm), Diameter: 1.77 in. (45 mm)  
FD-202: Length: 3.35 in. (85 mm), Diameter: 1.77 in. (45 mm)  
FD-401: Length: 3.94 in (100 mm), Diameter: 2.56 in (65 mm)  
FD-601: Length: 3.94 in. (100 mm), Diameter: 2.56 in. (65 mm)

### Solenoids:

FD-102: 1 or 2 simultaneously

FD-202: 1 to 4 simultaneously  
FD-401: 1 to 4 simultaneously  
FD-601: 1 to 6 with individual control

### Wires:

FD-102: Blue to cable, white to solenoid  
FD-202: Blue to cable, white and brown to solenoids  
FD-401: Blue to cable, color-coded to solenoids  
FD-601: Blue to cable, color-coded to solenoids

**Surge Protection:** Built-in (FD-401 and FD-601 only)

**Output Power:** Adjustable from central controller

**Encapsulation:** Fully waterproof

**Address:** Pre-coded from factory (i.e., no switches)

### Electrical Input:

Nominal voltage: 33 VAC from line  
Minimum voltage: 21 VAC  
Standby Current: FD-102: 0.5 mA, FD-202, FD-401 & FD-601: 1 mA  
Input Fuse (FD-401 & FD-601 only): 300-500 mA, thermal

### Electrical Output:

Max. voltage: 33 VAC  
Max. load: FD-102: 2 Rain Bird solenoids,

FD-202: 4 Rain Bird Solenoids (two per address)  
FD-401: 4 Rain Bird solenoids (1 per address)  
FD-601: 6 Rain Bird solenoids (1 per address)

### Number of Simultaneously Active Outputs (FD-401 & FD-601 only):

Cable length from MDI 12-gauge (2.5 mm<sup>2</sup>)  
No. active  
Up to 5,905 ft (1.8 km): 6  
Over 5,905 ft (1.8 km): 4

### Decoder Solenoid Distance (FD-102 & FD-202):

Max. resistance 3 ohms

### Max. Distance Decoder/Solenoids:

Cable length:  
328 feet: 100 m  
196 feet: 60 m

**Wiring:** 2 x 14-gauge (1.5 mm<sup>2</sup>) solid copper, PVC insulated

### Environment:

Working range: 32° to 122° F (0° to 50° C)  
Storage range: -4° to 158° F (-20 to 70° C)  
Humidity: 100%

**Surge Protection:** 40 V, 1.5 kW transil

*Note: Rain Bird recommends using 3M DBY electrical connectors for all connections.*

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