

# Hunter®

G O L F



## Genesis III™



The Essential Computer Central Irrigation System



Value Leader in Golf Irrigation Control

Simple. Powerful. Two seemingly unrelated characteristics are at the heart of one dependable irrigation management system.

Easy to operate, Genesis® provides full programming and control of a network of field controllers, data retrieval units, and sensors—all from a single location.

Yet, it's also built on a hardware platform of legendary strength, incorporating the ability to effectively combine radio, hardwire and telephone modem communications within the same system.

The test of time—and a legion of satisfied customers—has proven Genesis to be the ideal choice for cost-effective central control.



## ***Managing Your Water Needs has Never Been So Easy...or Affordable***

Genesis® controllers are delivered to your course ready to go to work. System components that are exceptionally user-friendly. An optional intelligent, interactive graphical display accessible with a simple click of your computer mouse. And it all comes from Hunter, a company recognized throughout the irrigation industry for its leadership and innovation. **Genesis, for golf courses of any size and stature where being cost-effective is of utmost importance.**

## ***Playability: It's What Every Golf Course Strives for***

Does your course look good? Is it in optimum playing condition? These are the questions your potential members will ask before laying out their hard-earned dollars to join your club and play your course over someone else's.

Don't you want them to choose your course over all the others? Then you need to make sure that yours is at its very best, at all times. To do that you need to maintain a watchful eye over the changing conditions on all portions of your course, as efficiently—and that means easily—as possible.

To ensure the playability of your course and attract a solid club membership, you need an irrigation management system that you can count on.

For the results that you're after, nothing performs like Genesis.



## Why Should Your Course Install Genesis?



*Powerful but discreet radio communications ensures the reliability of sending and receiving high speed data.*

Genesis® has been designed to precision-irrigate different playing surfaces in your landscape. Installing a Genesis water management system instead of another system can provide your golf course with these operational benefits:

- Digital wireless or cabled telemetry provides the reassurance of instant two-way communications with every corner of your installation in real time
- Custom graphic of your property makes course maintenance easier to implement
- Browser-like controls make programming and operating the system easy enough that “anyone can use it”
- Automated Task Manager reprocesses and balances irrigation daily, at preset times



*Interactive custom graphics provide instant access to specific course areas.*



*Browser-like controls simplify common functions.*

### And these financial benefits:

- Reduce operating costs by minimizing the use of water and managing its application intelligently
- Automatically flow balance your entire system to complete watering in minimum amount of time
- Decrease wear on all system hardware including pipes, valves, sprinklers, and pumps



*The end result: precision irrigation of the playing surface.*

The end result? With Genesis, faster greens, sturdier tees, and more luxuriant fairways are all just a click away.





## Your Course as You've Always Wanted to See it

With over 20 individual program sequences (in up to 60-station controllers), Genesis has the horsepower to deliver worry-free irrigation day after day.

- Get a clear picture of your course with a site map of the property derived from any suitable graphic, scorecard scan, or aerial photo
- Ready access to any controller or program on your course for easy seasonal adjustments, semi-auto program starts, custom manual irrigation, rain shutdowns, and more
- Organize the course by plant types on their respective holes of golf so you can adjust greens, tees and fairways—or features on a particular hole—all with a simple click of the mouse



## Simple Programming with Maximum Flexibility

It all adds up to maximum water savings with minimum equipment wear, and precision irrigation accomplished in the minimum time necessary.

- Control irrigation from a desktop computer or the illuminated keypad on the field controller
- Accept ET (evapo-transpiration) directly from your own weather station to adjust for climatic conditions automatically
- Automatically flow balance the resulting schedule across the entire golf course
- Program with complete hydraulic information for your entire irrigation system, including pump, pipe, valve, and rotor capacities
- Scientifically balance the flow to complete watering in the minimum amount of time, while driving pumps at peak efficiency

## What's Happening...in Real Time



With up to 16 possible Data Retrieval units, each with up to 6 sensor capability, Genesis is like adding an entire staff to your operation.

- Connect an optional Data Retrieval unit to your network to monitor conditions in the field
- Monitor actual flow, wind speed and direction, rainfall, and other sensors to provide detailed historical reports and alarm protection
- Shut down all, or designated sections, when high flow or high wind conditions are sensed

## Analyze the Past, Present, and Future

You're never left in the dark with Genesis' recording and reporting ability, since your entire watering schedule can be laid out in a simple spreadsheet (which is also interactive for immediate adjustment).

- Running the Activity Log during automatic irrigation provides a complete report of each individual irrigation event on the course
- The innovative Accumulation Report tracks irrigation during preset time intervals, as well as historical use and system totals

## *What Comprises a Genesis System*

Hunter golf course irrigation management systems are distinguished by their elegant simplicity: all the latest technology that you need (and nothing that you don't), all bundled into an easy-to-understand, easy-to-operate package.

### **Central Computer**

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Your link to all the various components of the Genesis® system located throughout your course. This powerful PC includes a monitor, hard drive, microprocessor, and extra RAM for processing horsepower. Also equipped with pcAnywhere™ for remote control access from other computers. It's painstakingly customized to the specific needs of your particular system.

### **TriSend™ Central Interface**

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Your connection to the field, this unit hangs on the wall and instantly transmits commands to the course via radio, hardwired cable, or both, in the same system. There's even an optional telephone modem for remote dial-up connection. TriSend handles all communications with the field, including downloads, reporting, alarm monitoring, and sensor reporting.

### **Genesis Field Controllers**

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Able to operate up to 60 stations each (over 100 each in decoder applications), all Genesis controllers feature:

- All-weather enclosure – stainless steel or high-tech plastic
- Field-Resident Memory – irrigation schedules are never dependent on the central computer
- Two-Way Communications – always know the programs were delivered, as well as the status of any controller and its sprinklers at any given moment
- Heavy industrial surge and lightning protection



### **Data Retrieval Units**

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Optional monitors are capable of reporting flow, rain, wind, and other conditions from sensors in the real world. Their reports provide real-time feedback to the operator, and even monitor and react to alarm conditions when detected. Monitor up to six sensors each, reporting via radio or hardwire.

### **Weather Station**

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Automatically adjust watering to local conditions as reported on your premises, not a TV station dozens of miles away. This option not only makes it possible to monitor and track weather trends, but you can also calculate ET data for your microclimate that will be automatically factored into each day's irrigation calculations.

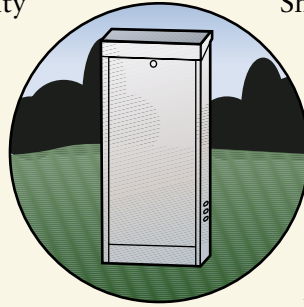
# Genesis® Central Control System Overview



Labor-saving **Maintenance Radio** remote technology is available in every Genesis® system, as a standard feature in radio models (Straight Talk™) or as a central interface option in hardwire version.\*

\* Portable radio sold separately

Powerful, high-capacity **Field Controllers** are available in stainless steel or high-impact resistant plastic with pedestal or wall-mounted outdoor enclosures.



Shielded against electrical noise and interference, **Hardwired Cable** provides reliable communication over 10,000 feet between each device. An economical choice when open pipe trenches offer convenient placement of wire in the ground.

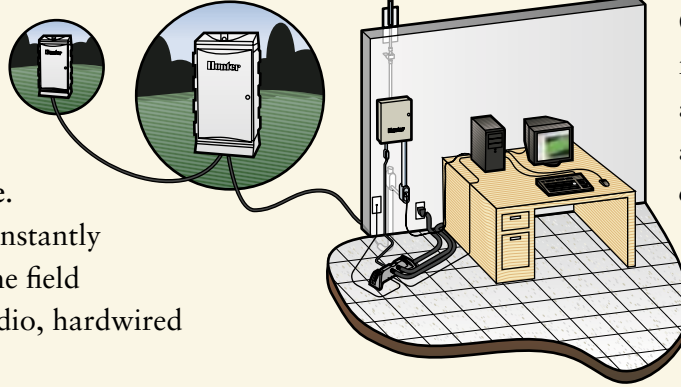


To eliminate the need for a cable connection between the central and controllers in the field, dependable **UHF Radio Communications** can provide the link.

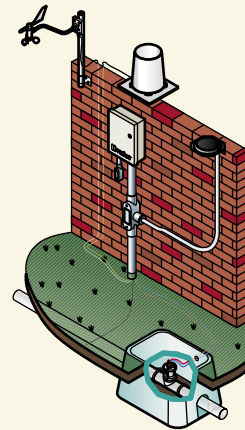


All communications with the field—including downloads, reporting, alarm monitoring and sensor reporting—are handled by the TriSend™ Central Interface.

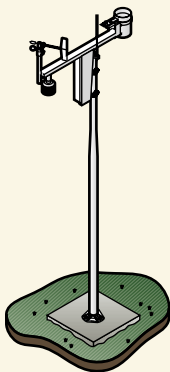
Commands are instantly transmitted to the field controller via radio, hardwired cable, or both.



The simple-to-operate, yet powerful **Central Computer** allows full programming and control of all the many components that comprise the Genesis system...from a single location.

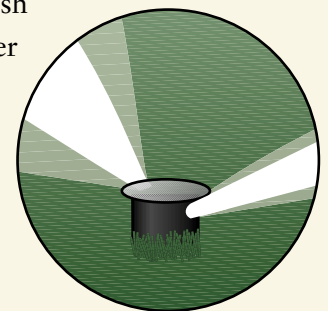


**Data Retrieval Units** report flow, rain, wind, and other conditions from sensors. This real-time feedback makes it possible to monitor and react to alarm situations when detected.



The **Weather Station** option allows you to monitor and track weather trends, as well as calculate ET data for your microclimate for use in daily irrigation calculations.

From the largest rotor to cover the fairways to the smallest spray head to keep flower beds lush and colorful, Hunter offers a full line-up of **Sprinklers** to handle every size and shape of landscape found in the golf course environment.



## *Great Control Systems are Built on Great Communications Networks*

Hunter knows that an irrigation control system is only as good as its ability to get the message – and the water – out to the plants. And Genesis® is a master at both.

### **Combine Hardwire and Radio**

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New technology and engineering steeped in practical experience have combined to make Genesis not only more reliable, but also more flexible than ever. Combine hardwired controllers and radio controllers in any proportion you want. So, you could hardwire your closest controllers, yet send two-way radio signals to the most distant ones.

### **Maintenance Radio Extras**

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The TRNR Maintenance Radio can work with your existing UHF wireless voice communications radios, while providing access through the touch-tone buttons to the controller functions (direct to radio controllers via StraightTalk™; through the TriSend™ interface for hardwired controllers).



### **UHF Radio**

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Radio is ideal for crossing long distances, streets, bodies of water, and building complexes without the costs of running wires. Plus, there are no wires to cut during course maintenance and construction operations. Radio control is also ideal for retrofit controls, since the whole system can be put into operation without disrupting the playing surface.

Hunter radio controllers use modern Ultra High Frequency (UHF) radio modems to send and receive data from your computer. Digital addressing prevents any unauthorized or unintentional access.

### **Hardwire**

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Hardwired communications are often the economical choice in new construction situations, when open pipe trenches offer convenient placement of wire in the ground. Hardwired cable is shielded against electrical noise and interference, and communicates reliably over an amazing 10,000 feet (three kilometers) between each device.



Hunter “hardwired” communications operate over two-twisted pair cable using the robust, proven 4-20 milliamp loop communications, a standard in many demanding outdoor applications. Our own cable, called GCBL, is suitable for direct burial, and is available in optional armored steel for rodent resistance.

### **Maintenance Radio**

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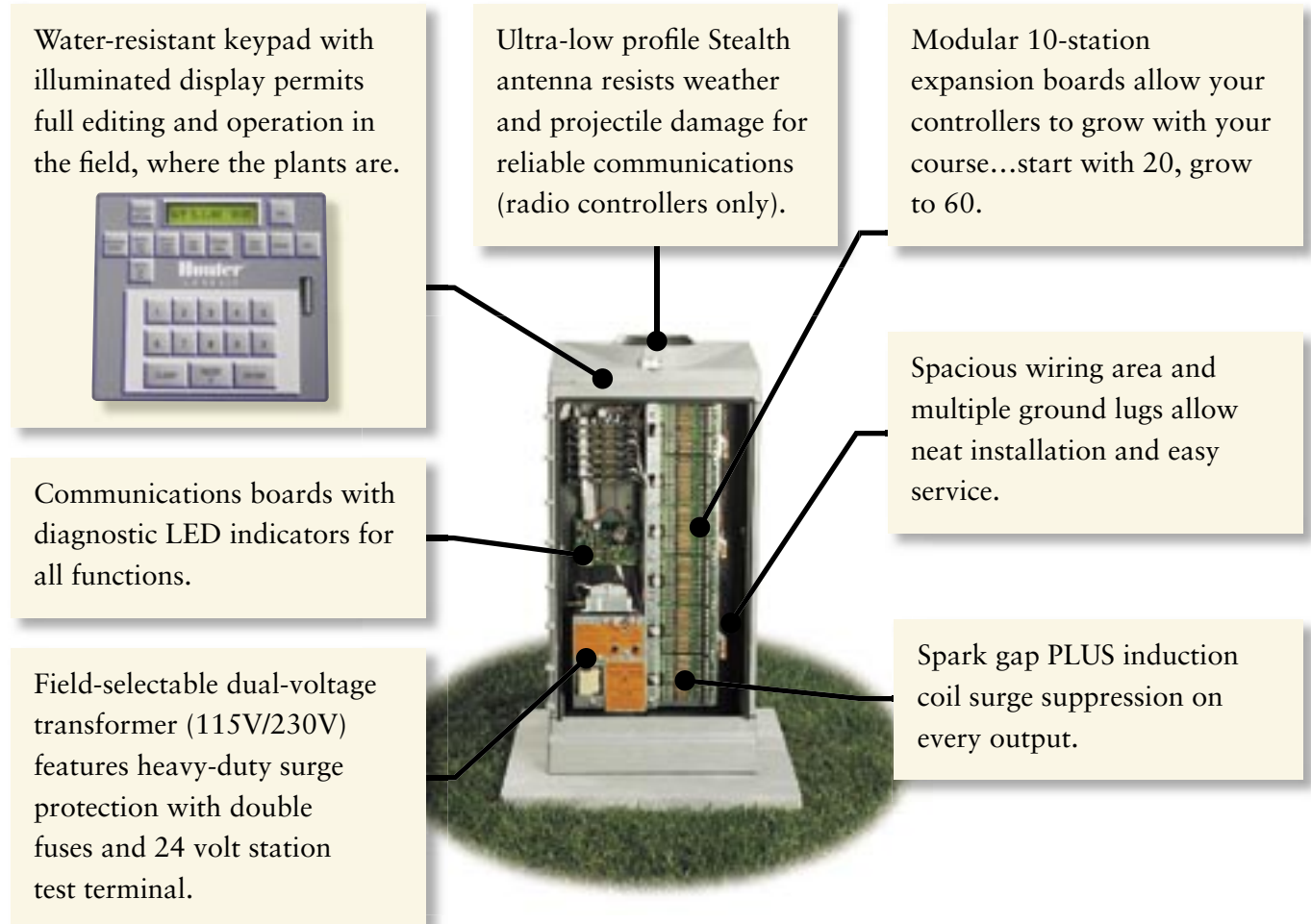
Hunter’s Maintenance Radio feature is what turns a central control system into a personal control system. Using voice capable handheld UHF radios, you can remotely start, stop, pause and resume stations and programs from any vantage point—on demand.

Maintenance Radio technology is built into every Genesis system as a standard feature: in the TriSend central interface for hardwired controllers, as well as directly in to all radio controllers (Straight Talk).



## The Genesis Controller

We boasted about it earlier, now here's the proof. The Genesis® controller mounts the biggest brain in the business, on a rugged pedestal packed with power and protection...the kind you get from decades of practical experience in the golf environment.



Hunter believes that critical irrigation is too important to be left in the hands of an unattended computer. That's why Genesis downloads each meticulously-calculated irrigation schedule to this sophisticated editing tool. The Genesis controller is the on-site guardian of your playing surface.

Genesis also hosts a set of manual watering features unique to the needs of golf operations, as well as innovative labor savers not found on any other controller.

- 20 automatic programs with up to 5 different day schedules
- Up to 9 or continuous cycles per program with programmable soak time
- 1- to 31-day scheduling and day-of-week scheduling
- Up to 12 simultaneous stations operating
- Semi-auto and manual starts of all programs or individual stations
- Automatic overload protections and onboard diagnostics
- Water budgeting from 1 to 512% by controller or by program
- Remote control of all manual functions from Maintenance Radio

## The Decoder Option

Decoders are small modules that receive both power and signals over one pair of wires, enabling you to use fewer devices to operate all of your sprinklers without giving up the local access that field controllers provide. Hunter decoders are designed to work with standard 24VAC solenoids and because circuitry is embedded in waterproof epoxy the units are impervious to environmental conditions.

With Genesis® decoders, a superintendent can control and adjust irrigation in the field from field controllers, while operating up to 103 decoder stations from each field controller over a single pair of custom wires. And since the decoder controller

communicates with the same Genesis software that controls “conventional” controllers, you can even mix them in the same system!

In addition, two-wire decoder path also makes retrofitting new stations after the initial installation a snap—just snip the wires, and splice in another decoder.



## Key Components Specifications

### Software

Genesis is designed to operate in the Microsoft® Windows™ environment.

- Maximum Field Controllers: 999
- Maximum Stations: 102,897
- Scheduling: 5 Program Groups, 1-31 Day Schedules
- Flow Management: Automatic

Field Communications are via serial port.

### TriSend™ Central Interface

The TriSend central interface is supplied in a steel, key lockable, powder-coated enclosure suitable for indoor or outdoor mounting, and includes a professional grade surge suppression power strip. Only one TriSend is required per system.

### Communications Outputs and Connectors

- One radio output, 4' (1.2 m) antenna cable connection, type N male (except hardwire only version). Use with RG8

radio antenna cable or equal, 50' (15 m) maximum, and RA5M base antenna.

- Two hardwire output terminals, 4-screw type. You may connect either one or both hardwire “legs” for communications to the field, for shortest runs.
- One copper ground lug for connection to earth ground (see ASIC Earth Grounding Guideline 100-2002).

### Central Computer

GENPC Personal Computer specifications are updated regularly and are available on our web site ([www.huntergolf.com](http://www.huntergolf.com)).

Generally, our custom OEM computer includes:

- Windows™ XP Pro edition
- Symantec® pcAnywhere™
- Norton Antivirus
- P4 2+GHz microprocessor, minimum (see [www.huntergolf.com](http://www.huntergolf.com) for current specifications)
- 128 Mb RAM, minimum

- 17" Trinitron monitor
- CD-RW drive
- Enhanced Video card and drivers

### Data Retrieval

Data Retrieval Units are supplied in a steel, key lockable, powder-coated enclosure suitable for indoor or outdoor mounting. You may have up to 16 Data Retrieval Units per system, maximum.

### Communications Outputs and Connectors

- Radio Versions – One 4' (1.2 m) antenna cable connection, type N male (except hardwire only version). Use with RASREM field antenna or equal.
- Hardwire Versions – One hardwire terminal, 4-screw type.
- One copper ground lug for connection to earth ground (see ASIC Earth Grounding Guideline 100- 2002).

### TriSend and Data Retrieval: Electrical Data and Dimensions

Dimensions	16" (406 mm) tall	12.5" (317 mm) wide	5" (127 mm) deep
Primary (input)	International Transformer [SV versions pre-switched to 230V]	115VAC or 230VAC, selectable	115V: 1A, max 230V: 0.5A, max
Secondary (outputs)	All	Transformer -24VAC/50VA Radio (450 to 470 MHz)	2.08A 2.0 Watts

# The Genesis Field Controller Specifications

## Dimensions

- Stainless Steel Pedestal: 34.5" (88 cm) tall x 18" (46 cm) wide x 10" (26 cm) deep
- Plastic Pedestal: 35" (89 cm) tall x 17.5" (45 cm) wide x 10.5" (27 cm) deep
- Average weight: 56 lbs (25.5 kilos). Stainless and Plastic Wall-Mount enclosures available.

## Electrical Specifications

- Primary (Input): 115V/230V, selectable
- Current Draw: 115VAC, 1 Amp max. 230V, .62 Amp max.
- Secondary (Output): 24VAC\*, 1 Amp max. per station  
3.125 Amp total station output  
1 Amp max. comm. output

\* NOTE: Pump output .5 Amp max. if connected

## Signal Output

- Radio: 2 Watts, UHF (450-470 MHz) Narrowband
- Hardwire: 4 - 20 milliamp loop

## Communications Wiring

- **GCBL** – Shielded 2 twisted pair, 18AWG
- **GCBLA** – Armored, shielded 2 twisted pair, 18AWG (for direct burial)

## Options

- **SW** – On-Off-Auto switches for each station
- **SV** – 230VAC versions (50/60 Hz, selectable)

## Accessories

- **TRNR** – Handheld Radio for Maintenance Radio communications
- **TRIRADKT** – Maintenance Radio capability for hardwire systems (through the Central Interface, does not include TRNR)

# Decoder Specifications

## Models

- **GVIKDEC** – Single station decoder (two solenoid capacity)
- **GVIKDEC4** – Four station decoder
- **MINIDEC1** – Single station mini-decoder (single solenoid only)
- **GVIKLSPN** – In-line surge protection module
- **GVIKLSPE** – End-line surge protection

## Dimensions

- **GVIKDEC** – 3.26" (8.3 cm) tall x 1.96" (5 cm) wide x 1.57" (4 cm) deep
- **GVIKDEC4** – 3.26" (8.3 cm) tall x 1.96" (5 cm) wide x 1.57" (4 cm) deep
- **MINIDEC1** – 3.62" (9.2 cm) tall x 1.57" (4 cm) wide x .78" (2 cm) deep
- **GVIKLSPN** – 2.95" (7.5 cm) tall x 1.96" (5 cm) wide x 1.37" (3.5 cm) deep
- **GVIKLSPE** – 2.95" (7.5 cm) tall x 1.96" (5 cm) wide x 1.37" (3.5 cm) deep

## Decoder Electrical Characteristics

### Power Draw

- **MINIDEC1** – 1 mA (idle), 20 mA (per active solenoid)
- **GVIKDEC** – 1 mA (idle), 20 mA (per active solenoid)
- **GVIKDEC4** – 1 mA (idle), 20 mA (per active solenoid)

### Solenoid Capacity

- **MINIDEC1** – 1, maximum
- **GVIKDEC** – 1 to 2 simultaneously
- **GVIKDEC4** – 1 to 4 simultaneously

### Decoder Wire Pair Requirements (from controller)

- **GVIKCBL1** – 14/2 AWG/1.5 mm (to 10,000'/3,000 m)
- **GVIKCBL2** – 12/2 AWG/2 mm (to 15,000'/4,500 m)

### Decoder-to-Solenoid Wiring

- 18 AWG/1.024 mm, twisted (150'/45 m)

## Optional Decoder Manager Utility Software

- **DECMAN** – Available on CD-ROM only



# Genesis® ... The Proven Value Leader

While the rugged Genesis hardware has stood the test of time, it hasn't stood still.

Continuous evolution and refinement of this powerful electronic platform have resulted in unmatched year-round reliability in the harshest environments. The software and communications elements incorporate the latest advances in technology. And, with the field-resident memory and full two-way communications, the Genesis system offers more intelligence for your irrigation dollar, including the ability to operate completely independently of a computer, or use a PC for full flow optimization and E.T. management.

Genesis. The simple-to-operate golf course irrigation central system with the powerful features and indispensable necessities. The most proven and capable golf irrigation control system available today.

