Hunter®
The Irrigation Innovators

SURVEYOR

Simple, Powerful Central Irrigation Control for Golf

Surveyor™ is the irrigation management tool that combines simplicity and high-tech accuracy into a golf maintenance professional's dream system. A computerized, central irrigation control system that can start small and simple, Surveyor has the ability to grow into a full-fledged, weather-driven, flow-balanced, interactive map that harnesses all the power of the modern computer. With Surveyor in place, you can work the way you want. Surveyor requires minimal set up, yet contains the most advanced tools available for flow, weather, and sensor input. And the choice of how to use this arsenal is up to you: turn all of them on when you're ready or keep it clean and simple when these advanced features are not needed.

Precision irrigation by plant type…automatically or in real time.

VSX™ Field Controllers

With true two-way communications and field resident memory, VSX Field Controllers ensure that your course will be irrigated without depending on a central computer or communications links. Available with either hardwire or synthesized UHF radio communications—and with the option of Maintenance Radio remote control—Hunter VSX Field Controllers are actually two control packages rolled into one.
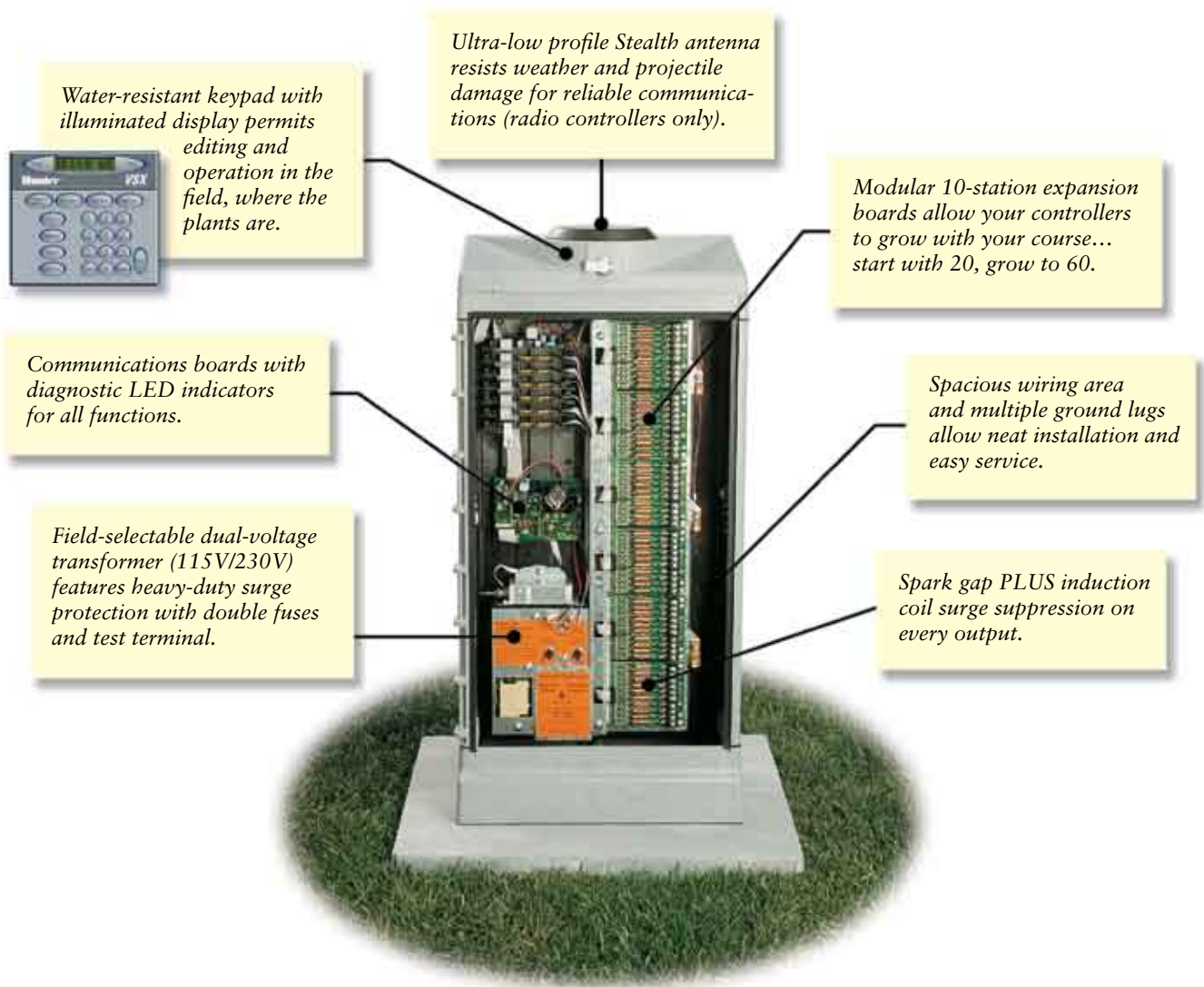
The Intelligent Controller for the Surveyor Central Control System

Surveyor's flow-balanced schedules are transmitted to the VSX for reliable irrigation in the field. The field controller stores up to 3 days of fresh schedules, and if central communications are ever lost, they continue to operate on their own. The central program for a field controller can be reviewed on-site, in the illuminated two-line display, at any time.
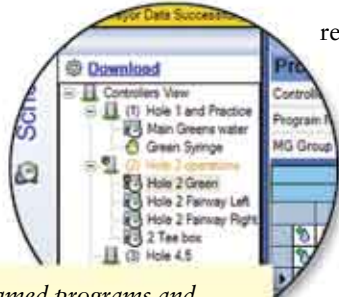
A Powerful Standalone Timer System for New Construction Grow-in or Special Applications

Using a greatly enhanced operating system, the VSX Field Controller enables the superintendent to perform programming operations simply and quickly. Up to 64 local automatic programs can be created for standalone operations or special applications. Innovative new preset technology makes it possible to customize and store common routines (such as syringe cycles) and start them with ease. All presets and automatic programs feature alphabetical labels for quick and easy identification and activation. And a new "block" function allows you to group similar stations to run simultaneously, then sequence the blocks to run as an automatic program.

Water-resistant keypad with illuminated display permits editing and operation in the field, where the plants are.

Ultra-low profile Stealth antenna resists weather and projectile damage for reliable communications (radio controllers only).

Modular 10-station expansion boards allow your controllers to grow with your course... start with 20, grow to 60.

Communications boards with diagnostic LED indicators for all functions.

Spacious wiring area and multiple ground lugs allow neat installation and easy service.

Field-selectable dual-voltage transformer (115V/230V) features heavy-duty surge protection with double fuses and test terminal.

Spark gap PLUS induction coil surge suppression on every output.

Program Management Has Never Been Simpler

Name your programs (and the stations) for what they water, group them by the types of turf they manage, and flow- or time-graph the results. Save perfect watering scenarios under different names and recall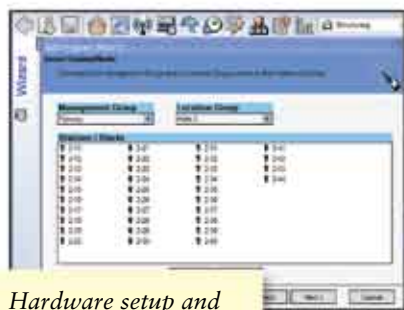 them as needed, when those conditions reoccur. If you prefer the flexibility of true individual station control, Surveyor can group heads by plant type and station-level flow balancing. Just input where more or less irrigation is needed (greens, tees, fairways, etc.), and let the computer do the rest. Rescheduling start times, flow optimizing, and downloading are fully automated.

Named programs and stations clearly identify every rotor and program.

Fast and Easy Start Up

The built-in wizard will walk you through start up—from out-of-the-box to ready to water—with very little preparation. From there, you'll find Surveyor is completely capable of full-featured operation with no graphics at all. Simple click-and-drag hydraulic modeling lets you build a pipe network without being a computer draftsman. For more advanced control, import CAD designs of the irrigation network, or even draw

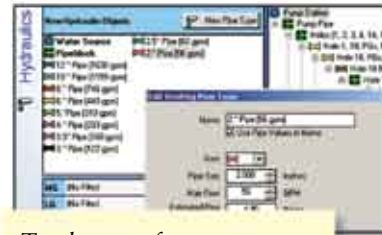*Hardware setup and program creation are simplified with Setup Wizards.*

Access controllers, programs, and individual stations with Surveyor's advanced graphical tools...drawn on scans or aerial photos of your course!

your own with Surveyor's built-in graphical tools. You can build an advanced database as you go, or import one from your system design.

Hydraulic Modeling

Extend equipment life and meet shorter water windows with Surveyor's easy-to-use Hydraulic setup screen. This setup is not required for basic irrigation, but it unlocks the true power of individual head control by maximizing system flow at safe velocities, across the entire pipe grid. A customizable library of common pipe types and characteristics uses your hydraulic map to determine the fastest, safest way to schedule each day's irrigation with your water sources.

Track water from source to nozzle, in the graphical Hydraulics view- click, drag, and adjust.

Create and Edit Programs Out on the Course

With Surveyor, critical irrigation isn't dependent on the whims and availability of a computer or communications link. Surveyor creates schedules and sends them to the field, where controllers do the actual irrigating. And because Hunter field controllers are packed with intelligence, you can even create and edit irrigation programs right out on the course. Surveyor then keeps a watchful eye on flow, weather, and other real-world conditions. All the while, true two-way communications verify that your irrigation schedules are reaching the landscapes that rely on them!
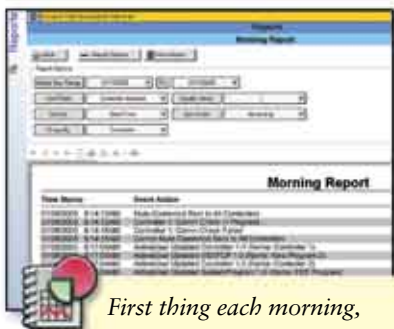
Edit programs from your office, or in the field.

Know What Happened…
And What's Happening Now

An attractive, readable, and printable account after each irrigation period, Surveyor's innovative **Morning Report** can be customized for the items that matter most. Itemize each irrigation event over the water window or just

note exceptions and alarms for immediate attention. Measure flow, keep an eye on the wind, and prevent wasteful irrigation during the rain with Surveyor's **Data Retrieval** module that collects information from

First thing each morning, Surveyor presents a customized briefing of last night's events.

sensors in the field, while the computer stands by to issue any protective shutdown commands. And use the color-coded **Flow Graph** to show how much water is going where. Graph irrigation scenarios in advance, track what happened while you were gone, or view in real time what is flowing right now.
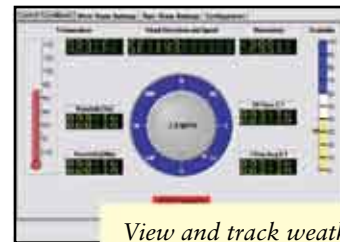
An Invisible Assistant on Your Staff

Surveyor's incredible Task Manager can be programmed in advance to perform timed tasks throughout the year. Anything from a simple pop-up reminder window (fertilization schedules, tournament events…even important birthdays), to pre-programming downloads of named programs on a future day. Task Manager can be set to check the weather station, get and apply the ET, monitor the sensors, and even to suspend irrigation for important events in the future. Best of all, you don't have to be at the office to change schedules…just tell Task Manager to change and the switch will be made according to your pre-programmed instructions.

Schedule automatic downloads, new programs, even pop-up reminders for meetings and appointments, with the Task Scheduler.

Tie Your Irrigation to the Weather

Progressive water saving and climate-sensitive automation features, including weather tracking and automatic evapo-transpiration (ET) calculations, provide the ultimate in scientific turf management. The spectacular weather interface displays the (optional) weather station's sensor readings on demand, with historical recording. You can apply the weather conditions to the next irrigation application automatically, in any proportions

View and track weather in real time, and automatically adjust irrigation to ET, with the weather interface.

you like! Surveyor can schedule irrigation in run times, application amounts, or percentages of ET (by plant type or course area).

Feature-Filled
(Of Course, It's from Hunter)

Full two-way communications. Industrial-grade surge protection. The peace of mind of a downloaded schedule. On-board event recorders. And feedback from an entire family of sensors. Plus, Hunter's Maintenance Radio provides instant control of stations, blocks, and programs from your portable radio, with fewer buttons to push and instant audio confirmation of commands.

Radio field controllers include Hunter's famous StraightTalk™ technology that allows wireless remote control at ranges up to two miles whether or not the computer central is turned on. Two-mile range subject to terrain and requires a site survey; FCC or Industry Canada license required.

Central Computer

Surveyor Software Requirements and Specifications
- Operating Systems: Windows 2000 or XP (Pro or Home Editions)
- Max System Programs: Unlimited
- Stored, named adjustments: Unlimited
- Contingency Programs: Unlimited
- Maximum Field Controllers: 999
- Maximum stations: 102,897
- Scheduling: Manually entered or ET-based
- Flow Management: To station level; automated and graphed
- Graphics: Custom; raster (scan, photo) or vector (DXF import) or both
- Full functionality without graphics: Yes
- Selectable Layers with toggled visibility: Yes, unlimited.
- Built-in Map Editor with customizable Drawing Objects
- Built-in Task Scheduler: 100-year+ advanced scheduling with pop-up notification
- Stored Historical Reports: 5 years minimum

PREMPC OEM Computer System*:
- Operating system: Windows XP Pro
- Processor: (minimum) Intel Pentium 4, 3.2 GHz
- Memory: 512 Mb DDR2 SDRAM, 400 MHz
- Monitor: Dell 19" Ultra Sharp Flat Panel
- Video: ATI Radeon 64 Mb graphics card
- Modem: Dell V.92 PCI Data/Fax Modem
- Keyboard: Dell USB Performance Keyboard with 8 Hot Keys
- Mouse: USB 2-button optical scroll mouse
- 1.44 Mb 3.5" and 48X CD-RW drives
- Norton AntiVirus

Specifications updated frequently - visit www.huntergolf.com for latest specs.

TriSend™ Central Interface:
- Communications: Radio, Hardwire, & Modem (can be mixed in system)
- Enclosure: Powder-coated steel (outdoor/indoor)
- Connection: DB-9 Serial port
- Primary Input: 105-125VAC, 0.5A max
- SV Versions: 205-230VAC, .25A max.

True Two-Way Communications Range:
- Radio Versions: 2 miles (approximate, depends on terrain)
- Hardwire Versions: Up to 10,000 meters/3,000 feet to first field controller, up to 10,000 meters/3,000 feet between each additional field controller
- TriSend™ technology allows Radio, Hardwire and Telephone Modem communications to be combined in the same system

Options & Accessories:
- RA5M: Base Antenna
- DAT (R or HW): Data Retrieval for sensor feedback to Surveyor
- TW Series Weather Station - high efficiency weather station with wireless and solar power options

Weather station for Surveyor is only an "option" until you've tried one... wireless, solar-powered, affordable, with automatic ET.

Field Controller

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 upon request

Electrical Specifications
- Primary (Input): 105-125VAC, 1A max.
- Primary (Input) SV Version: 205-230VAC, .62A max.
- Secondary (Output): 24VAC, 50/60Hz 1A max. per station 3A total output 1.67A communications output
  NOTE: Pump output 1A max. if connected

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

Communications Cable: (hardwire)
- GCBL: Shielded 2 twisted pair, 18AWG (armored Cable available)

Options & Accessories:
- SV: 230VAC
- TRNR: Handheld Radio for TriSend™ or StraightTalk™ communications
- SW manual switch (ON/OFF/AUTO) for each station

FIELD CONTROLLER SPECIFICATION GUIDE

EXAMPLE: **VFC - 20 - HW - SW**

MODELS*	STATION QUANTITY	COMMUNICATION TYPE	OPTION
VFC = Stainless Steel Pedestal	**20** = 20 stations	**S** = Stand-alone	**SV** = 230VAC
VFCP = Plastic Pedestal	**30** = 30 stations	**R** = Radio*	**SW** = Switches
VWC = Stainless Steel Wall-Mount	**40** = 40 stations	**HW** = Hardwire	
VWCP = Plastic Wall-Mount	**50** = 50 stations		
*For Viking decoder models, add "V" to the beginning of model number	**60** = 60 stations	*License required, specify frequency when ordering	

CENTRAL COMPUTER SPECIFICATION GUIDE

MODELS	
SURVEYORCD	= Central software
PREMPC	= Premium Central Computer Package

CENTRAL INTERFACE SPECIFICATION GUIDE

MODELS	COMMUNICATION TYPE	OPTION
TRISEND = 3-way capable central interface	**NR** = No radio module	**SV** = 230VAC
TRIMOD = Telephone modem module	**R** = With radio module License required, specify frequency when ordering	