Irrigation Management and Monitoring System™

The Powerful Water Management Tool to Monitor and Control a Network of Irrigation Systems from a Single Central Location
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THE BENEFITS OF A HUNTER IRRIGATION MANAGEMENT AND MONITORING SYSTEM™

The Hunter Irrigation Management and Monitoring System Saves Time
Managing a network of irrigation controllers – on a single site or multiple sites – requires time-consuming work. Setting up and synchronizing controller operations can take hours of time. Plus, every time a program change needs to be made, or a system needs to be shut down for a special event, you have to physically travel to the controller.

With the Irrigation Management and Monitoring System (IMMS™), these hassles are removed, since the entire system can be monitored and controlled from the comfort of your office. Additionally, by communicating with localized sensors, the system can alert you to potential service problems such as a ruptured pipe or sprinklers that have been broken by vandals.

The Hunter Irrigation Management and Monitoring System Saves Water
The centralized control of your irrigation controller network allows you to take advantage of the latest water saving benefits. Modify controller schedules in real-time, taking into account daily and seasonal weather conditions and weather forecasts...shut down all systems during rain with just a few keystrokes...increase watering for thirsty annuals during hot days. Any and all changes can be made to each controller’s program in a matter of seconds.

In addition, the program’s reporting module allows you to monitor your water usage over time, both in total gallons used and estimated water costs. This will allow you to plan ahead for future needs and identify areas for improvement.

The Hunter Irrigation Management and Monitoring System Saves Money
Saving time and saving water ultimately adds up to an even greater savings: that of your irrigation budget. IMMS reduces your labor expenses, including the time it takes to travel from site to site and the time it takes to program and update controllers and verify system operations. Not to mention the fact that the IMMS is priced at a level that makes it affordable and not a luxury item. With the IMMS, you possess a powerful tool designed to manage and monitor your irrigation needs.

TYPICAL APPLICATIONS
- School and Industrial Campuses
- Parks
- Town Centers and Urban Plazas
- Businesses with Branch Locations
- Shopping Malls
- Apartment Buildings
- Condominiums
- Homeowner Associations
- Large Residential Estates
- Sports Field Complexes
- Cemeteries

SYSTEM OVERVIEW
With the Irrigation Management and Monitoring System, automatic irrigation systems at multiple sites can be programmed for functions that would typically be handled directly at each site’s controller. Scheduling of days to water, run times, start times, cycle and soak operations and more can now be done from a single computer at a desk, miles away from the actual installation. In addition, scheduled operation of non-irrigation components also in use at these sites – for example, lighting systems at athletic fields or fountains at shopping centers – as well as pumps and sensors can also be programmed and monitored from a single central location.

A key function of the Irrigation Management and Monitoring System is its ability to monitor changing conditions. With the aid of such options as flow sensors, rain sensors and other weather-sensing devices, the Irrigation Management and Monitoring System can receive reports on the current condition at every site it is linked with. Should any conditions go beyond the limits that have been defined, the IMMS system will then respond with individual controller or site-wide shutdowns.
Irrigation Management and Monitoring System

No central irrigation control system available today is more cost-effective than the Hunter Irrigation Management and Monitoring System. Plus, it upgrades easily to accommodate an expanding network of Hunter controllers, providing the most essential features needed for water management.

SYSTEM CAPABILITIES

- Manage irrigation systems at up to 100 different sites from a single centralized computer.
- Each site managed can have up to 100 controllers networked into the site interface. The IMMS system can network with Hunter ICC, Pro-C, and SRC controllers.
- Manage all controller programming data from the central computer.
- Manual functions: activate, deactivate manual or automatic waterings from the central computer.
- Initiate rain-off or rain-delay features by controller or globally.
- Manage “no water days” (Non-Water Windows) up to 365 days in advance globally, by site, or by controller. This allows an irrigation manager to set specific days for maintenance, events, etc.
- Easily program cycle and soak waterings for maximum water efficiency (ICC only).
- Manage watering windows.
- Programmable sensor shutdowns and delays

MONITORING CAPABILITIES

Monitor weather sensors including rain, wind and freeze sensors for real-time responses to weather conditions. Sensor data can be implemented locally with individual controllers or shared globally across the entire site.

Control system flow conditions through optional Flow-Clik™ flow sensors. This can shut specific controllers down during over-flow conditions (line breaks, broken sprinklers), saving water and reducing liability concerns.

PRODUCT FEATURES AND BENEFITS

*Operates With All SmartPort®-Equipped Hunter Industries Irrigation Controllers...*

*Retrofit all past and present Hunter controllers*

Hunter controllers including the ICC, Pro-C and SRC which were manufactured after February 1997 are IMMS software compatible. This means that installers will NOT have to purchase special “Central Control” models of irrigation controllers which significantly reduces the cost of a Hunter IMMS central control system. Also, the retrofit capability supports sites with existing Hunter controllers, allowing those sites to become more easily managed from a central location. This is just one reason of many why the Hunter IMMS system saves time, labor and money.
**PRODUCT FEATURES AND BENEFITS (continued)**

**Hunter Field Controllers Provide the System Programming Features...**

**Simple and reliable irrigation management**

A simple approach to retaining program information is to let each individual controller retain its own information. Each model of Hunter controller including the ICC, the Pro-C and SRC has a programming feature set unique to it. Features such as 4 programs in the ICC, 6-hour run times in the Pro-C or 9 zones in the SRC are utilized by the IMMS™ software when setting scheduling parameters for the irrigation manager. This speeds up the learning curve for the successful operation of the IMMS system.

**Program Memory Resides in the Controller**

**Computer power outages do not affect operation**

Any program downloaded from the IMMS central into a controller is kept within that controller’s memory. This feature eliminates the possibility of losing a program due to power outages or downtime at the main central computer. Also, with the ICC and Pro-C’s non-volatile memory, the program in the controller is not lost or altered due to any power outages at the controller.

**Sensor Input for Maximum Irrigation Control...**

**Up-to-date information will save water**

Sensor based monitoring enhances the ability of the system manager to become a better manager of water resources. Any microswitch type sensor such as Hunter Industries Rain-Clik™, Mini-Clik®, Flow-Clik™, Wind-Clik®, Freeze-Clik® and the all-in-one Mini Weather Station will operate within the IMMS system.

These sensors interface with either the Site Interface or the Controller Interface or both to provide maximum irrigation control.

**IMMS Manages Sensors in One of Three Ways**

1. A report is generated informing the irrigation manager of what happened but no action is taken.
2. The sensor installed on a Controller Interface will provide localized irrigation shutdowns.
3. The sensor installed on a Site Interface can provide global control for the entire site.

**Maximum Control with Minimal Startup Time or Costs...**

**As easy as plug n’ play**

Using a regular computer along with a Central Control Communications Unit, as little as a standard cable or phone line to the Site Interface will get you up and running with communication between the two. Just turn the computer on, install the IMMS software and begin programming as if you were standing in front of a Hunter ICC or Pro-C controller. It’s as easy as plug n’ play.

**Control Irrigation Systems at Multiple Sites...**

**Reduces travel time and labor costs**

Change controller run times, delete start times, shut down zones with broken sprinklers, program event days, reprogram the days schedule at any site. These are just a few of the features which can be quickly implemented from your desk with just a few keystrokes at the computer. Travel time between sites for programming issues are virtually eliminated from the work schedule. With the cost of labor increasing every year, the potential for savings in a single season will offer a fast payback.
Manual Operation of Systems from Central Computer...
A few keystrokes to apply additional water
Adding additional waterings is a simple procedure: with a few keystrokes it’s done. This convenience is a must-have for extra waterings when fertilization is done or during over-seeding of warm season turf. Being able to make adjustments at a central location means local crews do not have to change irrigation programs for a special maintenance event.

Reduce Water Costs...
Increased monitoring equals reduced watering
It’s a proven fact that when irrigation systems are constantly monitored and adjusted there will be a substantial reduction in the amount of water used. Typically a reduction is possible when a system can not be monitored constantly – for example, irrigation and landscape maintenance personnel would rather err on the side of over-irrigating (longer run times) than to return to a job site with large patches of brown turf.

With the Hunter IMMS monitoring a system, it becomes as easy as powering up the computer and making a few keystrokes to adjust the run times according to the local weather conditions, thus reducing water costs.

Forecast Water Use by the Day, Week, Month or Year...
Calculate future water costs for budgeting purposes
Irrigation water costs are becoming a significant factor in city budgets. Managers need to know what the costs will be before they occur. With the forecasting capabilities of the Hunter IMMS, managers are able to make accurate and informed decisions.

Reduce System Monitoring Efforts...
Control all irrigation functions from a central point
An irrigation manager is able to control all of the systems of which he is in charge without the need to travel to each site. Usually, maintaining controller programming is only one of the many tasks for which this individual is responsible. Driving around in a truck to different sites requires effort that could be put to better use in other aspects of the business.

Alarm Warnings When Site Visits May be Necessary...
Accurate remote monitoring
When sensors are installed on site, the IMMS software will post an alarm if changes occur in the normal watering pattern through sensor feedback. The alarm icon informs the irrigation manager of a potential problem at the site.
Cycle and Soak Optimizes Watering Run Times...
Keep runoff to a minimum when using a Hunter ICC irrigation controller

In addition to other programming features, when IMMS™ is used in conjunction with Hunter’s ICC controllers a Cycle and Soak feature can be remotely programmed. Cycle and Soak programming is the preferred way to water slopes, heavy soils or any area that cannot allow a runoff situation. The Cycle and Soak feature works by programming the total amount of run time needed for the zone, then selecting a maximum cycle time and a minimum soak time. The controller software does the rest, breaking up the total run time into a number of cycle times with a soak time countdown between each cycle time. All Cycle and Soak functions may be remotely programmed by IMMS.

Special Calendar Event Day(s) Off...
Turn off specific calendar days for maximum control

Need to make certain that a controller does not water on a specific day or days of the week? When IMMS is installed on an irrigation site, the Non-Water Window feature can alert the operator to conflicts between irrigation schedules and pre-programmed “off days” for special events. For example, an interval program is scheduled to water every third day but Saturdays have been designated as a “mow day,” so no watering can occur. Under the Event Day Off selection, Saturdays can be turned off. This is an ideal feature for sports fields, apartments, schools and parks.

Historical Logs Keep System Operating Data for Later Use...
Stores important information to solve issues

The IMMS control system will store all major system operating data in summarized form for up to 5 years to facilitate any questions that may arise from the operation of the system. This includes information associated with station start and stop times, “high” and “no” flow conditions, etc.
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Simulated “Dry Run” Displays Total Irrigation Run Time for Watering-Window Calculations...
See effects of irrigation scheduling before they take place
In many cities and towns, the irrigation of parks and streetscapes must be completed within a certain period of time – this is called a “watering window.” This is important because it decreases the likelihood of liability issues or calls to City Hall about cars and people getting wet. With the IMMS, verifications of different irrigation schedules can be run to make sure all irrigation is completed without violating a user-designated “Non-Watering Window.” This feature is a convenient tool to help the irrigation manager with irrigation scheduling.

Efficient Irrigation Within Prescribed Watering Windows...
Keeps track of cumulative run time to control operating time
The IMMS software keeps track of the accumulated run times of all stations as they are programmed into a controller. If the total run time exceeds a specified watering window, the software will inform the programmer of the conflict. This ability to inform during programming helps to control irrigation scheduling and provide “what-if” scenarios.

Ability to Retain Pertinent Information by Site...
When special instructions are in order
The notes text box feature allows instructions and other pertinent information about a certain site to be entered and kept readily available for immediate viewing, organized in a handy calendar format.

Flow Sensing with the Flow-Clik IMMS for Liability Reduction...
Provide monitoring 24 hours, 7 days a week
Today, the reality of lawsuits is a real concern to installers and property owners alike. They cannot ignore any hazardous situation that can be easily prevented, including an event such as an irrigation system that has excess flow due to a ruptured mainline pipe or a damaged sprinkler head. The Flow-Clik IMMS is a flow sensing device that monitors flow in the system piping, always checking for “high-flow” condition such as a pipe rupture or sprinkler break. The IMMS software will automatically identify the over-flow condition and initiate flow shutdown, and send an alarm message to the central computer identifying where and when the problem occurred.
PHONE COMMUNICATION TO SITES ACROSS A WIDE GEOGRAPHIC AREA

Standard Phone Line

(Connects to the standard modem in your computer)

SITE 1

SITE INTERFACE (SI)

Communicates between site interface and individual satellites

Any Hunter Controller on the site can be programmed via the Central Control computer (SmartPort® equipped)

HUNTERGCBL Twisted Pair Cable

#18/5 Cable

Weather Sensor(s)

Valves

SITE 2

SITE INTERFACE (SI)

SITE 3

SITE INTERFACE (SI)

SITE 4

SITE INTERFACE (SI)

SITE 5

SITE INTERFACE (SI)

PHONE COMMUNICATION TO SITES ACROSS A WIDE GEOGRAPHIC AREA
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HARDWIRE COMMUNICATION

- PC: Compatible with Windows 2000/XP operating system (supplied by user)
- IMMS SOFTWARE: Easy to use software provides for fast program setup and ongoing management
- CENTRAL COMPUTER COMMUNICATION UNIT: Provides a communication link from the computer to the Site Interface

SITE INTERFACE (SI)
Communicates between PC computer and Controller Interface (CI) (includes one CI to communicate to first controller).

FIELD SATELLITE CONTROLLERS
Any Hunter Controller on the site can be programmed via the Central Control computer (SmartPort® equipped)

HARDWIRE COMMUNICATION

- HUNTER ICC Controller #1
- HUNTER ICC Controller #2
- HUNTER ICC Controller #3
- HUNTER ICC Controller #4
- HUNTER ICC Controller #5

- #185 Cable
- Weather Sensor(s) (optional)
- Flow-Clik (optional)
- Valves

 Optional phone modem for Internet documentation access

SITE #1 - Multiple controllers on one site

CONTROLLER INTERFACE (CI)
Communicates between site interface and individual satellites

HARDWIRE COMMUNICATION

- HUNTER G5BL Twisted Pair Cable
- #185 Cable
- Rain-Clik Sensor (optional)
HUNTER IRRIGATION MANAGEMENT AND MONITORING SYSTEM™ COMPONENTS

Computer (Central Controller)
Utilizes standard IBM-compatible computer with minimum Intel® Pentium® II processor 133 MHz or higher. Microsoft® Windows® 2000 or Windows® XP operating system. At least 32 Mb of RAM (64 Mb recommended), 10 Mb of hard disk space and CD-ROM drive required. VGA monitor with resolution of at least 800 x 600. Built in modem (required for modem controlled systems, optional for hardwire system s where internet technical documentation access is desired). Mouse or other pointing devices. Typically located in an irrigation manager’s office, this unit is the brains of the entire water management operation. In addition to running the IMMS™ software, this computer can be used for other office functions.

IMMS Software (CD)

Product Overview
This easy-to-use graphical software package provides the user many tools to effectively manage multiple site irrigation system from a central location.

Features and Specifications
- From the IMMS central computer, irrigation systems at a single site or multiple sites can be scheduled for water days, run times, start times, cyclical schedules, Cycle and Soak schedules, event days off and watering windows.
- Manual operation of systems from central computer or from field controller units.
- Emergency shutdown of system.
- Cycle and Soak feature promotes irrigation efficiency by allowing all irrigation water to infiltrate the soil without runoff.
- Scheduled operation of non-irrigation components such as lighting systems (at athletic fields or shopping centers), security gates, and water fountains as well as pumps.
- Forecast projected water use by day, week, month or year.
- Hold historical data of all alarms and irrigation start/stop times.
- One year calendar settings for future irrigation occurrences, and Non-Water Windows
- Operates up to 100 separate sites.
- Easy-to-use software provides fast program set-up and ongoing management. Handy icons allow for easy navigation.
- Locations, controllers and stations can be user-assigned actual names and site descriptions for easy reference.
- Built-in calendar program allows for scheduling of maintenance events (mowing, fertilizing, pest control) in conjunction with the irrigation schedule.
- Extensive standardized reporting section allows generation of tables and graphs showing estimated water usage and dollar costs. Data can be viewed for current and historic time periods to ascertain trends.

Central Computer Communication Unit (CCC)*
(*only required in hardwired systems)

Product Overview
Located adjacent to the computer in a hardwire application (non phone-line), it serves as the link between the central computer and the site interface unit(s) in hardwired systems. It is connected directly to the COM port of the computer CPU using the provided serial connection cable.

Features and Specifications
- Serial port (DB-9 female, 6 ft./2 m cable supplied)
- 4-screw terminal for GCBL hardware connection
- Plug-in transformer: 120VAC, 1A max; 230VAC, 0.5A max
- Communications up to 10,000 ft./3 km with Hunter GCBL cable
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**Site Interface (SI)**
(*one required per site*)

**Product Overview**
The site interface unit should be located within 6 ft./2 m of controller on site. It serves as an interface between the Central Computer and additional Controller Interface (CI) units on a given site. The Site Interface unit transfers commands from the computer, sending them out to the Controller Interface(s). The Site Interface (SI) is connected to the central computer via telephone line or directly hardwired through the Central Computer Communication Unit. A typical installation would include one SI coupled to a string of CI’s on a site. SI units also operate the first controller in a string of controllers or at sites which only require the use of one Hunter controller.

**Features and Specifications**
- Operates one Hunter ICC, Pro-C or SRC controller
- Operates up to 99 additional Controller Interfaces
- Interfaces with site sensors (Mini-Clik®, Rain-Clik™, Flow-Clik IMMS, Wind-Clik, Freeze-Clik® or the Mini-Weather Station)
- Unit relays central computer communication to Controller Interface(s)
- Internal transformer: 120V AC, 1A max; 230VAC, 0.5A max

**Mounting**
- Wall mount: locking, weather-proof plastic cabinet

**Connections**
- Via telephone modem over analog dial-tone telephone lines, or
- Via hardwire/direct connection over Hunter GCBL from CCC (10,000 ft./3 km)

**Controller Interface (CI)**

**Product Overview**
At each site where multiple controllers are used to handle irrigation tasks, a controller interface is needed for each additional Satellite Controller. The CI unit(s) are hardwired in-line from the Site Interface and connected to each additional controller in order to establish communication with the Central Computer.

**Features/Specifications**
- Operates with a single Hunter Satellite Controller (ICC, Pro-C or SRC)
- Monitors local controller sensors (Mini-Clik, Rain-Clik, Flow-Clik IMMS, Wind-Clik, Freeze-Clik or the Mini-Weather Station)
- Provides communication with individual controllers from the Site Interface unit
- Internal transformer: 120VAC, 1A max; 230VAC, 0.5A max

**Mounting**
- Wall-mountable, locking, weatherproof cabinet.

**Communications (SI to CI)**
- Hardwire/direct connection: Hunter GCBL cable (to 10,000 ft./3 km)

**Controller Connection**
(CI to Satellite Controller)
- 18/5 UL Underground Feeder Cable (6 ft./2 m)

**Field Satellite Controllers**

**Product Overview**
The controllers used in the IMMS network are the Hunter ICC, Pro-C or SRC controllers in plastic or metal cabinets. These controllers can be wall mounted or can also be pedestal mounted, as with the ICC controller. No costly upgrade to the controller is required to deliver the benefits associated with central compatibility when used with the Hunter Irrigation Management and Monitoring System.
HUNTER IRRIGATION MANAGEMENT AND MONITORING SYSTEM™ COMPONENTS (continued)

ICC Controller

Product Overview
From a top-of-the-line 8-station small-project controller, up to a 48-station commercial workhorse, this is Hunter’s largest, most versatile controller for residential, commercial, sports field, and public works projects. With the simple addition of station modules, one ICC will go from 8 stations to 48 stations in 4-station increments. This controller is absolutely perfect for sports fields, parks, office buildings, shopping centers, cemeteries, schools, banks, large residences, factories, highway planting areas and anywhere else an easy to program, solidly constructed wall mount or pedestal mount irrigation controller is needed. With its modular design, inventory management is easy, while inventory investment is low. With the ICC, there are fewer Stock-Keeping Units (SKUs) and less shelf space requirements. One locking plastic cabinet and one locking metal cabinet controller, plus a combination of the 4-station modules and/or 8-station modules, produces 18 possible controller configurations.

Features/Specifications
• Stores and executes schedule instructions from the central computer
• Communicates with central computer via hardwire or telephone modem via IMMS™ interface
• Modular design for inventory management, easy future expansion, eliminates service hassles
• Non-volatile, 100-year memory holds programs during power outages
• Cycle and Soak capability allows total irrigation run time to be split into useable cycles, minimizing runoff
• Operates up to 48 stations
• Four programs with 8 start times each allow varied irrigation applications in a single controller
• 365-day calendar with leap year intelligence for odd or even day programming
• Self-diagnostic electronic short circuit protection identifies electrical shorts, skips shorted stations and continues watering remaining program
• Available in wall mount and metal or stainless steel pedestal
• Master valve programmable by station
• Programmable event days off to set any day of the month as a non-watering day
• Interval programming with 1-31 day interval
• Programmable delay between stations allows for slow closing valves or well regeneration
• Programmable rain delay enables system to stay off for a specified period with auto-restart
• Global seasonal adjust provides irrigation adjustments from 0-150% in 10% increments
• Sensor override switch allows irrigation when sensor is activated
• Surge protected circuit board with MOV’s
• Remote ready with Hunter remote control products
• Battery-programmable controller allows for remote programming
• AM/PM or 24-hour clock setting
• Multi-language capability

Pro-C Controller

Product Overview
For the end user, for the contractor...there has never been a light commercial controller so remarkably easy to handle as this. Borrowing the innovative concept of modular design from its big brother, the ICC, this latest addition to the Hunter product line-up is destined to become the leading controller in its market segment in the years to come. Starting with a base model of 3 stations, it is possible to
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expand the controller up to 12 stations simply by adding plug-in modules. So, there’s no need to bring along a variety of different-sized controllers to see which one is best for the job. With its ability to customize to the particular size you need, the Pro-C will always be the right choice. Being a modular system, the new Pro-C also makes inventory a breeze for contractors – there are only three different units to stock (indoor cabinets, outdoor cabinets and station modules).

**Features and Specifications**
- Stores and executes schedule instructions from the central computer
- Communicates with central computer via hardware or telephone modem via IMMS interface
- Modular design for inventory management, easy future expansion, eliminates service hassles
- Three programs with 4 start times each allow varied irrigation applications in a single controller
- 365-day calendar with leap year intelligence for odd, odd 31-day or even day programming
- Operates up to 12 stations
- Interval programming with 1-31 day interval
- Non-volatile, 100-year memory holds programs during power outages
- Surge protected circuit board with MOV’s
- Available in outdoor or indoor wall mount
- Master valve programmable by station
- Programmable delay between stations allows for slow closing valves or well regeneration
- Programmable rain delay enables system to stay off for a specified period with auto-restart
- Global seasonal adjust provides irrigation adjustments from 0-150% in 10% increments
- Programmable event days off to set any day of the month as a non-watering day
- Sensor override switch allows irrigation when sensor is activated
- Maintains time of day for up to 4 weeks without a battery
- Self-diagnostic electronic short circuit protection identifies electrical shorts, skips shortsed stations and continues watering remaining program
- Internal junction box provides for easy primary wiring
- Remote ready with Hunter remote control products
- Battery-programmable controller allows for remote programming
- AM/PM or 24-hour clock setting
- Multi-language capability

**SRC Controller**

**Product Overview**
The SRC is an affordable controller for all residential applications. Designed with the needs of the professional contractor in mind, the SRC offers easy installation, simplified dial programming and an impressive range of features typically found in controllers costing twice as much.

**Features and Specifications**
- Stores and executes schedule instructions from the central computer
- Communicates with central computer via hardware or telephone modem via IMMS interface
- Three programs with 4 start times each allow varied irrigation applications in a single controller
- 365-day calendar with leap year intelligence for odd, odd 31-day or even day programming
- Sensor override switch allows irrigation when sensor is activated
- Operates up to 9 stations
- Available in indoor wall mount or outdoor using outdoor cabinet
- Pre-programmed test cycle
- Remote ready with Hunter remote control products
- AM/PM or 24-hour clock setting
- Multi-language capability
SENSORS

Product Overview
Changes in weather conditions (rain, wind, freeze) and in flow rates can be monitored by a variety of sensors that automatically identify conditions that exceed the prescribed maximum. By reporting these variances to the central computer, immediate automatic adjustments can be made that can save substantial amounts of water.

Rain-Clik™

Product Overview
The Rain-Clik acts as a switch to break the circuit to the solenoid valves of the irrigation system the instant it starts to rain. This allows the timer to advance as scheduled, but keeps the valves from activating and allowing water to flow.

The Rain-Clik rain sensor also automatically compensates for the amount of rainfall that occurred before reactivating by allowing the user to adjust and set their own particular “drying out” period.

Connection to the SI will provide global sensing capabilities for a site while attachment to a CI will give the Rain-Clik a local (near to the controller) sensing capacity.

Quick Response™...
Interrupts irrigation after only a few minutes of rain

Modular Mounting Options...
Choices depending on the job site needs

Set a Maximum Dry-Out Time Period...
Adjust the irrigation restart to account for different types of soil

Maintenance-Free Patented Sensing Mechanism...
No callbacks, set it and forget it

Wireless Rain-Clik™

Product Overview
Many times just the hassle of running wires from the irrigation controller out to a rain sensing device has kept contractors from installing a rain sensor. Some of the reasons may be:

• Carrying a ladder on the truck just to install rain sensors is not a normal practice for installers.
• Hiding the sensor wires that connect to the controller.

Installing a rain sensor has never been an easy job. Normally, it is a labor intensive and time consuming practice, especially when the sensor wires must be installed on a multi-story building.

The Wireless Rain-Clik unit eliminates all installation issues dealing with wire runs – because there aren’t any wires.

The Wireless Rain-Clik operates in the same manner as the standard Rain-Clik by acting as a switch to break the circuit to the solenoid valves of the irrigation system the instant it starts to rain. The Wireless Rain-Clik sensor also automatically compensates for the amount of rainfall that occurred before reactivating by allowing the user to adjust and set their own particular “drying out” period.

Connection to the SI will provide global sensing capabilities for a site while attachment to a CI will give the Wireless Rain-Clik a local (near to the controller) sensing capacity.

Wireless Installs Easily,
No Hassles with Wires...
Simple to add on to a new or an existing installation

Install up to 300’ from the Transmitting Unit...
Typical wired system limitations vanish

Quick Response...
Interrupts irrigation after only a few minutes of rain

Modular Mounting Options...
Choices depending on the job site needs

Set a Maximum Dry-Out Time Period...
Adjust the irrigation restart to account for different types of soil

Maintenance-Free Patented Sensing Mechanism...
No callbacks, set it and forget it
Irrigation Management and Monitoring System

**Mini-Clik®**

*Product Overview*

The Mini-Clik rain sensor is Hunter’s classic device that automatically compensates for the amount of rainfall that has occurred before reactivating. Fabric disks absorb water and then expand proportionally to the amount of rain that fell. As the moisture-laden disks expand, they activate a switch that interrupts the electrical circuit from the controller to the valves. Once the Mini-Clik has dried sufficiently, the switch closes again to allow for normal operation.

The time it takes the Mini-Clik to reset for normal sprinkler operation after the rain has stopped is determined by weather conditions such as sunlight, wind, humidity, etc. These conditions will determine how fast the discs dry out. The irrigated turf also experiences the same conditions. So when the turf needs more water, the Mini-Clik is already reset to allow the sprinkler system to go at the next scheduled cycle.

Connection to the SI will provide global sensing capabilities for a site while attachment to a CI will give the Mini-Clik a local (near to the controller) sensing capacity.

**Easily Installs on Any Automatic Irrigation System...**

Simple to add on to an existing or new installation

**Maintenance-Free Patented Sensing Mechanism...**

No callbacks, set it and forget it

**Adjusts to Actuate at Various Rainfall Quantities...**

Versatile and accurate from ¹⁄₈" to 1" of precipitation

**Constructed of High Impact Thermoplastic...**

Built to last

**Wind-Clik®**

*Product Overview*

The Wind-Clik acts as a switch to break the circuit to the solenoid valves of the irrigation system during windy conditions. This allows the timer to advance as scheduled, but stops the valves from activating (not allowing water to flow). Once the wind conditions drop below the reset point, the switch closes again to allow for normal operation. The Wind-Clik can be used in conjunction with other sensors to enhance the overall automation of any irrigation system.

Connection to the SI will provide global sensing capabilities for a site while attachment to a CI will give the Wind-Clik a local (near to the controller) sensing capacity.

**Reduces Liability Hazards of Wet Walkways and Roadways...**

Wind-blown water will no longer be a safety concern

**Cut Down on Overspray When Used With Fountains...**

Keep surrounding areas safe and dry

**Adjustable Shutoff for Wind Speeds Between 12 and 35 mph...**

Effectively control irrigation system operation during windy conditions

**Automatic Reset of System at Wind Speeds from 8 to 24 mph...**

Select the setting that is best for your area

**Freeze-Clik®**

*Product Overview*

In most installations, the Freeze-Clik sensor acts as a switch to break the circuit to the solenoid valves of the irrigation system near freezing. This allows the timer to advance as scheduled, but stops the valves from activating, thus not allowing water to flow. Once the low temperature climbs above 37°F (3°C), the switch closes again to allow for normal operation.

Connection to the SI will provide global sensing capabilities for a site, while attachment to a CI will give the Freeze-Clik a local (near to the controller) sensing capacity.
Irrigation Management and Monitoring System

Reduces Liability Hazards of Iced Walkways and Roadways...
“Wayward” water that could freeze over is never a safety issue
Can be Used in Conjunction with Other Sensors...
Enhances the overall automation of irrigation systems
Accurate Shutoff at 37°F, Before Water Turns to Ice...
Reduces liability hazards for walkways and roadways by preventing icing.

Mini-Weather Station

Product Overview
A must for commercial and municipal sites, but certainly a great investment for any site that requires more than one sensor. The Mini-Weather Station – which includes the Mini-Clik®, Freeze-Clik®, and Wind-Clik® in one convenient package – will save water and money, paying for itself within a short time. A tremendous benefit of this station is the ease in which it is installed, with a variety of mounting options and just two wires attaching to the Site Interface (SI), Controller Interface (CI) or the Hunter controller’s sensor terminal connections.

Connection to the SI will provide global sensing capabilities for a site while attachment to a CI will give the Mini-Weather Station a local (near to the controller) sensing capacity.

Two Different Models to Accommodate Your Weather Sensing Needs (Available with or without a Freeze Sensor)... 

MWS – Weather Station combines wind and rain sensors for use on 24 volt applications.
MWS-FR – Weather Station incorporates rain, wind and freeze sensors for use on 24 volt applications.

Flow-Clik IMMS

Product Overview
Any Hunter IMMS™ centrally managed irrigation system has the ability to have its low monitored and automatically shut down during a high low situation by installing the low cost Flow-Clik IMMS low monitor. Preventing over-low provides the benefits of water conservation, erosion prevention and reductions in both liability and repair costs.

The Flow-Clik IMMS acts as a switch to signal the SI or CI to terminate irrigation, at either a single controller or for an entire site. After a user set time limit has elapsed, the Flow-Clik IMMS can allow system low to take place allowing the irrigation system to continue watering.

When an over-low condition does occur, the IMMS system activates an alarm on the central computer screen informing the irrigation manager that there is a problem with the system at the site.

Low Cost...
Reliable flow protection for any system budget
Sophisticated Water Conservation...
Automatic shutoff device
Liability Reduction...
Minimize the possibility of litigation from unforeseen system breaks
Erosion Prevention...
Stop major landscape damage before it starts
**Irrigation Management and Monitoring System**

*Reduced Costs for Rupture Related Repairs...*
Unanticipated budget allocations kept to a minimum

*Installs Easily in New or Existing Systems...*
Simple to add on to a new or existing installation

*Programmable Start-up Delay...*
Increased start-up velocities won’t affect readings

*Programmable Automatic System Reset...*
System can reset itself without manual intervention, or can remain shut down until the cause is repaired

*Customized Calibration for Precise System Control...*
“Learning Mode” customizes alarm settings for each individual system – automatically
Following are two typical scenarios illustrating the successful use of IMMS™ to fulfill two different customers’ needs.

One is a large, single-site management system, and the other depicts a typical wide-area network. Each is followed by a sample bill of materials.

**Single-Site Use**

**150-Unit Condominium Complex – New Installation**

A new irrigation system is being installed in a large-scale condominium complex. The owners of the property are very concerned with the quality of care the landscape will receive and the cost of water both now and in the future. They want an irrigation system that will be easy to manage and monitor to allow more proactive scheduling to reduce water costs. With that in mind, the property management company will be hiring an on-site maintenance crew who will maintain the site, with one person in charge of all irrigation management.

The owners of the property specified the requirements of a central irrigation management and monitoring system as follows:

1. The irrigation management and monitoring System must be simple to start up and operate.
2. System start-up costs shall be minimal.
3. Manage all on-site irrigation controllers from a central location in sales office.
4. Allow adjustment of controller programming quickly and efficiently from a central location and/or at the field controllers.
5. Forecast water use and cost for budgeting purposes.
6. Shut down system quickly in the event of excessive flow due to a pipe break or sprinkler head vandalism.
7. Ability to program certain days off for mowing and maintenance.
8. System shall provide for excessive rain or wind and freezing temperature shutdown.
9. System to provide for creating watering window scenarios.
10. Irrigation programs shall not be affected by power outages.
11. No irrigation water run-off will be allowed.
Irrigation Management and Monitoring System to Include the Following:

- Central Computer System
- 160 Irrigation Zones
- Sensors to shut down system due to inclement weather and/or high flow conditions

**Conclusion (Single-Site Use)**

In the condominium single site example shown above, the Hunter IMMS system component costs are less than half of the nearest competitor. Also, because the IMMS software works with the same programming functions as a Hunter controller interface, it is not only less expensive to install, but it is more user-friendly to operate resulting in a very short learning curve which translates into less training costs and time.

**HARDWIRE CONNECTIONS: BLOCK DIAGRAM**

**HUNTER IMMS SYSTEM BILL OF MATERIALS (SINGLE-SITE USE)**

<table>
<thead>
<tr>
<th>QTY</th>
<th>COMPONENT</th>
<th>UNIT LIST ($)</th>
<th>TOTAL LIST ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IMMS Software</td>
<td>1,985</td>
<td>1,985</td>
</tr>
<tr>
<td>1</td>
<td>Central Computer Communication Unit</td>
<td>425</td>
<td>425</td>
</tr>
<tr>
<td>1</td>
<td>Site Interface w/Hardware</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>6</td>
<td>Controller Interface</td>
<td>350</td>
<td>2,100</td>
</tr>
<tr>
<td>3,000</td>
<td>GCBL Twisted Pair Comm. #18</td>
<td>59/ft</td>
<td>1,770</td>
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<tr>
<td>7</td>
<td>ICC-M Controller (24 Station)</td>
<td>685</td>
<td>4,795</td>
</tr>
<tr>
<td>7</td>
<td>Flow-Clik-IMMS</td>
<td>229</td>
<td>1,603</td>
</tr>
<tr>
<td>1</td>
<td>Mini-Weather Station</td>
<td>196</td>
<td>196</td>
</tr>
<tr>
<td>600</td>
<td>18/4 Sensor Cable</td>
<td>.12/ft</td>
<td>72</td>
</tr>
</tbody>
</table>

**TOTAL = $13,846**

**Hardwire Connections:**

(A) Computer (Windows® 2000 or XP, Home or Pro edition) connected via (B) serial port (only) to (C) CCC (6 ft./2 m, max), connected via (D) GCBL (10,000 ft./3 km, max) to (E) SI, connected via (F) 18/5 (6 ft./2 m, max) to (G) Hunter Controller, and via (H) more GCBL to subsequent (I) CI (10,000 ft./3 km, max) and associated controller, etc., up to 100 max controllers.

**Note:** No forks, tees, splices, or loops are required or permitted in communications path.
Multi-Site Use

8 Bank Locations – Retrofit Installation
A small city bank with eight bank branches is considering retrofitting their existing irrigation system to a centralized irrigation management and monitoring system to reduce labor hours and water costs. The district office has asked for a system that will do the following:

1. The irrigation management and monitoring system must be simple to install and operate.
2. System start-up costs shall be minimal.
3. Manage all irrigation controllers from a central location in the main office.
4. Easily expandable to accommodate new sites.
5. Easy controller upgrades as bank sites expand.
6. Allow adjustment of controller programming quickly and efficiently from a central location and/or at the field controllers.
7. Shut down system quickly in the event of excessive flow due to a pipe break or sprinkler head vandalism.
8. Forecast water use and cost for budgeting purposes.
9. Allow remote control operation of on-site controllers.
10. Ability to program certain days off for maintenance functions.
11. System shall provide for excessive rain or wind shutdown.
12. System shall calculate irrigation within water windows for “dry run” scenarios.
13. No irrigation programs lost during power outages.
14. No irrigation water run-off allowed.

Irrigation Management and Monitoring System to Include the Following:
- Central Computer System
- 256 Irrigation Zones
- Sensors to shut down each individual site’s system due to rainy weather and/or high flow conditions
- Each site includes one controller operating up to 32 zones

Conclusion (Multi-Site Use)
Hunter IMMS™ is 50% to 70% less expensive than “traditional” central systems and far less complex. The Hunter IMMS system delivers effective central control at a fraction of the cost of typical “wide-area” central control systems.
In the bank locations multi-site example, the Hunter IMMS system is the best choice. Besides being 50% to 70% less expensive, installing the IMMS system will give the bank common controllers between all sites which will permit maintenance personnel to familiarize themselves with only one type of controller. Learning how one controller operates will reduce controller confusion dealing with programming errors or other related troubleshooting issues. When installing the IMMS system, each ICC 32-station controller is attached to a modem Site Interface (SI-MOD). The ICC 32 controller with SI lists for $1,530 (an additional ICC 32 combined with a Controller Interface (CI) would list for only $1,180).

**MODEM CONNECTIONS: BLOCK DIAGRAM**

**Dial-up Modem Connections:**
(A) Computer (Windows® 2000 or XP, Home or Pro edition) with internal modem, connected with (B) RJ-11 cable (6 ft./2 m, max) to (C) analog phone system jack, connected via (D) public telephone network (no limit), from (E) dedicated analog line wall jack, via (F) RJ-11 cable (6 ft./2 m, max) to (G) SI-MOD, connected via (H) 18/5 (6 ft./2 m, max) to (I) Hunter Controller and via (J) more GCBL to subsequent (K) CI (10,000 ft./3 km, max) and associated controller, etc., up to 100 max controllers per site.

*Notes: Modem systems may include up to 100 different sites, each with up to 100 controllers. The first controller at each site must be connected to an SI-MOD as shown. IMMS dials up each site (via D, above), one at a time. No forks, tees, splices, or loops are required or permitted in communications path on each site. Modem systems may coexist with ONE hardwired site – the computer may use the serial port to communicate with a local site via the CCC (Hardwired connections, at top of page), and use its internal modem to communicate with up to 99 additional dial-up modem sites (as shown in the Dial-up Modem diagram).
TECHNICAL INFORMATION

Control Capabilities
- Manage irrigation systems at up to 100 different sites from a single centralized computer.
- Each site managed can have up to 100 controllers networked into the site interface. The IMMS™ system can network with Hunter Pro-C, ICC, and SRC controllers.
- Manage all controllers programming data from the central computer.
- Manual functions: activate, deactivate manual or automatic watering from the central computer.
- Initiate rain-off or rain-delay features by controller by site or system-wide.
- Manage “Non-Water Windows” up to 365 days in advance globally, by site, or by controller. This allows an irrigation manager to set specific days for maintenance, events, etc.
- Easily programs cycle and soak watering for maximum water efficiency.

Monitoring Capabilities
Monitor weather sensors including rain, wind and freeze sensors for real-time responses to weather conditions. Sensor data can be implemented locally with individual controllers or shared globally across the entire controller network.

Control system flow conditions through optional Flow-Clik™ flow sensors. This will shut specific zones down during over-flow conditions (line breaks, broken sprinklers), saving water and reducing liability concerns.

Specifications:
The irrigation control software shall be Windows®-based and shall be compatible with the Windows 2000 and Windows XP (Home or Pro edition) operating systems.

The software shall be organized with both pull down menus and colored icons in a tool bar for ease of programming and shall allow irrigation systems at a single site or at multiple sites to be accessed. The software shall have the ability to schedule water days, run times, start times, cyclical schedules, Cycle and Soak schedules, and event days off at each of the sites that the central computer controls. It shall also allow for manual operation of all connected systems and for emergency shutdown of any or all sites.

The irrigation control software shall have the ability to operate up to 100 distinct and separate sites (through site interface units) from a single computer, and shall be capable of managing up to 100 controllers at each site. It shall permit two-way communications between the central computer and individual site interfaces via hardwire cable and/or standard telephone modems within the same system.

The irrigation control software shall be capable of developing reports in both table and graphical formats providing information on estimated water use, run times, and water cost units. The irrigation control software shall also display past, as well as predicted future irrigation events in calendar form. The calendar shall also feature reminder notes for specific days or patterns of days to aid in irrigation management. The calendar shall also display any alarms as reported from the field.

The irrigation control software shall download irrigation schedules to the field controllers through the site interface(s), and shall not be required to be running on the computer for the normal scheduled irrigation to take place. The software shall download schedules on operator-initiated command, or automatically at scheduled intervals ranging from once per hour to once per day.
Irrigation Management and Monitoring System

The irrigation control software shall offer user preferences for metric or English units of measurement, and shall automatically adopt the host computer’s time/date format and regional settings.

The irrigation control software shall be capable of monitoring contact closure sensors, including rain, wind and freeze sensors, as well as the Flow-Clik IMMS. Sensor data shall be acted on, either locally at individual controllers or shared globally across all controllers on a site if the sensors are connected to the site interface. The site interface shall further be able to initiate irrigation shutdowns of the entire site or a selected list of field controllers for each sensor, or alarm input. The site and controller interfaces shall be capable of reporting the time and date of all alarm events.

The software shall interface with Hunter ICC, Pro-C, and SRC controllers through its connection with a communication unit at the central computer location and through interface units at each site and controller location. Connection to ICC, Pro-C, and SRC controllers shall be through the built-in SmartPort® connections. Connection via SmartPort shall not inhibit the controller’s ability to accept wireless remote controls, specifically Hunter Industries Model SRR and ICR remote controls, which shall be connected and fully functional through the respective site and controller interfaces.

The irrigation control software shall be the Hunter Model IMMS-CD.

The irrigation control software shall have the ability to operate one local hardwired site through direct hardwire connection via the Central Computer Communications unit (CCC), which shall connect to the computer via a standard serial port within a distance of 6 ft./2 m. The CCC shall include its own UL-listed, CE-approved external transformer power supply and shall feature diagnostic power, transmit, and receive indicator lights.

The Central Computer Communications unit shall be Hunter Industries Model IMMS-CCC.

The CCC shall be connected to a hardwire Site Interface (SI) via GCBL cable or equal. The cable shall be 4-conductor, two twisted-pair 18AWG/1 mm dia., foil-shielded with bare ground wire, to a maximum single distance of 10,000 ft./3000 m. The wire pairs shall be colored red-black and orange-blue for connection to the color-coded terminal strip.

The hardwire communications cable shall be Hunter Industries Model GCBL.

The Site Interface shall be enclosed in a weatherproof UL listed, CE-approved wall-mounted cabinet, and shall be provided with 110 or 220VAC primary power to its internal 24 VAC transformer. The SI shall connect to and operate the first controller in the system via 18/5 (or 1 mm five-conductor) color-coded sprinkler wire within a maximum distance of 6 ft./2 m. The wires shall be colored red-white-blue-green-yellow for connection to the color-coded terminal strip.
TECHNICAL INFORMATION (continued)

The hardwired Site Interface shall be a Hunter Industries Model IMMS-SI-HW.

Each additional controller on the site shall be connected to the system via a Controller Interface (CI), which shall be sequentially connected downstream from the SI with an additional length of GCBL cable or equivalent within an additional 10,000 ft./3000 m. Each CI shall connect to a single controller via 18/5 (or 1 mm five-conductor) color-coded sprinkler wire within a maximum distance of 6 ft./2 m. The wires shall be colored red-white-blue-green-yellow for connection to the color-coded terminal strip. Each CI Interface shall be enclosed in a weatherproof UL listed, CE-approved approved wall-mounted cabinet, and shall be provided with 110 or 220VAC primary power to its internal 24 VAC transformer.

The Controller Interfaces shall be Hunter Industries Model IMMS-CI-HW.

The irrigation software shall also be able to control up to 100 remote sites with up to 100 controllers per site, via standard dial-up telephone modem. Telephone modem systems shall not require the CCC for dial-up communications, although the CCC may still be required if the central computer will operate a local hardwired site, in addition to one or more remote dial-up sites.

Communications with remote sites shall require a standard dial-up computer modem from the central computer and a dial-up telephone line with standard RJ-11 connector within 6 ft./2 m of the computer.

Each remote site shall have one Modem Site Interface connected to a dedicated analog telephone line, with not more that 6 ft./2 m RJ-11 telephone cable. The Modem Site Interface shall be of identical construction to the hardwired SI as described above, with the addition of an internal modem. The Modem Site Interface shall connect to and operate the first controller at the remote site as described above, in addition to managing the telephone interface to the site.

The Modem Site Interface shall be Hunter Industries Model IMMS-SI-MOD.

Each remote site may have up to 99 additional controllers, each connected via GCBL cable sequentially from the Modem Site Interface, as described above.

The remote Controller Interface(s) shall be Hunter Industries Model IMMS-CI-HW.

Communications to each Site Interface and Controller Interface shall be two-way, regardless of whether they are hardwired or dial-up. The central software shall download irrigation schedules and commands to the controllers via the interfaces, and the interfaces shall report communications and sensor status back to the central software.

Each Site and Controller Interface shall be uniquely addressed and the address shall be displayed with large, illuminated LED displays. Each Site and Controller Interface shall feature diagnostic power, transmit, and receive LED indicators.
Each Site and Controller Interface shall accept up to 3 different Clik-family sensors for status and alarm purposes. Each sensor input shall have its own individual alarm response configuration as determined by the operator, including notify only, shutdown controller, and (in the Site Interface) shutdown all controllers on the site.

Each Site and Controller Interface shall feature color-coded, labeled terminal strips for simple installation and service.

Each Site and Controller Interface shall have a copper ground lug which shall be connected to an approved earth ground. The recommended earth ground shall have an impedance of 10 Ohms or less. For additional information on earth grounding of irrigation equipment consult American Society of Irrigation Consultants (ASIC) Guideline 100-2002 available at www.asic.org.

**Dimensions**

**IMMS-SI (HW or MOD)**
- Height: 16" (406 cm)
- Width: 11.5" (292 cm)
- Depth: 4.25" (108 cm)
- Shipping Weight: 18.7 lbs (8.48 kgs)

**IMMS-CI**
- Height: 8.9" (226 cm)
- Width: 9.9" (251 cm)
- Depth: 4.3" (109 cm)
- Shipping Weight: 5.66 lbs (2.57 kgs)

**IMMS-CCC**
*(Excluding external plug-in transformer)*
- Height: 1.5" (38 cm)
- Width: 4.25" (108 cm)
- Depth: 6" (152 cm)
- Shipping Weight: 1.96 lbs (0.89 kgs)

### SPECIFICATION GUIDE

<table>
<thead>
<tr>
<th>MODEL</th>
<th>COMPONENT</th>
<th>COMMUNICATIONS</th>
<th>POWER OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMS</td>
<td>SI = Site Interface</td>
<td>HW = Hardwire</td>
<td>A = Australian, 240VAC</td>
</tr>
<tr>
<td></td>
<td>CI = Controller Interface</td>
<td>MOD = Modern</td>
<td>E = Euro/International, 230VAC</td>
</tr>
<tr>
<td></td>
<td>CCC = Central Computer Communication Unit</td>
<td>HW = Hardwire</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CD = Software</td>
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</table>

**EXAMPLE** IMMS - SI - HW
FREQUENTLY ASKED QUESTIONS

Software

Can IMMS™ work in a Windows® Millenium/98/95/3.1 operating system?
No. IMMS requires Windows 2000, Windows NT 4.0, or Windows XP (Home or Professional Editions).

Wiring and Installation

Is it really necessary to provide extra earth grounding for IMMS interfaces?
Yes. The ground lug provided in the Site Interface and the Controller Interface should be connected with solid copper wire to a ground rod, or plate, buried in the earth.

Communications wire is a source for lightning surges to enter our components. Since IMMS components are more expensive than standalone controllers, and since all the interfaces and controllers at a given site are connected to one another by GCBL, proper earth grounding is more important than ever.

An excellent resource for more information on grounding is available from the American Society of Irrigation Consultants. You can read and download the illustrated ASIC Grounding Guideline 100-2002 for irrigation components at: http://www.asic.org/asic_grounding_guideline.html.

Are we required to use GCBL wire to connect IMMS interfaces?
The specified cable is GCBL (Paige Electric P-7171D), or GCBLA armored cable, or wire which exactly meets that specification. If the customer uses Hunter model GCBL or GCBLA, the entire system is guaranteed, when installed according to our simple instructions.

Some important points about GCBL cable:
• The color-coding of the wiring is vital to simple and trouble-free installation.
• The twist of the individual pairs of wires is required, and very important.
• The foil shield is required, and must be grounded with the bare drain wire.

Remember that communications wire is a new source for lightning surge to enter our components, and the foil and grounding are there to prevent this.

• GCBLA has a steel wrapping to protect against rodents. The steel wrapping replaces the foil in regular GCBL and must be grounded.

Can we splice GCBL wire?
You can never splice GCBL to create a “T”, for the purpose of running the wire in two different directions. The CCC, or a modem SI, transmit a certain signal at a specified level. If you split the signal, each branch will only have half as much signal and there will not be enough to fulfill our distance requirements. This is analogous to placing a T in an irrigation pipe to run twice as many sprinklers, when the flow from the source is sufficient for only the first set of sprinklers.

You can splice two ends of GCBL cable together to continue a run or repair a break, but such splices should be kept to an absolute minimum. You can assume that the GCBL wire will be accidentally cut after the initial installation, by future maintenance and construction operations. Obviously, you will have to splice these cuts to repair the system. Therefore, avoid splices in the initial installation so that future repairs will have a minimum impact on the signal. Every time you splice the communications cable, you induce noise and loss into the IMMS signals. The cumulative effect of long runs and multiple splices can cause problems which are difficult to solve.

Splices should be made with waterproof connectors. Underground splices should be placed in a valve box (splices are always a weak point, and odds are that you will need to visit the splice again). Be sure to splice the drain wires back together, as well as the color-coded conductors.
Can we split the GCBL communications leg in two at an interface, and wire out in two directions?
No, for the same reason that we don’t wire “T’s” directly into the cable. GCBL is run continuously from one interface to the next, in a straight line. There are no “splits”, T’s, Y’s, forks, or loops.

Can we use existing Maxi wire if it is already in the ground?
No. IMMS communications use all four wires for our powerful and reliable communications. Maxi cable has only two wires, and will not work for IMMS.

Can we use PE-39 or “icky-pick” wire for IMMS connections?
Probably, with some limitations. However:
• It is not a Hunter-authorized substitution. We cannot guarantee a PE39 installation because: 1) we did not supply the wire, and 2) PE-39 has some slightly different electrical characteristics. Some consequences are difficult to predict. GCBL is guaranteed. *
• It is solid core wire, instead of stranded like GCBL, and therefore more difficult to work with. It is also usually 6-conductor instead of 4, so you will have two wasted wires. DO NOT USE the other two wires for any other signal or voltage.
• It will not have the correct color-code to match the labels on the interface terminals.
• It is gel-filled, which is not harmful, but not necessary.
* Resistance for PE39 is 8 Ohms/1000 ft., versus GCBL resistance of 6.4 Ohms/1000 ft., so max distance with PE39 would be 8000 ft./2400 m, versus 10,000 ft./3000 m with GCBL.

Can I still use ICR or SRR remote controls, if IMMS is connected to a controller?
Yes, absolutely. Since IMMS customers will be among our most advanced customers, they are very likely to want wireless remotes as well.

The SmartPort® for the ICR/SRR receiver must be connected directly to the Site or Controller interface, not to the controller directly.

Note: The address for the ICR/SRR remotes is completely separate from the address for IMMS Site and Controller. Many customers move a single receiver from controller to controller as needed. If the customer will leave an ICR/SRR-R receiver permanently installed at each controller location, you can make the remote addresses match the interface addresses, to reduce confusion.

How do I wire Flow-Clik IMMS?
Flow-Clik IMMS requires four-conductor wire, all the way from the sensor to the interface (SI or CI). With four-conductor 18AWG/1 mm wire, you can run at least 1000 ft./300 m from the Flow-Clik IMMS sensor to the IMMS interface. Shielded wire such as GCBL is not required, but will work perfectly.

Other Communications Questions
Can I have both Hardwire and Telephone Modem communications in the same system?
Yes. One Site can be Hardwired directly from the computer (via the CCC) to local controllers, while the other sites can be dialed by the computer’s internal modem.

You may only have one Hardwired site per computer system, however. All other sites must be via telephone modem.

Can IMMS be connected to a weather station?
No. However, the human operator can monitor the weather from any source, and use IMMS to operate the Season Adjust feature of ICC and Pro-C to compensate for weather conditions. The more controllers you have in an IMMS system, the more valuable this feature becomes (since you don’t have to change individual run times, program by program).
IMMS™ allows the operator to Season Adjust the entire system, or all the controllers at specific sites, or individual controllers. You can right-click on the system, the site, or individual controllers in the software, and apply a Seasonal Adjustment at any level. When the weather returns to “normal” conditions, you can return to 100% and the programs will all revert to the original run times.

**Does IMMS really require a dedicated telephone line (when used as a dial-up modem system)?**
Yes. The Site Interface will answer after the first ring, and this is not programmable. If any other devices, such as a regular telephone or a fax machine, were connected to the same line, they would never get a chance to answer, and the customer would be unhappy with us.

**Will IMMS telephone modem systems work in a digital telephone system (or PBX)?**
No, probably not. IMMS wants a dedicated analog line with a dial tone. True digital telephone systems are not compatible with IMMS. A rough rule of thumb is that if you can bring your telephone from home to the proposed location, plug it in, and immediately get a dial tone, IMMS will work; if you can’t, it won’t.

Another rule of thumb is that analog phone lines use a small square plastic plug called an RJ-11 jack. If you look closely at an RJ-11 jack, you can see that it has 4 wires. If the customer’s telephone jacks are larger, with 6 or 8 wires, it is probably digital and it probably will not work. Note that some 4 wire RJ-11 systems are digital, and this is not a guarantee. The presence of a dial tone is the sure thing.

**Can IMMS be programmed to dial an extension?**
Yes, in an analog phone system. At the Site Hardware tab, after you enter the telephone number to be dialed, you can type a comma and a space, and then the extension number. The comma will create a pause, so that the phone system can answer and listen for the extension number. You can type more than one comma to create a longer pause if necessary.

**Is IMMS Internet (or TCP/IP) enabled?**
No. IMMS does not use the Internet for communications of any kind. The telephone modem option in IMMS is more like two fax machines communicating: one machine (the computer) dials another one (the modem-SI) directly, at a dedicated telephone number, and they have a two-way conversation.

**Can IMMS work in a private computer network?**
Yes, up to a point. IMMS works on the Windows 2000 or XP operating systems, which are network-friendly. This means that the computer running IMMS can also communicate with other computers or servers in a private network, without losing its ability to communicate with IMMS sites.

**Can IMMS communicate over existing network wiring to the Site or Controller interfaces?**
No. The wiring spec will be wrong, for one reason, and IMMS will not be equipped to share with other signals on the same lines, for another.

**Will IMMS work over my cable/DSL modem?**
No.

**Can IMMS work over a fiber optic line?**
IMMS is not designed for fiber optic applications.

**What other types of flow sensors can I use with IMMS?**
Flow-Clik IMMS is the ONLY flow sensor you can use with IMMS. The flow-learning intelligence and the “clik” output are functions of the sensor itself, not the Site or Controller interface. Even if an installation has a pre-existing flow sensor, it will not interface to IMMS and you will need to add a Flow-Clik IMMS to use this feature.