

Irrigation Management

Water management from a single central location

Challenge

Because Every Drop Counts

As our population grows, but our sources of water do not, simple math demonstrates that there will be less of the wet stuff to go around.

Never before has water conservation seemed so important. With that in mind, Hunter has assembled a family of products that makes it possible to create a more efficient system.

IMMS 2.0 is one of these "Proven Water Saver" products and can provide the ideal way to oversee all your irrigation needs and ensure that your system's effectiveness is maximized while water consumption is minimized.

Solution

The IMMS software shall provide full two-way communications with the field controllers. The software shall completely emulate the functions of the controllers, and shall provide access to all controller functions, programming, reporting, and logging. The software shall permit organizing clusters of controllers into Sites for convenience and lowest cost communications, with up to 100 controllers per site sharing the point of connection to the central computer.

The software shall not be required to communicate irrigation events constantly, and shall download those events to the controllers so that they may run full irrigation schedules off-line from the central computer. The system shall not require "site centrals" or other hardware other than the controller itself for full featured operation of all pre-programmed instructions.

The software shall retrieve automatically or on demand by the operator the current and accumulated flow of each controller equipped with a flow sensor, and shall display total water usage in gallons or liters for day, week, month, and year, versus the last comparable elapsed period (i.e., month to date vs. last month, etc.).

The software shall feature a separate station database for each controller including all settings for flow, cycle and soak, pump/master valve associations, and programmable Simultaneous Station Groups.

The software shall provide detailed summaries of water usage by controller, site, and system, with export functions for common spreadsheet formats. The software shall calculate actual start and end times, in real time as edits are made, displaying the effects of all start, run, stack/overlap, and other changes as made by the operator. The software shall also provide a color-coded visual indicator in Gant chart form of all program durations.

The software shall display in real time the status of all communications as they are sent and received, and shall indicate whether they were fully or partially successful. Software shall included transmit and receive indicator lights for all communications functions.

The central control system shall incorporate automatic irrigation adjustment based on dedicated evapo-transpiration sensors connected to designated controllers. The central control system will maximize water-savings and minimize run-off by using site-specific ET data to calculate individual run times for irrigation zones at station level.

The central control system shall retrieve ET and rainfall data from the ET sensor(s) every day, and apply the ET factors to a system-wide, zone-level plant/soil/water database. The calculated run times shall be downloaded to all designated controllers. The designated controllers shall

operate the new ET-based schedules within their existing feature sets.

The central software shall include a system-wide database to station level for each zone of irrigation under ET control. The database shall include, at a minimum, the following characteristics for each irrigated zone or station:

- Plant Type
- Plant Variety (including Crop Coefficient)
- Root Depth
- Maturity factor
- Soil type (including both infiltration rate and water holding capacity).
- Slope factor
- Sun exposure
- Sprinkler Type
- Precipitation Rate (adjustable for efficiency and spacing)

The software shall include common plant and sprinkler types. The software must also include the ability to create custom plant types, which may then be added to a list, allowing regional species to be characterized and then selected by zone.

The control system shall base calculations on the industry-standard Modified Penman-Monteith equation for landscape plantings, and shall use generally accepted industry standards for replenishment of the soil reservoir. The System shall also allow percentage-of-ET adjustment to station level, to control plant stress and maximize water savings.

The central control software must include compensation for naturally-occurring rainfall, and apply an adjustable percentage of the rain to the soil reservoir. The control system shall adjust the automatic irrigation to only replenish the required balance, if any, after the rainfall has been applied.

Results

HUNTER - IMMS Irrigation Management and Monitoring System™ brings affordable central computerized control of standard irrigation controllers within the reach of any water manager's budget, and usually pays for itself in the first year of operation. Now, this innovative central system adds a whole new dimension to your command and control, allowing access to the two-way communication and flow monitoring power of the new HUNTER ACC, Advanced Commercial Controller. Experience simplified communications, real time flow metering, station level diagnostics, and industrial strength irrigating power...all through the industry's most affordable control software. IMMS allows water savings of more than 50% regarding an usual irrigation system.

Target Markets

Projects that can benefit from Hunter's IMMS™

- 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

Luis Carvalho

GUSTAVO CUDELL, LDA

Rua Eng. Ferreira Dias, 954

4149 - 008

Porto
Portugal

+351 22 615 80 00

[luis.carvalho@cudell.pt](mailto:luis.carvalho@ cudell.pt)
Website: www.cudell.pt