

Glossary

Access Code

A user assigned 3 digit code used to restrict unauthorized usage (reprogramming/control) of the controller.

Alarm

An irrigation related "event" reported by the controller which requires operator notification and/or action.

Anemometer

Wind speed measuring device (Measuring units in MPH). at water limit The specified monthly water total limit based on a given irrigation program. When the limit is exceeded, the watering program will either stop watering or display a warning.

Auto Limits

Feature that automatically establishes upper and lower limits for flow and current.

Base Screen

Base screen is the starting point or reference screen/position from which all user interaction occurs. Additionally, when the controller displays the base screen information, the controller functions in the "automatic mode" meaning that any valid program(s) will automatically start at its programmed start time(s).

(The manual functions [see chapter 8] disable the automatic mode.) The controller has a built in time-out function (2 hour time-out) which returns the controller to the base screen (automatic mode) if the user inadvertently leaves the controller in some other screen.

Central Control Mode

Central Control Mode indicates that two way communications have been established between the evolution controller and the Central Control PC. This means that programming data can be downloaded and uploaded, and that the Central Control PC can control all functions remotely. Central Control Mode can be entered in two ways:

1. If a controller has been setup as a submaster and a valid address has been entered.
2. If the controller is physically connected as a satellite and has established two-way communications with its submaster.

Central User

One who operates a controller irrigation system using a Central Control computer.

Condemned Station

A station that shut down due to operational defects or exceeded limits. The condemned station will not operate again until the defects are corrected and warnings are cleared.

Continuous Cycle

A watering program that will run continuously within a user defined water window. After the first cycle, a specified soak time is initiated and the program starts again.

Controller

A microprocessor based solid state programmable apparatus that automatically controls and manages irrigation valves, pumps, flow sensors and other peripheral devices.

Controller Address

Identifies each controller/satellite within a multiple controller system. The address number is alternately displayed on the base screen with the program number.

Controller Initialization

A one time initialization process that sets up the controller to operate under global default settings.

Controller Keys

The controller panel touch keys used to move through all menus for programming and data entry.

Current Limits

The maximum amount of current that a station is allowed to draw. If the specified maximum current is exceeded, the station will shut down and the program advances to the next station. Also refers to the minimum amount of current that a station should be drawing. If a station output does not draw any current, it is likely that the circuit is open.

Cycle Mode

Option that selects either start times or continuous cycle.

Day Keypad

Front panel keys representing days of the week used to enter water day programming information.

Default Values

The parameter values established prior to any programming.

Delay Time

The specified time period prior to taking flow measurements (range from 1 to 6 minutes) to allow for water line stabilization.

Device

Defined in an irrigation system configuration as a Master Valve, Pump or Flow Sensor.

Download

When operating a controller in Central Control Mode, the term download indicates when one or more programs are sent from the Central Control Computer to the controller (satellite). The controller program is overwritten.

Downloading

The process of transferring files or programs from a Central Control Computer to a satellite controller or a group of controllers.

Down Arrow

A menu positioning key used to move to the next screen/function.

Enter Key

Front panel key used to indicate that previously entered numeric keypad data is complete /correct. When ENTER is hit, the controller accepts and processes the numeric data.

EvapoTranspiration (ET)

The name reflects two ways water moves from an irrigated field to the atmosphere: Evaporation, which is the movement of water from the wet soil to the air, and Transpiration which is the movement of water from the plant to the air.

EV-CAB-COM

A particular type of communication cable used in controller hardwire configurations.

Field Wiring

The wiring setup among controllers, Master Valves, Pumps, sensors, and valve solenoids.

FlowMax

Multiple controller system configuration comprised of one submaster and one or more satellites. This unique feature allows controllers to utilize a single point of connection to share devices (i.e. Flow Sensors, Master Valves, Pumps, etc.) and intelligently manage system operation.

Flow Rate Delay

Refers to a delay time between 1 and 6 minutes to allow water line pressures to stabilize prior to performing a flow limit check.

Flow Sensor

A rotating paddle device placed in a main water line used to measure water flow. The device must be calibrated using K and Offset values to compensate for pipe size.

Function (F1-F6) keys

Front panel keys F1-F6 are used for transition through different controller functions. Their function is context sensitive which means that their definition changes depending on the current menu level.

Global Settings

Settings which are programmed into all controllers of an irrigation system.

Host Computer

The Central Control Computer that controls the irrigation system.

Icon

A graphic symbol or representation of a function, such as the pointing finger icon indicating the flow of menu display screens.

Initialization

Upon the very first time controller power-up, various data must be initialized (e.g. date/time, usage of master valve, etc.) before the user can enter the base screen. Once this data has been correctly entered, subsequent power-ups will bypass the initialization prompts and start with the base screen display. (In the event that the user wishes to change the initialization data, the user can do so from the setup screens.)

Injector Station

A dedicated station output most commonly used for applying fertilizer.

Irrigation Program

See Program.

ISC

Individual Station Control (ISC) is an alternative programming mode that treats an individual station like a program. The user enters water days, start times, and runtimes for each station programmed as an ISC.

K Value

A numeric value required for the proper setup/ calibration of flow sensors.

Limit Checking

The controller validates user defined upper and lower limits for flow, and current readings. Violations are reported in the warning/report buffer.

Main Flow

The maximum flow limit for a complete irrigation system.

Main Menu

The starting menu that provides the major options for all subsequent programming and setups.

Manual Control

Manual control provides maintenance personnel the ability to turn on/off individual stations and programs. The controller can also be placed in rain shutdown for either a programmable or indefinite amount of time.

Manual Station

Feature allowing any one station to be turned on manually.

Manual Test Mode

Test feature that turns on all stations one at a time for a specified time period for purposes of testing and analysis.

Master Valve Output

A dedicated controller output which is activated by the controller each time a program start time occurs (typical operation). The evolution controller however, allows a number of different setup options associated with master valve operations. This output is typically connected to a Pump or another valve which acts as the master enable for all irrigation.

Master Valve Delay Turn On

The amount of delay time in seconds from the time a Program starts until the master valve turns on.

Menu

Any LCD display which has F1-F6 menu select option keys to move to other LCD displays.

Moisture Sensor

A water sensing device placed in the root zone of a watering area which monitors the amount of water application. If watering exceeds specified limits, the station will turn off.

Moisture Sensor Trip Point

The specified watering level that determines watering activity.

When the sensor detects moisture above the trip point, watering will stop.

Non-volatile Memory

Refers to computer memory that will not be erased regardless of power failures or related problems.

Normally Closed Valve

Master Valves are normally closed and must be energized to deliver water flow.

Normally Open Valve

Master valve that is normally open and must be energized to turn off.

No Water Window

A user specified period of time (stop water flow) where irrigation is not allowed. The watering window is specified on a daily basis by establishing a daily start and end time. The controller automatically disregards any program start times which occur in the watering window.

Numeric Keypad

Front panel keys used to enter all numeric data.

Off-line

Relates to any controller that loses hardwire communication within a system.

Offset Value

A numeric value required for the proper setup/calibration of flow sensors.

Omit By Date

An Evolution DX2 feature which allows the user to specify dates which irrigation will be disallowed (any programmed start times which occur on these dates will be skipped).

On-line

Relates to any controller that is properly communicating within the irrigation system.

Over Current

Condition at any station that detects an excessive amount of electrical current.

Overlap Protection

Feature which insures that no two programs will run during the same time. (Each program must be set up to have its overlap protection on.)

Percent Run Time

Provides the ability to modify the run times of all stations in a given program. A station run time programmed at 10 minutes would run for 5 minutes if the percentage run time is set to 50%.

Power Glitch

A disturbance in the AC power line.

Program

A program provides a way of grouping stations with similar irrigation characteristics so that the start/stop of water can be controlled automatically. In order to establish a valid program the user must specify:

1. The station numbers associated with the program (stations).
2. The time(s) during the day when the program is executed (start times).
3. The days of the week when the program is to be executed (water days).
4. The amount of time each station operates (station run time).

Program On/Off Key

A dedicated front panel key which allows the user to immediately turn a program either on or off.

Quit Key

A front panel key which brings the user back to the base screen display.

Rain Gauge

Device used to measure rainfall. Units are measured in pulses with each pulse representing 1/100 inch.

Rain Shutdown

A feature which stops all irrigation in the event of rain. Several options are associated with rain shutdown including:

1. Rain shutdown on/off (indefinite period)
2. Programmable rain shutdown (user specifies the amount of time which the controller is in rain shutdown)
3. Rain shutdown enable/disable on a per program basis

RAM

Random Access Memory

Run Time

The amount of "on" time either in minutes/ seconds or hours/ minutes (setup option) for a station.

Satellite

A term used for any controller which is connected to a Central Control System or a submaster.

Satellite Address

Identifies each satellite within a multiple controller system. The address number is alternately displayed on the base screen with the program number.

Screen Display

The information which appears in the LCD display of the front panel.

Sensor

A device used to detect and measure flow, moisture, wind or ET (evapotranspiration).

Setup

The setup function provides the mechanism for tailoring the evolution controller operation to a specific irrigation application. Numerous setup options allow flexibility for master valve usage, program execution, station limit checking, controller operations and programming.

Short Circuit

Electrical term indicating an excessive amount of current being drawn on a given station or Master Valve/Pump output.

Skip By Day

A water day cycle option which allows the user to program water days by defining the number of days which should be skipped before the next watering occurs.

Solenoid

An electrical coil used to turn valves on or off which is energized by the station or Master Valve/Pump outputs.

Start Time

The time of day which a program (or ISC) starts its execution.

Station Delay Time

The inter station delay time (in seconds) which the controller waits before starting the next successive station of a program.

Station and Station Number

The LCD displayed station number has a one for one correspondence with the evolution output board station number at the terminal block (field wire connection). Each station may actually connect to one or more valve solenoids depending on the installation as long as the maximum current for a station and is not exceeded. Stations can be assigned to programs, or can be programmed individually as ISCs.

Submaster

A submaster is a term used for an Evolution DX2 controller

which is being operated in conjunction with an RMIS Central Control System. A submaster is a controller which has specialized communications capability. It can be set up for direct two-way communications with the Central Control PC either via radio, telephone, or wire. Additionally, the submaster has additional responsibility for communications to any satellites which may be physically connected to it.

Time Format

Option that allows time to be indicated in hours and minutes or minutes and seconds. An additional option selects 24 hour or 12 hour AM/PM format.

Touch Key

The keys on the DX2 front panel producing the distinctive beep which verifies key press.

Transient Protection

Built-in feature to prevent damage to electronic components against AC power disturbances and lightning.

Trip Point

Moisture sensors must have a definition of "wet" versus "dry" soil. This transition point is known as the moisture sensor trip point. Each moisture sensor must have its trip point setup on an individual basis. The trip point is established using a relative number between 0 and 200. Higher numbers indicate more moisture.

Up Arrow

A menu positioning key used to move to the previous screen/function.

Unscheduled Flow

Defined as any water flow that is not programmed or under the control of the controller.

User Interface

Refers to the inter-action that takes place between the user and the controller. The menu option selection features provide an easy-to-use method of programming thereby making the system "user friendly".

Upload

When operating a controller in Central Control Mode, the term upload indicates when one or more programs are sent from the controller (satellite) to the Central Control PC.

Valve Solenoid

See solenoid.

Warning/report

A controller detected warning or report condition. The user is notified of these conditions by the appearance of |F2|=WARNING while in the base screen. Depressing |F2| will then allow the user to view a list of warning/report conditions.

Water Days

User defined (programmed) days which irrigation shall occur on.

Water Window

A user specified period of time where irrigation is allowed. The watering window is specified on a daily basis by establishing a daily start and end time.