Irrigation Control: A Solution Guide

While every aspect of a commercial irrigation design, specification or installation project is important, implementing the best possible control solution has a tremendous impact on a system's efficiency and performance for years to come.

With all the control options available today, how do you know which is the best one for your project? It's not as simple as just choosing the most sophisticated or expensive controller or central control. Rather, it's about identifying your project's unique needs, and then finding the control solution within your budget that best meets those needs.

ESP-LXME

ET Manager™ Cartridge

ESP-LXD

STANDALONE CONTROLLERS

These controllers, intended to manage a single commercial site, run their current watering schedule until an operator manually changes or adjusts it. Standalone controllers can be divided into two primary groups based upon the irrigation system's design: traditionally wired controllers like Rain Bird's ESP-LXME and ESP-LXMEF and two-wire, decoder-based controllers like Rain Bird's ESP-LXD.

These controllers typically offer program and global monthly program percentage adjustments based on historical water requirements. However, many standalone controllers can also be upgraded to include weather-based smart control, flow sensing and flow management. Rain Bird's ET Manager™ Upgrade Kit, for example, can transform ESP-LXME, ESP-LXMEF and ESP-LXD Controllers to weather-based control by adjusting programming based upon hourly weather information and evapotranspiration (ET). Optional rain, freeze and soil moisture sensors can also be added to these controllers to stop watering when a pre-defined condition is met. Adding optional flow sensors also allows these controllers to automatically react to pipe breaks, stuck valves and other flow problems.

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CENTRAL CONTROL

Central control systems are on the more sophisticated end of the control spectrum. Unlike standalone controllers, central control systems allow users to program, monitor, adjust and manually operate controllers remotely from one central computer, eliminating the need to travel to the controller itself.

Some central control products like Rain Bird's Maxicom²® and IQ™ v2.0 systems can manage multiple irrigation sites. Others, like Rain Bird's SiteControl, are designed to manage one large, contiguous site. Some systems are intended for use with traditionally wired satellite controllers, others are for use with two-wire, decoder-based systems and some can handle both types of satellite controllers.

Central control systems often include features like flow sensing, soil moisture sensing, flow management and automatic weather-based scheduling adjustments. The functionality of these systems can range from basic remote irrigation management to interactive mapping, water usage reporting, multiple communications options, password-protected operation and even the ability to manage lighting, fountains and security systems.

IQ™ v2.0

FIND YOUR BEST IRRIGATION CONTROL SOLUTION

The chart on the next two pages breaks down Rain Bird's commercial control solutions by their features. To find the control solution that's right for your project, explore the options and features listed in the far left column. Identify those features that are "must-haves" and the ones that would be nice to have, but aren't entirely necessary.

From there, you can narrow your options down to the control solution that includes both your must-have features and some (or all) of the features you'd like to have.

As always, you can find more information about commercial controllers and central control systems, as well as the names of your local Rain Bird distributors, on our website, **www.rainbird.com**. Additional help is also just a phone call away at **1-800-RAIN BIRD.**

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FEATURES	STANDALONE CONTROLLERS		CENTRAL CONTROL SYSTEMS		
System Name	**ESP-LXME & ESP-LXMEF**	**ESP-LXD**	**IQ™ v2.0**	**SiteControl**	**Maxicom²®**
System Type	**Single site, traditionally wired standalone controllers**	**Single site, decoder-based standalone controller**	**Modular multi-site central control system**	**Modular single site central control system**	**Multi-satellite central control system**
Traditionally wired or two-wire decoder	Traditionally wired	Two-wire decoder	Works with both	Works with both	Traditionally wired
Typical applications	Small to large commercial sites that are unlikely to experience future expansion and need fast, easy installation with low controller hardware costs	Larger commercial sites, projects being developed in multiple phases over time and sites that require fast and efficient troubleshooting	Multi-site management with modular features. Ideal solution for water managers, schools, parks, corporate campuses and transportation departments	Single site management with modular features. Ideal for large resorts, cemeteries, shopping centers, theme parks and sports stadiums	Multi-site commercial or industrial irrigation applications. Ideal for municipalities, school districts, homeowner associations and park and recreation departments
Number of sites/system	1	1	999	1	200+
Local and/or remote site control	Local	Local	Local and remote	Local	Local and remote
Upgradeable to central control	Yes, with IQ-NCC Communications Cartridge	Yes, with IQ-NCC Communications Cartridge	N/A	N/A	N/A
Maximum number of simultaneous stations per site/system	5	8	5 per ESP-LXME 8 per ESP-LXD	3,584 per site	112 per CCU
Number of ET (weather) sources	1 with optional ET Manager™ Upgrade Kit	1 with optional ET Manager™ Upgrade Kit	100	4	16
Program adjustments by ET	Yes with optional ET Manager™ Upgrade Kit	Yes with optional ET Manager™ Upgrade Kit	Yes with optional Advanced ET Software Feature Pack	Yes with optional Automatic ET Software Module	Yes
Program adjustments by percentage	Yes	Yes	Yes	Yes	Yes
Programming by volume/gallons	No	No	No	No	Yes
Number of programs	4	4	4 per satellite	100 total per system	999 per CCU
Flow management capabilities	Yes	Yes	Yes	Yes	Yes
Flow monitoring/recording capabilities	ESP-LXME: Optional / ESP-LXMEF: Standard	Yes	Yes	Yes	Yes
High-flow shutdown	ESP-LXME: Optional / ESP-LXMEF: Standard	Yes	Mainline and laterals	Mainline only	Mainline and laterals
Low- or zero-flow shutdown	ESP-LXME: Optional / ESP-LXMEF: Standard	Yes	Mainline and laterals	No	Mainline and laterals
Alarms/warnings	Yes	Yes	Yes	Yes	Yes
Sensor input and manual bypass	Yes	Yes	Yes	Yes	Yes
Number of weather sensor inputs	1	4	One per ESP-LXME Four per ESP-LXD	Up to 200 sensor inputs per system	Up to 56 per CCU
Number of flow sensor inputs	1	5	One per ESP-LXMEF Five per ESP-LXD	Up to 200 sensor inputs per system	Up to 6 (two wire) or 20 (Link) per CCU
Software/password log-on protection	No	No	Yes, with Advanced Programming Software Feature Pack	N/A	Yes
Remote control capabilities	Yes, LIMR remote	Yes, LIMR Remote	Yes, LIMR Remote	Yes, Freedom System	Yes, Freedom System
Cycle+Soak™	Yes	Yes	Yes	Yes	Yes

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System Name	**ESP-LXME & ESP-LXMEF**	**ESP-LXD**	**IQ™ v2.0**	**SiteControl**	**Maxicom²®**
System Type	**Single site, traditionally wired standalone controllers**	**Single site, decoder-based standalone controller**	**Modular multi-site central control system**	**Modular single site central control system**	**Multi-satellite central control system**
Water window by program/schedule	Yes	Yes	Yes	Yes	Yes
Computer included with software	N/A	N/A	No	Yes	Yes
Computer programming	N/A	N/A	Yes	Yes	Yes
24/7 system monitoring	N/A	N/A	Yes, by the server satellite	Yes, by the computer	Yes, by the CCU
24/7 communication & feedback	N/A	N/A	Server to client satellite	Yes, computer to satellites and decoders	CCU to satellite
Remote site telephone, cellular, radio, Ethernet, Wi-Fi communication	N/A	N/A	All	No	All
Automatic remote site communication	N/A	N/A	Yes, with optional Advanced Communication Software Feature Pack	No	Yes
Satellite controllers or decoders	N/A	N/A	ESP-LXME or ESP-LXD Satellites	ESP-SAT Satellites or FD-Series Decoders	ESP-SAT or ESP-SITE Satellites
Modular station capacity	Yes, 8 to 48 stations in 4-station increments	Yes, 50 to 200 stations in 75-station increments	ESP-LXME: 8-48 / ESP-LXD: 50-200	No	No
Number of site/system interfaces	N/A	N/A	N/A – No interfaces required	8	>200
Number of satellites/system	N/A	N/A	16,000+	896	>5,600
Number of satellites/site interface	N/A	N/A	Up to 150 satellites per IQNet	Up to 112 per TWI	Up to 28 per CCU
Number of satellite stations/site	N/A	N/A	ESP-LXME: Up to 7,200 per IQNet / ESP-LXD: Up to 30,000 per IQNet	Up to 21,504 per system	Up to 672 per CCU
Number of decoder addresses per site	N/A	Up to 200 per controller	Up to 30,000 per IQNet	Up to 4,000	N/A
Spreadsheet style interface	N/A	N/A	Yes	Yes	Yes
Interactive map interface	N/A	N/A	No	Yes	No
GPS, CAD, SHP, BMP Import	N/A	N/A	N/A	Yes	BMP, PDF, JPEG
Valve control: stations or decoders	N/A	N/A	Both	Both	Satellite stations only
Estimated/actual water use report	N/A	N/A	Yes	Yes	Yes
Event recording (station operation)	N/A	N/A	Yes	Yes	Yes
Projected operation (dry/run) capability	N/A	N/A	Yes	Yes	Yes
Supported by Global Services Plan	N/A	Yes	Yes	Yes	Yes
Can also manage lighting and security systems	Yes	Yes	Yes	Yes	Yes