

2023 IRRIGATION CONTROLLERS SPECIFICATION CHARTS

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DEMYSTIFYING smart controllers

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For any smart devices, make sure the strength of the Wi-Fi signal is capable of reaching and communicating effectively. Look out for obstructions in the area that can weaken the overall signal. Photo: Orbit

Learn how to make internet-connected devices work for both you and your clients.

Smart irrigation controllers are key to finding new ways to improve efficiency in water use while also improving results for clients. As water restrictions increase across the country, a smart irrigation controller can make the difference between a staggering utilities bill and a healthy landscape.

But as technology advances, the options can feel complicated for both homeowners and contractors alike. Finding the right smart controller to fit the situation can seem like a challenge but these tips from product managers and industry experts can help clear the air.

BE SMART ABOUT CONTROLLERS

Today's smart controllers are adding advanced connectivity options, according to Sergio Ramos, product marketing manager, irrigation and lighting software at The Toro Company, Bloomington, Minnesota. He says the ability to not have to be physically present to adjust irrigation settings can really add up in reduced time spent driving to client properties and checking systems.

"The obvious feature is convenience and time savings," Ramos says. "The ability to control and manage irrigation systems using a mobile device or website means that you can get more done or receive critical system information without the need to be physically present at the site or in the office."

But if clients are antsy about the prospect of completely upgrading a system or spending the money on a technology change they don't fully understand, it's important to remember that a smart controller doesn't have to be a full commitment to get results, Ramos says.

"Smart control is not an all-or-nothing proposition," he says. If budget or timing is a factor, some manufacturers have standard controllers that can be upgraded with smart capabilities when the need arises. "This allows customers the flexibility to add features or wireless control at any time."

Many smart controllers offer the user the ability to simply not use the connected aspect of the product and use the tactile dial or physical interface, so the flexibility to level up to a smart controller is one that can come with time. While the controller won't provide the enhanced efficiencies that the client could expect from a connected system without those abilities, it can be helpful to have the option while still providing basic services.

Contractors should look for controllers that have the obvious features but also consider some more basic features that are essential for a well-functioning, efficient system, says Joseph Tsai, founder and CEO at Aeon Matrix, Cupertino, California. "Controllers are often designed with cost in mind, which may result in smaller sizes with fewer features, such as surge protection," Tsai says. "To ensure the safety and quality of a controller, it is important to check



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– Will Upton, Rachio

for certifications like UL. It's also important to have on-device buttons just in case you need to run your zones when the internet is down."

INSTALLATION CONSIDERATIONS

When it comes to installing smart controllers, the difference between an unconnected controller and one without an internet connection isn't too much of a divide. The key factor is the strength of connection at the location where the controller itself is installed, whether the smart controller is connected via Wi-Fi or cellular service.

When building a Wi-Fi network, remember that the signal is sent out in a similar style to televisions or radios from a single source called the Wireless Access Point. Most devices available to contractors will transmit at 5Ghz, which allows for a higher transmission of data.

Devices that send at 5Ghz have a maximum reach of about 200 feet. Similar to how Wi-Fi signal weakens inside a home the farther away a phone is from the source, that reach of 200 feet degrades significantly over the distance. Also similar to that home setup, the more physical objects between the source and the intended receiver, the faster that signal will break down.

Will Upton, director of pro at Rachio, Denver, suggests doing a simple test to ensure the necessary coverage is there to operate the controller.

"Before you start the process, one of the biggest things is to go to where the original timer is or where you're going to put the timer and check to make sure that you have about two bars of Wi-Fi," Upton says. "Usually, if you have about two bar signals and you can see that you're logged into it the network, then you should have plenty of bandwidth to run any smart controller."

Just as with any irrigation system installation, a map of any Wi-Fi sources and repeaters installed on the property will go a long way toward making maintenance or future upgrades run smoothly. Installers need to make sure this information along with any network access information is stored securely, as it contains clients' private information.

Upton adds that in some instances, the client might feel more comfortable with the installer using the client's phone to set up the system so the installer does not have to gain access to the client's network credentials.

Beyond testing the site's connective-friendliness, another consideration that end users should keep in mind is security. Make sure the client is aware that the servicing team needs to be notified anytime there are changes in the network's access if the customer is supplying the Wi-Fi network.

Upton says that it's essential for the installer to make sure that the controller is properly connected to the end users' network to ensure ease of use and give the users confidence to operate the controller via their smartphones. He says this is one of the big benefits of smart controllers: People know how to use an app but might be intimidated by the traditional tactile setups of normal controllers.

"That contractor, being a pro, should be able to get that unit online for that homeowner," says Upton. "That's one of the reasons why they're there. Once it's online people are more able to use an app and trust an app much more."

Properly installed and functioning, the capabilities of smart controllers can make a difference in a company's business strength and in terms of helping conserve resources, Upton says.

"I don't care what manufacturer it is, it if you adopt it and you learn it, it drives efficiencies and drives money into the bottom line, and it increases your routing and scheduling, decreases footsteps, decreases everything and then puts data stamps on when you were there as a contractor," he says. "People don't have to be home. It's kind of a game-changer." 🌞

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Photo: Rain Bird

SMARTPHONE-FRIENDLY IRRIGATION CONTROLLERS

FOR RESIDENTIAL/LIGHT COMMERCIAL APPLICATIONS

Editor's note: Information presented in these charts was provided by manufacturers. Please contact the manufacturer directly for more details.

Manufacturer	Model name(s)	EPA WaterSense certified	Maximum stations	Weather data source	Rain data source	Rain delay	
Aeon Matrix	Yardian Pro Smart Irrigation Controller	✓	12	Aeris Weather, PWS Weather	Aeris Weather, PWS Weather and on-site rain sensor	user conf.	
BlueSpray	BlueSpray		64	NOAA	NOAA	auto.	
Hunter	HC, Pro-HC, HPC-FP, Pro-C Hydrowise, HCC	✓	54	Weather Underground and The Weather Channel; local airport weather stations, personal weather stations and virtual weather station options available	Weather Underground and The Weather Channel forecasts, weather station data and on-site rain shutoff sensor	user conf.	
HydroPoint	WeatherTRAK LC+, Weather-TRAK ET Pro3, WeatherTRAK OptiFlow XR, Baseline AG 1000, Baseline BaseStation 1000, Baseline BaseStation 3200	✓	100	data collected from 45,000+ government-regulated weather stations across North America	current local weather and forecast from weather stations	✓	
Hydro-Rain	HRC 400 WiFi, HRC 410, HRC 480, HSC, CMS	✓	63	WeatherSense uses Aeris Weather (commercial weather stations), PWS Weather and others	WeatherSense and on-site sensors, or when connected to a hub	user conf.	
Irritrol	Climate Logic proprietary plug in for Irritrol Kwik Dial, KD2, Total Control and MC-E Controllers	✓ (with Climate Logic)	12	on-site sensor	rain sensor, no rainfall measurement	user conf.	
Jain/ET Water	SmartBox, SmartWorks and Hermit Crab 2	✓	48	multiple streaming weather data sources	multiple streaming weather data sources	auto.	
K-Rain	Pro EX 2.0, Pro LC Wi-Fi		28	Aeris Weather via local weather stations	Aeris Weather and rain sensor	user def. up to 14-days	
Orbit	B-hyve, B-hyve Indoor, B-hyve XR	✓	16	WeatherSense uses Aeris Weather (commercial weather stations), PWS Weather and others	WeatherSense and on-site sensors	user conf.	
Rachio	Rachio Irrigation Controller	✓	16	NOAA, PWS Weather	NOAA, PWS Weather	user def.	
Rain Bird	LNK2 WiFi Module works with ESP-TM2, ESP-ME3, ESP-LXME2, and ESP-LXIVM	✓	240 (when installed with the ESP-LXIVM)	World Weather Online	World Weather Online	auto. or user config.	
Smart Rain	ComPro3	✓	48	NOAA/IBM New	NOAA/IBM New	auto.	
Spruce Irrigation	Spruce Controller WiFi	✓	16	WeatherKit and optional soil moisture sensors	WeatherKit and optional soil moisture sensors	user conf.	
Toro	TMC and Evolution Series Controllers	✓ (with Climate Logic)	24	on-site sensor and Toro Precision Soil Sensor with Evolution controller	on-site rain sensor, no measurement of rainfall	user def.	
Weathermatic	SL and PL Series with SLW15 weather station	✓	48	on-site sensor	on-site rain sensor, no measurement of rainfall	user def.	

PWS = personal weather stations

Subscription fee for weather data	Automatic scheduling interval capable	Guest access (contractor)	Home automation	Connectivity	Other product information	Sensor capabilities	Run time input	Watering restrictions	Predictive scheduling (rain, freeze)	Zone customization	Cycle and soak (custom or calculated)	Operation without internet connection
	✓	✓	✓	Wi-Fi, RJ45 port for any routers	real-time notifications, prediction of smart watering frequency and duration, automatic local water restriction rules applied on schedules, Level VI power efficiency full-range power adapter, enhanced Wi-Fi antenna for wider coverage, on-device instant control buttons with auto valve scan capability, dedicated master zone and 24VAC output	rain, flow	✓	✓	✓	✓	✓	✓
		✓	✓	Wi-Fi	run time in min/sec, can turn on multiple valves simultaneously	rain, freeze, flow	✓	✓	✓		✓	
✓ (if more than one airport station is to be subscribed)	✓	✓	✓	Wi-Fi	automatic weather adjustments customizable by zone, contractor portal for multisite management, real-time alerts and notifications, built-in milliamp sensor, event logs and reports	rain, freeze, soil moisture, flow	✓	✓	✓		✓	✓
	✓	✓	✓	LTE	remote management through web and mobile app, alerts sent to email/text, advanced flow management features	rain, flow (with optional key)	✓	✓	✓	✓	✓	✓
	✓	✓	✓	Wi-Fi (2.4 GHz), Bluetooth, cellular, RF	built-in irrigation audit, drought settings, program scheduling (grow-in), portal for multisite management, event logs, built-in milliamp sensor, real time alerts, over the air updates, hub for other devices	rain, freeze, flow, soil moisture	✓	✓	✓	✓	✓	✓
		✓		RF plus	SMRT logic allows auxiliary wireless control up to 250 wireless relays	Climate Logic (rain, freeze)	✓	✓			✓	✓
✓	✓	✓		cell	subscription-based product; standalone or add-on to various models of Hunter, Irritrol, Toro, Superior, Weathermatic, Rain Bird and Rain Master controllers	flow, rain	✓	✓	✓	✓	✓	✓
	✓	✓		Wi-Fi	optional long-range antenna for controller, Wi-Fi Hub connects to controller through radio frequency increasing possible distance between router and controller, advanced seasonal adjust allows run automatic run time by the month, landscape lighting program, looping feature	rain, freeze, flow	✓	✓		✓		✓
	✓	✓	✓	Bluetooth, Wi-Fi (2.4 and 5 GHz) or with hub	built-in irrigation audit, drought settings, program scheduling (grow-in), real time alerts, over the air updates, hybrid programming at device or on app	rain, freeze	✓	✓	✓	✓	✓	✓
	✓	✓	✓	Wi-Fi	current and historic weather data used, real-time notifications	rain and soil, flow with Rachio 3	✓	✓	✓	✓	✓	✓
		✓	✓	Wi-Fi		rain, freeze, soil, flow	✓	✓	✓		✓	✓
✓	✓	✓		Wi-Fi, cell		rain, freeze, soil moisture, flow, ET	✓	✓	✓	✓	✓	✓
	✓		✓	Wi-Fi	combines real-time moisture sensor data and weather predictions	rain, flow, Spruce soil moisture sensors	✓	✓	✓	✓	✓	✓
	✓	✓		RF, Wi-Fi plus	grow-in schedule able to control fountains, gates, landscape lighting via a wireless relay	rain, freeze, ET, soil moisture sensor	✓	✓		✓	✓	✓
✓		✓	✓	RF, cell, Wi-Fi	SmartLine Air Card, no Wi-Fi or router required	rain, freeze, weather sensor, flow	✓	✓		✓	✓	✓

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