rainmachine™

the forecast sprinkler

Mini 8 - User Manual

Package Contents 3
Wiring Diagram 4
Hardware Installation 5
First Time Setup 6

Operation 7
Creating first program 7
Zones 9
Dashboard 10

How it works 11
Weather Data 12
Snooze 12
Freeze Protect 12
Hot Days 12
Sensitivity 13
Field Capacity 13

Specifications 14
Features 14
Environmental 14
Mechanical 14
Electrical 14
Certification 14
Warranty 14

LEGAL 15

Package Contents

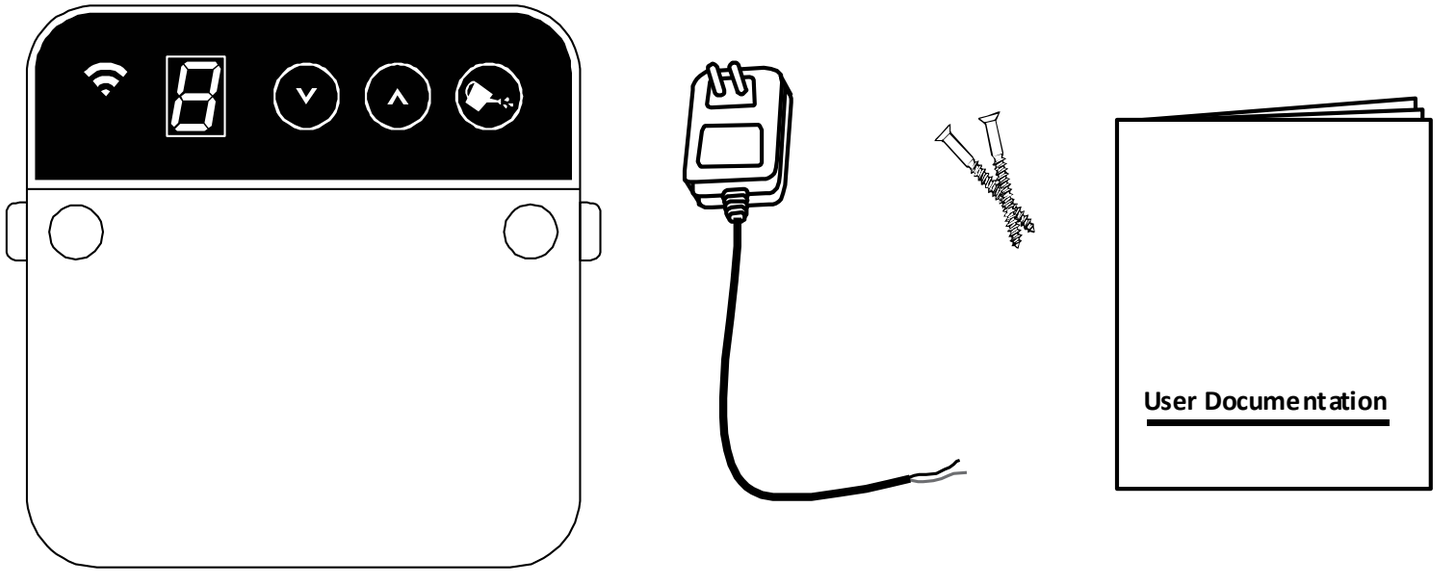
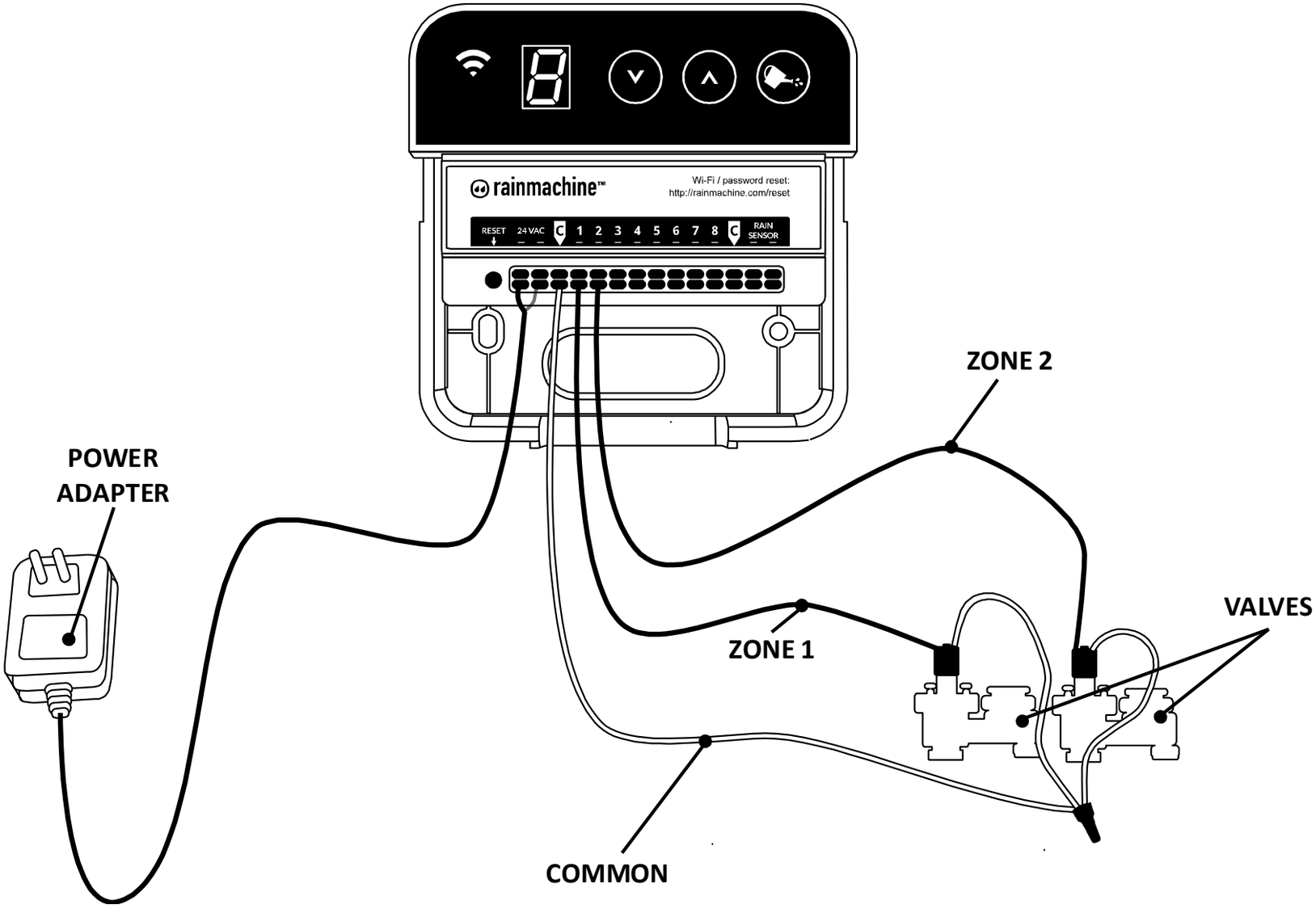


Figure 1, package contents

- RainMachine Mini 8 device (front view)
- 24VAC power adapter (cable 1.5m length)
- 2 drywall screws
- User documentation

Wiring Diagram



Hardware Installation

1. Fastening unit

- Place the Quick Installation Guide printed card on the wall.
- Mark and drill though the holes labeled “DRILL HERE”.
- Using the provided 2 Drywall screws, fasten the unit to the wall.

2. Electrical

- Insert your valve wires by pressing the orange terminals push buttons.
- You can use any or both of the “C” as common.

3. Power Up

- Connect the power leads to the terminals marked “24VAC”.
- Plug transform into AC wall socket.
- System will boot for the first time and will enter in the initial setup mode and the digit display will show letter “A”.

First Time Setup

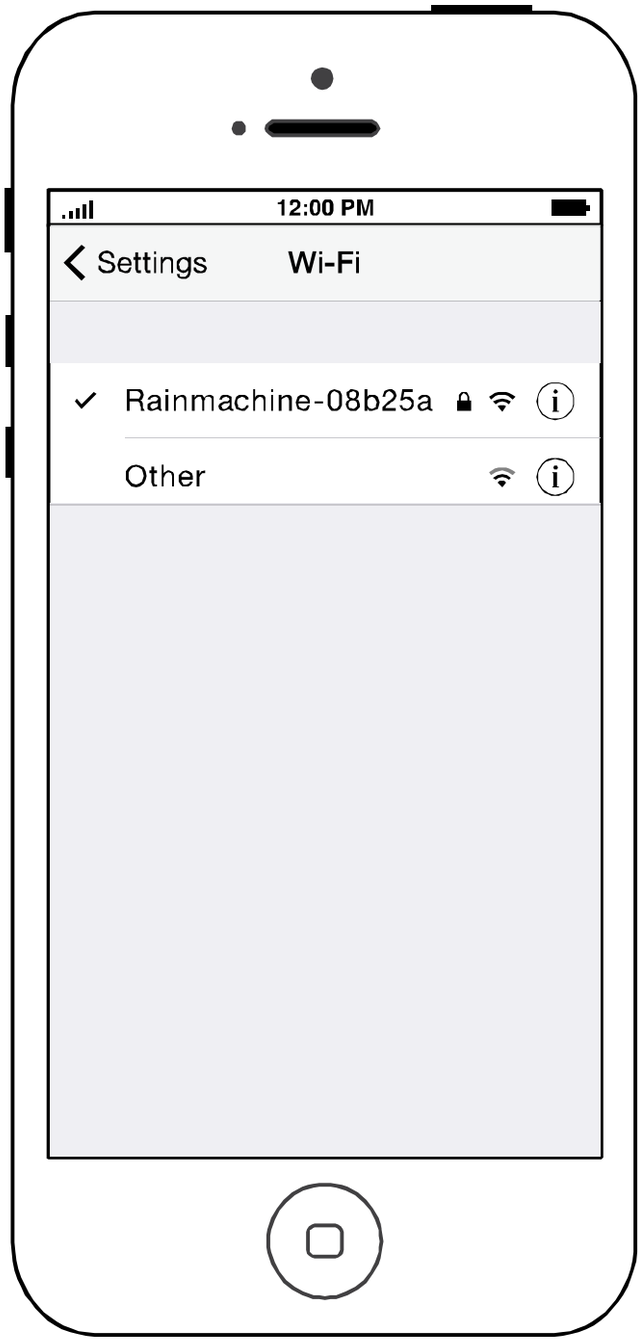
Step 1 Download and install the Rainmachine app from App store.

Step 2 (very important!)
From your smartphone Wi-Fi's Settings Screen, join the "RainMachine" Wi-Fi network.

Step 3 Launch the RainMachine application, go to the Devices screen and tap on the "RainMachine setup >".

Follow the installation wizard steps to configure Network, Location, and create login account.

NOTE: After this step your mobile device should re-connect to your home WIFI. Make sure your mobile device did not accidentally re-connect to other WIFI networks.



Operation

Creating first program

In order to enable automatic watering you need to setup at least one program:

1. From RainMachine app, go to Settings / Programs / Add New Program
2. Label your program. Example: “Rose Garden”
3. Select a frequency – how often the program runs
4. Select a Start Time – when the program starts
5. Assign a base watering duration[1] for each in this program.
6. Save

[1]*Base Watering Duration – duration of watering required for each zone, during a regular summer day. Example: Rose Garden, 5 minutes. The RainMachine will constantly adjust this duration based on weather conditions (temperature, rain, humidity, wind) and time of the year (incoming solar radiation relative to earth rotation and trajectory).*

Advanced program properties

"**Cycle and Soak**": splits the base watering duration in multiple cycles, allowing a soak time between cycles. This feature improves watering efficiency by avoiding run offs.

"**Delay between zones**": sets the amount of time between two consecutive zones in a program, to accommodate specific irrigation systems. (Example: extra time to fill up water tanks or to build up water pressure).

Zones

To manually start watering on a Zone you can either:
From RainMachine app, go to Zones and tap on the ON/OFF switch.
To change the watering duration tap on the zone name before starting.

From the RainMachine device, touch the UP/DOWN buttons to select the zone number and start watering by touching on the watering can button.

NOTE: The duration defaults to 5 minutes, but it can be changed and saved from the RainMachine app. Manual watering does not affect any scheduled programs.

Zones Properties

To modify zone properties, tap on the "**Edit**" button on top right corner:

- Assign a name to each zone
- Change the vegetation type
- Disable / Enable dynamic Weather adjustments for a specific zone.
- Use historical averages in case the weather data is not available (automatic seasonal adjustment)

Dashboard

The dashboard screen allows you to view both past and future watering and weather statistics.

"**Water Need**" shows you a reference amount of water needed for that respective day. Please note that actual irrigation might vary based on irrigation frequency as defined by your programs. Swipe right/left to see more.

"**Programs**" shows the output of watering for that respective program. Each program has a graph showing you both historical and predicted water output. Swipe right/left to see more.

"**Rain**": This graph shows you past and future forecasted rain amounts (inch/day). Swipe right / left to see more.

***NOTE**: By pressing the "**Edit**" button, you can rearrange the graphs order or hide them from the dashboard view.*

How it works

Program the RainMachine with the number of minutes (per zone) that are necessary to keep your plants happy in an average summer day. That's all!

Example: Roses, 5 minutes.

The RainMachine will then dynamically adjust this base watering duration (*Roses, 5 minutes*) using Evapotranspiration calculations based on weather data such as forecasted Temperature, Wind, Rain and Humidity as well as solar irradiation relative to earth rotation and inclination at any given point of the year. In short, we simulate Nature water cycle and when necessary, we supplement the missing water.

When compared with regular timer controllers with fixed watering duration, the RainMachine allows you to save water and maintain healthy plants.

Weather Data
Weather data is being fetched several times per day from various weather sources such as NOAA (US) or MET (Global). Default is NOAA for US and MET only for EU. If two or more weather sources are used at the same time, the result will be an average of the two data sets.

Restrictions
Restrictions are a set of rules the user can impose on the running programs. Specific time spans (Days, Months, Hours) where no watering takes place.

Snooze
This is a temporary restriction that skips programs for 1, 2 or more days.

Freeze Protect
Set a temperature threshold below which watering activity is stopped.

Hot Days
If this option is selected, extra watering will be allowed during extreme heat waves. If this option is not checked the maximum watering amount is capped to 100% of programmed runtime.

Sensitivity
Sensitivity settings allow you to adjust the forecasted amount of Rain or Wind.

Example: Buildings can provide shelter from wind; as a result the wind amount can be adjusted downward. Setting wind or rain sensitivity to zero eliminates rain or wind forcing from the EvapoTranspiration calculations. Please do not change default values unless you have a good reason to do so. These settings are global (applies to all zones).

Field Capacity
Maximum number of days allowed to accumulate rainfall in the ground to be used for future water need calculations. (default = 2 summer days).

NOTE: During Spring/Autumn the field capacity is automatically adjusted to a higher number of days to reflect slower evapo-transpiration.

Specifications

Features

- 8 Zones, Weather Aware, WIFI Irrigation controller
- Projected Capacitive Keypad
- Forecast spatial resolution up to 1.5 Km
- EvapoTranspiration method: American Society of Civil Engineers - ASCE Standardized.
- Freeze control and heat wave protection
- iPhone and Android apps

Environmental

- Indoors operating temp: -20C to 50C (-4F to 120F)
- To 85% relative humidity, non-condensing

Mechanical

- Dimensions: 115 x 115 x 27mm
- Weight: 170g

Electrical

- WIFI: USB 802.11N, 2.4Ghz, US/Japan/EU
- Wires: AWG 14-22, 0.75 -1.5mm
- AC Input: 24VAC, 50/60Hz, 750mA (adapter included)
- Valve output: 24VAC, 50/60Hz, max 10VA
- Master valve: 24VAC, 50/60Hz

Certification

- FCC, CE.

Warranty

- 2 years standard warranty

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