Smart Controll∈r Installation & Programing

RSC600i





Support

Product Information

The model and serial numbers are located at the rear of the controller. Record these numbers in the space provided below. Have these numbers available when contacting Technical Support.

MODEL NO.:	
SERIAL NO.:	

Additional Support

If additional support is required after reading the instructions in this guide, then Internet Video Support or Technical Phone Support is available.

Internet Video Support:

raindrip.com/smart

Technical Phone Support: 877-502-7952

Monday - Friday 8:00 AM - 5:00 PM (Pacific Standard Time) Saturday - Sunday 9:00 AM - 1:00 PM (Pacific Standard Time)



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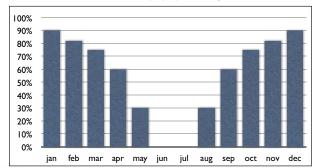
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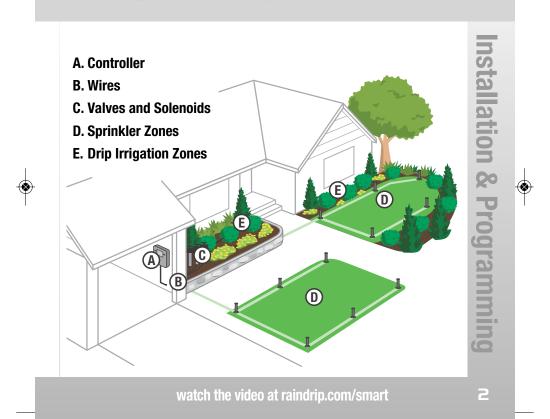
Smart Controller Technology

Installation & Programming Typical Monthly Water Savings % *results will vary by zip code region



Smart controllers can reduce water consumption as much as 30% by optimizing the amount of water applied to landscaping. A smart controller applies 100% of the programmed watering duration during the hottest months of the year and reduces watering durations for cooler months. Watering duration compensation factors are based on 10 years of historical weather data for specific zip code regions.

Irrigation System Overview



Package Contents

- **1** Smart Controller / Docking Station
- AC Power Supply
- **3** Mounting Hardware
 - a. #8 X 11/4" Screws (4) b. Drywall Anchors (4)
- Installation & Programming Guide



Installation & Programming



Smart Controller Features RSC600i

- 6 zones with up to 4 independent watering cycles per day per zone.
- Automatically adjusts watering duration based on historical weather patterns for your zip code and time of year.
- Daily and Year-to-Date water savings displayed.
- Built-in diagnostics automatically troubleshoots and alerts of wiring issues.
- Audible beeps to alert for low batteries, wiring faults, and other user interface actions.
- "Skip" function allows for manual interruption of watering schedule for yard work and other activities.
- "Water Now" function allows for manual watering to test irrigation system.
- Rain Sensor / Switch ready works with most major brands.
- · Easy to read, oversized backlit display.
- Controller "undocks" to allow for comfortable / convenient programming.
- Automatically adjusts for daylight savings.
- · Optional conventional timer mode (non-smart).
- Requires 2 AA batteries (not included).

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Installation

Overview **RSC600i**

- **LCD Display** Displays status of the controller. (page 21-22)
- **2** Navigation Pad Used to select, change, and enter values.
 - LEFT and RIGHT arrows to move left or right.
 - UP and DOWN arrows to increase or decrease values.
 - ENTER saves all values and advances to next screen.
- 3 Settings View or change DATE, TIME, ZIP CODE, and WATERING DAYS option. (page 11-12)
- **4 Edit Schedule** View or change the WATERING SCHEDULE. (page 13-16)
- **3** Auto Run Change operating mode to ON / SKIP / OFF. (page 17)
- **6 Water Now** Manual watering Start / Stop. (page 18)
- **⊘** A/C Power Connection External power connection.
- **3** Valve Solenoid Wire Terminals Color coded quick connect terminals.
- **9 Rain Sensor / Switch Terminals** For rain sensor / switch wiring (optional). No additional programming required. (page 20)
- Reset Stops watering; clears controller memory of any errors; and returns controller to the idle state. DATE, TIME, ZIP CODE, WATERING DAYS option, and WATERING SCHEDULE are not erased.
- Removable Cover To access SETTINGS, EDIT SCHEDULE, and RESET buttons.

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Overview RSC600i



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Installation & Programming

Installation Requirements

Items Required for Installation

- Docking Station (provided)
- #8 X 1 1/4" screws (4) (provided)
- Drywall anchors (4) (provided)
- Phillips head screwdriver
- Wire strippers
- Power drill (if drywall anchors are to be used)
- 1/4" drill bit (if drywall anchors are to be used)
- Sprinkler wire (18 gage, solid copper wire recommended)



Note: If replacing an existing irrigation timer, label each of the wires as they are removed from the old timer so they can be placed in the same position on the RSC600i.

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Installation: Mount Docking Station

Docking Station Installation - Indoors Only

For new installations

- Locate near sprinkler wires from irrigation system valve solenoids.
- Locate within 48" of a 110 volt AC outlet.

Mount the docking station

- Undock and set the controller aside.
- At the selected location, hold the docking station on the wall.
- Using the docking station as a template, mark the four screw locations on the wall.
- If drywall anchors are needed, drill a 1/4" hole in the wall at each marked location.
- Insert a drywall anchor in each hole so that it is flush with the wall surface.
- Position the docking station over the anchors.
- Insert and tighten one #8 X 1½" screw in each of the four holes. Do not overtighten screws.







Installation & Programming

Installation: Wiring

Wiring the Docking Station
These instructions assume your irrigation system is properly installed and the valve solenoid wires are available at the controller mounting location.

CAUTION: Do not connect more than one wire to each terminal. Damage to the controller will occur.

Common Wire Connections

• Insert the common wire from the solenoids to a "COMMON" terminal (white) at the bottom of the docking station.

Zone Wire Connections

- Insert one control wire from a specific solenoid (zone 1) to a corresponding "ZONES" terminal (blue 1) at the bottom of the docking station. Repeat for each zone solenoid.
- Check wires to ensure they are fully seated and secure.
- Plug A/C Power Suppy connector to the "24 VAC POWER" terminal (red), then plug the Power Supply into a 110 volt outlet.





Installation: Dock Controller

Docking the Controller

- Remove display protective film.
- Install AA batteries in the back of the controller.
- Place the back of the controller against the docking station
- Slide the controller downward until it is firmly seated at the bottom of the docking station.
- Confirm UNDOCKED indicator is turned off.

The controller is ready for programming and operation.





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Programming: Settings

View or change DATE, TIME, ZIP CODE, and WATERING DAYS option.

Remove Cover

1. Press SETTINGS button



2. Adjust CURRENT DATE. Press ENTER.



3. Adjust CURRENT TIME (note AM or PM).

Press ENTER.



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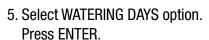
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Installation & Programming

Programming: Settings

- 4. Adjust your local ZIP CODE. Press ENTER.
 - If ENTER ZIP CODE ERROR is displayed; the zip code is not recognized.
 - -Check the entered zip code number.
 - -Use a neighboring zip code if necessary.

Note: To operate the controller as a conventional (non-smart) timer, see page 19.



- -Option 1: (see page 13)
- "WATER ON SPECIFIC DAYS OF WEEK"
- -Option 2: (see page 14)
 "WATER ON ODD OR EVEN DATES OF MONTH"

SETTINGS are now complete.







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Installation & Programming



Installation & Programming

Programming: Edit Schedule

View or change WATERING DAYS option.

Remove Cover



Option 1: WATER ON SPECIFIC DAYS OF WEEK



- 1. Use Programming Aid to facilitate watering schedule programming (pages 25 thru 30)
- 2. Press EDIT SCHEDULE button
- 3. Adjust number of watering CYCLES for each day.
- 4. After CYCLES have been set for all days, then press ENTER.
- 5. Repeat for all ZONES. (continued)

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Programming: Edit Schedule

Option 2: WATER ON ODD OR EVEN DATES OF MONTH



- 1. Use Programming Aid to facilitate watering schedule programming (pages 25 thru 30)
- 2. Press EDIT SCHEDULE button
- 3. Select ODD DATES or EVEN DATES.
- 4. Adjust number of watering CYCLES, then press ENTER.
- 5. Repeat for all ZONES.

(continued)



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Programming: Edit Schedule

View or change WATERING SCHEDULE START TIME and DURATION.

AM/PM



- 6. Adjust DURATION (1-99 minutes).
 - -Set DURATION for the hottest month of the year.
- 7. Adjust START TIME (note AM or PM). Press ENTER.
- 8. Repeat for remaining ZONES and watering CYCLES.

WATERING SCHEDULE programming is now complete.



Programming: Edit Schedule

WATERING SCHEDULE Notes:

- Zone watering schedules are reserved to avoid duplicate or overlapping START TIMES and DURATIONS. During programming, START TIMES may skip to the next available time slot.
- DURATION should be set before setting a START TIME.
- Watering schedule entries can be reviewed and corrected at any time during programming by pressing the EDIT SCHEDULE button.
- START TIMES and DURATIONS are restricted so that watering cannot cross midnight.
- The automatically adjusted minimum watering duration will be one (1) minute. If the adjusted duration is less that 30 seconds, the actual watering duration will be zero (0) minutes and no watering will occur for that specific zone.
- To erase ALL watering schedule programs, press and hold EDIT SCHEDULE for 5 seconds.

Installation & Programming

Auto Run (ON / SKIP / OFF)

Change AUTO RUN mode to ON, SKIP, or OFF.







Press AUTO RUN button to select ON, SKIP, or OFF mode.

ON: Controller is in automatic watering mode.

SKIP: Controller will "skip" watering for a selected time period.

- 1. Input DURATION (1 to 99 hours).
- 2. Press ENTER to start the skip cycle.
- After SKIP cycle completes, the controller will return to the previous operating mode (ON or OFF).

SKIP programming is now complete.

OFF: Controller is "off" and will not execute any watering schedule program.

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Water Now

Initiate Manual Watering.

- 1. Press WATER NOW button.
- 2. Select a specific ZONE (1-6). If ALL is selected, all zones will water sequentially.
- 3. Input DURATION (1-99 minutes).
- 4. Press ENTER to start manual watering cycle.



WATER NOW programming is now complete.

WATER NOW Notes:

- To stop a manual watering cycle, press the WATER NOW button again.
- After a manual watering cycle is complete, the controller will return to the previous operating mode (ON, SKIP, or OFF).
 - -The operating mode can be changed during a manual watering cycle by pressing the AUTO RUN button.
 - -Pressing AUTO RUN, SETTINGS or EDIT SCHEDULE button will not stop a manual watering cycle.
- WATER NOW manual watering cycles are not included in TODAY or YTD water savings calculations.



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Disabling Smart Mode

Operate controller as a conventional (non-smart) timer.

- 1. Press SETTINGS.
- 2. Press ENTER (do not change DATE).
- 3. Press ENTER (do not change TIME).
- 4. Change ZIP CODE to all zeroes. Press ENTER.
- 5. Press ENTER (do not change WATERING SCHEDULE method).



Smart mode is now disabled.

To enable Smart mode, repeat steps 1-5 above and enter your local ZIP CODE $\,$ as shown on page 12.

Conventional Timer Mode Notes:

- The ZIP CODE indicator will flash slowly as a reminder the controller is in conventional timer mode.
- Disabling Smart mode will not change WATERING METHOD or WATERING SCHEDULE program.
- TODAY WATER SAVINGS will display 00%.
- Watering durations will not be reduced seasonally.
- Water savings may not be realized.



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Rain Sensor / Switch

Connect a conventional two wire rain sensor / switch.

- 1. Mount rain sensor per the manufacturer's installation instructions.
- 2. Remove rain sensor jumper wire.
 - -Press square plunger down.
 - -Remove yellow jumper wire.
- 3. Connect wires from rain sensor to terminal strip.
 - -Press square plunger down.
 - -Insert sensor wires into yellow terminal blocks (ignore color of sensor wires).

NOTE: The controller cannot send a watering signal to valve solenoids if the jumper wire is removed and a rain sensor is not connected. Actual watering will not occur.







Rain Sensor / Switch is ready for use.

Examples of compatible Rain Sensor / Switch:

- Nelson® 8501 Rain-Trip™
- Rainbird® RSD-CEx
- Hunter® Mini-Clik®
- Hunter® Rain-Clik™
- Toro® TRS









Installation & Programming

Operational Notes

NOTE: The controller cannot send a watering signal to valve solenoids when the controller is "undocked". Actual watering will not occur.

Undocked - Using Battery Power

- The LCD backlight will not illuminate when the controller is undocked and running on battery power.
- If buttons are not pressed within a 1 minute time period, the LCD display will automatically turn off (blank) to conserve battery life. The controller clock will continue to operate.
- To reactivate the LCD display, press and hold any button for 2 seconds.
- Battery power is used for keeping current time and for undocked programming only when A/C power is not available (power loss or undocked). Watering schedule program is maintained in controller memory.

Docked - Using Wall Outlet A/C Power

- The LCD backlight will automatically turn off after buttons are not pressed within a 3 minute time period.
- To reactivate the backlight, press any button.

Audible Beeps

- Docking and Undocking rapid triple beep
- LOW BATTERY single beep every 15 seconds.
- ERROR Check Valve Wires single beep every 15 seconds.
- Upper or Lower Start Time Value Reached (when programming) single beep

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Status Indicators



Status Indicator Notes

- **1 UNDOCKED** The controller is "undocked" or not fully seated in the docking station.
- **2** LOW BATTERY Indicates batteries are low and need to be replaced. All programming and settings (except current time) will be maintained during battery replacement.
- **3 ZIP CODE ERROR** The entered zip code was not recognized. See SETTINGS on page 12.
- ◆ ERROR CHECK VALVE WIRES A wiring fault was detected during watering of a specific zone. The specific zone number will also be displayed. Check for shorted wires or faulty solenoid.
- **⑤** SHUTDOWN RAIN FORECAST The controller will not water when this indicator is on. If an optional rain sensor / switch is used, then this indicator will turn on when the rain sensor / switch detects a rain event.

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FAQ

1. Can I use the controller for both drip and sprinkler systems?

Yes. Independent durations and multiple watering cycles for each zone allow you to program various watering schedules as necessary.

2. Can I use my existing wires to my valves?

Yes. This controller is compatible with commonly used landscape irrigation systems.

3. Can I install the controller outdoors?

Installation outdoors is not recommended.

4. How many valves can be controlled by one zone output terminal?

Only one valve can be controlled per zone output terminal. Damage to the unit may occur if more than one valve is connected to a zone terminal.

5. What if my zip code is new or not recognized by the controller?

Use a nearby neighboring zip code.

6. How do I know what duration to program into the controller?

Set your watering durations for the hottest part of the year. If replacing a standard timer, use the durations from the watering program of your previous timer.

7. Why do I need more than one cycle or start time per day?

If your landscape soil is not easily penetrated by moisture or the landscape is sloped it can be beneficial to run a short watering cycle first to loosen the soil followed by a normal watering cycle.

8. Will my controller stop watering when it rains?

The controller will not stop watering unless an optional rain sensor is installed. The controller will accept most major brands of rain sensors (see page 20).

9. What if it's raining and I don't have a rain sensor?

The SKIP function can be used to interrupt all programmed watering schedules for up to 99 hours. When the SKIP function ends, the controller will return to the previously set operating mode (ON or OFF).

10. Why does my landscape appear to be dry?

Your maximum summer watering duration may need to be adjusted if dryness is frequently observed. If necessary, you can supplement your programmed watering during hotter than normal weather by using the WATER NOW feature.

11. Do the valves operate when the controller is undocked?

No. The controller cannot operate valves when it is undocked.





Troubleshooting

Problem	Possible Cause	Solution			
No Backlight; Blank Display (wall power)	a) No power to controller	Check power wires and circuit breakers			
No Backlight; Normal Display (wall power) (see page 21)	a) Backlight is in sleep mode	Press/Release any button to activate backlight			
No Backlight (battery power) (see page 21)	a) Normal operation to conserve battery life	Normal operation			
Blank display (battery power)	a) Display is in sleep mode	Press/Hold any button for at least 2 seconds			
(see page 21)	b) Weak or dead batteries	Replace batteries			
Controller does not respond when buttons are pressed	a) Electrical surge	Press/Release reset button			
Controller beeps once every 15	a) LOW BATTERY indicator is on	Replace batteries			
seconds (see page 21)	b) ERROR CHECK VALVE WIRES indicator is on	Note zone on display; Check / Repair shorted wires or faulty valve solenoid			
	a) Faulty wiring, solenoid, or valve	Check / Repair open wire, faulty solenoid, or faulty valve			
No watering occurs when controller shows watering	b) Water supply may be shut off	Check water supply line has pressure			
onomo matorinig	c) SHUTDOWN RAIN FORECAST indicator is on	Check rain sensor jumper wire or rain sensor (see page 20)			
	a) AUTO RUN is OFF or in SKIP MODE	Set AUTO RUN to ON			
	b) Current date and time is incorrect	Check / Set current date and time			
Controller does not water as	c) WATERING SCHEDULE not programmed correctly	Verify WATERING DAYS option, START TIMES, and CYCLES per day			
	d) Smart technology adjusted the watering duration to zero	Normal Smart operation (see pages 1 and 16)			
	e) UNDOCKED indicator is on	Fully dock the controller			



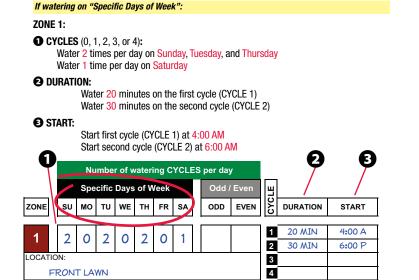


Programming Aid - Introduction

The following information will be needed for each **Zone**

- 1) The number of watering CYCLES per day.
- 2) The number of minutes (DURATION) per CYCLE.
- 3) Start time (START) for each watering CYCLE.

The example below illustrates how a watering schedule is transferred into the programming aid.





Programming Aid - Introduction

CYCLES:

0 indicates no starts (no watering)

1-4 indicates number of start times per watering day.

ODD or EVEN:

ODD will water on 1st, 3rd, 5th, etc. dates of month EVEN will water on 2nd, 4th, 6th, etc. dates of month

If watering on "Odd/Even Dates of Month":

ZONE 1:

O CYCLES (0, 1, 2, 3, or 4):

Water 2 times per day on EVEN, dates of the month

2 DURATION:

Water 20 minutes on the first cycle (CYCLE 1)

Water 30 minutes on the second cycle (CYCLE 2)

START:

Start first cycle (CYCLE 1) at 4:00 AM Start second cycle (CYCLE 2) at 6:00 AM





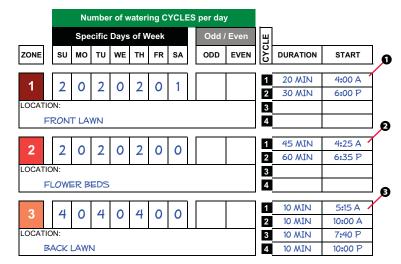


Programming Aid - Example

Programming Note

- The watering schedule reservation system adds a 5 minute buffer (no watering) at the end of each DURATION.
- In the example below for ZONE-1 / CYCLE-1; the DURATION = 20 minutes and START = 4:00 AM. ①
- The next available START time is: (4:00 AM + 20 min. + 5 min.) = 4:25 AM.
- This next available START time is used for ZONE-2 / CYCLE-1.
- This was repeated for ZONE-3 / CYCLE-1. Based on ZONE-2 / CYCLE-1 START time and DURATION, the next available START time is: (4:25 AM + 45 min. + 5 min.) = 5:15 AM. ●

Option 1 Example - WATER ON SPECIFIC DAYS OF WEEK





Option 2 Example - WATER ON ODD / EVEN DATES OF MONTH

	Number of watering CYCLES per day															
		Specific Days of Week							Odd							
ZONE	SU	МО	TU	WE	тн	FR	SA		ODD	ODD EVEN		ODD EVEN		DURATION	START	O
1								Ī		2	1	20 MIN	4:00 A			
										2	2	30 MIN	6:00 P			
LOCATIO	N:										3					
FI	SON.	T LA	WN								4			Ø		
2								Ī		2	1	45 MIN	4:25 A			
2										2	2	60 MIN	6:35 P			
LOCATIO	N:										3					
Fl	_OWI	ER B	EDS								4			6		
								Ī			1	10 MIN	5:15 A			
3										4	2	10 MIN	10:00 A			
LOCATIO	N:										3	10 MIN	7:40 P			
В	4CK	LAW	V								4	10 MIN	10:00 P			





Programming Aid - Worksheet

		N	lumb	er of									
		Spe	cific	Days	of W	Veek			Odd	Even	J.E		
ZONE	su	МО	ΤU	WE	тн	FR	SA		ODD	EVEN	CYCLE	DURATION	START
		1	I	I	I		I	1					
1											1		
LOCATIO	DN:		<u> </u>	<u> </u>	<u> </u>		<u> </u>				3		
											4		
2											1		
											2		
LOCATIO	ON:										3		
											4		
								1		1	_		
3											1		
											2		
LOCATIO	N:										3		
											4		

Programming Aid - Worksheet

	Number of watering CYCLES per day												
		Spe	cific	Days	of W	V eek			Odd /	Even	Ш		
ZONE	su	мо	TU	WE	тн	FR	SA	Ì	ODD	EVEN	CYCLE	DURATION	START
_											_		
4											1		
~											2		
LOCATIO	ON:										3		
											4		
								T	1				
5											1		
											2		
LOCATIO	ON:										3		
											4		
								,			_		
6											1		
											2		
LOCATIO	N:		-	•	•	•	•		-		3		
1											_		

Specifications

A/C Power Supply

Input: 120VAC, 60 HZ

Output: 24VAC, 0.45amps

Controller Zone Output: 24VAC, 0.25amps

Battery Power

Two (2) "AA" alkaline (not included).

Depending on battery usage, batteries should be replaced once a year.

(do not use lithium or rechargeable batteries)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

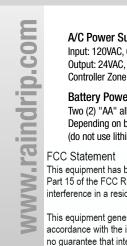
This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- · Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- . Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by Raindrip Technical Services could void the user's authority to operate the equipment.

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Warranty

Raindrip Smart Controller - Limited Warranty

Raindrip warrants to the original product or service purchaser ('the Customer') that the Raindrip product, for which the Customer received this warranty, was designed, developed and/or fabricated using all due reasonable commercial care and good manufacturing practices. Raindrip's product shall be free from defects in material and workmanship for one year, from the original date of purchase. Raindrip's sole and exclusive obligation under this warranty is to provide for the free repair or replacement of the product or of defective part in the product, at Raindrip's option.

Warranty Limitations. The duration of any implied warranty or condition, of merchantability, fitness for a particular purpose, or otherwise, on this product shall be limited to the duration of the express warranty set forth above. In no event shall Raindrip be liable for any loss, inconvenience or damage, whether direct, incidental, consequential or otherwise, resulting from breach of any express or implied warranty or condition, of merchantability, fitness for a particular purpose or otherwise with respect to this product, except as set forth herein. Some states or countries do not allow limitation on how long an implied warranty lasts and some do not allow exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty will be interpreted pursuant to the laws of the United States and the State of California. The original English language version (meaning) of this warranty controls over all translations.

Warranty Service Options. For service under this warranty you must return the product to the store where you purchased [the units] it.

Warranty Exclusions.

This warranty does not cover the following:

- Products that have been modified, neglected or poorly maintained, misused, abused or involved in accidents or natural disasters.
- Damage to the product resulting from improper maintenance or repair, the use or installation of parts and/or accessories that are
 not compatible with the original intended use of the product, or the failure to follow the product warnings and usage instructions.
- Damage or deterioration to the surface finish, aesthetics or appearance of the product.
- The labor costs required to remove and/or refit and readjust the product covered by this warranty.
- . Normal wear and tear to the product.
- Product installed outdoors or in a manner not recommended by Raindrip.
- . Or, any products for which the Customer does not follow the warranty procedures outlined [above] in this Limited Warranty.

877.502.7952

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