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Introduction

Congratulations on your purchase of a WEATHER**MATE**™ Controller from Weathermatic. We think you'll find it to be a reliable and easy way to manage your automated irrigation system, and we encourage you to read this manual so that you can maximize WEATHER**MATE's**™ performance.

By following the simple instructions in this manual, you can program WEATHER**MATE**™ to operate groups of sprinklers independently. This allows you to apply more water to some areas and less to others. WEATHER**MATE**™ also allows you to control the time and date that various sprinklers run, making it easy to conform to a variety of schedules.

WEATHER**MATE**™ optional remote control makes station testing simple. We know it will help you enjoy your irrigation system.

Here are some of the features:

- Large, easy-to-read display
- Dial-based control
- Six, Nine or Twelve station models
- Non-volatile memory saves even the most complex programs in case of power outage
- Skip function automatically bypasses short-circuited stations
- Three programs
- Battery backup saves correct time of day in case of a power outage
- Warranty: 2 year limited, from date of installation.
- Remote control (optional)

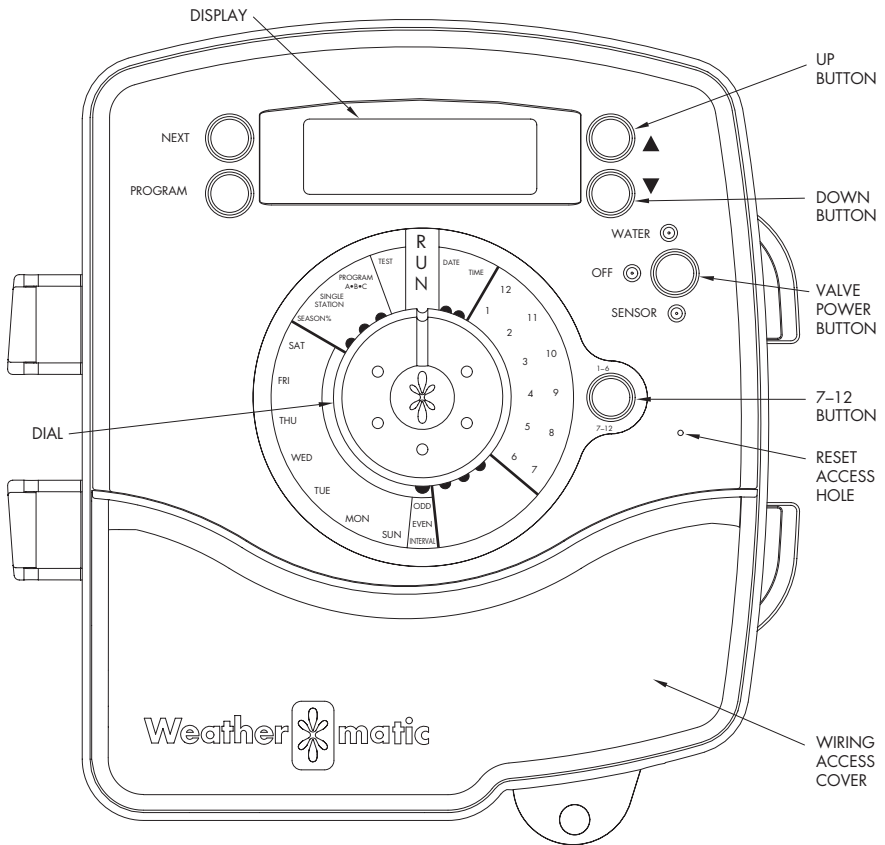


Figure 1.

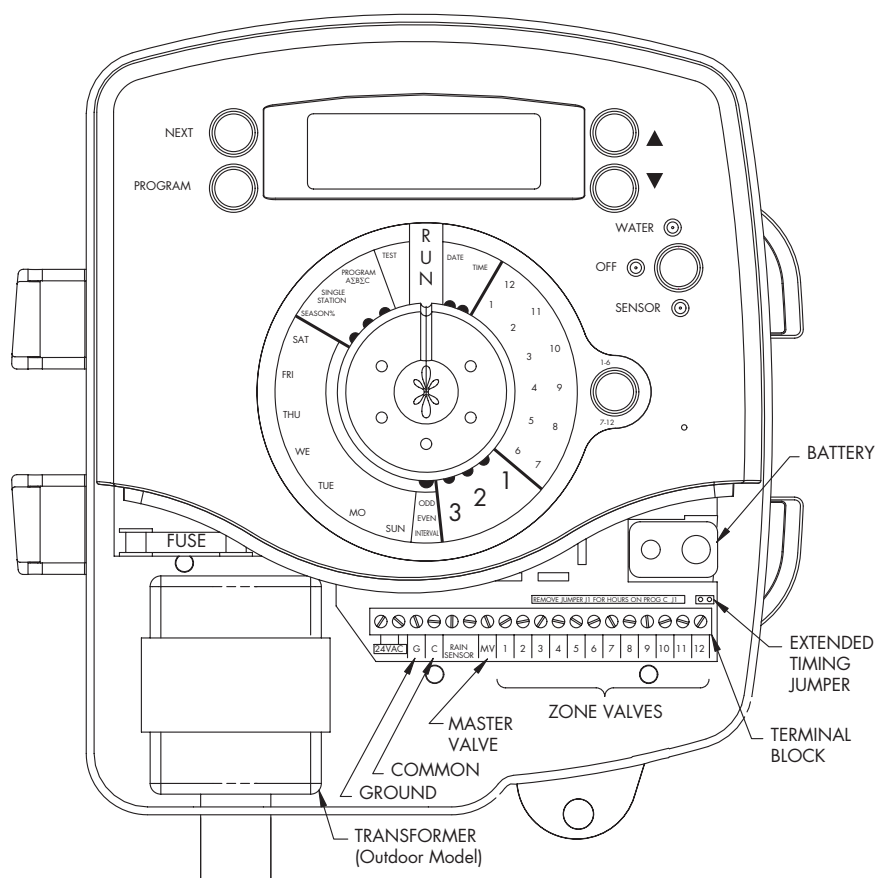


Figure 2.

Specifications

Input: 120 VAC

Output: 24 VAC, 24VA (Indoor), 30VA (Outdoor).

Fuse: 1 Amp slow blow, 3AG (Radio Shack 270-1021)

Conduit Size: Line wiring 1/2" and valve wiring 1"

Battery: 9 volt alkaline

Pump Circuit: Optional Weathermatic Pump Circuit Accessory # 952

Installation Instructions

Location

Select a suitable location to install controller. Temperature should not exceed 70°C (160°F) at any time. Controller should be installed at a height equal to eye level of the user.

Wall Mounting

Using provided template, mark locations for 4 wall fasteners (included) on the wall. Install the fasteners. Remove wiring access cover and face panel from housing. Install upper screw leaving about 3/8 inch between wall and screw head. Hang the controller on the top screw through the key hole. Pull controller housing down slightly to insure proper seating in keyhole slot. Drive three screws through knockout ports and into wall fasteners securing housing to the wall. Reinstall the face panel.

NOTE: If installing the remote control, follow the instructions on page 27.

Line Wiring

WM6-N, WM9-N, WM12-N (Indoor Models)—These models utilize a 3-prong plug-in type transformer (see Fig. 3). With transformer unplugged, connect BLACK and WHITE leads to separate **24 VAC** terminals. Connect GREEN lead to **G** terminal. After completing this step, simply plug transformer into a grounded household receptacle.

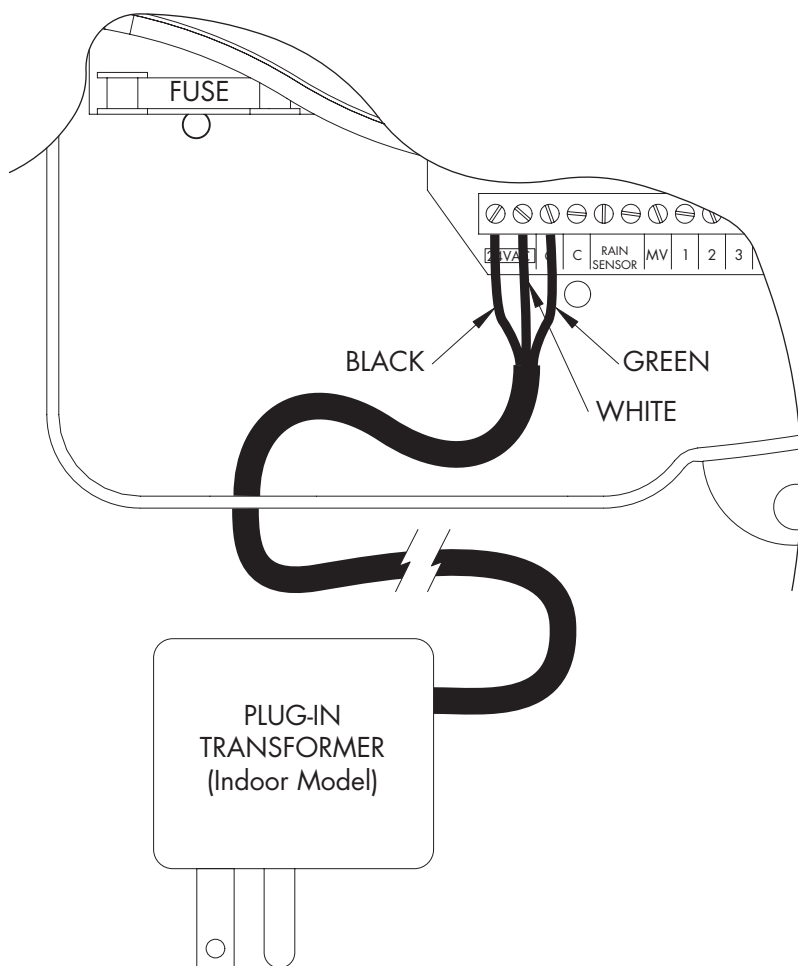


Figure 3.

WM6-O, WM9-O, WM12-O (Outdoor Models)—On these models, wiring should be done by a qualified licensed electrician in accordance with local Electrical Code.

CAUTION! Turn off 120 VAC power source before wiring.

Power wiring should be routed to the left side in 1/2 inch conduit with a junction box (not included) installed on the threaded transformer bushing. Connect line wiring (see Fig. 2) to transformer's BLACK and WHITE primary leads. Connect GREEN transformer lead to grounding conductor or to a copper cold water pipe or ground rod with minimum 14 AWG wire. Proper grounding must be connected to suppress line surges. Secure all wiring connections with wire nuts and install cover on junction box. Connect transformer's 24 VAC leads to WEATHERMATE™ terminal board (see Fig. 4).

Valve Wiring

Valve wiring should be routed to right side in 1 inch conduit and connected to controller. Terminal block will accept solid or stranded wire up to 14 AWG. Press valve power button to **OFF** position before attaching valve wires to terminal block.

Each station (zone) can operate one Weathermatic valve if master valve is used, or two valves if master valve terminal is not being used. All field-wiring connections **MUST** utilize a waterproof connection specifically designed for underground use.

Pump Circuit

An optional pump circuit relay (Weathermatic #952) may be installed in conjunction with the WEATHERMATE™ controller. Please refer to instructions provided with this accessory for details regarding its installation.

Optional Rain Sensor Installation and Operation

Turn off the 120 VAC power source to the controller. Locate, remove, and discard any small wire loop connected to the rain sensor terminals. Install leads from the rain sensor to WEATHERMATE™ Rain Sensor terminals (one lead to each terminal). Turn on the 120 VAC power source to the controller, and press VALVE POWER button until the **SENSOR** LED is illuminated.

A wet rain sensor will turn the **SENSOR** LED from green to red and prevent watering. To manually bypass a wet sensor, press the Valve Power button to light the **WATER** LED or use the optional remote control. If rain and freeze sensors are used together, the sensors must be wired in series.

Battery (see Fig. 2)

A 9-volt alkaline battery can be installed to maintain current time during a power outage and to restore watering if watering is interrupted by a power outage. To install a 9-volt alkaline battery, disconnect power supply to controller and remove access cover. Locate battery clip and connect to battery. Insert battery through circuit board into holder. Reconnect power supply.

Note: A battery is not required to retain program settings in the controllers nonvolatile memory.

Caution: When reinstalling the wiring access cover, take care not to pinch the battery lead wires.

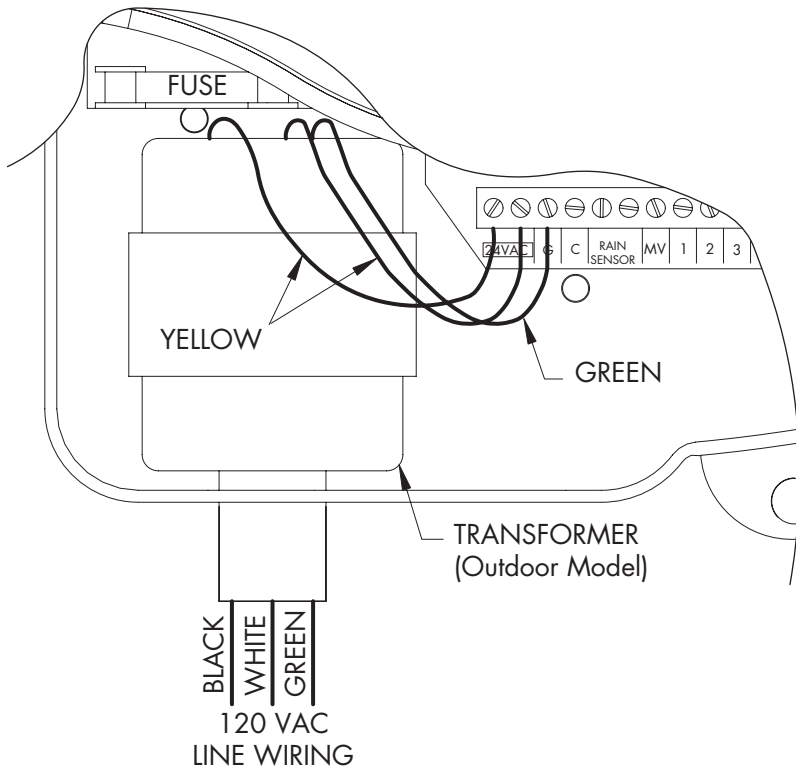
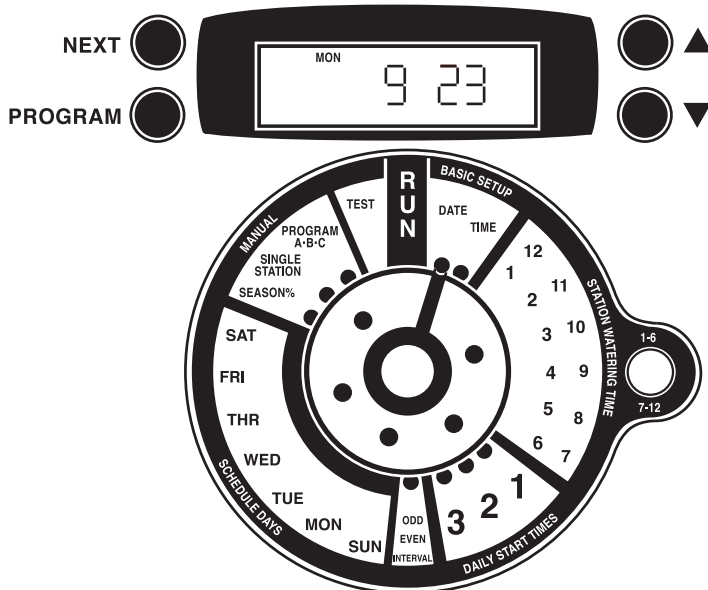


Figure 4.

To Set Date

Rotate dial to **DATE** to set current date.



Display shows

- month (flashing)
- day of month
- day of week

To set **DATE**

Press **▲** or **▼** button to select current month

Press **NEXT**. The day of the month will flash.

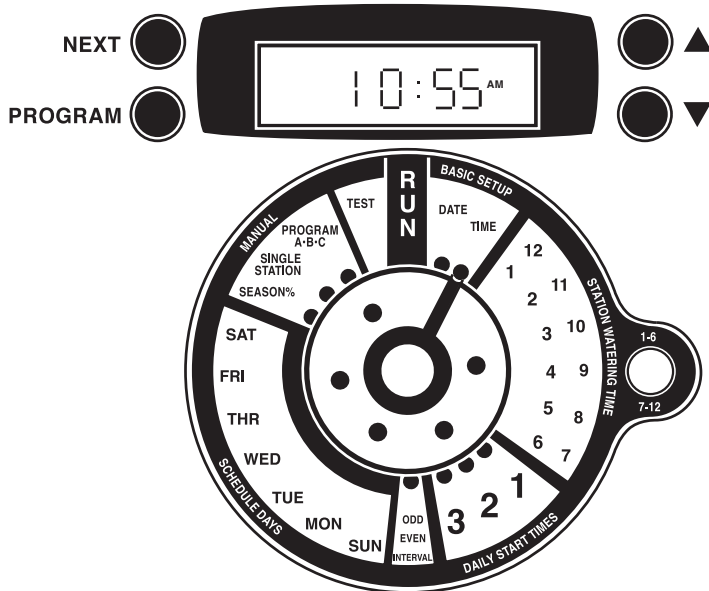
Press **▲** or **▼** button to select current day of month

Press **NEXT**. The day of the week will flash

Press **▲** or **▼** button to select current day of week

To Set Time

Rotate dial to **TIME** to set current time.



Display shows

- Hour (A.M. or P.M.) (flashing)
- Minute

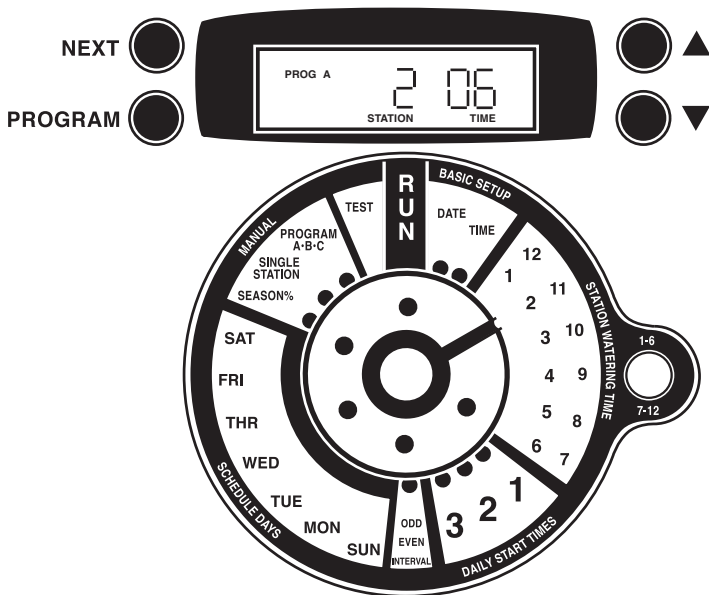
To set Hour

Press ▲ or ▼ button to select current hour (A.M. or P.M.)

Press **NEXT**. Minutes will flash

Press ▲ or ▼ button to select current minute

To Set Station Watering Time



Rotate dial to **Station Watering Time** segment.

Display shows

- program that governs station operation
- station number
- how long station is scheduled to water

To set watering time on station 1

- rotate dial to 1
- press **▲** or **▼** button to set amount of watering time (0-99 minutes)

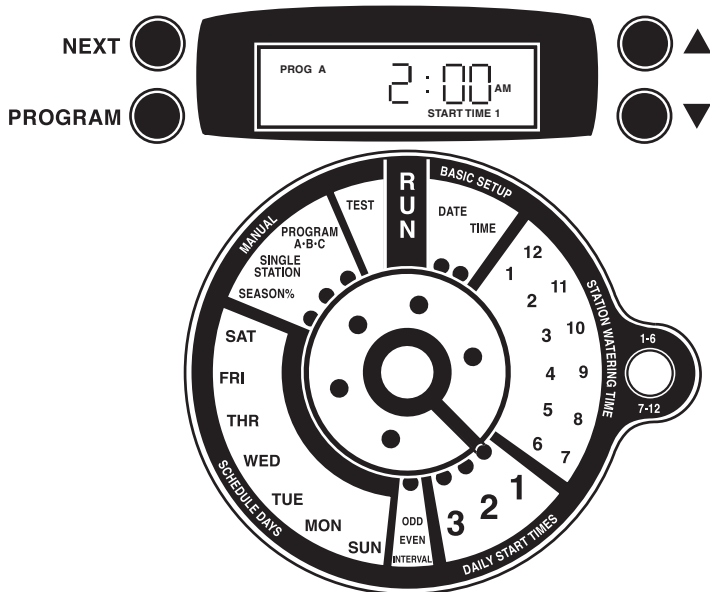
Use the same procedure to set watering times on stations 2 through 6

To set watering time on station 7 (on 9 and 12 station models only)

- press **7-12** Station Button
- rotate dial to 7
- press **▲** or **▼** button to set amount of watering time (0-99 minutes)

Continue setting watering times up through station 12

To Set Daily Start Times



To set the first daily start time for the watering cycle

- rotate dial to **1** in **DAILY START TIME** section
- press ▲ or ▼ button to select hour
- press **NEXT** button, minutes will flash
- press ▲ or ▼ button to select minute

To set the second daily start time (optional)

- rotate dial to **DAILY START TIME, 2**
- press ▲ or ▼ button to select hour
- press **NEXT** button
- press ▲ or ▼ button to select minute

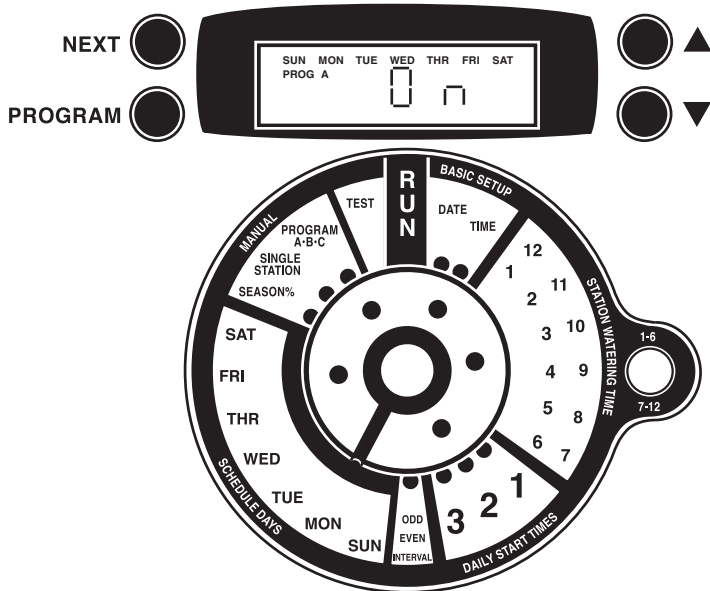
Daily Start Time (cont.)

To set third daily start time (optional)

- rotate dial to **DAILY START TIME, 3**
- press ▲ or ▼ button to select hour
- press **NEXT** button
- press ▲ or ▼ button to select minute
- To turn off a daily start time
- rotate dial to start time you want to turn off
- press ▲ or ▼ to cycle hour between 11:00pm and 12:00am
- display will flash "OFF"

Each **DAILY START TIME** operates programmed stations one after the other. If one watering cycle overlaps another, controller will delay the next daily start time until the completion of the first watering cycle.

To Set Schedule Days



Rotate dial to **SCHEDULE DAYS** segment to set watering days

Display shows

- selected day (flashing)
- ON or OFF (flashing)
- scheduled watering days
- program for scheduled watering days

To schedule day to water

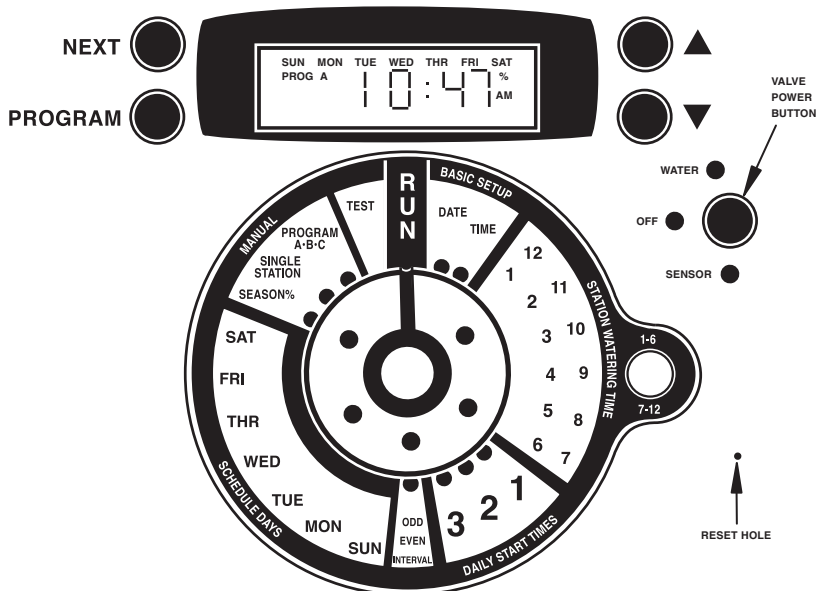
- rotate dial to day (Sun-Sat)
- press ▲ button to select ON

To schedule day not to water

- rotate dial to day (Sun-Sat)
- press ▼ button to select OFF

To Run

Rotate dial to **RUN** for automatic watering.



Press the valve power button to light:

- **WATER** (Green LED)—for normal automatic watering
- **OFF** (Red LED)—prevents all watering
- **SENSOR**—automatic watering occurs (Green LED) unless optional sensor is wet (Green LED turns Red).

Display shows

- current time of the day
- days of the week Program A is scheduled to run

While in operation display will show

- program running
- station watering
- time left on station watering

If **NEXT** button is pressed during watering, controller will advance to the next station scheduled to water. To pause watering, rotate dial to **DATE**. Rotate dial back to **RUN** to resume watering. To stop watering, press the valve power button.

To Review Your Program

Rotate dial to any of the following positions to review information in controller.

DATE, to check current month and day

TIME, to check current hour and minute

STATION WATERING TIME, to check watering time of each station

DAILY START TIMES, to check time program is set to water

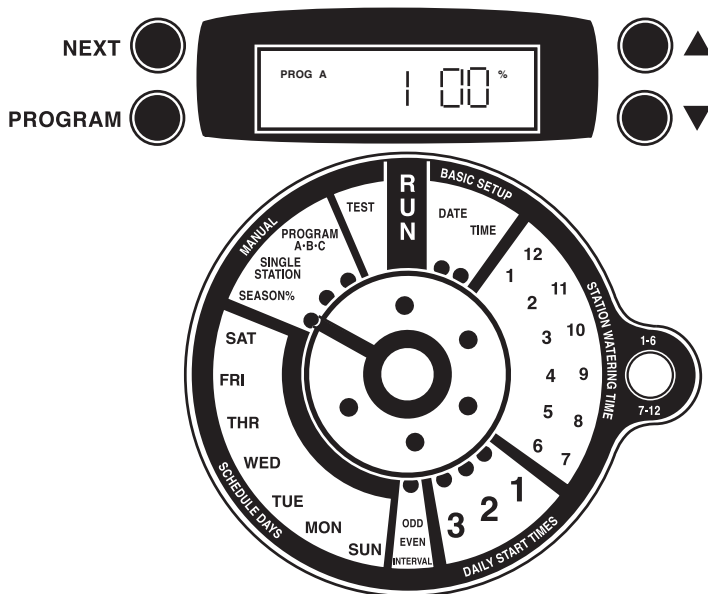
SCHEDULE DAYS, to check days on which watering will occur

Rotate dial to **RUN** to resume automatic watering.

For Program **B** or **C** see advanced programming, page 24.

To Set Season %

A separate **SEASON%** can be set for each program A, B, or C. Rotate dial to



SEASON% to scale all station watering times up or down by a percentage.

Display shows

- 100% (flashing)
- selected program

To increase watering time on program A

- press ▲ button to increase a program's watering time.
- (10%-200%)

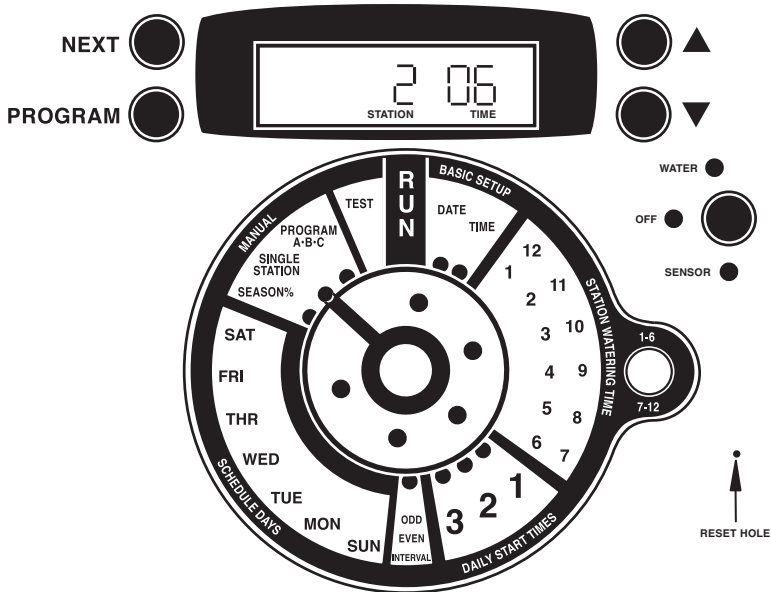
To decrease watering time on program A

- press ▼ button to decrease a program's watering time.
- (10%-200%)

To make seasonal adjustments to other programs press **PROGRAM** button. If no other program has been selected, **SEASON%** adjustments will affect water times in Program A. The % symbol in the display indicates that a season % has been set for that program.

To Set Single Station

Rotate dial to **SINGLE STATION** to manually operate a single station.



Display shows

- station (flashing)
- station run time

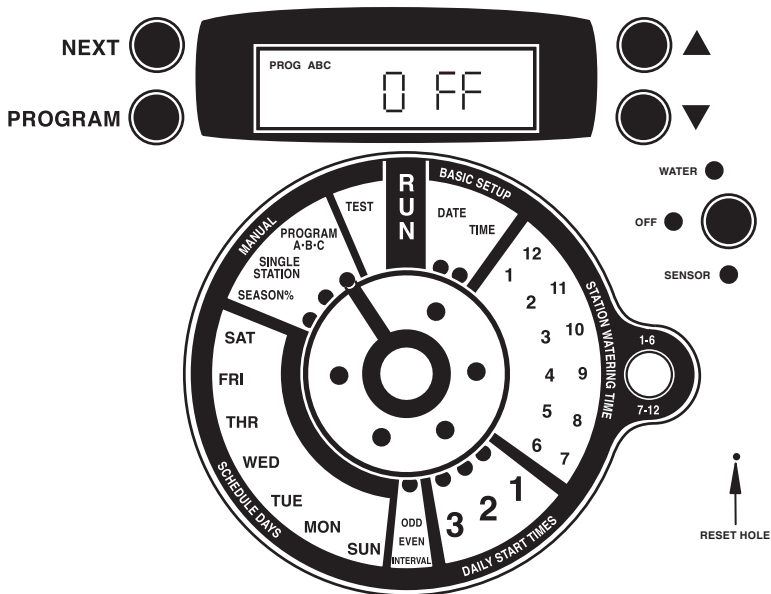
To select single station to be operated

- press ▲ or ▼ button to select a station
- press **NEXT** button
- press ▲ or ▼ button to select a station run time of 1-99 minutes
- rotate dial to **RUN** to start watering a single station

Controller will operate selected station for amount of time entered.

If valve power button is pressed while controller is in operation, watering will stop.

To Set Program A, B, or C for Manual Start



Station watering times must be set before a program can run using program A, B, or C.

Rotate dial to **PROGRAM A•B•C** to manually start a program.

Display shows

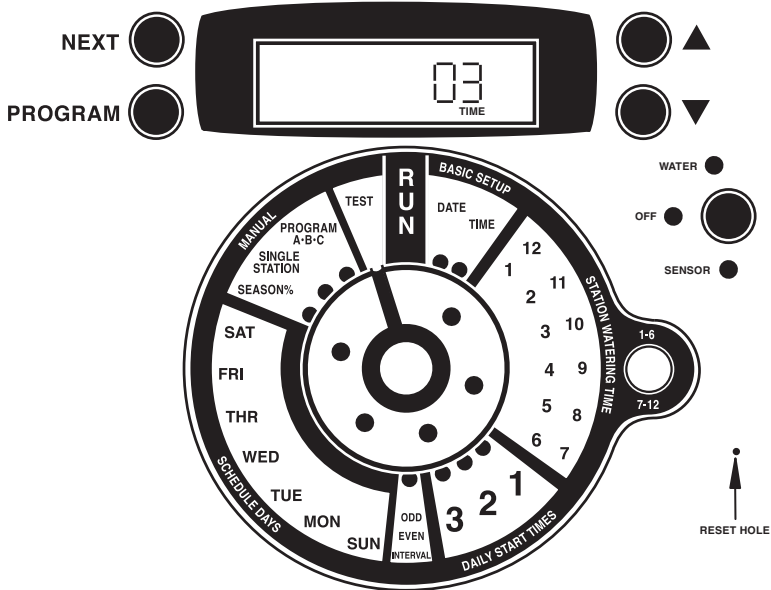
- OFF (flashing)
- PROG ABC (A flashing)

To select a program

- press **PROGRAM** button to select A, B, or C
- press **▲** button to select On
- rotate dial to **RUN** to start selected program

Controller will sequence through each station, watering for the length of time programmed in the selected program, adjusted for the season %. Pressing **NEXT** button will advance to the next station. If valve power button is pressed while controller is in operation, watering will stop.

To Set Test



Test function will only run stations that have previously set **STATION WATERING TIMES**.

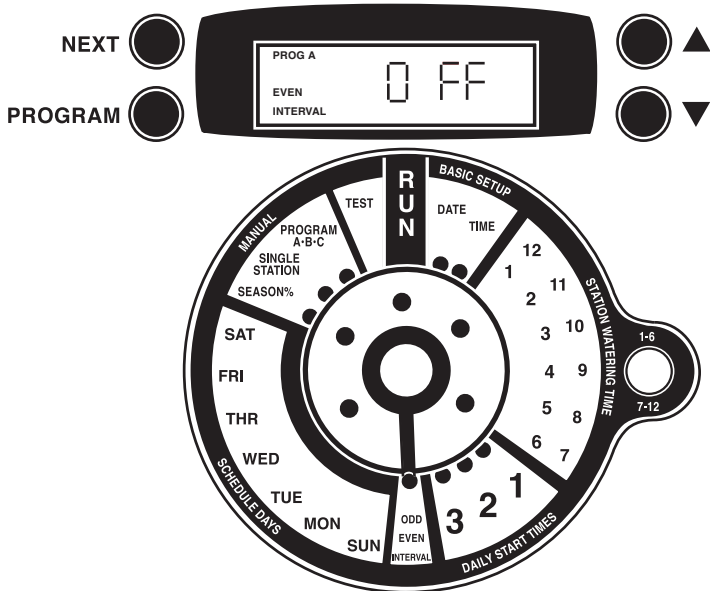
Rotate dial to **TEST** to water all stations for a selected amount of time.

Display shows

- watering time set for test (flashing 00)
- press ▲ or ▼ button to select test watering time (1-10 minutes)
- rotate dial to **RUN**

Pressing **NEXT** button will advance to next station. If valve power button is pressed while test is running, watering will stop.

To Set Odd/Even/Interval Period



Rotate dial to **ODD/EVEN/INTERVAL** to set program operation for odd, even, or interval watering days.

Press program button to select the desired program

Display shows

- selected program
- selected watering interval (flashing)
- on or off (flashing)

To set odd day or even day watering schedule

- press **NEXT** button to select ODD or EVEN
- press **▲** button to select ON
- rotate dial back to **RUN**

Note: If ODD is selected, watering will not occur on the 31st day of the month.

Odd/Even/Interval Period (cont.)

To set interval watering schedule

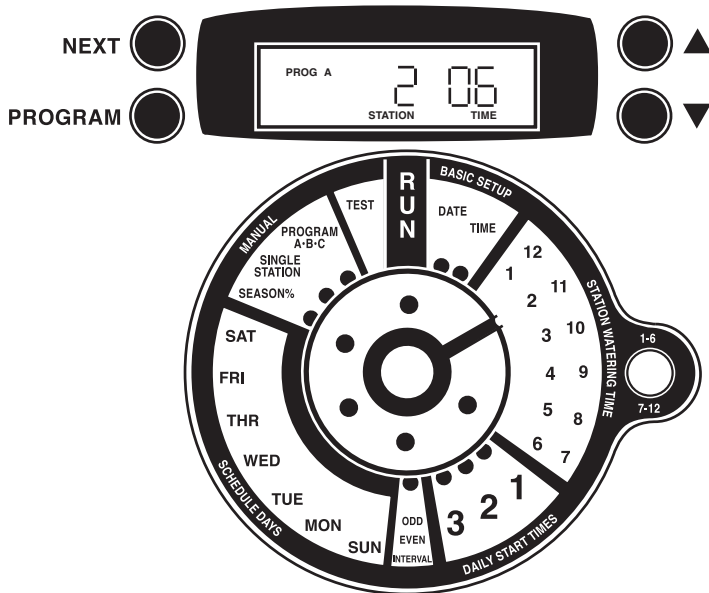
- press **NEXT** button to select INTERVAL
- press ▲ or ▼ button to select number of days between watering (example: Selecting 3, waters every third day)
- press **NEXT** button
- press ▲ or ▼ buttons to select day on which interval should begin
- rotate dial back to **RUN**

To prevent watering on specific days during odd or even day schedule.

- press **NEXT** button to select ODD or EVEN
- press ▲ button until days of the week appear on display (approximately 5 seconds)
- press **NEXT** button to select a day watering is to be prevented
- press ▼ button to omit that day from odd/even watering schedule
- rotate dial back to **RUN**

Note: More than one day may be omitted.

To Set Multiple Watering Programs



To set additional programs to water

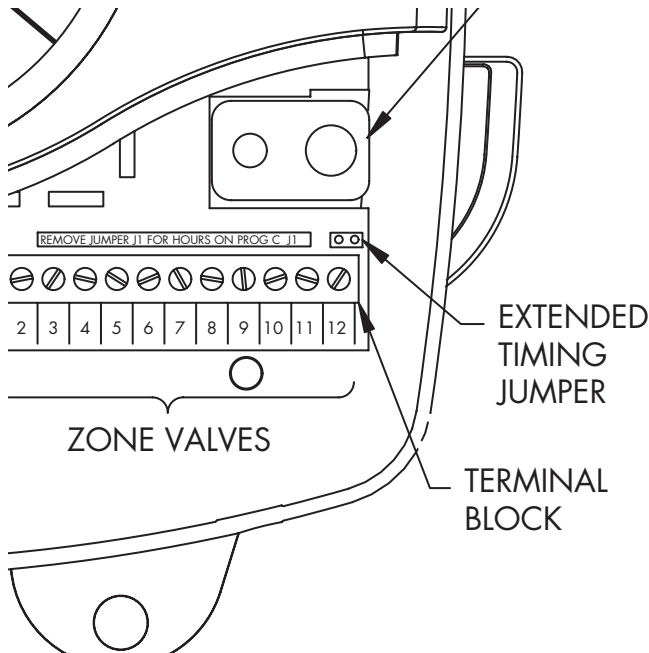
- Rotate dial to **STATION WATERING TIME** section for the desired station
- Press **PROGRAM** button to select B or C
- Set **STATION WATERING TIME** for stations in selected program
- Set **DAILY START TIME(s)** in selected program
- Set **SCHEDULE DAYS** in selected program
- Rotate dial to **RUN**

If a start time is inadvertently set to water before another program has completed, the second program will start upon completion of the first program.

To clear all program settings:

- Rotate dial to **PROGRAM A•B•C**
- Use unfolded paper clip to press the reset button through the reset button access hole located on the right side to the panel
- Reprogram the controller.

To Set Extended Timing Mode

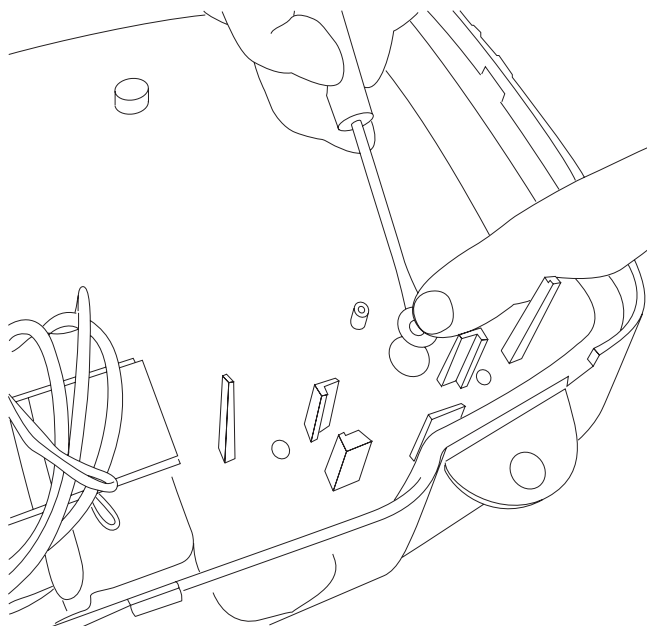


Program C has the capability to operate in extended timing mode (up to 9.9 hours in 0.1 hour increments) (0.1 hours = 6 minutes). To utilize this feature:

- Remove Wiring Access Cover (see Fig. 1, Page 4)
- Locate rectangular Extended-Timing Jumper between Battery and right end of Terminal Block
- Gently pull jumper straight up, removing it from 2 pins, and re-insert on 1 of the pins (to prevent it from being lost).
- Replace Wiring Access Cover.

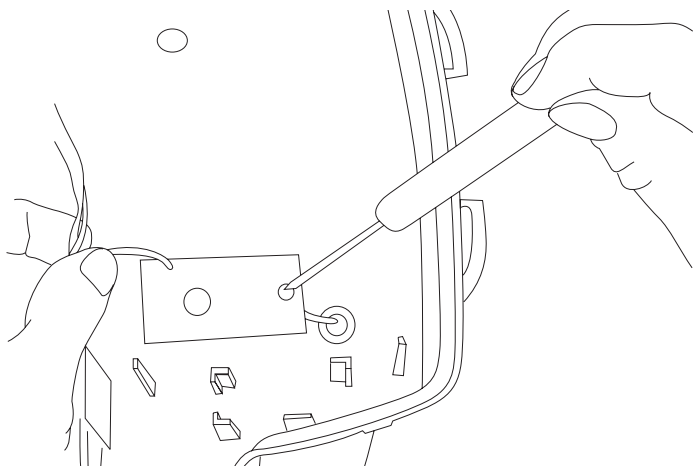
Program C will now operate in extended timing mode. To restore original timing mode, reinstall jumper on both pins.

The Remote Control



Installing the remote control

- Turn off power to WEATHERMATE™ controller. Remove both the Wiring Access Cover and face panel by pushing in firmly on the left side. Remove controller battery (if any).
- Remove button plug using a small flat screwdriver, then route the gray antenna wire through the hole in the back of the controller housing.
- Press antenna seal into the hole, then route the antenna straight up the back of the controller housing and snap into the clip at the top of the back of the housing.
- Attach the remote receiver circuit board (WM-RR) to the back of the WEATHERMATE™ controller housing with screw provided in the orientation shown on the following page, then connect receiver lead to the black plug on the back of the main panel.



Re-install the battery, face panel, and Wiring Access Cover.

Initializing your remote control

- On the controller face panel, press and hold the ▲ and ▼ buttons simultaneously for a few seconds until flashing small zeros appear in the display.
- Aim the transmitter (WM-RT) at the controller and press the ►► button until the time of day reappears.

The remote is now uniquely keyed to your WEATHERMATE™ controller.

Operation of the remote control

Before the remote control will operate, a run time **MUST** be set on stations to be remotely controlled. A station with zero time will **NOT** operate from the remote control.

- The lower button ► | ■ on your remote transmitter turns stations either on or off.
- The upper button ►► advances to the next station.
- The green light indicates that a signal is being transmitted.
- The clear unobstructed line of sight range with new batteries is 600 feet. The transmission range is gradually reduced by weak batteries or by obstacles such as glass, earth, vehicles, or building structures.

- If a remote operation is not stopped, the controller will cycle one time through all stations with a programmed run time.
- The remote can be stored by pressing it onto the posts located inside the controller front door.

WARNING

THE TRANSMITTER ANTENNA WAS TESTED BY WEATHERMATIC AND APPROVED FOR FCC COMPLIANCE. **IT IS CORRECTLY INSTALLED IN THE FACTORY. DO NOT ATTEMPT TO MODIFY OR REPLACE THE TRANSMITTER ANTENNA.** REMOVAL OR MODIFICATION OF THIS ANTENNA MAY EITHER SUBSTANTIALLY REDUCE THE OPERATIONAL RANGE OF THE REMOTE CONTROL OR CAUSE INTERFERENCE TO OTHER ELECTRONIC DEVICES.

Frequently asked questions about the WM-RC WEATHERMATE™ Remote

How can the remote begin watering?

By simply pushing the ON/OFF button ► I ■ once, the controller will sequentially operate each station that has a run time entered in any program (A,B, or C). The longest run time for each station in any of the three programs will be used. Watering automatically stops at the end of the cycle, and the controller will continue to run its regularly scheduled automatic operation.

Can I select a station using the Remote?

You can select a station by simply pushing the advance button ► ►. Advancing past the last station will cause the controller to start again.

What is the battery life of the remote?

The transmitter battery should last for 2-5 years depending on the frequency of use and storage. Replacement batteries can be purchased from any Radio Shack store (Battery number CR2032, 3 volt).

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
Only Battery Icon showing in display	No AC power to WEATHERMATE™	Check power supply to WEATHERMATE™
Blank Display	No AC power to transformer	Check circuit breaker panel Check GFCI outlet reset button
	No AC power from transformer	Replace transformer
	Transformer damaged by power surge	Replace transformer
Program does not come on automatically	Dial not in RUN position	Set dial to RUN position
	No DAILY START TIME entered	Enter a DAILY START TIME
	No SCHEDULE DAYS set	Set days ON or set interval schedule
Display shows a station operating, but no watering occurs	Valve power button toggled to OFF	Toggle Valve Power button to WATER
	Blown fuse	Replace fuse
	Sensor installed incorrectly	Check sensor installation
	Sensor has interrupted watering cycle	Allow time for sensor to dry
	Sensor leads have been cut	Toggle Valve Power button to WATER to bypass sensor
	Water is not turned on at source	Turn on water to system
Watering starts on wrong day	SCHEDULE DAYS set incorrectly	Set SCHEDULE DAYS
	DATE set incorrectly	Verify that day and day of week entered in DATE is today
Watering starts at wrong time	Start time set incorrectly	Check DAILY START TIME
	Time of day set incorrectly	Set TIME of day Page 11
	Multiple programs or DAILY START TIMES set	Check start times for all programs (A, B and C)
Program in display runs continuously	Controller programmed incorrectly	Correct programs or clear program Check start times for all programs

PROBLEM	POSSIBLE CAUSE	SOLUTION
A particular station does not come on	No STATION WATERING TIME entered	Enter watering time
	Wiring to valve is broken	Check field wiring
	Flow adjust on valve is shut	Open flow adjust
Display shows ERR message and Station 0	A short circuit in valve solenoid or field wiring for Master Valve caused all stations to be skipped	Repair shorted condition or replace Master Valve solenoid Check bare wires or loose connections Clear ERR message by using TEST on all stations
Display shows ERR message with station number	A short circuit in valve solenoid or field wiring caused station to be skipped	Repair shorted condition or replace solenoid for stations shown
		Check bare wires or loose connections
		Perform TEST on all stations
Water runs without power to WEATHERMATE™	Valve failed to open	Repair or replace valve
Station waters when valve power button is OFF	Field wiring problem	Check field wiring
	Station is damaged	Move wire to an unused station and set station watering time

Remote control won't initialize	Initialization error	Repeat initialization procedure on page 27
	Receiver not connected	Plug it in and repeat initialization
	Transmitter antenna wrapped around remote unit	Unwrap antenna and repeat initialization
	Dead battery	Replace coin battery and repeat initialization
	Receiver nonfunctional	Replace receiver and repeat initialization
Remote control doesn't turn stations on	No station time is set	Set watering time
	Valve Power button set to OFF	Press Valve Power button to ON
	Out of range	Move closer
Decreased range for remote control	Weak battery	Replace coin battery in transmitter
	Broken antenna	Replace remote

Note: To clear programming information, rotate dial to **PROGRAM A B C**, press reset button, and reprogram controller.



Remote Control
kit optional

6, 9, and 12-Station Models

WM6-O (Outdoor)

WM6-N (Indoor)

WM9-O (Outdoor)

WM9-N (Indoor)

WM12-O (Outdoor)

WM12-N (Indoor)

Export Models

E-WM6-O

E-WM9-O

E-WM12-O

Dimensions

9 1/2" W x 10" H x 4 1/8" D

(24.1 cm W x 25.4 cm H x 10.5 cm D)

Features

- Strong, attractively styled housing is available in both indoor and UV-resistant outdoor models
- Large, easy-to-read liquid crystal display
- Optional remote control offers a wireless link to the controller (Range 600 ft. line of sight)
- Simple, dial-based programming
- Non-volatile memory retains programs in the event of a power outage
- Three fully independent programs with three start times per program
- Adjustable test cycle from 1-10 minutes
- Input surge protection against power spikes
- Short detection system protects controller from field wiring problems and indicates stations requiring service
- Weekly, interval (up to 30 days), add, and even day scheduling
- Blackout day option during odd or even day watering accommodates weekly grounds maintenance and strict water rationing requirements
- Percent scaling provides easy seasonal adjustments to station watering time (10-200%)
- External sensor input with manual override on face panel
- Terminal block test post offers easy identification for field wiring designation
- Keyhole port insures easy controller mounting
- Flexible station water times (1 min. to 9.9 hours)
- Three stackable start times simplify the programming of overlapping schedules
- Master Valve/Pump circuit
- Simultaneously operates up to two Weathermatic valves or one Weathermatic valve and one master valve (Maximum draw up to 1 AMP)
- Reset button provides quick clearance of existing programs

Options

- Remote control kit specify #WM-RC
- Receiver only specify #WM-RR
- Transmitter only specify #WM-RT
- Welcome to Weathermate Video #AD202
- Rain-Stat rain sensor specify #950
- Conduit junction box specify #951-05
- Pump circuit accessory package specify #952
- Wall anchor kit specify #955
- Weathermatic screwdriver specify #AD410