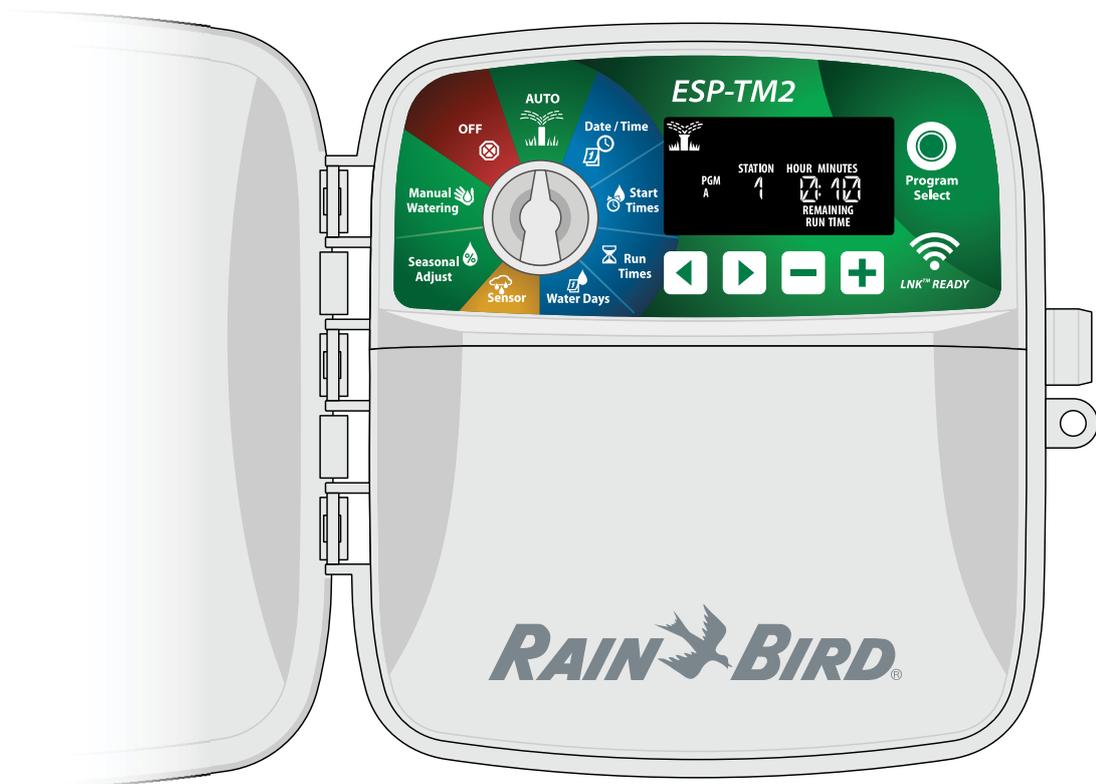




ESP-TM2 Controller User Manual



LNK™ Ready

Introduction	3
Welcome to Rain Bird.....	3
ESP-TM2 Controller Features.....	3
WiFi Enabled.....	3
Installation	4
Mount Controller.....	4
Wiring Connections.....	4
Connect Valves.....	4
Connect Master Valve (optional).....	4
Connect Pump Start Relay (optional).....	5
Connect Rain/Freeze Sensor (optional).....	5
Connect Custom Wiring (optional).....	6
Controls and Indicators	6
Basic Programming	7
1. Set Date and Time.....	7
2. Set Watering Start Times.....	7
3. Set Station Run Times.....	7
4. Set Watering Days.....	7
Custom Days of the Week.....	7
Manual Watering Options	8
Test All Stations.....	8
Run a Single Station.....	8
Run a Single Program.....	8
Normal Operation	8
AUTO RUN.....	8
OFF.....	8
Advanced Programming	9
Odd or Even Calendar Days.....	9
Cyclic Days.....	9
Rain Sensor.....	9
Seasonal Adjust.....	9
Delay Watering.....	9
Permanent Days Off.....	10
Special Features	10
Options	11
Reset Button.....	11
Accessories.....	11
Troubleshooting	11
Watering Issues.....	11
Electrical Issues.....	11

Hazardous Warnings

WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

SAFETY INSTRUCTIONS

Specific safety-related instructions or procedures are described.

Symbols & User Operation

 **NUMBERS** define a series of steps for the user to follow in order to operate the controller.

 **NOTE:** Notifies the user of important operating instructions related to controller functionality, installation or maintenance.

 **REPEAT:** Indicates that a repetition of previous steps or actions may be required for further operation, or to complete a process.

Technical Support

Questions?

For help setting up and operating the Rain Bird ESP-TM2 Controller, scan the QR code to visit

www.rainbird.com/esptm2



Additional user documentation is available under the Manuals & Literature tab, including:

- User Manual (this document)
- Quick Reference Guide
- Programming Guide
- Foreign Language Support

To learn more about Rain Bird irrigation systems and our Rain Bird Academy training programs, visit:

www.rainbirdsolutions.com/training

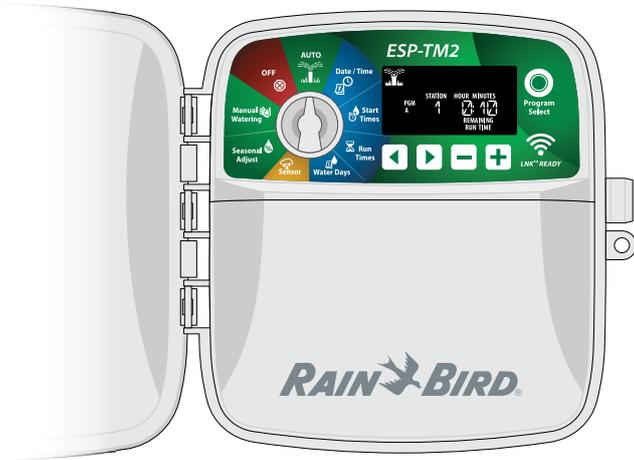
To see instructional videos for the ESP-TM2, visit

www.youtube.com/

Introduction

Welcome to Rain Bird

Thank you for choosing Rain Bird's ESP-TM2 controller. In this manual are step by step instructions for how to install and operate the ESP-TM2.



ESP-TM2 Controller Features

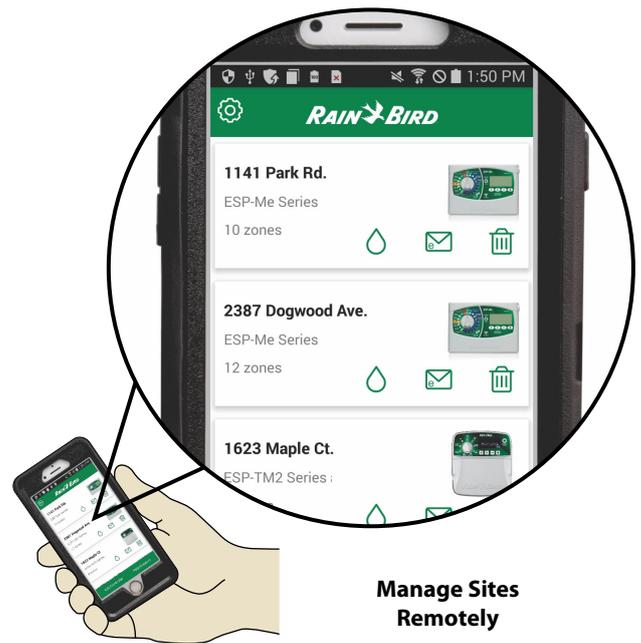
Feature	Description
Maximum Stations	12
Simultaneous Stations	1 plus master valve
Start Times	4
Programs	3
Program Cycles	Custom Days, Odd, Even and Cyclic
Permanent Days Off	Per program
Master Valve Control	On/Off per station
Rain Delay	Supported
Rain/Freeze Sensor	Supported
Rain Sensor Control	Global or by station
Seasonal Adjust	Global or by program
Manual Station Run	Yes
Manual Program Run	Yes
Manual Test All Stations	Yes
Station Advance	Yes
Short Detect	Yes
Delay Between Stations	Yes
Accessory Port	Yes (5 pin)
Save & Restore Programming	Yes
WiFi Compatible	Yes - with LNK™ WiFi Module

WiFi Enabled

The LNK™ WiFi Module allows remote connection to a Rain Bird ESP-TM2 Controller using an Apple iOS or Android compatible smart device. The mobile application allows remote access and configuration of one or more irrigation controllers.

For more information on the LNK™ WiFi Module and the value this product can provide for your ESP-TM2 controller, please visit: <http://wifi-pro.rainbird.com>

LNK™ WiFi Module
(sold separately)



Manage Sites
Remotely

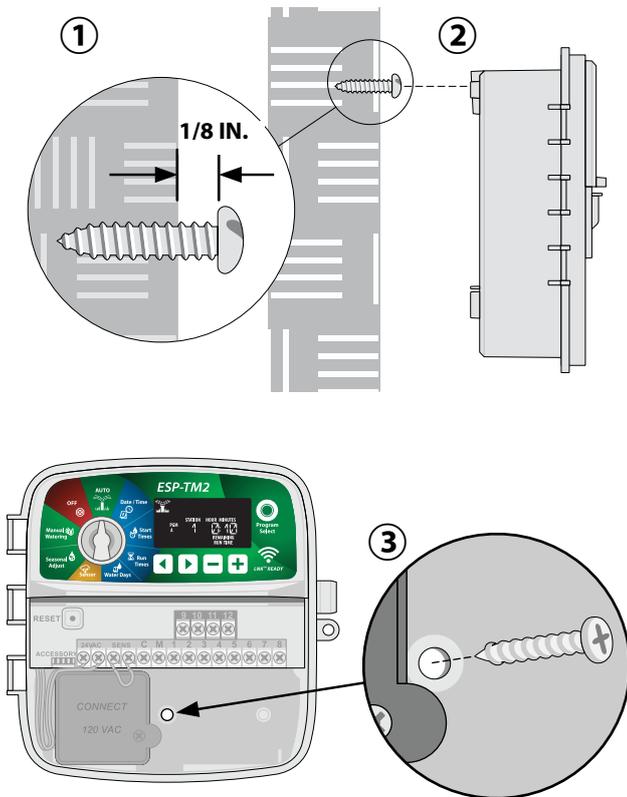
Installation

Mount Controller



NOTE: Choose a suitable mounting location close to a 230VAC wall outlet.

- ① Drive a mounting screw into the wall, leaving an 1/8 inch gap between the screw head and the wall surface (use the supplied wall anchors if necessary), as shown.
- ② Locate the keyhole slot on back of the controller unit and hang it securely on the mounting screw.
- ③ Remove the wiring bay cover on the lower part of the controller unit, and drive a second screw through the open hole inside the controller and into the wall, as shown.



Wiring Connections

Connect Valves

- ① Route all field wires through the opening at the bottom of the unit, or through the knock-out in back of the unit. Attach conduit if desired, as shown.

⚠ WARNING

Do not route valve wires through the same opening as power wires.

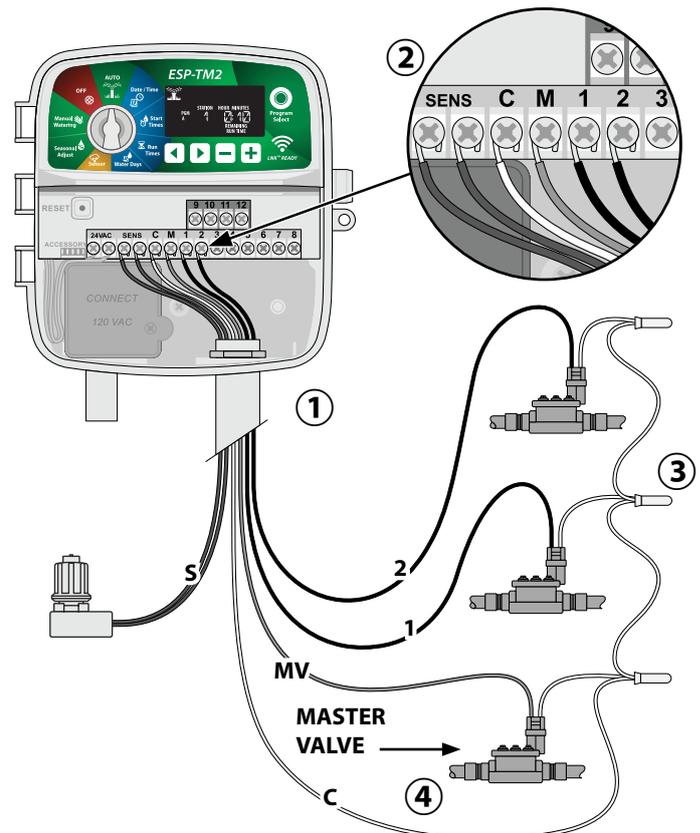
- ② Connect one wire from each valve to one of the numbered station terminals (1-12) on the controller, as shown.
- ③ Connect a field common wire (C) to the common terminal (C) on the controller. Then connect the remaining wire from each valve to the field common wire, as shown.



NOTE: The ESP-TM2 controller supports one valve solenoid per station terminal.

Connect Master Valve (optional)

- ④ Connect a wire from the master valve (M) to the master valve terminal (M) on the controller. Then connect the remaining wire from the master valve to the field common wire, as shown.



Connect Pump Start Relay (optional)

The ESP-TM2 can control a pump start relay, to turn the pump on and off as needed.

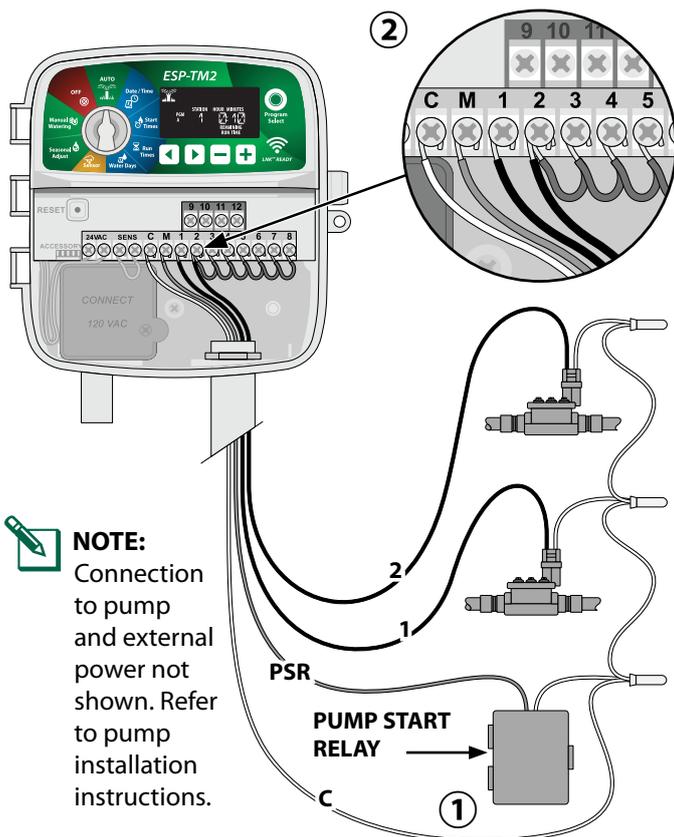
- ① Connect a wire from the pump start relay (PSR) to the master valve terminal (M) on the controller. Then connect another wire from the pump start relay to the field common wire, as shown.
- ② To avoid the possibility of damage to the pump, connect a short jumper wire from any unused terminal(s) to the nearest terminal in use, as shown.

NOTICE

The ESP-TM2 controller DOES NOT provide power for a pump. The relay must be wired according to manufacturer instructions.

Only the following Rain Bird pump start relay models are compatible with the ESP-TM2:

Description	Model #	Volts
Universal Pump Relay	PSR110IC	110V
Universal Pump Relay	PSR220IC	220V



Connect Rain/Freeze Sensor (optional)

The ESP-TM2 controller can be set to obey or ignore a rain sensor.

Refer to the Rain Sensor section under Advanced Programming.

- ① Remove the yellow jumper wire from the SENS terminals on the controller.

NOTICE

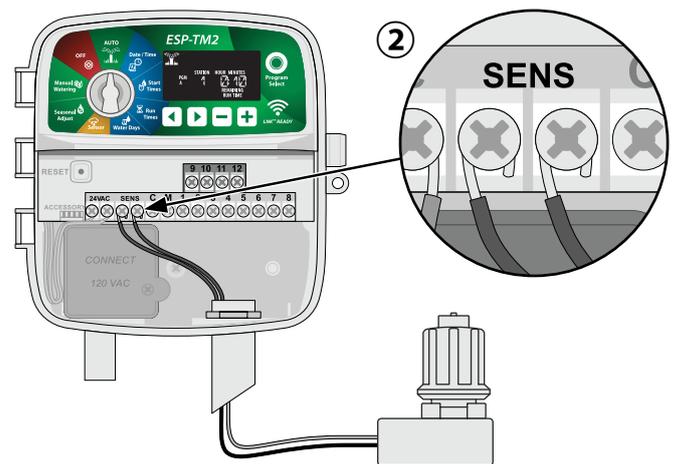
Do not remove the yellow jumper wire unless connecting a rain sensor.

- ② Connect both rain sensor wires to the SENS terminals, as shown.

WARNING

Do not route the rain sensor wires through the same opening as the power wiring

- NOTE:** Rain Bird controllers are only compatible with normally closed rain sensors.
- NOTE:** For wireless rain/freeze sensors, refer to installation instructions for sensor.



Connect Custom Wiring (optional)

If desired, the provided 230 volt power cord can be removed and replaced with a custom wiring.

⚠ WARNING

DO NOT plug in the transformer or connect external power until you have completed and checked all wiring connections.

⚠ WARNING

Electric shock can cause severe injury or death. Make sure power supply is turned OFF before connecting power wires.

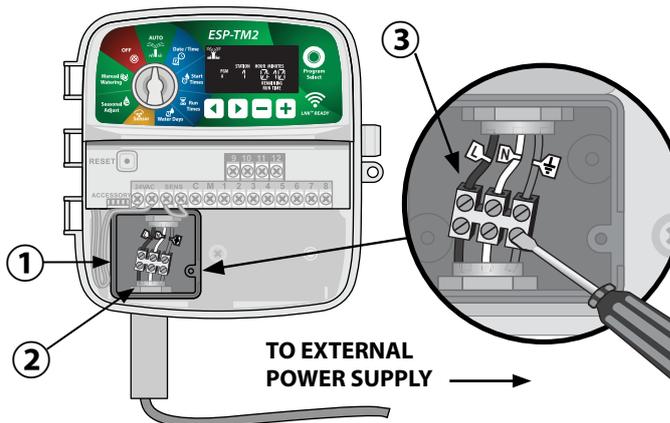
- ① Locate the transformer wiring compartment in the lower left corner of the controller unit. Use a screwdriver to remove the cover and expose the transformer connection wires.
- ② Route the three external power source wires through the conduit opening at the bottom of the unit and into the wiring compartment.
- ③ Connect the external power source wires (two power and one ground) to the transformer connection wires inside the wiring compartment.

⚠ WARNING

Ground wire must be connected to provide electrical surge protection. Permanently mounted conduit shall be used for connecting main voltage to the controller

NOTE: Use either the provided wire nuts or the installed connector for this step.

- ④ Verify that all wiring connections are secure, then replace the wiring compartment cover and secure it with the screw.



⚠ WARNING

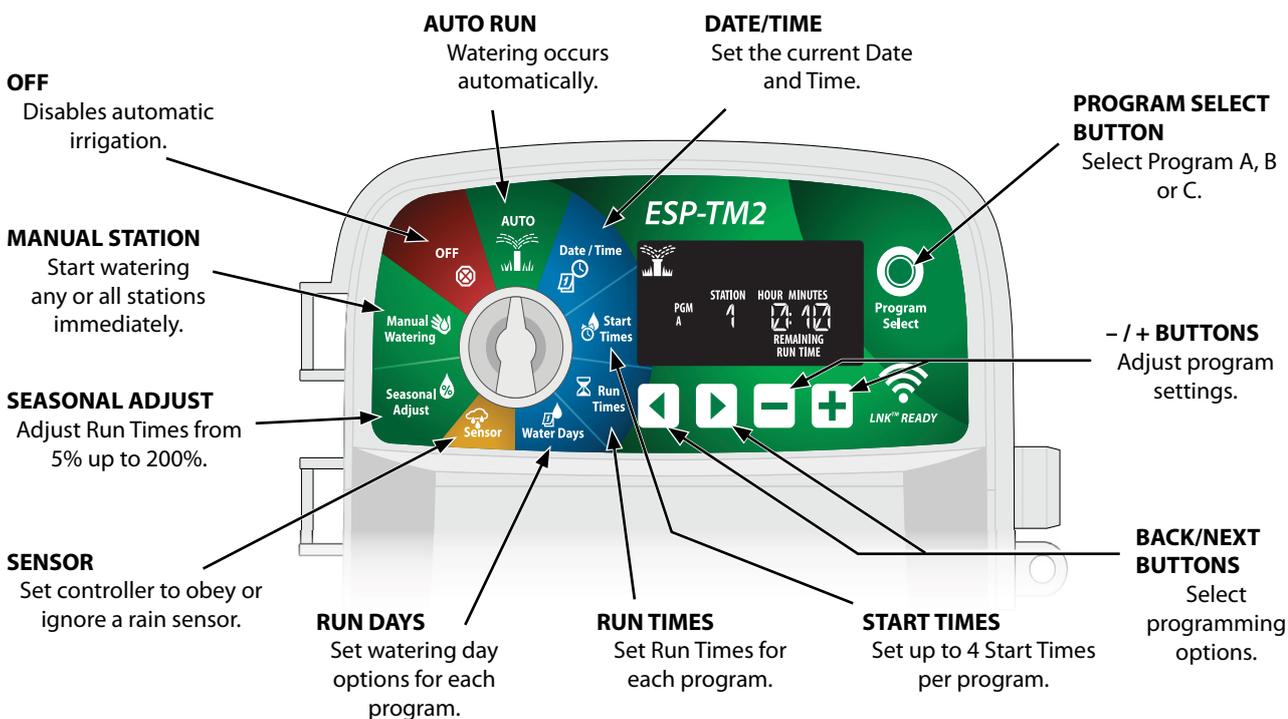
DO NOT apply power until you have completed and checked all wiring connections.

POWER WIRING CONNECTIONS 230 VAC (International)

- Brown supply wire (hot) to the brown transformer wire labeled with "L"
- Blue supply wire (neutral) to the blue transformer wire labeled with "N"
- Green-with-yellow-stripe supply wire (ground) to the green-with-yellow-stripe transformer wire

Controls and Indicators

Turn the dial to select programming features.



Basic Programming

1. Set Date and Time

 Turn the dial to **DATE/TIME**.

- ① Press ◀ or ▶ to select the setting to change.
- ② Press – or + to change the setting value.
- ③ Press and hold – or + to accelerate adjustments.

To change the time format (12 hour or 24 hour):

- ④ With **MINUTES** blinking, press ▶ .
- ⑤ Press – or + to select the desired time format, then press ▶ to return to the time setting.

2. Set Watering Start Times

Up to four Start Times are available for each program.

 Turn the dial to **START TIMES**.

- ① Press **Program Select** to choose the desired Program (if necessary).
- ② Press ◀ or ▶ to select an available Start Time.
- ③ Press – or + to set the selected Start Time (ensure the AM/PM setting is correct).
- ④ Press ▶ to set additional Start Times.

3. Set Station Run Times

Run Times can be set from one minute up to six hours.

 Turn the dial to **RUN TIMES**.

- ① Press **Program Select** to choose the desired Program (if necessary).
- ② Press ◀ or ▶ to select a Station.
- ③ Press – or + to set the Run Time for the selected Station.
- ④ Press ▶ to set additional Station Run Times.

 **NOTE:** Rain Bird recommends that the maximum irrigation zone cycle time be less than the time required for runoff to begin and that there be adequate soak time before the next irrigation cycle of that same zone begins again.

4. Set Watering Days

Custom Days of the Week

Set watering to occur on specific days of the week.

 Turn the dial to **RUN DAYS**.

- ① Press **Program Select** to choose the desired Program (if necessary).
- ② Press – or + to set the selected (blinking) day as either **ON** or **OFF**, and to automatically move to the next day.
- ③ You can press ◀ or ▶ at any time to move the cursor to the previous or next day.

 **NOTE:** If Sunday is selected, ▶ will enter and activate Cyclic Watering (see the Advanced Programming section). If this is not desired, press the ◀ button to return to watering by Custom Days.

Manual Watering Options

Test All Stations

Start watering immediately for all programmed stations.

 Turn the dial to **MANUAL STATION**.

- ① Press **—** or **+** to set a Run Time.
- ② Press and hold **▶** or turn the dial to **AUTO RUN** to start manual station test.

Run a Single Station

Start watering immediately for a single station.

 Turn the dial to **MANUAL STATION**.

- ① Press **▶** to display the MANUAL STATION screen.
- ② Press **◀** or **▶** to select a Station.
- ③ Press **—** or **+** to set a Run Time.
- ④ Press and hold **▶** or turn the dial to **AUTO RUN** to start the selected Station.

Run a Single Program

Start watering immediately for one program.

 Turn the dial to **AUTO RUN**.

- ① Press **Program Select** to choose the desired Program (if necessary).
- ② Press and hold **▶** to start the selected Program.

During Manual Watering:

The display shows a blinking sprinkler symbol, the active Station Number or Program, and the Remaining Run Time.



- ③ To cancel manual watering, turn the dial to **OFF** for three seconds until the screen shows OFF.

Normal Operation

AUTO RUN

During watering, the display shows a blinking sprinkler symbol, the current Program and the Remaining Run Time.



OFF

Turn the dial to  **OFF** to stop automatic irrigation or to cancel all active watering immediately.

NOTICE

Watering will NOT occur if the controller remains in the OFF position.

Advanced Programming

Odd or Even Calendar Days

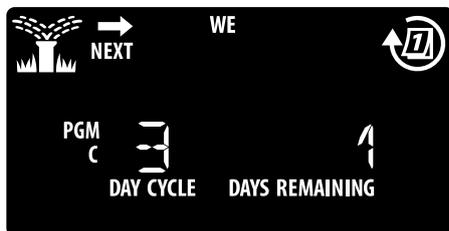
Set watering to occur on all **ODD** or **EVEN** calendar days.

- Turn the dial to **RUN DAYS**.
- Press **Program Select** to choose the desired Program (if necessary).
- Press and hold ◀ and ▶ at the same time until **ODD** or **EVEN** is displayed.

Cyclic Days

Set watering to occur at specific intervals, such as every 2 days, or every 3 days, etc.

- Turn the dial to **RUN DAYS**.
- Press **Program Select** to choose the desired Program (if necessary).
- On the **Custom Days** screen, press ▶ until the **Cyclic** screen is displayed (after SUN).
- Press – or + to set the desired DAY CYCLE, then press ▶
- Press – or + to set the DAYS REMAINING before the cycle begins. The NEXT watering day updates on the display to indicate the day that watering will start as shown.



Rain Sensor

Set the controller to obey or ignore a rain sensor.

When set to **ACTIVE**, automatic irrigation will be suspended if rainfall is detected. When set to **BYPASS** all programs will ignore the rain sensor.

- Turn the dial to **SENSOR**.
- Press – or + to select **ACTIVE** (obey) or **BYPASS** (ignore).



Obey sensor



Ignore sensor



Rain detected
(flashing)



NOTE: See **Special Features** to set Rain Sensor Bypass by Station.

Seasonal Adjust

Increase or decrease program run times by a selected percentage (5% to 200%).

Example: If the Seasonal Adjust is set to 100% and the station Run Time is programmed for 10 minutes, the station will run for 10 minutes. If the Seasonal Adjust is set to 50%, the station will run for 5 minutes.



Turn the dial to **SEASONAL ADJUST**.

- Press – or + to increase or decrease the global percentage setting.
- To adjust an individual Program, press **Program Select** to choose the desired Program (if necessary).

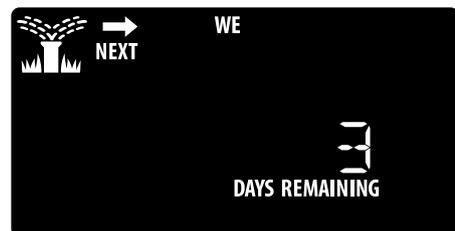
Delay Watering

Suspend watering for up to 14 days.



Turn the dial to **AUTO RUN**, then press and hold +

- Press – or + to set the DAYS REMAINING. The next watering day will update on the display to indicate when watering will resume.



- To cancel a Rain Delay, set the DAYS REMAINING back to 0.



NOTE: When the delay expires, automatic irrigation resumes as scheduled.

Permanent Days Off

Prevent watering on selected days of the week (for Odd, Even or Cyclic programming only).

- 1 Turn the dial to **RUN DAYS**.
- 1 Press **Program Select** to choose the desired Program (if necessary).
- 2 Press and hold **Program Select**.
- 3 Press **-** to set the selected (blinking) day as a Permanent Day Off or press **+** to leave the day **ON**.



Special Features

- 1 Turn the dial to the desired position.
- 2 Press and hold ◀ and ▶ at the same time.

SET INTERSTATION DELAY

A station delay (from 1 second to 9 hours) ensures that a valve has completely closed before the next one opens.

RESET TO FACTORY DEFAULTS

All programmed schedules will be erased.

SET RAIN SENSOR BYPASS BY STATION

Tells a station to obey or ignore a rain sensor.

SAVE PROGRAMMING

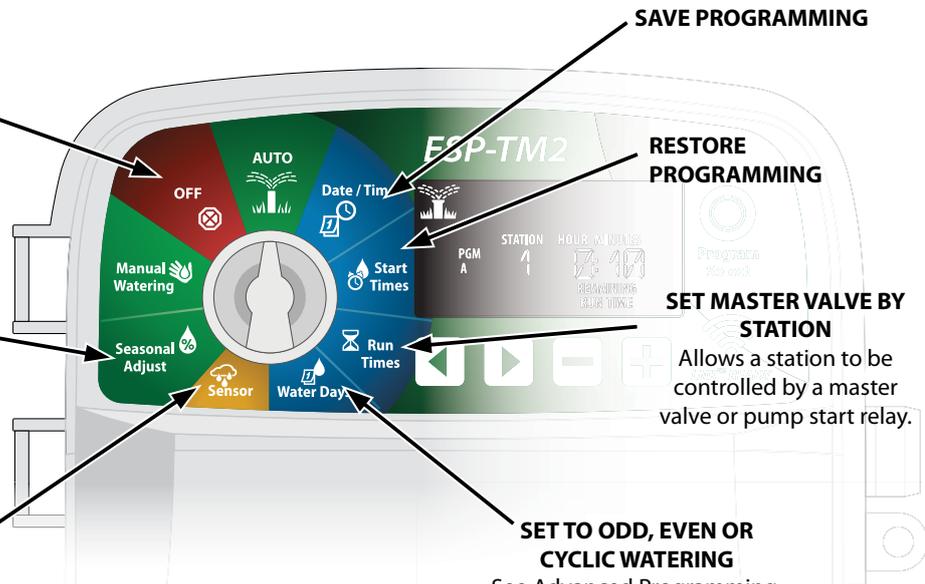
RESTORE PROGRAMMING

SET MASTER VALVE BY STATION

Allows a station to be controlled by a master valve or pump start relay.

SET TO ODD, EVEN OR CYCLIC WATERING

See Advanced Programming.

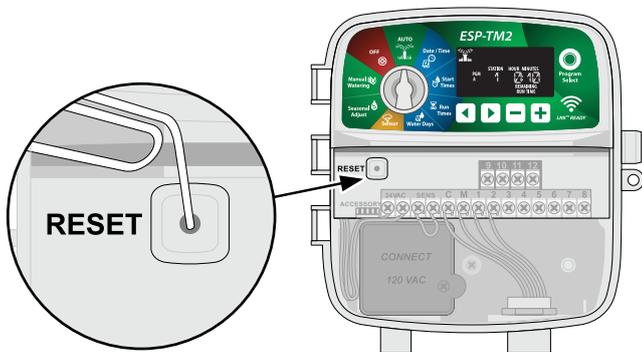


Options

Reset Button

If the controller is not working properly, you can try pressing RESET.

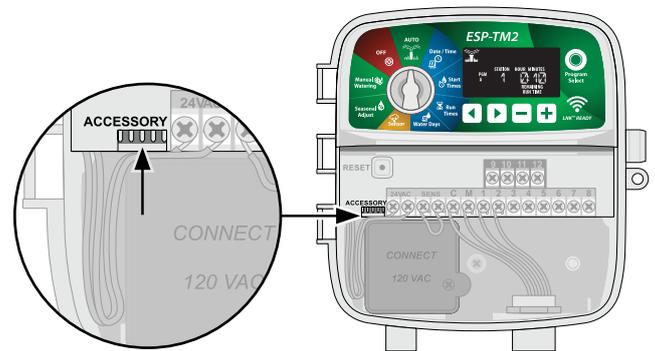
- 1 Insert a small tool such as a paper clip, into the access hole and press until the controller is reset. All previously programmed watering schedules will remain stored in memory.



Accessories

A 5 pin accessory port is available for Rain Bird approved external devices, including:

- 1 LNK™ WiFi Module
- 2 LIMR Receiver Quick Connect harness



Troubleshooting

Watering Issues

Problem	Possible Cause	Possible Solution
Watering icon on the display is flashing, but the system is not watering	Water supply issue.	Verify there is no disruption to the main water line and that all other water supply lines are open and functioning.
	Wiring is loose, not properly connected or damaged.	Check that wiring is securely connected at the controller and in the field. Check for damage and replace if necessary. Check wiring connections and replace with watertight splice connectors if needed.
Automatic and/or Manual Watering will not start	Connected rain sensor may be activated.	Let the rain sensor dry out or else disconnect it from the controller terminal block and replace it with a jumper wire connecting the two SENS terminals.
	Jumper wire connecting the two SENS terminals may be missing or damaged.	Jumper the two SENS terminals on the controller terminal block by connecting them with a short length of 14 to 18 gauge wire.
	Solenoid or master valve is shorted.	Confirm short message on the display. Correct the issue in the wiring. Clear the message by testing watering at the shorted valve or by pressing the ► button.
Excessive watering	Programs may have multiple start times that were set unintentionally	Programs (A, B or C) only require a single start time in order to run. Separate start times are not required for each valve.

Electrical Issues

Problem	Possible Cause	Possible Solution
Display is blank.	Power not reaching the controller.	Verify the main AC power supply is securely plugged in or connected and working properly.
		Verify the orange power supply wires are connected to the controller "24 VAC" terminals.
Display is frozen and controller will not accept programming.	An electrical surge may have interfered with the controller's electronics.	Unplug the controller for 2 minutes, then plug it back in. If there is no permanent damage, the controller should accept programming and resume normal operation.
		Press and release the RESET button.

Certifications

EU Declaration of Conformity

Rain Bird Corporation hereby declares that the following irrigation controllers are EU compliant.

- The products submitted meet the requirements of IP24.
- The object of the declaration described above is in conformity with the relevant Union Harmonization Legislation:

Product name: ESP-TM2 Irrigation Controller
Model #: ESP-TM2

Standards to which conformity is declared:
2014/30/EU EMC Directive (EMC)

- EN 55014-1:2006 + A2:2011
- EN 55014-2:1997 + A1:2001 + A2:2008

2014/35/EU Low Voltage Directive (LVD)

- EN 60335-1:2012 + A11:2014 + AC:2014
- EN 62233:2008+AC: 2008

2011/65/EU RoHS Directive

- EN 50581:2012

Signature:



Full name: Ryan L. Walker

Position: Director

Date: March 21, 2018

Place: San Diego, CA USA

Rain Bird Corporation 970 W. Sierra Madre Azusa, California 91702, U.S.A. 626-963-9311	Rain Bird International, Inc. 1000 West Sierra Madre Azusa, CA 91702, U.S.A. Ph: (626) 963-9311 Fax: (626) 852-7343	Rain Bird Europe 240 Rue René Descartes Batiment A PARC CLAMAR BP 40072 13792 AIX EN PROVENCE CEDEX 3 FRANCE
--	--	--

Waste Electrical and Electronic Equipment (WEEE)



As a hardware manufacturer, Rain Bird has met its national obligations to the EU WEEE Directive by registering in those countries to which Rain Bird is an importer. Rain Bird has also elected to join WEEE Compliance Schemes in some countries to help manage customer returns at end of life.

Safety Information

⚠ WARNING

Special precautions must be taken when valve wires (also known as station or solenoid wires) are located adjacent to, or share a conduit with other wires, such as those used for landscape lighting, other "low voltage" systems or other "high voltage" power.

Separate and insulate all conductors carefully, taking care not to damage wire insulation during installation. An electrical "short" (contact) between the valve wires and another power source can damage the controller and create a fire hazard.

All electrical connections and wiring runs must comply with local building codes. Some local codes require that only a licensed or certified electrician can install power. Only professional personnel should install the controller. Check your local building codes for guidance.

If the supply cord of an outdoor controller is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

If the supply cord of an indoor controller is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

If the electrical cord for models ESP-TM2 AUS is damaged, it needs to be replaced with the following:

Flexible supply cord H05VV-F

Minimum wire size of 0.75mm² (18 AWG). For Direct Connect wiring, the minimum wire size is 0.75mm² (18 AWG).

Outdoor controller shall be permanently connected to fixed wiring by a flexible cord, and have a cord anchorage. The cord anchorage shall relieve conductors from strain, including twisting, at the terminals and protect the insulation of the conductors from abrasion.

NOTICE

Use only Rain Bird approved accessory devices. Changes or modifications not expressly approved by Rain Bird could void the user's authority to operate the equipment. Unapproved devices may damage the controller and void the warranty. For a list of compatible devices go to: www.rainbird.com

Changes or modifications not expressly approved by Rain Bird could void the user's authority to operate the equipment.

Date and time are retained by a lithium battery which must be disposed of in accordance with local regulations.

Model, serial number, supply rate, manufacturing country and fabrication date are located on the back of the wiring bay cover.

⚠ CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capacity, or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules

Rain Bird ESP-TM2 on the Web

English	www.rainbird.com wifi-pro.rainbird.com
Español	Spain www.rainbird.es wifi-pro.rainbird.es Mexico www.rainbird.com.mx wifi-pro-mx.rainbird.com
Français	www.rainbird.fr wifi-pro.rainbird.fr
Português	www.rainbird.com.br wifi.rainbird.com.br
Italiano	www.rainbird.it wifi-pro.rainbird.it
Deutsche	www.rainbird.de wifi-pro.rainbird.de
Türk	www.rainbird.com.tr wifi-pro.rainbird.com.tr
Русский	www.rainbirdrussia.ru wifi-pro.rainbirdrussia.ru
Polskie	www.rainbird.pl wifi-pro.rainbird.pl
中文	www.rainbird.com.cn

The Intelligent Use of Water®

LEADERSHIP · EDUCATION · PARTNERSHIPS · PRODUCTS

At Rain Bird, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and services for our industry and community.

The need to conserve water has never been greater. We want to do even more and with your help we can. Visit www.rainbird.com for more information about The Intelligent Use of Water®.



Rain Bird Corporation
6991 East Southpoint Road
Tucson, AZ 85756
USA
Tel: (520) 741-6100

Rain Bird Corporation
970 West Sierra Madre Ave.
Azusa, CA 91702
USA
Tel: (626) 812-3400

Rain Bird International
1000 West Sierra Madre
Azusa, CA 91702
USA
Phone: (626) 963-9311

**Technical Services for
U.S. and Canada only:**
1 (800) RAINBIRD
1-800-247-3782
www.rainbird.com

**Specification Hotline
U.S. and Canada only:**
1 (800) 458-3005