



TEMPUS-AG-MV Controller 1 Station



TEMPUS-AG-MV

*Main valve or pump
controller*



USER'S GUIDE

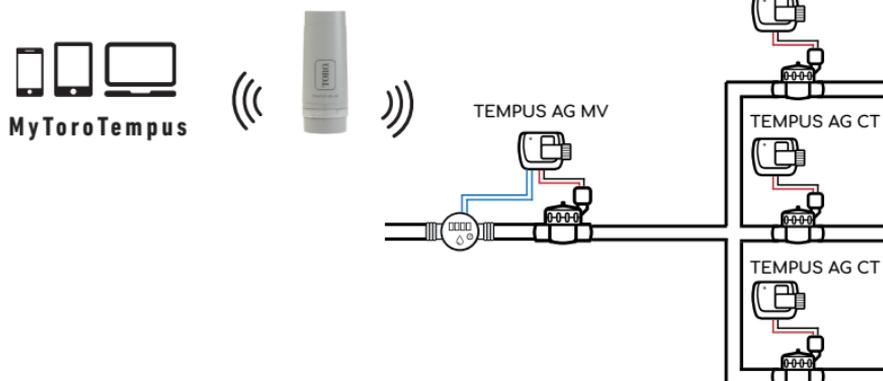
INTRODUCTION

The TEMPUS-AG-MV is a Bluetooth / LoRa connected device. This is a 9V battery supplied controller with an autonomy about approximately a year (the autonomy depends on the programming). It allows to manage a main valve or a pump (via a pump relay). It also offers a water meter input which can control the water flow from the same agriculture controllers network TEMPUS-AG-CT and transmit the information remotely through a TEMPUS-AG-4G / WF.

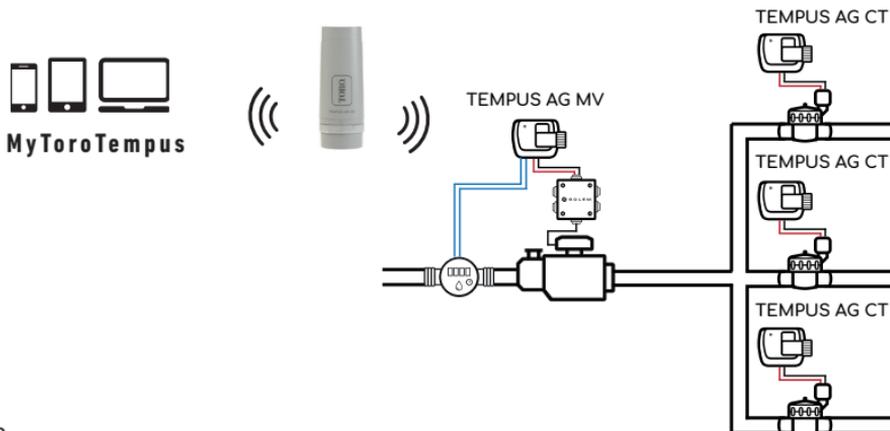
This product only operates in a controllers' cluster TEMPUS-AG-CT. The programming of this device is made automatically regarding the linked TEMPUS-AG-CT controllers programs, from the same network via MyToroTempusAG.com platform.

For any information regarding the app or the platform use, please refer to dedicated user manuals.

Main Valve use



Pump use



SPECIFICATION

DIMENSIONS

Width : 14 cm

Height : 9 cm

Depth : 5,5 cm

INSTALLATION

Raccordement à un capteur de pluie, compteur d'eau ou détecteur de pression

Raccordement de la vanne maîtresse ou relais et pompe

Compatible avec un solénoïde à impulsion de 9V

Longueur maximale du câblage avec solénoïdes : 300 m

POWER SUPPLY

9V 6AM6 ou 6LR61 Alkaline battery (not included)

Current consumption : 0.1mA

USE

Ambient temperature of product use: -20°C to 50°C

Use in humid environment IP68
(test conditions: 1h at 1m depth)

Altitude use up to 2000m

Indoor and outdoor use

Polution level 2

Maximum relative humidity of 80% for temperatures up to 31°C and linear decrease up to 50% of relative humidity at 40°C

FEATURES

Bluetooth® Smart 4.0 Low Energy

LoRa™ radio communication

Permanent programming save

Internal clock saved in case of power failure < 30 s

Installing the wrong type of battery may cause an explosion or fire hazard.

INSTALLATION GUIDELINES

The TEMPUS-AG-MV is made for an outdoor use. You can place it in a buried valve box or set it on a wall (concrete, brick, cinder blocks) with 2 dowels and 2 countersunk screws of 4X40 not included.

In order to clean the TEMPUS-AG-MV, use soapy water with a sponge and then a soft cloth to wipe it off.

Step 1

APP DOWNLOAD

1. On your smartphone or tablet, go to the «App Store» or to the «Play Store».



2. Search for «The Toro Company» in the search bar.

Developer

The Toro Company



3. Once found, download the MyToroTempus App



4. Once installed, activate the Bluetooth® of your smartphone or tablet.

CREATE AN ACCOUNT

To use your products, you need to create your MyToroTempus account.

1. Launch MyToroTempus app from your smartphone and/or tablet.

2. Select the "Registration" button.

3. Follow the steps described on the app.

Note: if you already have an account on the MyToroTempusAG.com platform, you must use the same credentials.

Step 2

ASSOCIATION

1. Unscrew the TEMPUS-AG-MV 's cap
2. Plug the 9V 6LR61 ou 6AM6 battery and screw the cap
3. Launch MyToroTempus app from your smartphone or tablet.
4. Click on the «Add a controller» button or on the «+» button
5. Choose the TEMPUS-AG-MV from the available controllers list.
6. (Optional) Define a name and a security key for your controller and click on the button «Validate».
7. To finish your TEMPUS-AG-MV pairing, follow the next steps described in the app.

Note: To identify your TEMPUS-AG-MV among the nearby controllers, please refer to the «Default name» present on its product label.

Security key

The security key allows to protect your controller. You can define it during the step 6 of the «ASSOCIATION» or access to further information by clicking on the icon  at the top right of your screen.

Step 3

PAIRING WITH TEMPUS-AG-4G/WF

The TEMPUS-AG-MV needs to be paired to a 4G gateway (TEMPUS-AG-4G) or WiFi gateway (TEMPUS-AG-WF) in order to enable a remote connection and a management from the app or from the MyToroTempusAG platform.

In order to optimize the LoRa radio communication between gateways and controllers, it is recommended to instal the controller at least at 800 meters from the gateway. We also recommend to pair all of your controllers TEMPUS-AG near the gateway before setting them in valve boxes.

1. Select the TEMPUS-AG-MV previously installed.
2. Click on  the top right icon to access to the product's informations.
3. Click on «Remote Access».
4. Select the gateway you want to pair the controller with.
5. Click on the button «Send» or  on the bottom of your screen to validate. Once the pairing finished, you can test the connection between your gateway and your TEMPUS-AG-MV
6. Go back to the «Remote access» screen.
7. Click on the button  to start the test.

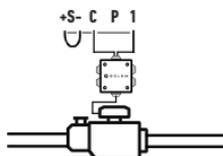
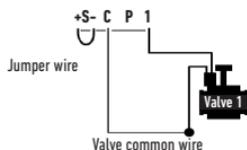
Note:

- The message «Connection established» means that the connection is reliable.
- The message «No connection established» means that it is necessary to bring the TEMPUS-AG-CT closer to the TEMPUS-AG-4G/WF or vice versa.

Step 4

SOLENOID VALVE / PUMP WIRING

1. Plug the TEMPUS-AG-MV as shown below. Use 9V solenoid valves only for a main valve and a relay for a pump use.



Step 5

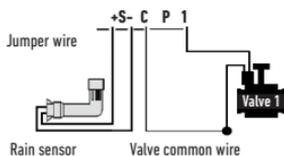
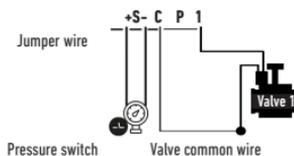
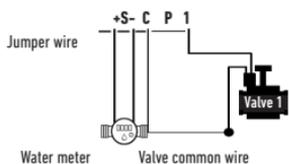
CHOICE AND SENSOR SETUP



Warning, by default there are no sensor configured.

The TEMPUS-AG-MV has a + S - sensor input on which you can connect a rain sensor or a flow meter/water meter or pressure switch after cutting the blue wire. Once the sensor is connected, it is necessary to configure it in the application.

1. Using the MyToroTempus mobile app, connect to your TEMPUS-AG-MV via Bluetooth.
2. Click on Add Sensor.
3. Select your sensor type and follow the instructions given by the application.

Rain sensorPressure switch (AON = All or Nothing)Water meter

Connect your + S - input to a water meter equipped with a flow sensor as shown above. Use dry contact flow sensors or equivalent. For polarized flow sensors, when wiring, observe the polarization :

Red wire -> + Black wire -> -

Step 6

SET FLOWMETER

1. Check the «Instant Value».

Instant Value: Ensures that the volume consumed indicated on the water meter is the same as the volume displayed on the application. If a gap is noted, check the wiring (polarity) or adjust the «COEFFICIENT» value.

2. Fill in the remaining fields.

High threshold (daily volume): maximum consumption (in liter) that you do not want to exceed in a period of 24h. If the goal is exceeded you will be alerted immediately (by e-mail and notification smartphone and / or tablet).

Low threshold (daily volume): minimum consumption (in liters) that you want to achieve over a period of 24h. If the goal is not reached you will be alerted the next day at 7am (by e-mail and notification smartphone and / or tablet).

Leak alert volume: water volume threshold (in liter) from which you want to be alerted outside periods of use.

Station flow: for each station, read the flowmeter at time T (Cpt1), start the station in manual mode for 5 minutes then at time T + 5mn (Cpt2). Read again the instant value Cpt2.

Make the calculation $(Cpt2 - Cpt1) / 5 \Rightarrow \text{Flow (L / min)}$

In the application fill in the results.

High Threshold (Station Flow Alerts): Maximum consumption warning threshold in % of the calibrated flow of the channel. The «High threshold» alert is immediate as soon as it is reached.

Low threshold (Station Flow Alerts): Minimum consumption warning threshold in % of the calibrated flow of the channel. The «High threshold» alert is immediate as soon as it is reached. For each station flow alert you have the possibility to define the desired type of action:

- **No action:** watering continues.
- **Permanent OFF:** resuming watering requires a manual ON command (in the application on the programmer concerned).
- **Inhibit the output:** stops the station concerned, requires the acknowledgment of the alert (in the application on the programmer concerned) to reactivate the station.

Stabilization time:

Time required before the water flow is stable when starting and stopping the station. It eliminates the peak flow (start) or leak (stop). The time is the same for all stations.

During this period, the consumption is not taken into account for triggering alerts or actions.

SET PRESSURE SWITCH

How to set up manually your pressure switch on the pipe :

1. The contact of the pressure switch is normally closed.
2. Put the pressure switch on the pipe.
3. Remove the cap on the head of the pressure switch.
4. Check that the value is 0 using the instant value connected in bluetooth with the App.
5. Open the irrigation and check if the value is 1.
6. To set it up precisely. During irrigation Screw the screw of the pressure switch until the instant value go to 0.
7. Then always during the irrigation, unscrew slowly a little bit more the screw in order to get again the 1.

Note: You can also use a multimeter instead of the using the instant value.

FAQ

What are the features required for the Bluetooth® product to work?

Android 4.3 (or more) Smartphones or tablets equipped with Bluetooth Smart 4.0 (or more). iOS 9.0 Apple iPhone or iPad running (or more) with Bluetooth Smart 4.0 (or more)

How does the rain sensor work?

When connected to the wire the rain sensor acts on the stations. If it is raining, stations won't start; you must wait for the probe to dry before the programming star again. The manual control is not affected by the rain sensor conditions.

How can I restart the pairing or the pairing procedure?

To start the pairing procedure again, just bypass the 2 battery connector pins (battery removed) for 30s minimum

If my device has no more battery, do I lose my programming?

No, they are not lost, it is automatically saved.

GENERAL INFORMATION



This symbol indicates that the product uses a LoRa™ technology radio.



The symbol «CE» indicates that this device complies with the European standards on safety, health, environment and user protection. Devices with the symbol «CE» are intended for sale in Europe.



This symbol indicates that these types of electrical and electronic equipment must be disposed of separately in European countries. Do not dispose of this device with your household waste. Please use the collection and recycling points available in your Country when you no longer need this device.



In case of contrary use to the indications given in this user manual, the device protection may be compromised.



This symbol indicates that the product is shock resistant.



This symbol indicates that the product is resistant to ultra violet.



This symbol indicates that the product is waterproof.



This symbol indicates that the supply voltage is a direct voltage.

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For Technical Assistance:
service.wb.emea@toro.com



FCC/IC STATEMENT TEMPUS-AG-MV

This product contain a modular approval with FCC ID : YWW-BLEMOD, T9JRN2903 and IC : 9319A-BLEMOD, 6514A-RN2903

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution : the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note : 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 generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. 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 tuning the equipment off and on, the user is encouraged to try to correct 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 circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with innovation, science and Economic development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions : (1) this device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/recepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'innovation, Science et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux condtions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This device complies with FCC and ISED RF radiation exposure limits set forth for general population. This device must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Le present appareil est conforme aux niveaux limites d'exigences d'exposition RF aux personnes définies par ISDE. L'appareil doit être installé afin d'offrir une distance de séparation d'au moins 20cm avec les personnes et ne doit pas être installé à proximité ou être utilisé en conjonction avec une autre antenne ou un autre émetteur.

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1 Station

For Technical Assistance:
service.wb.emea@toro.com

