TankMatic^{TM}

Installation and Operation Manual

Date: 22 October 2025

Contents

List of Abbreviations

- *v1* – Hardware version 1.

- *v2* – Hardware version 2.

- IP - Internet Protocol.

- SPin - SuperMation Products identification number.

- SPL - SuperMation Products Limited.

- UI - User Interface.

- URL - Uniform Resource Locator or website link.

Models Applicable:

- R1.

- L1.

1   Comparison of Products and Technologies

TankMatic Models		
Item	**L series**	**R series**
Calibration and sensitivity	Fixed (*v1*). Sensors string fixed, Hub variable sensitivity and calibration via software (*v2*).	Variable sensitivity and calibration via software. All sensors on *v1*. Hub only on *v2*. Sensor string fixed on hardware revision 2.
Visual Indicators	Multicolour LED: • Green for water detected • Blue for no water. • Cyan for network issues (*v2*).	Multicolour LED: • Green for water detected • Yellow for no water (*v1*). • Blue for no water (*v2*). • Purple for WiFi connection. • Blue for configuration mode (*v1*). • Cyan for network issues and configuration mode (*v2*). • White for calibration and remote updates.
UI and remote access	None (*v1*) Via phone browser through product's WiFi network (*v2*).	Via phone browser through client WiFi network. Remote access using the Telegram app.
Weather resistant	Yes.	
Relative cost	$	$$
Additional sensors	Yes up to 10 sensors total.	No (*v1*). Yes up to 10 sensors total (*v2*).

Technologies		
Item	TankMatic	Ultrasonic
Calibration setup	None (*v1*). Rapid setup (*v2*).	Required for each tank dimension (base to top).
Calibration drift	None.	Requires temperature compensation.
Tank integrity for installation	No damage to tank.	Drilling/cutting a hole in the top of the tank is needed for the sensor.
Installation time	Approximately 15 minutes for the L model. Approximately 30 minutes for the R model.	Approximately 30 minutes.
Reading resolution	5 levels (100%/75%/50%/25%/Critical) with 4 sensor string. Up to 11 levels with the 10 sensor string.	100% to 0% continuous reading.
Reading stability	Less affected by water slosh when tank is filling. Not affected by temperature. Rains will give false positive for water.	Significantly affected by water slosh and temperature. Not affected by rainfall.
Water contamination during installation	Not possible.	Contents of the tanks will be exposed during installation. Possibility of debris falling into the tank.
Service life	Long life due to electronics sealed and not exposed directly to the weather.	The sensor is continuously exposed to moisture inside the tank which may affect longevity.

Technologies		
Item	TankMatic	Ultrasonic
Subscription fees and advertisements	None.	Depends on the app.
Visual indicators on the tank	Yes.	Typically none.
UI, remote access.	Yes (R model).	Yes, dependent on the app.
Standalone capability without the internet.	Yes.	Depends on the app.
Additional sensors	10 sensors total (L model and R model *v2*).	Not required as the single sensor provides a readings from full to empty at high resolution.

2   Prerequisites

Safety is crucial so please ensure proper safety rules and use of tools are followed. The details of these are outside the scope of this document. SPL is <u>not liable</u> for any injuries or damages incurred due to incorrect installation.

2.1   Tools

Before installation, ensure the following tools are available:

1. Hot glue gun (minimum 60Watt) for full size (11mm / 0.43inch) sticks.
2. Extension cord (length depends on the location of the target tank and nearest power receptacle).
3. Ladder or scaffolding for tanks installed at significant height.
4. Clean, lint-free, cloth and rubbing alcohol in a spray bottle.

2.2   Site resources

The following are needed for the installation at the tank:

1. One available 120VAC power receptacle. For the L model, the house wiring must be properly grounded. A simple test is to measure the AC voltage at the receptacle between neutral and ground (use certified personnel and instrument). There must be 0.0V as shown in the picture below. Even a small voltage, for example 0.1V, will cause the product to lose sensitivity.

2. R models: WiFi 2.4GHz network (signal strength should be -70dBm or stronger). Internet for remote access and notifications. This is optional but recommended for the best user experience and remote diagnostics by SPL.
3. The tank outer surface must be dry with no trace of moisture. Please <u>do not install in drizzle/rain</u>.

2.3 Kit contents

The kit contains all that is needed for a full installation as listed below:

1. One TankMatic hub.

2. Three TankMatic sensors for standard orders.

3. One power cord 10 foot long.

4. One hot glue stick 11mm x 270mm.

5. R models: URLs for the UI and Telegram profile (emailed with the payment receipt).

3   Connect the product to the WiFi network (R models)

This section shows how to use the product in normal mode with connection to a router.

3.1   Power up

Insert the 2 prong power plug into a 120VAC receptacle, preferably within 10 feet of the WiFi router. To test the detection capability, place your hand behind the LED. This is the sensor area. The led will turn green with contact to your skin and yellow when not.

3.2   Enter WiFi credentials

It will flash purple for approximately 30 seconds then blue flashes for 120 seconds. This pattern will repeat until it successfully connects to a router. The blue (*v1*) or cyan (*v2*) flashes indicate it is in configuration mode. Use your phone to connect to its private network:
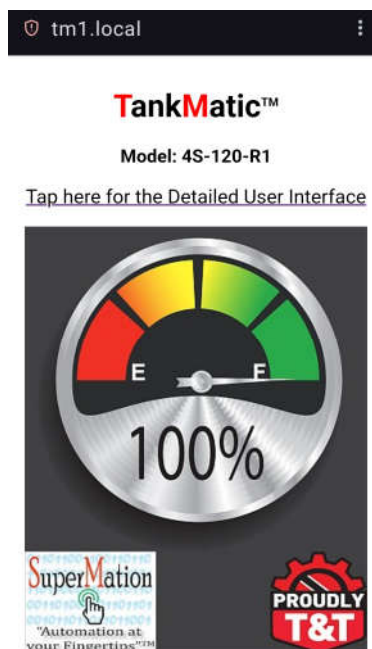
SSID: SPL_network_TM* (the * is a number which varies depending on the SPin)

Password: 1234567890

When connected use the UI URL in the receipt email or scan the below QR code (this works only when connected to the R model private network):

The simple UI will load as in the example (when installed onto a full tank):

Tap on the link to go to the ==Detailed UI==, tap on the ==About== tab then scroll down to the WiFi credentials section:

TankMatic™ ..>.

Model: 4S-120-R1

Tap here for the Basic User Interface

Configuration mode (0dBm)

WiFi credentials

Carefully enter the information. Pay attention to the case of characters.

Step 1A tap the relevant SSID (refreshes every 90 seconds):

1: Mrj | -50

2: ARRIS-D638 | -57

3: Flow Wi-Fi | -57

4: CarMatic | -75

5: Digicel_WiFi_PTMz | -90

Or step 1B for hidden SSID: [   ] Save SSID

Step 2 Password: [   ] Save password

There are 5 buttons showing the discovered SSIDS followed by their signal strength in dBm (the strongest signal is at button 1). Tap the button of the relevant SSID <u>or</u> enter your hidden SSID manually, tap the ==Save SSID== button, then tap the back button on your phone. Enter the relevant password then tap the ==Save password== button. The product will restart into normal mode. It will flash purple several times. If the credentials are correct and the router accepts the product, the light will turn yellow or green.

If the product did not connect successfully, repeat this sub-section (3.2) and carefully re-enter the credentials.

3.3   Find the product's profile in Telegram

Use the provided URL in the receipt email to add the product to your chat list in Telegram. Tap the ==Start== button and then enter the product's SPin. The keyboard menu will now be visible. <u>Do not share this information with unauthorized individuals</u>. The sales agreement does not cover reprogramming of the product.

3.4   Notifications

3.4.1   Add or remove Users

While connected to the WiFi router, use the UI URL in the receipt email. If using an Android phone, you may need to wait approximately 5 minutes before this address resolves. A faster method is to tap the <mark>Details</mark> button in the Telegram chat keyboard: the address will be shown in blue text (see example below). Please bookmark both the UI URL and numerical IP addresses in your browser app.
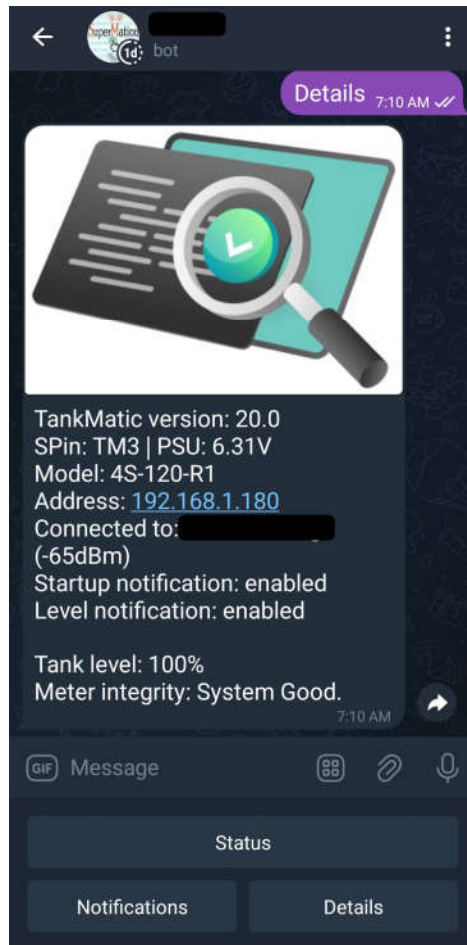
In the detailed UI (see sub-section 3.2), in the Control tab scroll down to the Notifications via Telegram section.
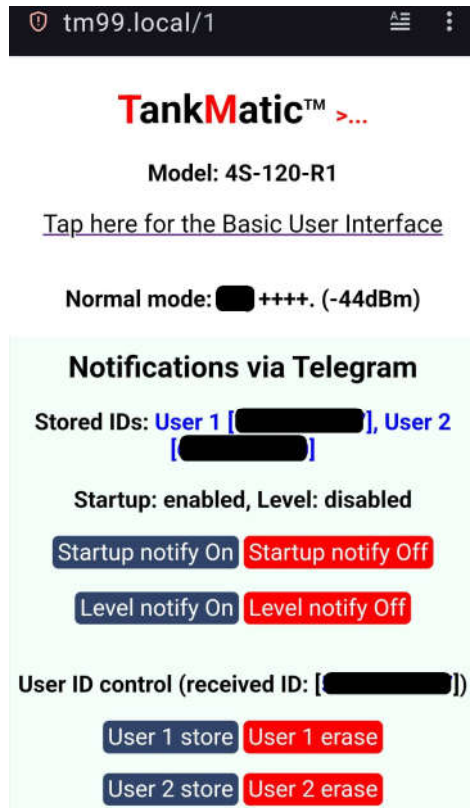
In Telegram tap the <mark>Status</mark> button, wait for a response and tap <mark>User 1 store</mark> button. A second user can be added by sharing the Telegram program, entering the SPin, tapping the <mark>Status</mark> button and tapping <mark>User 2 store</mark> button.

Either user can be removed by tapping the <mark>erase</mark> buttons and typing Yes at the prompt.

3.4.2 Enable or disable notifications

In sub-section 3.4.1, tap on the <mark>Notify On/Off</mark> buttons to enable or disable the startup and level change notifications. Both are enabled by default. Also in the Telegram chat, tap on the <mark>Notifications</mark> buttons to perform the same functions.

4   Installation onto the Tank

The product is designed for non-metallic liquid storage tanks. Ceramic, concrete and silicone tank walls are not compatible with the product. It is <u>strongly recommended to install onto a full tank</u>.

4.1   Powering

The 120VAC two pin plug needs to be inserted into a nearby receptacle and ensure all LEDs are active. This is needed to ensure proper placement and detection of water during installation. Carefully run the cord to the 120VAC receptacle. You can use hot glue to secure the wire to the tank surface, pipes and concrete walls for example.

- R models: The LEDs will go active. If sensor string LEDs are purple (*v1*) or cyan (*v2*), wait approximately 2 minutes for the system to self-configure. On a full tank, all 4 LEDs should be green. The hub LED will flash purple a couple times then turn green if there is water at that level. At this time you should get a message from Telegram if you were added as a user for notifications. You should receive notifications in the Telegram app as the sensors read the water level. Tapping the <mark>status</mark> button will give the estimated water level. If the tank is partially full, at least one LED, starting from the top, will be yellow (*v1*) or blue (*v2*).
- L Model: Green indicates water is detected. Blue means no water at the level of the sensor.

## 4.2   Mark and clean the external wall

Most tanks are made as a ribbed structure as shown in the examples below.

All components are installed on the ribs (or any part of the external surface for non-ribbed tanks).

The hub is the lowest component, the top of which should be placed 8 to 12 inches from the base of the tank. This volume of water is called the <u>reserve</u>.

Sensor S3 (or the topmost sensor for the L model) should be placed approximately 6 to 12 inches below the float valve inlet. This volume of water is called the <u>buffer</u>. The following photo shows a typical installation example of the standard 4 sensors model.
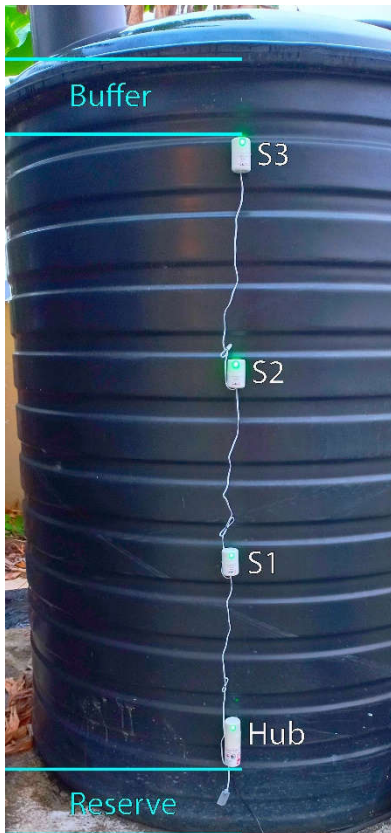
All components need to be placed equally apart. When all locations are identified, clean thoroughly with rubbing alcohol.

4.3   Install the components

Important! R model: If the tank is not full then the water level must be accurately located. Sensors above the waterline need to be temporarily placed at a rib which is below the waterline. This will be important for calibration in section 5.1.

Ensure your hot glue gun is hot enough that some glue dribbles from the nozzle. Starting with the hub, apply a vertical 1 inch line of glue at the sensor area (directly behind the LED). Ensure the LED is oriented up and faces outwards. Firmly press the hub onto the cleaned tank surface and hold for 20 seconds (if water is at that level, the LED will change colour). The hub must vertical (the wires at the bottom of its shell). If the installation was incorrectly done, spray the cooled glue with rubbing alcohol and let soak for 2 minutes. Pull off the hub and peel off traces of the glue. Repeat the installation properly.

Apply an inverted "U" of hot glue to seal the top of the shell to the tank and along the sides to a length of 1 inch. This ensures reliability of the product during rainfall. There is no need to glue the entire shell to the tank.

Apply the same technique to the other sensors.

5 Calibration (R model only) and General Use

5.1 Calibration (R model)

With the 4 components installed and powered on a full tank, calibration of the system is recommended. The product has default values for domestic polypropylene water tanks but calibration ensures consistent operation.

<u>If the tank is not full, do not perform the global calibration.</u> Wait until the tank is completely full i.e. the float valve has shut off the water inside the tank.

In the detailed UI (see sub-section 3.2), in the About tab scroll to the bottom and tap on the ==Calibration and Configuration== button, the password requested is ==SPL==. Tap the ==Global Calibration== button, type Yes and tap ==OK==. The hub LED will go white for several seconds and sensor LEDs will flash white. At the end of calibration the LEDs will go green. The product is ready for use.

5.2 Use

The R model can be accessed locally via its UI on your phone browser app or remotely using the Telegram app.

All models will provide a light colour depending on the presence of water within the tank.

5.3 Troubleshooting

Heavy rainfall will cause a false indication of water when no internal water is at the sensor(s). When the tank outer surface dries, the product will properly detect the internal level.