

Wireless Water Monitoring

Take the guess work out of your most valuable resource. Gallagher Wireless Water Monitoring is the most advanced and accurate wireless water level monitoring system available



Monitor water consumption and availability

Install up to 9 Water Level Sensors or Pump Controllers (maximum of 2 pump controllers) per Touch Screen Receiver and monitor your system from anywhere using your phone.

Monitor water consumption and availability

Install Water Level Sensors to measure daily consumption and receive alerts for low water levels or abnormal water use before your system runs out of water. Abnormal water usage alerts appear within only 4 hours!

2.8 inch Touch Screen Receiver displays real time data

The full colour, high resolution, Touch Screen Receiver displays graphics for water readings. It displays the status of wireless reception strength, battery levels, filter replacement time and a filter replacement alert.

Your water system performance in your pocket

Pair the Gallagher Water App to your Touch Screen Receiver to configure your system, then get water usage and level notifications and information on your phone. *Subscription applies.*

Long range communication

Data Transmitters wirelessly sends data up to 10 kms away to the Receiver if there is a clear line of sight.

Maintain tank levels

Pair up to two Wireless Pump Controllers to your Touch Screen Receiver to automatically control your water pump based on source and destination tank levels.

Low maintenance

High quality construction including marine grade (316) Stainless Steel sensor and ultra-high UV resistant plastic. A solar powered Data Transmitter means minimal maintenance and zero ongoing running cost. AC mains power available for sites such as underground tanks.

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Installation Instructions

It is important that the instructions are followed in sequence to guarantee the correct function of the product. *Not following these instructions could cause the product to fail or function incorrectly.*

Set up your Data Transmitter

Connect the Antenna to the Data Transmitter

1. Attach the multi-directional antenna to the Gold SMA connector on top of the Data Transmitter.
2. Turn the antenna in a clockwise direction until it is finger tight.



Connect the Water Level Sensor Cable to a Data Transmitter

The Data Transmitter holds residual charge. Connect the Sensor cable to power on the Data Transmitter.

Important: Be careful connecting the sensor as damage can occur to the electrical pins.

1. Align the cable as shown and gently push to connect.



2. Wind the connector in a clockwise direction until it clicks securely in place, this ensures the required weather resistance.



3. The Data Transmitter LED will flash green until it has successfully powered up.



Important: Manually bend the cable **PRIOR** to connecting the sensor cable to the Transmitter. If the cable is bent once connected to the Transmitter the waterproof connector may be damaged. Refer to the photograph for the correct technique.

Connect the power supply to the DC jack on the base of the Data Transmitter. **Gallagher recommends** charging the Data Transmitter for 3-4 hours to ensure a maximum charge level of the Lithium-ion battery prior to installation.

Set up your Touch Screen Receiver

To set up your Touch Screen Receiver:

- 1 Screw the antenna into the gold connector on the back of the Receiver.



- 2 Plug in the power supply and connect to the USB port on the back of the Receiver.



- 3 The Receiver powers up and displays the **Add Device** screen.



Note: If this screen is not shown, it can be accessed by touching **Menu** ≡ > **Add Device**.

Once the Receiver is powered up, the Data Transmitter or Pump Controller can be connected using the Receiver or the Gallagher Water App.

Pair the Data Transmitter to the Touch Screen Receiver

The Data Transmitter sends water level data to the Touch Screen Receiver.

Important: Connect the Sensor cable to the Data Transmitter but the Water Level Sensor must **NOT** be in the tank or in fluid of any type. If the Sensor is submerged, it will not connect to the Receiver.

- 1 Check the Receiver displays **Add Device** and **Waiting...**



- 2 Press and hold the connect button on the Transmitter until the LED turns blue for 2 seconds followed by 2 white flashes.



- 3 The Receiver beeps and displays **Tank 1 Added.**



Repeat the above procedure if adding additional Data Transmitters.

Gallagher recommends configuring all Transmitters prior to physical installation.

The Gallagher Water App

View your water information anywhere, anytime! Download the Gallagher Water App from your App store. Subscribe to harness the additional features offered by the Gallagher Water App.

User friendly design

Easy to configure your system following the on-screen prompts.

Early warning of abnormal water usage

Monitor and receive alerts when tank levels drop or water consumption unexpectedly changes.

Easy to understand data

Graphic display of water levels, level history, and weather forecasting with % chance of rain based on your location.

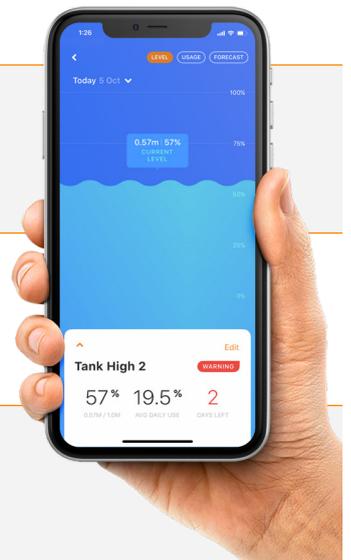
Comprehensive coverage of your water system

View real time water information for up to 9 Water Level Sensors and up to 2 Pump Controllers.

Control your Pump

Schedule your Pump to turn ON or OFF, or turn your Pump ON or OFF manually.

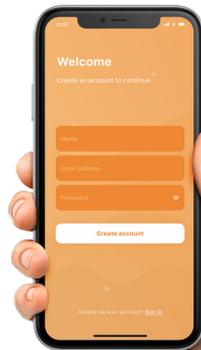
**DOWNLOAD
IT NOW** ↓



- 1 Download the Gallagher Water App.



- 2 Sign up and subscribe to utilize all the App features.



- 3 Select Add a new system and follow the prompts.



Measure and set your Tank Height

Before physically installing the Transmitter and Water Level Sensor, the system initially needs to know the approximate height of your water tank. This enables tank capacity calculation based on pressure.

Gallagher recommends physically measuring your tank height.

- Measure the height from the base of the water tank to the overflow outlet.
- Reduce the height measurement by 10%. For example, if your tank is 2.2m high, enter 2.0m as the **Tank Height**. If the height is unknown, enter a height measurement which is lower than the estimated height. This will allow the system to calibrate more accurately.

Enter the Tank Height Measurement.

- Enter the tank height into the Touch Screen Receiver. Refer to *Set Tank Height on page 13*.
- Enter the tank height using the Gallagher Water App by selecting the Tank and touching **Edit**.

CAUTION: If the tank height is set incorrectly it is possible the system will not perform accurately. Gallagher strongly recommends the tank height is set *lower* than the actual tank height. The system automatically calibrates to a precise 100% level when your tank fills to its maximum level. This technique will provide the most accurate ongoing performance.

Physical installation of your Data Transmitter and Level Sensor

Power the Data Transmitter

Install the Data Transmitter on top of the tank or post with **maximum** exposure to sunlight. In the southern hemisphere face the unit to the north, in the northern hemisphere, face the unit to the south. Ideally, it should be clear of shaded trees, surrounding buildings or hills. This will assist the battery in remaining sufficiently charged.

If your tank is not exposed to sunlight use the AC mains power supply.

Secure the Data Transmitter

Gallagher recommends securing the Data Transmitter.

- It can be secured with glue, or
- Use the supplied four 10mm x 25mm stainless steel self-tapping screws. If using the screws to secure the Data Transmitter to a concrete tank, it is recommended to drill 4 pilot holes with 4 plastic screw holders.

Important: When mounting the Data Transmitter, ensure the three venting grooves around the base of the unit allow water to drain away freely. Pooling water can cause the unit to fail.



Lower the Water Level Sensor into the Tank

1. Gallagher recommends drilling a hole in the tank for the Water Level Sensor to be lowered.
2. Lower the Sensor, ensuring it is located at the very base of the tank and away from the main outflow pipe.
3. Any excess cable can be lowered into the tank.

CAUTION: The Sensor is a delicate measurement instrument. Take care in the handling of the Sensor. Dropping or knocking the Sensor can damage it and will void the warranty.

Optional Accessories

The Wireless Pump Controller

The Wireless Pump Controller pairs with the Touch Screen Receiver or the Gallagher Water App to automatically control your pump to ensure water levels are maintained. For example, it can be set to turn the pump on when the water level gets low, and off once the tank has been filled.

Use the Touch Screen Receiver or Gallagher Water App to:

- Set the maximum run-times in case of abnormal water use.
- Automatically control multiple tank/pump systems by setting a minimum and maximum destination tank levels.
- Manually activate the Pump Controller.
- Schedule time of day operation.

Install a Wireless Pump Controller

Attach the black antenna onto the gold SMD antenna connector on the top of the product. Turn the antenna in a clockwise direction until it is "finger-tight". Do not over-tighten.

1. Plug your pump into the Pump Controller.
2. Plug in the Pump Controller to the AC mains. You will see a red LED light by the stop button to indicate the unit has power.
3. On the Touch Screen Receiver open the **Menu**  > **Add Device** screen. On the Gallagher Water App, touch **+ Add a new device** within your system page.
4. Press the **Connect** button on the Pump Controller.
5. The Start/Stop LED's will flash red twice, then green twice.
6. Confirm the Receiver or App displays the message **Pump 1 Added**.
7. The Pump Controller installation is then complete.



Note: If a Pump Controller is already connected to the system and is added again in error, the message Pump x already added will be displayed, where x is the existing pump number.

Gallagher recommends the use of an external antenna if the Pump Controller is mounted in a pump shed or closed structure.

Extend the Signal Range

To improve the signal or extend the range, contact your local Gallagher Representative to discuss fitting an external high-power antenna. Gallagher have a range of antenna options to suit most installation requirements.

Water Flow Indicator

This optional accessory gives you a visual indication of the water flow through your pipes. It shows a clear view of the water direction and speed.

The Water Flow Indicator fits most common water lines, they come in 32 mm (1 1/4") and 50 mm (2").

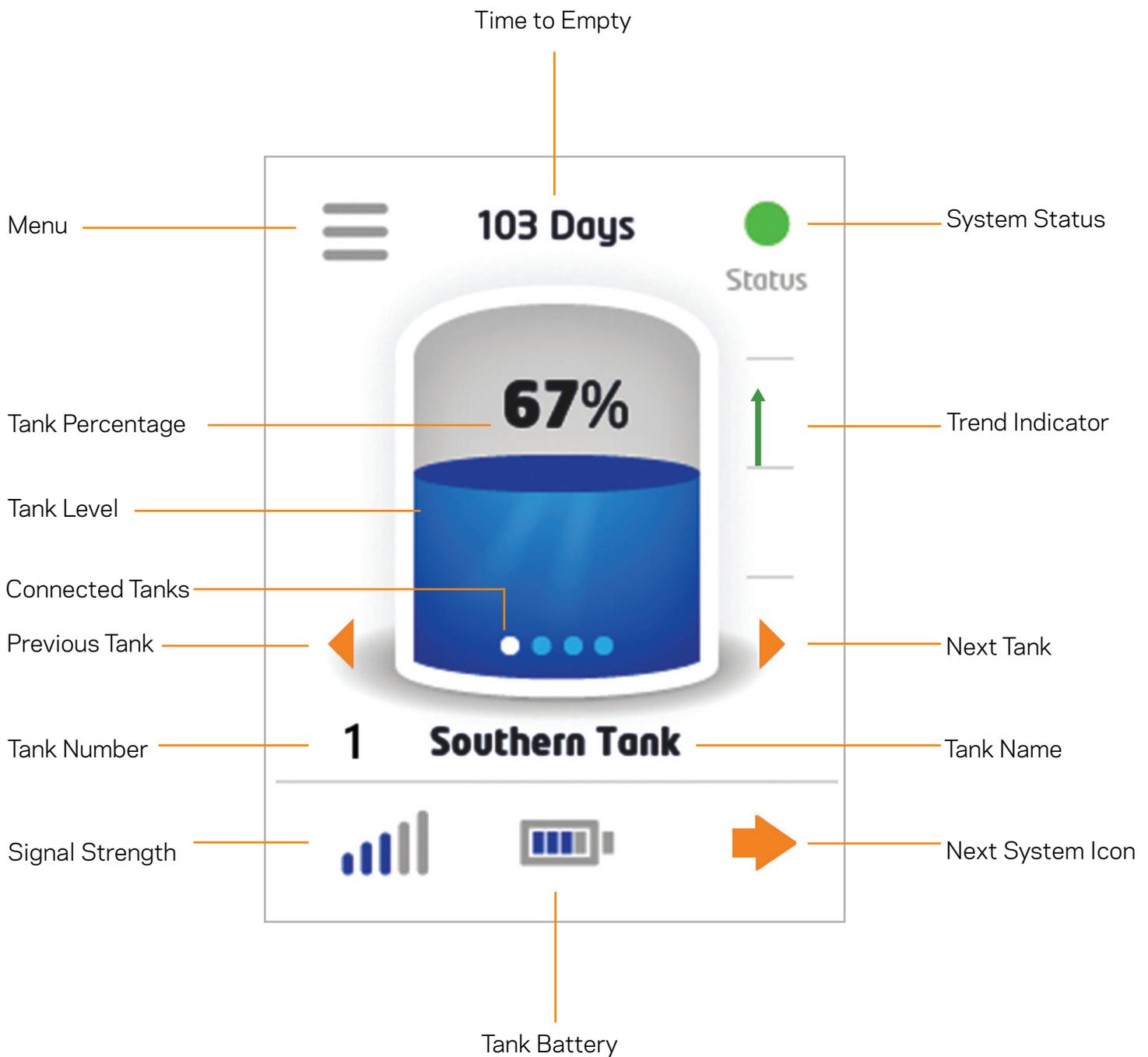


[Watch this video](#) on how to install an Indicator.

1. Find a location in your water reticulation network that is going to make diagnosing a problem easier. Gallagher recommends installing your Indicator near a valve. This helps control water flow during install or when cleaning and maintenance is required.
2. Either install a new valve with the Indicator or install next to an existing valve in your system.
3. Assemble the pipe fittings to your Indicator, use thread tape to secure the pipe fittings.
4. Connect the first female straight coupling pipe fitting to the Indicator.
5. Connect the new valve and the second coupling pipe fitting to the other end of the Indicator.
6. Tighten all the pipe fittings to ensure a secure and water tight connection.
7. Ensuring the water supply is off or close existing water valves, cut the section of pipe where the Indicator will be connected.
8. Connect the Indicator pipe fitting to the line. Ensuring a tight connection.
9. Turn the water supply on. The impeller will start rotating.

Gallagher recommends shielding the indicator from light to reduce algae growth. For example, a piece of PVC pipe or a wooden box.

Touch Screen Receiver



Receiver Icons

Menu



Touch this icon to access the full set of system settings and menus that are available.

System Status



Status



Status

Touch this icon to view the system status screen which displays notifications or alerts.

- A green icon indicates normal operation.
- A red icon indicates system has detected an abnormal condition or fault. The status screen lists the problems detected. For example, an alert could be generated by a leak in your water tank plumbing, a toilet constantly flushing or simply a tap left on. Other alerts include low Tank Sender battery, low signal strength and pump controller warnings.

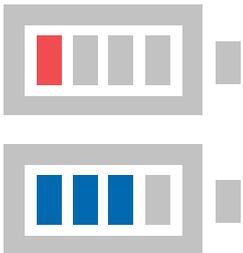
By pressing the status icon, the alert is cleared, and the icon will return to green, however the alert will remain in the status screen until the alert condition is rectified.

Signal Strength



Displays the signal strength being received by the Touch Screen Receiver from the Data Transmitter, in the form of a rising bar graph. If only one bar is shown (highlighted in red), consider moving the Transmitter or Receiver to a position with better reception.

Battery Level



Indicates the level of charge in the Data Transmitter battery. If only one bar in red is displayed this indicates that the Li-ion rechargeable battery has a low state of charge. Make sure the Data Transmitter solar panel has **maximum** exposure to sunlight to gain charge, or consider plugging in the optional AC mains power supply.

If multiple devices are connected, touch the battery low icon to display a list of tanks and their respective battery levels.

Tank Name

Tank 1

The Tank name is displayed below the icon. The name defaults to Tank x when the Data Transmitter is initially connected to the system. The device can be given a custom name. Refer to *Tank Name on page 14*.

Next System Icon



The arrow indicates further system icons such as battery level are available to view on the next page.

System Warning



When the warning icon is displayed, there is a possible problem with the system. Touch the warning icon to see details on the alert. Possible causes are: Battery too low, Data Transmitter wireless strength low, Filter replacement timer expired etc.

Days to Empty

56 Days

Displays the estimated time to empty before your tank supply will run out based on your current water usage and rainfall.

If for example you were getting low on water and subsequently became more efficient with your water usage, the estimated time to empty would increase. The maximum time to empty is displayed as 100+ days. When the system is first installed the status button will default to 200+ days. Once your water usage has been learned and stored into memory the time to empty will update to a new value.

Tank Number

1

Shows which tank is currently displayed on the Touch Screen Receiver. The tank number icon will show the number of the tank that is currently displayed.

If you have more than one tank connected, touch the tank number to allow selection of a different tank.



Other tanks can be selected by touching the tank selection icons (shown above). These allow the user to scroll through the tanks connected to the system.

Tank Percentage

67%

Displays how full your tank is according to the maximum recorded level of 100%. This value will change as the level in your tank rises and falls. The maximum level of 100% will auto-calibrate when your tank reaches it's maximum level. Further accuracy can be obtained by setting the tank outflow height.

Tank Level and Percentage



Displays how full your tank is according to the maximum recorded level of 100%. It displays the last reported level of water in the selected tank. The water level in this icon will rise and fall as the level in your tank changes.

Touching the centre of the icon takes you to the History graph, showing your tank level trend over the past 30 days.

Trend Indicator



The arrows indicate if the level of water is increasing or decreasing. The trend level indicator will not display if there has been no change in the tank level over the last two tank level reports.

Replace Filter



This icon displays when the time set for filter replacement has expired. Refer to *Tank Filter Replacement Timer on page 14*.

If multiple tanks are connected, touch the Warning Icon to view which tank filter needs to be replaced.

To clear the filter timer warning, reset the relevant tank filter timer that has expired.

Pump



This icon displays when a Pump Controller is connected to the system. When the pump icon is rotating this shows that a Pump Controller is in operation. Touch the pump icon to control the pump. Refer to *The Wireless Pump Controller on page 7* or *Pump Settings on page 15*.

Tank or Pump Selection



The selection screen is displayed when multiple devices are connected to the system. The numbers highlighted in blue represent the number of devices connected. Touch the device number you want to select to move forward to the next screen.

Hint: If a device has been renamed and the user is unsure of the device number, revert to the main screen where the device number is shown in the lower left-hand corner of the display.

History Screen



Touch the tank percentage icon on the main screen to display the HISTORY graph. This graph displays the recorded tank level for the preceding 30 days. Touch the centre of the graph to scroll through the different tanks connected to your system.

Once the system has been installed for 30 days the graph will continue to plot up until the previous day. If the Touch Screen Receiver is de-powered at any stage this will not affect the historical usage information stored in memory.

If the system is reset using the Factory Reset or Usage Reset option, all stored data will be erased for connected devices.

Receiver Screen Settings

Receiver Menu Options



Touch the Menu icon on the main screen to access the following menu options:

Add Device

Add a Water Level Sensor (Tank)

1. Attach the Water Level sensor to the Data Transmitter.
Important: ensure the sensor is NOT in fluid of any kind.
1. Open the **Menu > Add Device** screen on the Receiver.
2. On the Data Transmitter, press and hold button on the underside of the Transmitter. See *Set up your Data Transmitter on page 3*.
3. Release the button and confirm the Receiver displays either **Tank 1 Added**. Note: If a Sensor is already connected to the system and is added again in error, the message "Tank # already added" will be displayed.

Add a Pump Controller

1. Open the **Menu > Add Device** screen on the Receiver.
2. Press the Connect button on the Pump Controller. The LED's will flash red twice, then green twice.
3. Confirm the Receiver displays **Pump 1 Added**.
Note: If a Pump Controller is already connected to the system and is added again in error, the message "Pump # already added" will be displayed.

Tank Settings

Set Tank Height

Menu > Settings > Tank Settings > Tank Height

Refer to *Measure and set your Tank Height on page 6*.

Note: If the tank height menu is re-visited, the height shown will reflect the highest water level that your tank has ever reached. This may not be the number you initially entered, however this is normal operation and a good sign that the system is operating accurately and displaying a true 100% tank full level. Do not change it back to the original setting entered during installation.

Tank Outflow Height

Menu > Settings > Tank Settings > Outflow Height

Set the height of the outflow point of each tank. The outflow height is the height above the base of

the tank where water is drawn off for supply. Water below this level is effectively unusable. Setting the outflow height re-calibrates the system, ensuring a more accurate overall level measurement.

Select the tank you wish to change, touch the +/- buttons to set your customized level, and then touch **Set**. The minimum outflow height that can be set is 0.0m, the maximum height is 1.0m. Each individual tank connected to the system can have different heights set if required.

Tank Density

Menu > Settings > Tank Settings > Fluid Density

The density of the fluid being measured can be modified by adjusting the specific gravity (SG) value. Select the tank number you wish to set using the matrix and then use the up and down arrow keys to set the density. For example, molasses can be measured by setting a density of between 1.2 and 1.4. The default factory density setting is 1.0 (water).

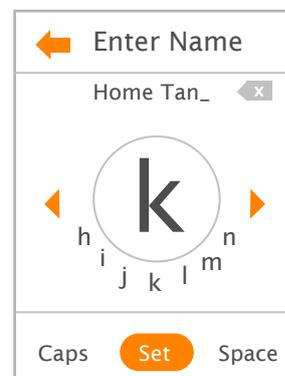
Select the tank you wish to modify from the tank number matrix. To change the density, touch the +/- buttons to set your customized value, and the touch **Set**. The minimum specific gravity value that can be set is 0.2 and the maximum value is 2.0. Each individual tank connected to the system can have different densities set as required.

Tank Name

Menu > Settings > Tank Settings > Name Tank

To use the Enter Name screen :

- Use the arrows to scroll through the characters. Touch the letter/number in the circle to add it to the name of your tank, up to 11 characters.
- The **Caps** button changes the case between caps and lowercase.
- The **Space** button allows a space to be entered into the tank name.
- Use the **Delete** icon to remove characters from your tank name.
- Once your custom name is entered, touch **Set**.



Tank Filter Replacement Timer

Menu > Settings > Tank Settings > Filter Timer

This feature will remind the user when a tank filter needs to be replaced. Select the number of months for replacement (maximum of 48 months) and touch **Set**. The filter replace icon will be displayed and an alert generated when the timer expires.

Tank Alert

Menu > Settings > Tank Settings > Tank Alert

When a Data Transmitter communicates to the Receiver, there is an acknowledgement message sent back to the Data Transmitter. If this message is not received it will create an alert in the system status screen. These alerts can be disabled by selecting **Off**.

Abnormal Usage Alert

Menu > Settings > Tank Settings > Abnormal Usage

The system will start collecting water usage data as soon as it is installed. Over time this data will build a range of usage that is considered normal for each tank. If the system detects a usage that is considered abnormal an alert will be generated and shown in the system status screen. These alerts can be disabled by selecting **Off**.

Remove a Tank

Menu > Settings > Tank Settings > Remove Tank

When the Remove Tank option is selected, you will be prompted to choose the tank to be removed. Choose the tank and select **Remove**. In the unlikely event that a Data Transmitter needs to be reconnected or replaced, it will need to be removed first by using this process. To re-connect the tank, use **Menu > Add Device**.

Caution: Once a Data Transmitter has been removed from the system, all settings, historical usage and associated customized data such as tank names will be lost.

Pump Settings

Set the Pump to Auto or Manual Mode

Menu > Settings > Pump Settings > Auto Pump

Changes the Pump Controller from manual mode to automatic mode. When set to Manual mode, the only way to control the pump is via the **Menu > Settings > Pump Settings > Control** screen or directly via the Pump Controller control panel. In this mode the pump will run continuously until manually turned off either at the Pump Controller or via the **Control** screen.

When the Pump Controller is set to **Auto** mode, it will turn on and off as per the pumping rules set up in the **Source** and **Destination** screens. Ensure that the automatic rules are created. See *Set the Pump Source on page 15* and *Set the Pump Destination on page 15*. When operating in Auto mode Gallagher recommends to set the run timer to ensure you don't run the tank dry.

Set ability to turn Pump Controller on or off via the Touch Screen Receiver and the App

Menu > Settings > Pump Settings > Control

Set the ability to turn the Pump Controller **On** and **Off** via the Touch Screen Receiver. The Control screen will work in both Manual and Auto modes.

- In Manual mode this function acts as a simple **On** and **Off** switch.
- In Auto mode, the Control function will override the rules set up in the Source and Destination screens. If the Pump Controller is manually turned off whilst in Auto mode, you will need to manually start the Pump again to resume the automatic control of the Pump.

Set the Pump Source

Menu > Settings > Pump Settings > Source

Choose the type of source for your pump and controls when the pump will turn off in auto mode. The type of source can be a 'Tank' connected to your system or 'Not a Tank', for example an infinite source such as a bore or a river.

If a 'Tank' is chosen, select which tank is the source. A pump stop level must be set. This ensures that the source tank will not run dry, or pumping is stopped at the desired level. To change the Source level, set your customized value, and then select **Set**. The minimum Source level is 10% and the maximum Source level is 100%.

Set the Pump Destination

Menu > Settings > Pump Settings > Destination

Choose the destination for your pump and control when the pump will turn off in Auto mode. The type of source can be a 'Tank' connected to your system or 'Not a Tank', for example an infinite destination such as a run-off.

Set the Pump Start Level

Menu > Settings > Pump Settings > Start

The Start menu must be completed when in Auto mode and when the destination is set to a 'Tank'. Select the Tank and set the Start level. This is the level that the destination tank must reach before the pump will automatically turn on.

Once the Source, Destination and Start rules are completed, and the pump is in Auto mode, the Pump Controller will automatically switch on or off based on the rule set.

Set a Custom Pump Name

Menu > Settings > Pump Settings > Name Pump

Refer to *Tank Name on page 14* for instructions on how to use the **Enter Name** screen.

View Pump Diagnostics

Menu > Settings > Pump Settings > Pump Diagnostics

The Pump Diagnostics menu displays a full report of the rule set that has been applied via the Source, Destination and Start settings. Use this page to check the rule set applied matches your requirements.

Remove a Pump

Menu > Settings > Pump Settings > Remove Pump

When the Remove Pump option is selected, you will be prompted to choose the Pump to be removed. Choose the Pump and select **Remove**.

Once a Pump Controller is removed from the system, all automatic rule sets will be lost. If the Pump Controller is re-connected to the system in the future, rule sets will need to be re-entered manually.

Reset Menu

Factory Reset

Menu > Settings > Reset > Factory Reset

Factory Reset is a full reset of the system. All recorded historical data and connected devices will be erased. If this option is selected the system will need to be re-installed.

Reset Usage Data

Menu > Settings > Reset > Usage Reset

This will reset only the recorded historical data stored in the system memory. All connected devices will remain connected to the system. Choose whether it is the Tank or Flow to be reset. The system data will be lost, including level history, usage, and time to empty.

Sound Settings

Menu > Settings > Sound

This menu gives you the ability to turn on or off the beep associated with touch screen activations and system alerts.

About

Menu > Settings > About

This screen displays company information and the software version number on the Receiver.

Display Settings

Set the DIM level on the Display

Menu > Settings > Display > Dim Level

You can change the brightness of the Touch Screen Receiver. This can be useful in low light environments as the back light used in the product is very bright.

Set the Dim Level from a minimum value of 5, up to a maximum value of 100 and then touch the **Set** button.

The display will return to maximum brightness and then dim after 1 minute to the set level. If the user touches the screen again, the screen will return to maximum brightness, the timer will be reset, and the screen will dim again after 1 minute.

Trend Vector

Menu > Settings > Display > Trend Vector

The Trend Vector displays the arrow icons which indicate if a tank is filling or emptying. To hide the arrows, set the Trend Vector to **Off** then touch the **Set** button..

Days Remaining, Days to Empty

Menu > Settings > Display > Days Remaining

The system calculates an approximate 'Days to Empty' value, which is the days left in the tank based on the average usage and tank level. Days to empty is calculated over time once usage data has been accumulated. This feature can be disabled by selecting **Off**.

Disabling the days to empty value may be useful for tanks that are rapidly filled and discharged multiple times a day using high volume pumps. In these scenarios days to empty may not provide an accurate representation of tank usage.

Filter Alert

Menu > Settings > Display > Filter Alert

A Tank Filter replacement reminder is set to 24 months by default. This time can be customized. Refer to *Tank Filter Replacement Timer* on page 14. The Filter Alert setting allows you to disable the alert by selecting **Off**.

Back Light

Menu > Settings > Display > Back light

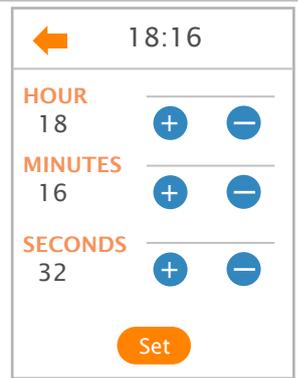
The back light setting is off by default. Turning this setting ON, turns the screen off after 2 minutes of inactivity. Touch the screen to re-illuminate. This is useful when you don't want the glare of the screen at night, in a bedroom for example.

Set Time

Menu > Settings > Set Time

Set time allows the user to set the current time. The system includes real time clock hardware to ensure accurate time keeping.

To set the time touch the +/- buttons to set the correct value for hour, minutes and seconds, and then touch **Set**. Touch and hold down the +/- buttons for faster setting. The time mode is set based on a 24-hour clock format.



Clean Screen

Menu > Settings > Clean Screen

This disables the touch screen from accepting touch inputs for 30 seconds, allowing for the screen to be cleaned without any unwanted touch commands being entered.

Gallagher recommends using a mildly moist cloth, or dedicated LCD screen cleaner if cleaning is required. Harsh detergents may damage the screen and void the warranty.

Diagnostics

Menu > Diagnostics

The Diagnostics screen shows system information on connected Data Transmitters. Diagnostic information presented are raw data values and are generally only used for fault finding by Gallagher technicians.

Under this menu, the Data Transmitters diagnostics can be accessed. Touching the centre of the screen will allow the user to scroll through the different devices connected to the system.

Frequently Asked Questions

Installation Notes

The Level Sensor should be free of water and not submerged when initially connected to the system. If a Data Transmitter needs to be re-connected to the system the Level Sensor needs to be removed from the tank and free of any water

If the Wireless Pump Controller is mounted in a pump shed or closed/sealed structure, Gallagher recommends the use of an external antenna

Operational Notes

Increased Data Transmitter communication rates can be activated by momentarily pressing the Data Transmitter button. This is helpful when wanting regular Data Transmitter updates to check for optimum signal strength. Data Transmitter update communications will be increased for a period of 30 minutes before returning to normal operation. Tank level communication reports are sent when the green LED flashes momentarily every 10 seconds

If a red flashing light is noted on the Data Transmitter, record the number of red flashes (1 through to 5) and contact Gallagher. Refer to the last page of this user manual for contact details

If the Data Transmitter is installed in an elevated, exposed location there will be an increased risk of a lightning strike. Gallagher recommends installing a lightning rod near the Data Transmitter which stands taller than any antenna (Multi Directional or Directional Long Range)

If a Wireless Pump Controller status of "Auto start blocked" is displayed then the pump has been commanded to stop while the destination tank level is below the pump automatic start level and/or the runtime has expired. This is a safety feature to avoid the pump starting again after it has been commanded to stop, or in a situation where the destination tank is not filling as commanded. To cancel this safety feature start the pump manually through the menu screen (PUMP -> CONTROL). Once the pump is started manually the "Auto start blocked" status is cleared automatically. The "Auto start blocked" feature is also cleared automatically if the destination tank level reaches the automatic start level set.

What is the maximum wireless range of the Gallagher Wireless Water system?

- Approximately 10km line of sight is the standard range. Additionally, our range of higher power antenna can also improve range and assist if the installation is hampered by obstacles.

Can I monitor more than one tank?

- Yes. Up to NINE separate tanks can be monitored from one Touch Screen Receiver. Each tank will need a separate Data Transmitter installed unless your tanks are interconnected. For example, if two tanks are interconnected and the level rises and falls in parallel, then only one Data Transmitter is required.

Can my water system control my pump?

- Yes. The product range includes a fully automatic Wireless Pump Controller. Your system comes with the pump control software already installed. Simply purchase the Pump Controller, connect it into your system and you will have full control of your water pump via the Touch Screen Receiver or the mobile app. Up to two Pump Controllers can be added per Touch Screen Receiver.

What is the maximum tank depth with this system?

- 5.0m (16ft) is the maximum depth the system will measure. However, custom depth systems are available on request. Please contact Gallagher for more information.

Do I need to change the batteries in the Data Transmitter?

- No. The battery is continuously recharged by the integrated solar panel. The Data Transmitter will continue to operate for up to 3 months without any direct sunlight.

Will the battery in the Data Transmitter run flat if it is cloudy?

- No. The battery will recharge at a slower rate in cloudy conditions, but it should not run flat. Exposure to direct sunlight is of course recommended for maximum charging performance.

Does the system work with underground tanks?

Yes. The system will work with all types of tanks both free-standing and underground. The solar powered Data Transmitter will need to be connected to the power pack to provide charging if there is zero access to sunlight (for the solar panel).

Is the legacy SW800 system compatible with the new generation SW900 Series 2 system?

- Unfortunately, it is not. There were limitations in the engineering of the SW800 that meant we needed to develop a fresh new advanced communications protocol and software suite. The SW900 is vastly superior to the SW800, however it did mean that the two systems were deemed incompatible.

How long does it take to learn my water usage?

- The system will start calculating and learning your water usage and trends from the moment it is installed. The longer the system is running the more intuitive and accurate the system will become.
- After a couple of weeks system performance will be very good and provide accurate indications of days to empty and average usage. This will also provide for system generated warnings such as Low Days Remaining and Abnormal Usage.

When will a water leak be detected in my system?

- An alert for abnormal usage (potential leaks) appears after approximately 3-4 hours. This alert will also be generated on the App (notification settings can be controlled via the App).

Can I install the system myself?

Absolutely! The system has been designed as a true DIY product. It is very easy to install and no technical skills are required.

What is the Blink Up process?

The blink up process is how you get the water system online. It is an ingenious way of transferring your WiFi network details into the Touch Screen Receiver. Blinking up is very intuitive and there are simple steps to follow on the app to guide you through the process.

Do I need to charge the battery in the Data Transmitter?

No, there is a high-power Lithium-ion battery powering the product and it is continuously recharged by the integrated solar panel. The product is designed to solar charge even in very low light conditions and has extremely efficient energy usage, so even a small amount of sunlight should provide sufficient charging. The Transmitter will operate for up to 3 months without any direct sunlight. However, if your tank has no access to sunlight (ie under a building), then you can simply recharge the Transmitter from time to time using the provided power pack, or alternatively leave it permanently plugged in. For peace of mind our software will alert the user via the Receiver (also via the app) if battery levels are detected to be low in any Data Transmitter's connected to the system.

Will reception be reduced if obstructions are between the Transmitter and the Receiver?

Any wireless system will have range/reception reduced by obstacles. This is like the poor reception of radio stations experienced in valleys and mountainous areas. Gallagher recommends minimising obstructions in the direct path of the wireless signal. If required, wireless performance can be enhanced by use of the Gallagher range of high-power antenna.

What happens if there is a power cut or the power to the Touch Screen Receiver is interrupted?

Nothing. Rest easy! Once power has been restored the Receiver will automatically regain communications with your Data Transmitters and Pump Controllers. Current and historical data will be restored to the screen and normal operations will resume.

Does the Data Transmitter need to be installed horizontally on the tank?

The position of the Data Transmitter on the tank is not critical. For optimum solar charging performance, position the Data Transmitter in direct sunlight and ideally facing North in Southern Hemisphere, and South in the Northern Hemisphere.

I have two tanks, but they are interconnected. Do I need two Data Transmitters?

No. If any tanks are interconnected then you will only need one Data Transmitter on one of the tanks. The fluid level in interconnected tanks rises and falls proportionately and as the system works on a proportionate level basis, the system will work correctly.

Does the Data Transmitter have to be solar powered? What if my tank has no direct sunlight?

No, the Data Transmitter can be constantly powered by AC mains if required. This is particularly useful for customers with underground tanks, or tanks with little or no exposure to direct sunlight. The Data Transmitter is supplied as standard with a 12VDC power pack for this purpose.

Can I measure different liquids other than water with this system?

Yes. The system allows for different liquids to be measured. For example, urea and molasses can be measured simply by setting the Specific Gravity (SG) of the fluid being measured through the settings menu.

I have very challenging terrain around my tanks, will it still operate?

The system does feature very powerful LoRa wireless performance which enables reliable operation in most applications. If there are significant terrain or obstacle issues affecting reception these can normally be resolved with the use of higher power antenna.

Should I "hang" the sensor in the tank, so it is just touching the bottom?

No. The sensor should be carefully lowered to the bottom of the tank (ideally away from any outflow plumbing) and then any excess cable can also be fed into the tank. If the sensor is on the bottom of the tank it will operate correctly.

Fault Finding/LED Sequences

Data Transmitter LED Sequences

Flash State	Description
Flashing GREEN until boot up is complete, then as below	Booting up sequence
3 x RED flashes - Serial number fault 4 x RED flashes - RF module fault	Failed boot-up
BLUE (for 2 seconds), then WHITE, WHITE	Successful binding
5 x RED flashes - Sensor out of offset range	Failed binding
PURPLE... on continuously	Boot loader waiting
PURPLE... continuously flashing until app update complete	Boot loader updating
BLUE	Receive signal
WHITE	Transmit signal
GREEN flashing when DC jack is powered, no response when solar charging	Battery charging (DC)
GREEN constantly on when DC jack plugged in to a powered mains source	Battery full
ORANGE flashing when battery level drops below 3.5V	Battery low
RED flashing when battery level drops below 3.3V	Battery warning

Touch Screen Receiver LED Sequences

Flash State	Description
ORANGE continuously flashing (STATUS LED)	Successful Boot-Up (Not blinked up)
GREEN continuously flashing (STATUS LED)	Successful Boot-Up (Blinked up)
BLUE constantly on once successfully connected to the internet	WiFi LED
RED constantly on, flashes once if ON is pressed	Pump OFF

Pump Controller LED Sequences

Flash State	Description
RED, GREEN, GREEN, RED	Successful Boot-Up
3 x RED flashes - Serial number fault 4 x RED flashes - RF module fault	Failed Boot-Up
RED, RED, GREEN, GREEN	Binding confirmation
RED	Transmit signal
GREEN constantly on, flashes once if OFF is pressed	Pump ON
RED constantly on, flashes once if ON is pressed	Pump OFF

Blink Up status codes

Pre-Blink Up and Blink Up Patterns

Flash State	Description
GREEN solid flash for three seconds	Blink Up successful
Orange long flash	No network settings or enrolment credentials
Orange long flash, short flash	imp005 waiting for Ethernet

WiFi Only Connection Patterns

Flash State	Description
Green short flash, red short flash, green short flash	WPS in progress (press WPS button on router)
Red long flash, two red short flashes	Searching for WiFi network
Red long flash, three red short flashes	Joining WiFi network

Generic Connection Patterns

Flash State	Description
Red long flash	Device lost connection
Short flash green, orange flash orange	Device deliberately offline
Green continuous	Updating impOS™
LED not illuminated	Normal operation