

Installation Details (Differential Pressure Sensor Model)

Lower the pressure sensor through an appropriate opening in the tank above the water level and allow the sensor to sink to the bottom of the tank. The transmitter case does not need to sit on top of the tank however it should be mounted in a position where the antenna is not obstructed. Excess cable can be pushed into the tank.

Operation

The tank transmitter unit normally accepts four AA batteries. These can be installed by unscrewing the lid on the transmitter. This combination of batteries (6V) gives an output power which is within most allowable limits specified by local and overseas broadcasting regulations for an operating frequency of 434 MHz. An AC/DC transformer can also be used as a replacement for batteries, or a solar panel in combination with a rechargeable battery. The transmitter unit will send data every 5-6 seconds after powering up. Pressure sensor readings are automatically compensated for changes in atmospheric pressure and data is converted to a water depth reading in cm.

To use the receiver/display unit:

- Connect the plug on the lead from the AC-DC wall transformer to the socket on the side of the display. Plug the wall transformer into the mains AC supply, switch on and press the ON/OFF key .
- The unit should display the message “AQUAGAUGE loading...” followed by “Press DISP for data”. The **depth** in centimeters for up to 4 sensors at a time can then be observed
- Pressing the DISPLAY key will show data for a second set of up to 4 sensors.
- The receiver unit is also supplied with an internal 4 x AAA battery holder enabling the receiver to be used in a portable mode. This is particularly useful for moving around when trying to establish a fixed location that has good RF reception. It should be noted that the display will retain a reading for 4 minutes if no new data is received, therefore when testing for the best reception range and location the receiver should periodically be switched off and on.
- A reading of “Nil” indicates no reception.

Maintenance and Operating Problems

Provided that the batteries are charged and the RF receiver unit is within an acceptable distance from the transmitter then AQUAGAUGE™ sensor/transmitter units should operate continuously and reliably. Common causes of problems include low batteries in the receiver or transmitter unit and electrical or RF interference from external sources. The receiver and transmitter need to be separated by a distance of about 3 meters otherwise temporary saturation of the receiver may occur and result in poor reception.

AQUACHART Data Logging and Charting Software.

If the system has been purchased with the optional serial data collection package (for WINDOWS 95 or later WINDOWS operating system) then the AQUACHART software supplied on CD will need to be installed. Insert the CD and run the setup program and follow the instructions. Once installed connect the supplied serial cable to the socket on the AQUAGAUGE display unit and an available serial port on the PC. If the PC has USB ports but no serial port you will need to use a USB to serial converter cable. Install the software that comes with the USB/serial converter and locate the COM port number assigned to the device using the Windows Control Panel/ System/ Hardware/ Device Manager tool. Check that the chosen serial port is not allocated to other software running on the PC. Start the AQUACHART software and select appropriate data collection parameters as follows:

Serial Port: select the number of the port to which the serial cable is connected.

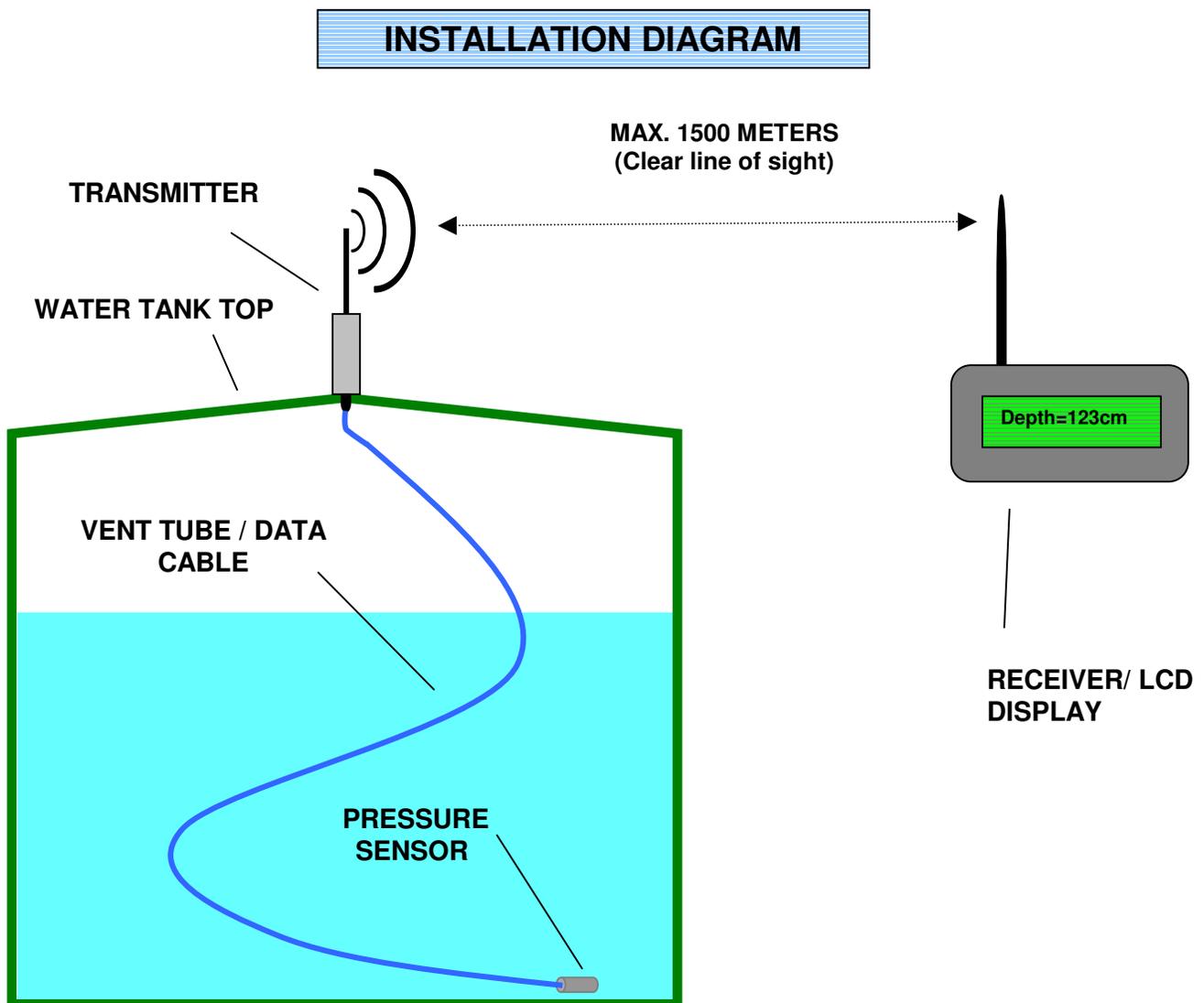
Data Storage Buffer Size: This value will determine the number of data points available for display in the main text box. If the data buffer size is exceeded it will automatically be saved and appended to a file named Aquachart_overflow_data.txt

Time Interval Between Readings: Choose an appropriate interval for data collection
Initial x-axis Span: Determines the initial time span for the data plots.

The **START** button commences data collection
The **STOP** button stops data collection
The **CLEAR** button erases all data
The **PRINT** button prints the graphs
The **SAVE** button will save the data displayed in the text box in a text file of choice.

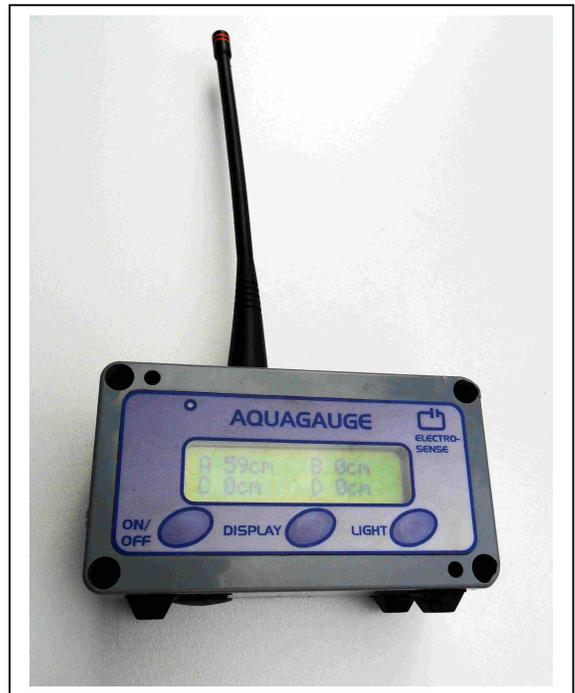
Up to 8 tanks can be monitored simultaneously. Graphs are displayed in pairs and can be selected by checking the appropriate buttons.

Drag-handles are provided on the charts for data rescaling and a cursor can be used to determine x,y values at any position on both charts.

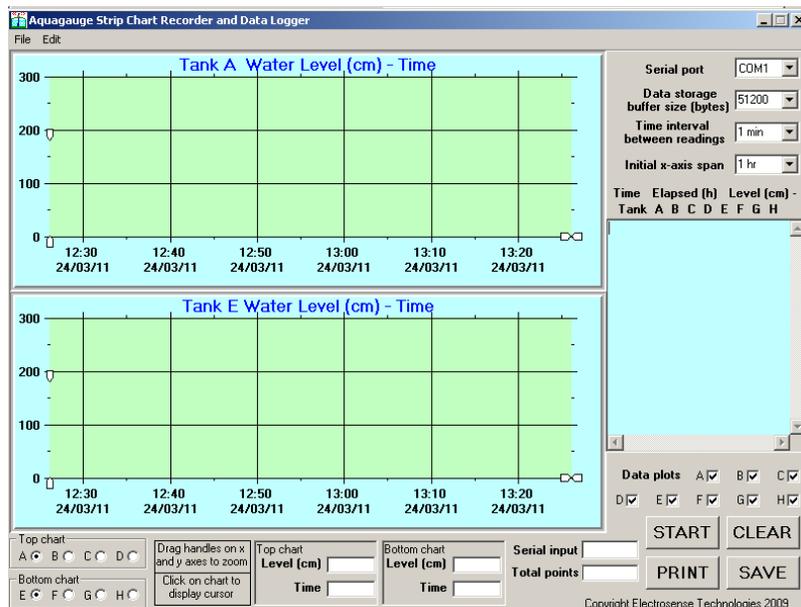




TRANSMITTER/SENSOR



RECEIVER/DISPLAY



OPTIONAL DATA LOGGING AND CHARTING SOFTWARE