COMLog™

Basic User Manual for DataGate™/ HWMOnline™ installation

Warning: This manual contains important safety and operating information. Please read, understand and follow the instructions in the manual.

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Introduction

Thank you for choosing an HWM data logger(s), we trust it will provide you with many years of service.
The individual configuration of your logger(s) may differ slightly from the detailed descriptions that follow, but any additional setup information that you need, should be available from our website.

Unpacking

As you unpack your new logger, please confirm that you have the following parts required to install the equipment. If there are any omissions, please contact our sales team to rectify or supply the missing parts.

- COMLog data logger
- Software Installation Tool (IDT) from www.hwmglobal.com or CD-ROM
- External GPRS Antenna (optional)
- USB Cable (optional)
- Connection cables (optional)
- External battery and appropriate cable (optional)
- Hanging bracket for logger, external battery and logger (optional)

Please dispose of your waste packaging responsibly.

Before proceeding to site for physical installation, please take the time to configure your logger in an office environment. Most settings can be configured before visiting site and this will save time at the point of install.

You will need to have:-

- A valid HWM-water.com account with username & password.
- A valid HWM DataGate™ account with username & password. See DataGate™ setup later in this manual.
- A PC with Windows installed.
- A USB cable for connection to the logger.
- A description and reference number for the installation site.
- The SIM card installed into the logger and a good GPRS signal on site for the chosen network (Roaming SIMs are also available). This is already done for you if you ordered a data package with the logger. See the appendix if you have purchased a data pack & SIM separately.

Use of Cellular networks – Important Notes

Availability of SMS

Most COMLog models include the ability to communicate to a server via use of the cellular data network. This is usually via the regular data network (which gives internet access). Alternatively, the SMS (Short Message Service) messaging can be used; in most cases this will be as a fall-back if the logger is temporarily unable to access the regular data network. If configured for SMS use, the logger uses the available **2G network**.

Important: 2G (GPRS) services, which carry the SMS messaging system, are slowly being turned off around the globe. Once 2G is switched off, the SMS services available within the logger will no longer be able to function.
Unless deactivated in the logger settings, the logger will continue to try, wasting battery power. Therefore, check with your cellular network operator for their switch off date before setting the logger to use the SMS backup service or any other feature requiring SMS use.

To deactivate the use of the SMS system, any related SMS settings must be removed (switched off or deleted). Refer to the IDT User Guide for details of SMS settings.
Any modified settings must be saved to the logger.

Note: For use of SMS services, both the logger and the cellular network provider must support SMS. In addition, the SIM card fitted inside the logger must support SMS
use. (Check with your SIM supplier if required).

Logger identity when using SMS

When using the cellular data network, the logger identity is included with the data within the message. However, when using the SMS system, the identity is the calling number (from the SIM card). Thus, when using any SMS services, these two numbers (IDT setting of logger telephone number and SIM telephone number) must match.

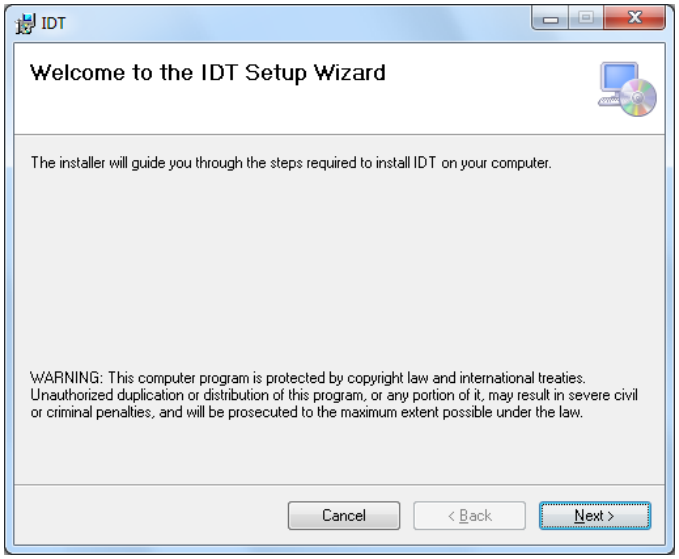
Installing the software

1. Insert the CD-ROM supplied into your CD drive.
   (If your PC does not have a CD drive, then either copy the files from the CD-ROM onto a memory stick, or download and run the installation file from the HWM website at www.hwmglobal.com)

NOTE: If you use proprietary archiving software, such as WinZip or 7zip, please ensure that you extract the files to a temporary folder using the automatic extraction buttons that maintain the original folder structure.

2. Ensure you have system administration rights for your computer, ask your IT department if you are unsure.

3. If the installation does not start automatically, locate and run the file "setup.exe" (in the IDTInstall/IDT folder), which installs the program and the necessary USB drivers for the device.

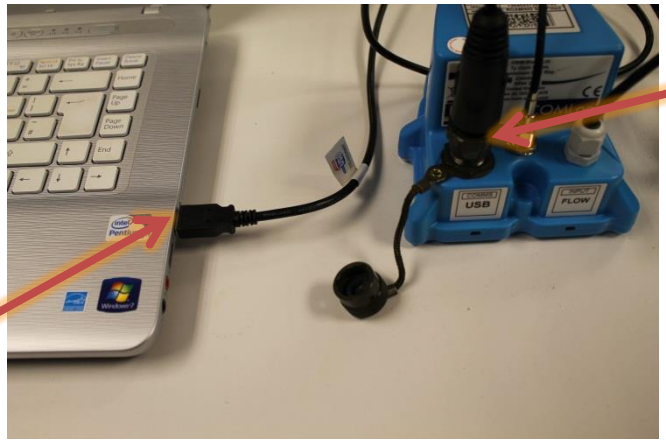


4. Follow the on screen installation instructions to complete the install of the IDT.

   Should the automatic installation fail, please check with your system administrator that you have sufficient rights to install the driver or try installing the drivers manually.
   You may be required to update Microsoft.Net; the install file is included with the IDT setup files for your convenience.

Installation and site hardware Diagnostics Tool (IDT)

Once you have installed the IDT, connect USB cable first to the logger and then to your PC – Note there will be a short delay before the PC recognises the connection of the logger. This is normal, if your PC has sound enabled you will hear the “ping pong” sound as the logger connects.

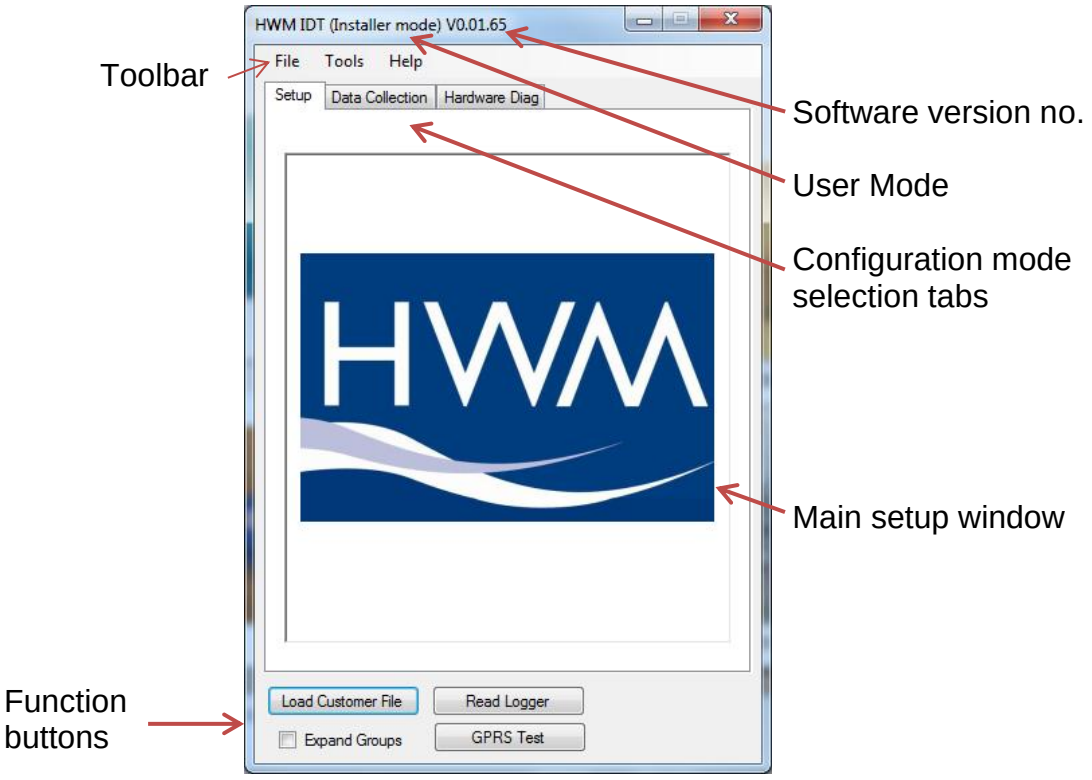


The first time you connect your COMLog to a new USB port, Windows will configure the driver, wait until this process is completed before proceeding.

Reading the logger

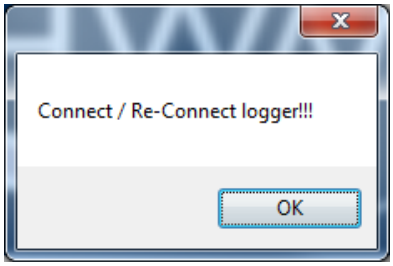
1. Run the “IDT” program.

2. The main window will appear of which the main items are:-



3. Now click the “Read Logger” button to load the current logger settings into the setup window.

Important: As the logger is not powered from the PC directly, to preserve battery, the logger will automatically disconnect from the PC and shutdown if there has been no activity for **10mins**. If you try to communicate with the logger after this time, a message “Connect/Re-connect logger!” will appear. Simply unplug the USB plug from your computer, wait for 2 seconds and then reconnect. This will wake up the logger again.

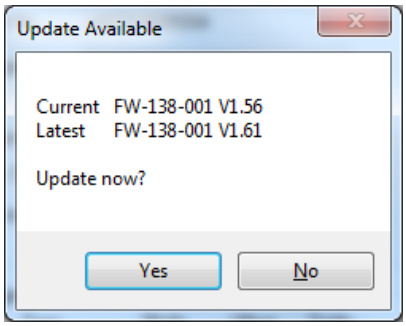


4. The IDT will now download the current settings from the logger.

   At this point the IDT will check to see if there is a more up-to-date version of the logger firmware available on your PC, if so, you will see the message “Update Available”.

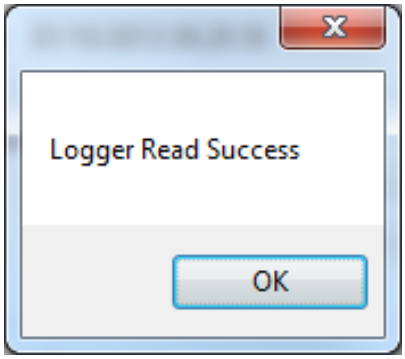
   To update the logger, Click “Yes”. The process will take approximately 2 minutes, however the logger will be restarted so you may wish to transfer any logged data first, in which case click “No”.

   The IDT checks the firmware version each time you read it.



5. Once all the settings have been loaded you will see this message.

   Click “OK” to start configuring your logger.



Configuring the logger

1. You will now see the main setup menu (expanded for illustration purposes) The menu is structured in sections for easy setup:

i) Logger Details including ID and SIM card phone number

ii) Logger start time and data capture interval (days or time of measurement period)

iii) Logger channel configuration including calibration factors (see appendix for info)

iv) Logger recorded meter readings

v) Cellular data service provider settings

vi) Data call settings

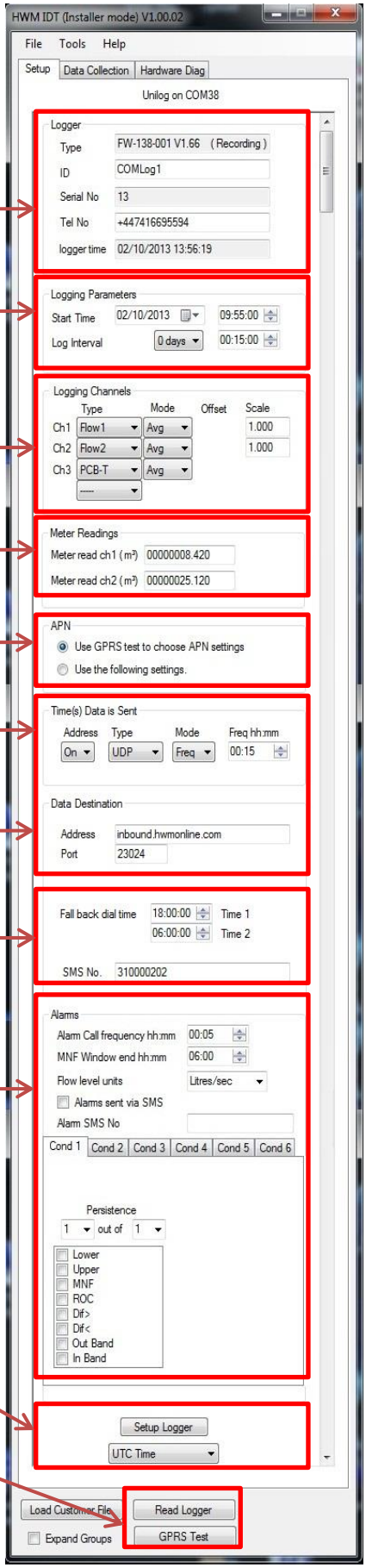
Data Destination details, the server address for the UDP data

vii) Backup call in timing details in case of main call failure or external battery exhaustion and SMS message destination number

viii) Alarm configuration

Final Setup button and logger time zone selection

Main function buttons



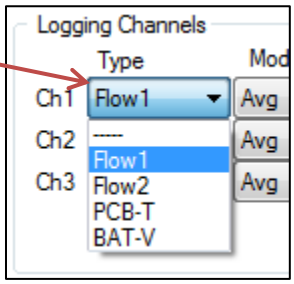
2. Now you can enter the configuration you require for each section

   i. **Logger** – enter the site ID that you wish for the logger, e.g. Postal/ZIP code up to 7 alpha-numeric characters and the telephone number associated with the SIM card. If you ordered a SIM with the logger, this will have been programmed already for you, otherwise enter the number from your service provider in international format (e.g. +44…)

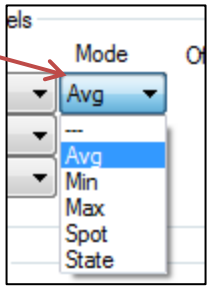
   ii. **Logging Parameters** – Accept the default start time or enter your own. Default start time is in the past so the logger will begin recording immediately. You can delay this start time by selecting one from the calendar or enter the time directly from your number keypad. Set your log interval by ticking the "24 hour" box or enter a shorter time in the time box. (Default is 15mins)

   iii. **Logging Channels** – Here you can configure your connections and what data you wish to see.

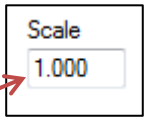
From the dropdown box select the Type of data to appear on Channel 1. This will depend on your individual order, but you may have a selection like that show here. Click "-----" if you do not wish to use that channel.



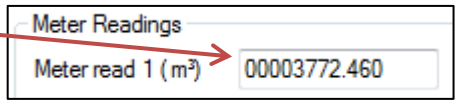
Next choose what mode of collation you wish
Avg = average reading over the log interval
Min/Max = Min/Max values measured over the log interval
Spot = The value at the log interval
State= the state of the switch at the log interval



Now, if required, enter the scaling factor for the chosen Type of logger input, click in the box and enter the multiplication factor you require. See appendix for info.

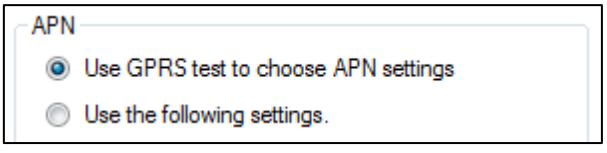


   iv. **Meter Readings** – If you wish the meter reading to be sent through to HWMonline, enter the current value in the box(s). This needs to be configured on site as the timing is important, however it can be corrected later via HWMOnline.



   v. **APN** – If you have ordered a data pack from HWM you can leave this setting alone (as below) as your logger will have been preconfigured by HWM.

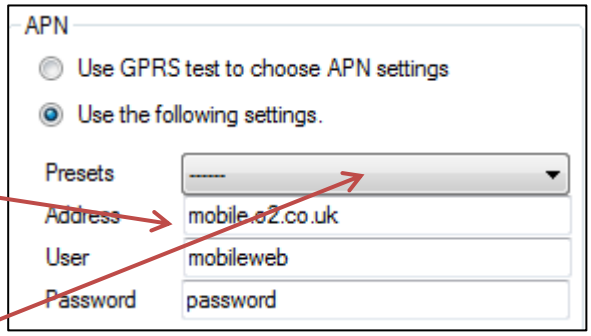
If you have ordered your data service & SIM card,



then you will need to separately configure your service. HWM recommends that you allow the GPRS test utility to search for these settings automatically, however if you wish to enter them manually, click the button beside “Use the following settings”

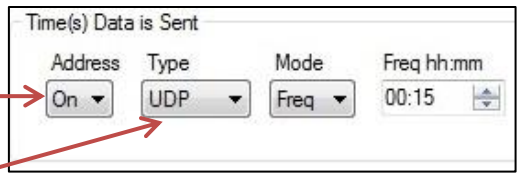
You can now enter your data service provider’s details into the appropriate boxes.

Alternatively select your network from the drop down list of presets

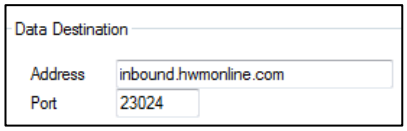


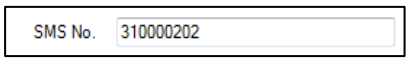
vi. **Time(s) Data sent** – Here you specify the Call Out requirement for the logger. There are 2 modes available, SMS and UDP. SMS is a one way unacknowledged data transfer service using the common text messaging service. UDP is a true 2 way confirmed data transfer process via the internet over a GPRS connection. Both have advantages, however HWM recommends UDP wherever possible as this offers the most secure method of data transfer.

Switch on the Call out by selecting “1” in the Address selector, then choose UDP or SMS from the Type selector.



vii. **Call Addresses** – These will usually have been entered at the factory and should not be adjusted, however if you have your own data server, then you can enter either the telephone number for your receiving modem, or the UDP address & port no for where the logger is to send its data.

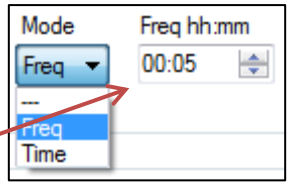




The fall back times specified here instruct the logger what to do in the event of the primary Call Out requirement not being met. This can be for 2 reasons:-

a. If a connected external battery goes flat, the logger will default from the normal call out requirement to a 2 times per day routine. The times of these calls are specified by both Fall back 1 & 2.
b. If a GPRS data call cannot be completed due to non-availability of a GPRS service, then the logger will try to send an SMS message at the Fall back 1 time.

Now choose your Call out mode, this can be either “Freq” for a call made at a regular frequency throughout the day or “Time” to specify up to 8 individual times during the day. Enter either the frequency (e.g. 00:05 minutes) or the time for the call in the box.



viii. **Alarms** – The COMlog has a comprehensive alarm system that you can configure to send out Alarm messages when certain defined conditions are breached.

When an alarm condition is triggered a new call frequency can be specified to allow the observer to gain more up-to-date data during an event.

Minimum Night Flow is measured between Midnight and the time specified here.

Choose your flow units

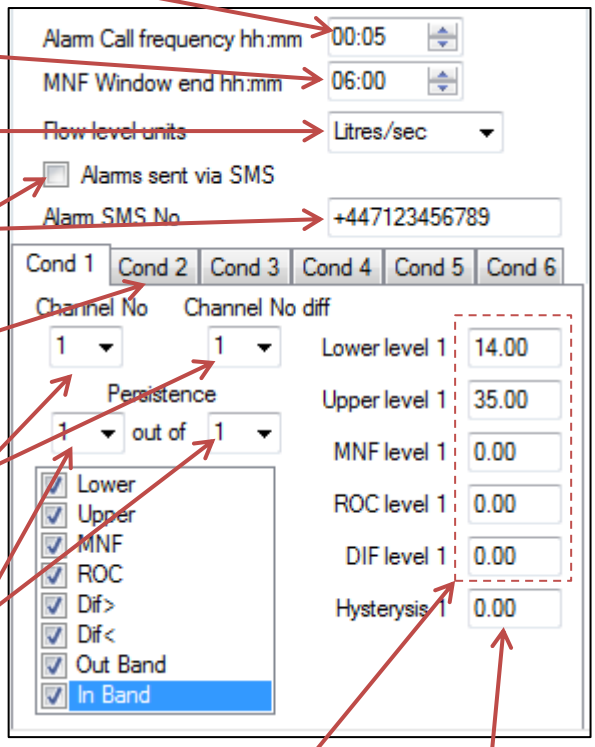
If you want SMS alarm messages to be sent, tick this box and enter a phone number

There are 8 possible different alarm conditions that can be configured, select each one from the tabs.

Choose the main alarm channel and then the difference channel if making a comparison.

Set your persistence or trigger point, e.g. 3 occurrences out of 5 incidents triggers the alarm

Choose your type of alarm from the list:-
Lower or **Upper** Limit breach
Minimum Night Flow (**MNF**) not met
Rate Of Change (**ROC**) faster than x per minute
Difference (**Dif**) between channels greater or less than limit
Either **In** or **Out** of **Band** set by Upper & Lower levels



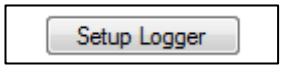
Enter the alarm threshold

Enter the alarm clear Hysteresis

Note on Hysteresis: When an alarm is triggered, if the value is set to zero then immediately the threshold is re-crossed then another clear message will be sent. If there is a period when the alarm threshold is borderline, this can result in numerous messages for the same event. By specifying a value in the Hysteresis box, you can provide a window that allows the threshold to be repeatedly crossed without sending repeated messages. e.g with an Upper limit of 5 and a hysteresis of 1, the alarm will trigger at 5, but the clear message will not be sent until the value drops to below 4.

3. Final steps – By default the logger is set to UTC (Coordinated Universal Time, equivalent to GMT), however you can choose either an offset from this time, or for the logger to use your PC time.

When you are happy with all the settings click the "Setup Logger" button to program the logger.



Data Communications Confirmation – GPRS Test

It is important to confirm that your logger is communicating with the data server before you leave site (or to be confident, your office), so you should undertake a GPRS test before you leave the logger in the field.

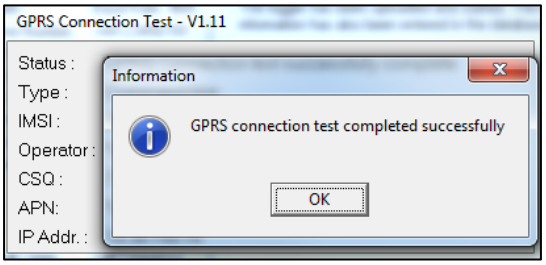
1. Connect an appropriate GPRS antenna to the FME socket on the logger. The location on the logger can vary depending on the configuration of logger ordered, but the picture below illustrates a typical connection.

Note: If this is the final Antenna connection, ensure that the connector is tightened with spanner or pliers to prevent water ingress to the antenna plug as this will reduce performance. Do not over tighten.

2. Run the IDT and read your logger as in steps 1 to 3 above.

3. Now click the "GPRS Test" function button.

4. The GPRS Test program will now automatically execute a communications check with the data server, DataGate™ and deposit a test message that can be checked later on.



The test will take a few minutes and will confirm that the communication is successful.

Troubleshooting a GPRS test failure.

There are a number of reasons why a GPRS test may fail.

The following points should be checked before calling HWM support for assistance:-

Possible Problem	Solution
Network Busy due to excessive traffic. Commonly occurs around schools.	Retry the test after a few minutes.
GPRS signal not available at your location. Not all Cell masts carry GPRS traffic	The logger will call into the data warehouse once per day using an SMS message; relocate the logger if more frequent communications is required.
Network signal not strong enough. You need a CSQ (reported by the GPRS test) of at least 8 for reliable communications.	Relocate the antenna if possible or try alternative antenna configurations. Ensure antennas are vertically orientated where possible. See Antenna placement notes section.
APN settings incorrect.	The GPRS tester knows about a large number of cellular networks and will try as many settings as possible and correct any error automatically. If there is still a failure, then you need to check with your network operator that you have the correct settings for your SIM.

If you continue to experience problems with communication, you may need to check the network coverage in your location.

Antenna installation considerations

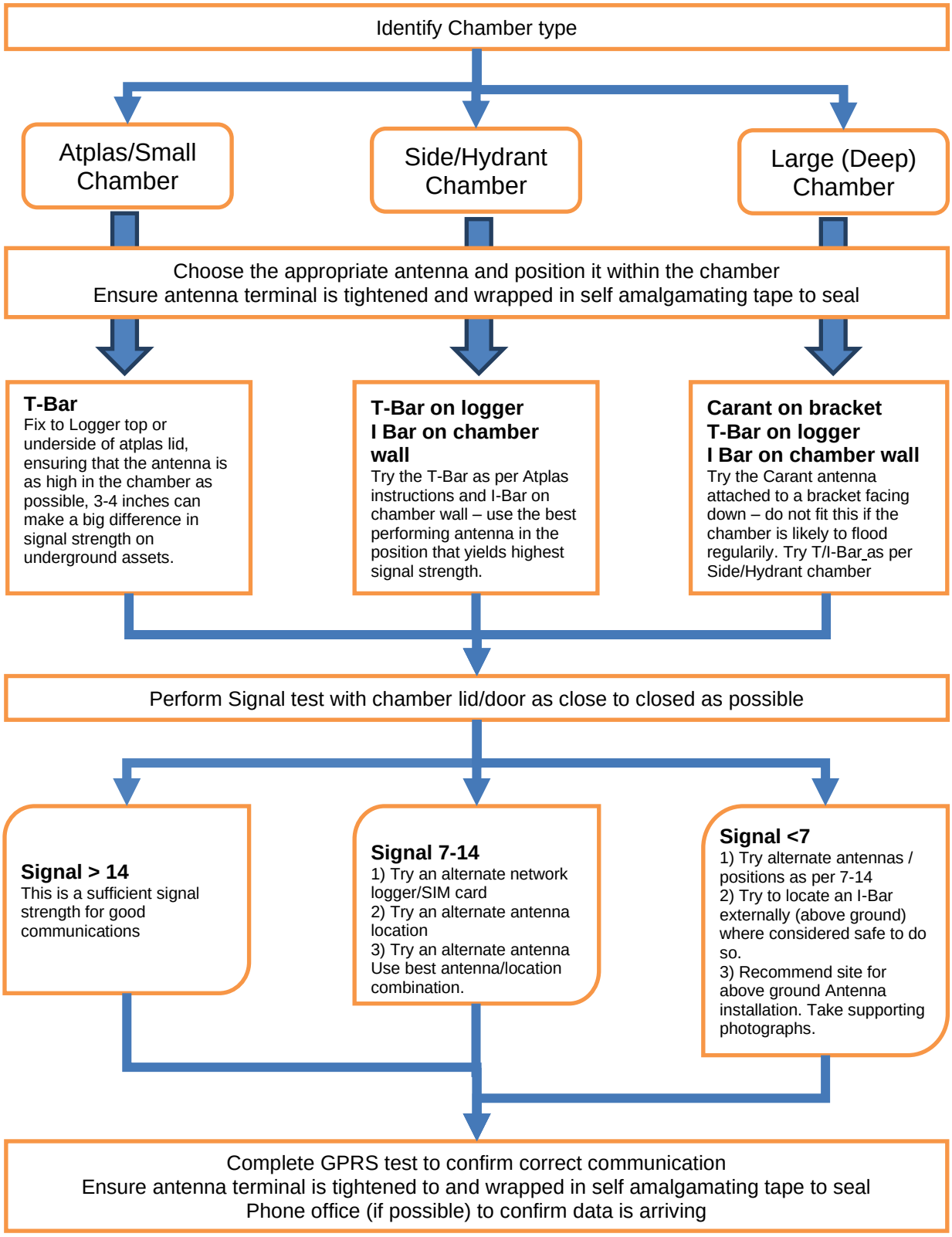
The method of installation at site should be carefully selected.
Signal strength within the cellular network can vary dramatically even within the same cell; proximity to the transceiver, type of antenna, position and angular orientation of the antenna, all have a significant effect on the ability of a device to reliably communicate with the cellular network. To ensure reliable GSM/GPRS data communications it is essential that the most suitable antenna is selected and it is mounted in the most appropriate location.

Installing a device without considering the type of antenna and its installation constraints can lead to disrupted and unreliable data communications and accelerated battery consumption. The following gives practical advice on how to minimise potential problems.

General Considerations

- Always perform multiple signal strength tests moving the antenna to different positions (please see below for description of signal strength test results).
- When performing Signal Strength Tests ensure that the chamber lid/cabinet door is in as close to normally closed position as possible to ensure an accurate result.
- Deploy the antenna as close to the surface as practically possible, especially when installing in a large chamber.
- If the device is installed in an underground chamber consider, where possible, locating the antenna in a secure position outside the chamber.
- Ensure that the antenna connector is in good condition and correctly tightened (finger-tight is not sufficient for the type of connectors used). Adequate tightening of the connector reduces the risk of water ingress and thereby signal attenuation as a result of changes in impedance.
- Never attempt to modify the dielectric seal of the antenna connector, it is designed to keep moisture away from conducting parts which lead to corrosion and attenuation.
- Consider using secondary environmental protection for the antenna connector such as self-amalgamating tape.
- If a logger is installed in a chamber that is likely to flood (e.g. an Atlantic Plastics chamber), position the logger upside-down in the chamber to avoid unnecessarily submerging the antenna connector.
- Use the shortest possible antenna lead and ensure that there are no kinks or tight radius bends in the cable. A kinked cable can cause signal loss.
- Where long transmission leads are required, consider using a low-loss alternative to corrugated copper cables, e.g. Times Microwave white braided coaxial cable.
- The signal emitted from any antenna submerged under water will be significantly attenuated; place the antenna in a location where it will not become submerged.
- Always ensure that the latest firmware is installed in the device.

Installation Process Decision Tree

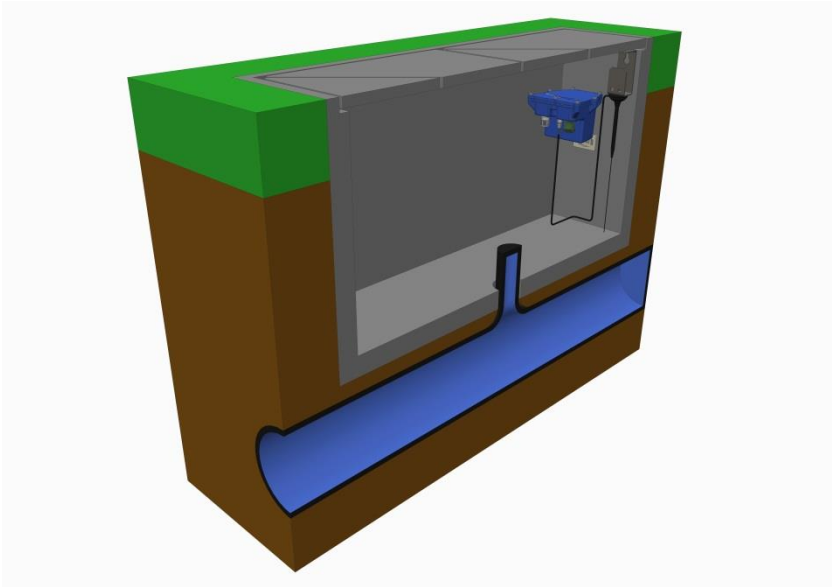


Cellular Network Signal Strength (as measured by CSQ Test)

0-7	Insufficient, the device may be able to register with network but will not be able to send or receive data reliably.
7-14	Marginal, depending upon the ambient conditions data transmission may be possible, important to select the correct antenna and install it in the most suitable location.
14-21	Adequate, Data transmission should be reliable.
21+	Ideal, Strong signal strength data transmission will be reliable.

Antenna Options

Carant Monopole antenna – For most installations the Carant antenna will give the best performance.

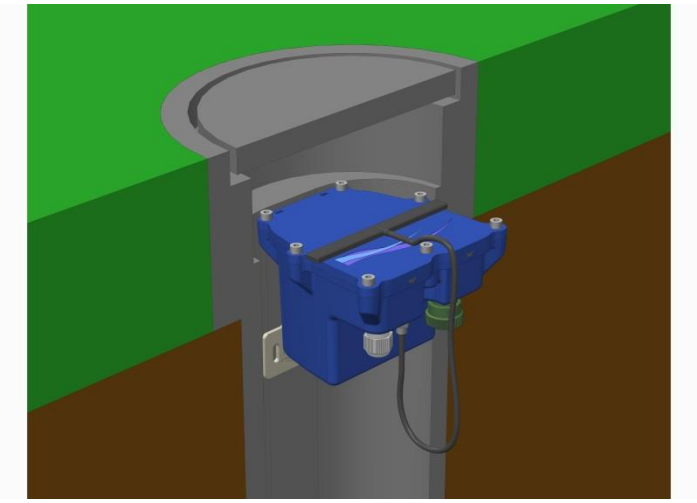


Carant Installations Considerations

For optimum performance the antenna requires a metal grounding plane, consider installing a metal bracket made of a ferrous material to attach the magnetic base of the antenna.

- Install the antenna near to as close to the surface in large underground chambers, ensuring that the lid will not interfere with the antenna when being opened/closed.
- This antenna is vertically polarised, it should always be installed in the vertical orientation.
- Never bend the radiating element of the antenna
- The Carant can also be attached to an installation bracket mounted to an existing marker post

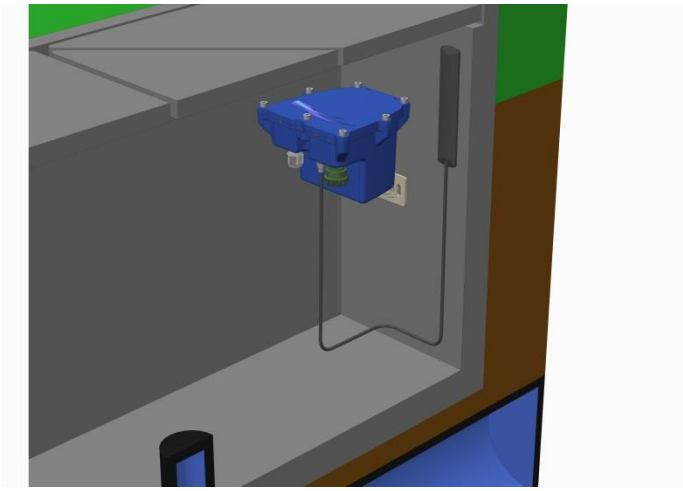
T-Bar – This antenna is ideal for installing on top of the device especially in locations with restricted space.

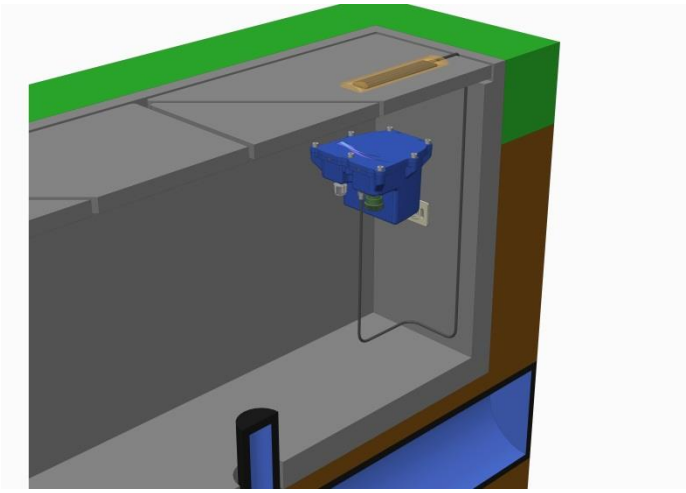


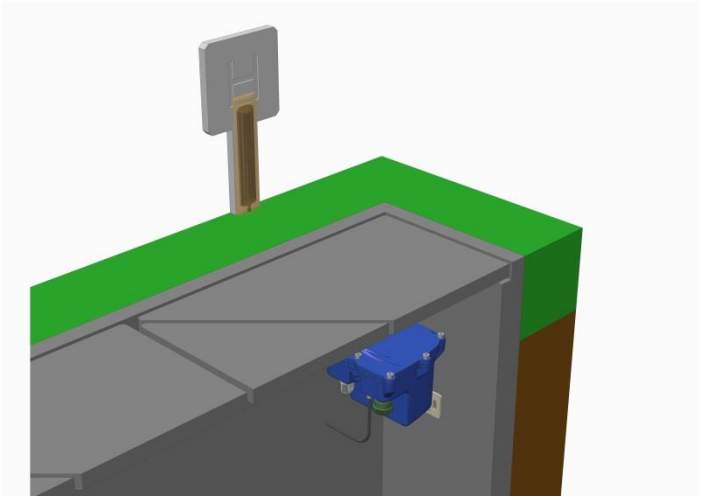
T-Bar Installations Considerations

- Adhere the antenna to external structures using marine quality adhesive (such as the brand ‘Goop’).
- Keep the antenna cable as short as possible, 0.5m.
- Avoid attaching the T-Bar to a metallic surface as this can adversely affect signal strength and performance, however it may be better than underground

I-Bar – The physical construction of this antenna makes it ideal for attaching to structures external to subsurface chambers.







I-Bar Installations Considerations

- Antenna can be attached to the side wall of a small chamber or to the top side of the chamber lid.
- With the use of a longer cable version (or an extension cable where absolutely necessary) and a sealing compound, this antenna can also be fitted in the ground, on marker posts, in cracks or brickwork near to the chamber.
- If the antenna is to be placed outside the chamber care must be taken to physically protect both the antenna and cable from damage. This can be done by burying the cable or installing a suitable conduit.
- Avoid attaching the I-Bar to a metallic surface as this adversely affects signal performance

Button – The button antenna is designed for mounting into chamber lids.

Button Installations Considerations

- Antenna needs to have the chamber lid drilled out as the top surface of the antenna needs to be 0.5mm below the surface of the lid to prevent damage.
- Use a 31mm core drill to make a suitable countersink in the lid to fit the antenna.

These are available from specialist tool suppliers.

- Once fitted, cover the top of the antenna with a resin epoxy such as Marine “Goop”

Installation pictures:

Adding an External Battery Pack or Power Source

If you wish to make frequent data calls, then you will need to attach an external battery pack or power supply to your logger.

Important: When placing the battery in the site, ensure that it is not crushing any cables other parts of the installation as they are heavy devices. Also respect any orientation arrows on the pack to optimise battery life.

Only **HWM** batteries and external power sources should be connected to the device. Please contact your sales representative for further information.

Installing your logger at site

Having performed all the steps in the previous sections, you should now be confident that your logger is configured for your purposes and is communicating correctly in a controlled environment. The next step is to physically install you logger on site.
Every site installation is unique with various types of connections, positioning or environmental conditions possible, the following recommendations will assist in a reliable installation.

- Keep the equipment neatly arranged in chambers so that cables are not crushed.
- Do not allow logger or battery to rest on the connectors as crush damage to cables can result.
- Ensure connections to any pulse cables are good and watertight (see page 23).
- Use wall mounting brackets were possible to keep the logger in clear space.
- Where space is tight, consider shortening flow cables to avoid squashing excess cable into small chambers.
- Position loggers away from sources of electrical interference such and motors or pumps.

<u>Wall Mounted (e.g. in utility cabinets)</u>

Installation bracket (HOU9105) available as an optional accessory from HWM.

Connecting the flow cable

When making a connection to COMlog you will normally need to splice the bare tails together. It is important that a waterproof connector housing is used, such as the “Tuff-Splice” enclosure available from HWM.

Final Connection

Fig. 1
Splice wires using supplied crimp connectors.

(DO NOT STRIP WIRES BACK).

Insert spliced wires into the gel filled tube.

Fig. 3
Close Tuff-Splice lid for secure seal.

Note: Long data connections should always be made using screened cable. The use of screened cable will ensure maximum rejection of interference from outside sources.
Always use a common ground point without creating ground loops.

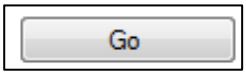
See appendix (page 31) for further information on pulse cables

Taking a reading from the logger and hardware diagnostics

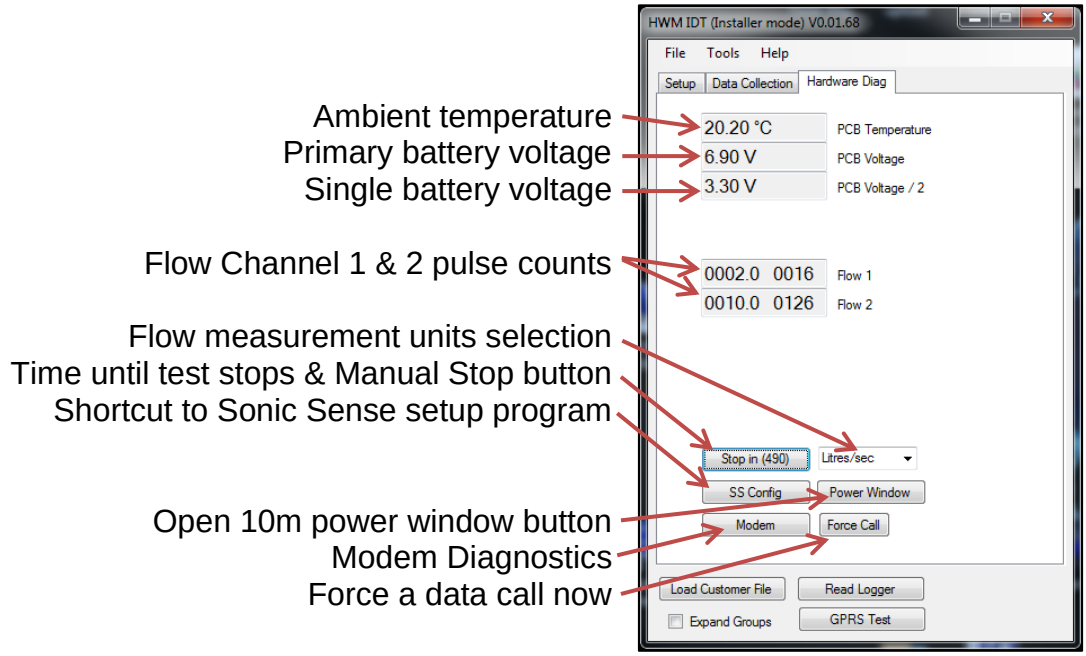
You are now ready to confirm that the logger is measuring real data from the sensors by taking an Instantaneous Value.

1. From the IDT menu bar, click the “Hardware Diag” tab.

2. Click the “Go” button to start to check the operation of your installed system.



3. The IDT will now display its measurements for a period of 10 minutes to allow you to diagnose any issues with cabling.



When you are ready to stop the test just click the “Stop” button.

Note: If the flow readings do not meet your expectations, then check your connections and your calibration factors have all been entered correctly. If you still have incorrect readings, you may have a faulty pulse unit on the meter which will need to be replaced.

4. A “Power Window” allows you to keep the logger’s modem turned on for a period of 10 minutes. This allows you to close the chamber lid and send a text message to it to confirm that communications is still OK. See final site checks on page 26.

5. Pressing “Force Call” forces the logger to send its data in immediately. Useful for when you wish to shift a logger to a new site.

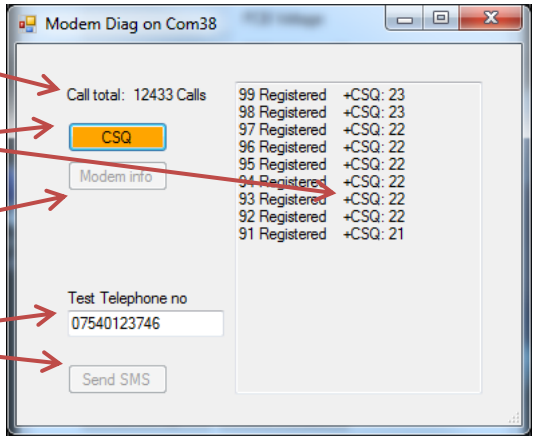
6. The “Modem” button allows some more advanced diagnostics to be performed on the modem.

Indicates total number of calls made

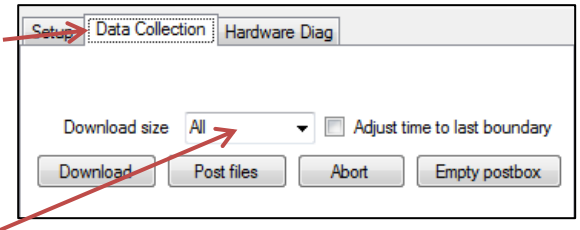
Provides the current signal strength

Provides the IMSI & IMEI numbers for the modem

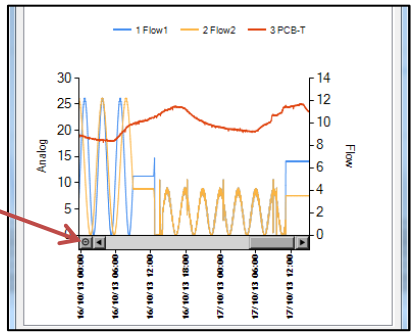
Enter a mobile phone number here & click “Send SMS” to instruct the logger to send you an SMS test message.



7. If you click the “Data Collection” tab you will now see a set of tools for downloading data from your logger for later uploading to the data server. It can also be of assistance for diagnosing problems.



   a. From the Download size selection, choose how much data you wish to retrieve, from everything the logger has stored to any un-sent data since the last time the logger called in.
   b. Click “Download” and the data will commence downloading. If you wish to stop the process, click “Abort” and the download will cease.
   c. A small chart will now be displayed showing the data downloaded. By using your mouse to draw boxes in the graph area you can zoom into areas of interest. Click the small circles at the end of the drag bars to zoom out. By hovering your mouse over the points on the graph, you will see the exact value recorded.



   d. If your logger is in a location where GPRS communication is not possible, you can now upload the data when you are next connected to the internet. Simply click “Post files” and all the data you have downloaded to your PC will be uploaded in one go. If you are downloading more than one logger in a route, all data is stored and transmitted together. If you decide that you do not wish to post the data you have downloaded, click the “Empty postbox” button to remove the downloaded data from your PC.

Final site commissioning checks

Having made all the configuration checks, checked all the wiring is good, verified the instantaneous values are what you need and confirmed communications with a GPRS test, there is one last check that you can make with your mobile phone to confirm everything is working as it should.

1. In the Hardware Diag tab, click the “Power Window” button to power up the logger for 10 minutes.

2. Close the chamber or cabinet such that everything is in its final positions.

3. Now using a standard mobile phone, send a text message to the SMS number of the logger (see page 8 for the number) including the international dialling code if needed.
   The text message should read **TTTT#**

4. After a few seconds/minutes (depending on the network operator) the logger will send a message back to you with details of its current status.
   Example response from a logger:
   TTTT138-002 V01.70CSQ:1010.9VyouridRT hh:mm ss dd-mm-yy …

5. To decipher the message returned, please refer to the table below:

Message	**Description**
TTTT	Original command text without #
138-002	Logger type number
V01.00	Firmware version in Logger.
CSQ: nn	Signal strength nn (nn = 6 to 30)
10.9V	Operating voltage
yourid	Your Logger ID
RT hh:mm ss dd-mm-yy	Real Time Clock setting
ST hh:mm ss dd-mm-yy	First Time the logger was started
LR hh:mm ss dd-mm-yy	Last Time the logger was re-started
Ch1 (A) 0029.0	Channel 1 29.0 units
Ch2 (A) 0002.2	Channel 2 2.2 pulses/sec

6. If the CSQ: value in the message is OK then the installation is complete. The logger will automatically go back to sleep after 10 minutes.

7. There can be delays in the SMS network, so the response to your message may not be immediate. If you have had no response in 10 minutes, re-open the chamber and using the modem diagnostic send yourself a test SMS. If this gets through then improve the location of the antenna and try again.

Note: Some Roaming SIM cards do not accept incoming text messages. Check with your service provider if you are unsure.

Installation checklist

Before you leave site, review the following items to be sure that the installation is going to be a good one.

- ☐ Have you calibrated and zeroed your pressure transducer?
- ☐ Have you run an instantaneous value to confirm data quality?
- ☐ Have you run the Radwin Wizard and set all calibration factors?
- ☐ Have you run a GPRS test to confirm communications quality?
- ☐ Have you confirmed the GPRS message was received by DataGate™?
- ☐ Have you sealed any joins in the pulser cable?
- ☐ Have you confirmed an SMS message with the chamber lid closed?
- ☐ Have you recorded all your site information, serial nos, photos, etc?
- ☐ Have you closed all open chambers and recorded any damage?
- ☐ Have you left all wiring tidy and safe – not tied to ladders?
- ☐ Have you removed all your installation tools?
- ☐ Have you recorded the GPS location of the logger?

You have now completed your site installation and confirmed that the logger is operating and transmitting its data to DataGate™ (or your local data server). The next section deals with how to view your data on HWMOnline™.

Using HWMOnline™

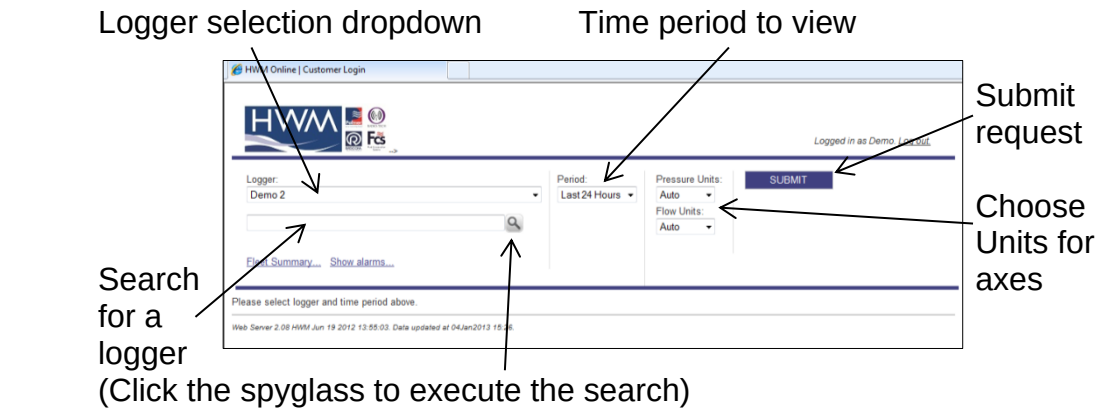
HWMOnline™ is a web viewing and management package for viewing the data for your fleet of loggers.
HWMOnline™ uses the data stored in the DataGate™ data warehouse to display charts for the data recorded by the loggers and other useful information like the location of the loggers.
If you have HWMOnline™ as part of your package, you will use the same username and password that was provided to you by your HWM account manager.

Viewing your data

1. Open a new web browser window and navigate to www.hwmonline.com

You will be asked to enter your Username and Password details.

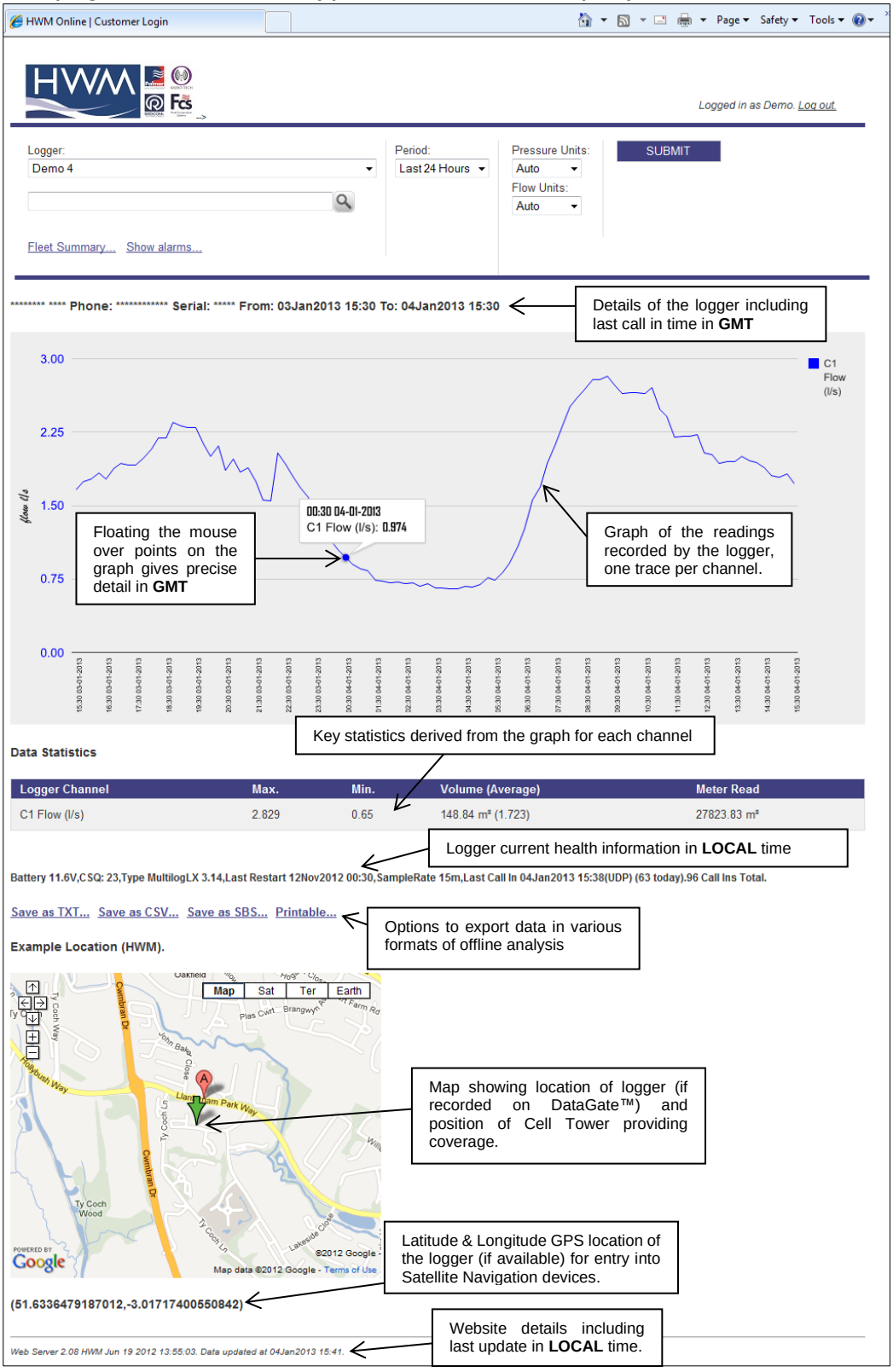
2. Once logged in successfully, you will see the main window below



3. Chose the logger you wish to view and the appropriate period & units and click “SUBMIT”
HWMOnline will then retrieve your data from DataGate™ and display it on the page.

Note: If your logger has not been able to communicate with DataGate™ then the message “No Data Has Been Received For This Location.” will appear. Investigate the cause of the communication issue of contact HWM support for assistance.

4. The page below shows a typical result of a site query:-



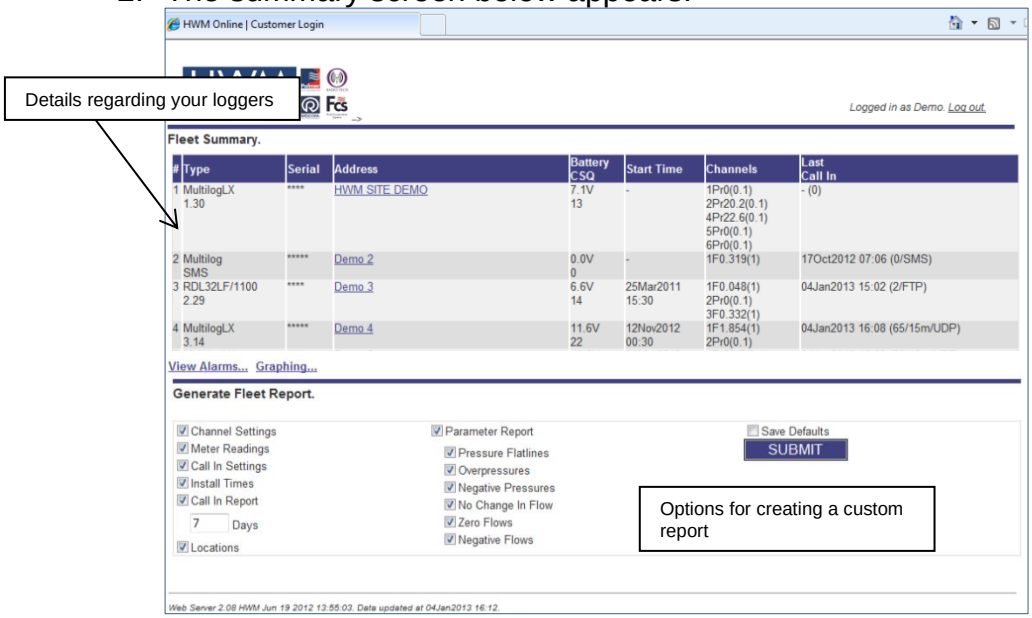
Note: The resolution of the graph reduces the more data you display. If you wish to zoom into an area of interest, use the “Custom” time Period and enter the precise range you wish to view.

Viewing information about your logger fleet

HWMOnline can also be used as a fleet management tool.

1. From the Home screen click the "Fleet Summary…" link.

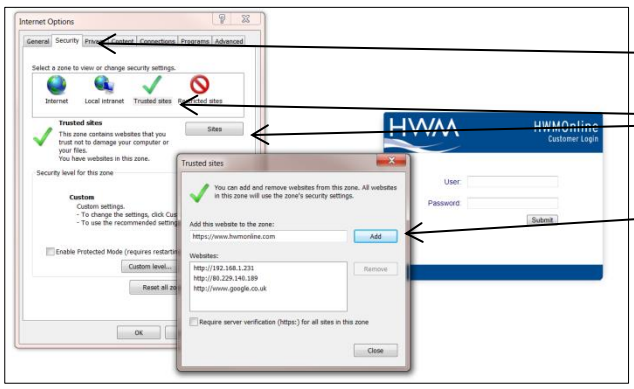
2. The summary screen below appears:-



3. From this screen you can either choose a logger to view or you can create a bespoke report containing details of your whole fleet of loggers. Tick the appropriate boxes in the "Generate Fleet Report" area and then click the "SUBMIT" button. Depending on how big your fleet is, this may take a few minutes to create. You can then choose to save the report file or open it immediately in MS Excel.
   Experiment with the settings until you find a format that you like, then tick the "Save Defaults" box so HWMOnline™ will remember the style for the next time.

A note about security settings

HWMOnline is hosted as an https:// site. If you do not see the maps on your browser, check your internet security options and add HWMOnline as a trusted site:-



Select "Tools", "Internet options" and "Security".

Click "Trusted sites", then the "Sites" button

Click "Add" to add HWMOnline as a trusted site, then "Close" and "OK".

You may need to restart your browser.

Appendix – Additional Information

Pulsers

There are many different types of pulse cable in use for connecting to meters. Below is a selection of pulse types and wiring configurations that may be useful. The variations are changing all the time so if your particular meter is not shown below, please contact your meter supplier for connection details.

Picture	Pulse Cable	Alternatives		HWM Cable
	Red			Blue
	Blue			Green
	Red	Brown		Blue
	Black	White		Green
	Red	Brown		Blue
	Black	White		Green
	Red	Brown	Red	Blue
	Black	White	Blue	Green
	White			Blue
	Brown			Green
	Yellow			Yellow
	Brown			
	White			
	Brown			Blue
	White			Green
	Blue			Blue
	Green			Green
	Red	Brown		Blue
	Black	White		Green
	Red	Yellow		Blue
	Black	Black		Green
		White		Yellow

Aquamaster connections – Yellow wire is Flow Channel 2 where required.

Picture	Pulse Cable	Alternatives		HWM Cable
Aquamaster Bulgin 	Blue			Blue
	Green			Green
	Yellow			Yellow
Aquamaster Souiau 	Blue			Blue
	Green			Green
	Yellow			Yellow

Meters & Pulse Value Guide

There are many different varieties of meters in use. Below is a selection of water meters with their appropriate pulse calibration factors that may assist in setup. If your particular meter is not shown below, please contact your meter supplier for pulse factor details.

Meter Type	Pulse Switch	Image	Litre per Pulse for logger
PSM			Meter register with 4 RED digits cal = 0.5
PSM			Meter register with:- 2 RED digits cal = 50 3 RED digits cal = 5
MSM Black			1
MSM Grey			1
Scocam Schlumberg			See label On screen for pulse value
Sappell			1
Sensus HRI A3			1
Actaris			See table 1

Helix 4000 Up to 100mm			Fitted at position:- 0.01 Cal = 10 0.1 Cal = 100 1 Cal = 1000
Helix 4000 Above 150mm			Fitted at position:- 0.01 Cal = 10 0.1 Cal = 100 1 Cal = 1000
Helix 3000 Up to 100mm	PD10 Or LRP		10
Helix 3000 Above 150mm	PD10 Or LRP		100
Helix 2000 Up to 100mm	PD10 Or LRP		10
Helix 2000 Above 150mm	PD10 Or LRP		100
Helix 2000 Master 40mm	PD10 Or LRP		1
Helix 2000 Master 50,80 &100	PD10 Or LRP		10
Actaris Flostar-M			See table 1
Actaris Woltex			See table 1

Meters used in conjunction with Cyble pulse units:-

All pulse values contained in the table below are expressed in litres/pulse.

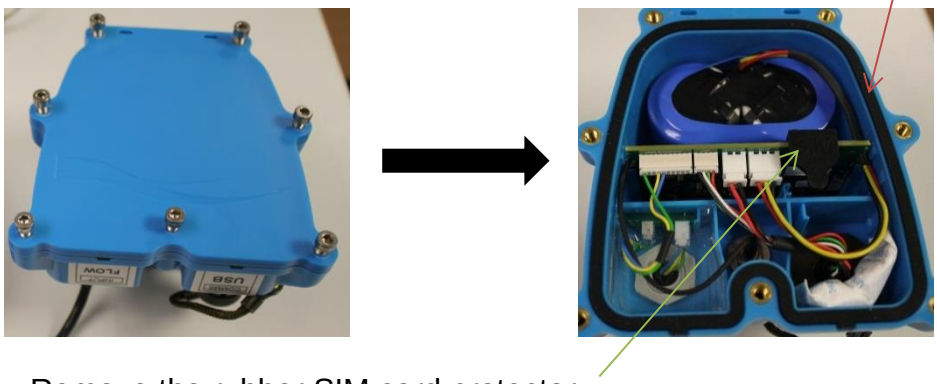
Where an Emitter-S is necessary, the pulse value indicated on the register label should be used.

		Cyble k factor					
		1	**2.5**	**10**	**25**	**100**	**1000**
Meter type	**Size(s) (mm)**						
Aquadis	**15, 20, 25, 30, 40**	1	2.5	10	25	100	1000
	65	10	25	100	250	1000	10000
Flostar-M	**All**	10	25	100	250	1000	10000
Woltex	**50, 65, 80, 100, 125**	10	25	100	250	1000	10000
	150, 200, 250, 300	100	250	1000	2500	10000	100000
	400, 500	1000	2500	10000	25000	100000	1000000
Isoflo Combination *(Main)*	**50, 65, 80, 100**	10	25	100	250	1000	10000
	150	100	250	1000	2500	10000	100000
Isoflo Combination *(Bypass)*	**All**	1	2.5	10	25	100	1000

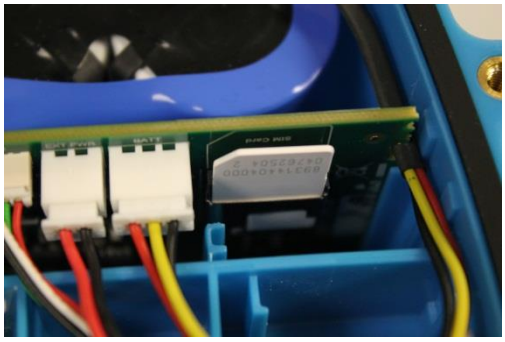
Table 1

Fitting your own SIM card

1. Remove the lid of the logger taking care not to damage the seal.



2. Remove the rubber SIM card protector



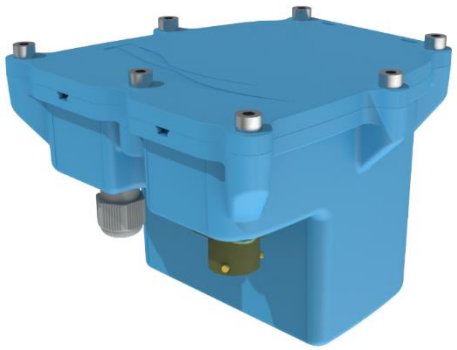
3. Insert your new SIM into the empty slot as shown above.
   Ensure the gold contacts face the board and the notch is to the left.

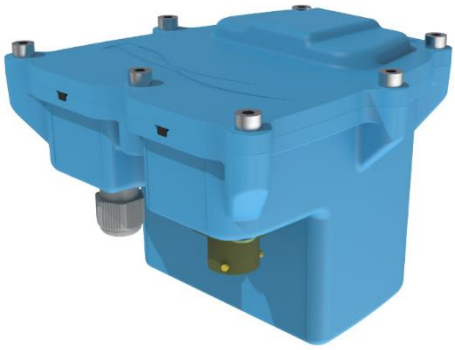
4. Replace the SIM protector and lid ensuring the screws are retightened to 1.2nm to ensure the logger remains water tight.

5. Proceed with programming the logger and ensure you enter the new SIM phone number into the software including the '+' symbol and the international dialling code with no spaces.
   e.g. +4477xxxx.
   This is an important step as the logger sends an SMS message to itself once a month to synchronise its clock. If the wrong phone number is entered, this can result in an international SMS message being sent.

Enclosure variants / Replacement battery

Note: Two versions of the enclosure exist (see opposite).
When considering battery replacement, ensure the part-number of the unit is given to HWM (or your distributor) in order to obtain the correct battery and fittings required for your unit.





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