Quick Start Guide: COMLog 2 IS Installation (Using HWM IDT).

(Automatic Meter Reading models).

Warning: Always read this manual in conjunction with the Safety Supplement which contains important safety and operating information. Please read, understand and follow the instructions in the manuals. Additionally, carefully read and follow the information in the "Safety Warnings and Approvals Information" document.

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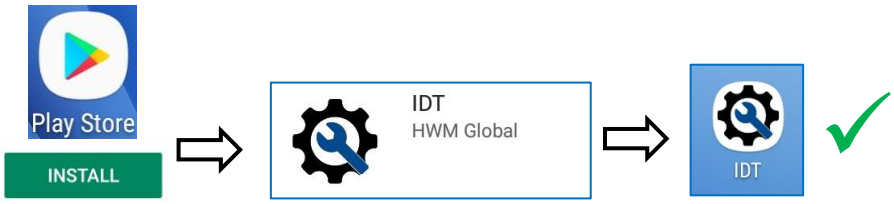
Note(s):

1. Loggers will be set to call in with meter reading data and other messages to a server. This could be one of the HWM central servers or to your company's own server (with HWM logger communication software installed).
2. Your logger may be pre-configured with a security setting requiring the use of the HWM DataGate or FCS OmniColl central servers; these are referred to as "secure loggers" and notes 5, 6 and 7 apply (see below).
   Without this security setting, the loggers are referred to as "insecure loggers" and notes 5, 6 and 7 do not apply (insecure loggers can be used without DataGate).
   Alternatively, notes 5, 6 and 7 can be optionally applied (insecure loggers can be optionally used with DataGate).
3. IDT will allow use without the app first logging in to the DataGate server (see link at the app login page) but will only work with insecure loggers.
4. For additional information, refer to main product manual,
   MAN-157-0002 "User Guide: COMLog2-IS / ISLog - Installation and Setup".
5. Loggers must be pre-registered on DataGate.
6. User must be pre-registered on DataGate.
   Contact your System Administrator (or your HWM Sales representative) to obtain your server URL, username, and password information, etc.
7. Assumes DMAs are pre-registered on DataGate.

1 PREPARE

1. Install required apps

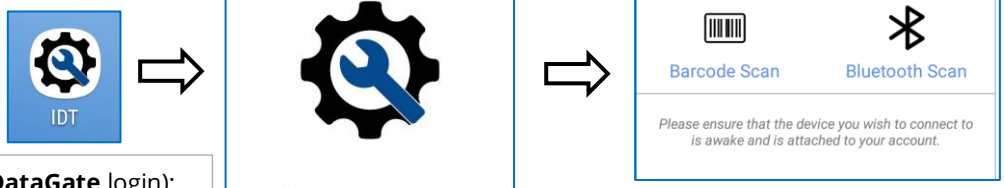
Install “IDT” onto
a mobile phone



Links: IDT: GET IT ON Google Play

2. Configure IDT app and Login

Launch IDT.



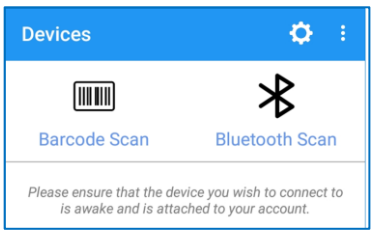
(When IDT used **with DataGate** login):
Contact your supervisor or administrator for the Server URL, your username and your password.

Add Server URL.
Add Username.
Add Password.
Login.

(When IDT used **without DataGate** login):
Tap on the link
“Log in without DataGate”.

To edit or enter information on any screen, tap on a line.
Then view or change the editable information.
Tap on the “Save” or “Cancel” button when finished.

The “Devices” page appears.

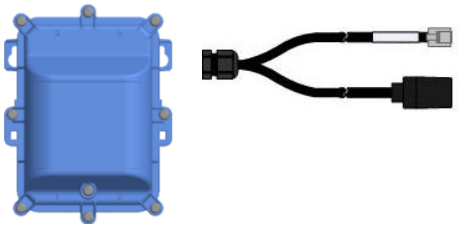


2 CHOOSE LOGGER MODEL

Several logger types are available. Examine the meter at the installation site and choose the correct logger model (and adaptor cables) for the job.

Common Models and examples of use: (Note: ' * ' indicates unspecified option)

HIS/F0K0Q/*/*/C - Flow (Uni directional, 1 channel) + Tamper alarm option.

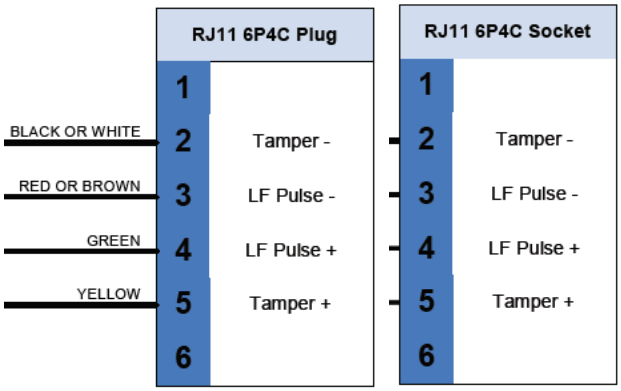


1 x Flow pulse input channel (2-wire);
RJ11 plug (male).
(Configured as 1-wire Unidirectional Flow + option for Tamper Alarm).

1 x Flow pulse (replicated) output channels (2-wire);
RJ11 socket (female).
(Can be configured to give replicated output of input pulses).

Example of use: (1) Monitor meter flow pulses (with tamper-alarm option).

Signal and wire colour details are shown opposite for both RJ11 plug (male) and RJ11 Socket (female).

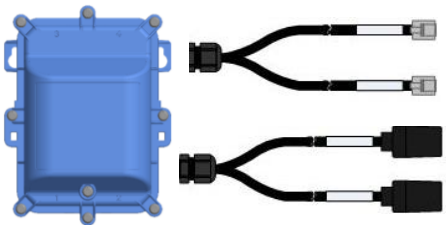


Key:

"LF Pulse" = Pulse ch1 / Flow1

"Tamper" = Pulse ch2 / Flow2

HIS/F084Q/*/*/C - Flow (Uni directional, 2 channels).

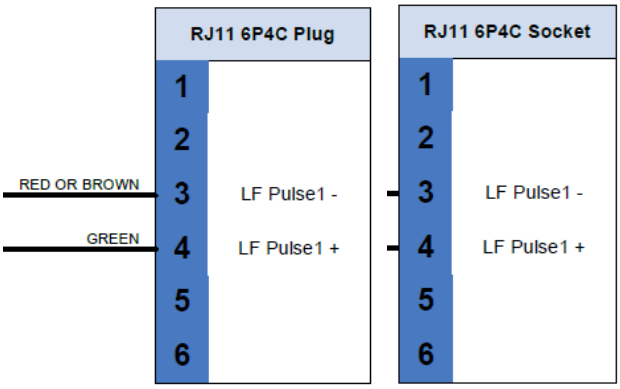


2 x Flow pulse input channels (1-wire);
RJ11 plugs (male).

2 x Flow pulse (replicated) output channels (1-wire);
RJ11 sockets (female).

Example of use: (1) Monitor of regular meter pulses and pulses from a volume corrector (with replicated pulse outputs).

Signal and wire colour details are shown opposite for both RJ11 plug (male) and RJ11 Socket (female).



Key: (2 channels)

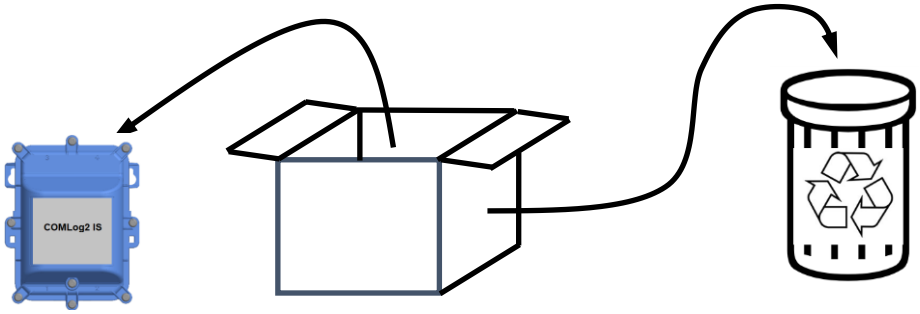
"LF Pulse" = Pulse ch1 / Flow1

"LF Pulse" = Pulse ch2 / Flow2

3 INSTALLATION

1. Un-pack logger

Dispose of packaging responsibly.



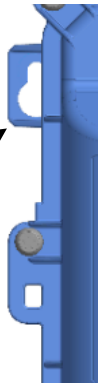
2. Install logger.

This product is only to be installed and connected by a **fully ATEX trained installer**.

Check on available space in the meter cabinet and decide where to position the logger, antenna, and cables. Ensure there is access to the magnetic sensor (see 4).

Securely mount the logger with suitable fixings; keyhole mounting holes are provided.
Note: The logger **should be installed upright** (pictured) to give best battery life.

If required, add anti-tamper seals between lid and base using holes provided.



3. Connect antenna to logger

Place the antenna in a suitable location.

Connect antenna to the logger.

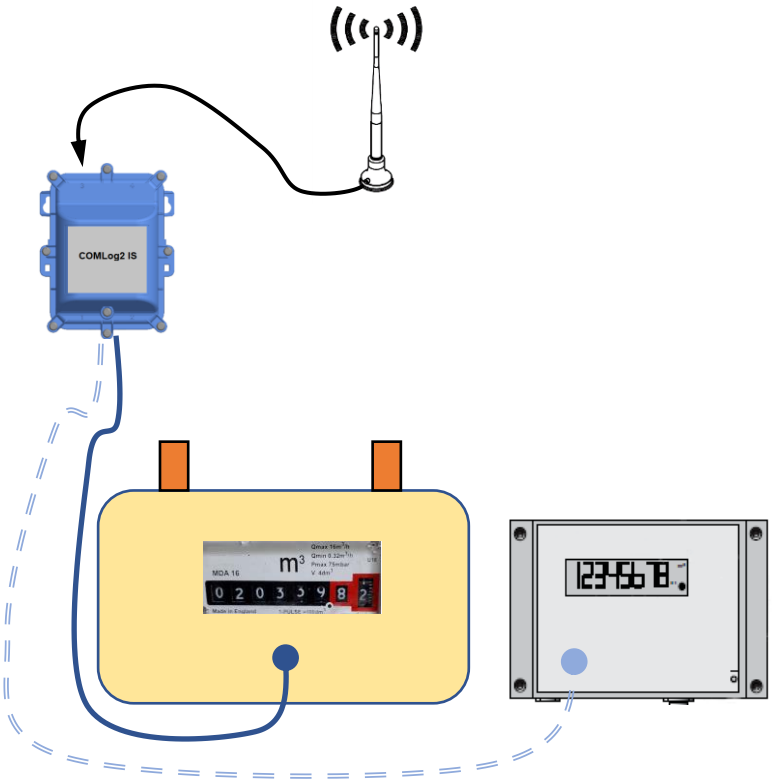
Ensure antenna cable has no sharp bends.

4. Connect logger to meter output(s).

Connect the logger Flow1 input to the meter output.
Use a suitable adapter cable if required.

Alternatively, where a volume corrector is in place, Flow 2 can be used for corrected meter flow.

Use a suitable adapter cable if required.



If required, activate pulse repeat outputs of the logger, and connect to any downstream equipment (not shown).

Locate the cables so they cannot be damaged or cause a trip-hazard, and secure in position.

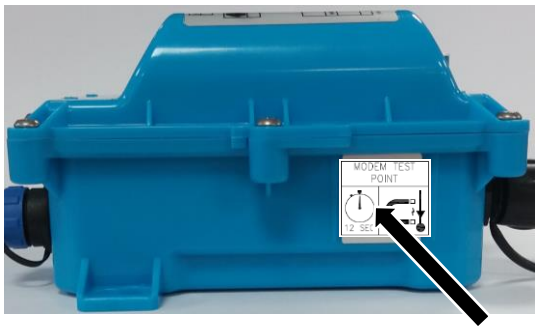
4 ACTIVATE LOGGER / WIRELESS COMMUNICATIONS

Logger must be activated during installation.

Hold a strong magnet in the position shown.

Wait 12s, then remove the magnet.

- If logger Bluetooth-compatible communications is in standby, it becomes active.
- Logger communications stays active for 120s, waiting for IDT to communicate.
- Communication with phone remains open for 600s after last use.



5 CHECKING AND ADJUSTING LOGGER CONFIGURATION.

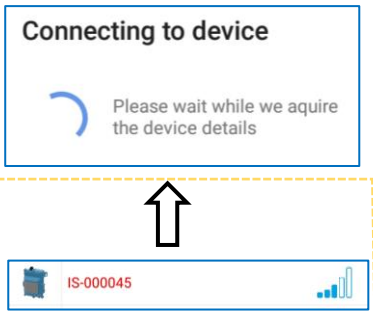
1. Read barcode / Bluetooth scan

Tap “Barcode Scan” icon.

Scan barcode of logger.

IDT connects to Logger.

If fail, try (4) again.



Alternative:

Tap “Bluetooth Scan”.

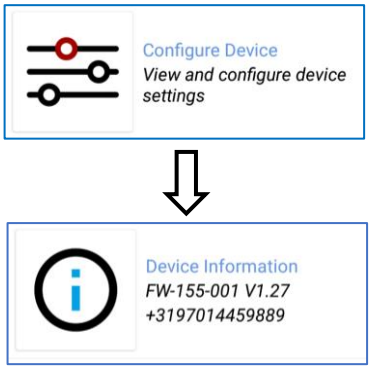
Select logger from list; IDT connects to logger.

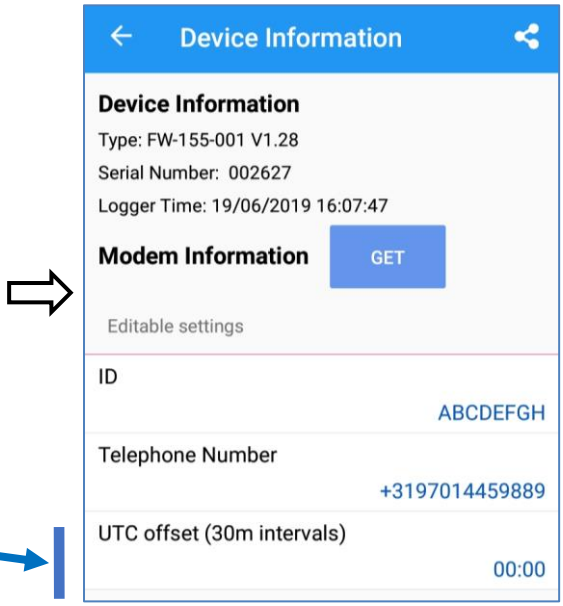
Note: When using IDT app with DataGate login, insecure loggers may be hidden from lists. There is a menu option to view both secure and insecure loggers together.

2. Setup Logger ID and time-zone

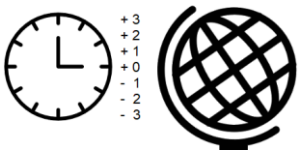
Tap
“Configure Device”.

Tap
“Device Information”.





Set local time-zone.



3. Display existing Channel settings (summary)

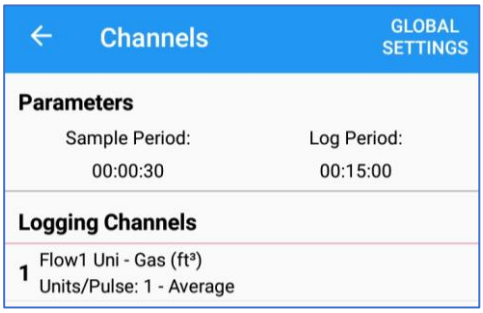
The required logger settings will vary according to the meter and other equipment used at the site.

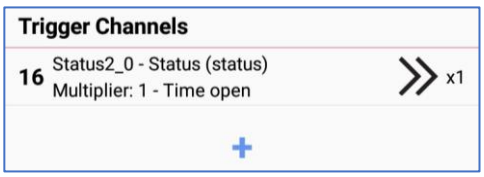
Tap the Channels icon.

(A “Combo” is a way of setting a combination of conditions that, together, can generate an alarm).

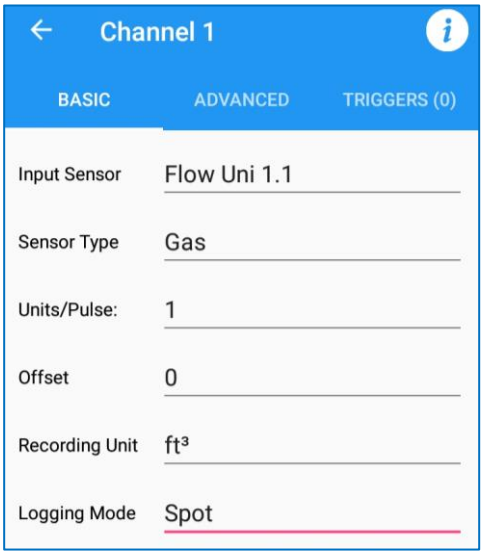
A summary of number of channels and combos already configured is shown.
(The illustrations opposite show an example of a single flow channel with Tamper alarm set).

Flow channels appear as Logging channels. A tamper alarm uses a status input which appear as a Trigger channel.





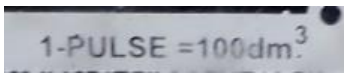
4 Check / Edit logger Flow Channel 1 settings



Tap the Flow channel line to show its details.

This screen is to set the volume measurement characteristics of the logger to match the meter's pulse outputs.

Note: These details can normally found within the data-sheet for the meter, but typically are found on the meter or pulse-head, as shown below.

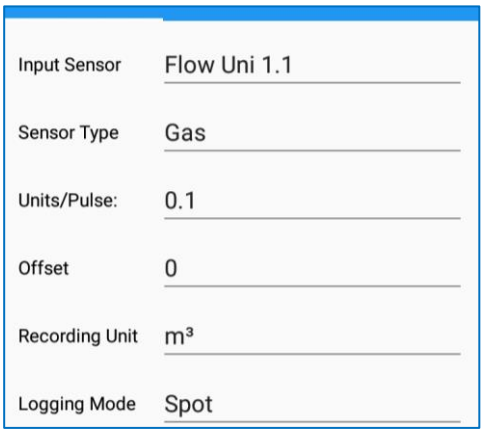


The meter unit above is metric, so the logger is required to be set up to use metric units (m^3).

Check the "BASIC" tab channel settings match the meter, and if not adjust the settings.

e.g. Using the gas meter pulse characteristic shown above…

- The sensor type is set to Gas.
  This matches the meter. ✓
- The unit of measurement shown is set to ft^3 , which is an imperial measurement. ✘
  - The channel requires adjusting to a metric measurement unit.
    Tap on "Recording Unit" and set to m^3.
- The "Units / Pulse" field now requires editing. The volume represented by the meter-pulse needs to be scaled to the setting of the Recording Unit field.
  "1 PULSE = 100dm^3 " corresponds to 0.1 m^3 of gas per pulse.
  The channel therefore requires adjustment of the "Units/Pulse" to be 0.1 to match.
- For a Flow reading, the channel must be set to "Spot" (the result is the pulse count since last measurement).

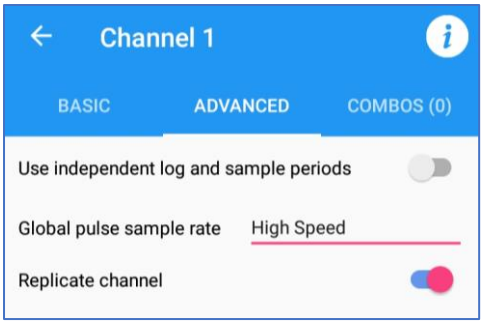


The edited screen is shown opposite.
(Settings are correct for this example).

If any settings were changed, tap on the "ACCEPT" button.

5 Check / Edit logger Flow Channel 1 Pulse Sample rate and Pulse replication settings

Tap on the “Advanced” tab.
Check the channel settings…



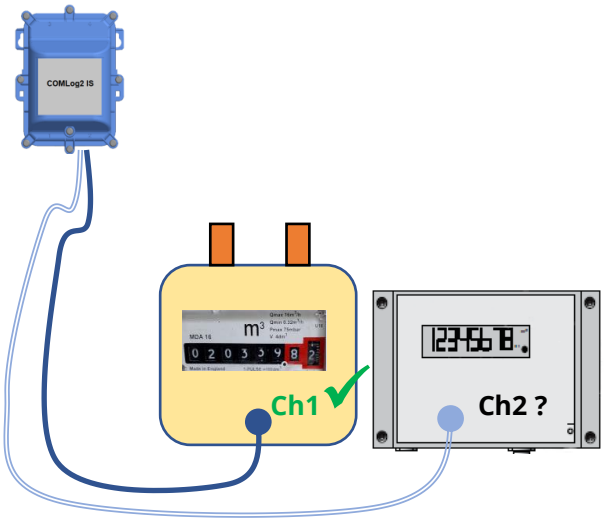
- The “Global pulse sample rate” should be set to “Low Power” for most meters, for best battery life. (Pulse width minimum 500ms, 50% duty cycle).
  “High Speed” must be set for meters with high pulse rates. (Pulse width maximum 10ms, 50% duty cycle).
  Refer to the datasheet of the meter.
- If required, the “Replicate Channel” control should be active, as pictured.
  (This setting ensures pulses from the Flow input are duplicated on the corresponding output, allowing down-stream equipment to use the meter pulses).

If any settings were changed, tap on the “ACCEPT” button.

6. Check / Edit Flow Channel 2 settings

If the logger is dual channel, repeat the checks and adjustments (steps 4 and 5) for the second meter measurement (e.g. from the volume corrector).

(Only required on dual-channel models. *For single-channel models, the option is replaced by a Tamper Alarm option; see below*).



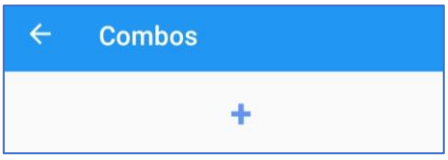
7. Check / Edit logger Tamper Alarm settings

Some logger models can support a Tamper alarm to detect un-plugging of the logger from the meter.

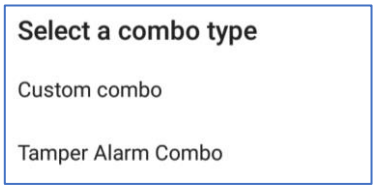
If the logger is single channel, and the meter supports a tamper alarm, then confirm this is set up (see end of description). If not, follow the instructions below:

Tap on Combo:

No combos have been set up.
Tap on the “ + “ line.



Tap on “Tamper Alarm Combo” to set up the tamper alarm.
(This activates IDT to make several changes to logger settings in order to produce a Tamper Alarm).



The tamper alarm settings are shown below (a) and (b):

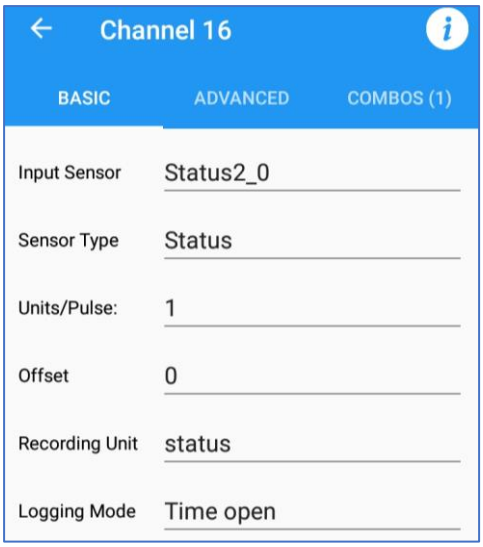
(a)

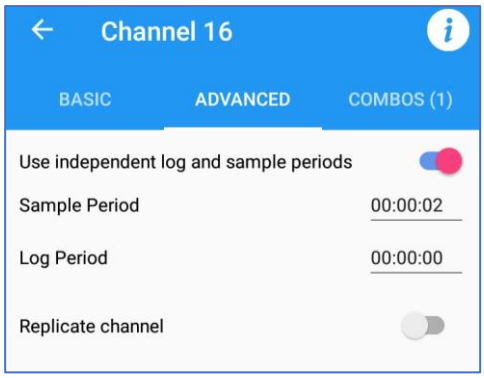
A new channel is created measuring the open-circuit time of input Status2 (/ Flow2).

The channel input is tested every 2 seconds.

The channel is not logged.

The tamper input is not replicated to any output channel due to the “Replicate channel” control being switched off (see diagram).
(With this setting is not available for use by other equipment).





(b)

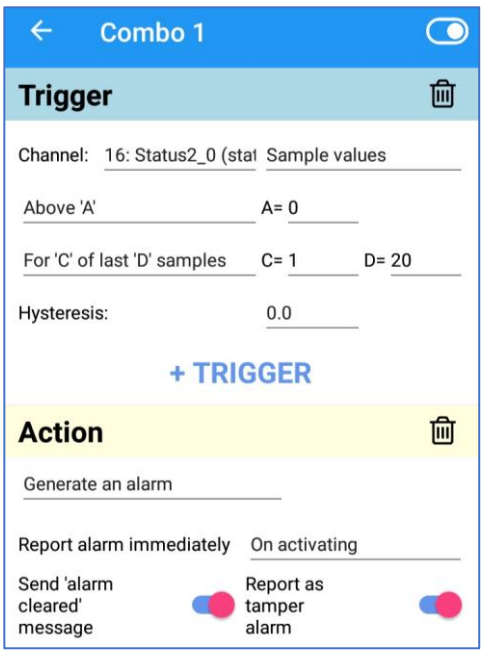
There is an alarm condition set up (via a “Combo” condition test).

The test checks the last 20 samples.

The OK condition (non-tamper) is for a closed-circuit to be present; the time of an open-circuit condition is to be “0”.

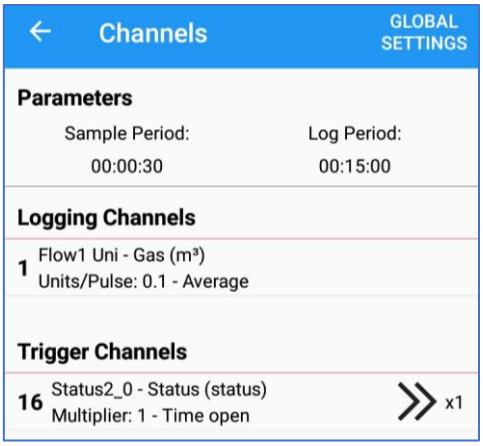
The settings opposite create a trigger condition as soon as a single measurement shows an open-circuit condition exists.

The Action taken is to immediately report the alarm (to the server). It is to report it as a tamper condition.
(Functionality and settings in the server determine if the alarm is just recorded, or if it is actively forwarded to alert a user).

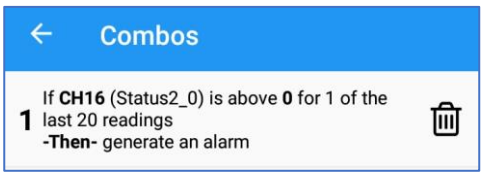


When the triggering condition no longer exists, the logger will also send an “alarm cleared” message. However, this will be sent when the unit next calls in to the server, not immediately.

The channels summary shows the presence of the newly added channel and a combo being set to trigger in the new channel.



A summary of the tamper alarm combo is shown opposite and can be used to check if the combo has already been set.



6 Set Meter Reading of Flow Channel(s)

1. Set logger with current Meter Reading.

The logger tracks the volume of gas passing through the meter (from the pulses) and sends a meter reading into DataGate when it calls in with the flow measurements data.

Initially, the logger has not had the meter value set.

Tap on “Metering Settings”.

Find the units the meter is displaying. For the meter in the example we are using, the dial clearly states “m^3 “ (see diagram opposite).

The “Meter Factor” must next be determined and entered.

$$\text{Meter factor} = \frac{\text{Unit of volume measurement used on the Meter for each digit}}{\text{Unit of volume measurement used on the Flow channel}}$$

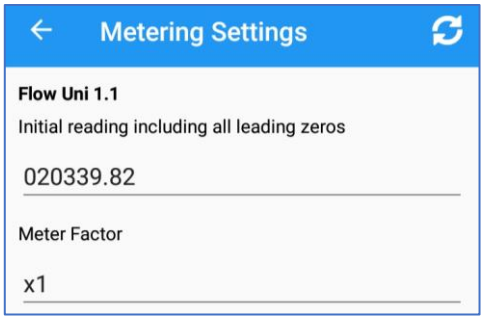
In our example: The flow channel was set up in m^3 and the meter similarly measures in m^3.
The ratio would be 1 m^3 / 1 m^3;
Set “Meter Factor” equal to “1”.

Example 2: If the flow channel measured in ft^3, whilst the meter measures in 100s of ft^3, the ratio would be 100 ft^3 / 1 ft^3; Set “Meter Factor” equal to “100”.

Read the main meter, noting its format.
Enter the meter reading into the “Initial reading” field.

When entering the meter reading, include any leading zeros, the decimal point and any other displayed digits.

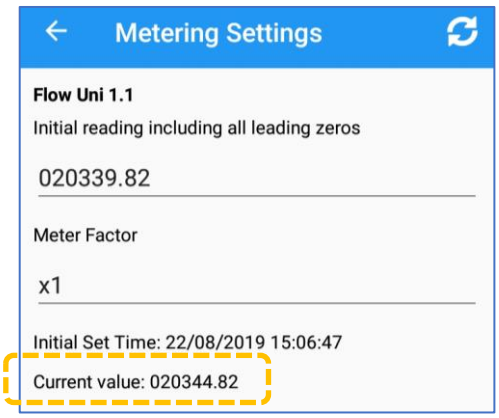
For the example shown, enter “020339 . 82”.



Tap the back-arrow and the entered reading for Meter 1 is now shown. (This is not a live value).

You can confirm logger is set up correctly by doing the following:

- After waiting for the meter to change by a few digits, note the meter reading and tap the “Meter Settings” control.
- Confirm the “Current value” reading matches the meter reading (noted earlier).



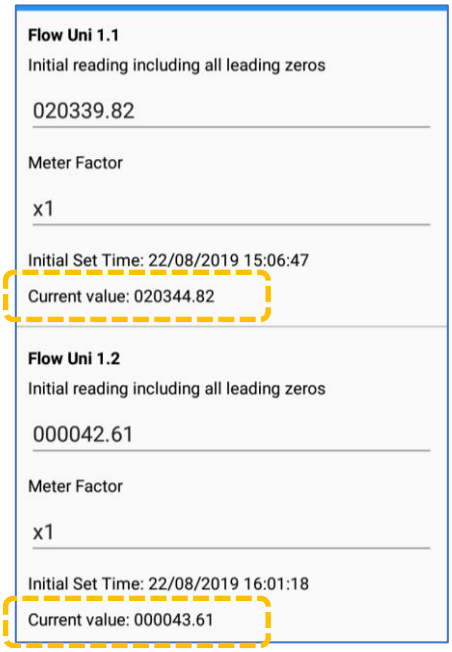
If the reading is not correct, re-check:

- The cables go to the correct meter.
- The meter factor is correct.
- The channel settings (units/pulse and recording unit) are correct.

… and then repeat the test.

Where two flow channels are used, the meter reading entry page will be as shown opposite.

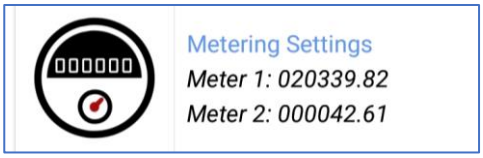
Make the settings (as above) for each meter.



Add the initial reading and Meter Factor for the second meter.

Then tap the back-arrow.

A meter reading is now shown for both meters.



Confirm the readings of both “Current value” fields are operating as expected, using the method described earlier.

7 ADD ANY ADDITIONAL COMBOS

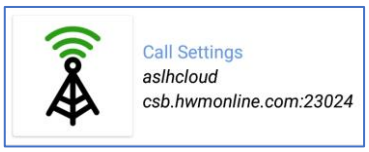
1. Add any required Combos.

If any additional alarms are required, they should be added by using a custom “Combo”. (e.g. If flow rate exceeds rated flow of the meter).

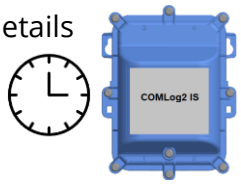
8 CALL SETTINGS AND TESTS

1. Set Call-in Settings

Tap “Call Settings”.



Set your required logger call-in details



Call-in daily at set times.

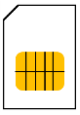
Save battery – Do not call if latest data already sent OK.

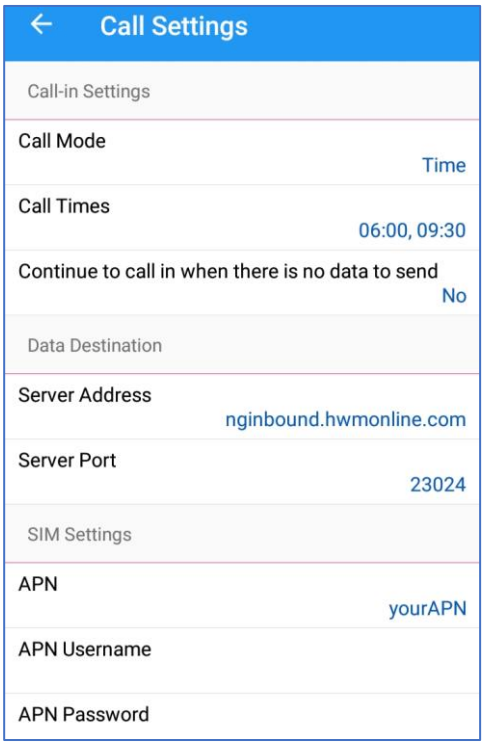
Times at which to call with data.

Set your DataGate destination

HWM DataGate

Set network details for your SIM provider.





Note: These settings can (as an option) be pre-configured by HWM to customer requirements.

2. Call Test.

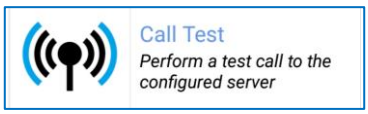
Check in final position with door of meter cabinet (or lid on chamber) closed.

Tap “Call Test”.

Wait until complete.

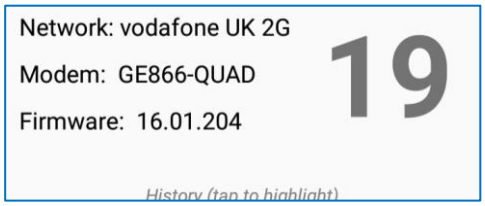
Check “Call successful”.

Check CSQ is a good value. (If not, check CSQ level with antenna in various positions, as described below)



3. Check CSQ level (If required).

Tap
"Signal Test"



Close door of meter cabinet and check network CSQ level.

Summary of CSQ levels is shown below:

☹ 0-7 Poor.
(The logger may be able to register with network but will not be able to send or receive data reliably).

😐 8-14 Acceptable.
(Depending upon the ambient conditions data transmission may be possible. It is important to select the correct antenna and install it in the most suitable location).

☺ 15+ Good.
(Data transmission should be reliable).

If required, adjust the antenna position or type to get best results.

- Check result with meter cabinet door open, for comparison.
- Move position
- Adjust height
- Change antenna type.
  (Where the meter cabinet is constructed of metal, it may be required to cut a hole and fit a button-type antenna). – Contact HWM for antenna options.

Repeat the call test when optimal antenna position is found.

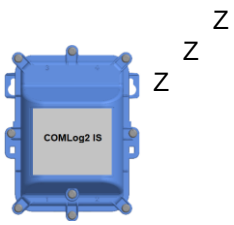
9 COMPLETE INSTALLATION

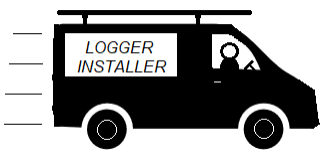
1. Make a record of the logger deployment location (for office use).

2. Logger Deployment complete.

Leave site and go to the next site.

The logger communications will go into standby.





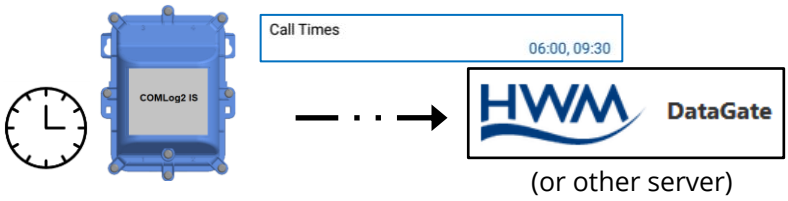
3. Logger makes measurements and logs data.

Logger takes measurements at regular sample intervals and saves datapoints at specified intervals.

4. Logger calls in with measurement data (when used with DataGate).

Logger contacts server
at call-in time, and uploads
measurement data.

Logger can call server
immediately if an alarm condition
is detected and the combo settings require it.



(or other server)

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