LOGGER 17 USER MANUAL

V2.3
5 July 2018
Imran C.F Jones

Table of Contents

Introduction

I2O loggers allow water companies to measure and log pressure and flow data from their water networks. This is done remotely via our software platform and each water company has a personalised platform website, which is used to configure loggers and view data.

Alarms can be configured per channel to give real-time information on network issues such as low pressures or increased flows due to leakage or bursts. When thresholds are met or exceeded, an alarm is triggered automatically. Individual alarm trigger thresholds can be set for each pressure and flow channel.

The logger supports Over the Air firmware updates, meaning that if a new version of the firmware is released, the logger will download and install it automatically, there is therefore no need to physically connect to the device in order for an update to be installed. Loggers are available with up to 3 pressure transducers, and inputs for 2 flows. This document details the procedure for installing and configuring an i2O logger.

Intentionally left blank

Quick Start Guide

1

2

3

4

5

6

7   support.i2owater.com

"Logger Configurator"

Configurator
.exe

8
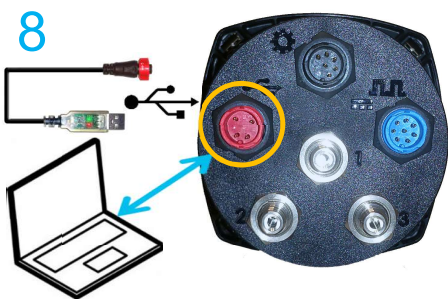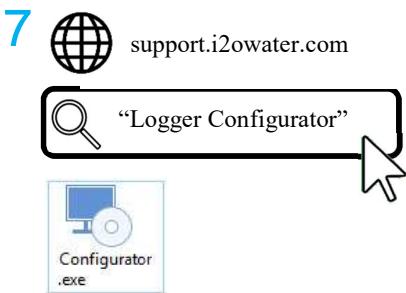
This area is reserved for quickstart text

Deploying the Logger

Install Configurator

Download Configurator from your i2O Platform and install on the laptop used for
direct connection to the logger. For more information on downloading and using
Configurator, visit support.i2owater.com. You will also need your platform
settings files, which are used when configuring the logger:
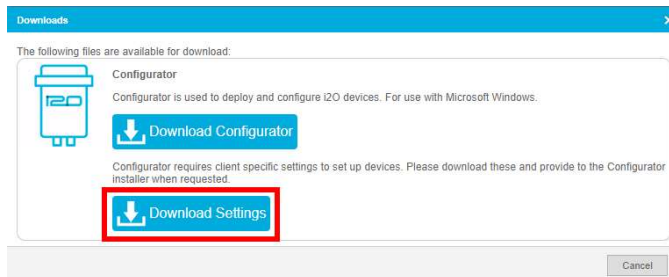
Assign the logger to a Location

Before installing the logger on site, it must first be associated with a location in
the platform. Loggers can be pre-assigned to a location using the device serial
number. After the logger is assigned to the location,
you can configure dial-ups, view the recorded data,
and manage device alarms. For more information
on creating locations, visit our Help Centre at
support.i2owater.com
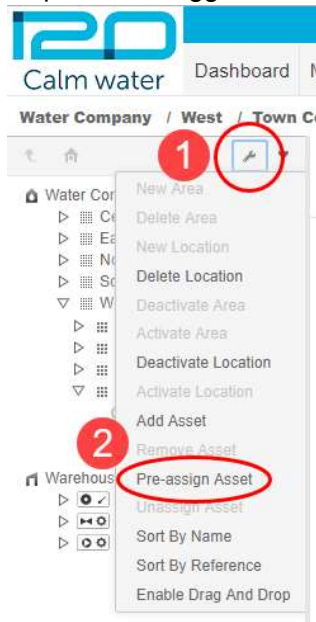
When a L17 is used with the "pre-assign" option, it
must dial-up twice to get its Location configuration.
The first time it dials-up it only gets a "Warehouse
configuration" and the second time it gets its proper
Location configuration.
If you do not do the second manual dial-up, it will
not receive its proper configuration until midnight,
which is the default dialup time for a Warehouse
configuration.

*You may wish to configure multiple dialups to monitor logger operation
on the day of deployment. Remember to revert to a more permanent
setting (eg.once daily) after correct logger operation is verified.*

Mounting

Mount the logger using a zip-tie or optional mounting bracket if required

Connect the Logger to a Laptop
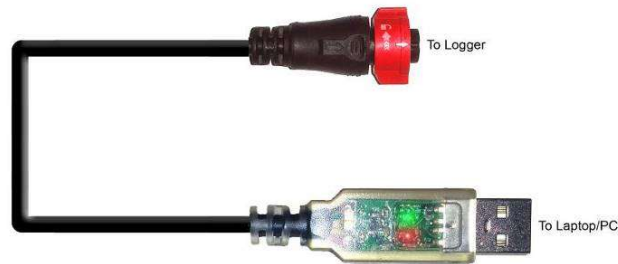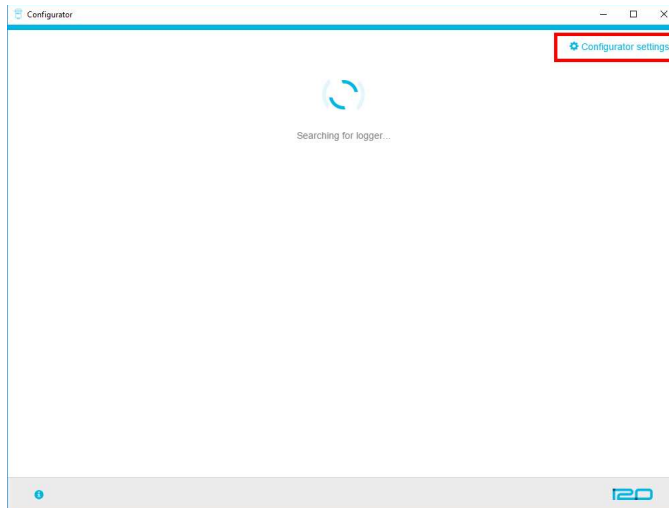
To Logger

To Laptop/PC

Ensure both arrows on the cable and logger are aligned before inserting the cable.

(i) *Device driver prompts may appear, ignore these, as no additional drivers are needed for the logger.*
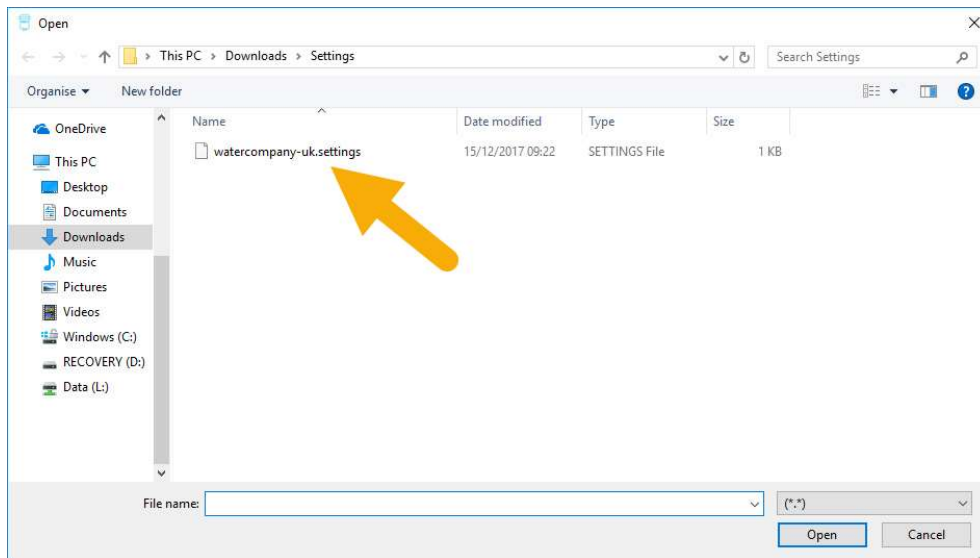
Load settings file:

Before logger is connected, Configurator will say 'Searching for logger'. Load your platform settings file by clicking the 'Configure settings' link:
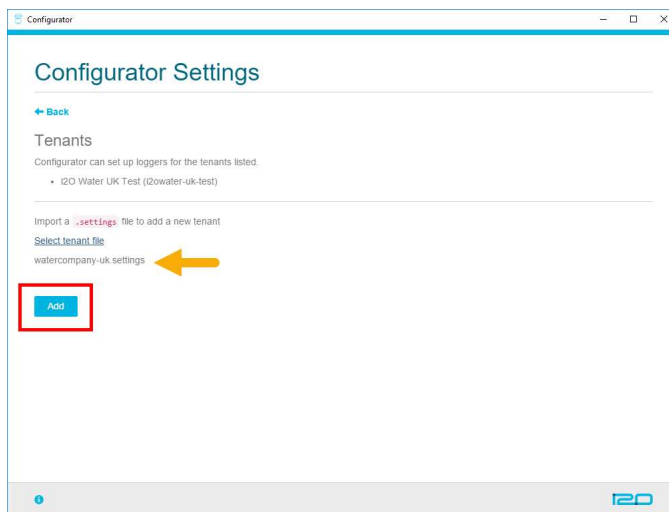

Then click the 'Select tenant file' link
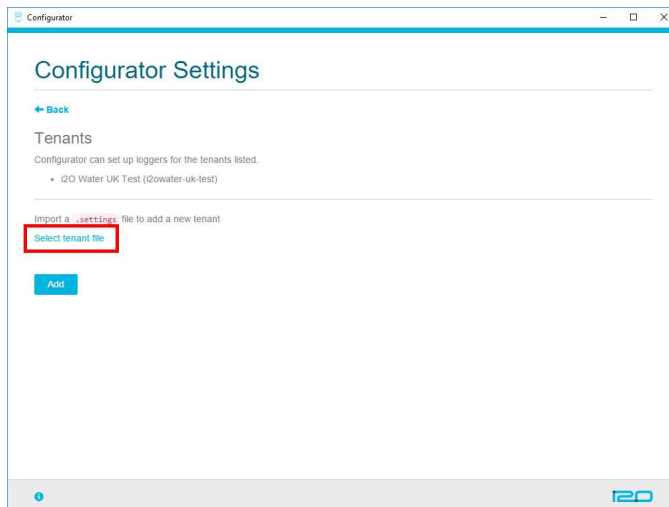
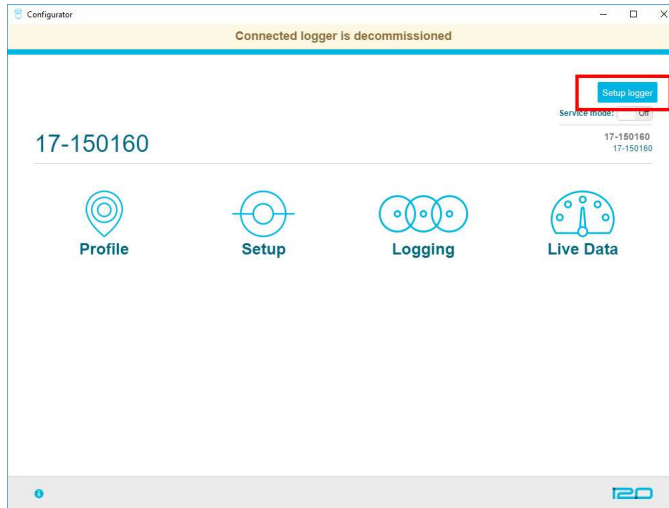Select your downloaded settings file

Your selected settings file will now appear in Configurator, click 'Add' to load the file

Configure the logger

Connect the logger to your laptop. When the logger is detected, the configurator home screen will appear. Click 'Setup logger'

Click the 'Perform configuration' button to start the logger configuration sequence. A confirmation message will appear, be sure to read the contents of the message before continuing
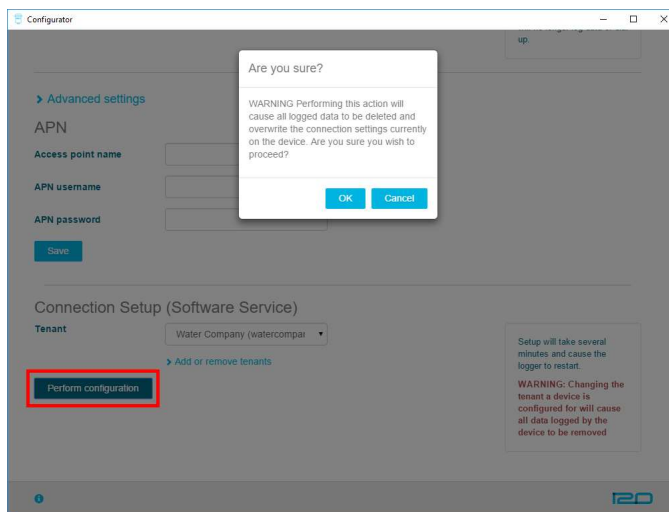
This procedure will remove all recorded data from the device. Any existing settings files will be overwritten.

Wait while the logger completes the setup process
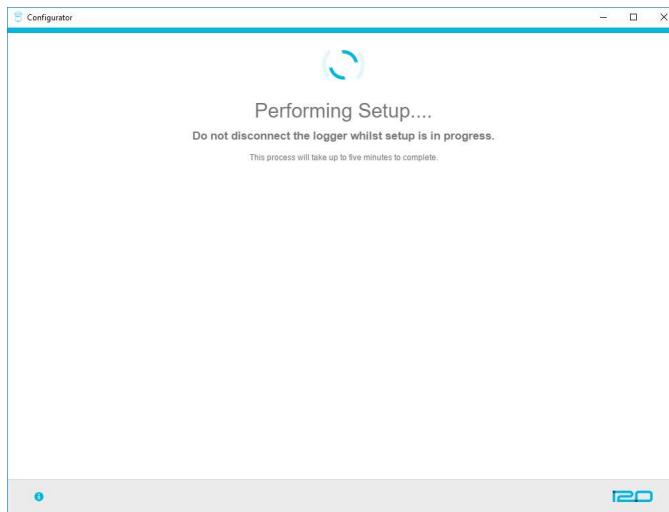
When the process is complete, a message showing this will appear on the Configurator screen

The logger will restart automatically and Configurator will go back to showing the home screen.

Force a Dial-up

Click the dialup button to allow the logger to download its configuration files from the Platform. The dialup button changes to an animation sequence of status messages as it completes the different stages of the dial-up process.
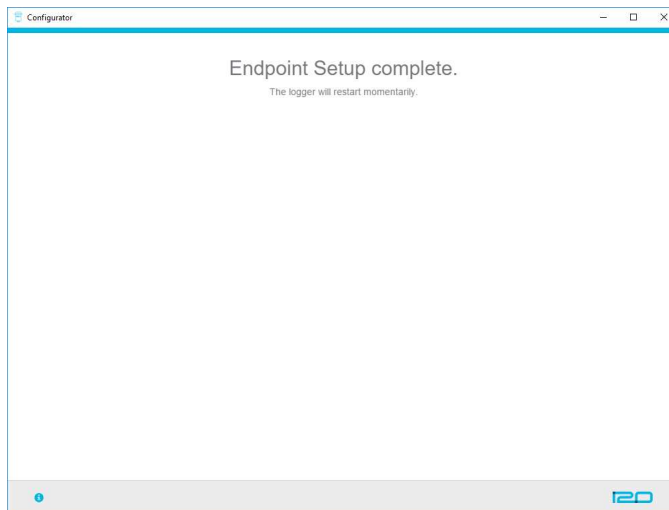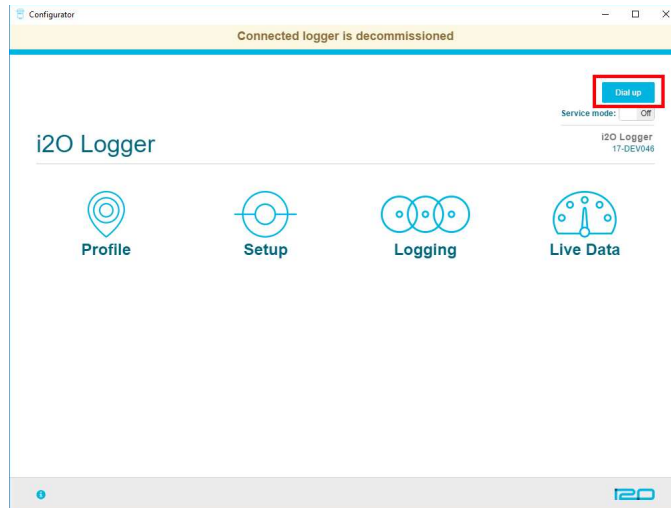

Viewing Live Data

Live logger behaviour is available from the Live Data screen.
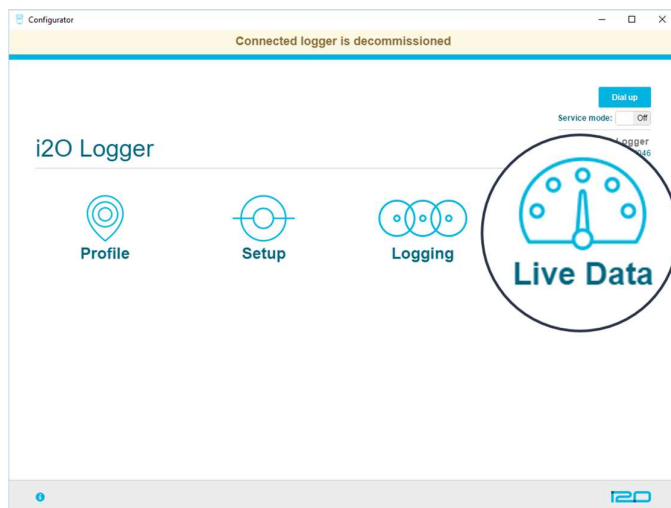
Here you can look at information including current signal strength, logger name and serial no, along with live pressure, flow and battery voltage readings during the deployment process.
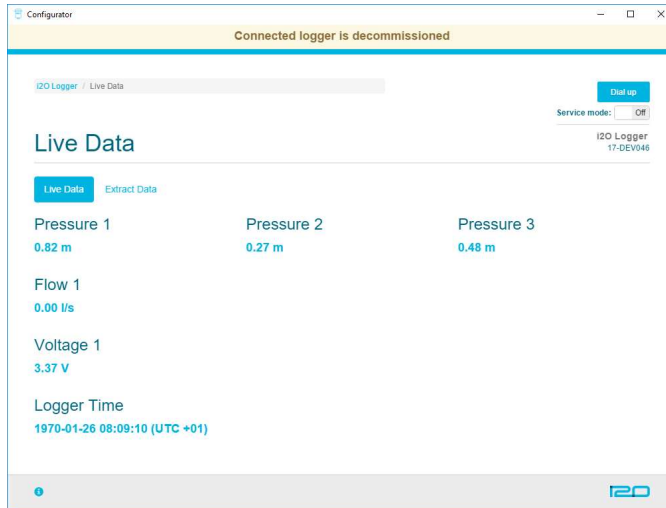
The Live Data page also allows you to extract local data from the device. The logger will store up to 12 months of flow and pressure data. More information on this is available in the Reference section.

Decommissioning

The logger can be decommissioned if it is no longer in use or temporarily being placed into storage, to do this, enter the "Setup" menu:
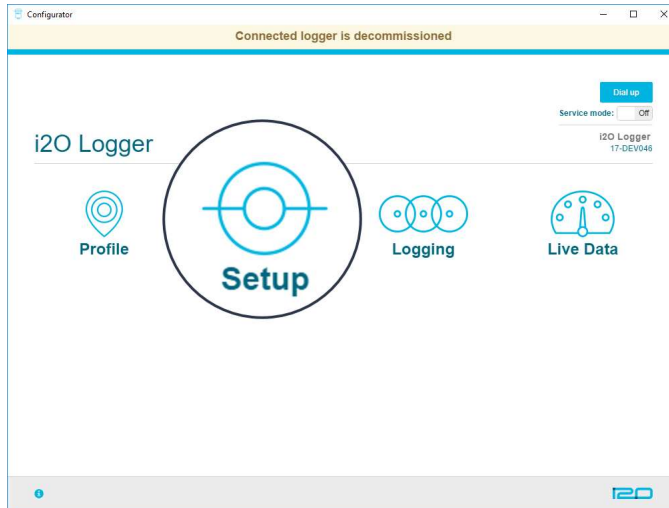
Select the "Decommission Logger" button. Decommissioning the logger removes its scheduled dial-ups and disables logging. This prevents spurious data from being recorded and extends battery life.
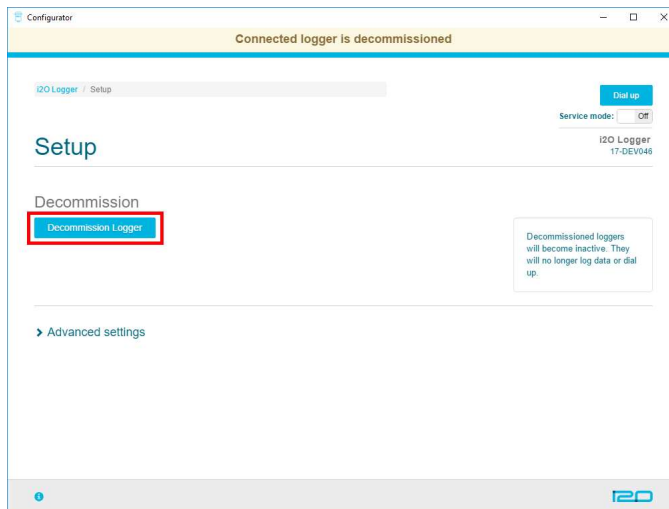
Changing the Battery

Loosen 4 in no. Camlok screws

Carefully disconnect the battery cable

Remove old battery and desiccant pack

Insert new battery, desiccant pack and re-connect battery cable

Fitting the SIM card

Insert the new SIM as shown, taking note of the orientation. The SIM card must be full size, do not use micro or nano SIMs with converters. The SIM must support 3G.

Connections

Connecting the Logger to a Laptop

To Logger

To Laptop/PC

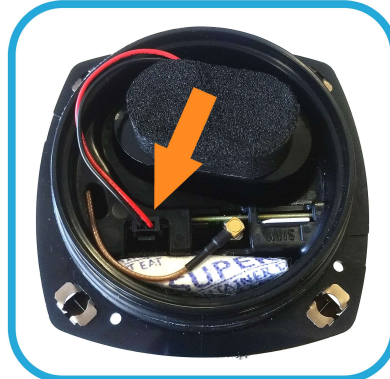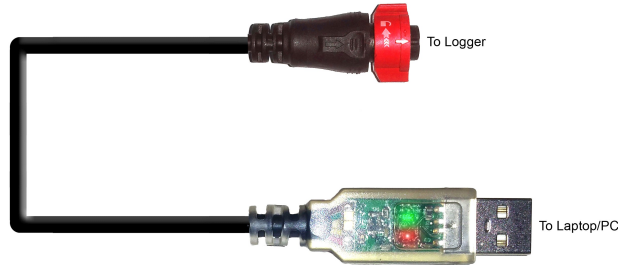Ensure both arrows on the cable and logger are aligned before inserting the cable.

(i) *Device driver prompts may appear, ignore these, as no additional drivers are needed for the logger.*

Flow Cable

The Logger 17 version comes with two options for connecting flow and external power. There is also the capability to record reverse flow for bi-directional flow meters. Connect the flow cable in accordance with the following diagram. There is more information on connecting external power, including what supplies are compatible with the i2O logger, in the next section of this document.

2-wire

Green - Forward Pulse
Brown - Ground
Yellow - Not Connected
Orange - Not Connected

3-wire

Green - Forward Pulse
Brown - Ground
Yellow - Reverse Pulse
Orange - Not Connected

5-wire

Green - Flow Pulse
Brown - Ground
Yellow - Flow Direction
Orange - Tamper
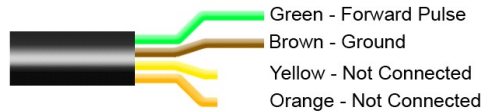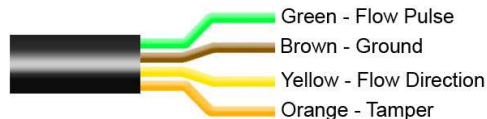
(i) *For 5-wire meters, the 'Low Frequency' pulse is not connected.*

External Power

An external DC power source such as a mains-powered supply, battery, solar panel, or micro-turbine may be used with or without internal battery fitted. The supply must be 6 – 30 Volts DC.

Connect the DC supply using the external power cable as shown below. If a flowmeter connection is also required, use the combined flow and power cable.

Red - Positive (+)
Black - Negative (-)

Combined Flow and External Power

To Logger

Ensure arrows are aligned

From External Power

From Flow Meter

Red - Positive (+)
Black - Negative (-)

Green - Flow Pulse
Brown - Ground
Yellow - Flow Direction
Orange - Tamper
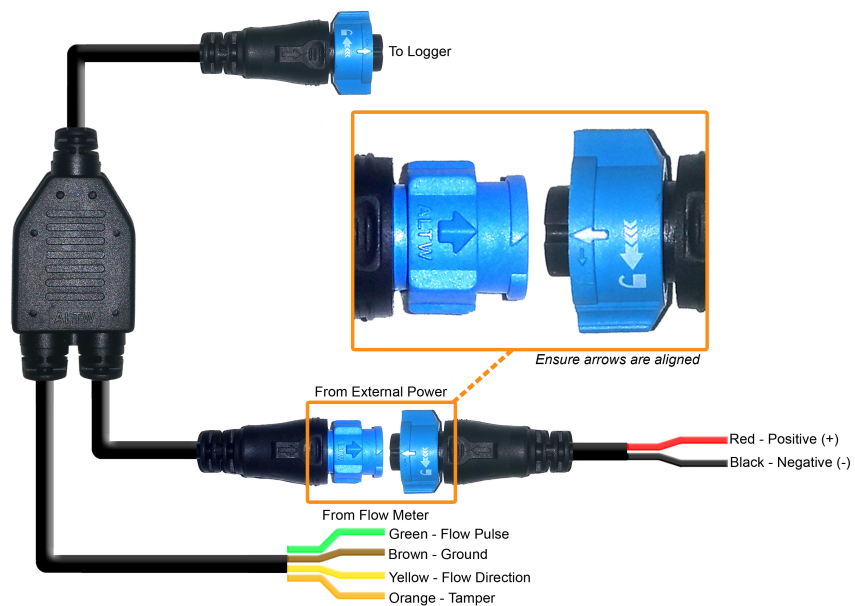
Features and Specifications

Physical Dimensions

SIZE (mm)	w115 x d115 x h155
WEIGHT (kg)	0.68

Technical Data

DATA SAMPLING INTERVAL	≥1s (1min default)
DATA LOGGING INTERVAL	≥1min (15min default)
DIALUP INTERVAL	External Power ≥5 min (24hr default) Internal Battery ≥60 min
TEMPERATURE/VOLTAGE	Logged (default = hourly)
MODEM SIGNAL STRENGTH	Logged on dial-up Connection

Logging Modes

STANDARD LOGGING
Mean of samples over logging interval
ENHANCED STATISTICS
Instability, pressure transients and surges can be identified from maximum, minimum and standard deviation values captured during the logging interval

Alarms

Alarm thresholds can be individually set for each flow and pressure channel (HH&LL in graph). Alarms are logged when they occur and can trigger the logger to:

- Log alarm details
- Send an SMS alert to a specified telephone number containing alarm details
- Dial up with increased regularity

A Nightline period can be defined and alternative thresholds can be set for a flow channel to aid breach and burst detection.

Interfaces

|	
DIGITAL FLOW INPUT	
TYPE	Industry standard, digital 2-wire interface, plus 3-wire and 5-wire bi-directional meters
MAX PULSE FREQUENCY	100Hz
MIN PULSE WIDTH	5ms
PHYSICAL INTERFACES	
CONFIGURATION PORT	USB connection to PC or Windows tablet
EXPANSION PORT	Connection to external power sources 6 – 30VDC
OVER THE AIR INTERFACE	
NETWORK	Quad band GSM and Penta-band UTMS
SIM	Field replaceable
	Automatic configuration, supports roaming SIMs

Reference Information

Installing an External Antenna

Loosen 4 in no. Camlok screws

Carefully disconnect the internal antenna
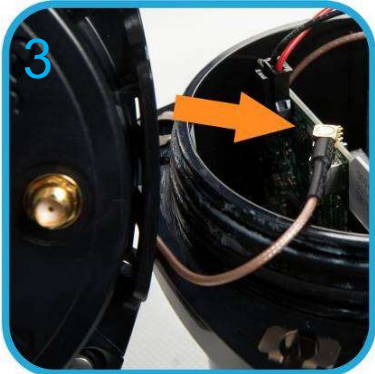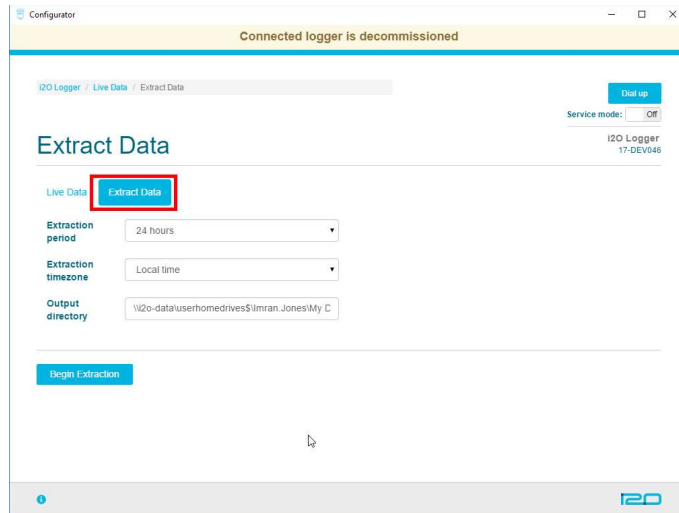

Connect external antenna top cap

Use external antenna kit AMKT0018

Connect external antenna

Retrieving Local Data

The logger allows you to extract local data in circumstances where there is poor signal strength, or a mobile network is not available. This is done from the Live data screen:

You can select an extraction period, extraction time zone and folder where you want your data. Data is saved in CSV format and can be viewed in Excel or similar spreadsheet application. Note that it is not possible to upload extracted data files to the platform.
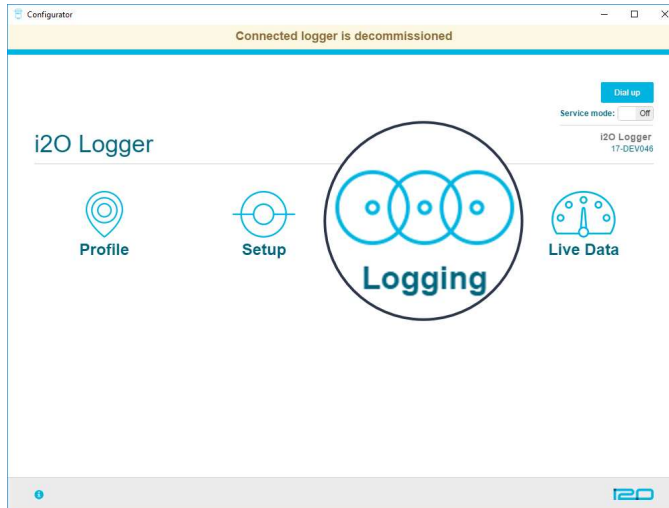
Advanced Settings

Expand the Advanced Settings menu to view and configure the logger's APN settings:
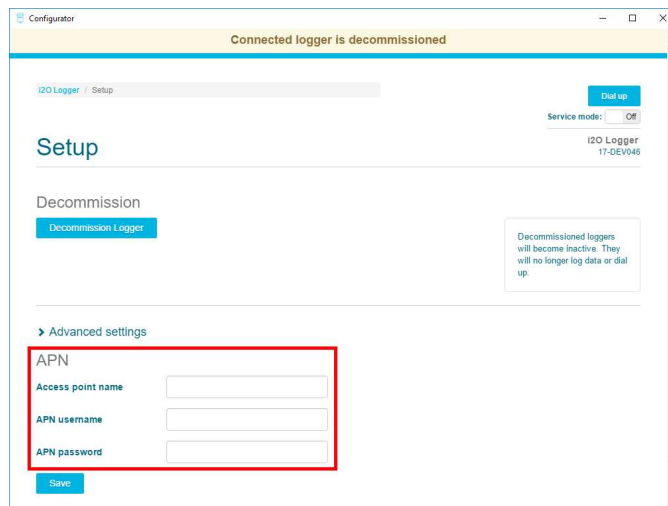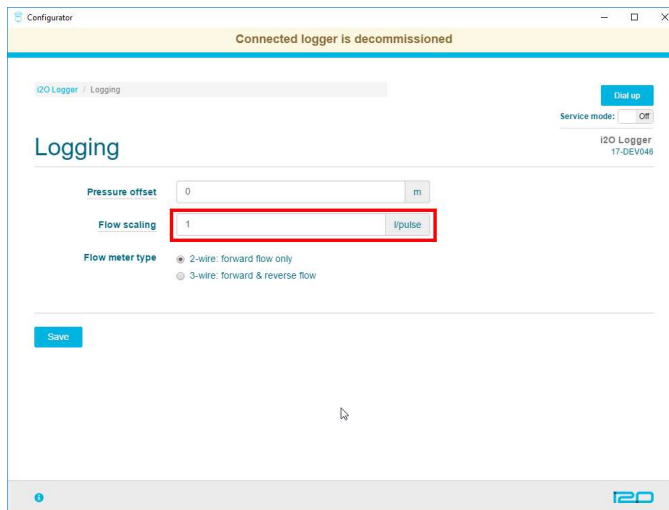
Configuring Flow Scaling

To configure flow scaling, enter the "Logging" screen:

Set the desired flow scaling value in the box highlighted:

Part Numbers

This user manual is applicable to the following i2O logger part numbers:

ALGA0120	ALGB0120
ALGA0130	ALGB0130
ALGA1120	ALGB1120
ALGA1130	ALGB1130
ALGA1121	ALGB1121
ALGA1131	ALGB1131
ALGA3220	ALGB2120
ALGA3230	ALGB2130
ALGA3221	ALGB2121
ALGA3231	ALGB2131

I2O
Calm water

http://support.i2owater.com

support@i2owater.com