User Guide: LoLog 450, 500, Vista - Installation and Setup

(using the IDT app)

HWM IDT

Warning:	This manual contains important safety and operating information. Please read, understand, and follow the instructions in the manual and also any safety / approvals documents shipped with the device.

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1 INTRODUCTION

Thank you for choosing a HWM device. We trust it will provide you with many years of service.

The "LoLog" family consists of LoLog 450, LoLog 500 and LoLog Vista devices. Each logger can be built and configured to suit specific applications; several models of each type are available. Please contact your sales representative for help with selection of an appropriate model for your application.

1.1 DOCUMENTATION AND SUPPORT OF PRODUCT

This user-guide covers the following model families:

Model Number(s)	Description
RDL451LF/??*, RDL452LF/??*	LoLog 450 models
RDL511LF/??*, RDL512LF/??*	LoLog 500 models
RDL511LF/??V*, RDL512LF/??V*	LoLog Vista models

The user-guide should be read in conjunction with:

MAN-110-0002	Safety Warnings and Approvals Information.
MAN-2000-0001	User Guide - IDT (mobile) app.

This user-guide provides details of the available logger interfaces, its operation and how to install the product. It includes some information about use of the IDT app, which is a software tool (from HWM) that allows users to check or modify logger settings and to test that the logger is working correctly. It is also used later to retrieve the data from the logger.

To view your data a viewing tool is required; refer to any user-guide or training materials relevant to the tool you will be using (see also section 6).

Note: Periodically new features and changes are released, thus you may observe slight changes from the diagrams and features shown in this manual. The available features can vary depending on which LoLog model is in use.
Refer to IDT app screens and setting options to determine which features are available on your logger.

In the event of any issue, please refer to the Troubleshooting section of this document (see section 7). HWM also provides support of the logger devices by means of our customer support webpages: https://www.hwmglobal.com/help-and-downloads/

Should you have any questions that are not covered by this manual or the online help, please contact the HWM Technical Support team on +44 (0) 1633 489479,
or email: cservice@hwm-water.com

1.2 OPERATING TEMPERATURE

Refer to the logger Datasheet or your sales representative for guidance on the storage and operating temperature range of the device. Ensure the unit is within the operating temperature range prior to installation.

2 OVERVIEW AND PREPARATION FOR USE

2.1 PHYSICAL FEATURES & INTERFACE IDENTIFICATION

The LoLog series loggers have a front face (which includes the infrared communications window) and a rear face. Labels (including the nameplate label) are present on the loggers. On the LoLog 500 and LoLog Vista models, they are positioned on the rear and side faces of the unit. On the LoLog 450 they are positioned on the rear face.

The label (see Figure 1) will indicate the LoLog model name (e.g., LoLog 500) and the part-number of the unit, the latter being specific to the logger construction. The label also includes a unique serial number for the LoLog unit.

Figure 1. Example LoLog nameplate label

2.1.1 LoLog450

The LoLog 450 (see Figure 2) is the smallest device in the LoLog family of loggers.

The logger has a plastic enclosure and is constructed to be resist the ingress of dust and water to IP68 standard.

Refer to the model datasheet for additional information and feature summary.

In the centre of the logger there is a window (surrounded by a magnetic ring) which is used for infrared communications.
A cable with an infrared interface (refer to section 2.2), available from HWM, is required for communications with the logger. The magnetic ring holds the communications interface in position during use.

Figure 2. LoLog450

The logger will have either one or two measurement interfaces fitted. These will pass through the enclosure at either the top or bottom of the logger, depending on the model supplied.

Some interfaces may be presented as a waterproof bulkhead connector. Some interfaces may exit the enclosure by means of a glanded cable.

A pressure interface may also employ a built-in pressure transducer with a quick-release connector. This is for direct connection to a pipe (or hose).

The interfaces fitted are also shown on labels, but sometimes in a shortened format. E.g., the position of an Internal Pressure transducer (built-into the unit) is shown as “INT. PRESS (20BAR)” in the label shown in Figure 3.

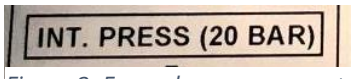

Figure 3. Example measurement interface label

2.1.2 LoLog 500 and LoLog Vista

The LoLog 500 and LoLog Vista (see Figure 4) are the largest devices in the LoLog family of loggers.

The loggers have a metal enclosure and are constructed to be watertight.

The LoLog Vista has a built in LCD display. (Refer to section 5.1).
The LoLog 500 is similar in construction but does not have any LCD display.

Refer to the model datasheets for additional information and feature summary.

Figure 4. LoLog Vista

In the centre of the logger there is a window (surrounded by a magnetic ring) which is used for Infrared communications.
An infrared communications cable (refer to section2.2), available from HWM, is required for communications with the logger. The magnetic ring holds the communications interface in position during use.

The logger will have either one or two interfaces fitted depending on the model supplied. These will pass through the logger enclosure at the bottom of the logger.

Some interfaces may be presented as a MIL-SPEC bulkhead connector.

A pressure interface may also employ a built-in pressure transducer with a quick-release connector. This is for direct connection to a pipe (or hose).

The interfaces fitted to the logger are shown on labels, but sometimes in a shortened format. (E.g., the position of an interface for external (wired) pressure transducer is labelled as “EXT. PRESS” in Figure 5).

Figure 5. Typical interface (channel) identification

2.2 COMMUNICATIONS LINKS (FOR PROGRAMMING AND DATA DOWNLOAD)

To communicate with the logger, an infrared communications interface is required. E.g., HWM part-number "RAG R10USB".

The interface is known as the "USB IR Reader" (See Figure 6 and Figure 7).

Figure 6. USB IR Reader

Figure 7.
IR Reader communications window

For reliable communication, ensure the infrared windows of both the LoLog and the USB IR Reader are clean prior to use.

The IR Reader is positioned over the magnetic ring / infrared window of the logger during use; it is held in place by the magnetic force. (See Figure 8).

The other end of the interface is a standard USB-A connector.

Figure 8. IR Reader coupled to a LoLog Logger for communications

A software tool, known as the "IDT app", is available for programming the LoLog series loggers. The app should be installed on a tablet, or similar device. However, additional items may be needed to complete the connection path and allow use of the programming tool.

2.2.1 IDT - used with an Android Phone or Tablet device (via USB).

The IDT app requires the IR Reader to be plugged into an available USB port of the tablet device hosting the programming tool. This can be directly to a USB-A port, or via a suitable adaptor (if required).

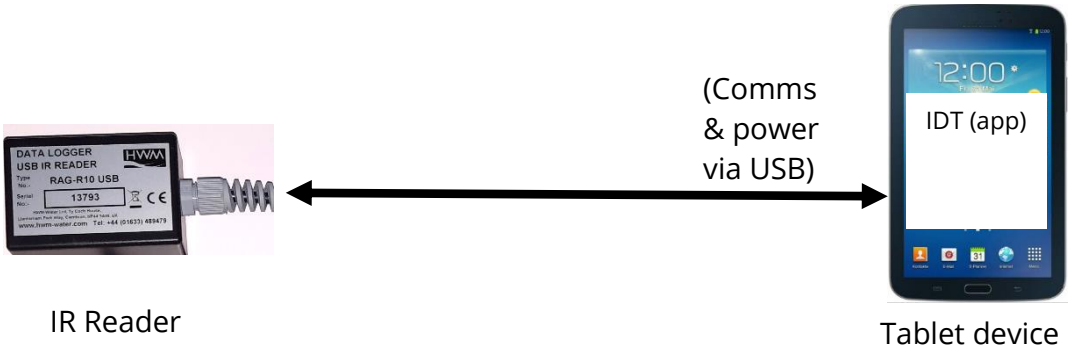

Figure 9. Communications path when using IR Reader directly connected to Android phone or tablet

The tablet device provides power to the IR Reader.

Prior to use, the tablet should have the IDT app software installed.

When using this connection method, be sure to select the IR Reader listed in USB connections within the IDT App.

Figure 10. IDT app control offered to select IR Reader as a connection method

2.2.2 IDT app - used with a Mobile phone or Tablet / Bluetooth option

Certain mobile phone or tablet devices (which must be Android or IOS-based and support Bluetooth radio) are able to use this method. (For latest information about known compatible devices, contact your HWM representative).

Prior to use, the mobile device should have the IDT app software installed.

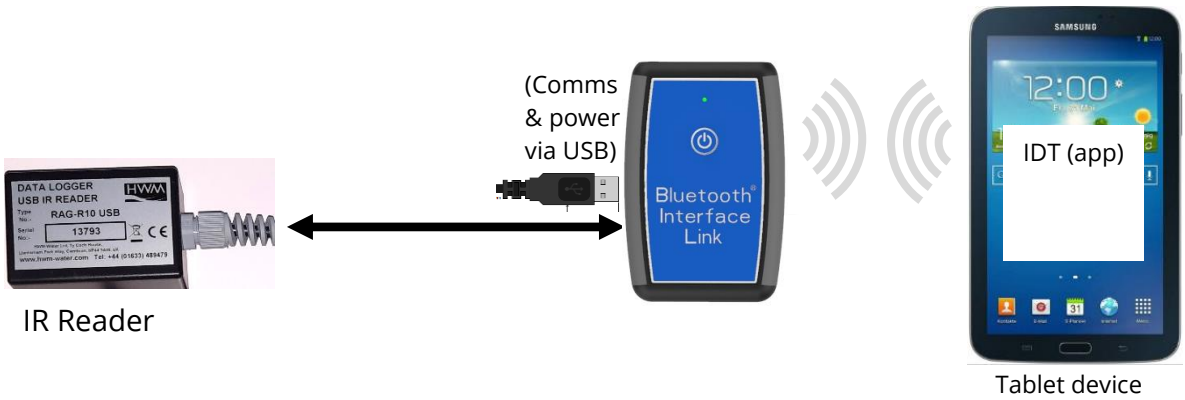

Figure 11. Connection path when used with a Bluetooth Interface Link unit

The connection path (refer to Figure 11) makes use of a communications adaptor known as the HWM 'Bluetooth Interface Link'. The IR Reader should be plugged directly into the USB-A port of the unit. The device should be turned on during use. It provides power to the IR Reader device. The IDT app is required to be paired to the Bluetooth Interface Link unit prior to communication with the logger. The Bluetooth Interface Link handles protocol translations and flow control of messages between the logger (via the comms cable) and the radio link.

2.3 PREPARING A TABLET FOR USE

The LoLog devices require a user-interface in order to setup and test the unit. This is provided by a HWM software tool / app called "IDT" ("**I**nstallation and **D**iagnostic **T**ool"). This must be installed on a tablet or mobile phone device. Refer to the IDT app user-guide for further information and installation instructions.

2.4 LOGGER OPERATION

The LoLog logger is powered by a non-rechargeable Lithium battery. The software is designed to minimise battery use and thereby prolong the expected battery life. However, battery life is also affected by user-programable settings. The user is advised to set the logger to keep the frequency of logged measurements to the minimum needed in order to manage battery power effectively.

Before the logger can be used, it must first be activated (see section 2.5).

The LoLog series loggers have a capacity of producing up to 2 channels of data, containing a series of data-points (values). The data-points are separated in time by a time interval, known as the "log period"; this can be modified using IDT. However, the logger sometimes takes additional measurements in the background, which can then be used to produce "average" values. Where a logger has an unused interface, the related channel can be disabled to reduce battery power consumption and the saving of zero/null or erroneous data.

The LoLog series loggers have the options of analogue inputs or digital inputs (usually used for meter pulse detection), or one of each. The inputs are monitored during logger operation and are arranged as input channels. The 'output channel' is the measurement data, consisting of a series of numeric 'datapoints'.

For analogue channels, the LoLog logger will produce a datapoint which represents an average value for the measurement over the preceding log interval.

For digital (pulse input) channels, the signal transitions (typically meter pulses from a water meter, representing water consumption) require calculations of a different type to be made to produce the datapoints. The logger again produces an average value as a datapoint for each preceding log interval. However, to produce this figure the logger either counts pulses or it can measure the time interval between pulses arriving.

The logger has a large but finite memory size (up to 64000 readings as standard, but models with additional memory are available). The user can set the logger to either stop

logging when the memory is full of data, or to continue to record (by over-writing the oldest data, which then becomes lost).

2.5 LOGGER ACTIVATION PROCESS (FOR FIRST-TIME USE)

The logger is normally shipped from the factory in an inactive state (referred to as “stopped” by the IDT app, for these models) to preserve the life of the battery. Whilst in this state, the logger still monitors the infrared communications window for any activity in case someone is trying to communicate with it; it is mainly measuring and logging functions that are suspended.

To use the logger, it must first be *activated*, by using the IDT app, as follows:

Check the recording status of the logger.

If it is in a “stopped” mode, the logger is inactive.

Tap on the Status line.

Figure12. IDT indicating logger state of 'stopped'

IDT will write the program settings back to the logger and then cause the logger to re-start.

The logger will proceed through the states of “waiting” and then “recording”, as described in the IDT user guide (‘Logger recording status" section). Once in the state of “recording” the logger has completed activation.

It then starts repetitively measuring from sensors and recording data.

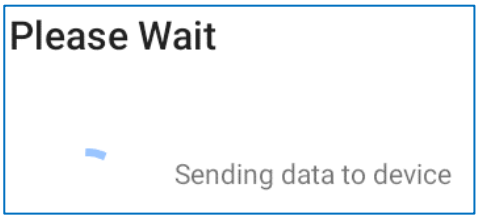

Figure 13. IDT during data transfer to logger.

The logger may also be activated by modifying any existing program settings. Each time the program is modified, the IDT app will save the settings to the logger and cause it to re-start.

3 INTERFACES AND SENSORS

3.1 LOGGER INTERFACES AND SENSORS

Sensors provide information for various physical parameters, and this information is transferred to the logger via an appropriate interface.

LoLog can support the following interface types:

- Flow (consumption) - This is a digital interface, sensing an open / closed contact, for detecting meter pulses.
- Pressure - This is an analogue interface for pressure sensors.
- (Other, 4-20mA input) - The logger may include an input for use with analogue sensors that have a 4-20mA output signal. (The parameter being measured will depend on the sensor used).

Note: The fitted interfaces are dependent upon the model supplied.

Analogue interfaces require calibration to match the sensor type prior to use. Calibration is done prior to shipment from the factory.

Some loggers have a connector for attaching or removing a sensor, whilst others may include the sensor permanently attached (e.g., a pulse detection head).

Sensors provided by HWM will include a cable with a suitable connector for the logger.

3.2 PRESSURE SENSOR INPUTS

Depending on the model supplied, the logger may have up to two pressure inputs.

3.2.1 Internal Pressure Sensor

A pressure input may be presented as a built-in transducer (as shown in Figure 14), which connects directly to the fluid via a hose using a quick-release connector.

When connecting a hose to the logger using a quick-fit connector, give consideration to the possibility of adverse weather conditions and if required, insulate the hose (and logger) to prevent damage due to water freezing.

Figure 14. Quick Release connector for a built-in pressure transducer

3.2.2 External Pressure Sensor

A pressure input may be presented as an electrical interface, using a 4-pin MIL-Spec connector (as shown in Figure 15). This allows a cabled pressure transducer (sensor) to be plugged into the logger. HWM can provide a variety of pressure sensors with the appropriate connector for the logger.

Figure 15. Pressure interface with a 4-pin MIL-spec connector

Note: A typical pressure transducer is shown in Figure 16. It has a threaded end for connection to the pressure measurement point (directly, or via the use of adaptors).

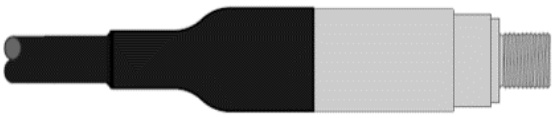

Figure 16. Illustration of a typical pressure transducer

When connecting the pressure sensor to the logger, ensure that the connector is dry, correctly aligned, fully pushed home, and fastened so that it is secure and watertight. This will prevent corrosion to the contacts and help the logger to continue to operate reliably.

3.2.3 Available pressure ranges

A LoLog supplied with an internal pressure sensor has a standard range of 0-10bar (Since 1 bar = 10.2 meters head of water, this corresponds to a range of 102.0 meters). This sensor produces a numeric range of 0 to 1020. (With this numeric range, a multiplier of 0.1 can be used to convert to meters of water head pressure).

Model numbers fitted with a 10-bar transducer are standard format. (E.g., RDL451LF/60)

Certain LoLog models may include an internal pressure sensor of 0-20bar or 0-30bar range. These sensors produce a numeric range of 0 to 2040 and 0 to 3060 respectively.

3.2.4 Calibration

LoLog loggers are supplied factory-calibrated for use with the supplied pressure trandsucer. It is not possible for the user to re-calibrate the unit. If re-calibration is required, discuss the avaibility of the service with your HWM representative.

3.2.5 Re-zero facility (for pressure relative to local atmosphere)

The sensors normally measure pressure relative to atmospheric pressure. Prior to connecting the transducer to the actual measuring point, leave it exposed to the local atmosheric pressure. Then “re-zero” the sensor using the IDT app.

3.3 FLOW SENSOR INPUT (METER PULSE COLLECTION)

Depending on the model supplied, the logger may have 0, 1 or 2 Flow inputs.
These are digital inputs, designed to sense the open or closed condition of a switch (activated by the installed meter). To use the flow channel(s) the logger must be set up (using IDT) to know what each meter pulse represents.

3.3.1 Via a 4-pin connector

A Flow input may be presented as an electrical interface, using a single 4-pin MIL-Spec connector (shown in Figure 17). The connector pinout has 2 inputs and can support up to 2 channels. However, the quantity available for use will depend on the factory settings for the logger.

- input 1 is between pins B and C.
- Input 2 is between pins D and C.

Figure 17. Flow sensor interface with a 4-pin MIL-spec connector

Where the logger is **pre-configured by the factory to produce only 1 Flow channel** (datapoint stream), the pins within the single electrical connector can be used in one of two different ways:

1. Input 1 can be used with a **Uni-directional meter** (one which only measures forward flow / consumption).
   For use in this configuration:
   - Input 1 acts to collect meter pulses, and
   - input 2 must be left disconnected.

2. Inputs 1 and 2 can be used as a pair with a **Bi-directional meter** (one which can measure both forward and also reverse flow).
   For use in this configuration:
   - Input 1 acts to collect meter pulses, and
   - input 2 is used for the flow direction indication from the meter (open = forward flow, closed = reverse flow).

Where the logger is **pre-configured by the factory to produce 2 Flow channels** (datapoint streams), the pins within the single electrical connector are used as 2 independent input channels (channels 1 and 2).
Each input can be used with a Uni-directional meter (one which only measures forward flow / consumption).

- Channel 1 input is between pins B and C.
- Channel 2 input is between pins D and C.

Note: Certain logger models can alternatively be fitted with 2 x 4-pin connectors. For these, both inputs are between pins B and C.

3.3.2 Via a glanded cable with 4-pin connector

Some logger models have a Flow sensor input consisting of a glanded-in cable which ends with a 4-pin connector. This 4-pin connector has the same pinout and operation as the bulkhead version described in section 3.3.1.

3.3.3 Via a built-in pulse-head / Reed switch

Certain models within the LoLog series are supplied with a Pulse-head or Reed switch pre-fitted to the logger.
(One example of a pulse head is shown in Figure 18).
Take care to understand if the pulse head affects the meter pulse rate to the logger in any way when installing.

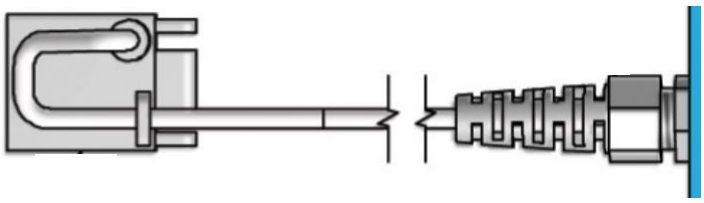

Figure 18. Example of LoLog with a captive pulse-head

Various types of pulse-head are available. When ordering the logger, ensure the pulse-head fitted is the one you require, (i.e., that it will be suitable for use with the meter). (Discuss with your HWM representative prior to ordering).

3.4 4-20mA Sensor Input

The LoLog can be fitted with up to one input for connection of a sensor which uses a 4-20mA current as its signal output.

The 4-20mA input is presented as an electrical interface, using a single 4-pin MIL-Spec connector (shown in Figure 19). The connector provides one channel.

The input is passive (i.e., the logger provides a current path for sensor equipment that has its own power source).

Figure 19. 4-20mA sensor interface with a 4-pin MIL-spec connector

The inputs are as follows:

- Sensor '+' is on pin B.
- Sensor '–' is on pin D.

Although intended for use with 4-20mA sensors, the sensor is factory calibrated to cover the range of 0-20mA. The logger indicates the measured current with a numeric range of 0 to 2000.

The channel can be set up using IDT. This type of input will appear in IDT as a '4-20mA' channel.

3.5 PINOUT / INSTALLATION CABLES

Simplified examples of input circuits are illustrated below.

3.5.1 Flow input

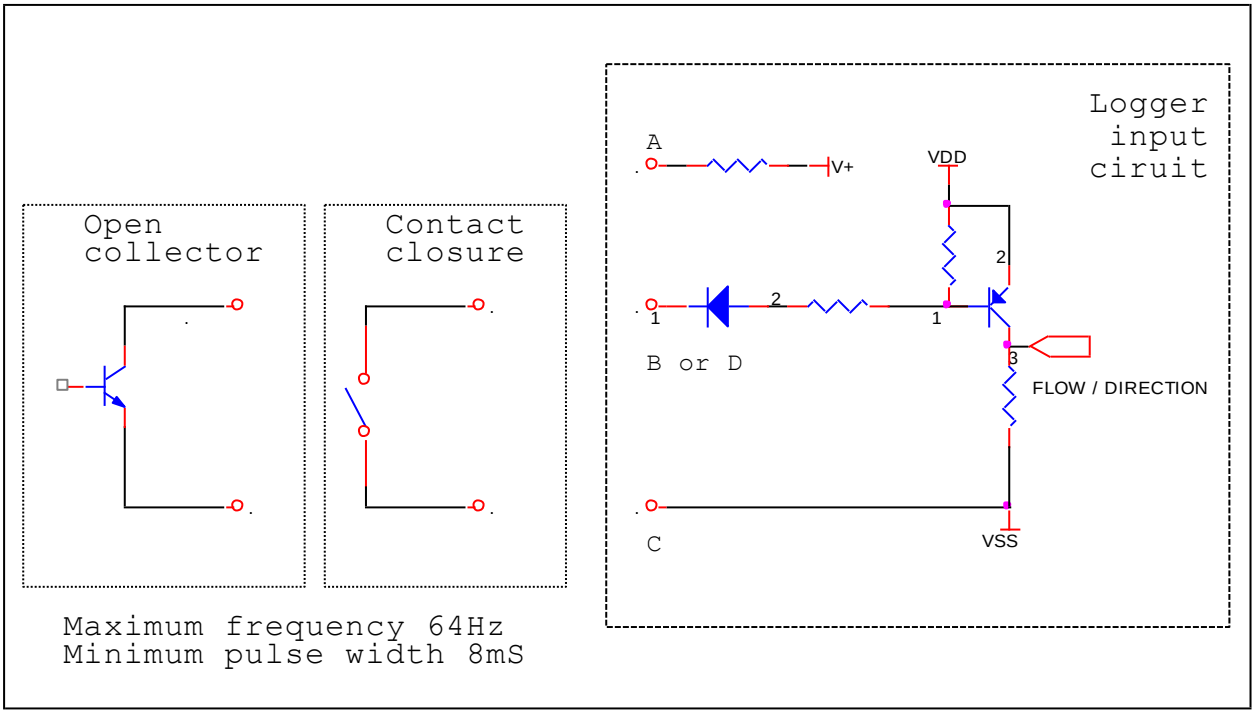

Figure 20. Schematic (typical digital flow input circuit)

LoLog 4 Pin MIL-spec Connector (Flow)			
Pin No.	Title	Description	Typical HWM cable colours (for Flow)
A		Not connected	Red
B	Flow	Flow input signal (pulses)	Blue
C	GND (0V)	Ground (0 volts)	Green
D	Direction	Pulse Direction input signal 0V = -VE direction	Yellow

3.5.2 Milliamp Input (4-20mA)

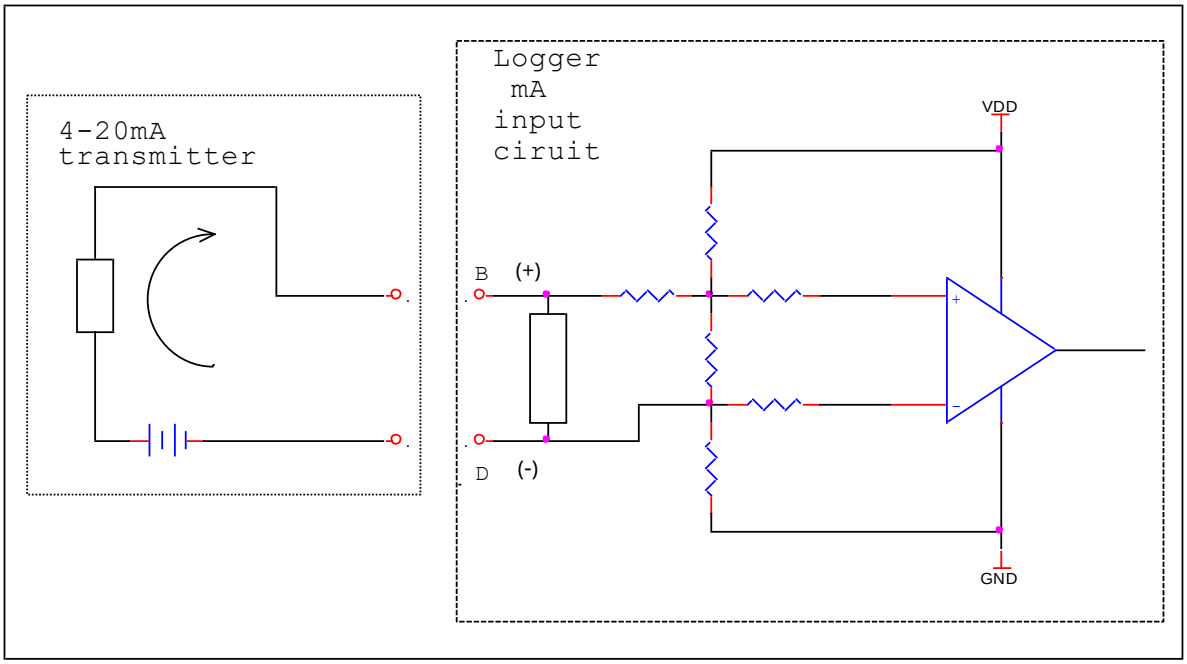

Figure 21. Schematic (typical milliamp input circuit)

LoLog 4 Pin MIL-spec Connector (milliamp)			
Pin No.	Title	Description	Typical HWM cable colours (for milliamp)
A			
B	+VE signal	Positive mA input signal	Blue
C			
D	-VE signal	Negative mA input signal	Yellow

4 INSTALLATION STEPS

- Consider where the equipment is going to be located.
- Check that an assessment of the work has been done and that any safety measures are in place. (E.g., Safety precautions, protective clothing and/or equipment is used).
- Check any meter to which the logger is required to be connected is suitable for use with your logger; check the meter pulse signals are available, and if the meter is uni-directional or bi-directional. Check if the meter requires a pulse-head for making meter pulses available.
- Check fittings are available to connect to any pressure measurement point.
- Check all cables and hoses are of a suitable length.
- The logger must be mounted in a suitable location where the sensors to be attached can reach their intended installation points.
  Place the logger into position and ensure it is securely fixed. Consider access requirements for connection of the infrared reader.
- The logger, cables, and sensors should be kept away from sources of electrical interference such as motors or pumps.
- Cables and hoses should be routed and secured so as to not cause any hazards. Do not allow any equipment to rest on cables, connectors, or hoses as crush damage can result.
- Connect to the logger (see section 2.2) and launch the IDT app.
- Use IDT to check or modify existing logger settings.
- For pressure sensors, electrically attach them but expose the sensor to the local atmospheric pressure and re-zero them before commencing making a connection to the measurement point.
- Install (position and connect) the sensors at their measurement point.
  Bleed any connections to water.
  Where required, insulate any water-filled tubing connected to pressure transducers to protect them from frost. Insulating pipe covers can be supplied upon request at additional cost or sourced locally from a hardware store.
- Test the logger and sensors are functioning correctly.
- Ensure any electrical connections made on site are durable and water-tight.
- (Vista only). Select the information to be output on the LCD Panel using IDT.
- Verify any changes to settings have been saved prior to leaving site.
  Check that the logger is in a “recording” state.
- For use of the logger with the DataGate system, ensure details of the site of logger deployment are recorded.
  (Use of the HWM Deployment app is recommended to reduce the server administration required by office staff).

5 USING THE IDT APP

Refer to the IDT app user-guide for guidance regarding use of IDT. The IDT guide covers several logger models, including setup of most of the functionality for the LoLog series. It can also be used to test sensor are operating correctly.

The IDT app must have a communications path to the logger; Refer to section 2.2. Then start communications by reading the current program settings into IDT.

This user-guide will describe a limited set of features that are unique to LoLog loggers or are of particular importance.

5.1 SETUP OF LOLOG VISTA DISPLAY / UNDERSTANDING THE LCD DISPLAY

The LoLog Vista has an LCD display panel. This can be used to display various measurement values. The display continuously cycles through:

Time → Ch1 → (Ch1 selected values) → Ch2 → (Ch2 selected values).

To select the display content for the LoLog Vista, take the following steps:

Within the “Configure Device” page, select the “Display Options” line.

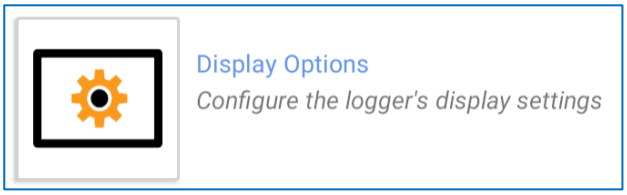

Figure 22. Selector to access the Display Options page.

The Display Options page will be shown. This page has two sets of identical controls, one for Channel 1 and one for Channel 2.

There is a “Mode” selection line, which is the main selector of how many measurements are being displayed.

Where Minimum or Maximum values are included in the selection, additional information is required. (These are entered on the lines that are shown opposite but are currently ‘greyed out’). The Minimum and Maximum values require a time-window from which the minimum and maximum values are to be selected. This can either be the last 24-hours, or from specified start and end times.

The display for a specific channel can also be disabled by selecting “Off”.

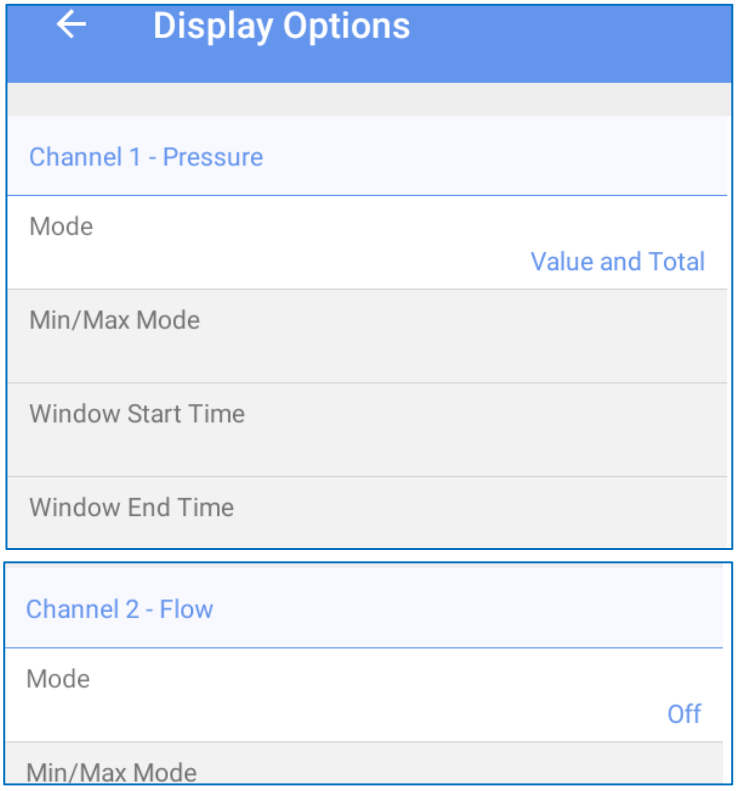

Figure 23. 'Display options' page, with a group of controls for each available channel

Note: The LoLog 450 and LoLog 500 also have this option within IDT. These can be set to “off” since no display exists on these models. Any other setting is irrelevant.

To setup the display of a specific channel, tap on the “Mode” line of that channel. Several options will be listed.

- Off:
  Deactivates the channel from showing on the LCD display.
- Value:
  Shows the current value (last datapoint produced) in the display sequence.
- Total:
  Shows the value of the total flow since the logger was last restarted. (If set for an analogue channel, Pressure or 4-20ma, the setting will be ignored as it has no meaning; the LCD shall not display any value).
- Value and Total:
  Displays the current value, then the total value
- Min / Max:
  Displays either the minimum value or the maximum value from the datapoints within a timed window.
- (The remaining settings show various selections, as explained above, which will be displayed in the sequence selected).

Figure 24. Display mode selection

When selecting the LCD to include the display of a minimum or maximum value, tap on the “Min/Max Mode” line.

Then select the required value and either a ‘last 24 hours’ or a ‘time-window’ option. If a ‘time window’ option was selected, adjust the window start and end times.

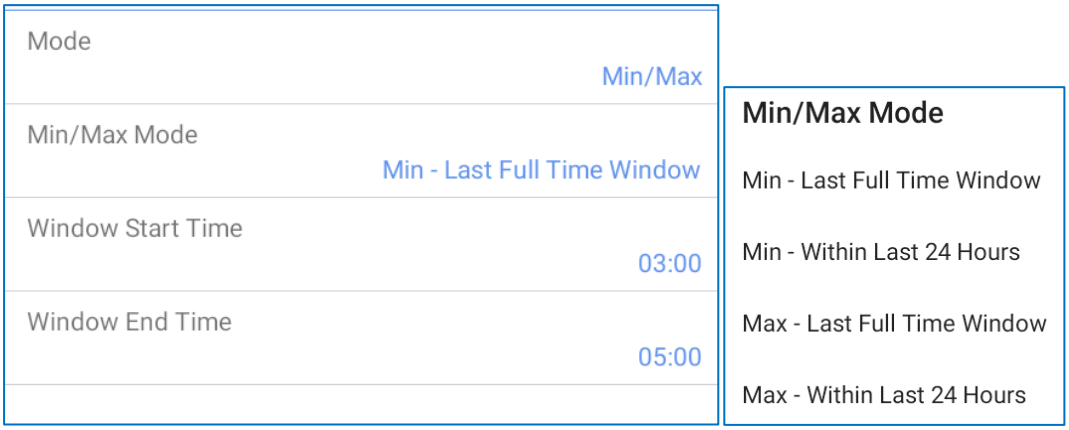

Figure 25. Min/Max selections and setup of the time window

Each time the LoLog displays a value, it precedes it with a ‘code’ on the LCD which gives information about the digits that follow:

Results for an analogue channel (such as Pressure or 4-20mA input) are preceded by a code of 3 digits, then ‘P’.

Results for a digital channel (such as meter pulses indicating Flow) are preceded by a code of 3 digits, then ‘F’.

When displaying a total (e.g., for a flow channel), the number is 12 digits in length, and thus is too big to display within the 4 LCD digits. The value is therefore displayed by spreading it over 3 sets of 4-digits. Each partial value is again prefixed by a code, ‘000’ (and then a horizontal ‘position’ bar):

The most significant 4 digits is preceded by code, ‘000’ (and then a high bar).

The middle 4 digits is preceded by code, ‘000’ (and then a middle bar).

The least significant 4 digits is preceded, by code ‘000’ (and then a low bar).

When displaying a minimum value, the value is preceded by a code, the last digit being a ‘lower n’.

When displaying a maximum value, the value is preceded by a code, the last digit being an ‘upper n’.

5.2 Memory Management

The Global settings page has an additional control for LoLog memory management.

This is normally set as disabled, as shown.
In this condition the logger will over-write the oldest data with new data.
If the control is set as enabled, the logging will simply stop when the memory is full.

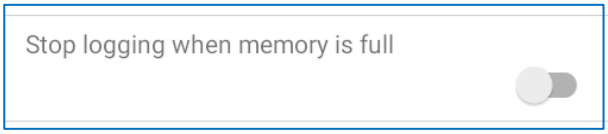

Figure 26. Memory management control in 'Global settings' page

5.3 Telephone number / SMS number: IDT app generates.

The ‘Device Information’ screen contains a field showing the ‘SMS / Telephone number’ of the logger. This cannot be edited by using the app; it can be disregarded. Instead, the app generates an SMS number on behalf of the logger to identify it when sending data to the server. (Refer to section 6.1.1 for details).

5.4 Check of Status before leaving site.

Prior to leaving site, it is important to check that the logger is not in a 'stopped' state but is indicating that it is 'recording'. Follow the guidance regarding 'Logger recording status' in the IDT user-guide to confirm.

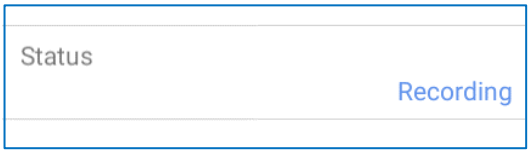

Figure 27. Check logger status is 'recording' before leaving site

6 Retrieving, storing, and viewing data

Measurement data is initially stored within the logger. To access the data, return to the logger after some time and re-connect to it using the IDT app. The data can be temporarily downloaded into IDT and viewed graphically. For data retrieval with permanent storage, IDT is required to be used in conjunction with the DataGate server. Refer to the IDT app user-guide for how to undertake this task and also the latest information on IDT capabilities and features.

6.1 Viewing your data on the server

When logged into the IDT app, logger data can be transferred to the server for storage.

The data is then best viewed with the viewing portal (website) recommended by your HWM representative (e.g., DataView, shown below).

Figure 28. Example of data seen using an on-line data viewing tool

DataGate can also (by arrangement with your sales representative) be used to export logger data to other servers.

6.1.1 Identifying your logger's data (using site or SMS number)

When stored on the DataGate server, the data from the logger is associated to the site where the logger was deployed, during the time it was installed there. When a logger has been moved to another site, the change of site must be registered with the DataGate server (e.g., by use of the HWM Deployment app).

To find the logged data on the web-page normally requires a search for the name or address of the site. To find the data retrieved for the logger's current deployment location, you can also search using the logger using an 'SMS number' as the search reference.

For LoLog loggers, the SMS number is not shown on any labelling. However, it can be constructed using the following method:

The SMS number takes the format '44110450nnnnnnn'

- The number should be 15 digits long.
- The '44110450' is a set prefix.
- The 'nnnnnnn' should be substituted with the serial number of the logger. (If less than 7 digits, pad it out with leading '0's (zeros).

E.g., For a logger with serial number '1234567',
the SMS number will be '441104501234567'.

7 TROUBLESHOOTING

Problems when communicating with the logger:

E.g., 'Time-out error' or 'No response from logger' whilst attempting communications between LoLog and IDT.

- Check that the infrared reader is correctly located over the LoLog infrared window.
- Check any connectors are plugged in in the communications path (see section 2.2).
- Check the battery of the device on which IDT is being used is sufficiently changed.
- Check the USB port is not being used by other software.
- The communications window of the logger or Infrared Reader may be soiled. Clean with a damp cloth if required.
- The logger battery may be exhausted; try with another logger to confirm your infrared reader is OK.

Logger records all zeros:

- Check cables are correctly connected at the logger end and also the sensor equipment end.
  If the logger interface is not required for use, it can be disabled.
- Check for water ingress or trapped moisture.
- Check sensor for correct operation.
- Check the lead of the sensor for damage.
- Check flow sensors are correctly wired to use the meter pulse pin (not the direction pin).

Flow rate readings seem to be in error:

- Check 'units per pulse' settings are correct for the meter / pulser in use.
- It is possible that the meter / sensor combination is producing an output at a frequency that is too high.
  Change the pulse sensor to one with a lower resolution (more volume per pulse);
  Remember to compensate in IDT for 'units per pulse' settings.

The data from the logger does not appear on the server:

- Ensure IDT settings use the correct data destination URL and credentials for your server. (Refer to the IDT guide).
- Ensure your server is correctly configured to receive and present the data.

8 MAINTENANCE, SERVICE AND REPAIR

No user-serviceable parts inside. Unauthorised servicing will void the warranty and any potential liability for HWM-Water Ltd.

8.1 CLEANING

Always keep the connectors of the equipment free of dirt and moisture. If fitted, use the protective cover for the connector when cleaning.

Keep the communications windows of logger and IR Reader clear of dirt; dirt will cause unreliable communications when using IDT.

The unit can be cleaned using a soft cloth dampened with a mild cleaning solution. Ensure the unit is dried before use.

8.2 REPLACEABLE PARTS

Batteries

- Only use batteries and parts recommended and provided by HWM.
- Batteries are only replaceable by a HWM approved service centre or relevantly trained technician. Contact your HWM representative for more details if required.

8.3 RETURN OF PRODUCT FOR SERVICE OR REPAIR

When returning product for investigation or repair, be sure to follow the instructions of your distributor to document why the product is being returned and provide contact details.

If returning to HWM, this can be done by completing the on-line RMA form:
https://www.hwmglobal.com/hwm-rma/

Prior to shipping, put the equipment into a 'stopped' state (refer to the IDT app user-guide for instructions). Refer to the Safety Warnings and Approvals Information for guidelines of the packing requirements.

If soiled, ensure the unit is cleaned with a mild cleaning solution and soft brush, disinfected, and dried prior to shipment.

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