INSTRUCTION MANUAL

DATA LOGGER
GELOGGER LINX
From Serial GLL 4000

GEOSENSE

UK CA CE

1. VERSION CONTROL

Version	Date	Author	Approved	Issued
V1.0	Mar 2025	TB	TC	GC

2. INTRODUCTION

This manual is intended for all users of **Geosense® GeoLogger Linx** vibrating wire dataloggers and provides a guide for its installation, operation and maintenance.

It is VITAL that personnel responsible for the installation and use of the GeoLogger Linx READ and UNDERSTAND the manual, prior to working with the equipment.

2.1. General Description

The **Geosense® GeoLogger Linx** is a range of low cost, battery-powered data loggers designed for reliable unattended monitoring. Available as single channel, three channel or six channel suitable for up to six vibrating wire sensors and their associated thermistors.

It can be automatically configured using an Android application via USB connection.

2.2. Theory of Operation

Vibrating wire sensors comprise of a tensioned wire held between two restraining ends. As the restraining ends move the tension in the wire changes. The vibrating wire frequency generator within the GeoLogger Linx generates voltage pulses in the magnet/coil at the centre of the gauge and measures the resonant frequency of vibration. These frequencies are then stored within the data logger and can then be downloaded as a .csv file.

2.3. Software

The **Geosense® Linx** software provides the interface to configure and download the data and is available on the Google Playstore.

As part of continual improvement, updates to the software may occur and should be downloaded to ensure the current version is being used.

2.4. Firmware

The GeoLogger Linx software can be updated via the same Android application used to programme the loggers. For details of this process, see section 7.3.5.

2.5. Host System Requirements

2.5.1. Hardware

- Android device
- GeoLogger Linx
- USB cable

2.5.2. Android Operating System

The GeoLogger Linx application is compatible with Android version 12.0 and later.

2.6. EMC - Electro Magnetic Compatibility

EMC is the electromagnetic interaction of electrical and electronic equipment with other electrical and electronic equipment. All electronic devices have the potential to emit and be affected by electromagnetic fields. With the reduction in size of electrical components and the ever-increasing number of electrical & electronic devices such as mobile phones, two-way radios, safety control systems, signalling, generators, welding equipment, power cables etc. in all environments, especially construction sites, there is a huge potential for devices to interfere with each other.

The GeoLogger Linx has been designed and tested for EMC under the relevant CE marking directives to ensure compliance and reliable operation.

2.7. Mode of Operation

2.7.1. Calibration Files

The **Geosense® GeoLogger Linx** Android application, if connected to the internet, allows for calibration data to be accessed directly from the Geosense server. If no internet connection is available on the Android device, parameters can be entered manually from physical calibration certificates for sensors.

2.7.2. Starting and Stopping Logging Mode

The Linx logger can be put in standby by turning the Logging Status to “OFF”. The Logger Status is always displayed in the software when connected to a logger. This can be useful when logging is not required for long periods.

2.7.3. Downloading Data

Data can be downloaded from the logger at any point. Data is available in .csv format. Where a channel is turned off in the logger configuration, the data exported will show “Off” in place of sensor readings. Where a channel is enabled but the sensor is disconnected, the channel will read “NaN”.

2.7.3.1. Append Data

The Append data function performs a similar function as data download, however, the logger will try and append the new data to the end of the previously downloaded file.

If the previously downloaded file is not available (for example using a different Android device) or the configuration has been changed (which will change the file headers) then the device will show an error and download a separate file (instead of appending).

2.7.4. Real Time Readings

The Logger is able to show real time readings to the user. During real time readings, the readings are logged to the memory and so can be downloaded from the logger if needed.

The following sampling intervals are applicable during live readings:

Model	Live Reading Interval
1 channel	2 seconds
3 channel	4 seconds
6 channel	7 seconds

Once live readings are stopped by the user, if logging was previously underway, the logger will revert to the previously set sampling interval in the logger configuration.

Display units can be changed in the live readings, see section 7.3.3 for more information.

3. VARIANTS

There are three variants of GeoLogger Linx, these are listed below:

- 1 Channel Alkaline version (standard)
    - Lithium version (available on request)

- 3 Channel Alkaline version (standard)
    - Lithium version (available on request)

- 6 Channel Alkaline version (standard)
    - Lithium version (available on request)

4. CONFORMITY

EU Declaration of Conformity

We

Geosense Ltd
Nova House, Rougham Industrial Estate, Bury St Edmunds, IP30 9ND, United Kingdom

declare under our sole responsibility that the product:

Equipment description: Geologger Linx 1, 3, 6 Channel

Model Numbers(s):
LINX-1C, LINX-3C, LINX-6C

to which this declaration relates are in conformity with all the essential requirements of Electromagnetic Compatibility Directive **2014/30/EU** and Restriction on the use of certain Hazardous Substances **2011/65/EU**

The following harmonised standards have been applied with respect to this product:

EN 61326-1:2021
EN IEC 63000:2018

Authorised Person

Tim Clegg
Director

Date: 16/12/2024
Location: Bury St Edmunds, UK.

DoC-11004-CE

UK Declaration of Conformity

Geosense Ltd
Nova House, Rougham Industrial Estate, Bury St Edmunds, IP30 9ND, United Kingdom

This declaration is issued under the sole responsibility of the manufacturer:

Equipment description: Geologger Linx 1, 3, 6 Channel

Model Numbers(s):
LINX-1C, LINX-3C, LINX-6C

The object of the declaration described above is in conformity with the following statutory requirements:

The Electromagnetic Compatibility Regulations 2016	SI 2016 No. 1091
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 no 3032	SI 2012 No. 3032

References to designated standards/specifications in relation to which conformity is declared:

EN 61326-1:2021
EN IEC 63000:2018

Signed for and on behalf of Geosense Ltd

Tim Clegg
Director

Date: 16/12/2024
Location: Bury St Edmunds, UK.

DoC-11004-UKCA

5. MARKINGS

Geosense® GeoLogger Linx series instruments are labelled with the following information:

- Manufacturers name & contact details
- Product type
- Model
- Serial number
- CE mark / UKCA mark

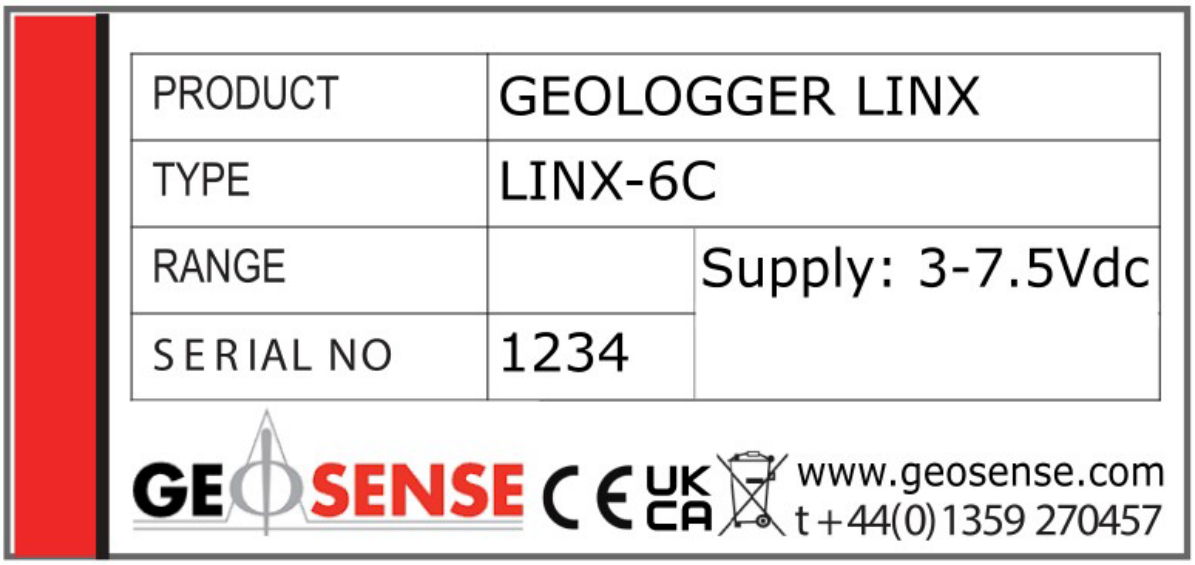


Figure 1: Example Product Markings

6. DELIVERY

This section should be read by all users of equipment manufactured by **Geosense®.**

6.1. Packaging

Geosense® GeoLoggers are packed for transportation to site. Packaging is suitably robust to allow normal handling by transportation companies. Inappropriate handling techniques may cause damage to the packaging and the enclosed equipment. The packaging should be carefully inspected upon delivery and any damage **MUST** be reported to both the transportation company and **Geosense®**.

Once the shipment has been checked it is recommended that **Geosense® GeoLoggers** remain in their original packaging for storage or transportation.

Cable should be handled with care. Do not allow it to be damaged by sharp edges, rocks for example, and do not exert force on the cable as this my damage the interim conductors and render the installation useless.

6.2. Handling

Whilst they are a robust devices, **Geosense® GeoLoggers** series systems are precision measuring instruments. They and their associated equipment should always be handled with care during transportation, storage and installation.

Once the shipment has been inspected (see 6.3), it is recommended that equipment remains in its original packaging for storage or onward transportation.

DO NOT DROP AS THIS MAY CAUSE DAMAGE TO INTERNAL COMPONENTS

6.3. Inspection / Functionality Check Readings

It is important to check all the equipment in the shipment as soon as possible after taking delivery and well before installation is to be carried out. Check that all the components detailed on the documents are included in the shipment. Check that the equipment has not been physically damaged.

All **Geosense® GeoLoggers** instruments carry a unique identification serial number which is located on the side of the unit.

6.4. Storage

All **Geosense® GeoLoggers** instruments and associated equipment should be stored in an environment that is protected from direct sunlight.

Loggers must be stored with all cable glands and ports sealed, as if they were fully deployed. It is recommended during storage to ensure the environment is free from moisture and excessive temperatures.

No other special requirements are needed for medium or long-term storage although temperature limits should be considered when storing or transporting associated components.

DISCONNECT BATTERY WHEN NOT IN USE

7. INSTALLATION

Do NOT open the logger case in a wet environment or with wet hands / tools

This section of the manual is intended for all users of the **Geosense® GeoLogger Linx** and is intended to provide guidance with respect to their installation.

7.1. Location

Prior to installing a **Geosense® GeoLogger Linx** it is essential to establish and confirm details of the installation to be carried out. Some of the main considerations are listed below:

- **Location** – the logger should be placed in a suitable location where it cannot be damaged (avoid areas where moving machinery may occur)

- **Mounting**- the logger can be mounted to any surface using suitable screws in the four mounting holes in the main body.

- **Water ingress** - whilst the enclosure is rated to IP67, care should be taken to ensure that it is not placed in a location where it can be submerged as this will cause damage to the unit. Therefore, if placing below ground in a manhole cover or equivalent, there must be sufficient drainage to ensure against the unit being submerged.

7.2. Batteries

The GeoLogger Linx can operate with either standard alkaline batteries (recommended) or for extended use, Lithium capable models are available upon request.

Note that the battery holders are physically different, so the battery chemistry is not interchangeable without modification.

Logger Version	Alkaline Type	Quantity	Lithium	Quantity
1 Channel	AA	4	C	2
3 Channel	C	4	C	2
6 Channel	C	4	C	2

7.3. Methodology

IT IS NOT RECOMMENDED TO PLACE THE LOGGER INSIDE A PLASTIC BAG, OR IMPERMEABLE CONTAINER, AS CONDENSATION MAY FORM ON THE INSIDE OF THE BAG AND POLL, EVENTUALLY SUBMERGING THE LOGGER

7.3.1. Physical Logger Connection

STEP 1 To open the logger, insert a small flat head screwdriver (provided) into the slot on one side of the lid, and push down whilst angling the handle of the screwdriver outwards.

The lid is hinged and should open outwards like a door, hinged from the opposite end to where the screwdriver was inserted.

STEP 2 The battery holder is attached to the inside of the hinged lid. Undo the retaining straps, and insert the batteries, making sure to observe the correct polarity.

STEP 3 Fasten the retaining strap tightly to hold the batteries into the cradle.

NOTE: the single channel version has a plastic lid to retain the batteries rather than straps.

STEP 4

To connect your VW sensors, undo the outer nut of the cable gland, remove the blanking plug (retain for safekeeping) and pass your sensor cable through the gland, making sure the gland nut is over the cable and that the rubber gasket does not fall out of the cable gland.

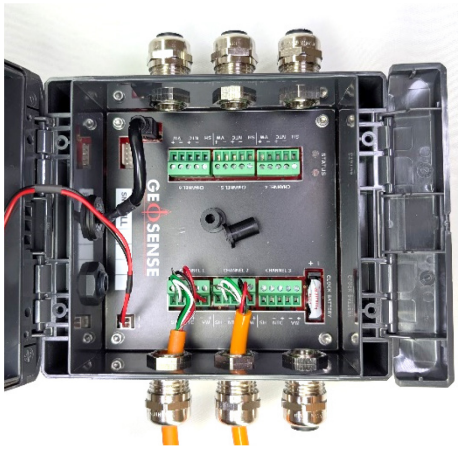
Ensure the end of the cable is clean and dry before passing into the logger.

Ensure you pass the cable through the grommet associated with the channel you want to use.

STEP 5

Connect the individual cores of the sensor to the pluggable screw connector block.

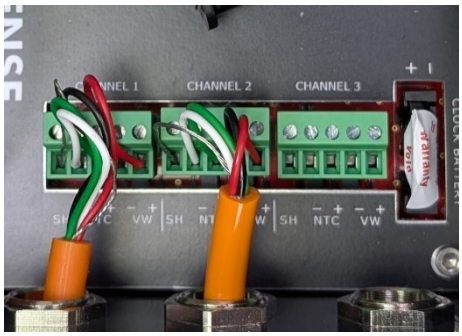
The connector can be removed from the board, and a length of cable passed through the logger grommet temporarily if easier and use the flat head screwdriver to tighten the screw terminals.



Make sure the terminals clamp the metal cores of the wires, not the sheath.

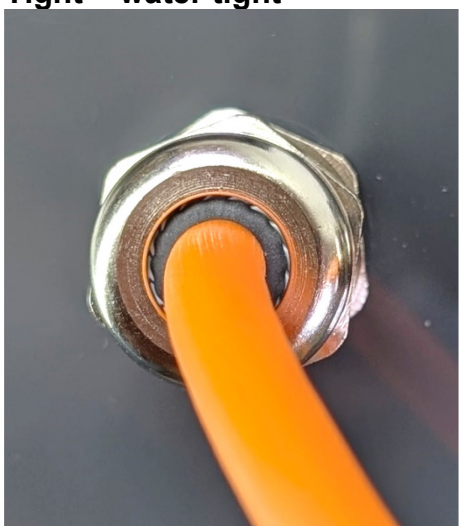
Geosense VW wiring colour coding:

VW Sensor	Colour	Logger Symbol
VW+	Red	VW+
VW-	Black	VW-
Thermistor +	Green	NTC+
Thermistor -	White	NTC-
Shield	Bare metal	SH



STEP 6 Tighten up the glands hand tight, then make sure they are fully tight using a 20mm spanner.

Tight = water tight



It is **CRITICAL** that the cable glands are tight, failure to tighten them up will allow moisture into the logger, potentially causing a failure.

Loose = will leak

MAKE A OF NOTE OF THE SERIAL RELATIONSHIP

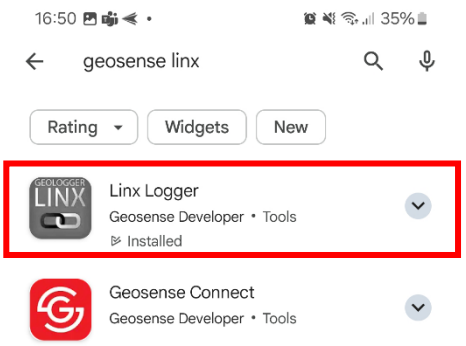
For example:

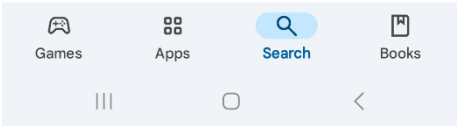
GeoLogger	Channel	Sensor
SN. 1234	**Channel 1**	**377271**
	Channel 2	**378210**

STEP 7 Close the logger up to avoid unnecessary exposure of the internals to the environment

7.3.2. Programming the Logger

STEP 1 The GeoLogger Linx is programmed using the Geosense Linx Logger Android application (Linx V2), available on the Google Play Store.





STEP 2 Connect the provided USB-C to USB-B Mini cable between the Android device and the logger, using the USB port on the side.

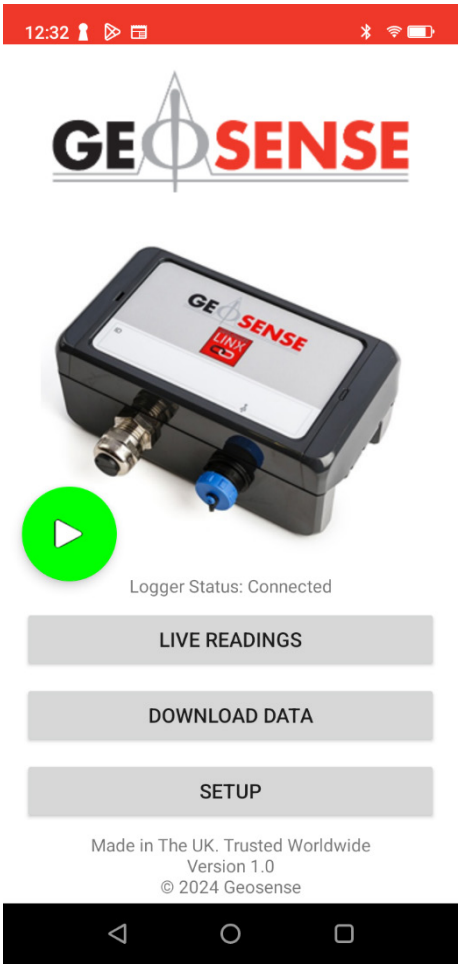
STEP 3 **OPEN THE LINX V2 APP ON THE ANDROID DEVICE.**

With no logger connected, the unit will display:

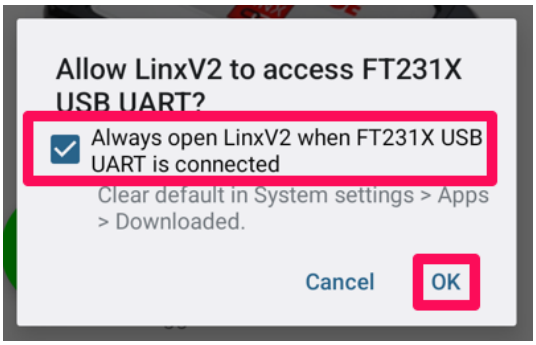
"**Logger Status: No Logger Connected**"

If a logger is connected, it will display:

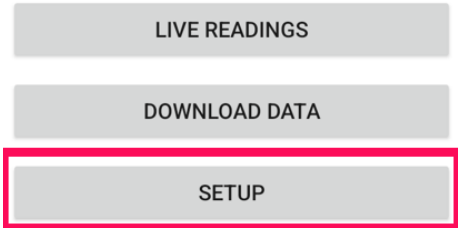
"**Logger Status: Connected**"



If presented with a pop-up, **check the box** to allow and press **OK**. This allows the device to access the logger.



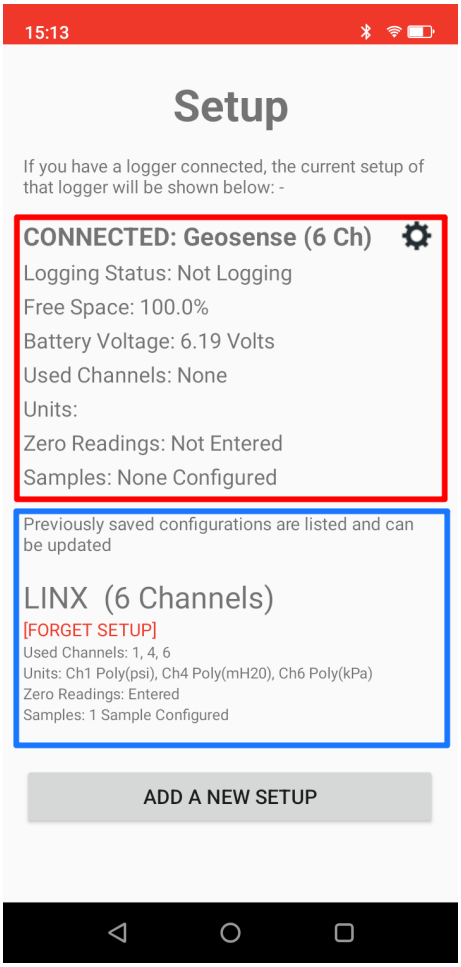
STEP 4 Tap the "**SETUP**" button



STEP 5 The first page of the setup wizard shows the current status of the logger (red box) and any previously saved configurations that are stored in the software (blue box).

Previous configurations can be deleted by pressing “[FORGET SETUP]”, ignored, or modified by tapping on them.

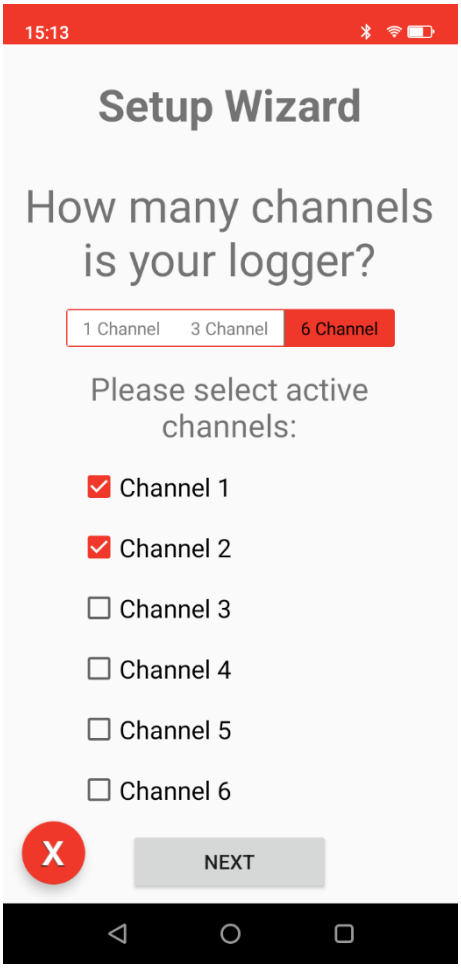
Tap “**ADD A NEW SETUP**”.



STEP 6 SELECT CHANNELS REQUIRED

Select which channels you wish to enable, in our example we have connected sensors to channels 1 and 2, so we will enable those ones.

Once completed, press “**NEXT**”.



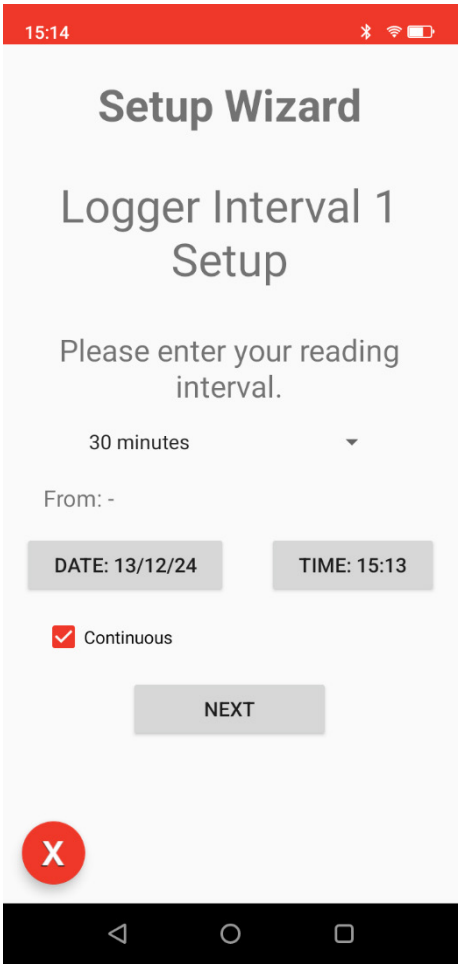
STEP 7 SAMPLING INTERVAL

Configure the sampling interval required using the drop down.

The “**Continuous**” setting configures if the logger logs continuously.

If unchecked, then the logger can be configured to start and stop based upon a time period entered.

Once configured as required, press “**NEXT**”.



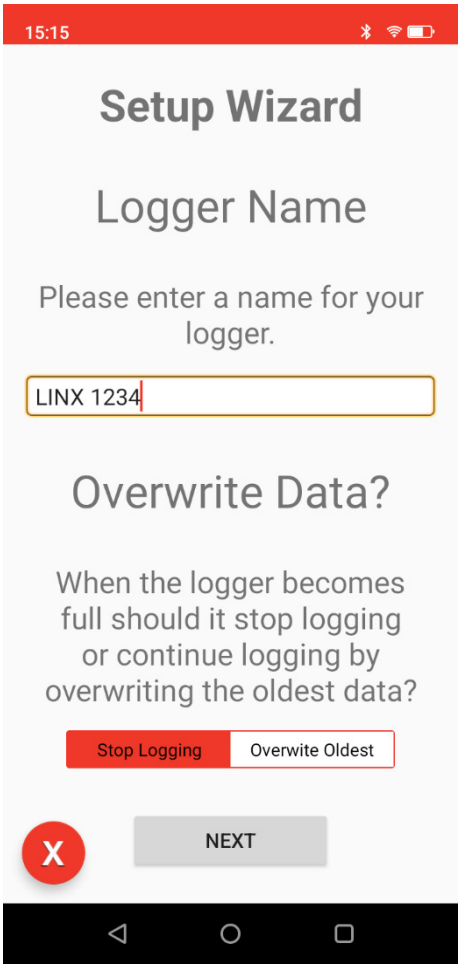
STEP 8 LOGGER NAME

Configure the logger name as required, this may for example be the serial number of the logger, or the name of the position it is installed on, for example “BH 01”.

OVERWRITE DATA?

This setting configures what happens when the logger completely fills its memory.

The unit can be configured to either stop logging once the memory is full or begin overwriting the oldest data.



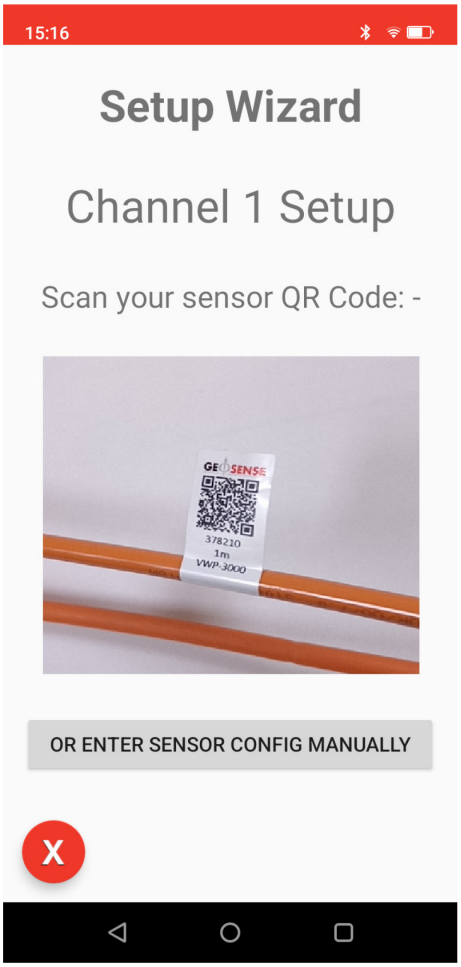
STEP 9 CHANNEL SETUP

The GeoLogger App (Linx V2) supports Geosense sensor QR codes, which are provided on the cables of all VW sensors.

For this function to work, the Android device requires an active internet connection.

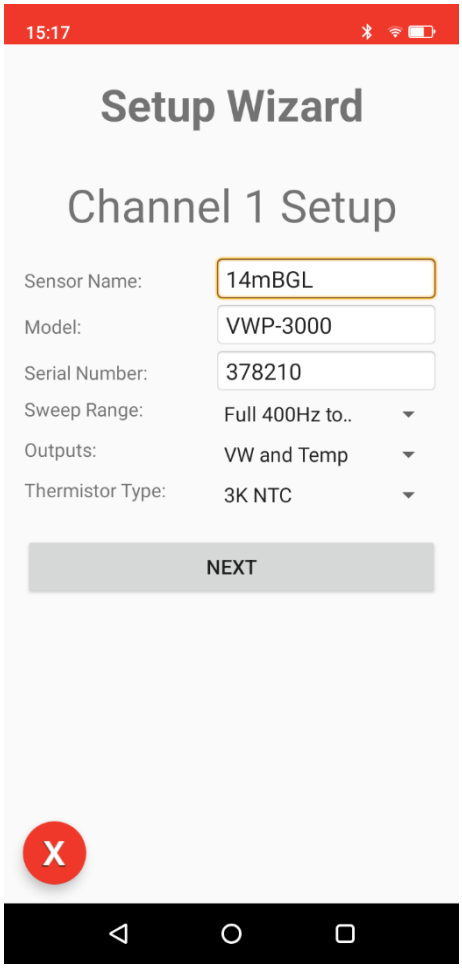
To use this automatic calibration data tool, simply point the camera of the Android device at the QR code on the cable, and proceed to step 12

If no internet connection is available, press "**OR ENTER SENSOR CONFIG MANUALLY**" and manually fill in the data in step 11.



ENSURE YOU ARE SCANNING/ENTERING SENSOR INFORMATION FOR THE CORRECT CHANNEL

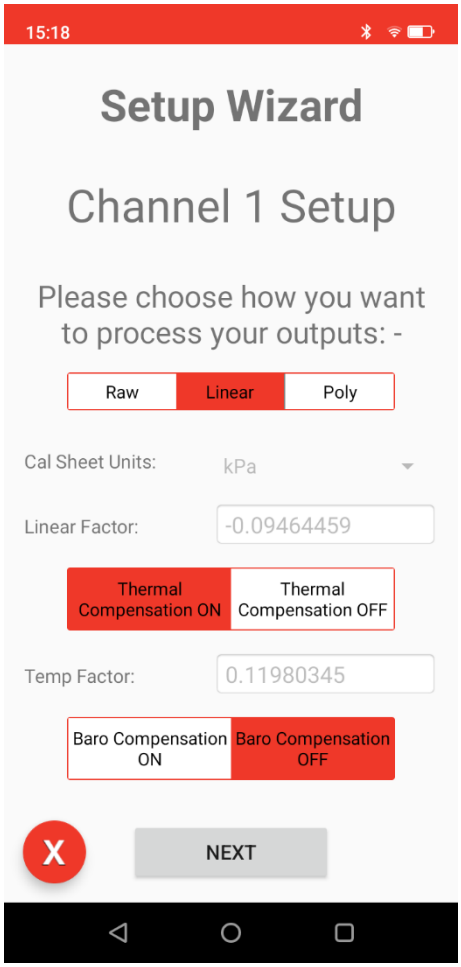
STEP 10 CHANNEL SETUP



When adding a new setup, a few options are configurable:

Heading	Description
Sensor Name	A user configurable entry, for example this could be the depth of the sensor connected to the specified channel
Model	Model of the sensor connected to the specified channel
Serial Number	Serial Number of the sensor on the specified channel
Sweep Range	The range of frequencies for the logger to look for the sensor, a tighter range is better, but it must cover the entire expected range of the sensor.
Outputs	The unit can be configured to record VW and Temp data, or just Temp data
Thermistor Type	As standard, the vast majority of Geosense VW sensors contain a 3K Thermistor. If unsure, contact Geosense Support.

STEP 11 CHANNEL SETUP



Select the calculation type required for the data output.

Linear = uses a linear approximation of the digits/pressure relationship.

Polynomial – uses a third order polynomial approximation of the digits/pressure relationship.

Thermal Compensation – determines if the thermal compensation is applied (only applies to sensors with a T coefficient provided in the calibration .

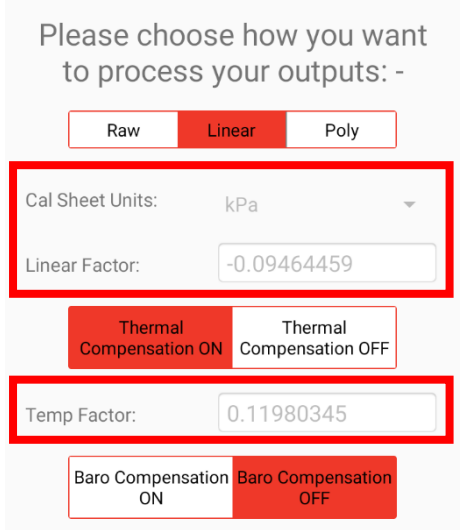
Barometric Compensation – determines if the internal barometer is used to compensate the data, only recommend for installations where the water surface is vented to atmosphere.

Once configured, press "**NEXT**".

If entering the calibration data manually, the user must ensure that the "**Cal Sheet Units:**" option is set to the correct unit for the values they are entering.

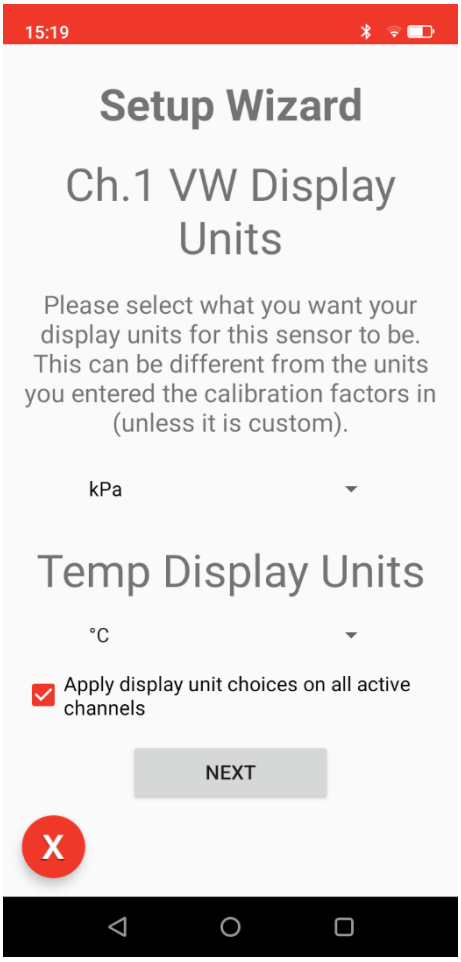
CALIBRATION FACTORS

	kPa per digit	psi per digit	mH₂0 per digit
Linear Factor (K)	-9.46446E-2	-1.37266E-2	-9.65110E-3
	kPa	psi	mH₂0
Poly Factor (A)	-4.61031E-7	-6.68646E-8	-4.70123E-8
Poly Factor (B)	-8.75318E-2	-1.26950E-2	-8.92579E-3
Poly Factor (C)			
	kPa per °C	psi per °C	mH₂0 per °C
Thermal (T)	1.19803E-1	1.73754E-2	1.22166E-2

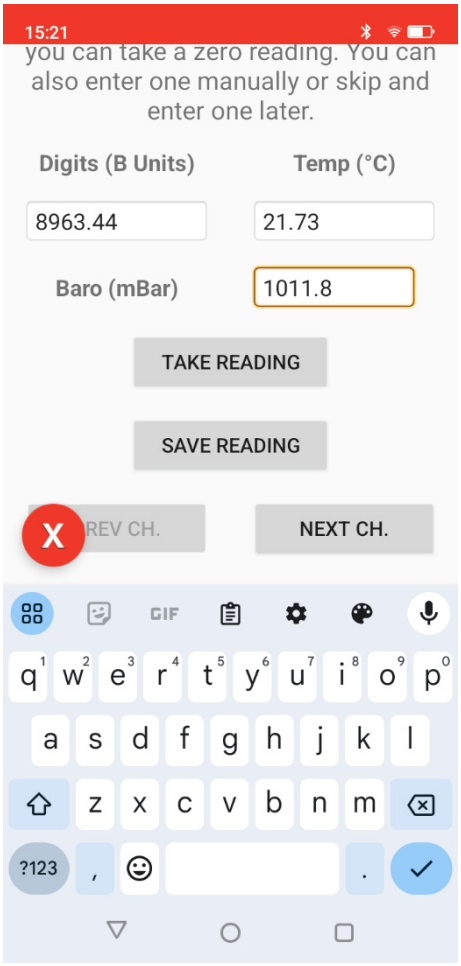


STEP 12 CHANNEL SETUP

Configure the pressure and thermal units for the logger to compute for the output file.



STEP 13 CHANNEL SETUP



Configure the site zero readings for the VW sensor.

If these were taken prior to install, enter the recorded values for Digits, Celsius and mBar in the appropriate boxes.

If the GeoLogger is being used to take the zero readings, tap "**TAKE READING**" and the boxes will be populated with the current reading.

Please see the relevant sensor manuals on the zeroing process.

It is recommended to take a number of zero readings using the "**TAKE READING**" function, to make sure the readings are stable.

If the readings are suitable, press "**SAVE READING**" to save the zero readings to the channel settings.

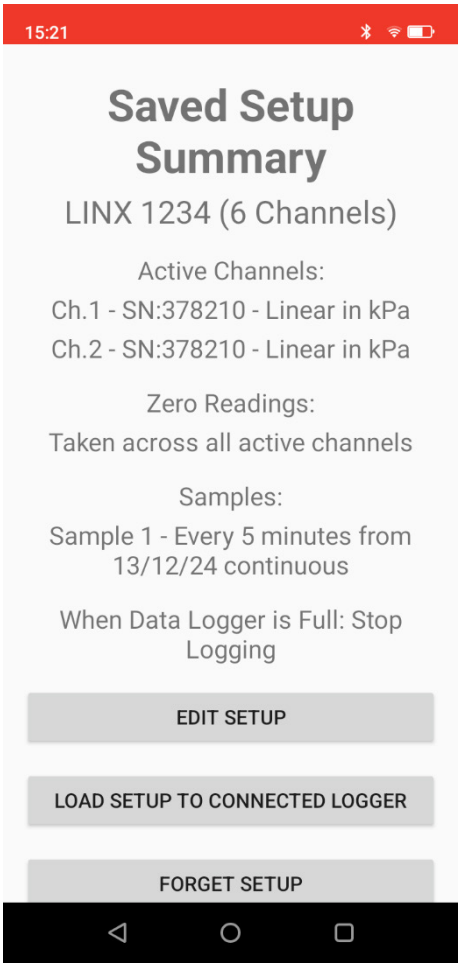
VW INSTRUMENTS REQUIRE ACCURATE SITE ZERO READINGS, CARRIED OUT AS PER THE CORRECT STATED PROCEDURE, IN ORDER TO PROVIDE ACCURATE READINGS

FAILURE TO ATTAIN A CORRECT SITE ZERO WILL RESULT IN INACCURATE ENGINEERING READINGS

STEP 14 Tap the "**NEXT CHANNEL**" and complete the zero readings information for all channels in use

STEP 15 Tap "**FINISH**"

STEP 16 SUMMARY SETUP

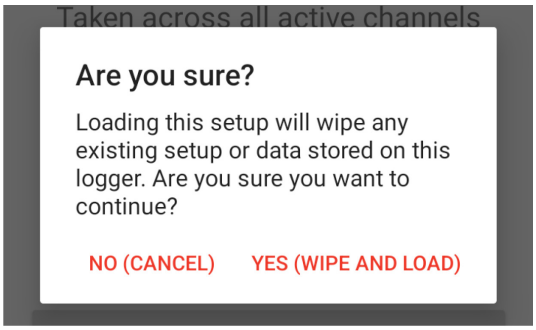


The final screen shows a summary of the configuration, it is strongly recommended to check this information a second time to make sure it is correct.

If edits are required, tap "**EDIT SETUP**"

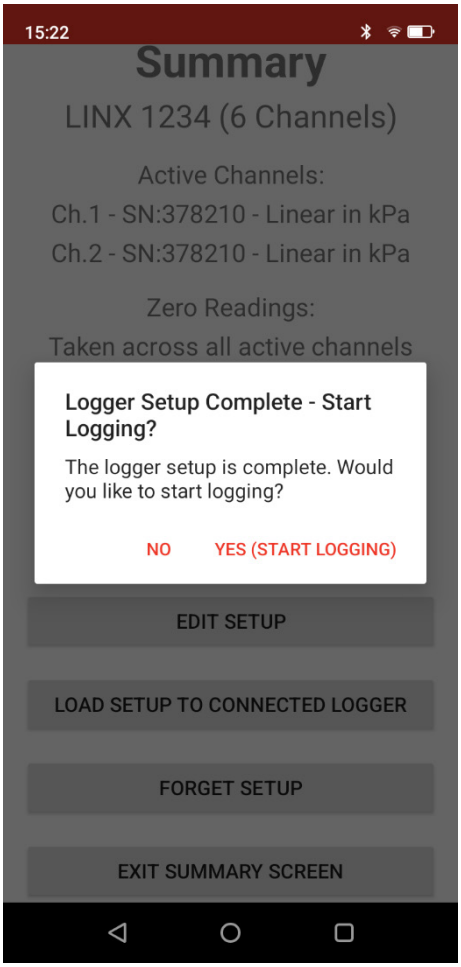
If all information is correct, tap "**LOAD SETUP TO CONNECTED LOGGER**"

When loading a setup to a logger, make sure to have downloaded any previous data on the unit beforehand, as uploading a configuration will wipe the memory.



STEP 17 SUMMARY SETUP

Once the setup has been loaded onto the logger (STEP 16), press “**YES (START LOGGING)**” to start the logger recording data.



STEP 18 SUMMARY SETUP

The logger can also be started and stopped from the main screen, using the green play symbol, or stopped using the red stop symbol.

NOTE: only one option will show at a time depending on the logger status.

7.3.3. Live Readings

STEP 1 **LIVE READINGS**

If live readings are required from the logger, these can be attained from the home screen when connected to the logger.

Tap “**LIVE READINGS**” to bring up a screen showing all enabled channels.

STEP 2 LIVE READINGS

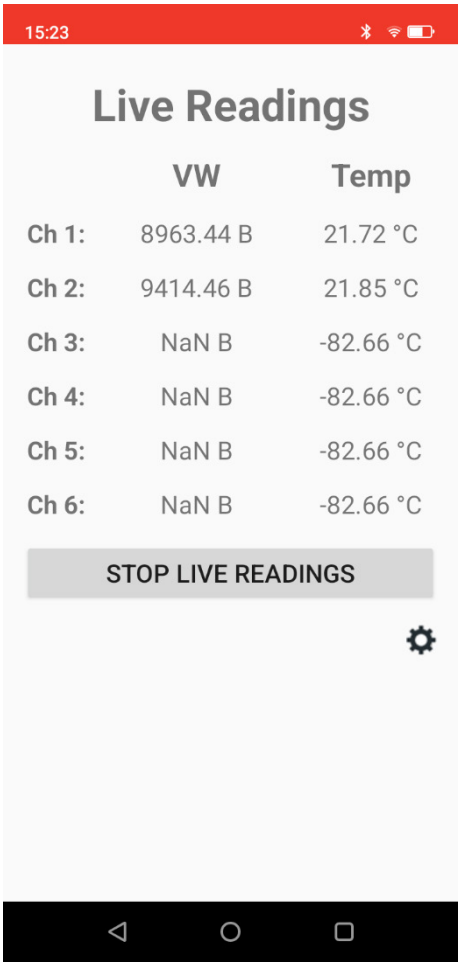
The live readings screen shows the enabled channels.

In the example shown, all 6 channels are enabled, with only sensors connected to channels 1 and 2.

Channels 3 through 6 show NaN indicating no sensors is connected, and an erroneous temperature.

If logging is enabled, readings will continue to be logged to memory (but at the live reading interval) whilst live readings are being viewed. After live readings are ended, the logging interval will return to the original configuration.

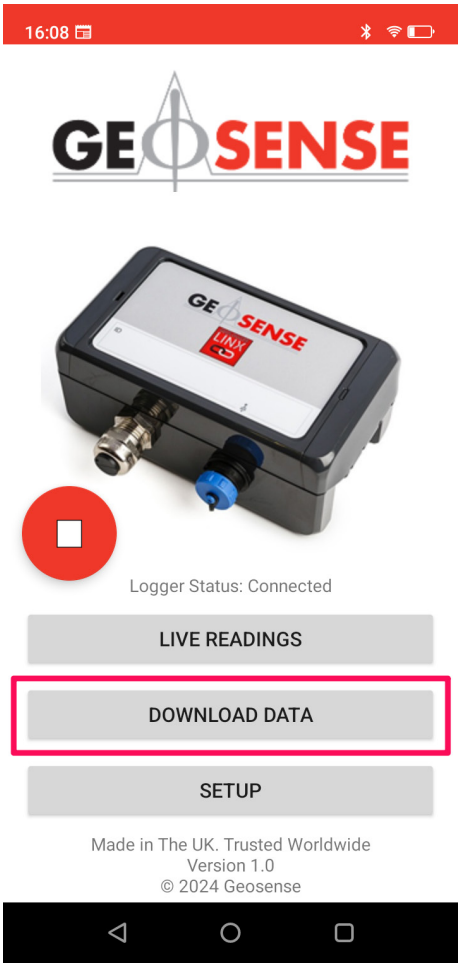
NOTE: Pressing the “**COG**” symbol under “**STOP LIVE READINGS**” allows the user to change the units displayed. Refer to section 7.3.2 on programming the logger with calibration data for the sensor channels.



7.3.4. Download Data

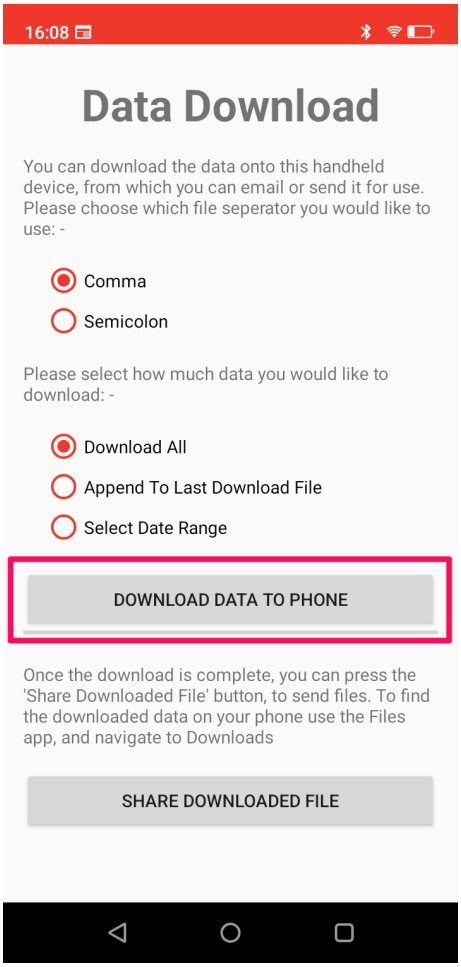
STEP 1 **DOWNLOADING DATA**

Connect to the logger using the cable provided and tap the “**DOWNLOAD DATA**” option.



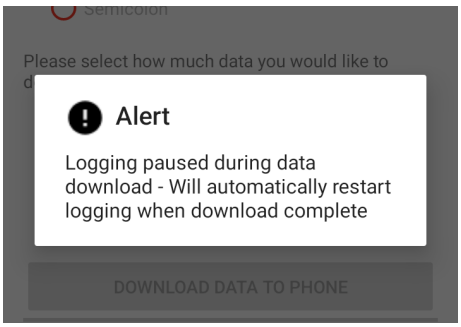
STEP 2 DOWNLOADING DATA

Select the file options required and then tap “**DOWNLOAD DATA TO PHONE**” this will start the download.



STEP 3 DOWNLOADING DATA

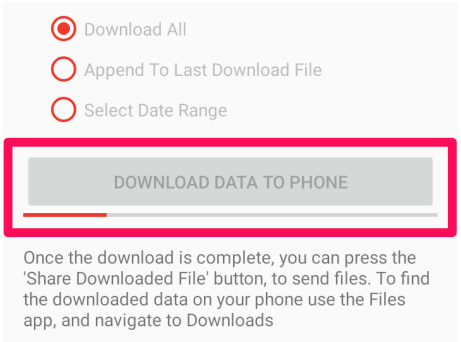
If the download is started whilst the logger is still logging data, a popup will appear informing the user that there will be a brief pause, whilst the download occurs, tapping anywhere on the screen will clear this.



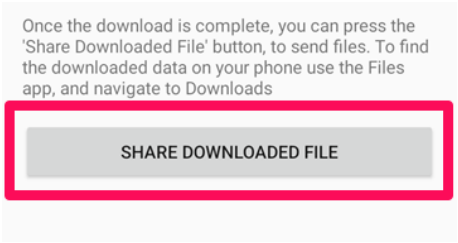
STEP 4 DOWNLOADING DATA

The progress bar shows the status of the data download. It may take a few minutes to download data in some instances.

Speed of download is dependent on the number of active channels the logger has and the length of monitoring data being downloaded.



STEP 5 DOWNLOADING DATA



Once the data is downloaded, it can be shared using the **"SHARE DOWNLOADED FILE**" and this gives the user the option to share using a number of standard options, such as via email.

NOTE: the data is stored on the Android device in the downloads folder after download, should it need to be extracted from the files of the tablet/phone.

The downloaded file will be in .csv

	A	B	C	D	E	F	G	H	I	J	K
1	Logger Name: LINX 1234										
2	Logger Serial Number: 30871										
3	Firmware Version: V0.0.35										
4	Hardware Version: 1.0										
5	Number of Channels on Logger: 6										
6	Active Channels: 1:2										
7	Overwrite Data Allowed: false										
8	Sample 1 Setup: Every 5 minutes from 13/12/24 15:13 Continuous										
9	Calibration Factors			Channel1		Channel2		Channel3		Channel4	
10	Sensor Name			14mBGL		45mBGL					
11	Model			VWP-3000		VWP-3000					
12	Serial Number			378210		378210					
13	Baro Comp			OFF		ON		OFF		OFF	
14	Zero Baro			1012.1		1012		0		0	
15	Eng Output			Linear		Linear		Raw		Raw	
16	Linear Factor			-0.09464459		-0.09464459		0		0	
17	Gauge Factor			0		0		0		0	
18	Batch Factor			0		0		0		0	
19	Poly Factor A			-4.60E-07		-4.60E-07		0		0	
20	Poly Factor B			-0.08753178		-0.08753178		0		0	
21	Poly Factor C			876.6613		876.6613		0		0	
22	Thermal Comp			ON		ON		OFF		OFF	
23	Thermal Factor T			0.1198035		0.1198035		0		0	
24	Thermistor Type			3K		3K					
25	Zero Digits			8963.44		9414.46		0		0	
26	Zero Temp			21.73		21.86		0		0	
27	Cal Sheet Units			kPa		kPa					
28	VW Display Units			kPa		kPa					
29	Temp Display Units			DegC		DegC					
30											
31											
32	Date Time	Logger Battery(V)	Logger Temp(Deg	Ch.1 VW(Hz)	Ch.1 Temp(Ohm)	Ch.1 Eng(kPa)	Ch.1 Temp(DegC)	Ch.2 VW(Hz)	Ch.2 Temp(Ohm)	Ch.2 Eng(kPa)	Ch.2 Temp(DegC)
33	13/12/2024 15:23	6.1	25.3	2993.9	3486	-0.027	21.5	3068.3	3466.1	-0.03	21.7
34	13/12/2024 15:23	6.1	25.3	2993.9	3486.1	-0.027	21.5	3068.3	3466	-0.04	21.7
35	13/12/2024 15:23	6.1	25.4	2993.9	3486.3	-0.027	21.5	3068.3	3466.1	-0.02	21.7
36	13/12/2024 15:23	6.1	25.4	2993.9	3486.4	-0.027	21.5	3068.3	3466.1	-0.03	21.7
37	13/12/2024 15:23	6.1	25.4	2993.9	3486.5	-0.027	21.5	3068.3	3466.1	-0.03	21.7

In this example, we have enabled channels 1 and 2, and the calibration constants and zero readings are printed in the header information, from the information that was entered when the logger was configured.

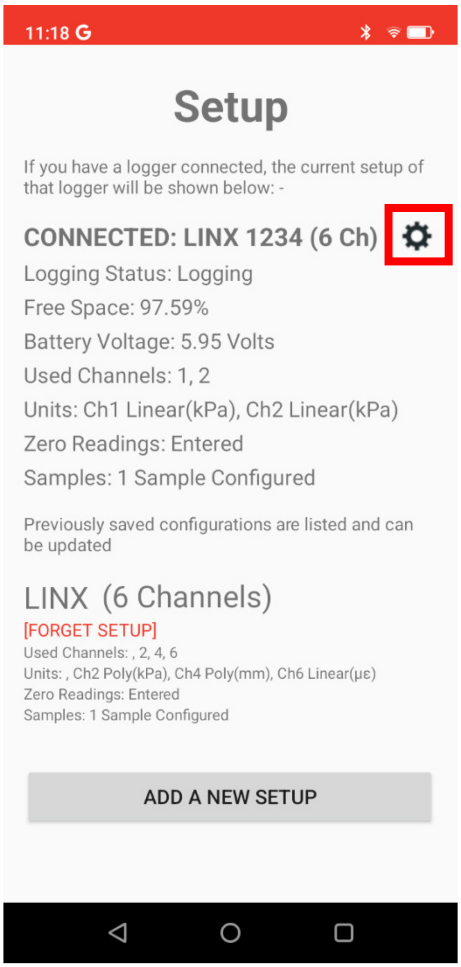
The data is represented under the individual headers for data types and channels from row 32 down.

Raw data is always included, it is always recommended the perform a manual check calculation to logger computed data, as if an error has been made at logger setup stage (for example, if an incorrect zero value was entered by mistake) then this error will apply to all computed data.

7.3.5. Logger Firmware and Settings

STEP 1 **LOGGER SETTINGS**

Each connected logger has a number of settings that can be amended, to access the settings menu, press the “**COG**” symbol on the main Setup screen.



STEP 2 LOGGER SETTINGS

The logger has the following options available:

SETUP WIZARD
Allows the user to view the current logger setup or amend the current one.

SYNC DATE/TIME
Syncs the date and time with the Android device, note that the date/time must be correct on the Android device.

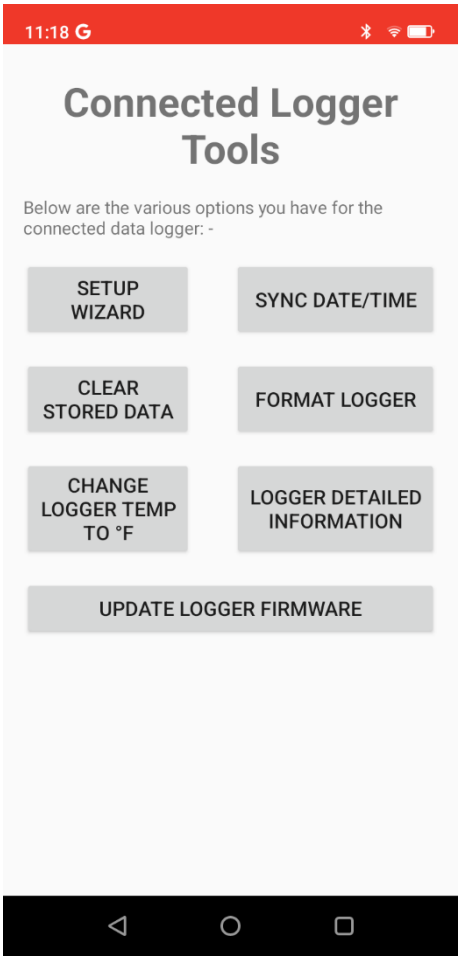
CLEAR STORED DATA
Deletes logged VW data but leaves configurations.

FORMAT LOGGER
Deletes all information on the logger, including configurations.

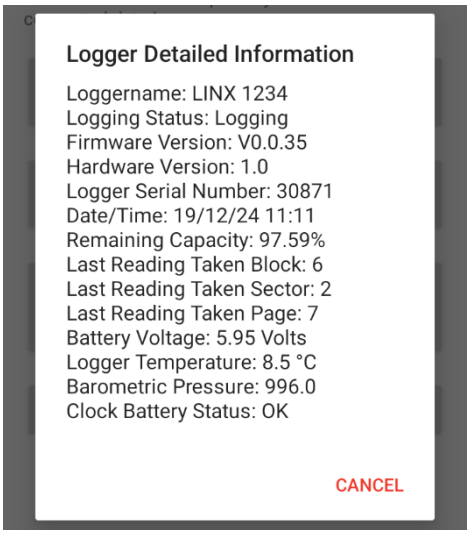
CHANGE LOGGER TEMP TO (°F / °C)
Changes the logger temperature readout within the app. NOTE – this setting does NOT change the logger temperature from the sensor.

LOGGER DETAILED INFORMATION
Provides further information about the logger.

UPDATE LOGGER FIRMWARE
Allows the user the update the firmware of the logger, requires Android device to have a current internet connection.



Example of LOGGER DETAILED INFORMATION



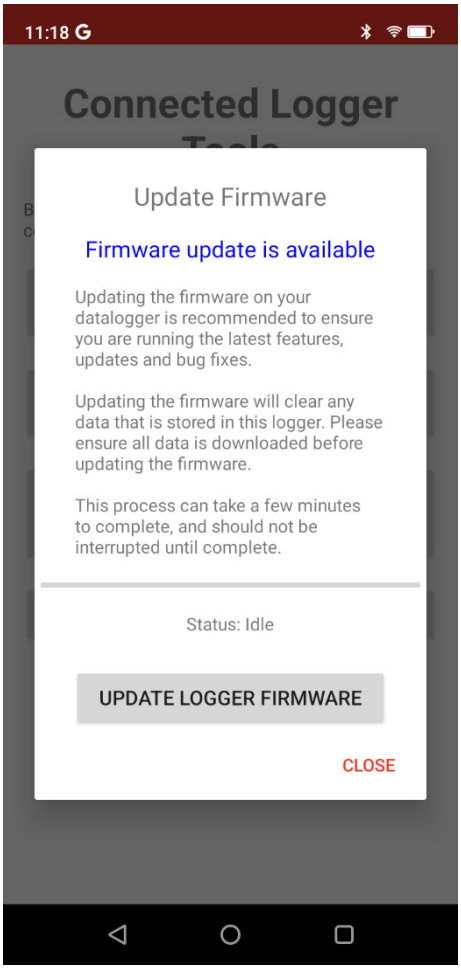
STEP 3 FIRMWARE UPDATE

To check for firmware updates, press "**UPDATE LOGGER FIRMWARE**" .

STEP 4 FIRMWARE UPDATE

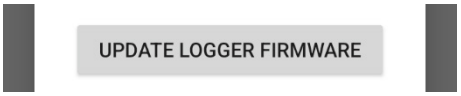
If a firmware update is available, this will be stated at the top of the window.

NOTE – it is worth checking for firmware updates prior to deployment of loggers, as patches and new features may have been added.



STEP 5 FIRMWARE UPDATE

If an update is available, tap “**UPDATE LOGGER FIRMWARE**”

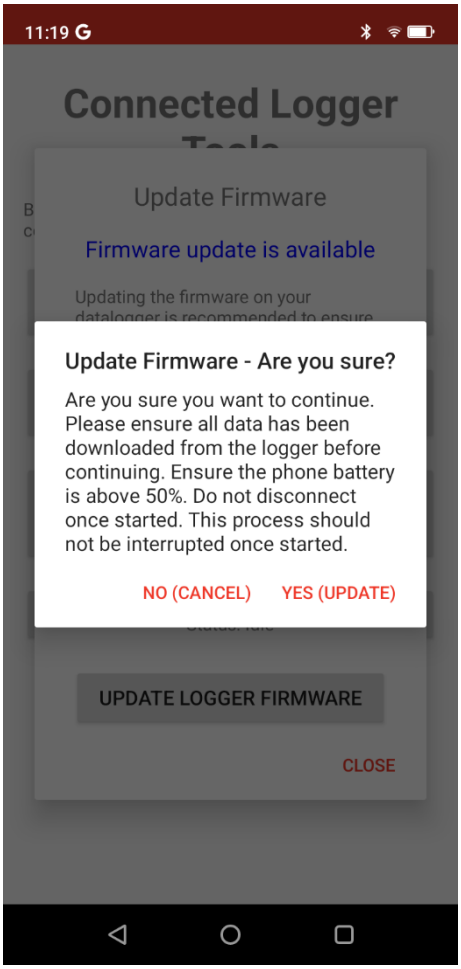


STEP 6 FIRMWARE UPDATE

A warning will be displayed. Make sure that ALL data has been downloaded from the logger prior to updating and that the batteries are above 50%.

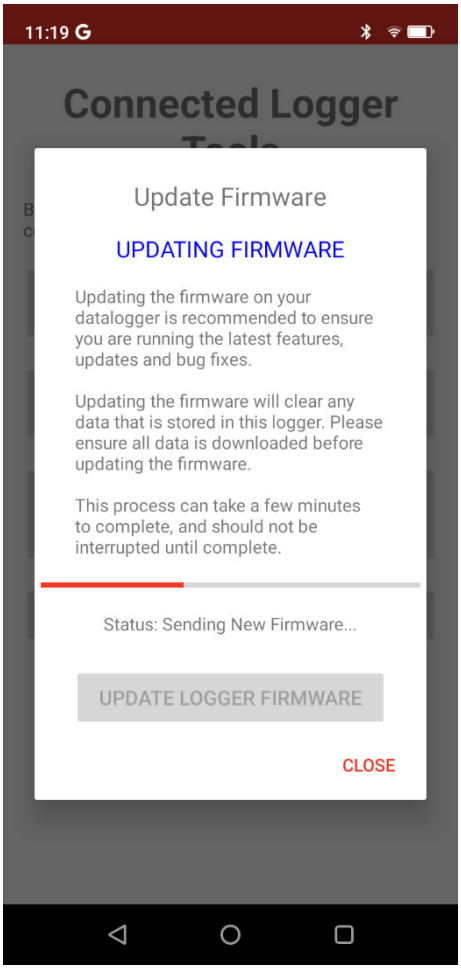
DO NOT DISCONNECT THE ANDROID DEVICE FROM THE LOGGER DURING THE UPDATE.

To continue, tap “**YES (UPDATE)**”.



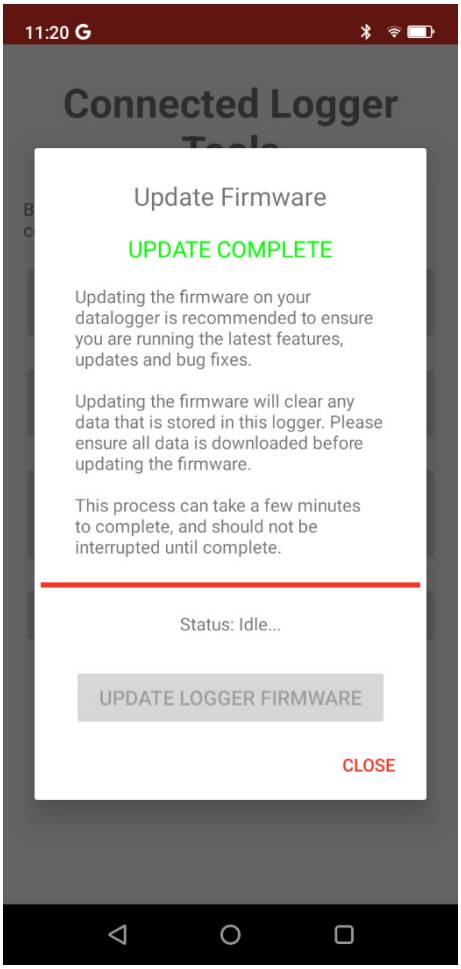
STEP 7 FIRMWARE UPDATE

The logger will begin updating the firmware, this make take a few minutes to complete.



STEP 8 FIRMWARE UPDATE

Once the firmware update is complete, this will be stated. The screen can then be dismissed using “**CLOSE**”.



STEP 9 FIRMWARE UPDATE

After a firmware update has been completed, check your configurations are correct, and remember to restart logging.

NOTE: Once the firmware update is complete, the app will automatically load the previous setup back onto the logger. Check this is the correct setup you wish to use before deploying the logger.

8. MAINTENANCE

Geosense® GeoLogger Linx units are basically maintenance free device for most applications, but the following should be considered during the service life:

- Keep the USB cable connection cap on when not connected to an Android device
- Avoid any impacts or significant vibration which can damage internal sensors
- Keep cables away from physical damage
- Keep all cable glands tight

9. SPARE PARTS

The **GeoLogger Linx** units contain no parts other than the batteries that will need replacement during normal use.

In the rare event that a spare part is required, please contact Geosense for support.

support@geosense.com
sales@geosense.com

10. RETURN OF GOODS

10.1. Returns Procedure

If goods are to be returned for either service/repair or warranty, please fill in the information via the website https://www.geosense.co.uk/returns/ where a **Returns Authorisation Number** together with **a Returns Form** will be automatically generated and sent to you via email.

The **Returns Form** should be sent together with the returned goods.

10.1.1. Chargeable Service or Repairs

Inspection & Estimate
It is the policy of **Geosense®** that an estimate is provided to the customer prior to any repair being carried out. A set fee for inspecting the equipment and providing an estimate is also chargeable.

A valid purchase order (credit customer) or advance payment for the inspection fee(s) is required before inspection can take place. In the event of a warrantable claim being accepted, the value will be credited back to the customer's account (credit customer) or refunded (pre-payment customer).

10.1.1. Warranty Claim

(See Limited Warranty Conditions)
This covers defects which arise as a result of a failure in design or manufacturing. It is a condition of the warranty that the **GeoLogger Linx** must be handled and used in accordance with the manufacturer's instructions and has not been subjected to misuse.

In order to make a warranty claim tick the warranty claim box under **REASON FOR RETURN** on the website and return the goods as above. You will then be contacted and informed whether your warranty claim is valid.

10.2. Packaging and Carriage

All used goods shipped to the factory **must** be sealed inside a clean plastic bag and packed in a suitable carton. If the original packaging is not available, **Geosense®** should be contacted for advice. **Geosense®** will not be responsible for damage resulting from inadequate returns packaging or contamination, under any circumstances.

10.3. Transport & Storage

All goods should be adequately packaged to prevent damage in transit or intermediate storage.

11. LIMITED WARRANTY

The manufacturer, (**Geosense Ltd)**, warrants the **GeoLogger Linx** manufactured by it, under normal use and service, to be free from defects in material and workmanship under the following terms and conditions:

Sufficient site data has been provided to **Geosense®** by the purchaser as regards the nature of the installation to allow **Geosense®** to select the correct type and range of **GeoLogger Linx** and other component parts.

The **GeoLogger Linx** equipment shall be installed in accordance with the manufacturer's recommendations.

The equipment is warranted for **2 years** from the date of shipment from the manufacturer to the purchaser.

The warranty is limited to replacement of part or parts which are determined to be defective upon inspection at the factory. Shipment of defective part or parts to the factory shall be at the expense of the Purchaser. Return shipment of repaired/replaced part or parts covered by this warranty shall be at the expense of the Manufacturer.

Unauthorised alteration and/or repair by anyone which, causes failure of the unit or associated components, will void this **LIMITED WARRANTY** in its entirety.

The Purchaser warrants through the purchase of the **GeoLogger Linx** equipment that he is familiar with the equipment and its proper use. In no event shall the manufacturer be liable for any injury, loss or damage, direct or consequential, special, incidental, indirect or punitive, arising out of the use of or inability to use the equipment sold to the Purchaser by the Manufacturer.

The Purchaser assumes all risks and liability whatsoever in connection with the **GeoLogger Linx** equipment from the time of delivery to Purchaser

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