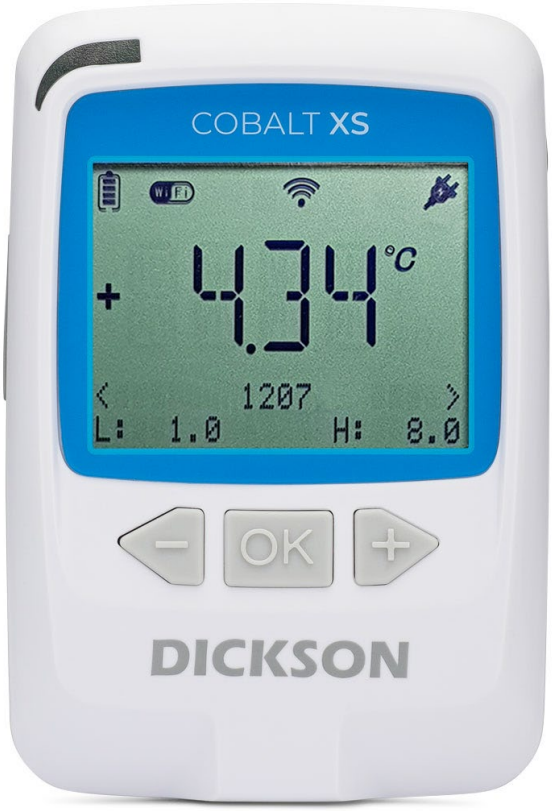
User Guide

Cobalt XS Wi-Fi

Data logger for DicksonOne monitoring platform



DICKSON
Environmental Monitoring + Compliance Experts

Certification and compliance

Caution: Any changes or modifications made to this product not expressly approved in writing by Dickson could void the user's authority to operate the equipment. The Cobalt XS Wi-Fi data logger is certified as follows:

Europe – Conformity with European regulations

This device is compliant with the essential requirements and other relevant requirements of the following directives.

- 2014/53/EU Radio Equipment Directive (RED)
- 2014/30/EU EMC Directive
- 2014/35/EU Low Voltage Directive
- 2011/65/EU Restriction of Hazardous Substances Directive

RED DA – ARTICLE 3(3)(D) – CYBERSECURITY COMPLIANCE FOR INTERNET-CONNECTED RADIO EQUIPMENT

This device is intended for use in a secure area with access controls to ensure that public access is restricted.

This device meets the basic requirements of Article 3(3)(d) of the Radio Equipment Directive on network protection, which states that “Radio equipment must not harm network function or misuse network resources, which could degrade service quality. This applies to any internet-connected radio equipment capable of exchanging data.”

Please contact Dickson if you require more details on this topic.

United States – FCC statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

FCC Radiation exposure statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Innovation, Science and Economic Development Canada

Canada – ISED Statement

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. Le dispositif ne doit pas produire de brouillage préjudiciable, et
2. Ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

MCMC
HIDF24000010

Malaysia – SIRIM certification

Certificate Holder (HID): HIDF24000010

ACMA – Australian Communication and Media Authority

通訊事務管理局
COMMUNICATIONS AUTHORITY

OFCA – Hong Kong Office of the Communication Authority

INFOCOMM MEDIA DEVELOPMENT AUTHORITY

Singapore – IMDA certification. Complies with IMDA Standards DA105282

Notices and safety

Read this first

Please read these simple guidelines before using your Dickson product. It may be dangerous or against local laws or regulations to not follow them.

Disclaimer and limitation of liability

Dickson assumes no liability for any loss or claims by third parties which may arise through the use of this product. Users must not use the product in any manner not specifically indicated by Dickson. In the case that the device is used in any manners not specified by Dickson, the protection provided by the device may be compromised. The proper use of the device is of the responsibility of the user.

Dickson shall not be held liable for improper use of this product. This document is non-contractual and subject to change without notice.

Safety instructions

The latest safety instructions document is available for download from the Dickson website. Flash this QR code to access the document:

https://docs.oceaview.com/dickson_safety.pdf

Wireless interference

All wireless devices may be susceptible to interference, which could affect performance.

Battery / electrical warning

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN OR REMOVE THE PRODUCT CASING. NO USER-SERVICEABLE PARTS INSIDE. ONLY AUTHORIZED PERSONNEL MAY REPAIR THIS PRODUCT.

The lightning flash with arrowhead symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

- This product contains two non-rechargeable, user-replaceable 3.6V lithium batteries.
- Use the batteries only for their intended purpose.
- Make sure you respect (+/-) polarity, as indicated inside the battery compartment, when inserting batteries into Dickson devices. Reversing polarity by inserting the batteries incorrectly can cause the product to heat up and may lead to battery liquid leakage.
- Use only batteries recommended by Dickson. Do not use a different type of battery, such as rechargeable, alkaline and magnesium. An incorrect battery may cause the device to heat up and may result in fire or battery liquid leakage.
- Never dispose of Dickson products or batteries in fire, as that may cause the battery to explode or leak flammable liquid or gas.
- Do not charge regular batteries that are not specifically rechargeable.
- When the batteries are low, or in case the battery-operated device in question remains unused for a lengthy period of time, remove the batteries from the device in order to avoid any risk of battery liquid leakage.

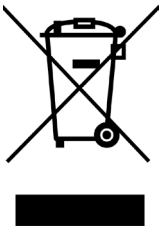
- Never leave batteries within the reach of children.
- Do not dismantle, cut, crush, bend, puncture, or otherwise damage batteries in any way. In case of a battery leak, avoid all contact with the liquid present on the battery.
- Rinse with clear water immediately in case the battery liquid comes into contact with the eyes, mouth, or skin. Contact a doctor or emergency service immediately. Battery liquid is corrosive and can damage vision or cause blindness or chemical burns.
- Extreme temperatures reduce battery capacity and operating lifetime. Use products only within the operating ranges indicated in the technical specifications.
- To prevent fires or explosion risks, use non-conductive tape over battery terminals and/or place batteries in separate plastic bags. Batteries should never be crushed, burned, or put in household waste. For proper disposal, batteries should be taken to specific battery collection points.

Keep your device dry. If your device is water resistant, check its IP rating and make sure that you only use the device under safe conditions with respect to its intended purpose and technical specifications.

California Proposition 65

This product can potentially expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

WEEE compliance This device complies with the essential requirements and other relevant provisions of the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE Directive).



Environmental protection
Please respect local regulations concerning disposal of packaging, unused wireless devices, and their accessories, and promote their recycling.

RoHS compliance
This device is compliant with the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive 2002/95/EC (RoHS Directive). Do not dispose of this product with household trash. Dickson recycles this product under certain conditions. Please contact us for more information.

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1 Introduction

Congratulations and thank you for choosing Cobalt XS Wi-Fi, a powerful and flexible wireless data logger created by Dickson for the DicksonOne monitoring platform.

Ideal for life science, agri-food, and logistics sectors, Cobalt XS Wi-Fi gives you a cost-effective, practical, and reliable way to keep an eye on the environmental parameters of your sensitive assets, storage facilities, products, equipment, and more.

The Cobalt XS Wi-Fi data logger implements Wi-Fi wireless technology to connect with your network. This data logger also supports Dickson's Smart-Sensor technology, which makes it easy to keep up with calibration tasks by storing all calibration information directly in the sensor. This enables both high accuracy and on-the-fly sensor swapping when needed.

Cobalt XS Wi-Fi is compatible with a variety of Dickson temperature and relative humidity sensors, as well as Dickson's Universal Smart-Sensor and Triple CO_2/Temperature/Relative Humidity Smart-Sensor (though only two sensors can be used simultaneously)

1.1 What's in the box

- Cobalt XS Wi-Fi data logger with two 3.6V Lithium batteries preinstalled (non-rechargeable)
- Mounting kit with wall-mount plate and magnet, adhesive strips, wall anchors, and cable ties

1.2 Technical features

Monitoring Applications	Refrigerators • Freezers • ULT freezers • Nitrogen tanks • Water baths • Ovens • Incubators • Autoclaves • Cold rooms • Cleanrooms • Warehouses • Industry standard equipment with 4-20 mA / 0-10 V output
Supported Dickson sensors	Temperature • Temperature / Relative humidity • Universal • CO2 / Temperature / Relative humidity
Sensor calibration options	Please see Dickson Calibration Catalog or contact us for more information
Measurement points	Up to two simultaneous measurement points • One connector for single-, dual-, or triple-sensor probes Note: when using triple-sensor probes, only two measurement points can be used simultaneously
Display & interface	2.4" (6.1 cm) LCD screen for setup, server synchronization, latest readings, power indicator, battery level, signal strength • Temperature in °C or °F
Monitoring software	Fully compatible with the DicksonOne monitoring platform
Alarms	Alarms (warnings and excursions) indicated by flashing light • Detected directly by data logger and transmitted to monitoring platform for fast user notification
Connectivity	Wi-Fi: 2.4GHz (2.412GHz to 2.472GHz) • 802.11n(HT20) Wi-Fi 4; 802.11ax(20MHz): Wi-Fi 6 • Integrated antenna
Data management	32,000 readings per sensor (about 32 weeks of data with reading interval of 10 minutes) • Unlimited storage of uploaded data on web platform
Power	Two 3.6 V user-replaceable lithium batteries (use only SAFT LS17500 batteries in Cobalt XS Wi-Fi data loggers). The device does not support any other battery type. • 1 year battery life (under normal conditions, with screen and Wi-Fi power saving activated) • Maximum current consumption 300 mA • Maximum power 1.08 W • USB-C power via optional AC adapter
Operating conditions	0 °C to +50 °C (+32 °F to +122 °F) • 0 to 90% relative humidity (non-condensing) • Product may be used at a maximum altitude of 2,000 meters (6,562 ft)

Storage conditions	0 °C to +50 °C (+32 °F to +122 °F) • 0 to 90% RH (non-condensing) • Optimal storage around 25 °C (77 °F)
Casing & dimensions	ABS plastic casing • 69 x 107 x 31 mm (2.7 x 4.22 x 1.22 in.) • Weight with battery: 130 g (4.6 oz.)
Pollution degree	Level 2 (only non-conductive pollution is supported under normal conditions; temporary conductivity caused by condensation is to be expected)
Mounting & installation	Wall-mount cradle with magnets, anti-slip rubber pad, and Velcro® • For indoor use only in non-harsh environments
Certifications	FCC • CE – RED DA • ISED • SIRIM • ACMA • OFCA

1.3 Data logger presentation

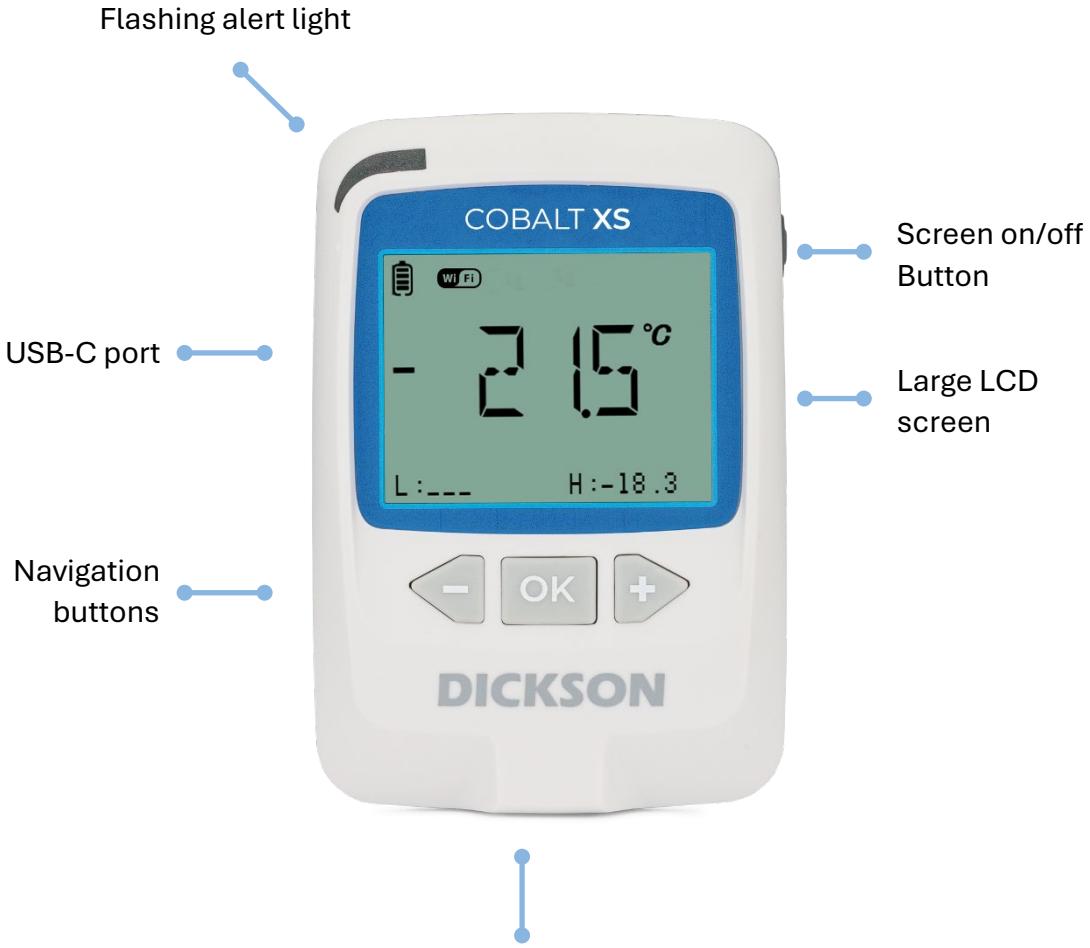


Figure 1 – Cobalt XS Wi-Fi data logger features

1.4 Dimensions

1.4.1 Data logger

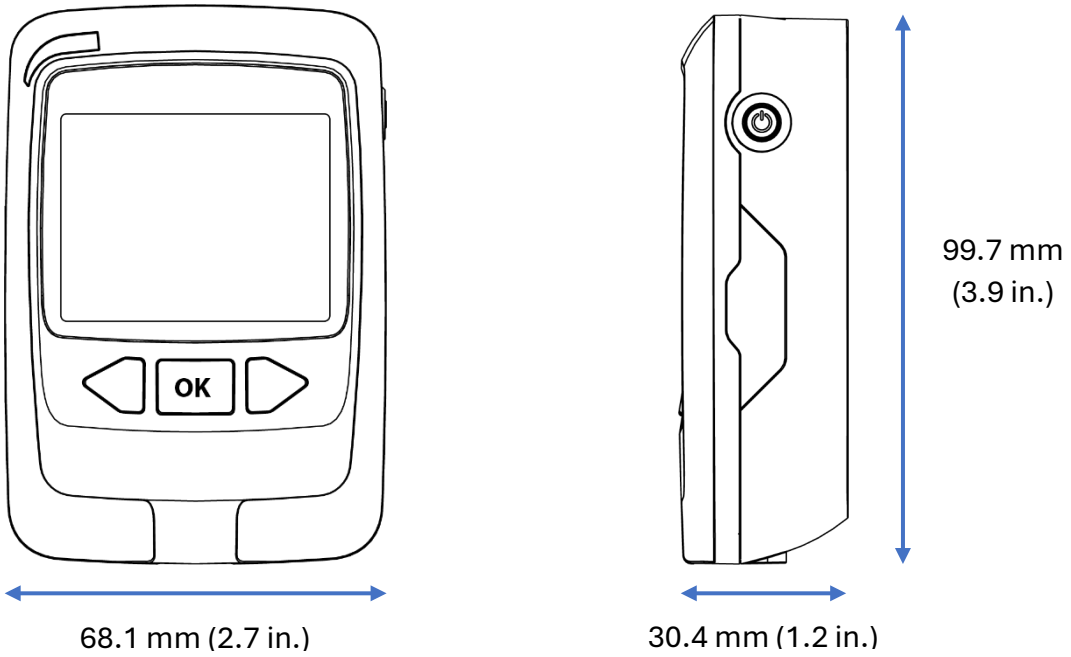


Figure 2 – Cobalt XS dimensions

1.4.2 Magnetic wall-mount

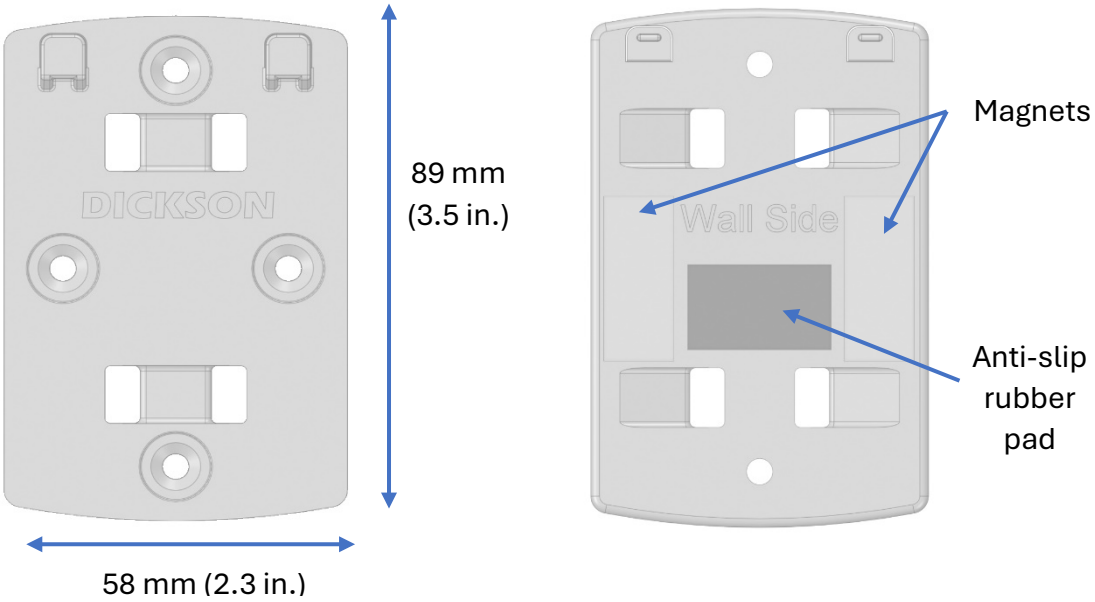


Figure 3 – Wall-mount plate dimensions

1.5 How it works

1.5.1 Prerequisites for using Cobalt XS Wi-Fi

To use the Cobalt XS Wi-Fi data logger, you will need:

- USB-C cable to connect the data logger to your computer for Wi-Fi configuration
- Optional power adapter
- A compatible sensor
- An account on the DicksonOne monitoring platform
- An operational Wi-Fi router with network access to your monitoring platform

1.5.2 Wi-Fi wireless network topology

Wi-Fi wireless technology is widely used for cable-free data communication over short to medium ranges, up to about 150 feet (46 meters) indoors. Its architecture is based on a “star” topology, where wireless data loggers connect to a central access point (or multiple access points) communicating bi-directionally with a server that collects and analyzes data from sensors, whether hosted in the Cloud or on-site.

Wi-Fi connectivity is ideal for installations within buildings or compact sites where robust, continuous communication is required. For larger facilities or areas with dense structural layouts, deploying multiple access points may be necessary to ensure consistent coverage and performance throughout the site.

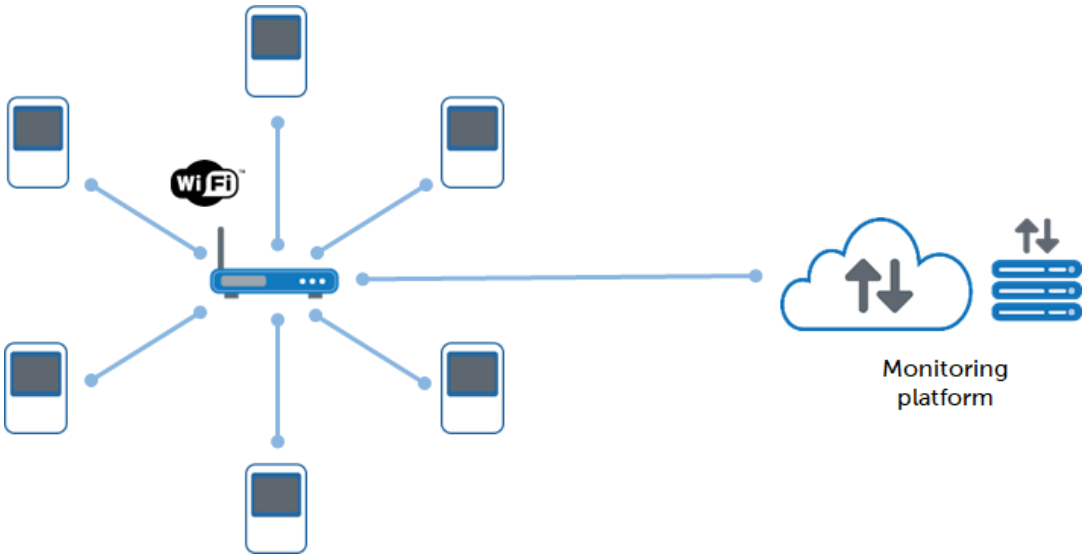


Figure 4 – Data loggers communicate via a Wi-Fi gateway with network access to the monitoring platform

1.5.3 Connectivity with DicksonOne

The Cobalt XS Wi-Fi data logger is designed for use with the DicksonOne monitoring platform. The diagram below illustrates end-to-end connectivity:

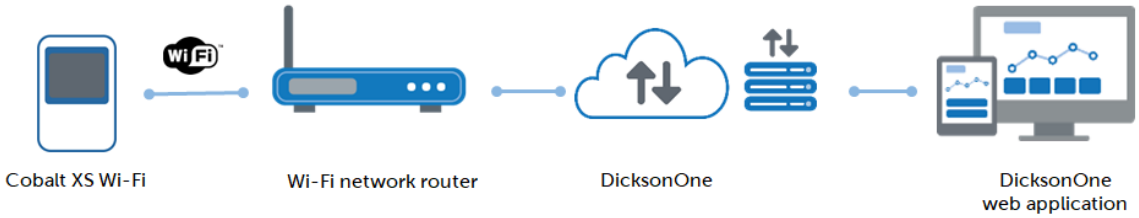


Figure 5 – Cobalt XS Wi-Fi connecting to DicksonOne

For more details regarding monitoring functionality and data logger programming, please check our DicksonOne on-line guides.

1.6 General information

1.6.1 Using the navigation buttons

The Cobalt XS Wi-Fi interface is controlled by four buttons that allow you to perform various actions and manage various device settings.

- Navigate through the menu using the three buttons on the front of the data logger.

1. If the screen is turned off, you must press the OK button one time to activate it.
2. Press and hold the OK button 3 seconds to enter the menu.
3. Use the left and right buttons (◁ ▷) to move through the menu items on the screen, and press the central OK button to select the currently displayed item.

   To return to the main screen, you may either press and hold the OK button briefly to back out, or navigate to the **Back** menu option and press OK. Otherwise, the screen turns off automatically or returns to the home screen after one minute of inactivity, depending on your settings.

- Turn the screen off/on using the round button on the side of the data logger. Press and hold the side button for about 3 seconds to turn the screen off to save battery power. Press the side button or any of the other buttons to turn the screen back on.

  Note: The default power saving setting turns the screen off after 1 minute of inactivity.

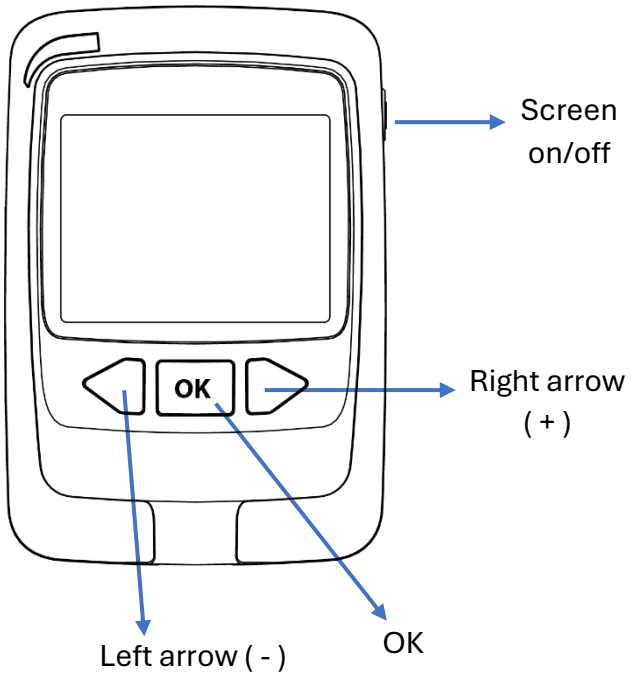


Figure 6 – Cobalt XS Wi-Fi buttons

1.6.2 Menu structure

This diagram shows the Cobalt XS Wi-Fi menu structure. Navigate through the menu items as described in the previous section.

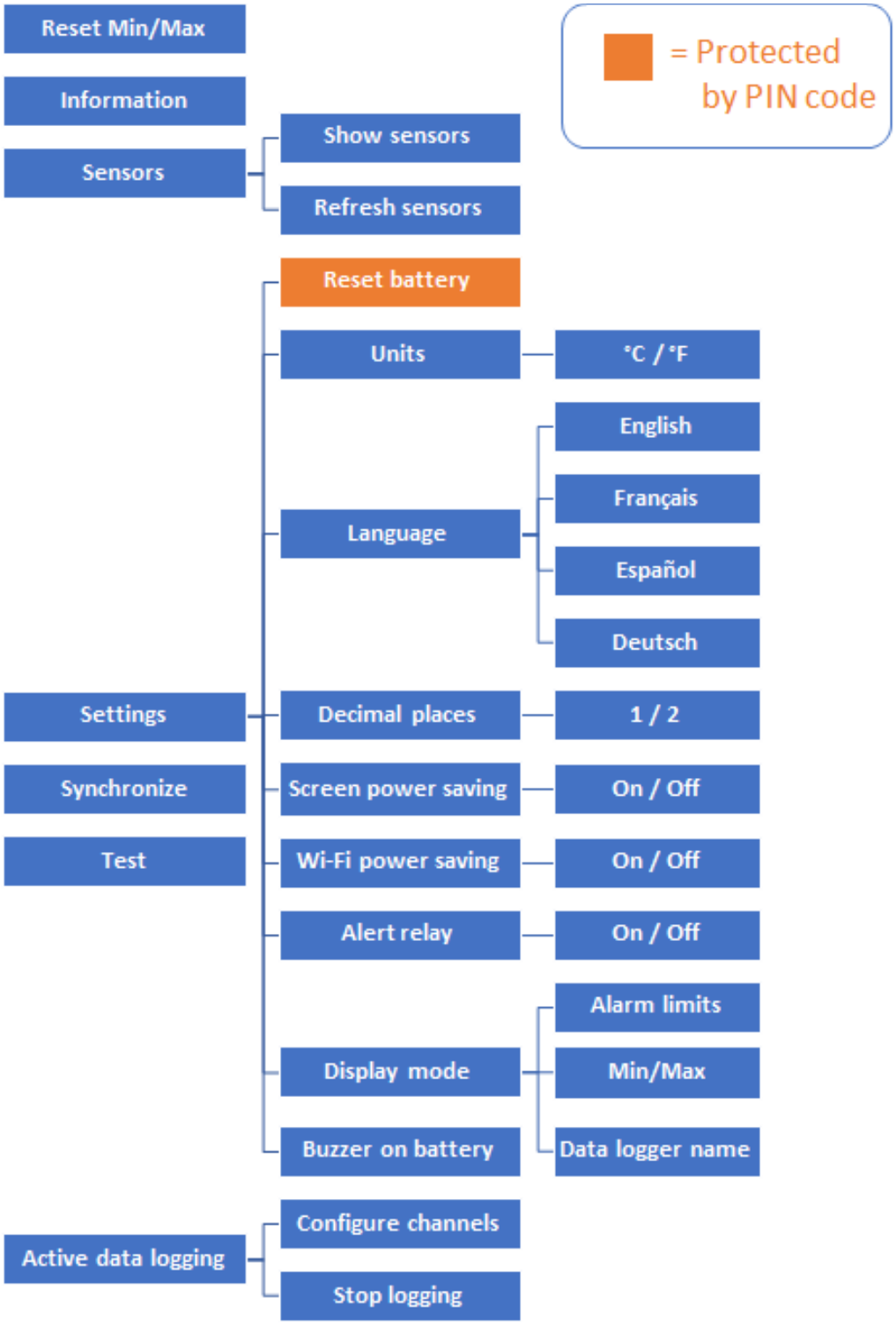


Figure 7 – Cobalt XS Wi-Fi menu structure

1.6.3 Entering numbers

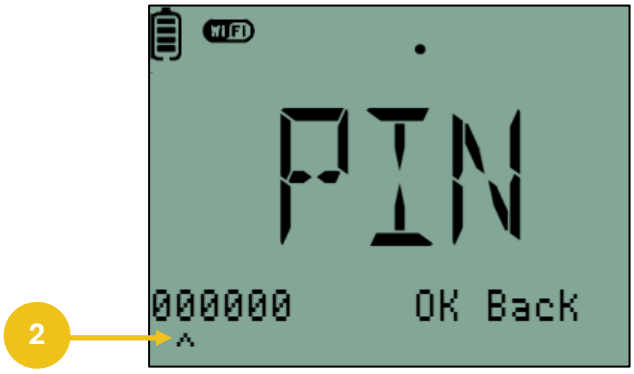
The buttons on the data logger enable you to manually enter numbers when prompted by the device. In particular, you will need to do this to enter your PIN code to reset the battery (**Settings ➔ Reset battery**):

> The PIN code is configured in your monitoring platform user profile.

Here's how to enter numbers using the button-controlled interface:

1. When you need to enter a number, the interface looks like this (using the example of PIN code entry) – notice the triangular cursor beneath the first digit (1) in the lower left corner of the screen.

2. Press ◁ or ▷ to move the cursor left or right (2) from one digit to the next.



3. Press OK to change the number above the cursor. Each press increases the number.
4. Stop when the number is correct, then press ▷ to move on to the next number.
5. When the number is complete, press ▷ to move the cursor to **OK** and then press the OK button to confirm. If you select **Back**, the previous screen is displayed.

1.6.4 Placing your Cobalt XS Wi-Fi data logger

For optimal performance in terms of wireless connectivity, follow these recommendations when physically placing your Cobalt XS Wi-Fi data logger:

- Do not place the data logger within 40 cm (16 in.) of another data logger.
- Make sure the data logger is not placed on an electrical conduit or cable tray (such as those used for computer network cables).
- Keep about 20 cm (8 in.) of clear space around the data logger. For example, a data logger that is “stuck” between two refrigerators may not communicate effectively.
- If possible, orient the data logger so that it faces the general direction of the router for best results.
- Make sure all cables, if any, are firmly attached and that sensors are properly placed in the appropriate space being monitored.
- To ensure reliable wireless communication, we recommend that the wireless signal displayed on the data logger screen be no lower than the “dot” and “one bar”, as shown here:

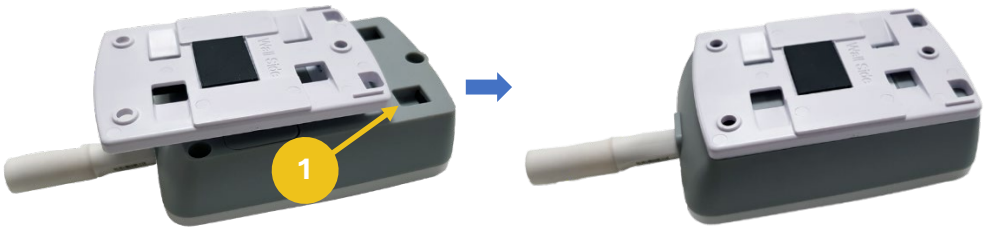
  If the wireless signal is too weak, data communication cannot perform optimally.

1.6.5 Mounting your data logger

Your Cobalt XS Wi-Fi data logger includes a wall-mount plate that can be used to fix the device solidly on a wall or metallic surface.

To mount the data logger on a metallic surface with integrated magnets:

1. Attach the wall-mount plate to the back of the Cobalt XS Wi-Fi data logger by inserting the hooks on the plate into the holes on the back of the device (1).



2. Place the magnetic side of the plate on the metallic surface to mount the data logger in the desired location.

Figure 8 – Placing Cobalt XS Wi-Fi on a metallic surface with magnetic mount

To mount the data logger on a wall with screws:

1. Place the plate on the wall and insert the screws through the appropriate holes.
2. Place the data logger on the mount and slide it down until it clips firmly onto the upper hooks on the mounting plate:

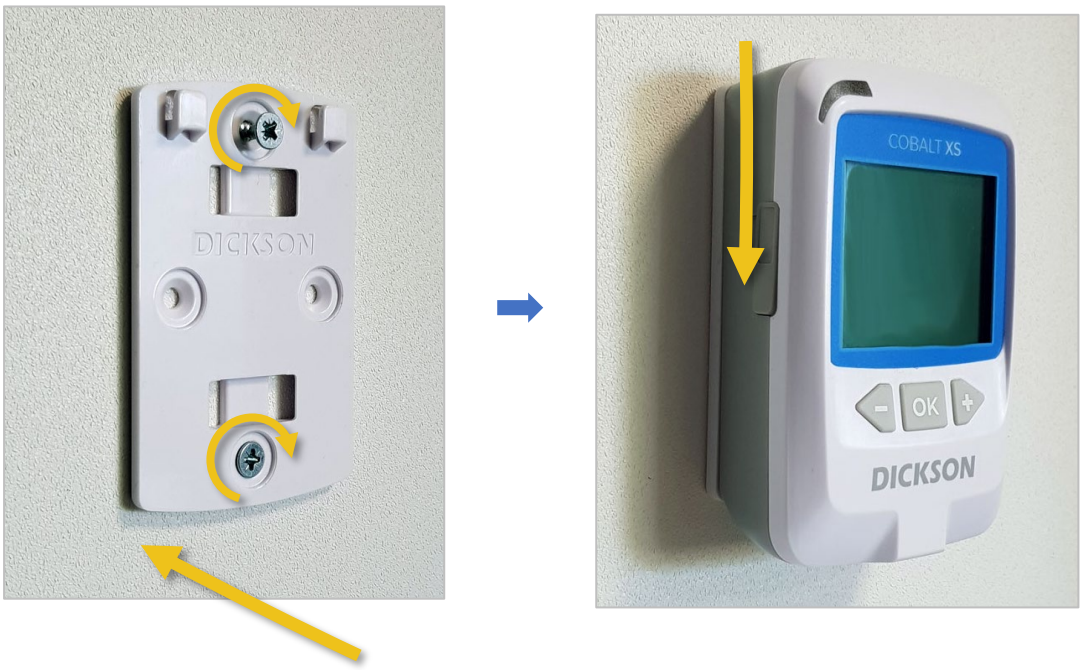


Figure 9 – Mounting the Cobalt XS Wi-Fi with the wall-mount plate

To mount the data logger on a pole or similar structure with cable ties:

The back plate has openings at both the top and bottom that can accommodate cable ties. This allows the device to be securely mounted to a pole or similar structure.

1. Run the cable ties through the holes and around the pole.
2. Pull the cable ties tightly to hold the logger securely in place.

Figure 10 – Use cable ties to mount the logger

2 Getting started

2.1 Activate battery power on the data logger

Batteries are pre-installed in your Cobalt XS Wi-Fi and are protected from electric contact by a pull-tab.

To activate the data logger batteries:

1. Remove the cradle from the back of the data logger by sliding it downwards (1).

Figure 11 – Remove the cradle and pull out the plastic tab to activate batteries

2. Pull out the clear plastic tab (2). This will activate the batteries and turn on the data logger. You can also use a USB-C power cable and wall-plug adapter as the main power source to preserve battery life.
3. The screen below is displayed when the logger turn on:

Figure 12 – Data logger welcome screen

2.2 Using USB-C power

Your Cobalt XS Wi-Fi data logger is designed to run on batteries or USB-C power. The data logger does not use its batteries if you plug it into a permanent power supply using an external power adapter.

Note: We recommend that you plug the sensor into the data logger before you begin, but you can use the **Refresh sensor** feature to update the sensor information on your monitoring platform.

To use an AC adapter with your data logger:

1. Plug one end of the USB-C cable into the data logger.
2. Plug the other end into the AC adapter and plug the adapter to a wall socket, power strip, or uninterruptible power supply.
3. When the data logger is plugged in to an external power source, the device is activated and an electrical plug icon is displayed in the upper right-hand corner of the screen:

Figure 13 – Data logger plugged into external power source

2.3 Setting up Wi-Fi

You must configure Wi-Fi settings in your data logger in order to connect the device to your wireless network and monitoring platform. This section describes how to use the configuration tool provided in data logger memory to customize Wi-Fi settings according to your environment.

To set up your data logger's Wi-Fi:

1. Plug one end of the USB-C cable into the data logger and the other end into your computer. The device is mounted as a USB drive, containing a configuration tool to open using your web browser. We recommend Microsoft Edge or Google Chrome for best compatibility.

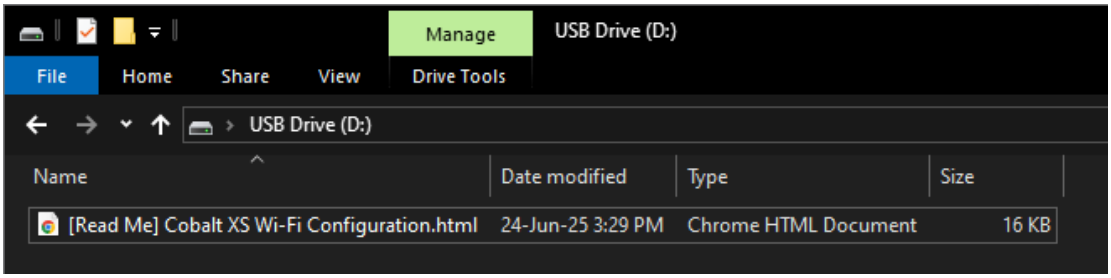


Figure 14 – Wi-Fi configuration file in Windows File Browser

2. Double-click to open the file "[Read Me] Cobalt XS Wi-Fi Configuration.html"

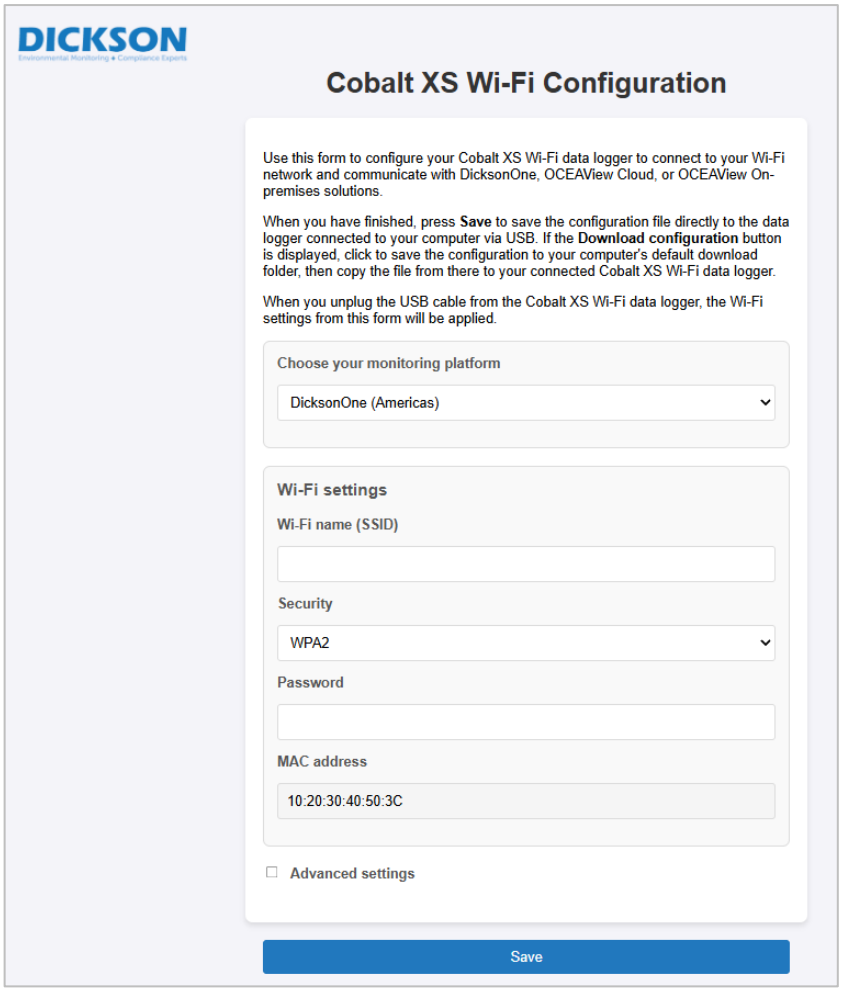


Figure 15 – Configuration overview (details provided below)

3. Start by clicking on the pull-down menu (1) to select your monitoring platform:

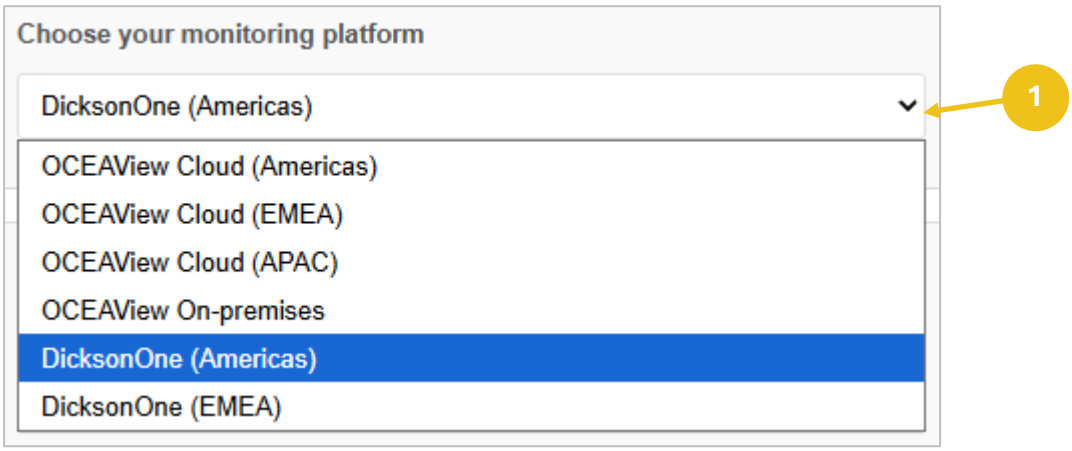


Figure 16 – Choose your platform

4. Fill in the following fields for IP settings in your network. The IP address will be obtained via DHCP:

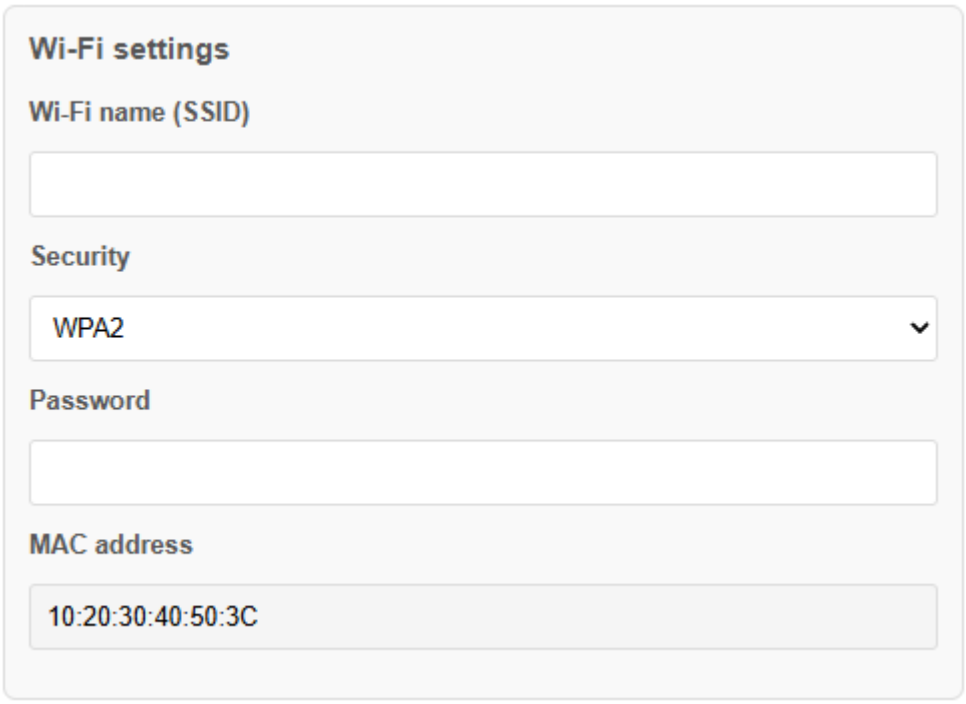


Figure 17 – Enter Wi-Fi connection details

Wi-Fi name (SSID) Enter the exact name of your wireless network. The text here must be the network's exact name. This field is limited to 63 characters maximum.

Security Choose the option that corresponds to your network's security protocol: Open, WPA2, WPA2-SHA256, or WPA3.

Password Enter the password required to join the wireless network. If you select "Open", you do not need to enter a password.

MAC address For information only. Your IT department may wish to use this information in case any specific network infrastructure configuration is required for this device.

Advanced settings Not used with DicksonOne.

4. After filling in the fields according to your situation, press **Save** at the bottom of the screen to save the configuration file (network_config.txt) directly to the data logger. If the **Download configuration** button is displayed, click to download and save the configuration file to your computer's default download folder (and then copy it to the data logger) or save it directly to the connected Cobalt XS Wi-Fi data logger.
5. To complete the process, unplug the USB-C cable from the data logger or use your computer's function to safely remove hardware and eject media.

   The device will detect the presence of the **network_config.txt** file and prompt you to apply the change. If the data logger has already been connected to your

DicksonOne platform, you will be prompted to enter your PIN code (described earlier in *Entering numbers*).

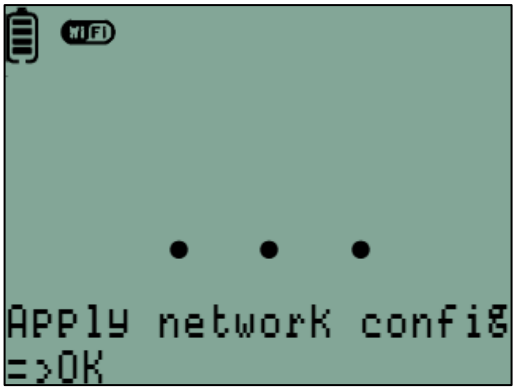


Figure 18 – Confirm that you want to apply the Wi-Fi network configuration

5. Press the OK button to continue if you want to apply your settings. If you do not take any action at this point, the data logger will remove the configuration file after one minute and nothing will be changed.

   After a confirmation message, the Wi-Fi icon on the screen indicates that the data logger is attempting to connect to the network.

2.3.1 Testing the Wi-Fi connection

After the data logger applies the Wi-Fi settings as described above, you can test connectivity as follows:

1. Press and hold **OK** to enter the menu.
2. Press the left or right button (or) until **Test** is displayed.
3. Press OK to run the test.

   If the connection is successful, you may proceed with data logger configuration in DicksonOne.

   If the connection is not successful, please check your Wi-Fi settings and try again. Error messages in case of failure are provided in the FAQ section at the end of this guide.

Figure 19 – Successful Wi-Fi connection test

2.3.2 Troubleshooting the Wi-Fi connection

The Wi-Fi connection test (described above) runs through several phases, enabling you to identify the source of any problems you might encounter. Here are the possible errors and a few suggestions for troubleshooting your Wi-Fi connection.

Error connecting to SSID	This error can occur if the password or SSID are incorrect (check your text carefully), or if the data logger is not able to access the router (e.g. too far away, router turned off...)
Server address resolution error	The router could not access the monitoring platform. Make sure there are no firewall conflicts and that the data logger is within wireless range.
Server connection error	This error occurs when the server does not respond as expected, potentially due to a problem with your firewall

Note: After saving Wi-Fi settings on your data logger, you may need to run the test twice for it to succeed.

2.4 Obtaining your DicksonOne registration code

1. If the Wi-Fi connection is successful, the data logger will connect to your DicksonOne monitoring platform and display a registration code within about one minute (see Step 2). If a sensor is connected to the data logger, reading begins automatically at this point.

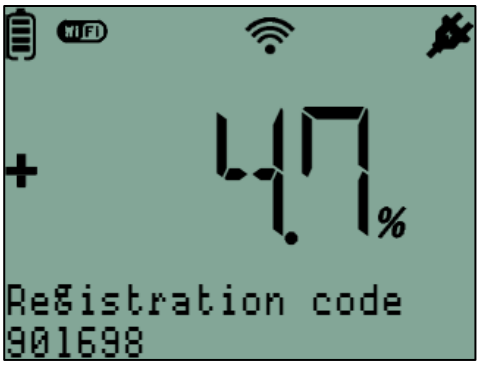


Figure 20 – After connection is established, the registration code and current sensor reading are displayed

If the data logger does not display a registration code, it might be because the Wi-Fi connection was not successful. See the next section for more information.

Hint: Once connection is successful, the registration code will remain on the display until the data logger is fully registered in your DicksonOne account (as described below in *Register the data logger on DicksonOne*). Data will only be synchronized with DicksonOne after the registration process is complete.

2.5 Register the data logger on DicksonOne

1. Log in to your DicksonOne account
2. Click on **+Add Hardware** in the upper right-hand side of the overview page.
3. Click on **Add a DicksonOne logger**.
4. Enter a name and the registration code, and select a location using the pull-down menu.

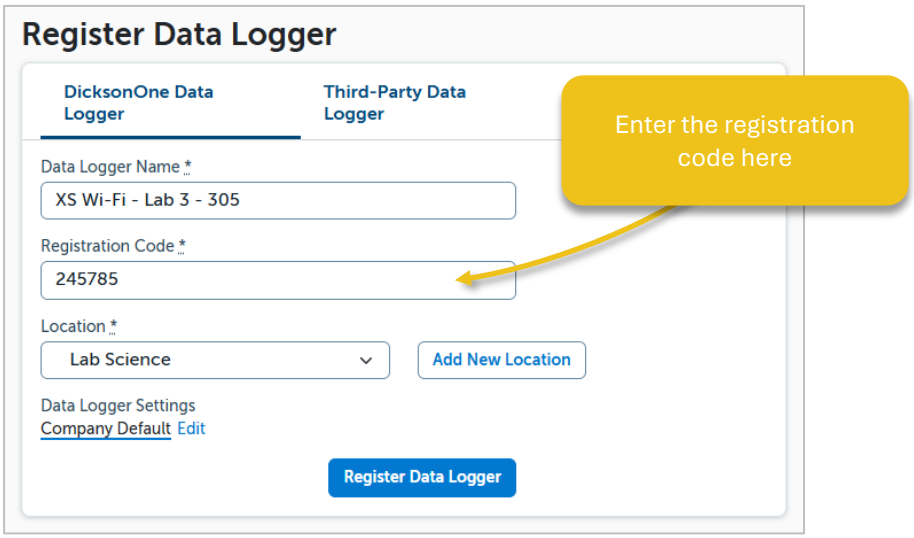


Figure 21 – Enter registration code and other information to register the data logger

5. Click on **Register Data Logger** to add the logger to your platform as shown below.

Figure 22 – Data logger registration in DicksonOne is confirmed

6. You can click on the data logger name to access the device and perform additional configuration tasks as needed, such as defining alarm limits, notification policies, and more, using the DicksonOne solution.

The data logger is displayed in the dashboard as shown below. Data will start to flow into the system automatically within a few minutes.

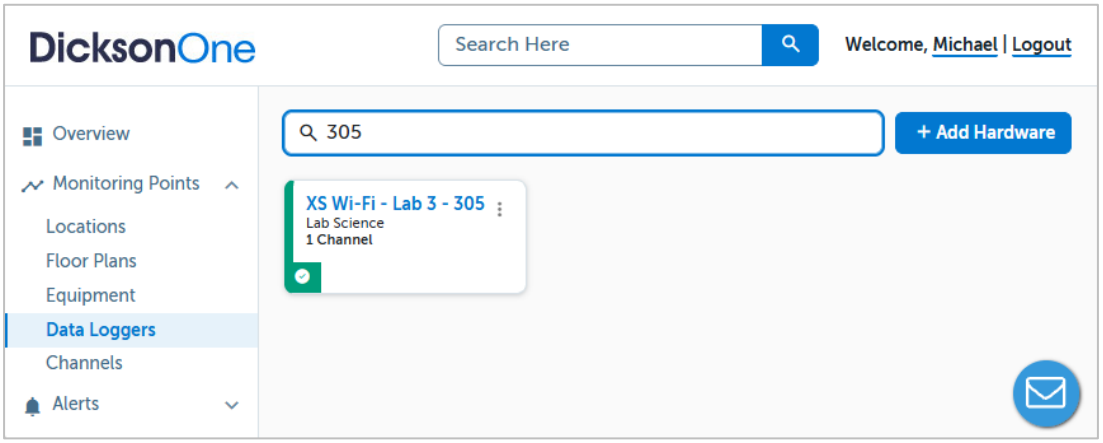


Figure 23 – Access the data logger via the Monitoring Points menu in DicksonOne

We encourage you to read the complete DicksonOne user documentation to get the most out of your Dickson products.

3 Sensors

3.1 Plugging in sensors

The Cobalt XS Wi-Fi has one connector on the bottom side of the casing.

To plug in a sensor:

1. Align the slot on the sensor plug with the key on the plug on the data logger.
2. Press firmly until the sensor cable is firmly seated on the connector.

Figure 24 – Plugging a sensor into the Cobalt XS Wi-Fi data logger

To remove a sensor:

1. Hold the black sensor plug.
2. Pull straight out until the plug is free.

You can swap a sensor for an identical sensor even while data logging is running. At calibration time, you can remove the current sensor and plug in a freshly calibrated sensor without any down time or data loss. The monitoring platform adapts automatically, and data logging continues seamlessly with the new sensor. You may use the **Refresh sensors** option to accelerate the process.

3.2 Refresh sensor(s) to update the monitoring platform

When you physically plug a supported sensor into the connector on the Cobalt XS Wi-Fi data logger, the device automatically recognizes the sensor and sensor type. DicksonOne will update automatically within a few minutes.

If a sensor is not present, or not up to date in the web application, you may use the **Refresh sensors** option to force it to detect the new sensor and update the configuration.

To force a sensor update:

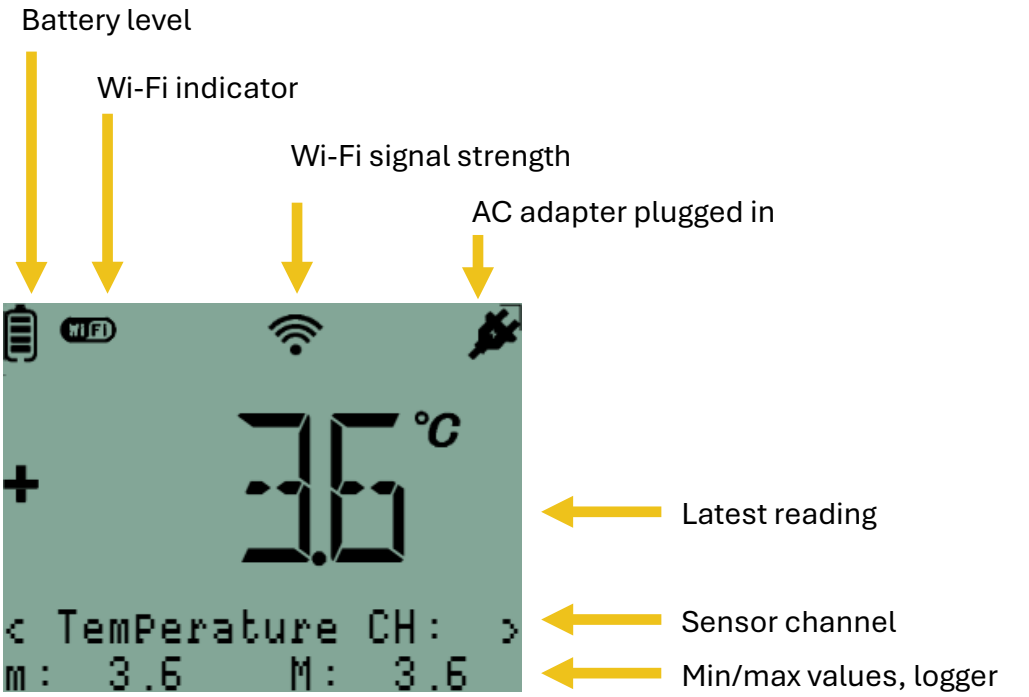
1. Press and hold OK to enter the menu.
1. Press ▷ until you reach **Sensors**, then press OK
2. Press ▷ until you reach **Refresh sensors**, then press OK
3. Wait while the system updates data in your monitoring platform.

4 Data logging with Cobalt XS Wi-Fi

4.1 Screen presentation

Here are the elements on the Cobalt XS Wi-Fi screen during data logging:

Normal screen



Screen with alarm

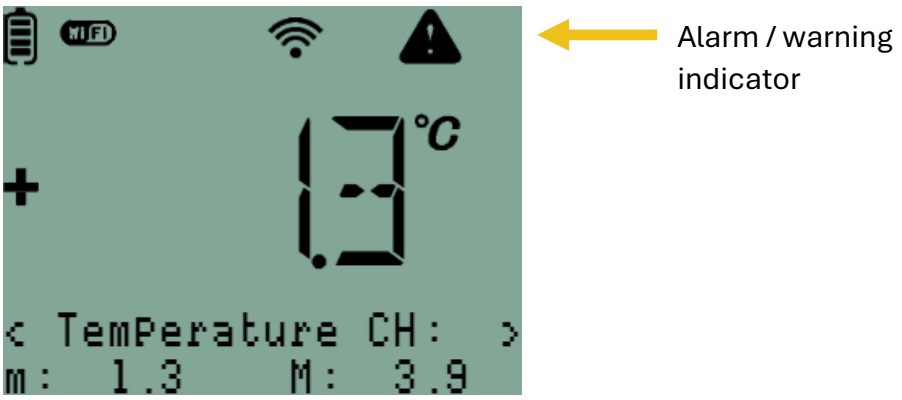


Figure 25 – Cobalt XS screen overview

For more information about alarms, please see section *4.6 – Alarms and warnings, p. 44*.

4.2 Starting data logging

Data logging begins automatically as soon as the Cobalt XS Wi-Fi logger is registered in DicksonOne. All settings are managed via the monitoring platform.

Please check the DicksonOne user documentation if you need more information about programming high and low limits, handling alarms, sending alerts to users, and more.

When data logger is running with one sensor, the display looks like this:

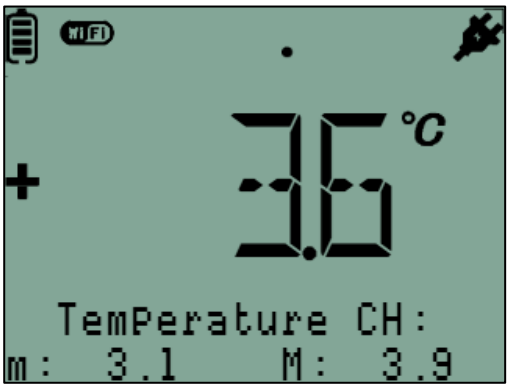


Figure 26 – Cobalt XS screen with one sensor connected

When your data logger has a dual or triple sensor – with up to two sensors used for data logging simultaneously – the display looks like this, with right/left arrows (1) indicating that a second sensor is present. You can press the left or right button (or) to see the other sensor.

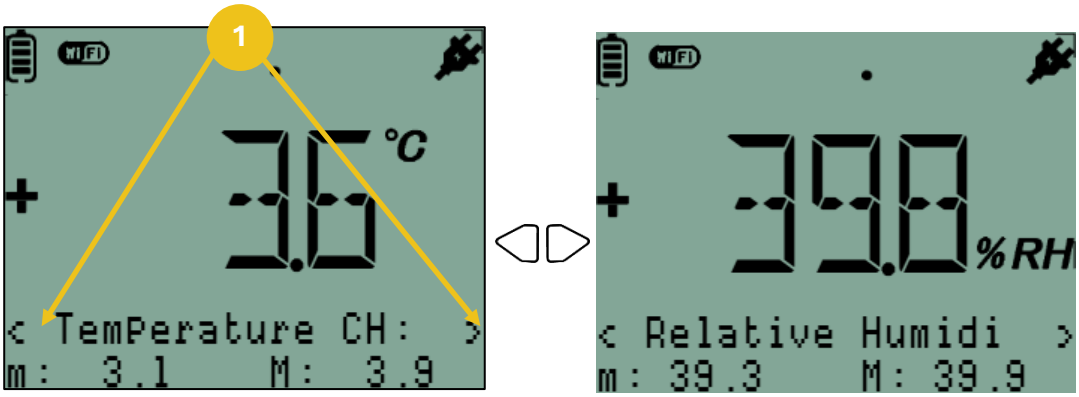


Figure 27 – Cobalt XS screen with a dual sensor connected

4.3 Stopping data logging

If you need to archive a data logger in DicksonOne, please follow these steps:

1. Archive the logger in DicksonOne:

   Select the logger ➔ open the **Settings** tab ➔ click on **Archive this data logger**.

2. Within a few moments, you will receive a new registration code on the logger.
3. Remove the sensor from the data logger.
4. Then, press and hold OK to enter the menu on the data logger.
5. Press ◁ or ▷ until you reach **Stop data logging**, then press OK
6. Press OK on **Yes** to confirm.

   If you do not wish to proceed, you can either press ▷ to display **No**, then press OK, or press and hold OK to return to the previous screen.

4.4 Data synchronization

The Cobalt XS Wi-Fi data logger automatically uploads data readings at regular intervals, as determined by your monitoring platform settings. You may force synchronization of your Cobalt XS Wi-Fi data logger with the server in order to speed up certain operations, instead of waiting for the next scheduled synchronization:

- When plugging in a new sensor to a Cobalt XS Wi-Fi data logger: if you use the **Refresh** function, the new sensor is updated on the server right away, otherwise the update occurs at the next programmed data transfer.
- If you make data logging configuration changes on the server, using the **Synchronize** function on the data logger causes those changes to be taken into account right away.

When using the Synchronize feature, please wait a few moments between presses to give the system time to react. It may take a moment for information to be updated completely.

To refresh your data logger with a new sensor:

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Sensors ➔ Refresh sensors**, then press OK

To synchronize your data logger data:

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Synchronize**, then press OK
3. If the data logger's network connection is up and running (which you can test as described in section *2.3.1 – Testing the Wi-Fi connection, p. 31*), information is updated bidirectionally.

4.5 Show sensors

Whether data logging is running or not, you may use the **Show sensors** feature to see current readings and parameters of each sensor connected to your Cobalt XS Wi-Fi data logger.

To see sensor information:

1. Press and hold OK to enter the menu.
2. Press ▷ until you reach **Sensors**, then press OK
3. **Show sensors** is the first option, so press OK again.

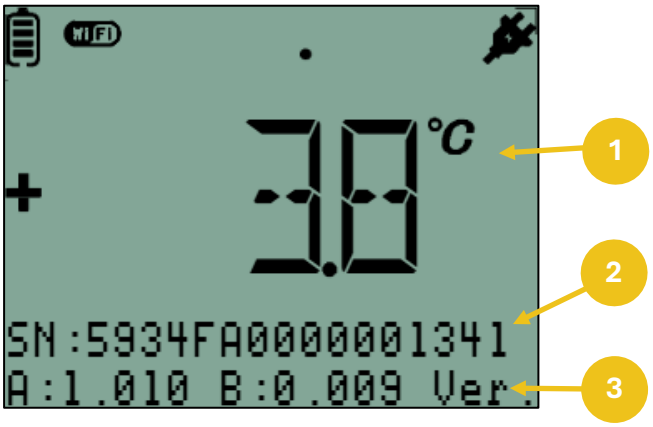


Figure 28 – Sensor information

The following sensor information is displayed on the screen:

1. Latest reading
2. Sensor serial number
3. Sensor calibration correction coefficients and sensor version

4. If a dual or triple sensor is connected to the data logger, press the left or right button (◁ or ▷) to see the other sensor(s).

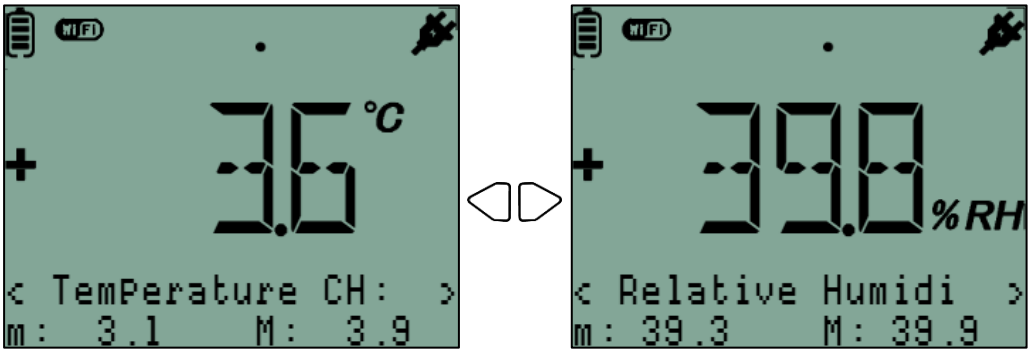


Figure 29 – Sensor information for a dual temperature and relative humidity sensor

4.6 On-demand sensor reading while data logging

The data logger is programmed to read its sensor(s) at regular intervals – configured using your monitoring platform – but you can check the current sensor reading at any time when data logging is running, without affecting recorded data or sensor graphs.

On-demand readings are for information only and are not stored in the database. Only readings taken at the programmed interval are stored.

To perform an on-demand read while data logging is running:

1. Press the OK button. The data logger reads the sensor(s) and displays the current value as well as the sensor serial number, calibration correction coefficients, and version.

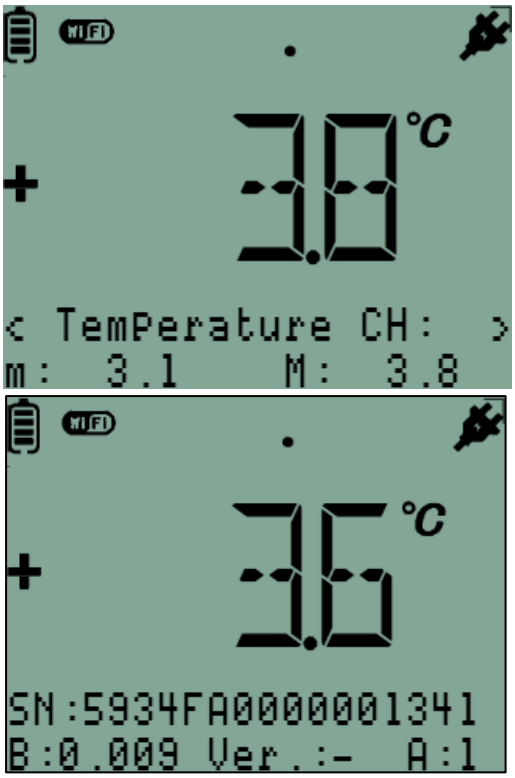


Figure 30 – On-demand sensor read

> It is completely normal for there to be variations between the first value (which shows the last read and recorded value) and the on-demand read value (which shows the current reading).

2. If you want to see the second sensor on a dual or triple sensor probe, press ▷ to scroll to the second sensor, then press OK

4.7 Alarms and warnings

One of the Cobalt XS Wi-Fi data logger's most important features is its ability to detect alarm conditions and work in tandem with the monitoring platform to notify designated users when problems occur.

An alarm condition can be one of the following:

- An **excursion**, where the read sensor value is outside the programmed target range. Excursions may be set up in the monitoring platform to be treated either as alarms or warnings (which are informational events and do not appear in data exports, graphs, or reports).
- A **technical alarm**, such as:
    - **Low battery**: this alarm is generated by the data logger if the battery consumption counter indicates that the remaining battery level has reached 30%. Also generated by the data logger, a **Battery level low** alarm can occur if the CPU detects a drop in voltage that could cause device failure. In either case, you should replace the batteries and reset the battery counter.
    - **Unexpected stop** (if the data logger stops functioning for some reason, such as when the battery is removed)
    - **Sensor failure** (if the data logger was unable to read the sensor)
    - **Invalid sensor** type (if an incompatible or unknown sensor type was plugged in)

Regardless of the programmed data transfer interval, alarms generated by the data logger are always transmitted spontaneously to the server as soon as they are detected by the data logger.

Note: on DicksonOne, you must enable "Audible alarms" for spontaneous alarms to function.

When an alarm or warning occurs, the LED in the upper left-hand corner of the data logger casing flashes for as long as the data logger remains in excursion. The light stops flashing if, at the next programmed sensor read, the alarm condition has ended.

Two colors are used for alarms:

- **Red** for limit alarms and technical alarms.
- **Orange** for warnings.

Figure 31 – Data logger with alarm (left) and warning (right)

In either case, the light stops flashing when the sensor value returns to its normal range, or when the technical alarm is resolved.

Alarms and warnings both trigger alerts (user notification or alarm device) if programmed.

4.8 Data logger information

General information about the data logger can be found in the **Information** screen. This information is mostly useful in case you need technical support and are asked to provide specific details.

To see information:

1. Press and hold OK to enter the menu.
2. As **Information** is the first option, press OK
3. Press the left or right button (◁ or ▷) to see the available information, including:
    - Data logger serial number
    - Firmware version
    - Date and time
    - SSID of your Wi-Fi network, security type, server address, MAC address, and IP address
    - Security key

Figure 32 – Use the right and left arrows to scroll through logger information

5 General settings

5.1 Resetting the battery counter

The Cobalt XS Wi-Fi data logger keeps track of battery life on an ongoing basis. If you change the batteries in your data logger, you must reset the battery counter as described here in order to indicate the correct battery level on the screen:

1. Press and hold OK to enter the menu.
1. Press ◁ or ▷ until you reach **Settings**, then press OK
2. As **Reset battery** is the first option, press OK
3. Enter your PIN code and select **OK** to continue:

   Users should enter their regular PIN code, as configured in their user profile.

   If the data logger has never connected to your monitoring platform, the PIN code is “000000” (six zeros).
4. You will be prompted to confirm this action. Press ◁ or ▷ to choose **Yes** or **No**, then press OK

Only use 3.6 V non-rechargeable batteries approved by Dickson.

5.2 Displaying temperature in °C or °F

The Cobalt XS Wi-Fi screen can display temperature values in either Celsius (°C) or Fahrenheit (°F).

To set the temperature unit:

1. Press OK to enter the menu.
2. Press ◁ or ▷ until you reach **Settings**, then press OK
3. Press ▷ until you reach **Units**, then press OK
4. Choose either **Celsius** or **Fahrenheit** then press OK to confirm.

5.3 Choosing the display language

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Settings**, then press OK
3. Press ▷ until you reach **Language**, then press OK
4. Press the left or right button (◁ or ▷) until the desired language is displayed (English, French, Spanish, or German).
5. Press OK to confirm.

5.4 Decimal places

You may choose to display sensor readings on the home screen with either one or two decimal places, as shown here:

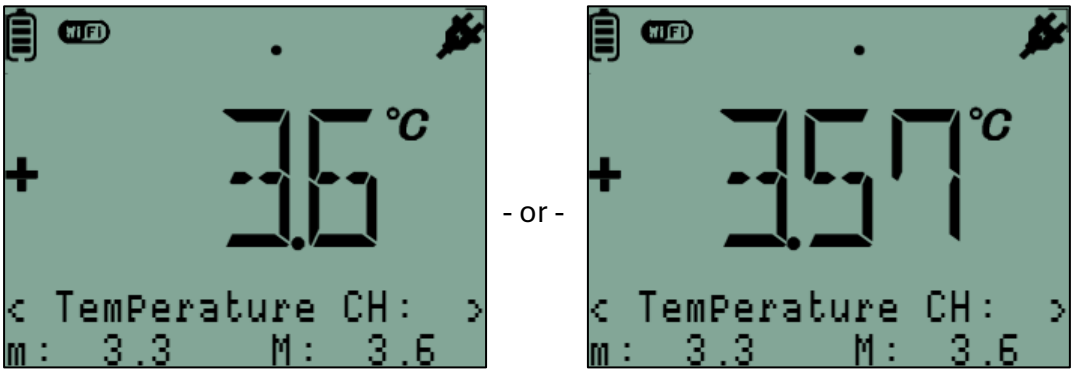


Figure 33 – Values displayed with one or two decimal points

To change decimal place settings:

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Settings**, then press OK
3. Press ▷ until you reach **Decimal places**, then press OK
4. Press ▷ to scroll through the available options:

   "1" Shows one number after the decimal, with rounding rules applied.

   "2" Shows two numbers after the decimal.
5. Press OK to select the desired option.

5.5 Screen power saving

A screen power saving option is available to help extend the battery life of your data logger:

To choose screen power saving options:

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Settings**, then press OK
3. Press ▷ until you reach **Power saving**, then press OK
4. Press ▷ to choose from the available options:

   On This is the default setting. The screen turns off after one minute. Press any button to reactivate.

   Off The sensor reading and other information remains displayed on the screen.

   In any case, the display always returns to the home screen after one minute of inactivity.
5. Press OK to select the desired option.

You may also use the data logger's side button to turn the display on or off, but that does not affect the settings described here.

5.6 Wi-Fi power saving

In most data logging situations, it is not necessary to maintain a permanent Wi-Fi connection with the router. Sensors are read periodically and data is usually transferred at intervals of several minutes or more. When the data logger is running exclusively on battery power, it can be important to use Wi-Fi only when needed. Cobalt XS Wi-Fi offers a Wi-Fi power saving feature to help extend the battery life of your data logger.

To choose Wi-Fi power saving options:

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Settings**, then press OK
3. Press ▷ until you reach **Wi-Fi power saving**, then press OK
4. Press ▷ to choose from the available power saving options:

   On This is the default setting. With power saving activated, the Wi-Fi chipset is powered down and disconnected from the network between each data transfer interval to save energy. The data transfer interval is controlled via your monitoring platform's web application.

   Wi-Fi is powered on automatically if the data logger detects an event that must be sent to the server immediately, such as an excursion for a programmed high or low alarm limit, low battery, or other technical alarm.

   Off The Wi-Fi chipset remains powered on and connected to the Wi-Fi router (access point) continuously.

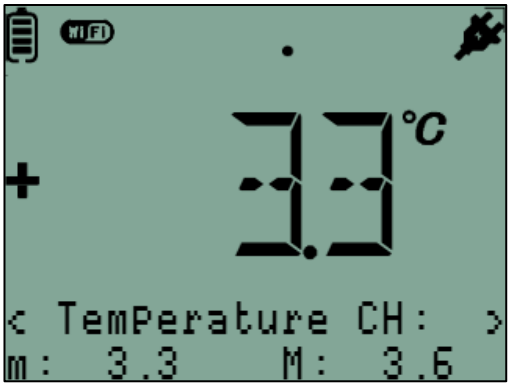
5. Press OK to select the desired option.

Changes made to Wi-Fi power saving are applied at the next programmed transfer interval. That is, if power saving is set to **On**, and you change it to **Off**, the data logger does not immediately connect to the router unless it needs to transmit an event. And vice versa: if power saving is **Off** and you change it to **On**, the data logger does not immediately disconnect from the router. The new setting takes effect upon at the time of the next transfer interval.

5.7 Display mode

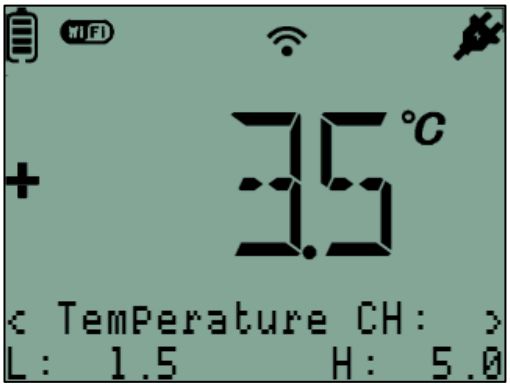
You to choose the information to show on the bottom line of the screen:

Minimum (m) and maximum (M) values:



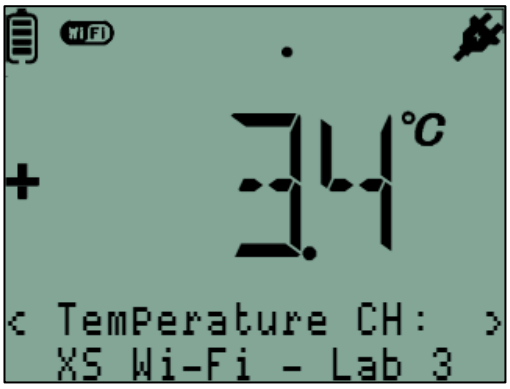
Min and max sensor values

High and low limits (as programmed in DicksonOne):



Programmed low and high limits

Data logger name:



Data logger name

Figure 34 – Display options

To assign display options:

1. Press and hold OK to enter the menu.
2. Press ◁ or ▷ until you reach **Settings**, then press OK
3. Press ▷ until you reach **Display mode**, then press OK
4. Press ▷ to choose either **Alarm limits**, **Min/Max**, or **Data logger name**, then press OK to assign your selection.

When you choose **Min/Max**, the menu option **Reset Min/Max** becomes the first option displayed when you press and hold OK to enter the menu. The menu structure remains otherwise unchanged.

5.8 Buzzer on battery

Buzzers use battery, so by default the logger does not use its buzzer when not running on AC power. If you want to activate the buzzer so that it also works when the logger is just running on batteries

- Use this option
- Enable Audible Alarms in DicksonOne

5.9 Using the Dickson triple $C0_2$ – T° – RH Smart-Sensor

The Cobalt XS Wi-Fi data logger supports up to two active sensor channels simultaneously. Therefore, if you want to use a triple sensor, such as Dickson's CO_2 – Temperature – Relative Humidity Smart-Sensor, you must choose which two sensors to use.

When this triple sensor is plugged into the data logger, CO_2 and temperature channels are selected by default.

Follow these steps to configure the sensor channels directly on the Cobalt XS Wi-Fi:

1. Press and hold OK to enter the menu.
2. Press the left or right button (◁ or ▷) until **Active logging** is displayed, then press OK.
3. Press OK to select **Configure channels**. Here you can assign any one of the three sensors to the first channel (Channel 0):

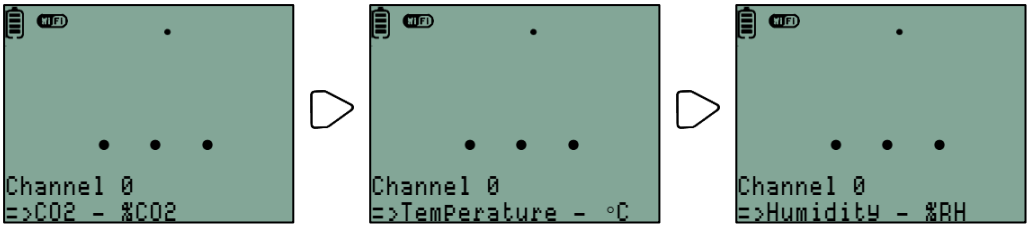


Figure 35 – Press arrow to cycle through the three sensors

4. Press OK to select the sensor you want on Channel 0.
5. Then, channel 1 is displayed, giving you the option to choose one of the two remaining sensors. Press OK to select the sensor you want on Channel 1.

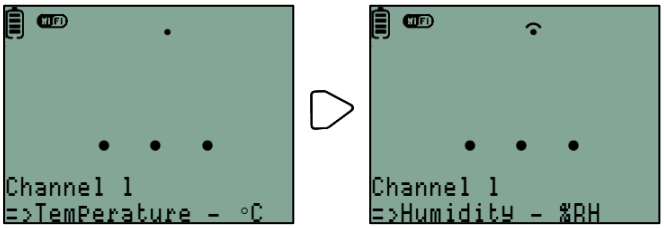


Figure 36 – Press arrow to cycle through the two remaining sensors

6. Any changes you make on the data logger will be taken into account automatically on DicksonOne, generally within 1 – 2 minutes.

General notes

- **Firmware update**

  Channel settings are preserved if firmware is updated.

- **Sensor swap**

  If you swap this sensor for an identical sensor (for example, at recalibration time), the channel settings are unchanged, and data logging continues normally. The new sensor is taken into account automatically by DicksonOne.

- **Device reboot**

  If the device is rebooted (for example, in case of battery swap or power off), the channel settings are unchanged, and logging will resume after about 1 – 2 minutes.

- **Replacement with a different sensor**

The channel selection settings described in this section only apply to Dickson's triple CO_2 – Temperature – Relative Humidity sensor. If you replace this sensor with a dual Temperature – Relative Humidity sensor, the two available channels on Cobalt XS Wi-Fi will be assigned automatically.

6 FAQ & maintenance

6.1 Updating data logger firmware

New firmware versions for your Cobalt XS Wi-Fi data logger may be released from time to time. You may choose to install updates over-the-air (OTA) via DicksonOne or by using a USB-C cable connected to your computer.

6.1.1 Method 1: Updating firmware via DicksonOne

6.1.1.1 Updating one data logger via DicksonOne

You can update firmware directly using DicksonOne in one of two ways, depending on your company default settings, either:

- Do not update automatically
- Update automatically

You can check the settings as follows:

1. Locate your data logger under **Monitoring Points ➔ Data Loggers**
2. Select **Settings ➔ Firmware** (1)

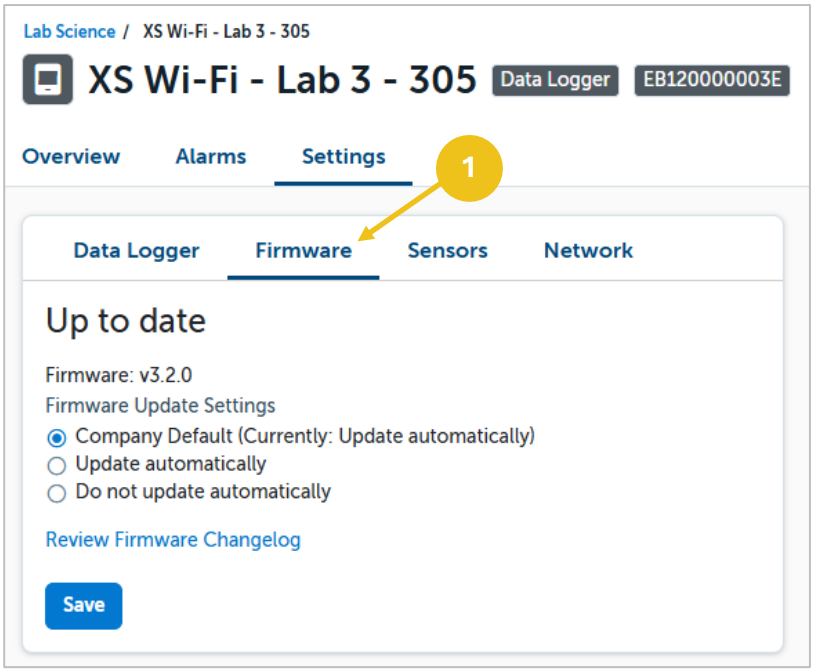


Figure 37 – Firmware update settings in DicksonOne

Update automatically

If the company's default setting is set to update automatically, firmware updates are installed on data loggers without requiring any user intervention. The system checks for updates at each data transfer interval and begins the update upon the following transfer.

Do not update automatically

If updates are not automatic, you must press the **Update firmware** button for your data logger to initiate the process when new firmware is available, as shown below. The update will begin at the time of the next scheduled data transfer.

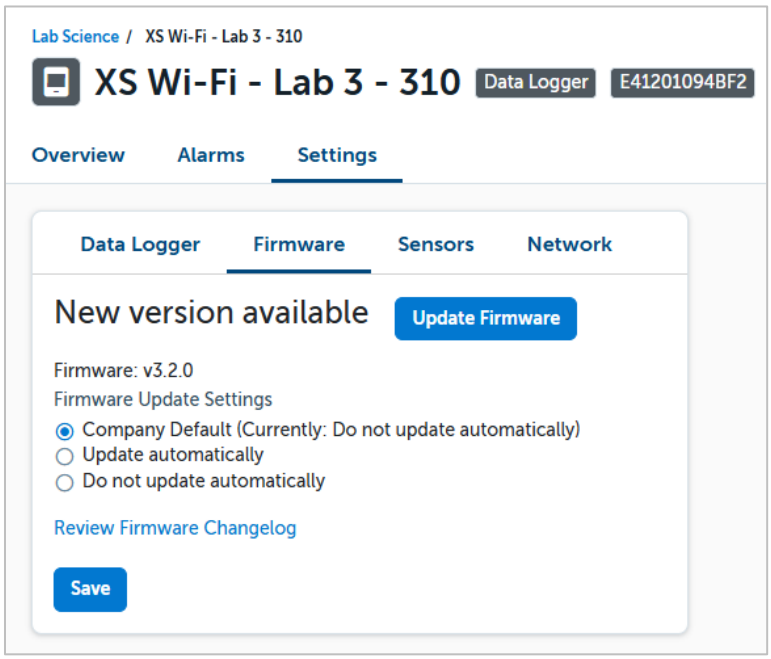


Figure 38 – Manual update for one data logger

6.1.1.2 Updating several data loggers via DicksonOne

You can update firmware on several data loggers in one operation as follows:

1. In the left-hand menu, select **Manage ➔ Data Loggers** (1)
2. Click to select one or more data loggers in the list. When you do this, a pop-up is displayed as shown here.

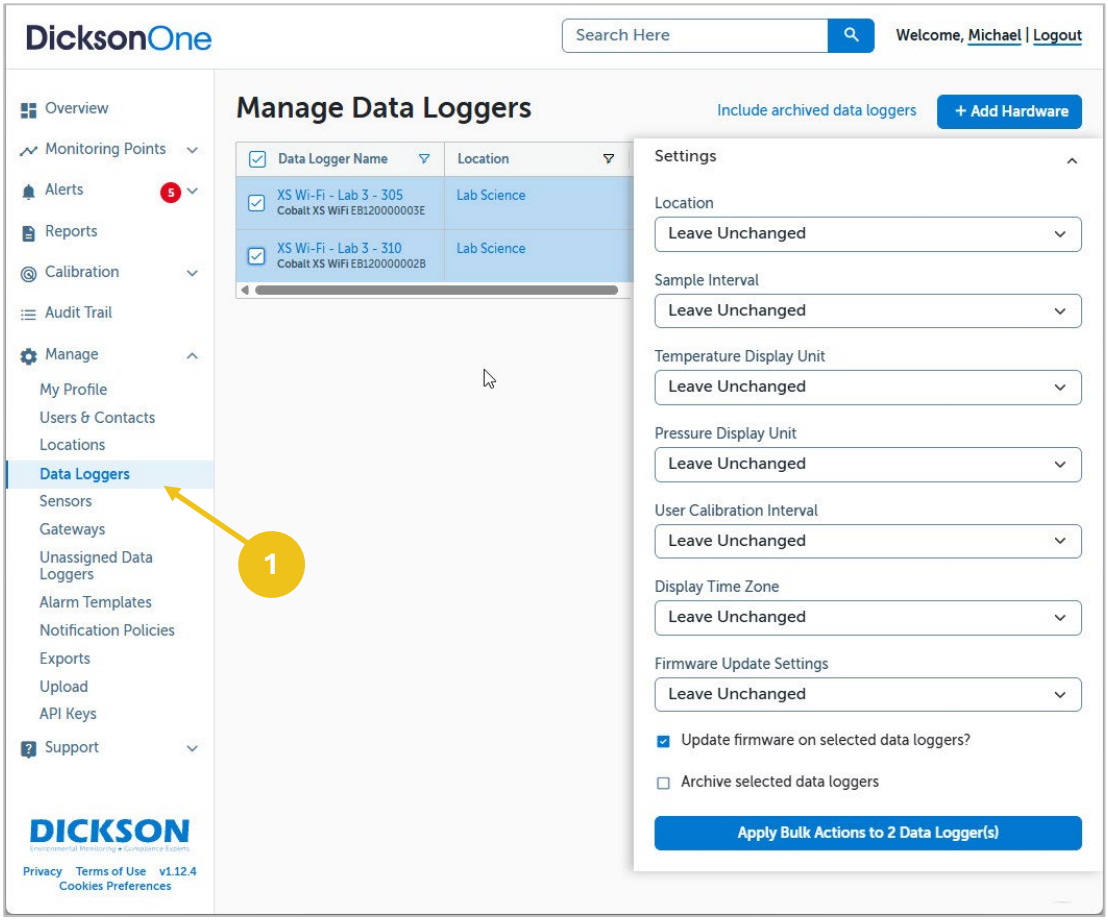


Figure 39 – Manual update for multiple data loggers

3. Click to select **Update firmware on selected data loggers?**
4. Click on **Apply Bulk Actions to # Data Logger(s)**

   If a firmware update is available, it will be installed automatically on the selected data loggers over the next data transfer cycles. If the firmware is already up to date, the data logger(s) will continue communicating normally.

> One thing to keep in mind is that selecting "**Update firmware on selected data loggers?**" initiates a one-time firmware update. The selected loggers will not update automatically when future firmware versions are released.

To configure the loggers to update automatically whenever a new firmware version becomes available, select the **Update Automatically** option from the **Firmware Update Settings** dropdown menu in the pop-up.

6.1.2 Method 2: Updating device firmware via USB-C cable

If your data logger has already communicated via Wi-Fi with the Dickson monitoring platform, your existing configuration is preserved when updating the firmware as described here. Please only use firmware files provided by Dickson.

To update the firmware via USB-C cable:

1. Plug the data logger to your computer using a USB-C cable. This should mount the data logger as a USB drive that you can access with your file browser.
2. Download the . tar file from DicksonOne, under **Support ➔ Change Logs**
3. Copy the .tar file to the data logger mounted as a USB drive.
4. After the file is completely copied to the data logger, unplug the USB-C cable from the data logger.
    - If the data logger has already communicated with your monitoring platform, you must enter your PIN code to continue.
    - If the data logger has never communicated with your monitoring platform, you will not be prompted to enter your PIN code.
    - If you use the Windows function “Safely remove hardware and Eject Media”, don’t forget to also detach the cable from the data logger.

5. This message is shown on the display: “**New firmware detected. Update?**”

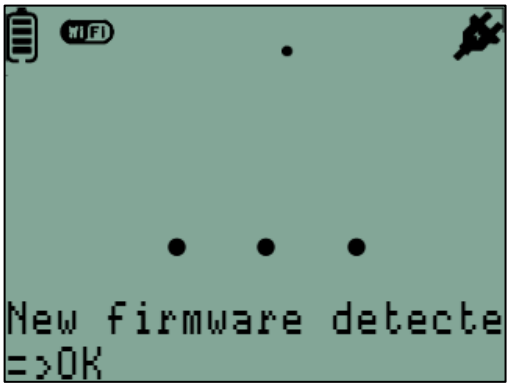


Figure 40 – Confirm firmware update

6. Press the OK button if you want to apply the update.
7. The display will show “**Updating…**” for up to about two minutes. The data logger then reboots and resumes operation.
8. To see the firmware version on your data logger, press and hold OK to enter the menu, then press OK again on **Information** and then the right button (▷).

6.1.3 Good to know

- It may take the duration of several transfer intervals to complete the firmware update via DicksonOne.
- The data logger LED blinks blue and green while the new firmware is being installed (less than 2 minutes).
- If automatic updates are enabled, and the data logger is currently in an alarm state (excursion, low battery, or technical issue), the update will be performed once the data logger has returned to its regular operating state.
- Firmware updates are tracked in the system’s Audit Trail.

6.2 Common questions and answers

6.2.1 Wi-Fi / wireless connectivity

An error occurs when testing the Wi-Fi configuration, what should I do?

The Wi-Fi connection test (described above) runs through several phases, enabling you to identify the source of any problems you might encounter. Here are the possible errors and a few suggestions for troubleshooting your Wi-Fi connection.

Error connecting to SSID	This error can occur if the password or SSID are incorrect (check your text carefully), or if the data logger is not able to access the router (e.g. too far away, router turned off…)
Server address resolution error	The router could not access the monitoring platform. Make sure there are no firewall conflicts and that the data logger is within wireless range.
Server connection error	This error occurs when the server does not respond as expected, potentially due to a problem with your firewall

Note: After saving Wi-Fi settings on your data logger, you may need to run the test twice for it to succeed.

My data logger has been working well, but now it is displaying a message "Error, server address resolution". What is causing this?

This error message means that the wireless signal to your Wi-Fi router is too weak. In that case, the data logger might not be able to resolve the server address. We recommend that the wireless signal be no lower than the "dot" and "one bar", as shown here:

What should I do if the Wi-Fi connectivity test fails?

First, check and make sure that the router is up and running, and is able to access your monitoring platform over the network.

Another reason might be that the router is beyond wireless range. An easy test is simply to bring the data logger closer to the router and rerun the test. See error messages earlier in this FAQ section.

The data logger is properly connected to the web platform. Why don't I get any temperature readings?

The data logger uses the Wi-Fi wireless protocol. The data logger connects wirelessly to your Wi-Fi router and transfers data periodically, but not necessarily at every sensor reading. If you modify data logging settings in the monitoring platform, the values on the data logger screen will be updated when the next transfer interval occurs. Wait for the next transfer interval to get your data updated.

This could also be due to a loose cable or improperly connected temperature sensor. Check the cable between the data logger and the sensor. Unplug the sensor and plug it back in. Make sure there are no exposed wires. Try a different sensor.

6.2.2 Data logging / sensors

Can you acknowledge alarms directly on the data logger?

Cobalt XS Wi-Fi does not have an alarm acknowledgement function, so you must acknowledge alarms using your monitoring software platform.

Where can I find information about compatible sensors?

For details regarding supported sensors, please see the Dickson Sensor Reference Guide.

Click here for PDF

I swapped the sensor with a new one and received a Sensor Fail error. But everything seemed OK after that. What happened?

The most likely reason is that you performed the swap just as the sensor was being read by the data logger. This generates an alarm concerning that precise moment. If the new sensor is working correctly, that problem can be considered as being very temporary and you can simply acknowledge the alarm on the monitoring platform to close it.

I plugged in a new sensor and the data logger rebooted.

Even if the data logger reboots after the new sensor is plugged in, the sensor is taken into account correctly and you may proceed once the data logger is ready.

The unit or temperature range for my sensor is not displayed correctly in the web application. What should I do?

Under rare conditions, it may happen that the sensor's physical parameter (unit) or temperature does not appear properly in the web application. If that occurs, resynchronize the information by unplugging the sensor from the Cobalt XS Wi-Fi data logger and selecting **Sensors ➔ Refresh Sensors**. Then plug the sensor back into the data logger and select **Sensors ➔ Refresh Sensors** again to push updated information to the web application.

I replaced my batteries after they died and data logging has not restarted. What should I do?

After you insert new batteries into your data logger, the data logging session that was in progress previously will be restored. This may take a few moments, as the data logger must reestablish communication with server and resume synchronization. To accelerate this process you may use the synchronize feature on the data logger, potentially repeating the process several times before data logging is restored.

6.2.3 Data logger hardware / power / USB / firmware / screen

How long will the battery last?

The estimated Cobalt XS Wi-Fi operating lifetime is at least one year with normal use, based on these general conditions:

- Starting with two new batteries
- Screen and Wi-Fi power saving activated
- 1 reading every 10 minutes, and transfer interval of 20 minutes
- Ambient operating environment 10-20°C
- 1 interaction with the device menu per day

What factors affect battery life?

Data logger battery life varies depending upon several main factors:

Ambient temperature: battery capacity is diminished when subject to very cold or extreme heat conditions.

Wireless communication: wireless communications consume battery power. Therefore, battery life depends on factors such as the connection frequency and signal quality.

Alarm indicator (LED): when the system triggers an alarm, the LED on the data logger casing flashes as long as your data logger remains in an alarm condition. Prolonged use of the LED consumes power and reduces the data logger's battery life.

Is there a warning when the battery gets low?

Yes, a **Low battery** alarm is generated when the battery counter reaches 30%. The alarm is sent to your monitoring platform, and notifications are sent as defined by alert rules. Battery level is indicated on the screen as shown here (full and low):

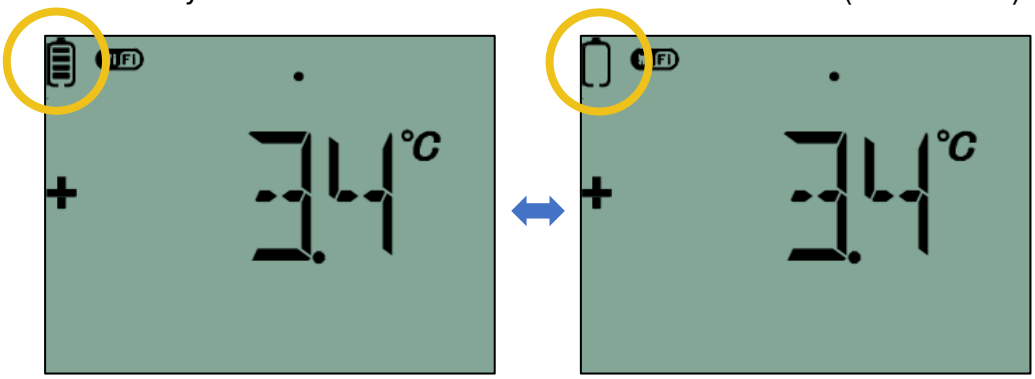


Figure 41 – Battery level indicator

We highly recommend that you change the batteries when your monitoring platform raises a warning. The data logger will not function correctly if the batteries get too low.

Nothing seems to happen when I unplug the USB cable from my data logger. What should I do?

If this happens, simply plug the cable back in and retry the operation.

After using the MS Windows "Safely remove hardware and Remove Media" function to disconnect the data logger from my PC, the screen on my data logger does not seem to display messages properly.

If you use the "Safely remove hardware" function in Windows, you must also detach the USB cable from the data logger, otherwise the data logger might not react properly.

You do not need to use "Safely remove hardware" when disconnecting the USB cable (connected to a data logger) from your PC.

The data logger screen does not seem to turn on. Nothing is displayed and there does not seem to be any reaction when I press the buttons. What should I do?

The battery might be low, and the screen is turned off because the data logger is in power saving mode.

Remember to use the **Reset battery** function when you install fresh batteries, but never use that function unless you actually change the batteries!

Also, check to make sure fresh batteries are installed and inserted in the right direction (+/- polarity according to the image in the battery slot). Contact technical support if the batteries are OK and still nothing is displayed on the screen.

Do I have to reconfigure Wi-Fi if I do a firmware update?

If your data logger has already communicated with your monitoring platform, the existing Wi-Fi configuration is preserved when you do a firmware update.

6.3 Cleaning instructions

You may occasionally need to clean your Cobalt XS Wi-Fi data logger depending on conditions at your site. Here are some recommendations and guidelines for cleaning your data loggers:

1. The data logger may be cleaned using a soft cloth lightly moistened with water or isopropyl alcohol.
2. Do not use any aggressive cleaning agents or scratching cleansers that might damage your data logger.
3. Do not submerse the data logger in any liquid, as the casing is not waterproof.

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