

DATALOG X-PRO 2.0

IoT MULTISENSOR WIRELESS DEVICE

for LoRaWAN™, Sigfox, and GSM networks

Quick Start Guide



Version control

The following table contains the record of changes per manual version.

| Version | Date | Description |
|---------|------------|---|
| 1.1 | 14/03/2023 | Format change. Extensive revision and correction of content. Technical background information update. |
| 1.2 | 24/06/2023 | Version control implemented. |

NOTICE

Read this guide before working with the product. For personal and system safety, and optimal product performance, make sure you thoroughly understand the contents before installing, using, or maintaining this product.

If you encounter a problem with your **Datalog X-PRO**, review the configuration information to verify that your selections are consistent with your application: input configurations; chosen limits; etc. If the problem persists after checking the above, you can have technical assistance at (+57) 3176478281, Monday through Friday, 7:00 a.m. to 5:00 p.m. Eastern Standard Time. You can also write to solutions@omicroniot.com, specialized personnel will discuss your application case.

Please have the following information available:

- All Configuration Information
- All Provided Manuals
- Device ID and the Parts List provided with the equipment.

Contact Information

To reach the **Datalog X-PRO** manufacturer for commercial information, refer to:

- Landline: +57 (604) 4087542
- Mobile: +57 (317)4365062
- comercial@omicroning.co

To reach the **Datalog X-PRO** manufacturer for technical information, refer to

- Landline: +57 (604) 4087542
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Visit us at: <https://omicroniot.com/>

Warning notice standard

This guide contains notices that must be observed in order to ensure personal safety, prevent damage to properties, and guarantee proper installation, use, and maintenance of the equipment.

The notices referring to personal safety or the integrity of the device are highlighted in the guide by an alert symbol; notes regarding recommendations or complementary information to the topics covered in this guide have no safety alert symbol. The notices shown below are graded according to the previous definitions.

Refer to the safety messages indicated by this standard at the beginning of each section before interacting with the device or its components:

⚠ WARNING

Indicates observations that, if not followed, could cause serious personal injuries, or damages to the device. The information in these tables indicates the risks related to each of the topics covered in this guide.



⚠ CAUTION

Indications on the correct use of the equipment, useful to avoid improper operation.



NOTE:

Recommendations and clarifications to take into account in the different topics covered in the guide.

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⚠ WARNING

Failure to follow safe installation guidelines could result in death or serious injuries.

- **Make sure the Datalog X-PRO is installed by qualified personnel** and in accordance with the applicable practice code.
- Use the device only as specified in this manual. Failure to do so may impair the protection provided by it.
- Inappropriate or incorrect use of the product may result in hazards and application-specific malfunctioning; such as damage to system components, due to incorrect mounting or adjustments.
- Do not perform any services besides those covered in this manual, unless you are qualified.
- Any substitution of non-authorized parts or repair, other than exchanging the sensors is prohibited.
- Unauthorized changes to the product are strictly prohibited as they may unintentionally and unpredictably alter the performance and safety.
- Unauthorized changes that interfere with the integrity of the enclosure or mounting holes, such as making additional perforations, compromise the product integrity and safety. **Equipment ratings and certifications are no longer valid on any products that have been damaged or modified without the prior written permission of Omicron IoT Solutions.** Any continued use of a product that has been damaged or modified without prior written authorization is at the customer's sole risk and expense.

Explosions could result in death or serious injuries.

- Verify that the operating environment of the device is consistent with its environmental specifications.
 - **This device is not intended for use in flammable or combustible atmospheres.**
-

Section 1: Introduction

This quick start guide is designed to start or verify the correct operation of **Datalog X-PRO** devices. These devices can measure multiple variables by connecting up to 3 different external sensors, and then send the collected information from the devices to the Centriomega® IoT remote monitoring platform.

To follow this guide you will need:

- **Datalog X-PRO 2.0.**
- Magnet (provided by the manufacturer).
- A device enabled for internet navigation (PC, Tablet, Smartphone, etc.).
- Sensors connected to the **Datalog X-PRO** (optional).

This guide is designed for trained personnel. Read it entirely and carefully before installing and setting up the product.

⚠ WARNING

The procedures and instructions in this manual may require special precautions to ensure the safety of the personnel performing the operations. The information that raises potential safety issues is indicated by a warning symbol. Refer to the safety messages listed at the beginning of each section before performing an operation preceded by this symbol.



1.1 Product recycling and disposal

Recycling of device components and packaging should be taken into consideration and disposed of in accordance with local and national legislation/regulations.

1.2 Storage and transport

The **Datalog X-PRO** is protected by a special packaging during transport and is guaranteed to handle normal loads during transport.

Section 2: Quick Start

2.1 Connection of sensors to the Datalog X-PRO

There are more than 60 different sensors that the user can connect to the **Datalog X-PRO**. **One device can receive up to three different sensors** communicating with the main unit through their sensor interfaces.

The sensors selected can be used to measure multiple and different variables, and be implemented in **different use cases**. For more information about the types of sensors offered with the equipment and their possible applications, refer to **Section 5.1 of the User's Manual of the Datalog X-PRO**.

NOTE:

A sensor can be installed in any of the three Datalog X-PRO ports, however, once the installation is complete, it is necessary to relate them to the Monitoring Platform. For that reason, once the configuration is done, avoid changing any sensor to another port, as this could cause confusion and erroneous readings on the monitoring platform.

1. Align the marked guide on the sensor cable with the port.
2. Push gently into the connector until it bottoms out.
3. Screw the sensor so that it is fixed.
4. Pull slightly on the sensor and check that the sensor is securely attached to its port.



Figure 2-1 Sensor Connection

2.2 Power the Datalog X-PRO

Among other hardware and firmware protections, the Datalog X-PRO is protected against power interruptions with its battery; which can supply energy for up to 180 days (depending on the sensors implemented and the data upload period to the remote monitoring platform). Thanks to that, **the user can consider using the device without connecting it to a power source in combination with the sensors that allow it, and recharging the battery whenever necessary.**

Alternatively, the **Datalog X-PRO** is provided with a terminal connected to its internal power supply circuit; so the user can connect for outdoor use an **industrial power supply from 12 to 24 VDC or a Solar Panel** with the proper terminal. Likewise, and only for indoor use, the user can connect the device to a **12 VDC AC/DC power adapter** (supplied).

⚠ WARNING

Exceeding the voltage ranges related to the power supply could cause damage or unpredictable operation, which could result in death or severe personal injuries and/or property damages. To avoid any risk, the Datalog X-PRO manufacturer could be reached to receive further assistance on how to properly connect the device. Remember that the Contact Information is provided at the beginning of this document.



2.2.1 Indoor use: AC/DC adapter connection (Supplied)

1. Connect the adapter's male plug to the female socket (See Figure 2-2).
2. Connect the power adapter to a wall mains electricity 110 VAC-220 VAC, 50-60Hz.



Figure 2-2 AC/DC adapter connection

2.2.2 Outdoor use: Connection to a solar panel or to an industrial power supply (Not Supplied)

⚠ CAUTION

Always observe the following safety instructions:



- Connections must be made only in the complete absence of line voltage.
- If over-voltage is expected, surge arresters should be implemented by the user.
- For outdoor use, the user could use a UL, CSA, CE, or EN safety-certified, with dual insulation between its primary and output for powering the Datalog X-PRO, and waterproof-approved power supply or a solar power system; the output rating must be limited to 12VDC/0.5A or 24VDC/0.25A for a single Datalog X-PRO.
- **In any case**, a 12VDC/0.5A 6W or 24VDC/0.25A 6W fuse and circuit breakers should be used between the power supply and the device.

1. Connect the power cable terminal of the Datalog X-PRO to the output of a **12VDC/0.5A 6W or 24VDC/0.25A 6W fuse and/or circuit breaker** suited for outdoor use, and these to the power supply.

Table 2-1 Datalog X-PRO Connections

| Wire Color | Description |
|------------|-----------------------|
| Red | Positive power supply |
| Black | Negative power supply |

The following image illustrates how to connect the referred protection and disconnection elements to the Datalog X-PRO and the solar panel:

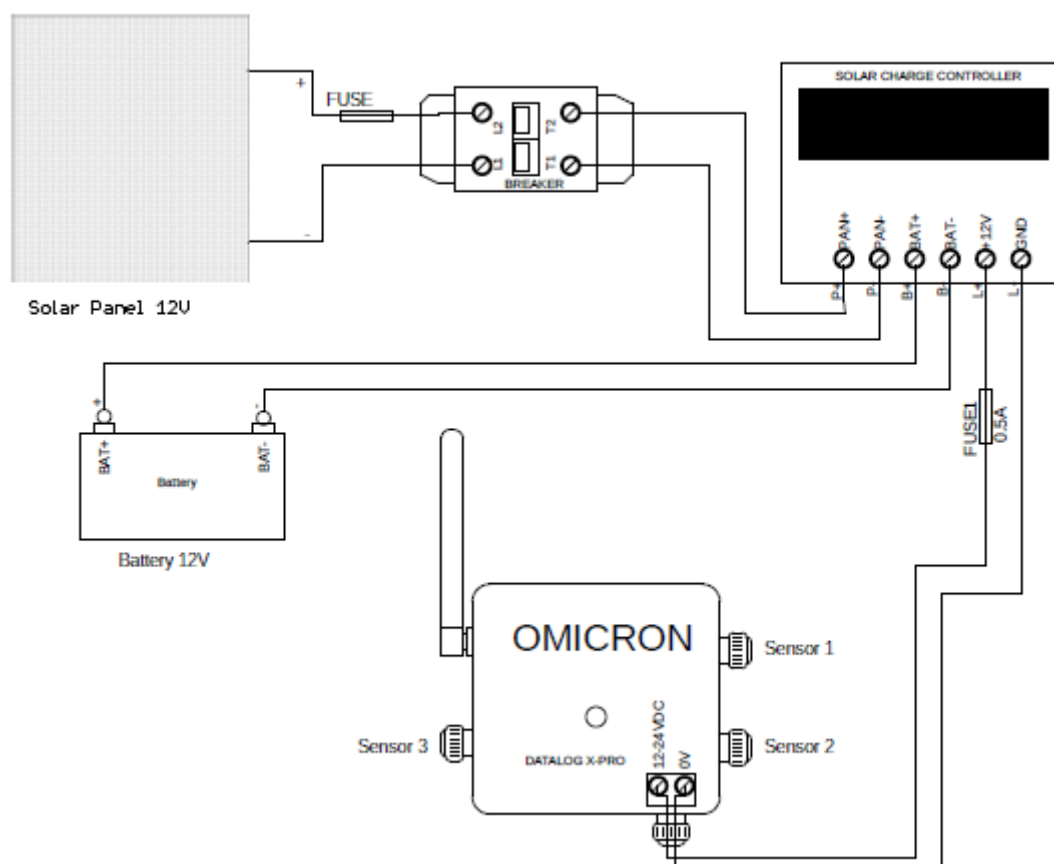


Figure 2-3 Schematic of Installation of the Datalog X-PRO with a Solar Panel System

2. Follow the guidelines of the solar panel and solar charge controller device manufacturers for their mounting:

- Calculate the total power of the system adding the power of the individual sensors connected to the Datalog X-PRO.
- Calculating the power of the solar panel and battery depends on the solar radiation present at the installation place.
- Calculate the value of the fuse and the primary breaker to protect the system depending on the energy generated by the solar panel and the recommendations given by the manufacturers of the solar panel and the solar charge controller.

3. Loosen the terminal block screws located inside the Solar Panel terminal box.

4. Connect the Breaker and the Fuse to the primary circuit, between the Solar Panel and the Solar Charge Controller.

NOTE:

It is recommended to install the Datalog X-PRO below the Solar Panel (See Figure 4-3), since this can prevent overheating of the device caused by direct sunlight over it.

It is recommended to cover the terminal box of the solar panel with a layer of silicone after mounting and connecting it, to ensure its protection against the ingress of water or dust.

Remember that the protection elements must be suitably located and easily reachable. Also, said components must be marked as the disconnecting mechanism from an external power source for the monitoring system.



Figure 2-4 Reference installation of the Datalog X-PRO with a Solar Panel

2.3 Turn on the device

The **Datalog X-PRO** is delivered in sleep/off state. The equipment also turns off when it is disconnected from its power sources or is forced to do so, after approaching a magnet for 10 seconds, to the opposite side of the antenna.

To wake it up for the first time, join the magnet provided one time near the main unit top cover (See Figure 2-5); after this, the system will automatically enter Normal Operating Mode, which can be recognized by checking the LED on the top cover of Main Unit's enclosure (LED Indicator, from now on); if it flashes blue sporadically (almost, once a minute), the device reports correct operation. Also, in Normal Operating Mode, as long as a magnet is placed near the Main Unit, as described in Figure 6-1, the LED Indicator will shine red.



Figure 2-5 Proper position to locate the programming magnet near the Datalog X-PRO

2.4 Send data via Sigfox or LoRaWAN Network™

The publication time configured for each sensor will naturally limit the data transmissions executed by the **Datalog X-PRO**, however, once the device is turned on, you can force it to send data through the Sigfox network or the LoRaWAN network™, as configured. To do this, briefly approach the magnet 2 times to the Datalog X-PRO as shown in Figure 2-5. **The LED will indicate that the magnet has been correctly approached by illuminating red.**

After briefly approaching the magnet 2 times, the main LED of the device will flash blue to show that it is reading its peripherals, and then it will flash green or yellow-green to indicate that it is sending information, depending on the zone and the configured protocol. After this, the LED will remain on while the device finishes sending the data frame.

2.5 Mounting the device

The enclosure of the Main Unit of the **Datalog X-PRO** is a standard ABS plastic box, with brackets for pole mounting, or covered perforations for wall mounting.

NOTE:

The system should be installed with all peripherals attached, to mount the assembly as a single block. It is strongly recommended to install the antenna so that its axis is vertical with respect to the ground, as this favors the range of the signals transmitted by the device.

Consider clearing a square area, of 25 cm at each side, of the plane in which the Datalog X-PRO needs to be installed. Mount the system near the center of said clear space, to leave enough margins to comfortably install its peripherals, as shown below:



Figure 2-6 Recommended free space around the Datalog X-PRO

To secure the Main Unit enclosure to a wall:

1. Find the mounting holes covered by the blind lids at the top and bottom borders of the Main Unit enclosure (3, in **Figure 2-7**)
2. Prepare the surface on which the Main Unit will be placed, taking into account the distance between the holes previously found (which is 81mm).
3. Use M3 screws (nuts, washers, or plastic anchors, as needed) to fix the device where it is required.

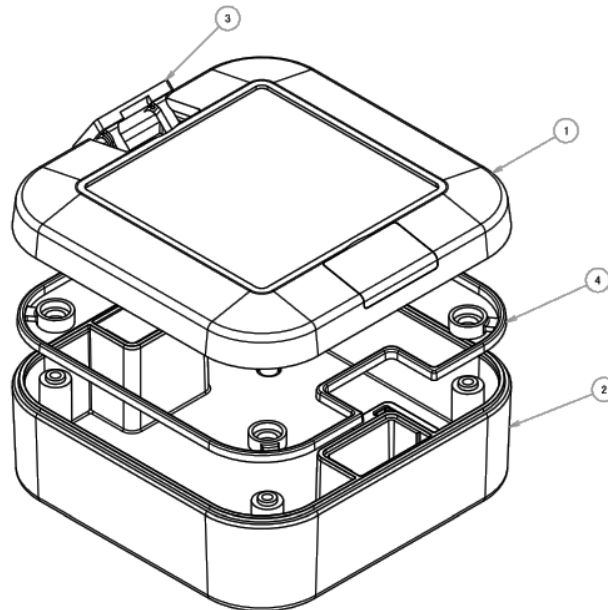


Figure 2-7 Main Enclosure Elements

To mount the Main Unit on a pole:

1. Find the mounting holes covered by the blind lids at the top and bottom borders of the Main Unit enclosure (3 in **Figure 2-7**).
2. Attach the pole mounting bracket accessories that come with the delivery to the Main Unit, using the screws provided by the manufacturer.
3. Finally, fasten the Main Unit to its pole using proper mounting straps.



Figure 2-8 Reference example of a similar device mounted on a pole

NOTE:

Avoid placing the device inside metal cabinets or near metal structures and columns, this may reduce the radiation pattern of the device and damage the communication ability of the **Datalog X-PRO**.

2.6 Access the Remote Monitoring Platform

To review the data sent to the Remote Monitoring Platform, access iot.omicroning.co (the entry form is displayed below), with the credentials provided by the manufacturer of the **Datalog X-PRO** or your dealer:



Figure 2-9 Remote Monitoring Platform entry form

If you don't have login credentials, contact your device dealer or manufacturer. **Remember that contact information is provided at the beginning of this document.**

2.7 Check the dashboard of the device in the Remote Monitoring Platform

After accessing the remote monitoring platform supported by the manufacturer of the **Datalog X-PRO**, you can review the information sent by your device on your unique Dashboard.

To do this, access the platform (following the instructions in **Section 2.6**), go to 'Dashboards' (1, in Figure 2-10); then, select the list of dashboards (2, in Figure 2-10) and select the dashboard with your device ID (3, in Figure 2-10). The unique identification of each device is marked on its rear label (**If you cannot find the device ID on the label, please refer to Datalog X-PRO User's Manual, Section 10.5**).

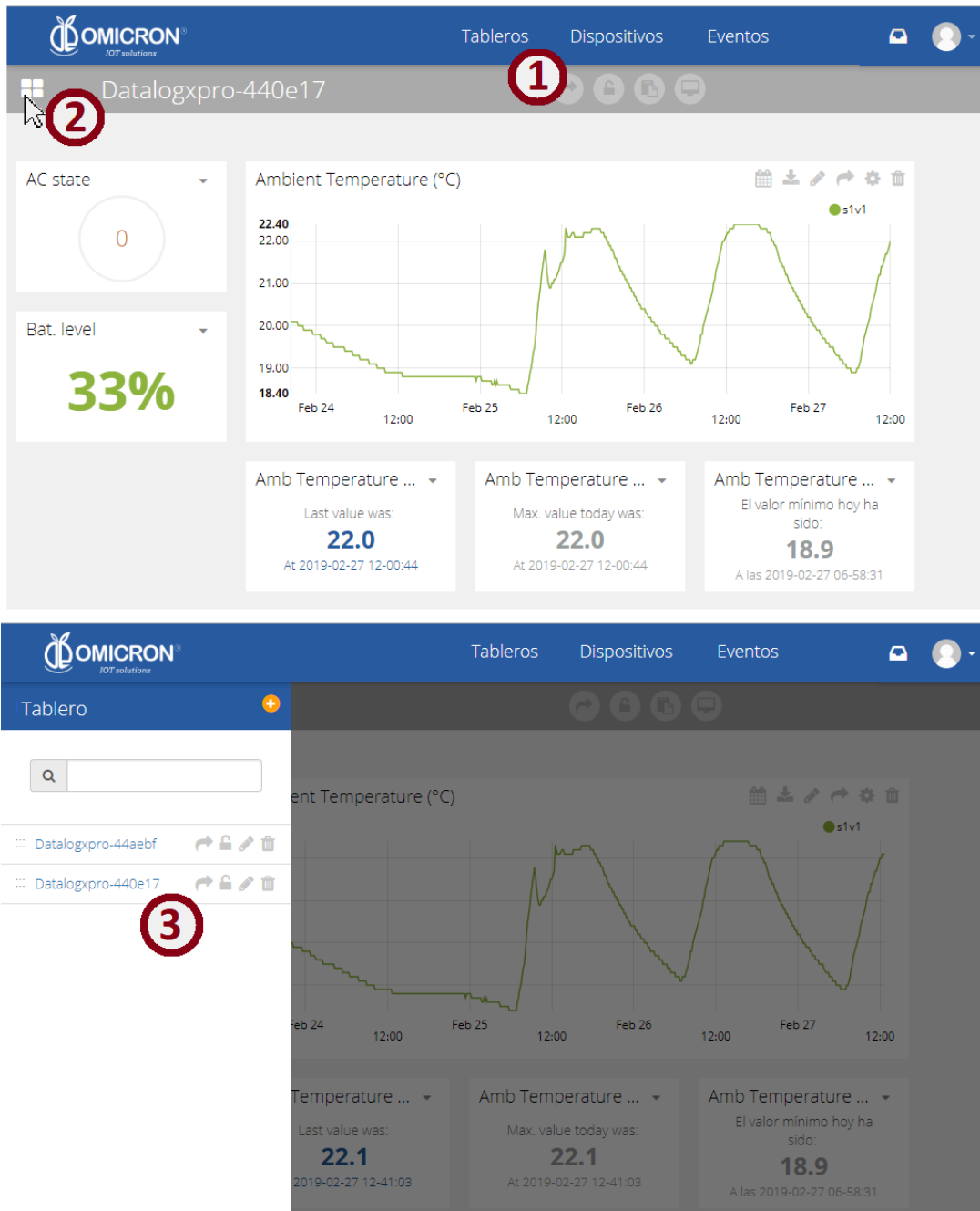


Figure 2-10 Steps to view a specific Dashboard

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