

KONTROLOG

INTERNET OF THINGS SYSTEM FOR REMOTE AND REAL-TIME MONITORING AND CONTROL

For LoRaWAN™, Sigfox, and Wi-Fi Networks

Quick Start Guide



Version control

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

Version	Date	Description
1.6	21/03/2023	Format change. Extensive revision and correction of content. Technical background information update.
1.7	24/06/2023	Version control implemented. Device image changed.

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 **Kontrolog**, 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 **Kontrolog** manufacturer for commercial information, refer to:

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

To reach the **Kontrolog** manufacturer for technical information, refer to

- Landline: +57 (604) 4087542
- Mobile: +57 (317)6478281
- solutions@omicroniot.com

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 Kontrolog 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 initiate or verify the correct operation of the Kontrolog controllers; even before they are mounted. With these devices, it is possible to measure variables from up to five (5) analog or digital sensors; as well as control processes through five (5) relay outputs. The information collected by the device is then sent to the Centriomega® monitoring platform.

To follow this guide you will need:

- A Kontrolog.
- Power cable, for connection to the 110 - 220 VAC, 50/60 Hz lines.
- An internet-enabled device (PC, tablet, smartphone).
- Additional cables, cable joints, and tools for electrical work (screwdriver, wire stripper, and a multimeter, among others).

The guide is designed for trained personnel. Please read it thoroughly and carefully before unpacking and installing the products.

⚠ 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 / 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 **Kontrolog** is protected by a special packaging during transport and is guaranteed to handle normal loads during transport.

Section 2: Quick Start

2.1 Connect the external sensors

⚠ CAUTION

Please note the following instructions:

- Connections should be made only in the total absence of supply voltage, and by trained technical personnel.
- Before energizing the equipment, check the firmness and continuity of the connections you make.



The Kontrolog can receive up to:

5 Analog/Digital Inputs, which can be configured as:

- Analog (4-20mA / 0-10V) or digital (by dry contact) inputs.
- Thermistor NTC 10K - 3950.
- Analog ambient temperature and humidity sensor.
- Digital pulse counter.
- Frequency meter (Input 5 only, up to 20kHz).

1 Input for battery 6/12 VDC, also measures DC supply voltage.

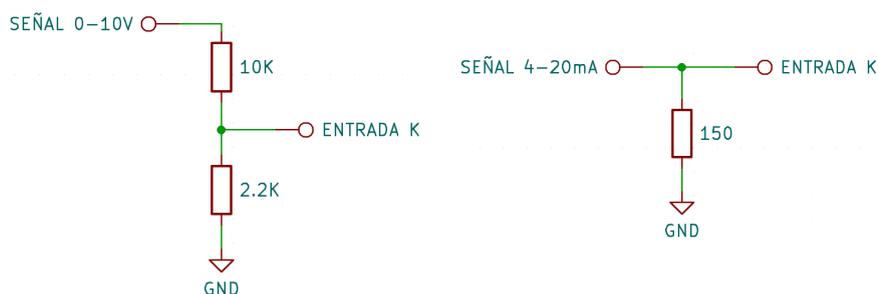
Input for 110/220 VAC power supply, also measures AC supply voltage.

One (1) Input for current transformer to measure AC current in the ranges:

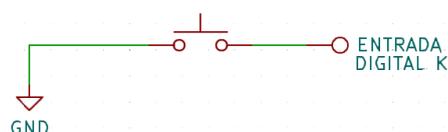
- 0 to 30 A
- 0 to 50 A
- 0 to 100 A

A Modbus RTU (RS-485) input port that operates as a master in the network, with which up to five different external sensors can be read.

The Kontrolog uses a resistive circuit to adapt the analog input signals for sensors in the described ranges (4-20mA / 0-10V). **This circuit can be ordered as an additional module at the time of purchase of the device**, or it can be built by the user. In the latter case, use the schematics shown below as a guide:

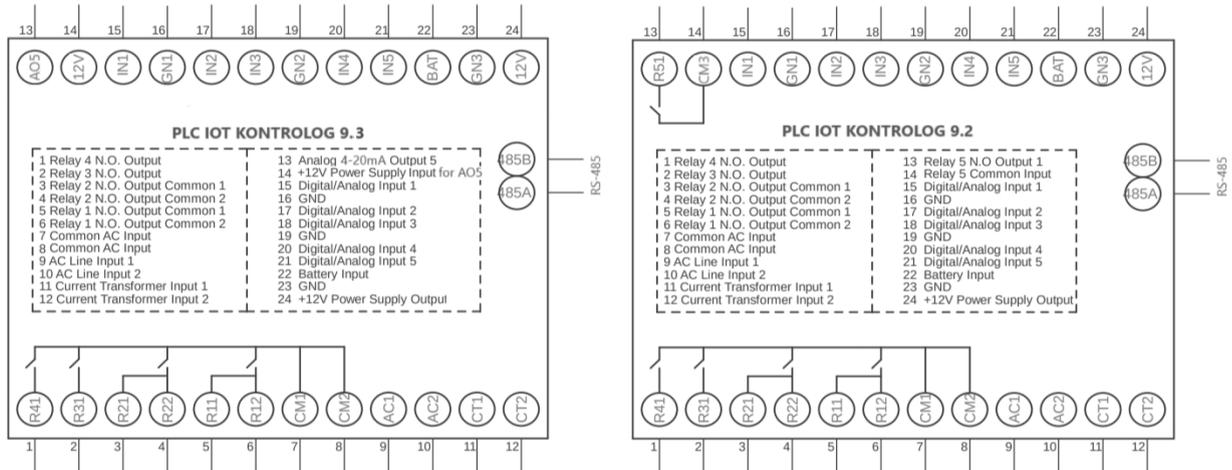


And for digital dry contact input:



With the above in consideration, you can connect the input sensor wires to the device's terminals using a knob screwdriver. **Verify and check the firmness and continuity of the connections you make.**

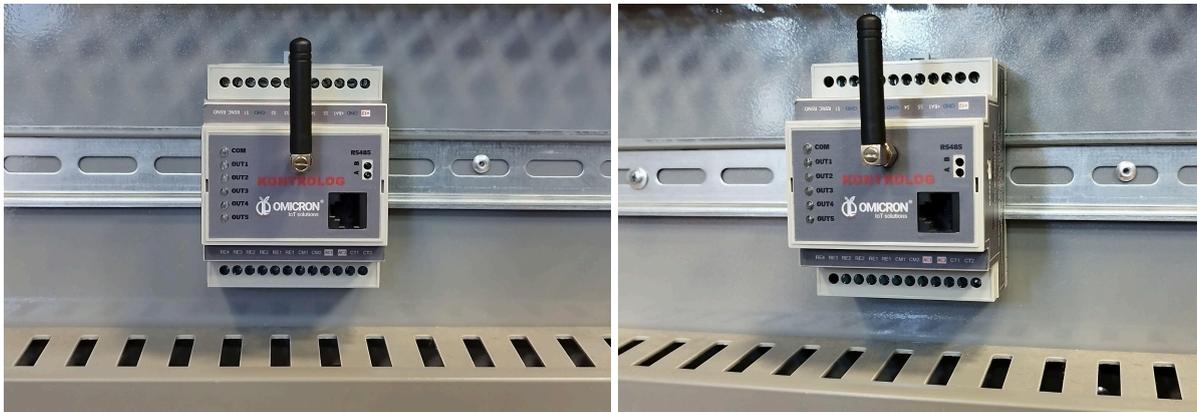
The following is the connection diagram of the Kontrolog 9.2 and 9.3 device:



2.2 Mounting the device

The device allows mounting on DIN rails for cabinets or industrial electrical panels. For this purpose, it has two tabs on the back that adjust to the rail geometry.

Also, a plastic enclosure with IP67 protection and 6V 0.2A battery can be ordered as an additional module at the time of purchase for applications requiring outdoor mounting.



2.3 Power the device to turn it on

The Kontrolog is powered by a two-wire power cable connected to its AC1 and AC2 inputs (shown in Figure 2-1) and connected to the 110 - 220 VAC, 50/60 Hz lines. In turn, the AC1 line can be jumpered to the terminals CM1 and CM2, if you wish to use either of the 12A relay outputs: RE1 or RE2 (note that each 12A output uses 2 terminal blocks).

⚠ CAUTION

Please note the following instructions:

- Connections should be made only in the total absence of supply voltage, and by trained technical personnel.
- If overvoltage events are foreseeable, surge protectors should be used.
- Before energizing the equipment, check the firmness and continuity of the connections you make.
- **A disconnect switch should be used between the equipment and its power source, and a 0.5A, 6W fuse should be used between the power source and the device.**



Once the equipment is energized, it will start its **Normal Operation State**, which can be recognized when the LED shown in Figure 2-1 flashes every second.

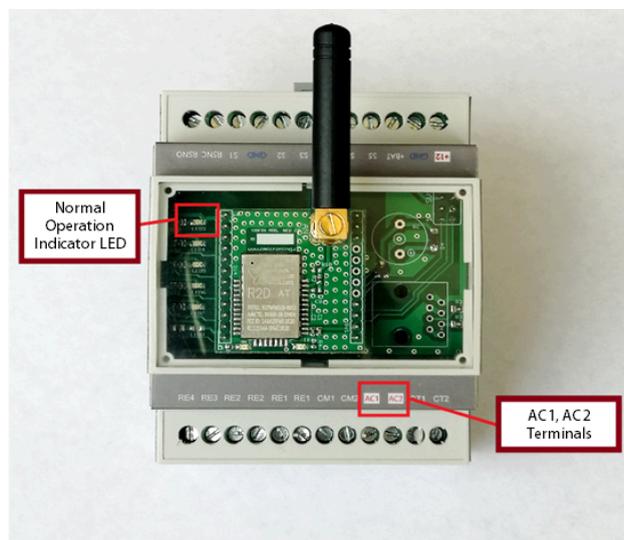


Figure 2-1 Elements of interest of the Kontrolog

2.4 Send data wirelessly

While the device is in **Normal Operating Mode**, it will proceed to periodically send the data measured by its enabled sensors (according to the minutes specified by the Publish Time parameter); using its communication module. **In case of using a module for connectivity technologies such as Sigfox or LoRaWAN, the device will connect automatically at power up; however, in the case of using a module for Wi-Fi® connectivity, you must connect the equipment to the remote monitoring platform following the steps in Section 2.2.1.**

NOTE:

In order to be able to connect to the Sigfox network, LoRaWAN, or a Wi-Fi® network, the device must have an internal communication module that allows it. If you have not ordered one, you can request it from the manufacturer.

Remember that contact information is provided at the beginning of this document.

2.4.1 Connect the device to a Wi-Fi® network

To configure the Wi-Fi® network to which you want to connect, the Kontrolog device generates a temporary Wi-Fi® network for 2 minutes upon power-up, using its in-built Wi-Fi® module. This network is named "IoTDevice_", followed by the device ID (e.g. "IoTDevice_bcddc212345"). You will need to connect to this network with a device capable of browsing on the Internet (such as a Smartphone, Tablet, or PC).

Once connected to the network, you must access the page with the IP address: 192.168.4.1 (whose interface is shown in Figure 2-2). It is possible to access the indicated page through any internet browser; there you will find a menu with the buttons "Configure WiFi" and "More Info".

NOTE:

The Wi-Fi® network temporarily generated by the device is only to allow the user to wirelessly connect to the device and configure it via a local web page. Therefore, this Wi-Fi® network does not provide Internet browsing; it only provides access to the web page designed to configure the **Kontrolog**.



Figure 2-2 Kontrolog general configuration page

To configure the credentials (name and password) of the network that will give internet access to the **Kontrolog** device, proceed as follows:

1. **On the General Settings Page (Figure 2-2), press the Configure Wi-Fi button** to go to a page where you can see a scan of the Wi-Fi® networks detected by the **Kontrolog**, two fields for entering data, and two buttons (Save and Scan).

The page that loads after selecting **Configure Wi-Fi** is shown in the following image:

KONTROLOG

OMICRON1	100%
ConsulsarSAS	94%
MARIAPRECIADO	40%
GUTIERREZ	36%
Agencia De Seguros	28%
HP-Print-16-LaserJet 1102	26%
<input type="text" value="OMICRON1"/>	
<input type="password" value="password"/>	
<input type="button" value="save"/>	
Scan	

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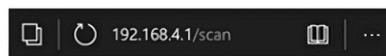


Figure 2-3 Wi-Fi® configuration page of the Kontrolog

- In the fields at the bottom of the Wi-Fi® setup page (Figure 2-3), **enter the credentials (name and password) of the network to which you want to connect the Kontrolog; then press Save.** If you want to connect the device to an open network, you do not need to enter a password.
- If the entered credentials are not correct, the following page will appear:

KONTROLOG CONFIG.

!! ERROR: Check Your SSID And Password !!

Figure 2-4 Invalid Wi-Fi® configuration page

Otherwise, you will see:

KONTROLOG CONFIG.

!! CORRECT !!
Settings Saved

Figure 2-5 Correct Wi-Fi® configuration page

2.5 Login to the remote monitoring platform

To review the data sent to the Omicron IoT Solutions Remote Monitoring Platform, **log in to iot.omicroning.co** (login form below), using the credentials provided by the **Kontrolog** manufacturer:



Figure 2-6 Remote Monitoring Platform login form

If you do not have login credentials, please contact the vendor or manufacturer of the device. **Remember that you can find the contact information at the beginning of this document.**

2.6 Review the device dashboard in the remote monitoring platform

After logging into the platform for remote monitoring, offered by the **Kontrolog** manufacturer, you can review the information sent by your device on its single Dashboard.

To do this, login to the platform, go to 'Dashboards' (1, in Figure 2-7); then enter the list of Dashboards (2, in Figure 2-7) and select the Dashboard with your device ID (3, in Figure 2-7). The unique ID of each device is marked on its back label.

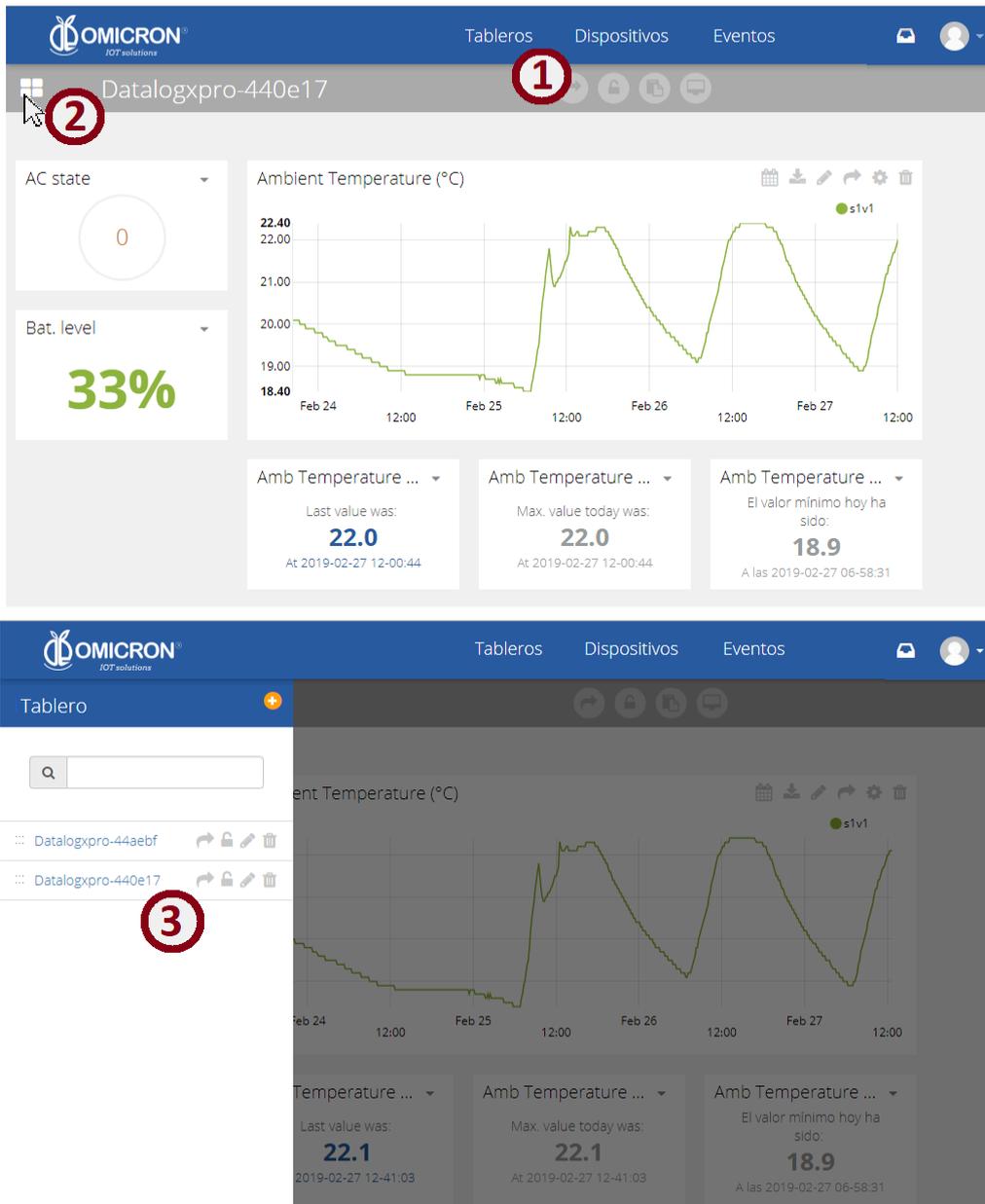


Figure 2-7 Steps to view a specific Dashboard

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