



Power quality analyser

VLOG-10




INSTRUCTION MANUAL


(M091B01-03-18A)




SAFETY PRECAUTIONS


Follow the warnings described in this manual with the symbols shown below.

	<p>DANGER Warns of a risk, which could result in personal injury or material damage.</p>
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	<p>ATTENTION Indicates that special attention should be paid to a specific point.</p>
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If you must handle the unit for its installation, start-up or maintenance, the following should be taken into consideration:

	<p>Incorrect handling or installation of the unit may result in injury to personnel as well as damage to the unit. In particular, handling with voltages applied may result in electric shock, which may cause death or serious injury to personnel. Defective installation or maintenance may also lead to the risk of fire. Read the manual carefully prior to connecting the unit. Follow all installation and maintenance instructions throughout the unit's working life. Pay special attention to the installation standards of the National Electrical Code.</p>
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	<p>Refer to the instruction manual before using the unit In this manual, if the instructions marked with this symbol are not respected or carried out correctly, it can result in injury or damage to the unit and /or installations.</p>
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CIRCUTOR, SA reserves the right to modify features or the product manual without prior notification.


DISCLAIMER

CIRCUTOR, SA reserves the right to make modifications to the device or the unit specifications set out in this instruction manual without prior notice.

CIRCUTOR, SA on its web site, supplies its customers with the latest versions of the device specifications and the most updated manuals.

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	<p>CIRCUTOR, recommends using the original cables and accessories that are supplied with the device.</p>
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REVISION LOG

Table 1:Revision log.

Date	Revision	Description
06/18	M091B01-03-18A	Initial Version

SYMBOLS

Table 2: Symbols.

Symbol	Description
CE	Compliant with the relevant European standards.

Note: The images of the devices are for illustrative purposes only and may differ from the original device.

1.- VERIFICATIONS UPON RECEPTION

The following must be checked upon reception of the device:

- a) The device has been supplied according to the specifications in your order.
- b) The device has not been damaged during transport.
- c) Perform an external visual inspection of the device before connecting it.
- d) Check that it has been supplied with the following:
 - An installation guide
 - 1 power supply terminal strip
 - 1 USB cable



Immediately contact the carrier and/or **CIRCUTOR's** after-sales service if you detect any problem in the device upon reception.

2.- PRODUCT DESCRIPTION

The **VLOG-10** power quality analyser is a programmable measuring instrument that measures, calculates and records the mains voltage in its memory. It also monitors the different events that can occur in a single-phase mains.

The **VLOG-10** records true RMS measurements with the power supply voltage, recording the results in its internal memory and then uploading them to a PC.



The device features:

- **1 button**, to reset the log memory.
- **3 indicator** LEDS.
- **1 USB** connector, to connect and download data onto a PC.

3.- INSTALLING THE DEVICE

3.1.- PRELIMINARY RECOMMENDATIONS



In order to use the device safely, it is critical that individuals who handle it follow the safety measures set out in the standards of the country where it is being used, use the personal protective equipment necessary (rubber gloves, face protection and approved flame-resistant clothing) to prevent injuries due to electric shock or electric arc due to exposure to current-carrying conductors and pay attention to the various warnings indicated in this instruction manual.

The **VLOG-10** must be installed by authorised and qualified staff.

The power supply must be disconnected before handling, altering the connections or replacing the device. Handling the device while it is connected is hazardous to people nearby.

It is essential to keep the cables in a perfect condition to avoid accidents, personal injury and damage to installations.

Limit the operation of the device to measuring the specified current or voltage values.

The manufacturer of the device shall not be held responsible for any damage resulting from the user or installation company failing to observe the warnings and/or recommendations indicated in this manual nor for any damage resulting from the use of non-original products or accessories or those from other brands.

Inspect the device before using it. Make sure that there are no cracks and that the housing is intact.

Do not use the device to take measurements if you detect an anomaly or malfunction.

Check the environment in which the device is installed before taking a measurement. Do not use the device to take measurements in dangerous, explosive, wet or damp environments.




The device must be disconnected from any power supply before carrying out any maintenance or repairs, or handling any of the device's connections. Contact the after-sales service if you detect that the device is not working properly.





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3.2.- INSTALLATION

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While the device is connected, the terminals, opening the cover or removing elements may expose hazardous live parts. The device must not be used until the installation process is complete.
- 

The device features a sliding door that **PREVENTS** the two connectors from being connected at the same time, due to the risk of electrocution: Mains and USB.
- 

Never tamper with the mechanical sliding door to enable both connections at the same time.
There is a risk of electrocution and/or destruction of the connected devices (VLOG-10 and PC)

Check the following points before connecting the device:

- **Power supply and voltage measurement:**
 - ✓ Single-phase voltage: **85 to 265 V~**
 - ✓ Frequency: **50 to 60 Hz**
 - ✓ Device consumption: **0.8 to 1.2 VA**
- **Operating conditions:**
 - ✓ Operating temperature: **-10 to 55°C**
 - ✓ Operating humidity: **25 to 75 % RH**
- **Safety:** CAT III 300V

3.3.- TERMINALS OF THE DEVICE

Table 3: List of the VLOG-10's terminals.

Terminals on the lower side of the eBOX 150 device	
1: L, Power supply / mains input	3: USB, USB connector
2: N, Power supply / mains input	

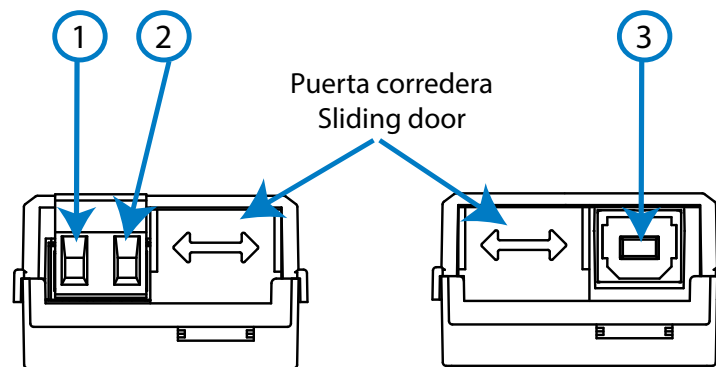


Figure 1: VLOG-10 terminals.

3.4.- CONNECTION DIAGRAMS

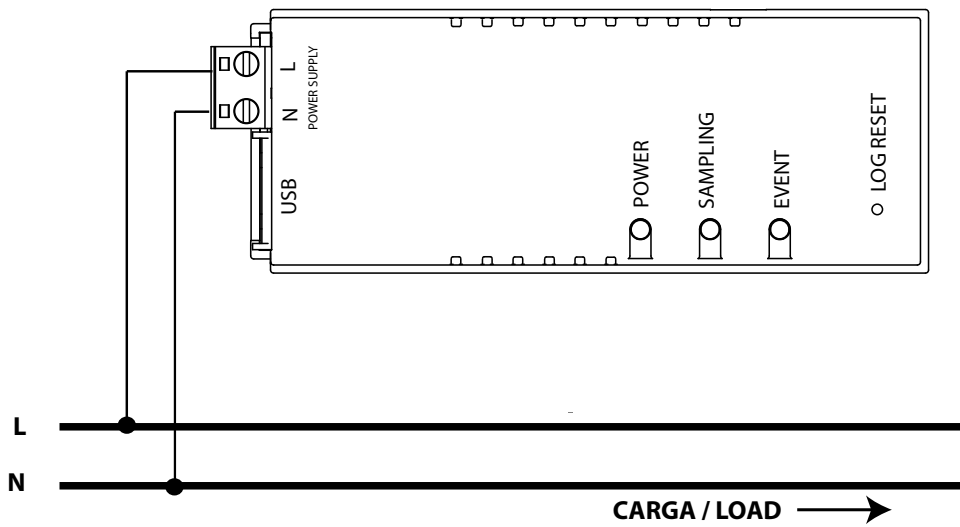


Figure 2: VLOG-10 connection diagram.

3.5.- START-UP

It is necessary to follow these steps before starting the device:

1.- Remove the seal from the internal battery. To do this, pull the seal in the direction of the arrow, as shown in, **Figure 3**.

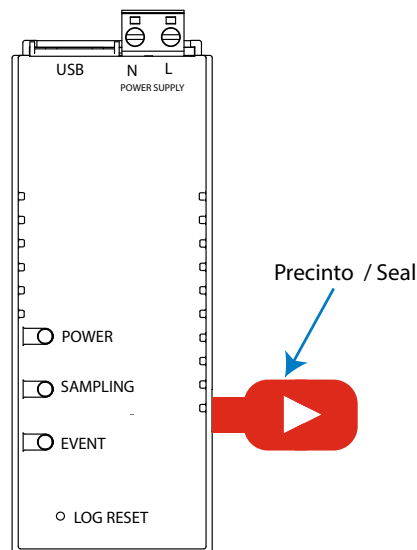


Figure 3: Seal from the internal battery.

2.- Configure the device. To do this, connect the device to the USB port of a PC and follow the instructions described in section "**5.- DISPLAY AND CONFIGURATION.**", to install the **VLOG-10 Software** configuration application.

When you start the application with a new device connected, the screen in **Figure 4** is displayed. Click on **Yes** and configure the device, see "**5.3.- CONFIGURATION**".

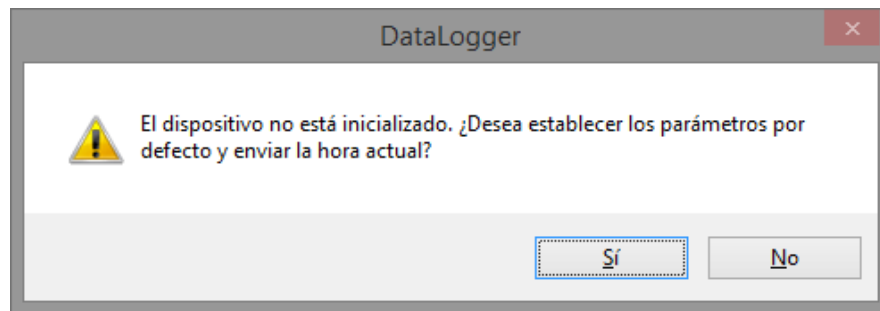


Figure 4:Information screen when a new device is connected.

The device is now prepared to operate autonomously after it has been connected to the mains.

The device will then start to sample and record values according to the configuration established in the setup parameters.

4.- OPERATION

4.1.- OPERATING PRINCIPLE

The device is prepared to operate autonomously when it has been connected to the mains, after which it will start to measure and calculate both the voltage and frequency, recording any data and incidents. These records are stored according to the settings established in the setup parameters.

A PC and the **VLOG-10 Software** application are used to configure the device and its parameters and upload the recorded data.

4.1.1.- VOLTAGE ANALYSIS

The mains voltage is analysed using a 12-bit resolution analogue-to-digital converter. The sampling frequency is adaptive, according to the signal frequency that is detected.

This frequency may range from 10 to 12 kHz, depending on the mains voltage frequency (50 or 60 Hz respectively). This results in the device performing 200 voltage measurements per period, irrespective of the mains frequency.

The mains voltage RMS is calculated using the following mathematical equation:

$$V_{RMS} = \sqrt{\frac{\sum_{n=0}^{N-1} (V_n)^2}{N}}$$

Equation 1: Calculation of the mains voltage RMS.

The device calculates and analyses the RMS input voltage of each complete period, with an adaptive frequency of:

$$F_{sampling} = \left(\frac{N}{Sampling_period} \right)$$

Equation 2: Adaptive sampling frequency.

Where, for a standard mains frequency of 50 Hz, it would be:

$$F_{sampling} = \left(\frac{200}{20\ ms} \right) = 10\ kHz$$

Equation 3: Sampling frequency (mains: 50 Hz).

In the case of a mains frequency of 60 Hz:

$$F_{sampling} = \left(\frac{200}{16.6\ ms} \right) = 12\ kHz$$

Equation 4: Sampling frequency (mains: 60 Hz).

When the **VLOG-10** device has calculated the RMS input voltage for a period, it can generate three types of events: **Voltage gap**, **overvoltage** and **Voltage interrupt**.

✓ **Voltage gap**

If during a measurement interval of two complete periods, the voltage that is measured is below the **Lower voltage level** configuration parameter and above 85 V~, the level at which a Voltage gap occurs, a **Voltage gap** event is generated and stored in the device's memory as an asynchronous event. (See "5.3.- CONFIGURATION")

✓ **Overvoltage**

If during a measurement interval of two complete periods, the voltage that is measured is above the **Higher voltage level** configuration parameter, an **overvoltage** event is generated and stored in the device's memory as an asynchronous event. (See "5.3.- CONFIGURATION")

✓ **Voltage interrupt**

The user cannot configure this parameter. It is an asynchronous event and is only generated when the mains voltage measured by the device is lower than the minimum operating voltage, i.e. 85 V~, during an interval of two complete periods

4.1.2.- FREQUENCY ANALYSIS

The frequency is calculated by measuring the time that has elapsed between five successive zero-crossings (changes from positive to negative voltages or vice versa) of the input voltage. In other words, two periods of the mains voltage.

The **VLOG-10** device can generate an event associated with the frequency measurement: **Frequency variation**.

✓ **Frequency variation.**

If the frequency measured in the mains is lower or higher than the **Frequency deviation threshold** configuration parameter, a **frequency variation** event is generated, and this is stored in the device's memory as an asynchronous event (See "5.3.- CONFIGURATION")

The **Frequency deviation threshold** is applied as the upper or lower level of the nominal frequency. In other words, the interval is always symmetrical to the nominal value.

4.2.- MEASUREMENT PARAMETERS

The device records different types of parameters and events, divided into two categories, with the time and date on which they occurred:

- ✓ Logs
- ✓ Events

The parameters are stored in an internal memory, which is capable of storing up to 10880 logs or events.

4.2.1.- LOGS

These are the mains voltage measurements in RMS value.

They occur synchronously, i.e. they are stored in the memory at certain intervals that are established in the device's configuration.

4.2.2.- EVENTS

Events are occurrences or incidents detected on the mains.

They are generated asynchronously and are stored in the memory at the precise moment when they are detected.

VLOG-10 can analyse and record the following events:

Table 4: Events recorded.

Event	Description
Device start-up	Event logged in the memory when the device is starting up.
Voltage gap	Event logged in the memory when the voltage level is below the threshold defined in the device's pre-configuration and above 85 V~.
Overvoltage	Event logged in the memory when the voltage level is above the threshold defined in the device's pre-configuration.
Voltage interrupt	Event logged in the memory when the voltage level is below 85 V~.
Frequency variation	An event that occurs when a fluctuation in the mains's input frequency is detected (50 or 60 Hz), through the configuration of a threshold that is defined in the device's pre-configuration.
Memory deletion	Event logged in the memory, indicating the time and date on which the stored data was deleted (events and logs).

4.3.- RESET BUTTON

The **VLOG-10** device has a **LOG RESET** button for resetting the log memory used to store logs and events.

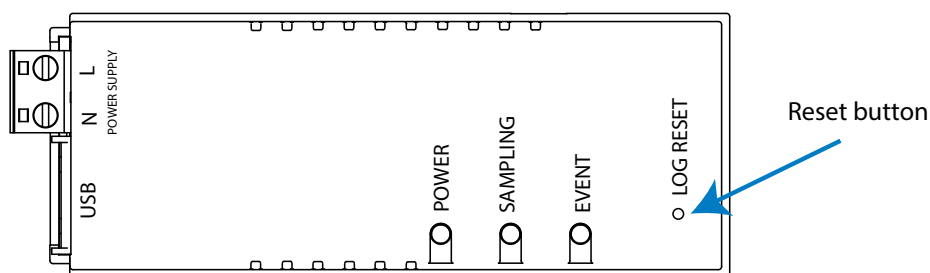


Figure 5:Reset button

The device must be connected to the PC in order to delete the memory.

If it is connected and the device is switched on and you hold down the button for 2 to 5 seconds, all data stored to date will be deleted.

4.4.- LED INDICATORS

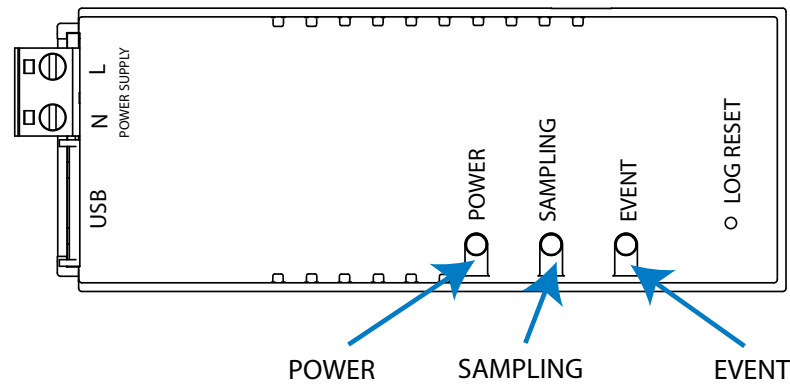


Figure 6:VLOG-10 indicator LEDs.

The **VLOG-10** has 3 indicator LEDs, **Figure 6** :

- ✓ **POWER**, red indicator light showing when the device is plugged into the mains or a PC's USB port.
- ✓ **SAMPLING**, green indicator light.
- ✓ **EVENT**, red indicator light.

The **SAMPLING** and **EVENT** LEDs have different meanings, depending on the current operating status of the device. These statuses are divided into two groups:

- ✓ **Analysis of the mains** (power supply terminal strip connected).
- ✓ **Data uploading to the PC** (USB connected to PC).

4.4.1.- MAINS ANALYSIS

In this analysis mode, the steady **SAMPLING** LED indicates that the device is analysing the mains and storing Logs according to the set parameters. Meanwhile, the **EVENT** LED indicates that some form of incident has occurred in the mains.

If the **SAMPLING** LED is off when the device is connected to the mains, this means that the device is not storing Logs or Events. When in this state, the **EVENT** LED indicates the unexpected event that is preventing the device from recording data.





The following different statuses may occur:

A.- The device is able to analyse and store the records of Logs / Events.

Table 5: LED status: Analysis of the mains (table 1)

Status	SAMPLING	EVENT
Device analysing the mains without incident	● (x1)	●
Device analysing the mains with Voltage interrupt detected	● (x1)	● (x1)
Device analysing the mains with voltage threshold exceeded (lower or upper)	● (x1)	● (x2)

Table 5 (Cont.): LED status: Analysis of the mains (table 1)

Status	SAMPLING	EVENT
Device analysing the mains with frequency deviation detected (lower or upper)	 (x1)	 (x3)
Device analysing the mains with low battery detected (< 2.2 V)	 (x2)	 (*)

Note: In the **SAMPLING** and **EVENT** columns, the number of flashes in each 2-second interval is shown in brackets:











(x1) One 0.2-second flash in 2-second intervals.

(x2) Two 0.2-second flashes in 2-second intervals.

(*) Number of flashes as per above cases

B.- The device is not analysing or storing any logs in the memory due to a serious issue.

Table 6: LED status: Analysis of the mains (table 2)

Status	SAMPLING	EVENT
Device has no preconfigured time		 (x1)
Battery drained (<1.7 V)		 (x2)
RAM full (if memory configured to "non-circular")		 (x3)
Error starting RAM hardware		 (x4)
Error starting FLASH hardware		 (x5)

Note: In the **EVENT** column, the number of flashes in each 2-second interval is shown in brackets:

(x1) One 0.2-second flash in 2-second intervals.







(x2) Two 0.2-second flashes in 2-second intervals.

...

4.4.2.- UPLOADING DATA TO THE PC

When the **VLOG-10** device is connected via the USB connector, the LEDs represent the following statuses, **Table 7**:

Table 7: LED status: Uploading data to the PC.

Status	SAMPLING	EVENT
USB interface started		
Management software detectedLink established	 (x1)	
Data transmission / reception	 (x1)	 (*)

Note: In the **SAMPLING** and **EVENT** columns, the number of flashes in each 2-second interval is shown in brackets:

(x1) One 0.2-second flash in 2-second intervals.

(*) Flashes according to the data transfer rate.

4.5.- INTERNAL BATTERY

The device comes with an internal battery to protect the data collected during the monitoring of the mains. This data, and the time, date and the device's configuration, will be kept while the battery is in an optimal condition (10 years at temperatures of 20°C -25°C).

The PC's **VLOG-10 Software** application allows the battery voltage to be monitored every time that the device is connected to the PC.

The battery voltage is shown in the **Factory settings** section of the **VLOG-10 Software** application ("**5.2.1.- FACTORY SETTINGS**")

Table 8: Status of the internal battery.

Voltage	Status
3 V	Battery fully charged.
< 2.2 V	Low battery level. The battery should be replaced, even if the device is still working properly.
< 1.7 V	Battery drained, impeding the operation of the device. The device indicates this status through the alternate flashing of the SAMPLING and EVENT LEDs. Connect the device to the VLOG-10 Software and check the voltage level of the battery in the Battery voltage parameter.

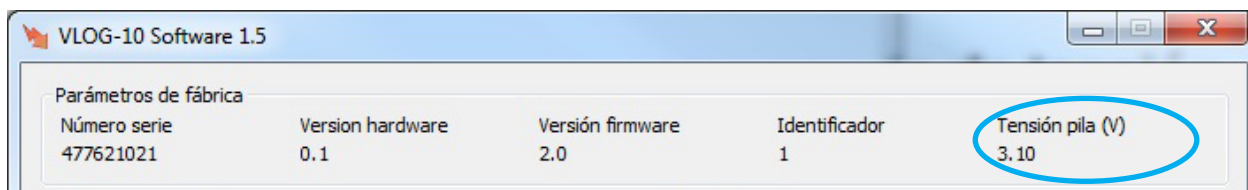


Figure 7: Internal battery voltage.

The device has been designed to autonomously retain data for up to 10 years. However, atmospheric factors such as the storage temperature and humidity may reduce this period.

	The internal battery must be replaced by an authorised maintenance service.
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	The battery must never be replaced with the device connected to the mains or to the PC via the USB port. There is a risk of electrocution.
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Note: When the internal battery is replaced, the device loses all of the settings and the date and logs stored on it at that time. After replacing the battery, it is necessary to start configuring the device again using the PC's **VLOG-10 Software** application.

5.- DISPLAY AND CONFIGURATION

The parameters are configured using the **VLOG-10 Software** application installed on a PC, with the **VLOG-10** connected via the USB port.

5.1.- INSTALLING AND CONFIGURING THE SOFTWARE

The **VLOG-10 Software** application and the necessary driver can be downloaded free of charge at the following links:

Driver: <http://docs.circutor.com/docs/VLOG>

Application: <http://docs.circutor.com/docs/VLOG-10 1.5.zip>

When the driver and software have been installed, the screen in **Figure 8** is displayed when running the configuration software.

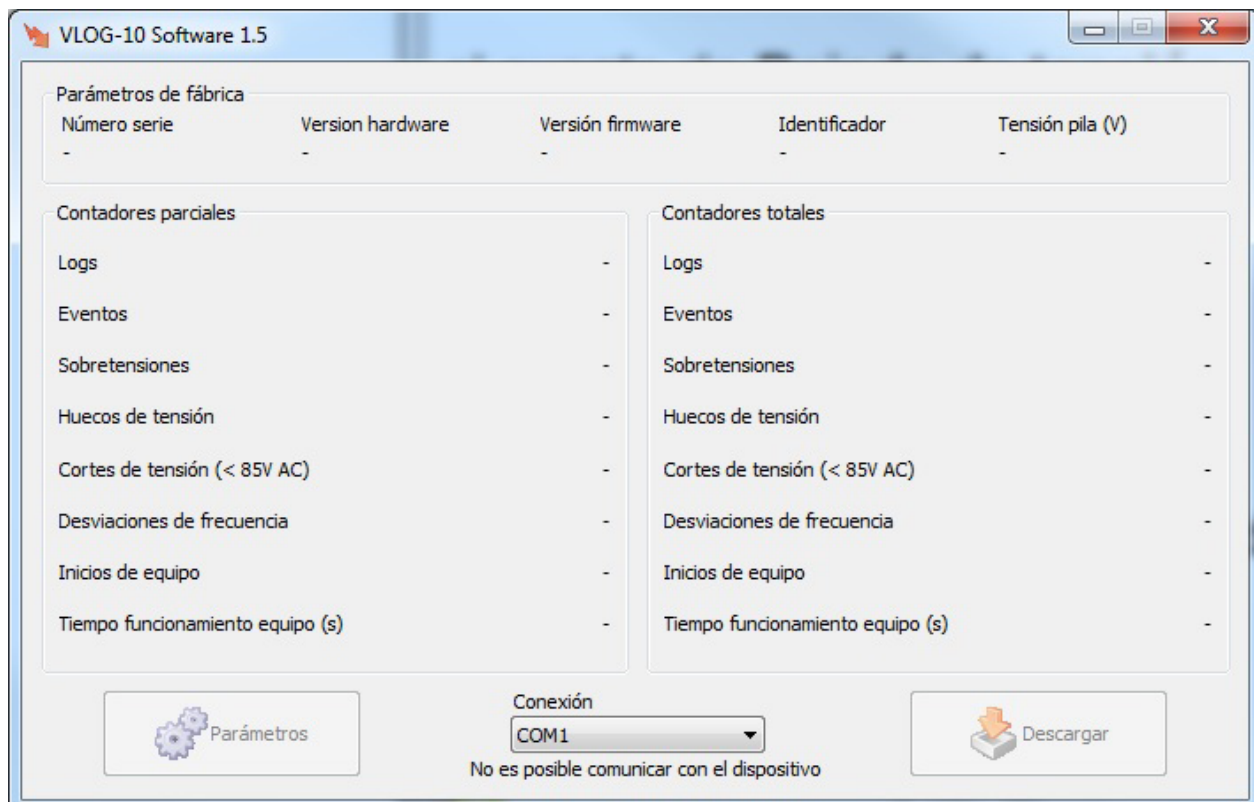


Figure 8:Main screen, device not connected.

This screen indicates that no device has been detected.

To detect the device, you must select the connection port to which the **VLOG-10** is connected. To do this:

1.- Open the PC's **Device manager** and check what port the **VLOG-10** is connected to. The device is identified as: STMicroelectronics Virtual COM Port.

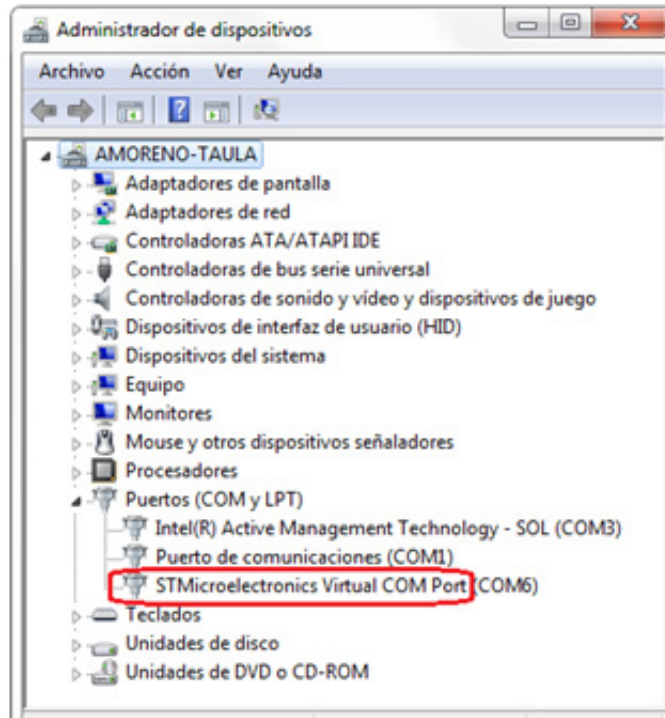


Figure 9:Device manager.

2.- In the **Connection** parameter on the home screen, **Figure 8**, select the COM port to which the device is connected.

When the connection port has been properly configured, the application automatically recognises the device, displaying its data on the screen.

In this state, the **SAMPLING** LED flashes at two-second intervals, indicating that the PC and the device are properly connected. (**Figure 10**)

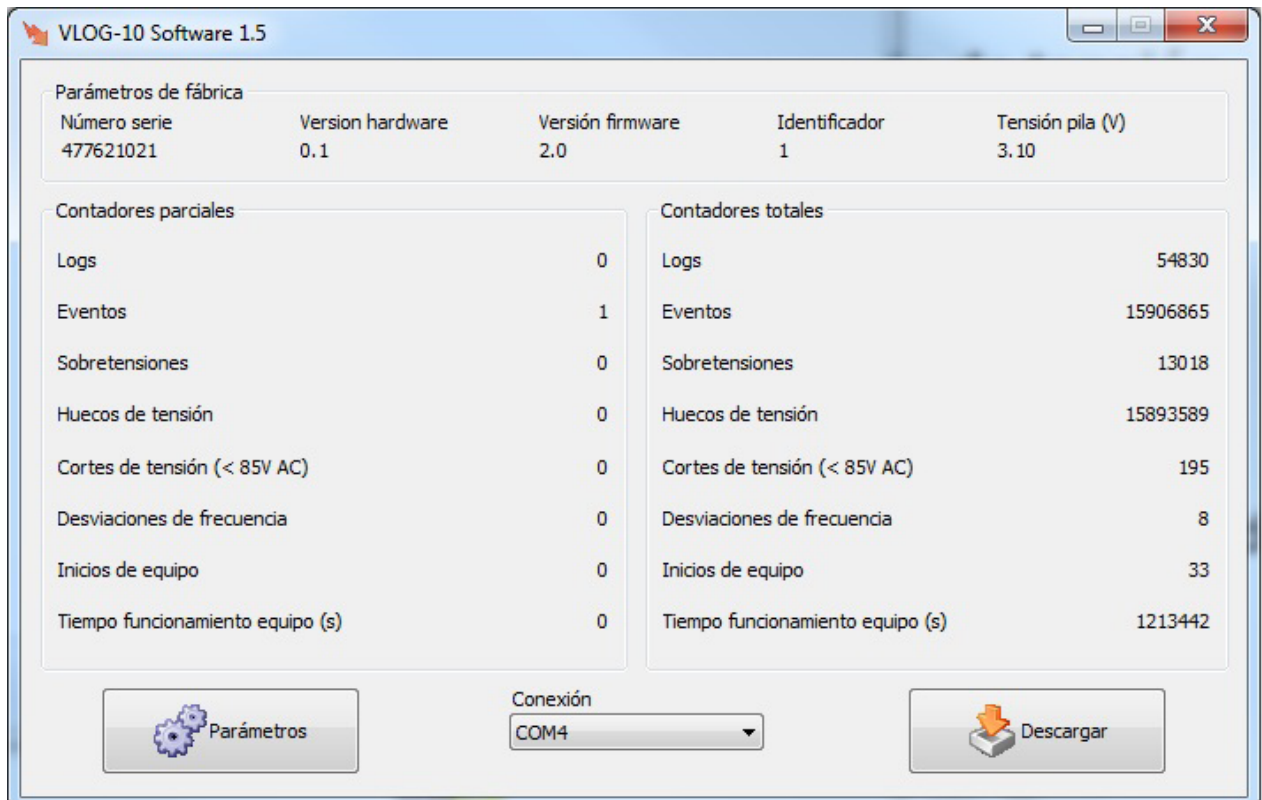
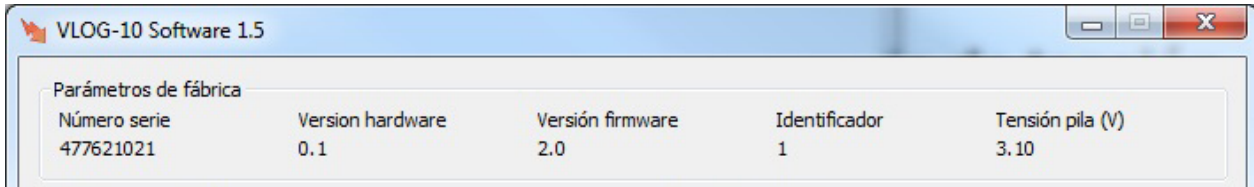


Figure 10:Main screen, device connected.

5.2.- DISPLAY

On the software's main screen, **Figure 10**, we can view the device's various settings.

5.2.1.- FACTORY SETTINGS



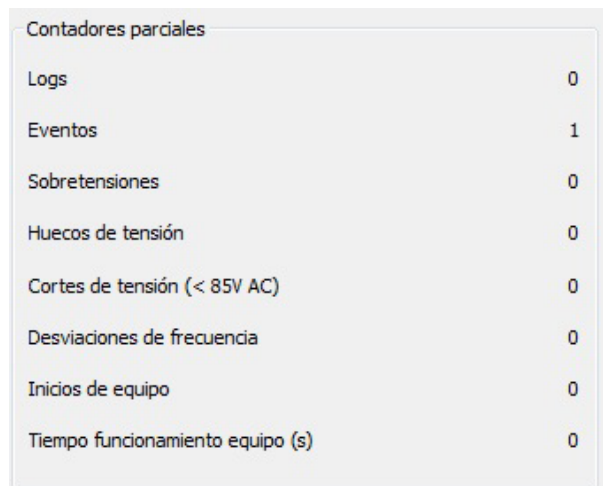
Parámetros de fábrica				
Número serie	Version hardware	Versión firmware	Identificador	Tensión pila (V)
477621021	0.1	2.0	1	3.10

Figure 11:Factory settings.

These settings cannot be changed by the user:

- ✓ **Número de serie** (*Serial number*): The device's serial number.
- ✓ **Versión hardware** (*Hardware version*): Identifies the device's hardware version.
- ✓ **Versión firmware** (*Firmware version*): The firmware version installed on the device.
- ✓ **Identificador** (*Identifier*): the version of the device.
- ✓ **Tensión pila** (*Battery voltage*): Indicates the voltage of the battery inside the device.

5.2.2.- PARTIAL ENERGY METERS



Contadores parciales	
Logs	0
Eventos	1
Sobretensiones	0
Huecos de tensión	0
Cortes de tensión (< 85V AC)	0
Desviaciones de frecuencia	0
Inicios de equipo	0
Tiempo funcionamiento equipo (s)	0

Figure 12:Partial energy meters.

These parameters indicate the number of mains incidents detected since the last reset.

- ✓ **Logs**: The number of valid logs stored by the device.
- ✓ **Eventos** (*Events*): The number of events detected and stored by the device.
- ✓ **Sobretensión** (*Overvoltage*): The number of power surges above the configured threshold value.
- ✓ **Hueco de tensión** (*Voltage gap*): The number of voltage drops below the configured threshold value and above 85 V~.
- ✓ **Corte de tensión** (*Voltage interrupt*) (< 85 VAC): Voltage drops below 85 V~.
- ✓ **Desviación en frecuencia** (*Frequency deviation*): The number of frequency deviations above or below the configured threshold.

- ✓ **Inicio equipo** (*Device start-up*): The number of times the device has been started in analyser mode.
- ✓ **Tiempo funcionamiento equipo** (*Device operating time*): The amount of time that the device has been operating (in seconds) in analyser mode since the last reset.

5.2.3.- TOTAL ENERGY METERS

Contadores totales	
Logs	54830
Eventos	15906865
Sobretensiones	13018
Huecos de tensión	15893589
Cortes de tensión (< 85V AC)	195
Desviaciones de frecuencia	8
Inicios de equipo	33
Tiempo funcionamiento equipo (s)	1213442

Figure 13: Total energy meters.

The parameters in this section are the same as for the partial energy meters, but the values cannot be reset. So it stores all incidents detected throughout the useful life of the device.

5.3.- CONFIGURATION

To access the setup screen for the device's settings, click on the **Settings** button.



Figure 14: Button to access the setup screen.

The screen that is displayed is shown in **Figure 15**:

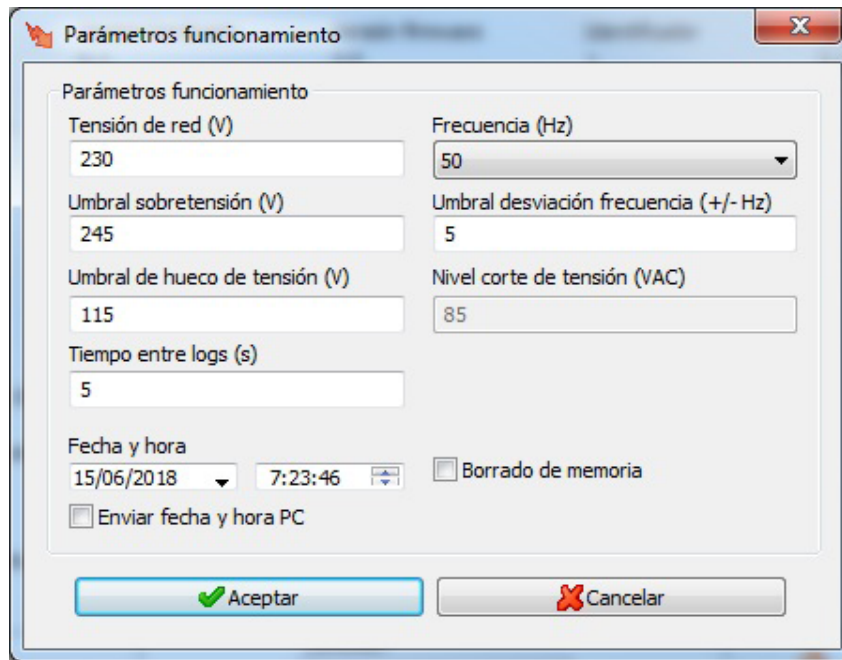


Figure 15: Setup screen.

The setup parameters are:

✓ **Tensión de Red** (*Mains voltage*)

The facility's operating voltage.

Minimum configuration value: 87 V.

Maximum configuration value: 259 V.

✓ **Umbral de sobretensión** (*Overvoltage threshold*)

Voltage level above which an overvoltage event is generated.

Minimum configuration value: 87 V.

Maximum configuration value: 265 V.

✓ **Umbral de hueco de tensión** (*Voltage gap threshold*)

Voltage level below which a **Voltage gap** event is generated.

Minimum configuration value: 85 V.

*Maximum configuration value: The selected **Mains voltage**.*

✓ **Tiempo entre logs** (*Time between logs*)

Here you can configure the intervals at which the device periodically measures and records the nominal value of the mains in the memory.

Minimum configuration value: 1 second.

Maximum configuration value: 7200 seconds.

The recommended configuration value is 900 seconds.

✓ **Frecuencia** (*Frequency*)

A drop-down menu is used to select the working frequency of the installation: **50** or **60 Hz**.

✓ **Umbral desviación frecuencia** (*Frequency deviation threshold*)

Upper or lower value at which the device generates the **Frequency variation** event.

Minimum configuration value: 1 Hz.

Maximum configuration value: 10 Hz.

✓ **Fecha y Hora** (*Date and time*):

To configure the device's time and date, simply tick the **Send PC date and time** box. This allows the **VLOG-10** to be configured with the time that is set on the PC.

✓ **Borrado de memoria** (*Memory deletion*)

If you choose to delete the memory of the device, all of the partial energy meters and all events and logs recorded by the **VLOG-10** will be deleted.

When you have finished configuring the device, click on the  button.

5.4.- DOWNLOADING DATA

To download and subsequently analyse the data stored on the **VLOG-10** device, it is necessary to click on the **Download** button after the device has been connected to the software.



Figure 16: Button to access the download screen.

The screen that is displayed is shown in **Figure 17**:

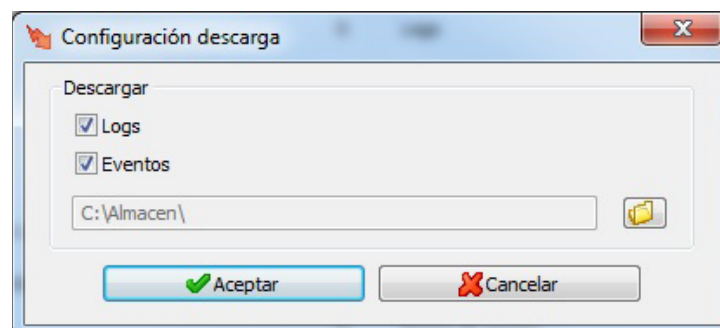


Figure 17: Download screen.

Here you must select the type of data to download: **Logs** and/or **Events**, and the directory where you want to store the files.

When you click on the **Accept** button, the selected data will be downloaded from the **VLOG-10 device**, **Figure 18**.

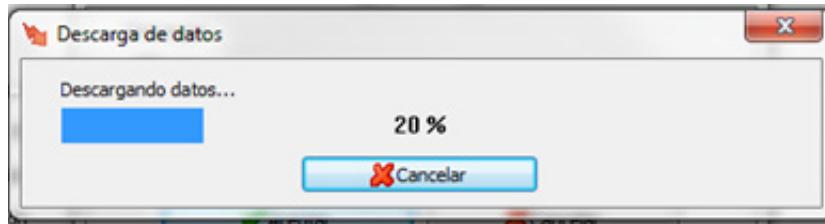


Figure 18:Downloading data.

This downloading does not lead to the data being deleted from the device's memory.

When you open the download directory, two types of files are displayed:

1.- “**events_ddmmaaaa.csv**” The file containing all of the events recorded by the device.

```

16/09/2015 10:16:12, Memory deletion
16/09/2015 10:16:45, Device start-up
16/09/2015 10:16:48, Voltage interrupt
16/09/2015 10:16:53, Device start-up
16/09/2015 10:16:54, Voltage interrupt
16/09/2015 10:16:55, Device start-up
16/09/2015 10:17:23, Voltage gap
16/09/2015 10:29:00, Voltage interrupt

```

Figure 19:Example of an events_ddmmaaaa.csv file

2.- “**logs_ddmmaaaa.csv**” The file containing the records of voltages measured in the facility and recorded in the memory, **Logs**.

```

16/09/2015 10:17:03,231.08
16/09/2015 10:17:14,231.77
16/09/2015 10:17:25,231.60
16/09/2015 10:17:36,231.52
16/09/2015 10:17:48,231.40
16/09/2015 10:17:59,231.55
16/09/2015 10:18:10,231.29
16/09/2015 10:18:21,231.49
16/09/2015 10:18:32,231.66

```

Figure 20:Example of a logs_ddmmaaaa.csv file

Note: The files have a .csv extension and can be opened using the Microsoft Excel application or similar.

6.- TECHNICAL FEATURES

Power supply	
Mode	Self-powered
Rated voltage	85 ... 265 V ~
Frequency	50 - 60 Hz
Consumption	0.8 ... 1.2 VA
Installation category	CAT III 300V

Voltage measurement circuit	
Voltage measurement margin	85 ... 265 V ~
Minimum measurement voltage (Vstart)	85 V~
Installation category	CAT III 300V

Measurement accuracy ⁽¹⁾	
Voltage measurement	0.5 %

⁽¹⁾ Accuracy is given by the following measurement conditions: temperature range 5 ... 45°C.

User interface	
Keyboard	1 button
LED	3 indicator LEDs.
Connectivity	USB

Internal battery	
Type	Li / MnO ₂ (Lithium / Manganese Dioxide)
Voltage	3 V
Capacity	220 mAh
Autonomy	10 years

Environmental features	
Operating temperature	-10°C ... +55°C
Storage temperature	-20°C ... +80°C
Relative humidity (without condensation)	25 ... 75%
Maximum altitude	2000 m
Protection degree	IP20

Mechanical features	
Dimensions	Figure 21 (mm)
Weight	66.2 g
Enclosure	self-extinguishing V0 plastic

Standards	
Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements.	EN 61010-1
Electrical equipment for measurement, control and laboratory use. Electromagnetic compatibility (EMC) requirements. Part 1: General requirements.	EN 61326-1

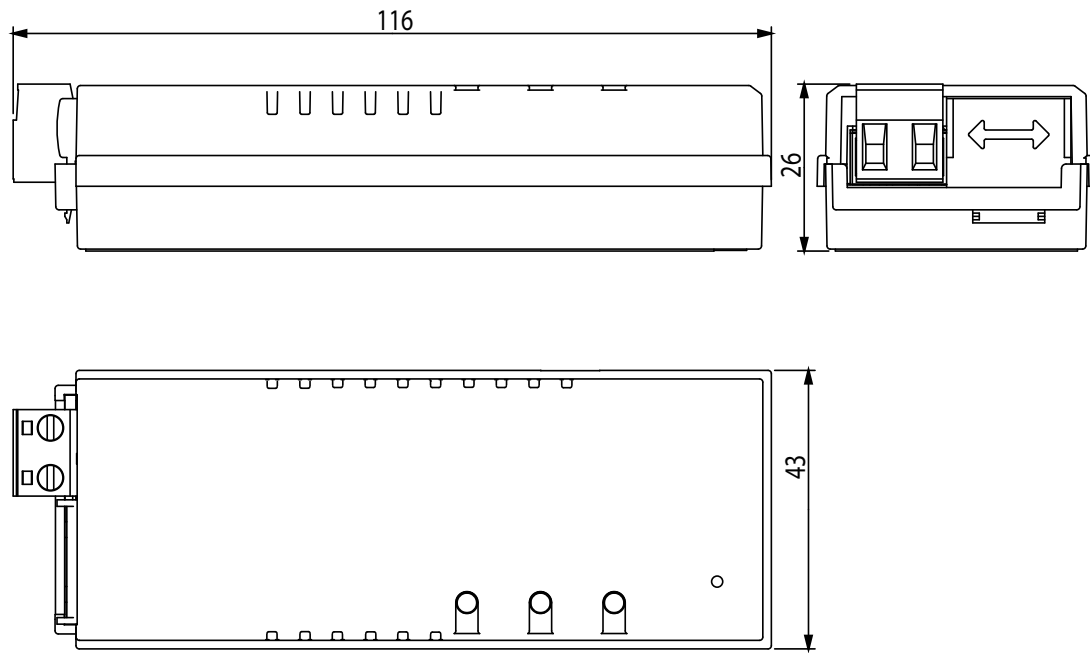


Figure 21:VLOG-10 dimensions.

7.- MAINTENANCE AND TECHNICAL SERVICE

The device does not need any maintenance.

In the case of any query in relation to device operation or malfunction, please contact the **CIRCUTOR, SA** Technical Support Service.

Technical Assistance Service

Vial Sant Jordi, s/n, 08232 - Viladecavalls (Barcelona)

Tel: 902 449 459 (España) / +34 937 452 919 (outside of Spain)

email: sat@circutor.com

8.- WARRANTY

CIRCUTOR guarantees its products against any manufacturing defect for two years after the delivery of the units.

CIRCUTOR will repair or replace any defective factory product returned during the guarantee period.



- No returns will be accepted and no unit will be repaired or replaced if it is not accompanied by a report indicating the defect detected or the reason for the return.
- The guarantee will be void if the units has been improperly used or the storage, installation and maintenance instructions listed in this manual have not been followed. "Improper usage" is defined as any operating or storage condition contrary to the national electrical code or that surpasses the limits indicated in the technical and environmental features of this manual.
- **CIRCUTOR** accepts no liability due to the possible damage to the unit or other parts of the installation, nor will it cover any possible sanctions derived from a possible failure, improper installation or "improper usage" of the unit. Consequently, this guarantee does not apply to failures occurring in the following cases:
 - Overvoltages and/or electrical disturbances in the supply;
 - Water, if the product does not have the appropriate IP classification;
 - Poor ventilation and/or excessive temperatures;
 - Improper installation and/or lack of maintenance;
 - Buyer repairs or modifications without the manufacturer's authorisation.

9.- CE CERTIFICATE



DECLARACIÓN UE DE CONFORMIDAD

La presente declaración de conformidad se expide bajo la exclusiva responsabilidad de CIRCUTOR con dirección en Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) España

Producto:

Medidor de calidad de suministro

Serie:

VLOG-10

Marca:

CIRCUTOR

EL objeto de la declaración es conforme con la legislación de armonización pertinente en la UE, siempre que sea instalado, mantenido y usado en la aplicación para la que ha sido fabricado, de acuerdo con las normas de instalación aplicables y las instrucciones del fabricante

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Está en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativos(s):

IEC 61010-1:2010+AMD1:2016 CSV Ed 3.0 IEC 61326-1:2012 Ed 2.0

Año de marcado "CE":

2018



EU DECLARATION OF CONFORMITY

This declaration of conformity is issued under the sole responsibility of CIRCUTOR with registered address at Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spain

Product:

Power quality analyzers

Series:

VLOG-10

Brand:

CIRCUTOR

The object of the declaration is in conformity with the relevant EU harmonisation legislation, provided that it is installed, maintained and used for the application for which it was manufactured, in accordance with the applicable installation standards and the manufacturer's instructions

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

It is in conformity with the following standard(s) or other regulatory document(s):

IEC 61010-1:2010+AMD1:2016 CSV Ed 3.0 IEC 61326-1:2012 Ed 2.0

Year of CE mark:

2018



DECLARATION UE DE CONFORMITÉ

La présente déclaration de conformité est délivrée sous la responsabilité exclusive de CIRCUTOR dont l'adresse postale est Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Espagne

Produit:

Analyseurs de qualité électrique

Série:

VLOG-10

Marque:

CIRCUTOR

L'objet de la déclaration est conforme à la législation d'harmonisation pertinente dans l'UE, à condition d'avoir été installé, entretenu et utilisé dans l'application pour laquelle il a été fabriqué, conformément aux normes d'installation applicables et aux instructions du fabricant

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Il est en conformité avec la(les) suivante (s) norme(s) ou autre(s) document(s) réglementaire (s):

IEC 61010-1:2010+AMD1:2016 CSV Ed 3.0 IEC 61326-1:2012 Ed 2.0

Année de marquage « CE »:

2018



Viladecavalls (Spain), 15/06/2018
General Manager: Ferran Gil Torné



CIRCUTOR, SA – Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
(+34) 937 452 900 – info@circutor.com


KONFORMITÄTSERKLÄRUNG UE

Vorliegende Konformitätserklärung wird unter alleiniger Verantwortung von CIRCUTOR mit der Anschrift, Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spanien, ausgestellt

Produkt:

Geräte zur Aufzeichnung der Stromnetzqualität

Serie:

VLOG-10

Marke:

CIRCUTOR

Der Gegenstand der Konformitätserklärung ist konform mit der geltenden Gesetzgebung zur Harmonisierung der EU, sofern die Installation, Wartung und/Verwendung der Anwendung seinem Verwendungszweck entsprechend gemäß den geltenden Installationsstandards und der Vorgaben des Herstellers erfolgt.

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Es besteht Konformität mit der/den folgender/folgenden Norm/Normen oder Regelwerk/Regelwerken

IEC 61010-1:2010+AMD1:2016 CSV Ed3.0 IEC 61326-1-2:2012 Ed 2.0

Jahr der CE-Kennzeichnung:

2018


DECLARAÇÃO DA UE DE CONFORMIDADE

A presente declaração de conformidade é expedida sob a exclusiva responsabilidade da CIRCUTOR com morada em Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Espanha

Produto:

Equipamentos de registo de qualidade elétrica

Série:

VLOG-10

Marca:

CIRCUTOR

O objeto da declaração está conforme a legislação de harmonização pertinente na UE, sempre que seja instalado, mantido e utilizado na aplicação para a qual foi fabricado, de acordo com as normas de instalação aplicáveis e as instruções do fabricante.

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

Está em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s):

IEC 61010-1:2010+AMD1:2016 CSV Ed3.0 IEC 61326-1-2:2012 Ed 2.0

Ano de marcação "CE":

2018


DICHIARAZIONE DI CONFORMITÀ UE

La presente dichiarazione di conformità viene rilasciata sotto la responsabilità esclusiva di CIRCUTOR, con sede in Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcellona) Spagna

prodotto:

Apparati di registrazione di qualità della fornitura elettrica

Serie:

VLOG-10

MARCHIO:

CIRCUTOR

L'oggetto della dichiarazione è conforme alla pertinente normativa di armonizzazione dell'Unione Europea, a condizione che venga installato, mantenuto e utilizzato nell'ambito dell'applicazione per cui è stato prodotto, secondo le norme di installazione applicabili e le istruzioni del produttore.

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive
2011/65/UE: RoHS2 Directive

È conforme alle seguenti normative o altri documenti normativi:

IEC 61010-1:2010+AMD1:2016 CSV Ed3.0 IEC 61326-1-2:2012 Ed 2.0

Anno di marcatura "CE":

2018



Viladecavalls (Spain), 15/06/2018
General Manager: Ferran Gil Torné



CIRCUTOR, SA – Vial Sant Jordi, s/n
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DEKLARACJA ZGODNOŚCI UE

Niniejsza deklaracja zgodności zostaje wydana na wyłączną odpowiedzialność firmy CIRCUTOR z siedzibą pod adresem: Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Hiszpania

produkt:

Zaawansowane Analizatory Jakości Energii

Seria:

VLOG-10

marka:

CIRCUTOR

Przedmiot deklaracji jest zgodny z odnośnymi wymaganiami prawodawstwa harmonizacyjnego w Unii Europejskiej pod warunkiem, że będzie instalowany, konserwowany i użytkowany zgodnie z przeznaczeniem, dla którego został wyprodukowany, zgodnie z mającymi zastosowanie normami dotyczącymi instalacji oraz instrukcjami producenta

2014/35/UE: Low Voltage Directive 2014/30/UE: Electromagnetic Compatibility Directive

2011/65/UE: RoHS2 Directive

Jest zgodny z następującą(y) normą(ami) lub innym(i) dokumentem(ami) normatywnym(i):

IEC 61010-1:2010-AMD1:2016 CSV Ed 3.0 IEC 61326-1:2012 Ed 2.0

Rok oznakowania "CE":

2018




Viladecavalls (Spain), 15/06/2018
General Manager: Ferran Gil Torné

CIRCUTOR, SA

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