MEASUREMENT AND CONTROL

QNA-600

Class A certified power quality analyzer

The Future is Efficiency
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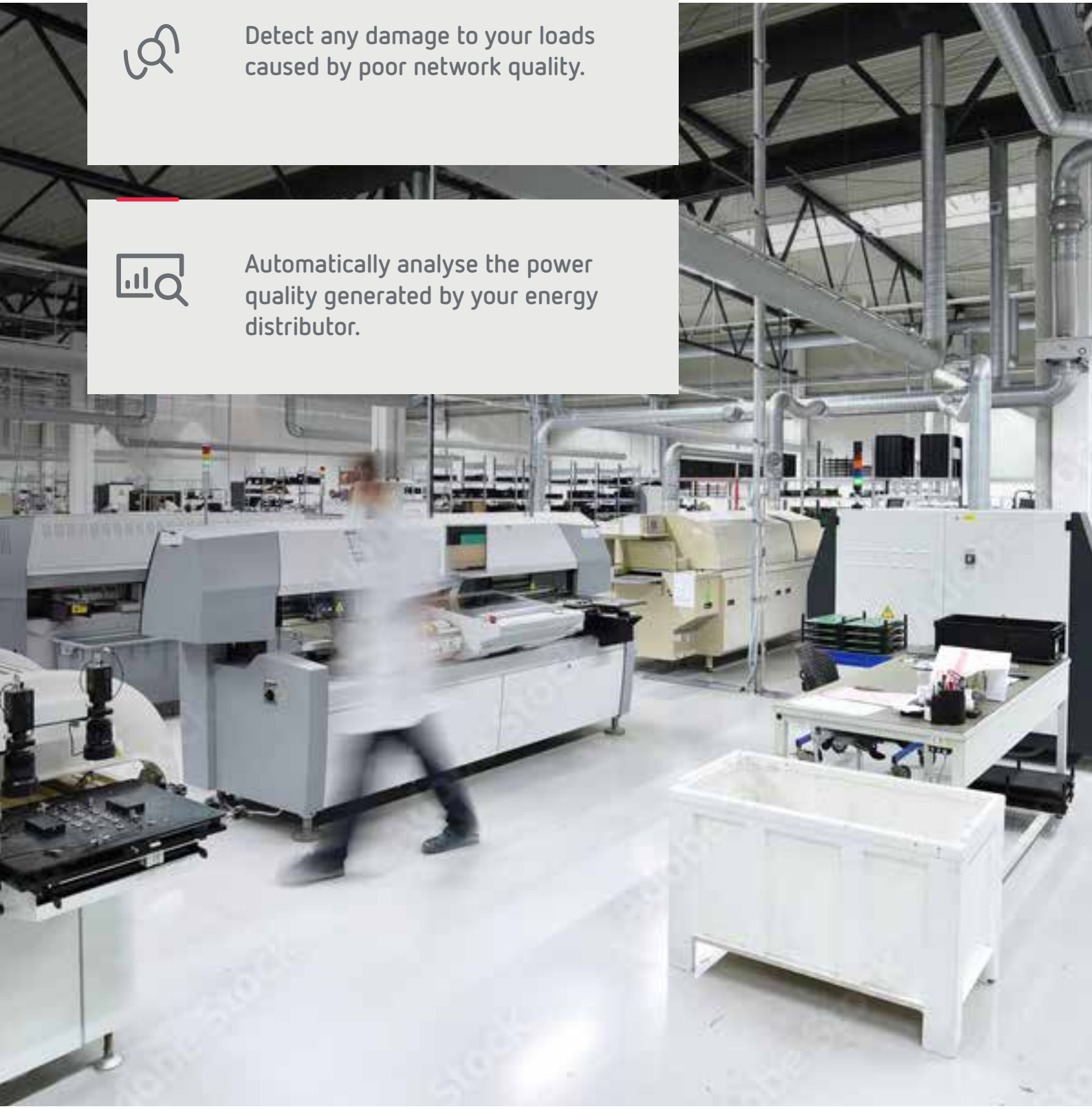
Ensure the operability of your installation

Detect any damage to your loads caused by poor network quality.

Automatically analyse the power quality generated by your energy distributor.



INTRODUCTION

The quality of electric supply is essential to ensuring the optimum operation of your electrical installations. Our growing dependence on electricity for our daily activities has raised the importance of maintaining quality standards that ensure a reliable and efficient supply. In this context, the installation of network power quality analyzers is regarded as an unavoidable need.

This type of solution allows the optimisation of operability and a reduction of costs. First, it verifies that the quality of the electric supply contracted from the utility complies with the requirements established by the current regulations. In addition, it accurately analyses the impact of voltage events, providing the information needed to prevent damage and minimise the economic impact due to problems such as production downtime, repair of malfunctions or reduction of raw materials.

The implementation of network quality analyzers is a comprehensive strategy to ensure efficiency, safety and operational continuity in any electrical installation.

MAIN CHARACTERISTICS

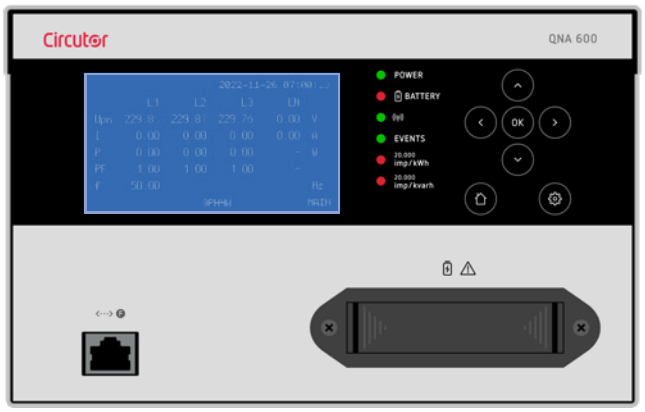
- 01 › 100% Class A certified, edition 3 (IEC 61000-4-30)
- 02 › Automatic reports from the EN 50160
- 03 › Automatic ITIC curve showing possible damage to electronic equipment due to voltage events
- 04 › Capture of overvoltages, dips and interruptions (1/2 cycle)
- 05 › Transient voltage and current capture (0.04 ms@50Hz/ 0.035Ms@60 Hz)
- 06 › Harmonics and interharmonics up to 63º
- 07 › Harmonic direction detection
- 08 › 5 direct voltage inputs (3 phases + neutral + earth)
- 09 › 5 current inputs (phases + neutral + earth leakage)
- 10 › 4G/Wi-Fi/2 x Ethernet with web server + GPS positioning
- 11 › Remote connection modification (phase sequence and/or direction of the current)
- 12 › Alarm generation.

QNA-600

Designed for high reliability

The **QNA-600** network analyzer is certified in **Class A according to the standard IEC 61000-4-30 (Edition 3),** so its data are fully reliable for resolving conflicts due to damage caused by a voltage variation from the distribution network.

The carrying out of automatic reports, based on **the EN 50160 European quality standard**, facilitates the interpretation of data, showing if the power quality complies with the minimum established requirements.



It detects whether the quality of your supply meets the quality standards.

It detects any problem caused by a quality event.

EN 50160

Ensure the quality of your power supply

The EN 50160 standard gives the main voltage parameters at the customer's point of common coupling in public low voltage (LV) and medium voltage (MV) electricity distribution systems, under normal operating conditions. In this regard, the standard establishes the permissible deviation ranges, including the evolution of variables such as voltage variations, frequency fluctuation and harmonic distortions, among other factors.

Compliance with EN 50160 not only guarantees the stability and reliability of the power you receive, but also contributes to the efficiency and cost savings in the medium and long term. Ensures that the utility is supplying a quality voltage within the established limits.

CERTIFIED

EN 50160

IEC 61000-4-30

Analyse how a voltage event affects you

The **QNA-600** is certified as Class A, as it complies with all the parameters established by the latest update of the IEC 61000-4-30 standard -Edition 3-. This version of the standard involves compliance with IEC 62586-2, which establishes the guidelines and procedures to ensure the measurement method and the accuracy of the values measured by the quality analyzers.

Class A avoids conjectures, ensuring that the data obtained by **QNA-600** are completely reliable. For this reason, this classification is a critical ally for negotiating with insurance companies when there has been damage to an installation, whether due to equipment malfunctions or interruptions of the electric service.

The ability to accurately analyse these events in a timely manner, is crucial to anticipate possible damage and minimise their impact. Power quality analyzers record all the information on any type of quality event, which allows preventive measures to be implemented, thus reducing the impact or losses that may be caused.

IEC 61000-4-30: Edition 3

A product with guarantees

The QNA-600 has been certified for compliance with the standard IEC 61000-4-30:

The **QNA-600** has been certified for compliance with the standard IEC 61000-4-30: Edition 3 by independent laboratories accredited by ENAC, the Spanish National Accreditation Body. In the national sphere, by the LME, the Electrical Metrology Laboratory (CIRCE). and internationally by the NMI. In addition, each device manufactured is independently verified by the CIRCUTOR independent laboratory, which also holds ENAC accreditation.

Consumption quality

Detect the problems generated by the equipment connected to your installation

Understanding the performance of your electrical installation's loads is essential to avoid operational problems and possible penalties. Power analyzers facilitate continuous monitoring, allowing patterns and trends in electricity consumption to be identified. This proactive analysis capacity helps to optimise load management, avoiding situations that can compromise efficiency and safety.

The **QNA-600** analyzer provides information on current and voltage harmonics generated by loads to study the impact that they may have on the operation of your installation, as well as to be able to recommend an optimal harmonic filtering solution to ensure its operation. The registering of power, whether active or reactive or apparent, allows a reactive, inductive or capacitive compensation solution to be recommended, in the event of having any consumption penalities.

Detects and avoids problems caused by harmonics.

Detects possible reactive penalties.

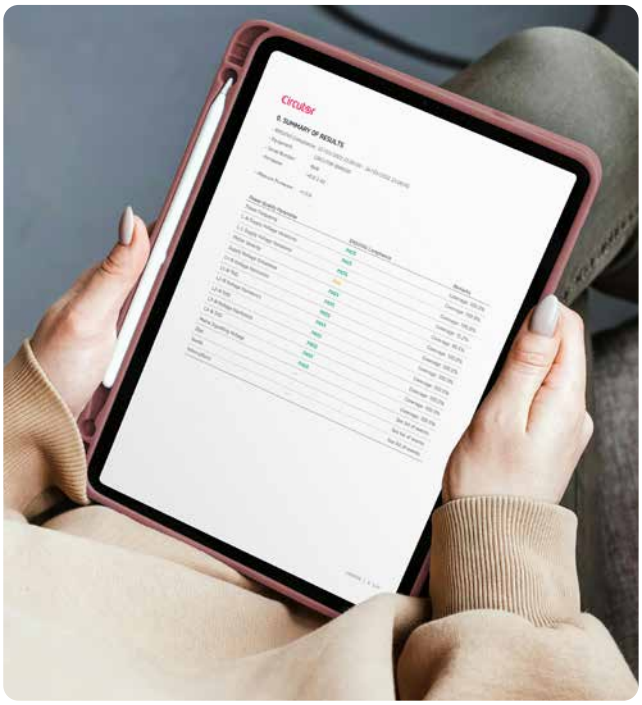
Power quality, easier than ever

The main task of a power analyzer is to provide reliable data to detect how poor power quality can economically affect any business or activity.

We interpret it for you

Understanding how to interpret all the data recorded by a quality analyzer is a complex task that requires advanced knowledge of which variables need to be assessed and their acceptance margins.

The **QNA-600** analyzer has implemented automatic reports of the EN 50160 power quality standard to do the job for you. Every week, or with the frequency you set up, you will receive a report indicating whether the quality supplied by the utility is adequate or poor, without having to make any calculations.



You don't need to be an expert, we can inform you whether your supply complies with quality standard EN 50160

The **QNA-600** detects any damage to your loads caused by poor network quality. In addition, its automatically analyses the power quality generated by your energy distributor.

Download an example of the power quality compliance summary report according to EN 50160.

EN 50160

How a poor power quality affects your installation

1 The distance between your installation and the transformer station can be a handicap in terms of the voltage level supplied.

If your installation is located very close to the substation, it could be affected by sustained high voltages, which can damage your electronic equipment.

2 However, if your installation is far away from the substation, it may be affected by continuous low voltage, which could cause production systems to shut down and reset.

3 Your installation can also be affected by harmonics, generated by the loads of installations connected to the same power transformer. In this case, the **QNA-600** detects the source of the harmonics in your installation.

IEC 61000-4-30

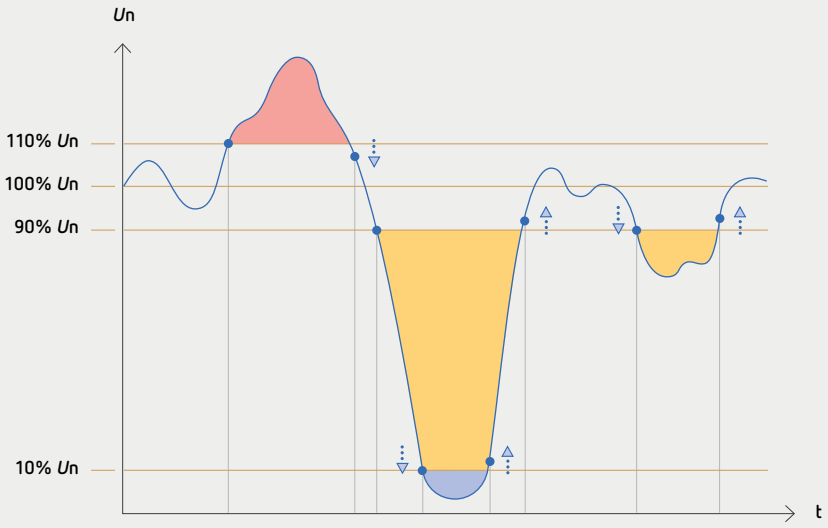
Find out how a voltage event affects your installation

Your installation may suffer from increases, falls or interruptions of voltage due to an unexpected event on the distribution lines that may affect both the integrity of the connected equipment and the correct operation of the loads. These events are uncontrollable by the utility and, therefore, could cause faults to its customers' installations.

Quality event detection

Supply overvoltages, dips and interruptions are known as quality events according to IEC 61000-4-30 and represent a sudden variation in voltage (not programmed) that affects the distribution network.

They usually occur suddenly and thanks to the **QNA-600** you can record them and determine how they affect your costs in the event of damaging your installation's loads, production stoppages or causing losses in the raw materials involved in production processes.



THE STANDARD IEC 61000-4-30 DEFINES THREE TYPES OF EVENTS:

- Overvoltage: Voltage greater than 110% *
- Dip: Voltage between 90% and 10% *
- Interruption: Voltage less than 10% *

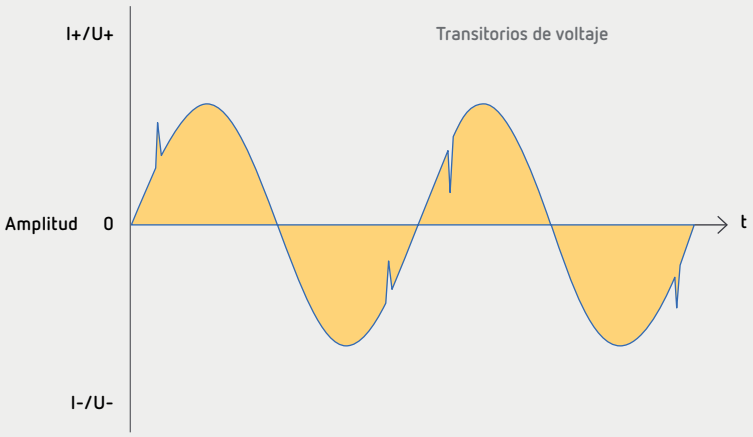
QNA-600 allows these percentages to be modified, offering more accuracy.
* Average values of the half-cycle duration (≥1/2 cycle).

Detect any event that may affect the performance of your installation with the **QNA-600** network analyzer.

Detection of disturbances

Disturbances (transient phenomena) consist of voltage variations of a duration that is lower than the standard. These events particularly affect production processes that, like electrolysis production, require a very stable voltage.

The **QNA-600** detects and records transient voltage and current, as well as rapid voltage changes (RVC) that may affect any production system or sensitive loads.



DETECTION OF TRANSIENT VOLTAGES AND CURRENT

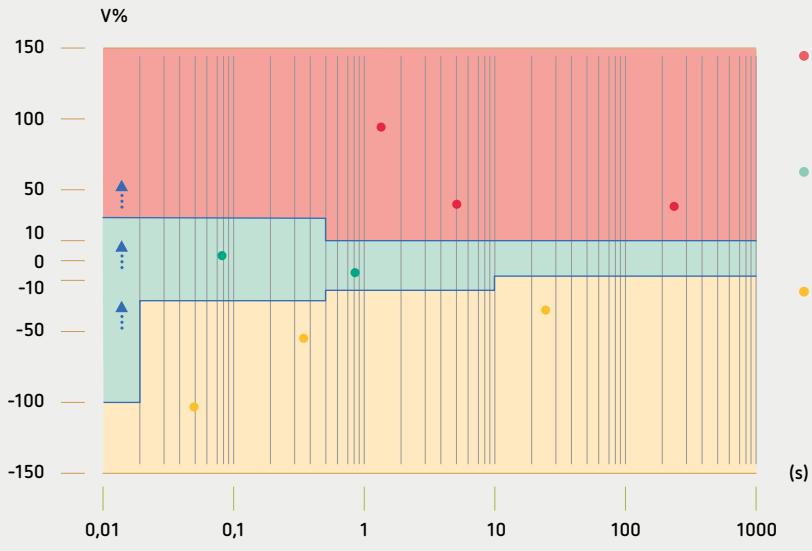
- From 0.039 ms (0.000039s) @ 50 Hz
- From 0.032 ms (0.000032s) @ 60 Hz

Detects sudden changes in voltage and current that may affect your production systems.

Identifies the severity of each event shown on the ITIC curve

It is not necessary to be an expert in power quality to analyse the effect of a voltage event. The **QNA-600** creates automatic reports, showing you the effect of a voltage event on your electrical installation.

The ITIC curve shows, in a simple way, the severity of a voltage event, in order to **quickly detect faults or restarts in your installation's electronic equipment.**



Overvoltage zone:

The event may cause damage to the installation's electronics.

Safe zone:

The event does not cause damage to the installation.

Undervoltage zone:

The event causes outages and resets in your installation, leading to indirect costs involving production systems.

QNA-600

The best ally for your installation

Maximum connectivity

Manage all the device's parameters directly from your own LAN, either via Ethernet port (front and rear) or wireless via Wi-Fi.

QNA-600 can also be managed remotely and from anywhere in the world using a SIM card with 4G communications, facilitating operations in installations that are difficult to access or with restricted access.

The data are always up to date

Integrated memory to record data in real time and store data for a period of five years. It also allows the storeage of up to 4000 quality events with their respective voltage and current waveforms.

Operating autonomy

It has a removable battery, which guarantees the analyzer's operation for 30 minutes, allowing it to communicate and record electrical parameters and quality events even when the electric supply is interrupted.

Harmonics under control

The **QNA-600** registers and analyses harmonics and interharmonics of voltage and current up to 64º for in-depth analysis. By analysing the THD% (Total Harmonic distortion) or the TDD% (Total Demand Distortion), the harmonics that occur between the installation and the electricity supply are assessed.

Compatible with substations

It integrates the **IEC 61850** communications protocol, making it compatible with the substation automation systems. The device is designed to form part of intelligent electronic devices (IED) within any substation, normalising the exchange of data between devices.

Secure access to your data

You can download the data recorded by the **QNA-600** via the SFTP server. The SFTP (Secure File Transfer Protocol) is a protocol that uses encryption, providing you with a high level of security when sending and receiving file transfers.

Where do harmonics come from?

It detects at a glance where harmonics are generated. The device displays the direction of current harmonics in graphic format, allowing you to distinguish between the harmonics that generate the loads and/or those that come from the distribution lines. With this information you can discover whether any effects on your installation are due to external causes.

Verify your electricity bills

It records the different types of energy -apparent, active, reactive, inductive and capacitive- and creates a report on actual consumption to be made. This way, you can compare consumption with the installation's tax meter of and verify the energy bill, anticipating possible penalties for reactive energy consumption.

Keep your equipment located

GPS synchronization ensures the accuracy of the time mark on all the values registered, regardless of the location of the analyzer. It also provides information on the exact location of the device. It uses the NTP and NMEA 0183 protocols for internal or external GPS.

it can be integrated with other

You can connect the **QNA-600** to your own monitoring and control systems using a simple API. This way, you can control the most relevant content for your installation, keeping users' security and authentication.

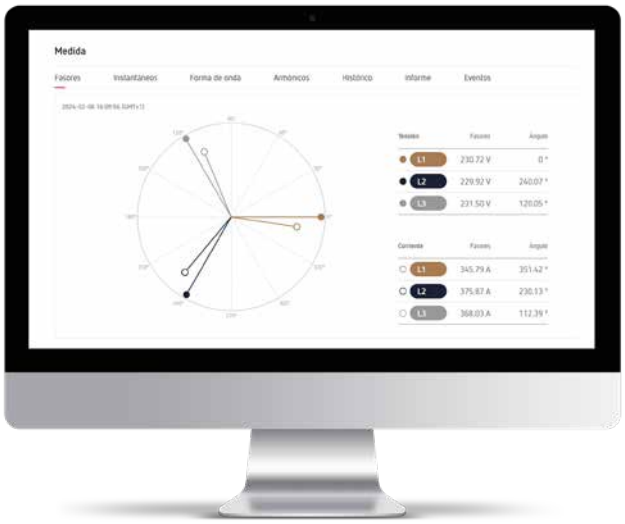
Easy to install

Easily mount in a 19" rack structure. This system allows the device to be used indoors with uncontrolled temperature conditions and environments with high noise levels. The small size allows two devices to be installed in the same rack in an adjacent way, making the most of the space.

Full management from any browser

The **QNA-600** has an integrated web server that allows access to the device from any web browser with a local connection, via Ethernet or Wi-Fi, or remotely via 4G communications.

Through the browser and using a user-friendly and intuitive web interface, you can configure, monitor, download, analyse and set up the device according to the parameters of your installation. You can also change the wiring remotely to resolve any issue arising from an incorrect connection.



Easy configuration

Set up your device in full in a few minutes and in a customised way, to monitor and record information that allows you to check the status of your installation.

From the web server you can configure the quality measurements and parameters, monitor and record variables in real time, view phasor diagrams and download information on the recorded quality events.

Operational from the outset

The web server allows you to check whether the installation and start-up of the device has been carried out correctly. Check at a glance whether the device is installed correctly or a change of configuration or wiring needs to be made.

Remotely modify the direction of currents or the correspondence of voltages and currents with a single click, either locally or remotely, without having to directly manage the device. Leave the device installed correctly from the outset.

Online monitoring

Monitors all variables recorded in real time:

- Instantaneous values
- Phasor diagram
- Waveform (voltage and current)
- Harmonics and interharmonics
- Historic voltage, current and power in a period

Maximum compatibility

Quickly download all electrical variables and quality events (overvoltages, dips and interruptions) in PQDIF format and voltage and current transients in COMTRADE format, interoperable with multiple analysis tools. The **QNA-600** generates files that are compatible with other systems to adapt to any existing system.

Compatible with open source software:

- **PQDIF** → Instantaneous values
- **COMTRADE** → waveforms/transients

Compare the network quality of your installation, avoiding malfunctions or operational incidents that affect your investment costs (Capex) and operation (Opex).

Automatic data download

Automate the download of the data recorded by the **QNA-600**. Select the file type to be sent automatically to receive reports with electrical variables, events or EN 50160 compliance and receive the data on your server without having to interact with the device.

PQDIF (Power Quality Data Interchange Format) is a standard format that is used to analyse electrical data in an exhaustive way and to resolve problems.

COMTRADE (Common format for Transit Data Exchange for power systems) is a file format for storing oscillations and status data, registering and exchanging data from protection relays, fault recorders and other devices used in the protection and supervision of electrical systems. These files contain information for analysing events in electrical systems.

Manage any incident via Scout

Scout is the new CIRCUTOR cloud platform designed to analyse and relate data for generating smart alarms that warn you about any incident that may affect the performance of your installation. This allows you to focus on what really matters, quickly identifying the most relevant incidents thanks to our advanced alarm analysis and prioritisation solution.

With this tool, you will always be one step ahead in incident management, identifying real-time alarms to ensure the operational continuity of your installation.

- **Alarm management:** It provides context data to facilitate decision-making in multiple facilities.
- **Real-time collaboration:** Allows real-time collaboration, with instant communication between the device from any device.
- **Data grouping:** Groups and prioritises data and events, generating alarms only when necessary.
- **Safety and Scalability:** It uses AWS to guarantee advanced security, redundancy and recovery of data with ISO 27001 certification.

Collaborate quickly with your work team

Scout allows working groups to be created to review alarms and allocate resources efficiently through a common chat space, where images of generated alarms, graphics and data tables can be added. This format allows each incident to be monitored and the information on the causes detected and the solutions applied to resolve each incident can be saved.

We centralise communication and analysis in a single collaborative tool that integrates data, people and smart alarms, allowing a quick and effective response in collaboration with the entire team.

- Collaborate with your team to resolve incidents

Incidents under control

All your equipment will be able to visualize graphics with the evolution of variables such as voltages, RMS currents, harmonic currents, THD *I*% and THD *U*%, power and frequency, selecting the period you need to analyse.

Graphs can be included with the history of events, waveforms, the ITIC curve and the harmonic spectrum to carry out a complete analysis of any alarm. It includes photos of the device or installation and closes the incident, notifying all the people involved for faster and more efficient management.

Be in control, wherever you are

The new Scout platform offers comprehensive incident management from anywhere, either through our mobile app or from a computer with any web browser. With the app, available for Android and iOS, you can receive notifications on your mobile phone, upload photos, view data to the cloud and collaborate with your team in real time.

Technical specifications

AC power supply	
Nominal voltage	180 ... 300 Vca
DC power supply	
Nominal voltage	88...162 Vcc
Backup battery autonomy	
Autonomy	30 mins
Voltage measurement circuit	
Sampling frequency	512 samples/cycle
Voltage measuring range	11 ... 500V F-N / 19 ... 866V F-F
Current measurement circuit	
Sampling frequency	512 samples/cycle
Nominal current	.../5A
Phase current measuring range	0,05...10A ~
Communications	
Protocol	HTTPS-NTP-SFTP-IEC61850
Technology	Ethernet / Wi-Fi / 4G
Mechanical characteristics	
Size (mm) width x height x depth	210x132,25x305,2
Technology	Ethernet / Wi-Fi / 4G
Measurement accuracy	
Put them in the catalogue	Put them in the catalogue

References

Type	Code	Accuracy	Power Supply	Coms	Protocols	Certifications
QNA-600	**Q22010.**	0,5s	180 ... 300 Vca	Ethernet | Wi-Fi | 4G	HTTPS - NTP - SFTP - IEC61850	IEC 61000-4-30 (Class A)
QNA-600	**Q220100009000**	0,5s	88...162 Vcc	Ethernet | Wi-Fi | 4G	HTTPS - NTP - SFTP - IEC61850	IEC 61000-4-30 (Class A)

View or download the product file

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