CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

C.A 8331
C.A 8333
C.A 8336
C.A 8435

The experience of the Qualistar,
ensuring high performance

POWER AND ENERGY QUALITY ANALYSERS

IEC 61000-4-30

IEC 61010
1000 V CAT III
600 V CAT IV

Measure all the necessary voltage, current and power parameters for full diagnosis of an electrical installation.

Capture and record all the parameters, transients, alarms and wave forms simultaneously.

Proven simplicity of use.

QUALISTAR+

- 5 voltage inputs & 4 current inputs
- 10-minute Inrush mode
- Calculation of distorting power
- IP67: all-terrain model available

TrueInRush

Eco Conception

Qualistar+ Range

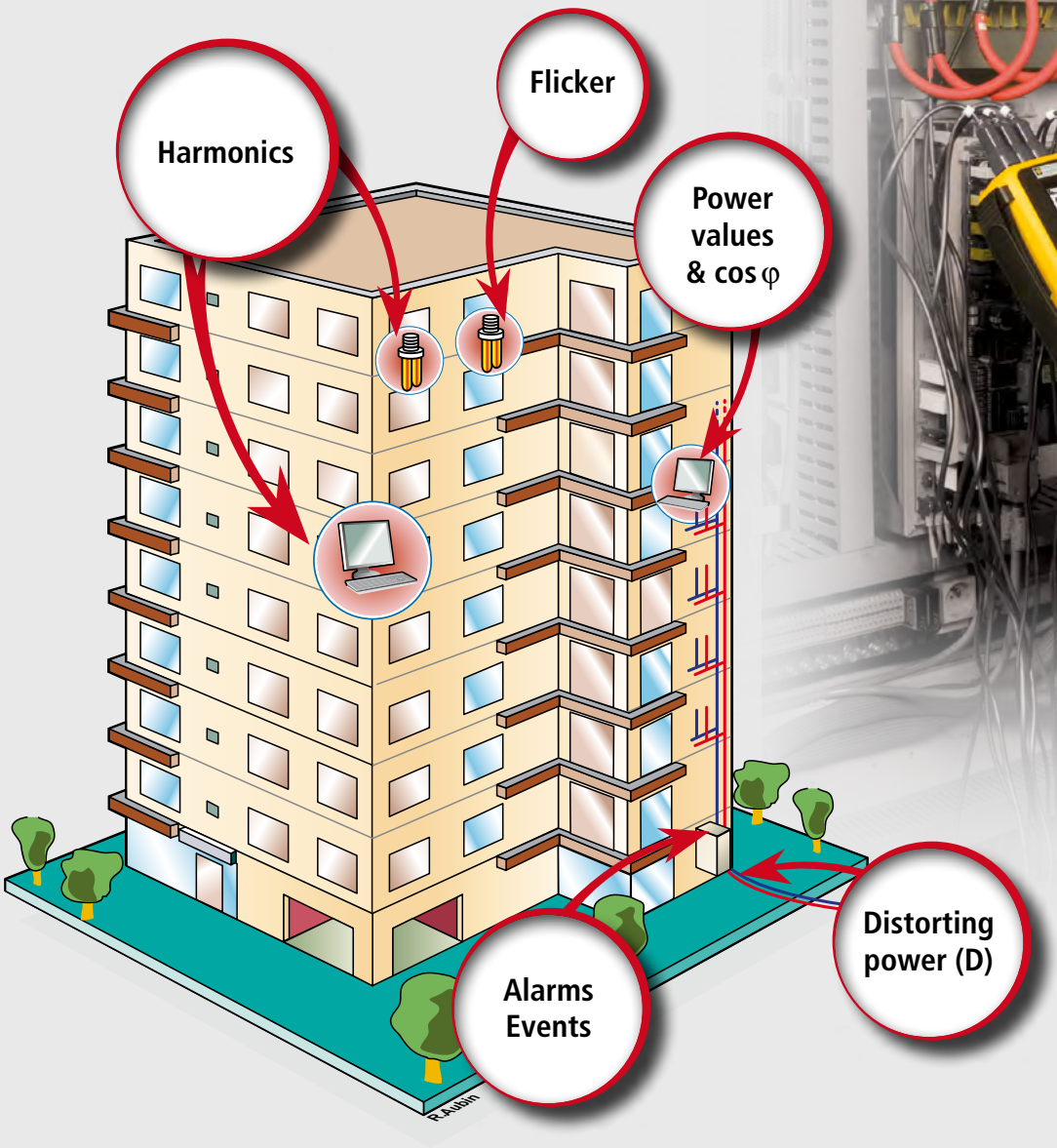
Designed for inspection and maintenance teams in industrial or administrative buildings, the Qualistar can provide a snapshot of the main electrical network quality characteristics. Easy to handle and precise, these instruments also offer a large number of calculated values and several processing functions.

Designed to cover all 600 V CAT IV and 1000 V CAT III applications in compliance with the IEC 61010 standard, the Qualistar+ range is divided up according to the functions provided and the connections available:

- C.A 8331 & C.A 8333: 4 voltage inputs and 3 current inputs,t,
- C.A 8336 & C.A 8435: 5 voltage inputs and 4 current inputs.

The whole range benefits from a set of inserts and rings for customizing the colour-coding in each country. Equipped with IP67 connections to ensure water-proofing, the C.A 8435 is also compatible with all the existing Qualistar measuring accessories.

Functions



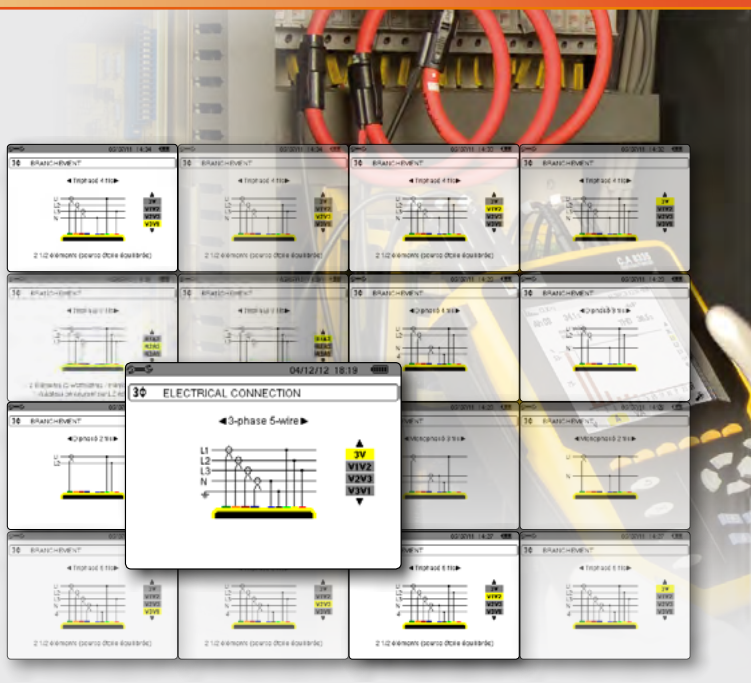
- Real-time display of wave forms (4 voltages and 4 currents)
- Half-period RMS measurements of voltages and currents
- Intuitive use
- Automatic recognition of the different types of current sensors
- Measurement on any type of installation: three-phase, Aron, etc.
- Integration of all the DC components
- Measurement, calculation and display of harmonics up to the 50th order,
- Display of phasor diagram
- Measurement of P, Q, S and D power values (total and per phase)
- Energy measurement (total and per phase)
- Calculation of the K Factor & FHL
- Calculation of distorting voltages and currents
- Calculation of the cos φ displacement power factor (DPF) and the power factor (PF)
- Inrush over up to 10 minutes
- Capture of hundreds of transients lasting several tens of µs
- Calculation of Pst & Plt flicker values
- Unbalance calculation (current and voltage)
- Monitoring of the electrical network with setting of alarms
- IEC 61000-4-30 Class B
- Back-up and recording of screenshots (image and data)
- Recording and export on PC
- Software for data recovery and real-time communication with a PC

Functions

Connections

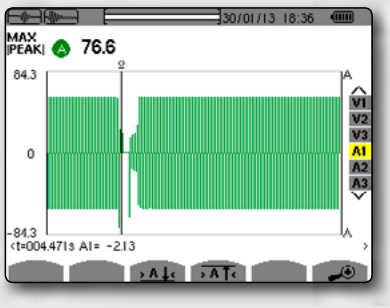
The Qualistar models are ideal for applications on all types of electrical networks, from the simplest to the most complex:

- Single-phase, split-phase and three-phase with or without neutral
- All types of 2, 3, 4 and 5-wire electrical networks
- 2-wattmeters method
- ARON
- 2 ½ elements…



Longer Inrush… over 10 minutes!

The Inrush current corresponds to the maximum input current drawn by an electrical device when it is powered up. This measurement helps to size the electrical installation correctly.



The Inrush is measured over a period of 10 minutes. Once you have chosen the acquisition mode (RMS or peak), the Qualistar captures everything.

Short or long-term flicker

The flicker (as defined by the IEC/EN standard) characterizes voltage variations which cause lighting fluctuations, for example.

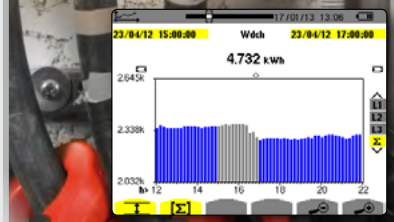
According to the applicable standards, the Flicker level is expressed by two parameters:

- **Pst (short-term flicker)**
  Calculation of the Pst, which is used to assess the flicker level, is based on statistical processing of the voltage signal sampled. It is measured over a period of 10 minutes
- **Plt (long-term flicker)**
  This is a multiple of the Pst. It is measured over a period of 2 hours.

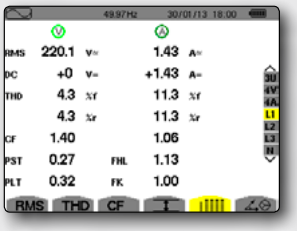
Energy values, including **Tonnes Oil Equivalent**

The Qualistar models measure energy. This mode displays all the values relating to power and energy.

- **"Start" and "Stop" keys to activate and deactivate summing of the energy values.**
- **A new feature is the wide variety of units available: kW, Joule, nuclear toe, non-nuclear toe, BTU, etc**



Calculation of K factor for transformers

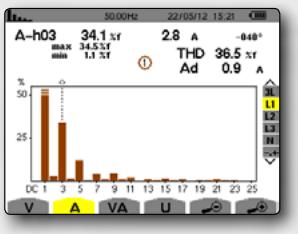


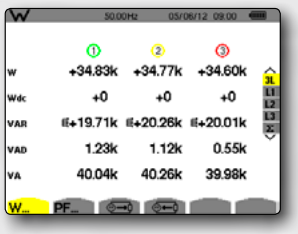
The harmonic currents flowing in a network lead to increased losses in the windings. This results in heating of the transformer and reduces the life span of the instruments connected.

- compliance with the NF EN 50464-3 standard for calculating transformer derating.
- the FHL and European K factor parameters are recorded and measured simultaneously.

Harmonics

All the useful parameters are measured: global THD and per phase on U, I, V and VA, phase offset of harmonics. Some models offer a VA harmonics function and an "expert mode".





New: the harmonics measurement function is more comprehensive:

- calculation of the harmonics in %f and %r
- decomposition of the harmonics on the neutral conductor
- calculation of the distorting voltages and currents

Distorting power

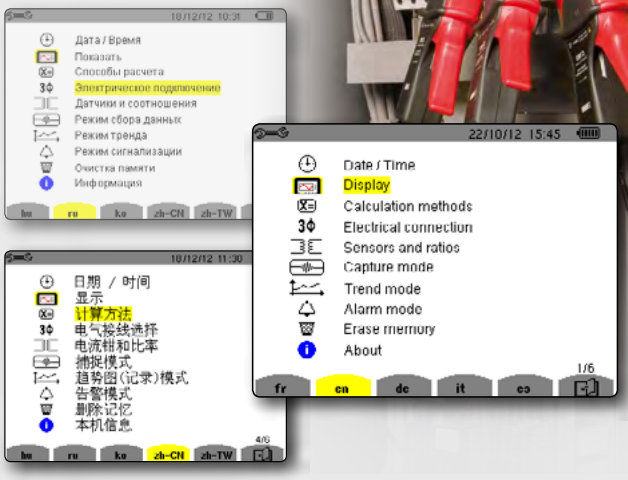
New!
Breakdown of the reactive power values, with the concept of non-active power (N), distorting power (D) and reactive power (Q & Q_1).

- Breakdown of the reactive power to find the distorting power linked to the harmonics (VAD).
- Distorting power for sizing the harmonic filters.
- Reactive power (var) of the fundamental for sizing the battery of the power-correction capacitor.

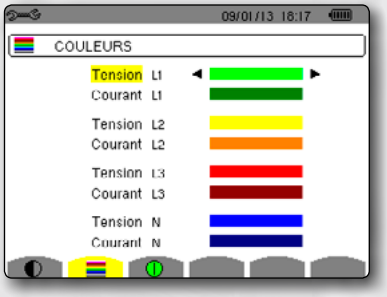
Configuration

- Users enter the instrument's general parameters directly (date and time, display contrast, colour, etc.).
- The menus, help screens and pop-ups are translated into all the languages.
- They select the type of network to which the Qualistar is connected.
- They configure the measurement and recording parameters.

Languages

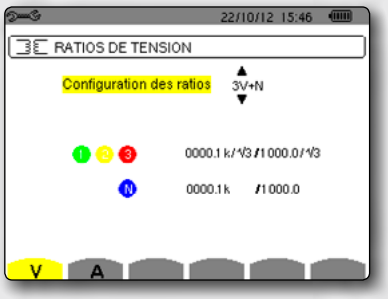


Display



Ratios and sensors

When they are connected, the current sensors are recognized automatically by the Qualistar.
By configuring the ratios, it is possible to obtain **direct readings of the measurements** on the transformer primary.

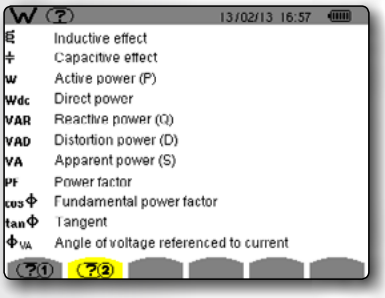


Practical advantages

Accessible on the front panel of the Qualistar, screenshots can be produced simply by pressing a key. The Help function is available at every stage.

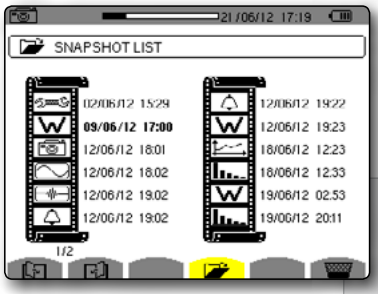
Help

If you have any hesitations, the **Help** key clearly explains the functions applicable to the screen display.



Screenshot

When this key is pressed, the instrument takes a screenshot. The screen displayed is then saved automatically with time/date-stamping.



Display

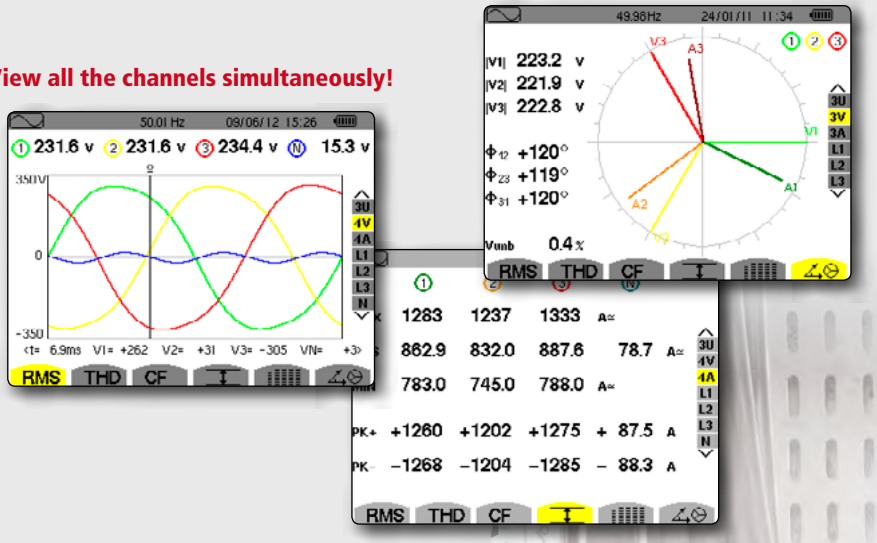
View the characteristics of a network instantaneously

OBSERVATION

Graphics

The Qualistar models allow you to view all the inputs simultaneously.
The measurements are displayed as waveforms; values or Fresnel diagrams.

View all the channels simultaneously!

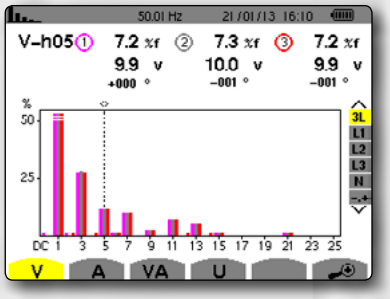


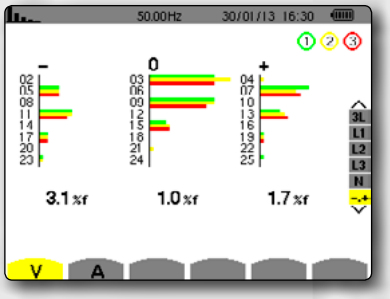
DIAGNOSTICS

Harmonics mode

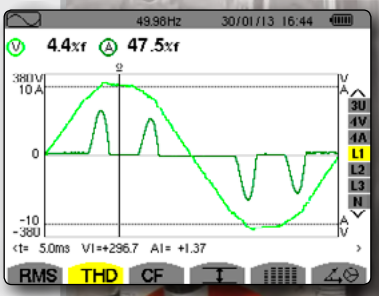
Global THD and per phase on U, I, V and VA in % and RMS value, phase offset of harmonics. They offer the expert mode for the Harmonics function.
These two instruments can be used to analyse the influence of the harmonics on heating of the neutral or on rotating machines.

GLOBAL THD





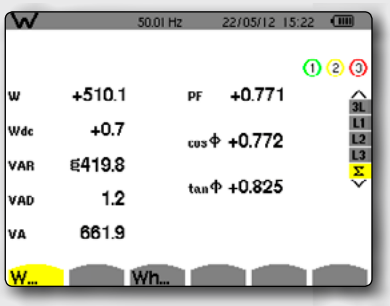
THD PHASE BY PHASE



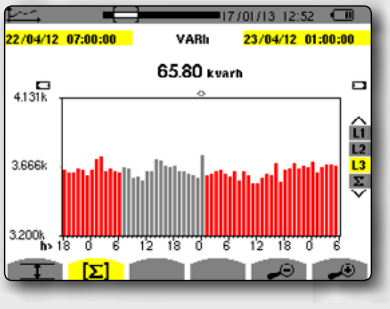
Power/Energy mode

This mode displays all the values concerning power and energy. The “start” and “stop” keys can be used to activate and deactivate totalizing of the energies.

POWER MEASUREMENT



INTEGRATION OF POWER / ENERGY OVER A PERIOD OF TIME



Monitor everything,

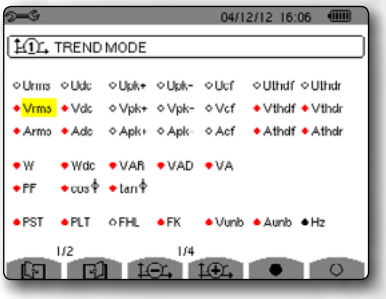
Configuration

Recording mode

- More than 450 recordable values with all the required parameters and graphic display.
- Programmable recording period and storage rate.

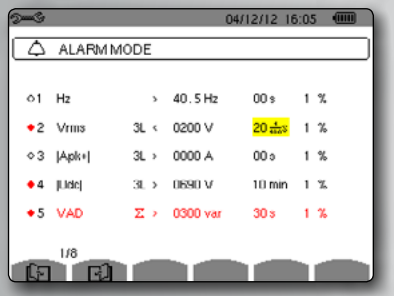
New! Quick start-up:

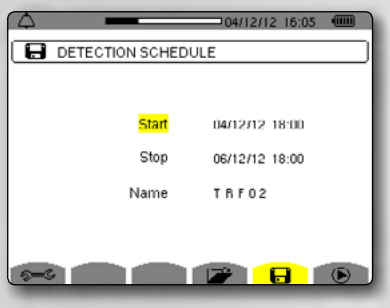
- **Immediate start of recording**
- Automatic indication of Min/Max values
- Auto-completion of measurement campaign names



Alarms mode

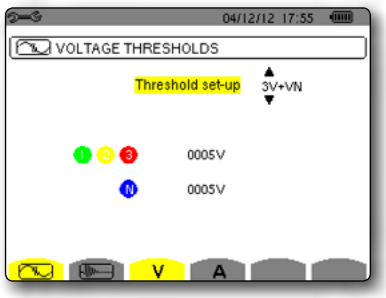
- **Up to 40 alarms can be set simultaneously!**
- Threshold overruns to be monitored can be configured during set-up.
- For each alarm threshold overrun, a time/date-stamped recording of the event is made with the duration and the extreme values.
- Possibility of modifying the end dates for programmed alarms.

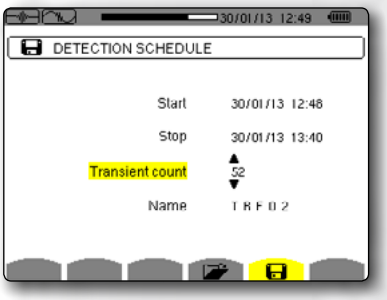




Transients mode

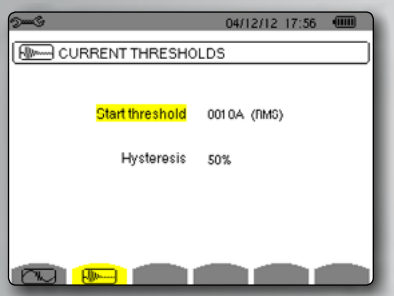
- Capture of events on the voltage and current with triggering according to thresholds.
- **Capture of hundreds of transients.**
- Display of events as short as a few tens of µs.

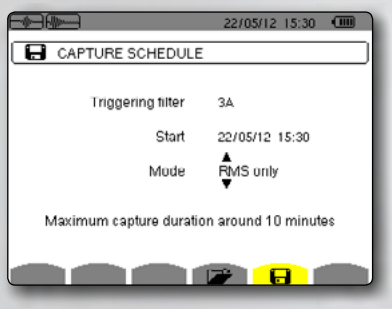




Inrush & TrueInrush

- Monitoring of the Inrush current for a load when it is powered up.
- **Records the currents, voltages and frequency.**
- For correct sizing of electrical installations.
- To view source switching faults.





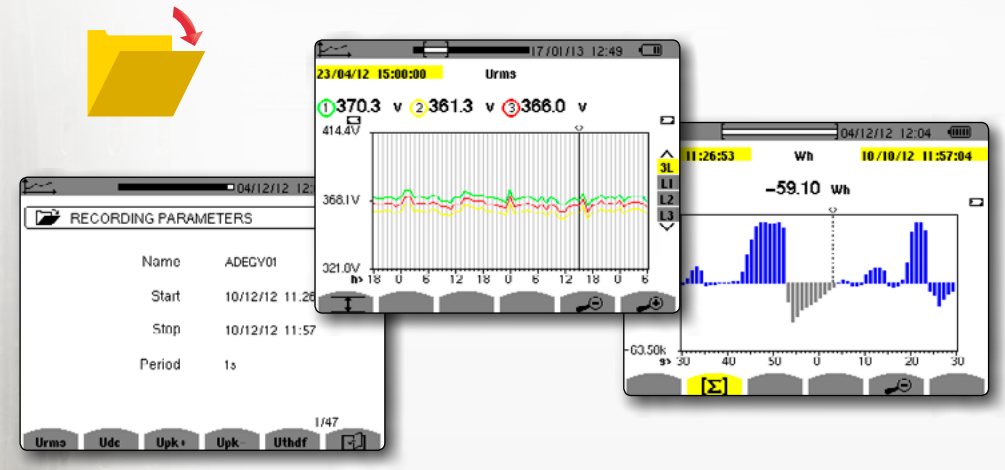
with more parameters

Acquisition in progress

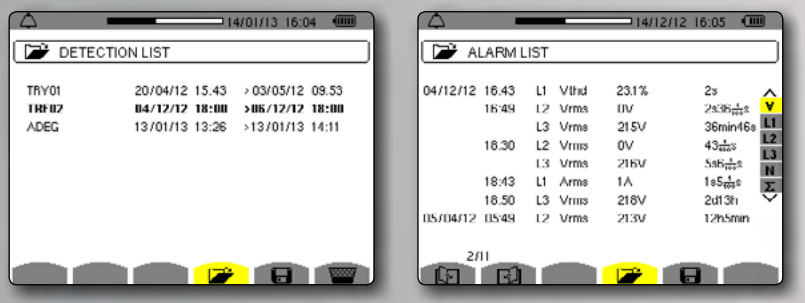
During acquisition:

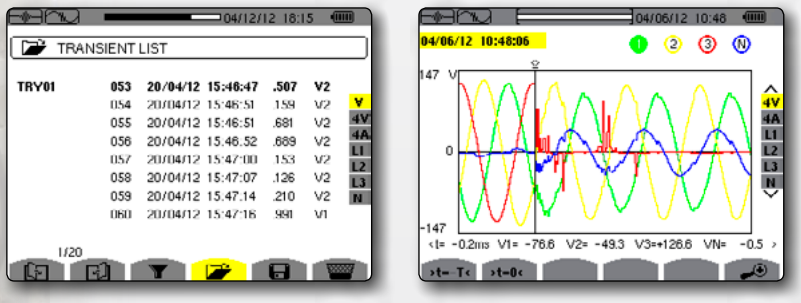
- Operation of several modes in parallel,
- Possibility of viewing the data during a campaign.

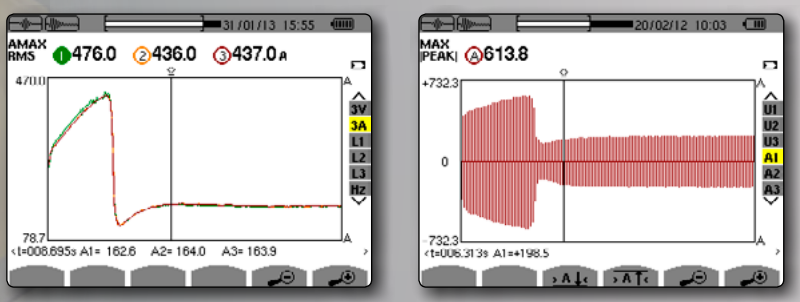
Users can view all the parameters, so they can be checked at any time.



Analysis







A rugged, waterproof C.A 8435, the special Qualistar+ for all conditions and all seasons!

IP 67

- Indoor and outdoor use, including in the rain
- 5 voltage inputs, 4 current inputs
- Continuous, simultaneous recording of all the parameters
- Monitoring with alarms
- All installation types

Specific caps have been developed to ensure maximum waterproofing for the C.A 8435 analyser.

The rugged site case is ideal for industrial use in factories, production workshops, etc. It is so rugged that it can even withstand projections of solids or liquids.

Specific accessories for this model: mains lead, sets of voltage leads and Amp***FLEX***™ clamps.

Essailec accessory for all the Qualistar models

A cable with an ESSAILEC plug can be used for testing without disturbances or interruptions in the power supply circuit on meters and the protective relays installed in the secondary circuits of the current or voltage transformers. The main advantage is quick and simple measurement with maximum user safety

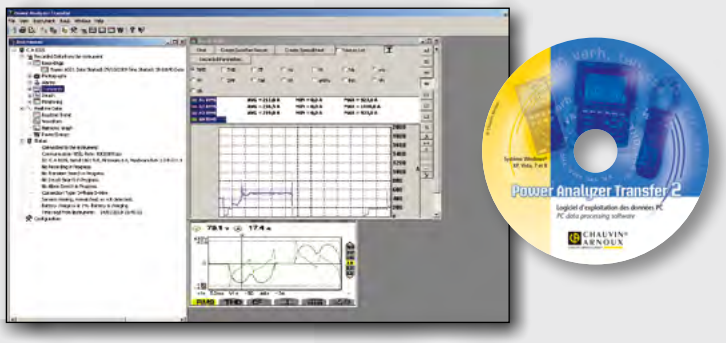
Accessories and software

ACCESSORIES

Model	MN93	MN 93A	MA193	PAC93	A196-450 A193-450	A193-800	C193	E3N
Measurement range	500 mA to 200 AAC	0.005 AAC to 100 AAC	100 mA to 10 kAAC	1 A to 1,000 AAC 1 A to 1,300 ADC	100 mA to 10 kAAC	100 mA to 10 kAAC	1 A to 1,000 AAC	50 mA to 10 AAC/DC 100 mA to 100 AAC/DC
Clamping Ø / length	20 mm	20 mm	Ø 70 mm / 220 mm	1 x Ø 39 mm 2 x Ø 25 mm	Ø 140 mm / 450 mm	Ø 250 mm / 800 mm	52 mm	11.8 mm
IEC 61010	600 V CAT III / 300 V CAT IV	600 V CAT III / 300 V CAT IV	1,000 V CAT III / 600 V CAT IV	600 V CAT III / 300 V CAT IV	1000 V CAT III / 600 V CAT IV	1,000 V CAT III / 600 V CAT IV	600 V CAT IV	600 V CAT III / 300 V CAT IV

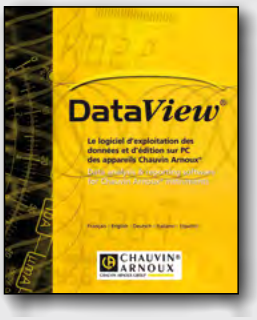
SOFTWARE

The measurements made with the Qualistar can be processed using two software products; Power Analyzer Transfer delivered as standard and DataView® available as an option.



Power Analyzer Transfer

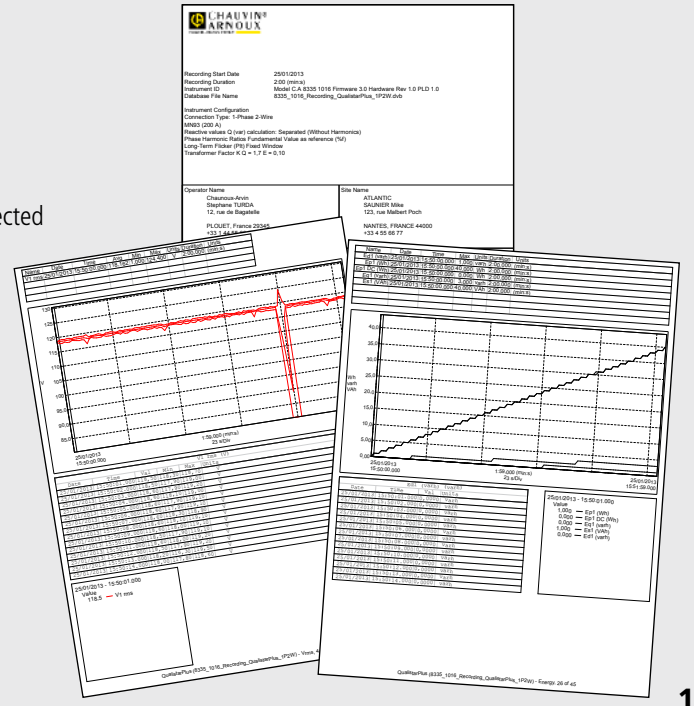
- Configuration of the instrument: setup, recording, alarms
- Real-time display
- Processing of the recorded data and the alarms
- Transfer of screenshots and transients
- Data export into Excel spreadsheets
- Data export in graphic form in Windows™



DataView®

The simple-to-use DataView® software automatically recognizes the instrument connected to the PC and opens the corresponding menu. Users have direct access to:

- report management
- database management



DataView® is compatible with other Chauvin Arnoux® products:

- Qualistar+ power analysers
- C.A 8220 & C.A 8230 power analysers
- F400 and F600 multimeter clamps
- And other measuring instruments

Minimum operating system requirements:
Windows® 2000, Windows® XP, Windows® Vista, Windows® 7 and 8.

Technical specifications

	C.A 8331	C.A 8333	C.A 8336	C.A 8435
Number of channels	3U / 4I		4U / 4I	
Number of inputs	4V / 3I		5V / 4I	
Voltage (TRMS AC+DC)	2 V to 1,000 V			
Voltage ratio	up to 500 kV			
Current (TRMS AC+DC) MN clamps	MN93: 500 mA to 200 AAC ; MN93A: 0.005 AAC to 100 AAC			
C193 clamp	1 A to 1,000 AAC			
AmpFLEX™ or MA193 clamps	100 mA to 10,000 AAC			30 A to 6,500 AAC
PAC93 clamp	1 A to 1,300 AAC/DC			
E3N clamp	50 mA to 100 AAC/DC			
Current ratio	up to 60 kA			
Frequency	40 Hz to 69 Hz			
Power values	W, VA, var, VAD, PF, DPF, cos φ, tan φ			
Energy values	Wh, varh, VAh, VADh			
Harmonics	yes			
THD	yes, orders 0 to 50, phase			
Expert mode	-	yes		
Transients	-	50	210	
Flicker (Pst & Plt)	yes			
Inrush mode	-	yes on 4 periods	yes > 10 minutes	
Unbalance yes	yes			
Recording Min/Max	yes			
of a selection of parameters at the max. sampling rate	4 hours to 2 weeks	A few days to several weeks	2 weeks to several years	
Alarms	-	4,000 of 10 different types	10,000 of 40 different types	
Peak	yes			
Vectorial representation	automatic			
Display	Colour ¼ VGA TFT screen, 320 x 240, diagonal 148 mm			
Capture of screens and curves	12		50	
Electrical safety	IEC 61010 1,000 V CAT III / 600 V CAT IV			
Protection	IP53 / IK08			IP67
Languages	more than 27			
Communication interface	USB			
Battery life	up to 13 hours			
Power supply	9.6 V NiMH rechargeable battery or external mains charger			
Dimensions	240 x 180 x 55 mm			270 x 250 x 180 mm
Weight	1.9 kg			3.7 kg

STATE AT DELIVERY FOR THE C.A 8336, C.A 8333 AND C.A 8331

Models without sensors
One Qualistar+ analyser delivered with a bag for accessories, 5 x 4 mm banana voltage leads 3 m long, 5 crocodile clips, a set of 12-colour inserts/rings for identifying the leads and inputs, a scratch-proof screen-protection film (mounted), a USB cable, a mains power cable, a mains power pack, a safety datasheet, a multi-language operating manual CD and a PC data retrieval software CD (Power Analyser Transfer).

STATE AT DELIVERY FOR THE C.A 8335

C.A 8435 AMP450: delivered with bag no. 22, USB cable, IP67 mains power cable, 4 AmpFLEX™ 450 IP67 A196 current sensors, 5 x 3 m black IP67 BB196 banana leads, 5 lockable crocodile clips, 12-colour identification kit for the leads and inputs, scratchproof screen-protection film (mounted), safety datasheet, CD containing the multi-language operating manual and CD PC data retrieval software and CD containing PC data retrieval software (Power Analyzer Transfer).

References for ordering

C.A 8336 alone P01160591
C.A 8333 alone P01160541
C.A 8331 alone P01160511
C.A 8435 alone P01160585
C.A 8435 AmpFLEX™ 450 mm P01160587

Accessories

MN93 clamp P01120425B
MN93A clamp P01120434B
AmpFLEX™ A193 450 mm clamp P01120526B
AmpFLEX™ A193 800 mm clamp P01120531B
PAC93 clamp P01120079B
C193 clamp P01120323B
AmpFLEX™ A196 450 mm IP67 clamp ... P01120552
MiniFLEX™ MA193, 200 mm P01120580
E3N clamp P01120043A
E3N Adapter P01102081
E3N mains power pack P01120047
Battery pack P01296024
ESSAILEC casing P01102131
Qualistar screen film P01102059

Set of id. rings/inserts P01102080
Set of caps *(C.A 8435)* P01102117
Set of 5 x 3 m IP67 (BB196) banana leads P01295479
Carrying bag no. 21 ..... P01298055
Carrying bag no. 22 ..... P01298056
USB-A USB-B lead P01295293
5 A box P01101959
Mains power pack *(C.A 8331-33-35-36)* P01102057
IP67 mains lead *(C.A 8435)* P01295477
Dataview® Software P01102095
Lockable crocodile clips (x 5) P01102099
Kit containing 5 banana leads, 5 crocodile clips and 1 set of coloured rings P01295483
Kit containing 4 banana leads, 4 crocodile clips and 1 set of coloured rings P01295476

906211385 - 11/2013 - Ed. 2 - Non contractual document - Confirm specifications before ordering.

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For assistance and ordering