

DIRIS[®] N

Electrical network **analysis** system

FOR **QUALITY** CONTROL OF YOUR FACILITIES

MADE TO MEASURE



Why do you need energy quality control?

- To verify that the network quality promised by the supplier is reached
- To detect and understand the events that lead to process shutdown
- To analyse pollution on the network in order to reduce electricity bills by avoiding penalties
- To optimize the installation



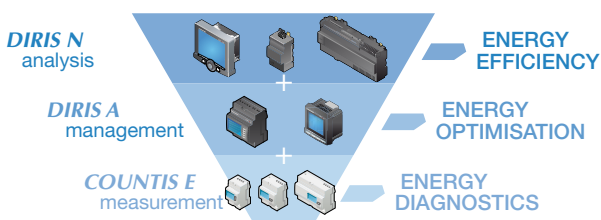
A comprehensive range for measuring your energy efficiency



GAMME 115 A GB

The new **DIRIS & COUNTIS** solutions are tailored to the requirements of industrial or tertiary environments: energy metering, quality monitoring and analysis of electrical networks.

The new standard the IEC 61557-12 is a sharp reference table for power measurement devices (PMD). The solutions **DIRIS** respect the requirements of the IEC 61557-12: it is the guarantee of a high level of performance.



DIRIS 792 A GB

A simplified installation

The **DIRIS N**, **D** and **O** have been designed to be located as close as possible to the function and its operation so as to reduce the number of cables needed.



DIRIS 760 A

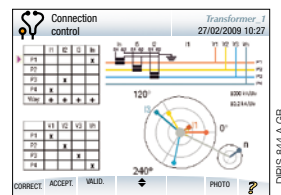
Only a standard RJ45 cable is required to connect the display **DIRIS D600**.

In the same spirit, power is supplied to the additional **DIRIS O** modules directly via the communication bus, thus avoiding the use of yet more cables.

A quick commissioning

Configure your network and your CT ratio, and validate: the **DIRIS N** is operational!

The analyser is configured with default measurement values to simplify starting. CT wiring check, metrological report, USB ports are more standard functions available on the **DIRIS N**.



DIRIS 844 A GB

An easy exploitation

A **DIRIS D** colour LCD display gives the user access to all the installation's parameters with the greatest of ease. They will be able to access both numerical values and graphs. The **DIRIS N** offers the option of downloading all the data in its internal memory onto a USB key or SD card.



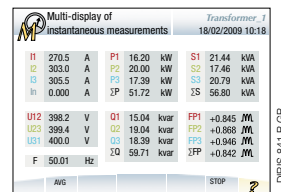
1. High-definition colour display
2. Direct access keys to all the parameters
3. Rotating wheel control
4. USB port to download files and update internal software

DIRIS 759 A GB

A precise measure

Optimal calculation functions and sampling in the range of 1.33 μ s ensuring a very high level of precision:

- Voltages and currents class 0.1
- Active energy class 0.2
- Harmonics classe 1



DIRIS 841 B GB

DIRIS[®] N

MADE TO MEASURE

As user friendly as a **DIRIS[®]**, as powerful as a network analyser

The multi-function network analyser **DIRIS N** allies ease of installation and operation of the **DIRIS A** series Meter with calculation and accuracy capabilities of a world class network analyser.



⇒ Metering

DIRIS N enables allocation of multi-fluid consumption (load curves).

⇒ Monitoring

DIRIS N ensures all parameters that might influence power quality (supplied or consumed) are monitored.

⇒ Control and Command

Linked to its optional digital and analogue input/output modules, **DIRIS N** can integrate and display all types of information. It is also capable of performing control/command functions.

⇒ Analysing

DIRIS N records events and their waveforms in case of disturbance or failure. It also provides the user with a complete diagnostic of the electrical supply quality (EN50160 report).

⇒ Communicating

DIRIS N can interconnect with other equipment, and transmit information (supervision, BMS, etc.) via an RS485, Ethernet or USB connection..



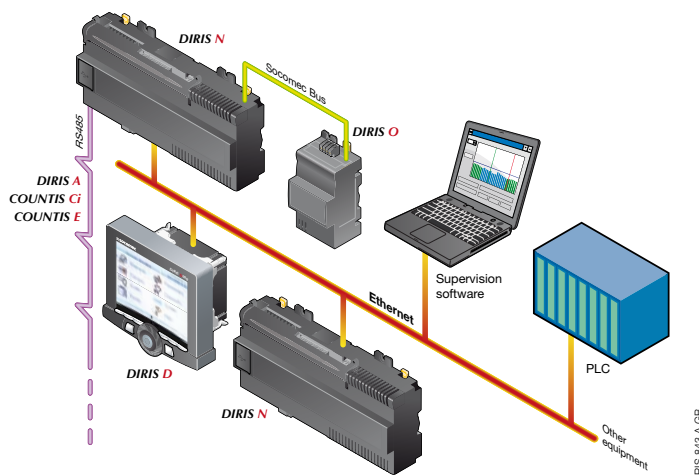
A modular and open system

The **DIRIS N** system includes three “functional blocks”:

- data acquisition and processing **DIRIS N300 / N600**,
- graphic colour display **DIRIS D600**,
- remote input / output modules: **DIRIS O**.

These blocks can be combined to enable a high number of configurations, and can adapt perfectly to your application and environment.

DIRIS N can also provide an interface between products communicating via RS 485 Modbus (**DIRIS A** or **COUNTIS Ci** for example) and an Ethernet network to centralise information on a monitoring system.



Product range

DIRIS N300 et N600 : the core of the analysis system

- Data acquisition, processing and memory module
- Ethernet, USB and RS485 communication ports
- Management remote I/O modules- **DIRIS O**
- DIN-rail or board mounting
- SD Card reader



DIRIS T64 A

	DIRIS N300 multi-function analyser	DIRIS N600 qualimeter
Advanced multi-measurement	•	•
Measurement history	•	•
Harmonics	•	•
Monitoring	•	•
Load curves	•	•
Troughs/Outages/Voltage surges	•	•
Unbalance	•	•
Vector diagram	•	•
Control command (options)	•	•
Interharmonics measurement		•
Analysis of transient states		•
Flicker		•
EN50160 report		•

DIRIS D: the ergonomic remote graphic display

- High-definition colour display
- Local or remote display of a or several **DIRIS N300 / N600** functions via dedicated screen windows
- Display of the consumptions
- Energy quality management
- Events and alarms history



DIRIS T62 A, CB - DIRIS T63 A

DIRIS O: for extended control-command functions

- Remote input / output modules
- Communication with **DIRIS N** via SOCOMEC bus
- Analogue and/or digital input/output
- Max. 32 modules per **DIRIS N**
- Acquisition and centralisation of informations coming from sensors (temperature, pressure...), meters (water, gas...), switches or contactors
- Command of breaker (load shedding, alarm)
- Programming of logical functions (AND, OR...)



DIRIS T65 A

Associated service package

Socomec can provide you with support for analysing and assessing your facility.



DIRIS 983 A

Various solutions can be put forward to best meet your needs or requirements.

- Remote supervision of your facility by specialists in network quality measurement analysis can provide you with access to a relevant and continuous audit of your facility.
- A targeted spot audit on the facility may also provide you with a necessary assessment under certain circumstances.
- Trainings and commissioning services are also available.

Software suite

The **DIRIS N300/N600** network analyser is delivered with the software package which allows to manage remotely all features. Friendly and intuitive, these software tools insure the functions of:

Configuration for a simple and fast parameter setting

This configurator allows to modify and to adapt quickly the settings parameters of the network analyser. The following parameters are available:

- Networks
- Events
- EN50160 report thresholds
- Tariff meters
- Histories and load curves
- Control/command functions linked to **DIRIS O** remote modules.

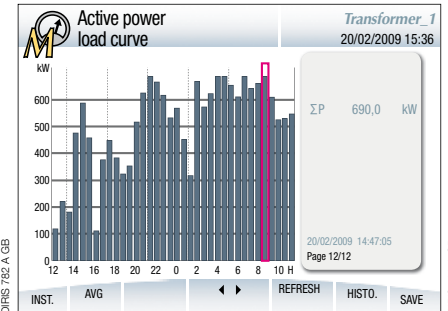
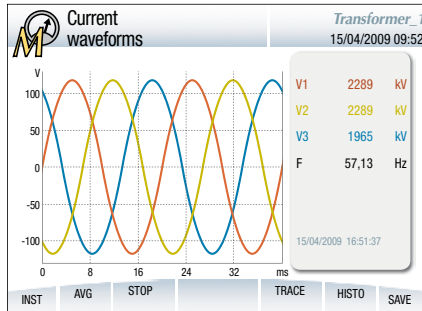


A maintenance function allows the connection and operation of the **DIRIS N** to be checked after they have been configured.

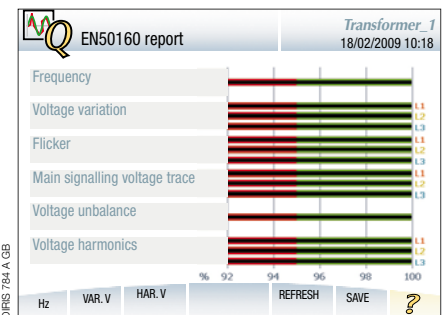
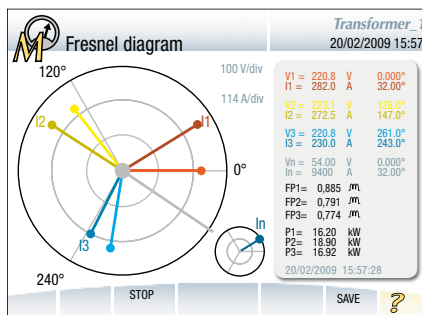
Display for a real time remote monitoring of your installation

This software reproduces the screens of the **DIRIS D600** identically on a PC. Any user can therefore access all the data to save time and increase readability:

- Measurement
- Energies
- Events
- Quality Parameters
- Diagnosis
- Configuration



Communication between the PC and the **DIRIS N** units is via Ethernet. A simultaneous display of several **DIRIS N** is possible.

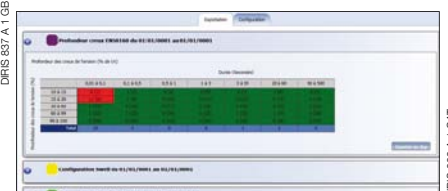
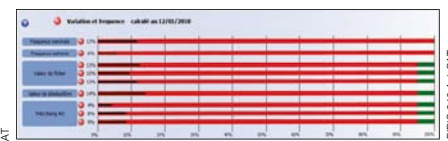
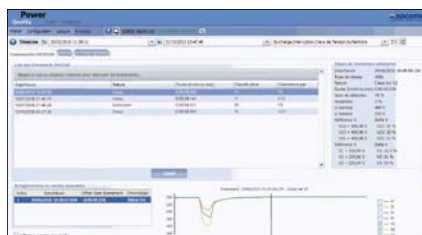


Operation to analyze the quality parameter

This software analyze the **DIRIS N300 N600** quality parameters to improve the efficiency of your electrical installation.

It provides the following functions:

- Classification of voltage dips, cuts and surges (Disdp table)
- EN50160 automatic reports (voltages, frequencies, harmonics, flickers...)
- Automatic detection of out of limits event
- Timestamp EN50160 events list (surges, dips, cut-offs...)



The application enables reports to be issued for periods which can be customised by the user. The temporal display screen allows rapid access to information relating to the desired period.

Specifications

	Base modules		Display	Optional modules		
PRODUCT	<i>DIRIS N300</i>	<i>DIRIS N600</i>	<i>DIRIS D600</i>	<i>DIRIS O</i> 4 inputs / 2 outputs, digital	<i>DIRIS O</i> 2 analogue inputs 0 / 4-20 mA	<i>DIRIS O</i> 2 analogue outputs 0 / 4-20 mA
References	4826 0001	4826 0002	4826 0003	4826 0071	4826 0072	4826 0073
Mechanical						
Consumption	50 W		10 W	1.5 W	1.3 W	2.5 W
Type	Modular		-	Modular		
Number of DIN module	16		-	4		
Dimensions W x H x D	287 x 123 x 67.5		151 x 146 x 84	72 x 148 x 65		
Cutout	-		92 x 92	-		
Vibrations	IEC 60068-2-6 compliant		IEC 60068-2-6 compliant	IEC 60068-2-6 compliant		
Protection degree	IP 40 (nose), IP 20 (unit)		IP 52	IP 40 (nose), IP 20 (unit)		
Weight	1 200 g		600 g	200 g	210 g	220 g

MEASUREMENTS

Networks	Three-phase without Neutral or with Neutral, LV and HV
Number of current transformers	3 or 4
Measurement category	cat III 600 V
Measurement method class	A, except for temporal aggregation
Measurement sampling frequency	10,24 kHz (nominal frequency)
Transient sampling frequency	1 MHz i.e. 1 µs

STANDARDS AND CERTIFICATION

Product standard	IEC 61557-12
Active energy	IEC 62053-22 class 0.2S
Reactive energy	IEC 62053-23 class 2
Harmonics and interharmonics measurement method	IEC 61000-4-7
Flicker measurement method	IEC 61000-4-15
Supply quality measurement method	IEC 61000-4-30
Characteristics of the voltage supplied by public distribution networks	EN50160

AUXILIARY POWER SUPPLY

Supply	110-240 VAC (50 / 60 Hz) (+/-10%) and 48 - 250 VDC (+/- 10 %)
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PRECISIONS

Currents	class 0,1 (0,1 In to In)
Voltages	class 0,1
Frequency	class 0,02 (Fn +/-15%)
Active power	class 0,2 (5% In à 2 In)
Active energy	class 0,2 (5% In à 2 In)

ENVIRONMENTAL DATA

Max. operating temperature	-10 ... +55°C
Max. storage temperature	-25 ... +70°C
Humidity	0 ... +70% RH

CURRENT INPUTS

Number of inputs	3 Phase + Neutral
Nominal current	5 A
Current transformers (primary / secondary)	5 ... 10 000 A / 5 and 1 A

VOLTAGE INPUTS

Number of inputs	3 Phase + Neutral + Earth
Nominal voltage	346 V AC (phase / Neutral) at 600 > V AC (phase / phase)
Voltage transformer	Primary maximum: 630 kVAC

COMMUNICATION

Ethernet	Modbus TCP or proprietary
RS 485	Jbus / Modbus RTU
USB port	Display D600 + N300/600
Local storage	SD card reader

Accuracy class of the current transformers is a dominating element to guarantee a precise measure. That is why Socomec offers a wide range of CT class 0.2 S, particularly adapted to the *DIRIS N*.



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