DIRIS Digiware

Measurement and monitoring system
for electrical installations
multi-circuit plug & play

your energy
our expertise

socomec
Innovative Power Solutions

Save time and space, reduce cost and improve accuracy

The DIRIS Digiware system is a hub of technological innovations that revolutionizes the world of measurement, bringing a high degree of flexibility to installations and making connection and configuration easy.
These innovations, together with unrivaled performance in terms of accuracy and functionality, make DIRIS Digiware the most effective solution for metering consumption and monitoring the quality of electrical energy.

APPLI 637 B US

Power management and optimization

For perfect control of your electrical network, DIRIS Digiware allows you to:
  - analyze consumption,
  - monitor power quality,
  - alert in case of electrical events.
DIRIS Digiware follows UL and IEC international standards dedicated to power monitoring:
  - UL 61010 and FCC standards guarantee product design and conformity with EMC,
  - ANSI C12.20 and IEC 61557-12 standards ensure product accuracy across a wide current range

Simplified maintenance

The electrical energy quality monitoring functions offered by DIRIS Digiware make it easier to anticipate electrical malfunctions. The display fitted on the panel door allows operators to quickly read information, on the tablet. The energy management software allows site managers to remotely monitor their installation.

For new and existing installations

The reduced size of the modules, the various current sensor formats and the multiple connection accessories make the DIRIS Digiware system suitable for even the most space-constrained installations. It can be easily integrated into an existing installation.

DIRIS Digiware

An energy measurement and monitoring system
that revolutionizes electrical installations

Build your system:

- A single centralised control unit
- A single voltage measurement module (U)
- Current measurement modules (I)
- Current sensors

- A single connection for communication

Exclusive to Socomec, patented

DIRIS DW 011 B US
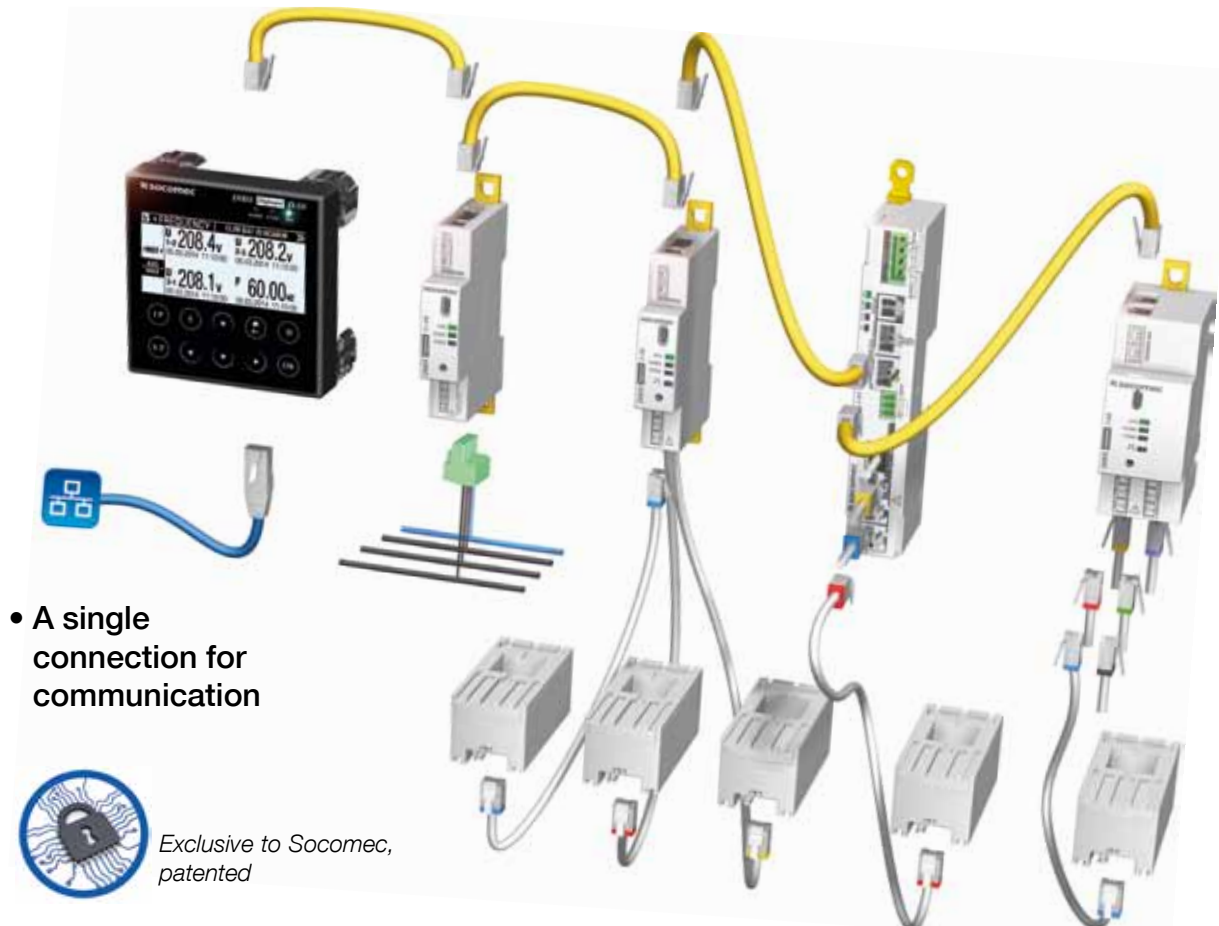
A leader in Energy & Power Management

- A recognized energy efficiency specialist for 20 years.
- The creator of the DIRIS.
- A single point of contact, from the initial quote through to implementation.
- A tailored support: experts ready to listen and services to make your life easier.

- A comprehensive solution: from sensors to energy management software including services.

- A solution adapted for industrial and commercial applications and for infrastructure projects.

INDUSTRY

CRITICAL BUILDING

BUILDING

INFRASTRUCTURE

Advantages of the *DIRIS Digiware* system

Flexible

Shared functions
- Common display.
- A single voltage reference for the entire system.
- Single auxiliary power supply.

Installation of components close to the load
- Modules and sensors can be installed at the closest point to the values to be measured.
- Elimination of hazardous voltage on panel doors.

Compact design
- Compact voltage and current modules (1 to 2 modules).
- System suited to integration in existing space-constrained installations.

Wide choice of current sensors
- Solid, split-core or rogowski coil.
- Various sizes and formats.
- Numerous accessories allow the system to be installed in all panel configurations.

Multi-circuit

Ability to monitor several outputs via a single current measurement module due to independent current inputs.

Accurate

Accuracy of measurements guaranteed according to ANSI C12.20 and IEC standard 61557-12:
- Class 0.5 from 2% to 120% of rated current for the global measurement chain (associated with TE/TF current sensors).
- Class 0.2 for the meter alone.

Cost effective

- Implementation in a quarter of the time vs existing technologies.
- Save space in panels.
- Common voltage measurement functions, display and communication.
- Up to 30% saving compared to existing metering technology.

Plug & Play

RJ12 current sensor connection
- Fast: automatic detection of ratings and verification of current flow direction.
- Reliable: identification of cables by color-coding and wiring control by the system.
- Disconnection of the current sensor secondary under load.

RJ45 interconnection of modules (Digiware Bus)
- Fast: a single connection, no tools required.
- Intelligent: allows communication and interaction between various modules.
- Reliable: ensures auxiliary power supply to modules without the risk of disconnection.

Auto-configuration of parameters
- Network type (single-phase, two-phase three-phase).
- Load type.
- Addressing of devices connected to the Bus.

APPLI 636 A US

DIRIS Digiware - SOCOMEC

Build your own system

Control and power supply interface (24 VDC)

DIRIS Digiware D
with display

DIRIS Digiware C
without display

+

Voltage measurement module

DIRIS Digiware U-x

+

Current measurement modules

DIRIS Digiware I-3x
3 current sensor inputs

DIRIS Digiware I-4x
4 current sensor inputs

DIRIS Digiware I-6x
6 current sensor inputs

Current sensors

+

TE
Solid

TR
Split-core

TF
Flexible

+

Communication gateway

DIRIS G
RS485 to Ethernet

Software suite: the perfect companion to drive reductions in your energy consumption

Energy and facility managers of commercial and industrial sites,

Do you want :
- To understand your site, buildings & processes?
- To reduce your energy consumption, costs & carbon emissions?
- To monitor, allocate and sub-bill energy costs?
- To implement a corporate green communication?

Socomec's energy management software is ideal for meeting the energy requirements of industrial and commercial buildings.

The software allows you to **reduce your** energy bills by up to 30%.

SYDIV_093_C_US

SYDIV_094_C

DIRIS Digiware D and *C* control and power supply interfaces

■ DIRIS Digiware display

The DIRIS Digiware remote display screens provide:
- a local view of the data from the DIRIS Digiware voltage and current modules,
- a power supply to the DIRIS Digiware modules,
- access to the data over Ethernet (D-50) or RS485 (D-40).

Via an RS485 connection, the DIRIS Digiware D-50 display also acts as a gateway, centralizing the data from DIRIS A, DIRIS B and COUNTIS E and makes this information available over Ethernet. The DIRIS Digiware D-50 screen is supplied with 24 VDC.


DIRIS DW 006 A

Strong points

- High-resolution graphical display.
- 24 VDC supply: elimination of hazardous voltage at the panel doors.
- Ergonomic and easy to use due to direct access buttons for:
  - measurement information,
  - circuit selection,
  - device configuration.
- Centralization of measurement points:
  - circuit selection,
  - data view.

DIRIS DW 030 A

DIRIS DW 031 A
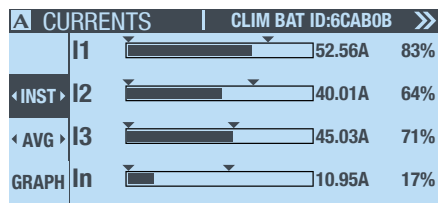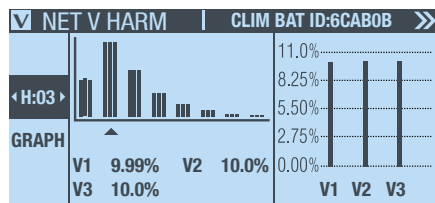
Ports	D-40	D-50
Input	Digiware	Digiware RS485
Output	RS485	Ethernet

■ DIRIS Digiware C-31 interface system

For applications without a local display, the DIRIS Digiware C-31 interface centralizes all of the system's data. An RS485 Modbus output allows this system to provide all information to user software (DIRIS G communication gateways are available for communication via Ethernet - Modbus TCP). The DIRIS Digiware C-31 interface is supplied with 24 VDC.

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diris_dw_020_a_1_gb
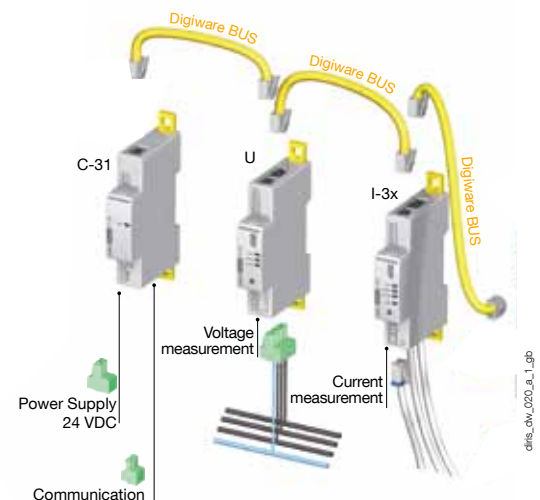
■ References

DIRIS Digiware D	Reference
DIRIS Digiware D-40 multi-circuit display panel with RS485 output	4829 **0199**
DIRIS Digiware D-50 multi-point display Ethernet output	4829 **0201**
DIRIS Digiware C-31	**Reference**
C-31 system interface	4829 **0101**

DIRIS Digiware U voltage measurement module

The DIRIS Digiware U module measures the reference voltage for the entire system. The Digiware RJ45 Bus allows you to measure the voltage as well as supply power to all connected devices.

diris_dw_005_a

Strong points

- 1 single voltage measurement point for the entire system.
- A complete, dedicated solution:
  - for metering,
  - for voltage monitoring,
  - for quality analyzis of the voltage.
- No hazardous voltage at the panel doors.

RJ45 cables (Digiware bus) are available; refer to the relevant pages of the catalog.

■ References

	U-10	U-20	U-30
Application	Metering	Monitoring	Analyzis
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality			
THD U, THD V,		•	•
Individual harmonics U/ V (up to rank 63)			•
Voltage dips, cut-offs and surges (EN50160)			•
Alarms (threshold)			•
History of average values			•
Format/number of modules	0.7 in / 18 mm / 1	0.7 in / 18 mm / 1	0.7 in / 18 mm / 1
Reference	4829 **0105**	4829 **0106**	4829 **0102**

Why do you need power quality monitoring?

- To ensure a continuous power supply.
- To lower electricity bills and avoid penalties associated with reactive energy.
- To optimize the size of the installation.
- To extend the lifetime of equipment (on networks polluted by harmonics).
- To identify polluting loads and improve the energy efficiency of the installation.

CONTINUITY OF POWER SUPPLY

ENERGY PERFORMANCE

RELIABILITY OF DEVICES

LIFETIME OF THE INSTALLATION

sydiv_178_a_gb
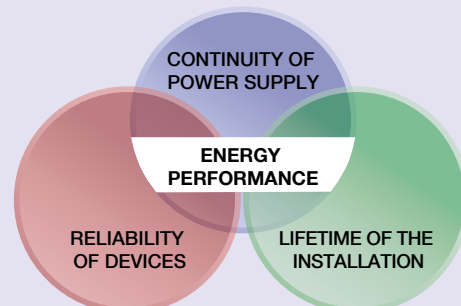
*DIRIS Digiware **I*** current measurement modules

DIRIS Digiware I modules measure consumption at the closest point to the loads. The flexibility of these modules allows you to allocate the loads to be measured or to monitor independent current inputs. For example:
- 1 three-phase load,
- 3 single-phase loads.

The RJ45 and RJ12 connections allow you to connect modules very quickly and to automatically configure connected current sensors:
- communication address,
- load type,
- sensor type and ratio,
- automatic rating and verification of current flow direction.

Wiring errors are also prevented and implementation is simplified.

DIRIS-DW-004 A

*Up to 32 DIRIS Digiware I-xx per system. Please contact us for higher requirements).*

■ Accessories

Removable Digiware connector
The removable Digiware connector allows you to disconnect a Digiware unit from the Bus, while ensuring continued operation of the rest of the DIRIS Digiware system. The accessory is very useful in applications using pullout drawers or critical applications such as data centres.
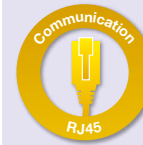
Communication RJ45

RJ45 cables (Digiware Bus) are available; refer to the relevant pages of the catalog.

■ References

	I-30	I-31	I-33	I-35	I-45	I-60	I-61
Application	Metering		Monitoring	Analyzis	Analyzis	Metering	
Number of current inputs	3	3	3	3	4	6	6
Metering							
+/- kWh, +/- kvarh, kvah	•	•	•	•	•	•	•
Multi-tariff (8 max.)		•		•	•		•
Load curves		•		•	•		•
Multi-measurement							
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣFP	•	•	•	•	•	•	•
P, Q, S, FP per phase			•	•	•		
Predictive power				•	•		
Current unbalance				•	•		
Phi, cos Phi, tan Phi				•	•		
Quality							
THDI			•	•	•		
Individual harmonics I (up to rank 63)				•	•		
Overcurrents				•	•		
Alarms				•	•		
Thresholds				•	•		
Inputs/Outputs					2/2		
History of average values				•	•		
Format/ number of modules	0.7 in / 18 mm / 1	0.7 in / 18 mm / 1	0.7 in / 18 mm / 1	0.7 in / 18 mm / 1	1.0 in / 27 mm / 1,5	1.4 in / 36 mm / 2	1.4 in / 36 mm / 2
References	4829 **0110**	4829 **0111**	4829 **0128**	4829 **0130**	4829 **0131**	4829 **0112**	4829 **0113**

Accessories	
Removable Digiware connector x5	4829 **0605**

TE, *TR* and *TF* current sensors

■ *TE* solid current sensors

Rated current	Real range covered
5 … 2000	0,1 … 2400

Suitable for new installations - Match the pitch of protective devices.

	TE-18		TE-25	TE-35	TE-45	TE-55	TE-90
Nominal current (A)	5 to 20	25 to 63	40 to 160	63 to 250	160 to 630	400 to 1000	600 to 2000
Real range covered (A)	0.1 to 24	0.5 to 75	0.8 to 192	1.26 to 300	3.2 to 756	8 to 1200	12 to 2400
Aperture (mm)	Ø 8.4	Ø 8.4	13.5 x 13.5	21 x 21	31 x 31	41 x 41	64 x 64
Dimensions (mm)	28x20x45	28x20x45	25x32.5x65	35x32.5x71	45x32.5x86	55x32.5x100	90x24.5 x126
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12
References	4829 **0500**	4829 **0501**	4829 **0502**	4829 **0503**	4829 **0504**	4829 **0505**	4829 **0506**

For loads greater than 1000 A, use the the 5 A / RJ12 adapter associated with 5A secondary CTs.

Staggered assembly

DIRIS T 005 A

Linear assembly

DIRIS T 006 A

Strong points

- Rapid RJ12 connection.
- High precision: class 0.5 in accordance with standard ANSI C12.20 for the global measurement chain (with TE current sensors).
- Follows IEC 60044-1 and IEC 61869-1
- 7 models with differing ratings (5 to 2000 A), matching the pitch of protective devices (0.7/1/1.4/1.8/2.2 in or 18/25/35/45/55/90 mm).
- 5 A/ RJ12 adapter for compatibility with TC / 5 A.
- Accessories provided for assembly on a DIN rail/cable/bar.

RJ12 cables with fail-safe mechanisms are available; refer to the relevant pages of the catalog.

■ *TR* split-core current sensors

Rated current	Real range covered
25 … 600	0,5 … 7 20

Suitable for existing installations.

	TR-10	TR-16	TR-24	TR-36
Nominal current (A)	25 to 75	32 to 100	63 to 200	200 to 600
Real range covered (A)	0.5 to 90	0.64 to 120	1.26 to 200	4 to 720
Diameter (mm)	Ø 10	Ø 16	Ø 24	Ø 36
Dimensions (mm)	25x39x71	30x42x74	45x44x95	57x42x111
Connection	RJ12	RJ12	RJ12	RJ12
References	4829 **0551**	4829 **0552**	4829 **0553**	4829 **0554**

For loads greater than 600 A, use the the 5 A / RJ12 adapter associated with 5A secondary CTs.

Strong points

- Rapid RJ12 connection.
- Precision: class 1 in accordance with standard ANSI C12.20 for the global measurement chain.
- Follows IEC 60044-1 and IEC 61869-1
- 4 models ranging from 25 to 600 A.
- Diameter from 0.4 to 1.4 in or from 10 to 36 mm.

■ *TF* Flexible (Rogowski) current sensors

Rated current	Real range covered
150 … 6000	3 … 7200

Suitable for existing installations with space restrictions or with high-intensity currents.

	TF-55	TF-120	TF-300
Nominal current (A)	150 to 600	500 to 2000	1600 to 6000
Real range covered (A)	3 to 720	10 to 2400	32 to 7200
Diameter (mm)	Ø 55	Ø 120	Ø 300
Connection	RJ12	RJ12	RJ12
References	4829 **0570**	4829 **0571**	4829 **0572**

Strong points

- Rapid RJ12 connection.
- Precision: class 0.5 in accordance with standard ANSI C12.20 for the global measurement chain.
- Follows IEC 60044-1 and IEC 61869-1
- 3 models ranging from 150 A to 6000 A.
- Diameter from 2.2 to 11.8 in or from 55 to 300 mm.

DIRIS G communication gateways

With DIRIS G communication gateways, all information from meters and measurement devices communicating via the RS485 bus are centralized in a single device and then made available on the Ethernet network via the modbus TCP. The gateway has an embedded WEBVIEW web server, allowing real time monitoring of electrical values and analyzis of consumption data.
Via Ethernet, the DIRIS G gateways can also retrieve data from remote Socomec meters or measurement units.

DIRIS G-30/G-50
RS485 Modbus/Ethernet

Strong points

- WEBVIEW web server embedded in the gateway, view of data via an Internet browser.
- Automatic addressing and detection of devices.
- Automatic recording and storage of measurements and consumption data.
- Automatic sending of alarm emails (SMTP).
- Automatic clock synchronization (SNTP).
- Automatic export of data to an FTP server.

Two versions of the WEBVIEW embedded web server

Power Monitoring

Monitor

- Automatic detection of connected devices.
- Up to 32 counting and measurement devices.
- Measurements of voltage, current, power, power factor, harmonic distortion rate (THD) and harmonics per rank.
- Total & partial energy consumption per load.
- Input/output status.
- Synchronization of device clocks.

Alarm

- Alarms for overloads, events & input status changes.
- Display of alarm history.
- Sorting by type, nature, criticality or state.
- Alarm displayed on the main page.
- Sending of alarm by email (SMTP).

Power & Energy Monitoring

View

- Historical measurements and consumption (one year of data).
- Distribution of consumption by usage and by utility (water, gas, electricity, etc.).
- Export of consumption data in CSV format.
- Automatic export of data to an FTP server.

Power & Energy Monitoring also includes "Monitor" and "Alarm" functions.
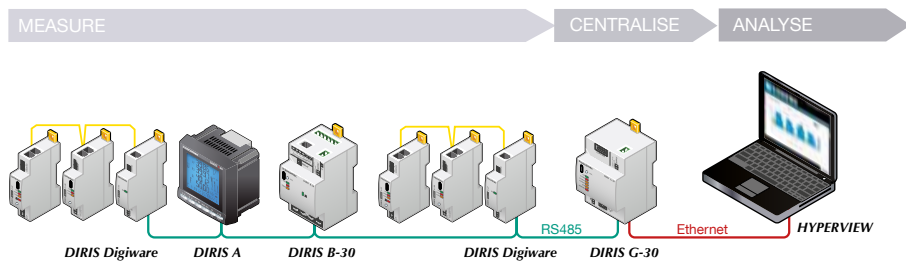
Real time views

Alarm history

Consumption history

Communication architecture

■ Single-gateway architecture: centralization of data on a single gateway

MEASURE · CENTRALISE · ANALYSE

DIRIS Digiware · *DIRIS A* · *DIRIS B-30* · *DIRIS Digiware* · *DIRIS G-30* · RS485 · Ethernet · *HYPERVIEW*
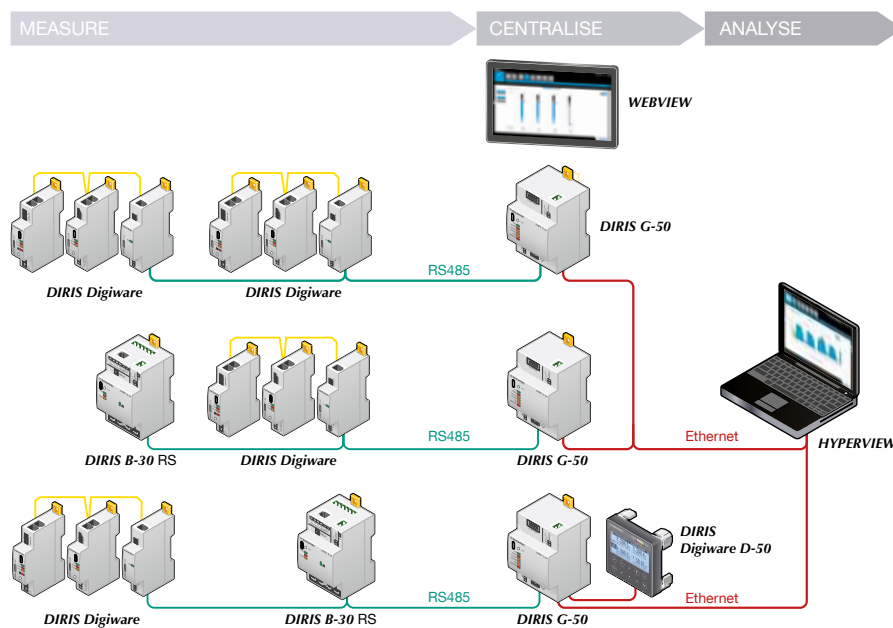
DIRIS G 029 A US

Strong points

- Centralization of data from RS485 Modbus devices.
- WEBVIEW embedded web server.
- Compatible with DIRIS Digiware, DIRIS B-30 and DIRIS A.

■ Multi-gateway architecture: centralization of data on several cascading or parallel gateways

MEASURE · CENTRALISE · ANALYSE

WEBVIEW

DIRIS Digiware · *DIRIS Digiware* · RS485 · *DIRIS G-50*

DIRIS B-30 RS · *DIRIS Digiware* · RS485 · *DIRIS G-50* · Ethernet · *HYPERVIEW*

DIRIS Digiware · *DIRIS B-30* RS · RS485 · *DIRIS G-50* · *DIRIS Digiware D-50* · Ethernet

DIRIS G 013 C US

Strong points

- Suitable for all network types.
- Multi-gateway communication.
- Local view of all devices linked to the connected gateways on a DIRIS Digiware D-50 display.
- WEBVIEW embedded web server.
- Compatible with DIRIS Digiware, DIRIS B-30 and DIRIS A.

■ References

	DIRIS G-30	DIRIS G-50
Standard interfaces		
Ethernet	•	•
RS485 Modbus	•	•
Embedded web server		
WEBVIEW Power Monitoring	•	•
WEBVIEW Power & Energy Monitoring		•
Main specifications		
Dimensions	3.5 modules	3.5 modules
References	4829 **0300**	4829 **0302**

Socomec worldwide

NORTH AMERICA

USA, CANADA & MEXICO
Critical Power / Power Control & Safety /
Energy Efficiency
222 Third Street - Suite 1221
Cambridge, MA 02142 USA
Tel. 617 245 0447
Fax 617 245 0437
info.us@socomec.com

IN EUROPE

BELGIUM
Critical Power / Power Control & Safety /
Energy Efficiency
info.be@socomec.com

FRANCE
Critical Power / Power Control & Safety /
Energy Efficiency
dcm.ups.fr@socomec.com

GERMANY
Critical Power
info.ups.de@socomec.com

Power Control & Safety / Energy Efficiency
info.scp.de@socomec.com

ITALY
Critical Power
info.ups.it@socomec.com

Power Control & Safety / Energy Efficiency
info.scp.it@socomec.com

NETHERLANDS
Critical Power / Power Control & Safety /
Energy Efficiency
info.nl@socomec.com

POLAND
Critical Power
info.ups.pl@socomec.com

Power Control & Safety / Energy Efficiency
info.scp.pl@socomec.com

PORTUGAL
Critical Power / Power Control & Safety /
Energy Efficiency
info.ups.pt@socomec.com

ROMANIA
Critical Power / Power Control & Safety /
Energy Efficiency
info.ro@socomec.com

SLOVENIA
Critical Power / Power Control & Safety /
Energy Efficiency
info.si@socomec.com

SPAIN
Critical Power / Power Control & Safety /
Energy Efficiency
info.es@socomec.com

SWITZERLAND
Critical Power
info@socomec.ch

TURKEY
Critical Power / Power Control & Safety /
Energy Efficiency
info.tr@socomec.com

UNITED KINGDOM
Critical Power / Power Control & Safety /
Energy Efficiency
info.uk@socomec.com

IN ASIA PACIFIC

AUSTRALIA
Critical Power / Power Control & Safety
info.ups.au@socomec.com

CHINA
Critical Power / Power Control & Safety /
Energy Efficiency
info.cn@socomec.com

INDIA
Critical Power / Power Control & Safety /
Energy Efficiency
info.in@socomec.com

SINGAPORE
Critical Power / Power Control & Safety /
Energy Efficiency
info.sg@socomec.com

THAILAND
Critical Power
info.ups.th@socomec.com

IN MIDDLE EAST

UNITED ARAB EMIRATES
Critical Power / Power Control & Safety /
Energy Efficiency
info.ae@socomec.com

OTHER COUNTRIES

NORTH AFRICA
Algeria / Morocco / Tunisia
info.naf@socomec.com

AFRICA
Other countries
info.africa@socomec.com

SOUTH EUROPE
Cyprus / Greece / Israel / Malta
info.se@socomec.com

SOUTH AMERICA
info.es@socomec.com

MORE DETAILS
www.socomec.us/worldwide

HEAD OFFICE

SOCOMEC GROUP
SAS SOCOMEC capital 10 686 000 €
R.C.S. Strasbourg B 548 500 149
B.P. 60010 - 1, rue de Westhouse
F-67235 Benfeld Cedex - FRANCE
Tel. +33 3 88 57 41 41
Fax +33 3 88 74 08 00
info.scp.isd@socomec.com

www.socomec.us

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