



# 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 revolutionises 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.



## Power management and optimisation

For perfect control of your electrical network, DIRIS Digiware allows you to:

- manage consumption,
- monitor power quality and electrical events.

The accuracy is ensured by compliance with IEC 61557-12 across a wide current range from 2 to 120% of current.

## 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

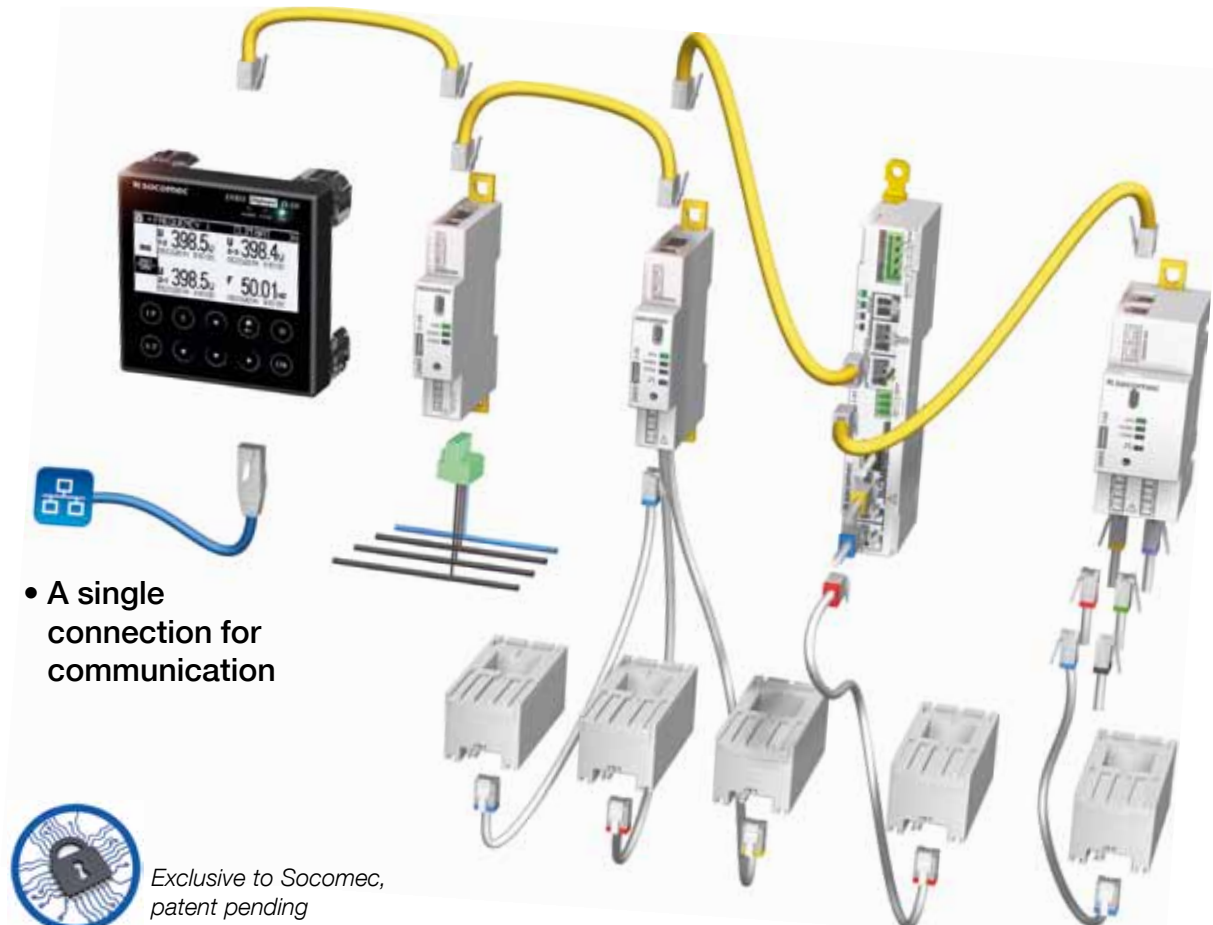
The reduced size of the modules, the various current sensor formats and the multiple connection accessories make the DIRIS Digiware system suitable for even the most space-constrained installations. It can be easily integrated into an existing installation.

# DIRIS Digiware

An energy measurement and monitoring system that revolutionises 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,  
patent pending

DIRIS DW 011 A

## A leader in Energy & Power Management

- A recognised 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.



# 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 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, three-phase).
- Load type.
- Addressing of devices connected to the Bus.



# Build your own system



<p>Control and power supply interface (24 VDC)</p>  <p><b>DIRIS Digiware D</b> with display     <b>DIRIS Digiware C</b> without display</p>		+	<p>Voltage measurement module</p>  <p><b>DIRIS Digiware U-x</b></p>	+	<p>Current measurement modules</p>  <p><b>DIRIS Digiware I-3x</b> 3 current sensor inputs     <b>DIRIS Digiware I-4x</b> 4 current sensor inputs     <b>DIRIS Digiware I-6x</b> 6 current sensor inputs</p>
<p>Current sensors</p>  <p><b>TE</b> Solid     <b>TR</b> Split-core     <b>TF</b> Flexible</p>			+	<p>Communication gateway</p>  <p><b>DIRIS G</b> RS485 and/or wireless to Ethernet</p>	

## 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 drive a legislation compliance process?
- 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%.



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

## DIRIS Digiware display

The DIRIS Digiware remote display screens provide:

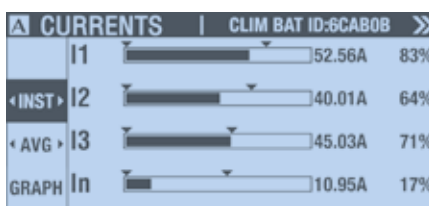
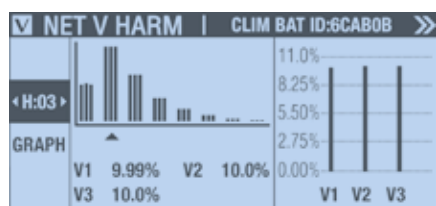
- a local view of the data from the DIRIS Digiware voltage and current modules,
- a power supply to the DIRIS Digiware modules,
- access to the data over Ethernet (D-50) or RS485 (D-40).

Via an RS485 connection, the DIRIS Digiware D-50 display also acts as a gateway, centralising 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.



### Strong points

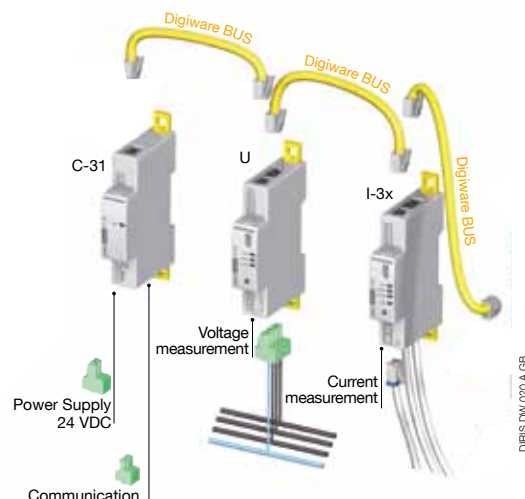
- High-resolution graphical display.
- 24 VDC supply: elimination of hazardous voltage at the panel doors.
- Ergonomic and easy to use due to direct access buttons for:
  - measurement information,
  - circuit selection,
  - device configuration.
- Centralisation of measurement points:
  - circuit selection,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



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 centralises 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.



## References

DIRIS Digiware D	Reference
DIRIS D-30 single-point display <sup>(1)</sup>	4829 0200
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

<sup>(1)</sup> The DIRIS D-30 display can be connected to the DIRIS Digiware I-4x current measurement device, providing a local display of data.

# 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 analysis of the voltage.
- No hazardous voltage at the panel doors.



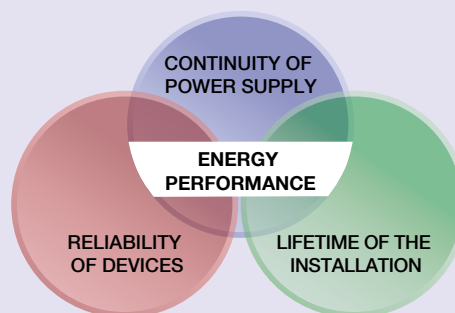
RJ45 cables (Digiware bus) are available; refer to the relevant pages of the catalog.

## References

	U-10	U-20	U-30
<b>Application</b>	Metering	Monitoring	Analysis
<b>Multi-measurement</b>			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
<b>Quality</b>			
THD U, THD V,		•	•
Individual harmonics U/V (up to rank 63)			•
Voltage dips, cut-offs and surges (EN50160)			•
<b>Alarms (threshold)</b>			•
<b>History of average values</b>			•
<b>Format/number of modules</b>	18 mm/1	18 mm/1	18 mm/1
<b>Reference</b>	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 optimise 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.



SYDOW 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.



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.

## References

	I-30	I-31	I-33	I-35	I-43	I-45	I-60	I-61
<b>Application</b>	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
<b>Number of current inputs</b>	3	3	3	3	4	4	6	6
<b>Metering</b>								
+/- kWh, +/- kvarh, kvah	•	•	•	•	•	•	•	•
Multi-tariff (8 max.)		•		•		•		•
Load curves		•		•		•		•
<b>Multi-measurement</b>								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣFP	•	•	•	•	•	•	•	•
P, Q, S, FP per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance				•		•		
Phi, cos Phi, tan Phi				•		•		
<b>Quality</b>								
THDI			•	•	•	•		
Individual harmonics I (up to rank 63)				•		•		
Overcurrents				•		•		
<b>Alarms</b>				•		•		
<b>Thresholds</b>				•		•		
Inputs/Outputs					2/2	2/2		
<b>History of average values</b>				•		•		
<b>Format/number of modules</b>	18 mm / 1	18 mm / 1	18 mm / 1	18 mm / 1	27 mm / 1.5	27 mm / 1.5	36 mm / 2	36 mm / 2
References	4829 0110	4829 0111	4829 0128	4829 0130	4829 0129	4829 0131	4829 0112	4829 0113

Accessories	
Removable Digiware connector x5	4829 0605

### Strong points

- RJ45 and RJ12 rapid connection.
- Available with 3, 4 or 6 inputs.
- Single-circuit or multi-circuit for maximum optimisation of the number of products.
- Compact format: 1 or 2 modules sized for integration at the closest point to the loads.
- A complete, dedicated solution:
  - for metering,
  - for power monitoring,
  - for quality analysis.
- Compliant with standard IEC 61557-12, guaranteeing the quality and accuracy of the system:
  - Class 0.5 from 2% to 120% of rated current for the global measurement chain (associated with TE/TF current sensors).

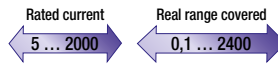


RJ45 cables (Digiware Bus) are available; refer to the relevant pages of the catalog.



# TE, TR and TF current sensors

## TE solid current sensors



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
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
Aperture (mm)	Ø 8.4	Ø 8.4	13.5 x 13.5	21 x 21	31 x 31	41 x 41
Dimensions (mm)	28x20x45	28x20x45	25x32.5x65	35x32.5x71	45x32.5x86	55x32.5x100
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12
References	4829 0500	4829 0501	4829 0502	4829 0503	4829 0504	4829 0505

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

### Staggered assembly



### Linear assembly



### Strong points

- Rapid RJ12 connection.
- High precision: class 0.5 in accordance with standard IEC 61557-12 for the global measurement chain (with TE current sensors).
- 7 models with differing ratings (5 to 2000 A), matching the pitch of protective devices (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



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 IEC 61557-12 for the global measurement chain.
- 4 models ranging from 25 to 600 A.
- Diameter from 10 to 36 mm.

## TF Flexible (Rogowski) current sensors



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 IEC 61557-12 for the global measurement chain.
- 3 models ranging from 150 A to 6000 A.
- Diameter from 55 to 300 mm.

# DIRIS G communication gateways

With DIRIS G communication gateways, all information from meters and measurement devices communicating wirelessly or via the RS485 bus are centralised in a single device and then made available on the Ethernet network via the modbus TCP.

Via Ethernet, the DIRIS G gateways can also retrieve data from remote Socomec meters or measurement units. The gateway has an embedded WEBVIEW web server, allowing real time monitoring of electrical values and analysis of consumption data.

**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 synchronisation (SNTP).
- Several optional modules available:
  - analogue inputs/outputs,
  - digital inputs/outputs,
  - temperature measurement.
- Automatic export of data to an FTP server.



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



**DIRIS G-40/G-60**  
Wireless and RS485 Modbus

## 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.
- Synchronisation 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.

*Power & Energy Monitoring also includes "Monitor" and "Alarm" functions.*

Real time views



Alarm history

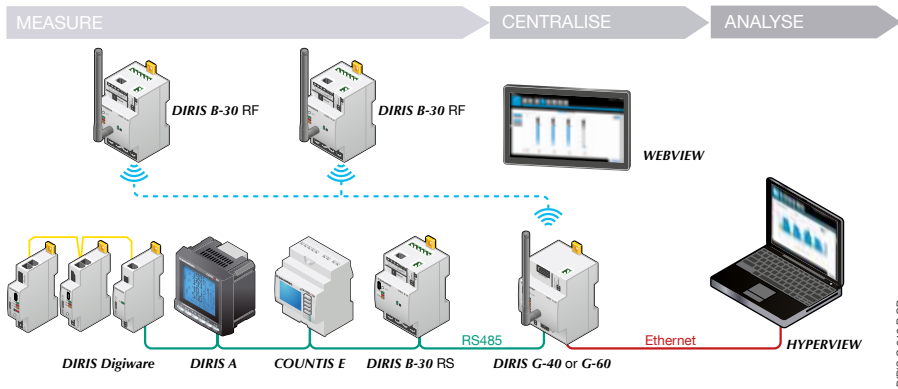


Consumption history



# Communication architecture

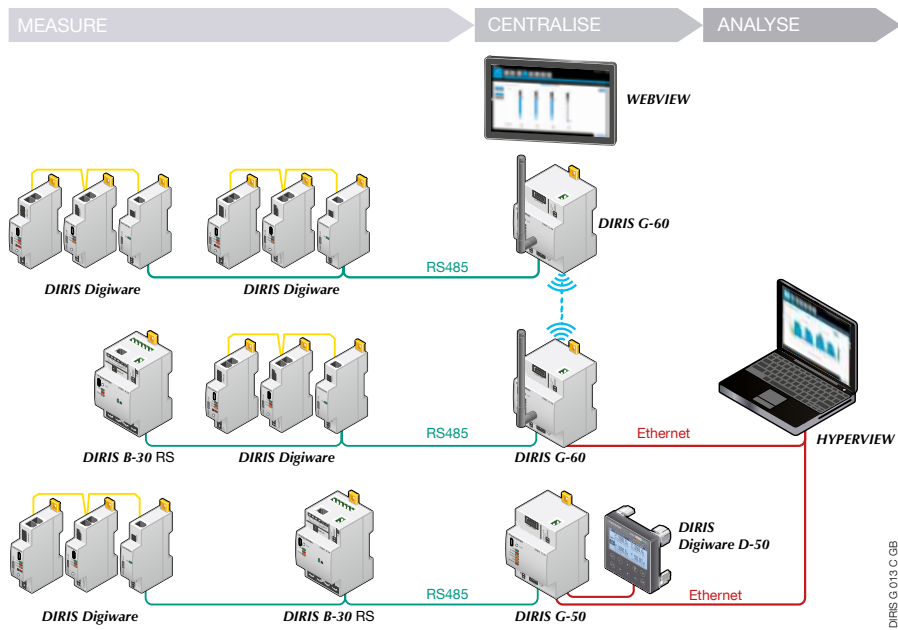
## Single-gateway architecture: centralisation of data on a single gateway



- Strong points**
- Centralisation of data from wireless & RS485 Modbus devices.
  - WEBVIEW embedded web server.
  - Compatible with DIRIS Digiware, DIRIS B, DIRIS A and COUNTIS E.

DIRIS G 019 E GB

## Multi-gateway architecture: centralisation of data on several cascading or parallel gateways



- Strong points**
- Suitable for all network types.
  - Multi-gateway communication with wireless options.
  - 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, DIRIS A and COUNTIS E.

DIRIS G 013 C GB

## References

	DIRIS G-30	DIRIS G-40	DIRIS G-50	DIRIS G-60
<b>Standard interfaces</b>				
Ethernet	•	•	•	•
RS485 Modbus	•	•	•	•
Wireless		•		•
<b>Embedded web server</b>				
WEBVIEW Power Monitoring	•	•	•	•
WEBVIEW Power & Energy Monitoring			•	•
<b>Main specifications</b>				
Dimensions	3.5 modules	3.5 modules	3.5 modules	3.5 modules
References	4829 0300	4829 0301	4829 0302	4829 0303

OPTIONAL MODULES <sup>(1)</sup>	
2 inputs / 2 outputs, digital	4829 0030
2 inputs / 2 outputs, analogue, 4-20 mA	4829 0031
3 temperature inputs, PT100 / PT1000	4829 0032
RS485 Modbus slave interface	4829 0033

(1) Up to 4 optional modules per gateway.

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