

Multi-circuit Power Monitoring System for AC and DC electrical installations

DIRIS Digiware



DIRIS Digiware

Elevating power monitoring to a new level

Master your electrical installation and transform your performance with the most versatile and intelligent power monitoring system available.

The DIRIS Digiware system is a hub of technological innovations that has revolutionised the world of power monitoring - bringing a high degree of flexibility to installations and making connection and configuration easier than ever before. A complete Socomec solution, DIRIS Digiware delivers unrivalled performance in terms of accuracy and functionality – whilst being tailored to your system architecture.

The most effective solution for monitoring the performance of your electrical installation – and that's proven.

Smart

Innovation you can rely on

- Fast RJ45 interconnection of modules (Digiware bus).
- Fast RJ12 current sensor connection.
- Unique class 0.5 system accuracy.
- Exclusive technologies for maximum reliability.

Versatile

A complete solution – with just one system

- Compatible with AC or DC applications.
- The only system combining power monitoring, power quality and residual current monitoring.
- Complete solution from current sensors to software.

Scalable

Evolving with you, for you – at your pace

- The first system to be 100% customisable to your precise requirements.
- Modular concept for multi-circuit applications.
- An interoperable ecosystem, scalable with the evolution of your facility's strategy.

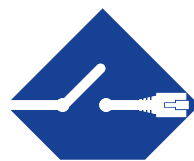
Groundbreaking technologies for greater simplicity and performance*



PreciSense

Be guaranteed of the accuracy of your measurements

- For the global measurement chain.
- For reliable measurements.
- For relevant corrective actions.



VirtualMonitor

Access the monitoring of your protective devices

- On your entire electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring.



AutoCorrect

Be guaranteed your measurement system is working correctly

- Automatic wiring control.
- Correction of errors.
- Feature available off-load.

* Only available with DIRIS Digiware AC.

VirtualMonitor and AutoCorrect are available with:



DIRIS A-40 and DIRIS Digiware I
Associated with ITR sensors



DIRIS Digiware S

Put together your own AC or DC metering and monitoring system

A single point of access to AC and DC measurement data for local or remote analysis

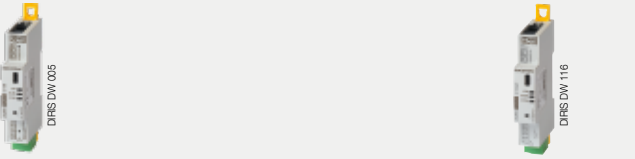
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DIRIS Digiware D *DIRIS Digiware M* **+** *WEBVIEW-M*

Voltage acquisition modules for AC or DC measurement


2



DIRIS Digiware U *DIRIS Digiware Udc*

Current acquisition modules for AC or DC measurement


3



DIRIS Digiware S *DIRIS Digiware I* *DIRIS Digiware Idc*
All-in-one with 3 integrated current sensors To be associated with external AC or DC sensors

Solid-core and split-core current sensors for AC or DC measurement

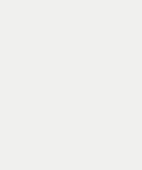
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AC sensors *TE, TR, iTR, TF* DC sensors

Digital and analogue input/output modules

5



DIRIS Digiware IO-10 *DIRIS Digiware IO-20*

Create your project

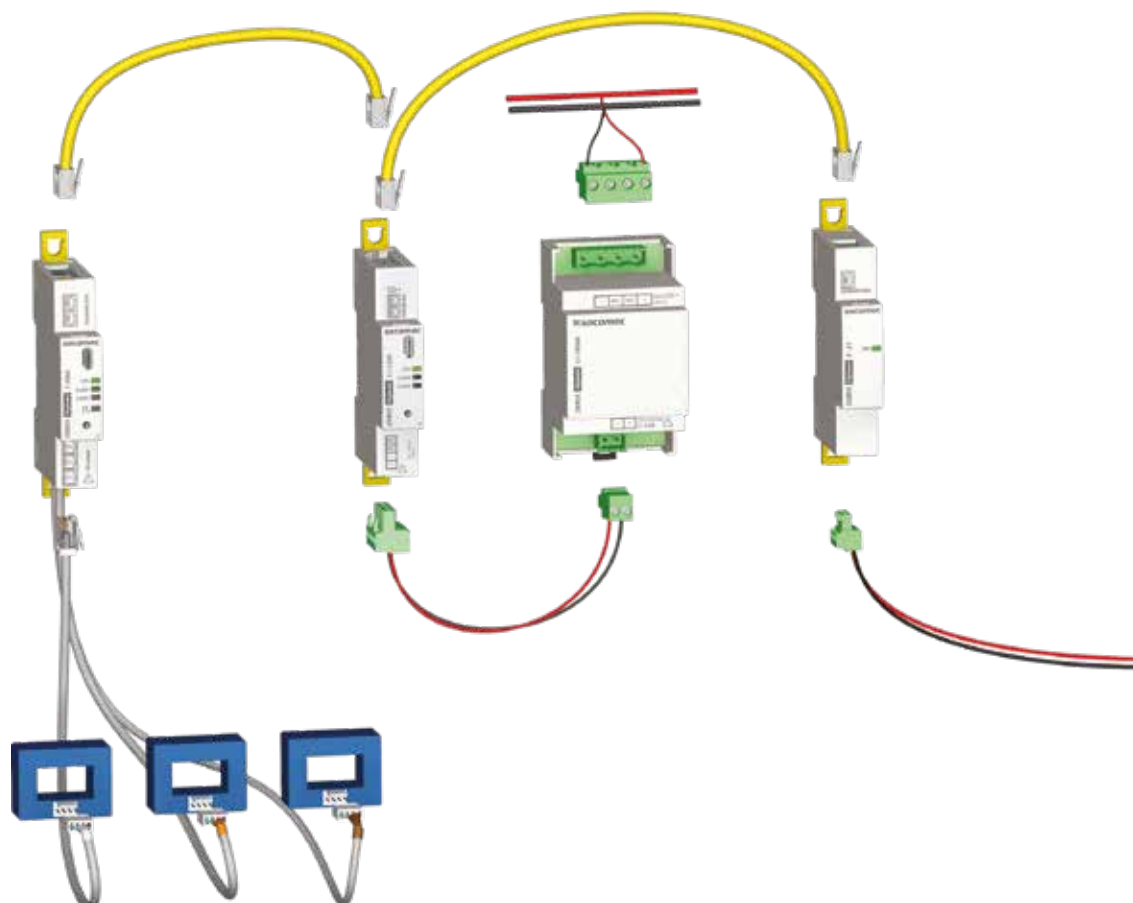
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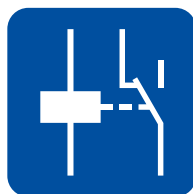
DIRIS Digiware DC system



The solution for



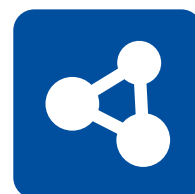
Telecom



Control
circuits

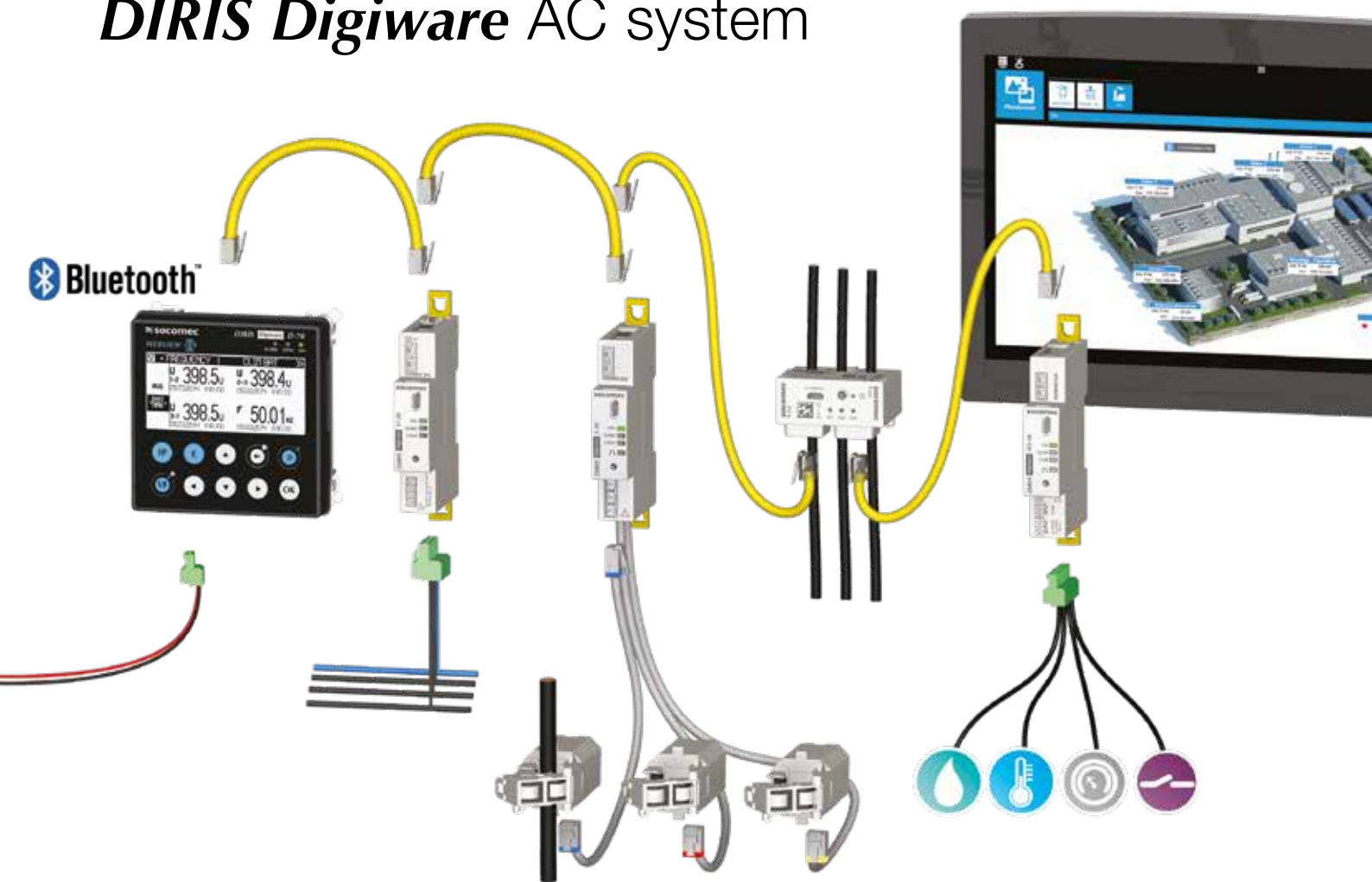


Renewable
power

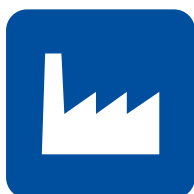


Micro grid

DIRIS Digiware AC system



The solution for



Industry



Building



Data centre



Infrastructure

A single point of access to AC and DC measurement data

DIRIS Digiware D & M

The DIRIS Digiware D and M act as a system interface (24 VDC power supply and communication) for all downstream products. They are your point of access for measurements and can communicate via multiple protocols over serial RS485 or Ethernet.



Connected

- Equipped with multiple communication protocols: Modbus RTU/TCP, BACnet IP, SNMP v1, v2, v3 & Traps.
- Bluetooth connectivity to collect data from environmental sensors.



Embedded software

- WEBVIEW-M visualisation software embedded in DIRIS Digiware M-70/D-70.



IOT ready

- Automatic data export with customisable format via FTP(S) to a remote server.
- Email notifications in case of alarms (SMTP).

Bonus

Cyber security is now integrated in all our gateways and displays to protect the confidentiality and integrity of your measurements.



APPLI 637

Bluetooth sensors **new**






The B-TRH and B-MAG are sensors that communicate with DIRIS Digiware M gateways and DIRIS Digiware D displays wirelessly via Bluetooth.



The B-TRH sensor monitors ambient temperature and humidity and alerts you if high levels are exceeded.



The B-Mag sensor alerts you in case the door of an electrical panel or restricted technical room is opened.

	Panel mounted display		DIN rail mounted interface and gateway		
					
	D-50	D-70	C-31	M-50	M-70
Inputs	Digiware / RS485	Digiware / RS485	Digiware	Digiware / RS485	Digiware / RS485
Outputs	Ethernet / RS485	Ethernet / RS485	RS485	Ethernet / RS485	Ethernet / RS485
Protocols	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU	Modbus RTU
	Modbus TCP	Modbus TCP		Modbus TCP	Modbus TCP
	BACnet IP	BACnet IP		BACnet IP	BACnet IP
	SNMP v1, v2, v3	SNMP v1, v2, v3		SNMP v1, v2, v3	SNMP v1, v2, v3
	Bluetooth	Bluetooth		Bluetooth	Bluetooth
Data export	•	•		•	•
Webserver	WEB-CONFIG	WEBVIEW-M		WEB-CONFIG	WEBVIEW-M

Voltage acquisition modules

DIRIS Digiware U & Udc

The DIRIS Digiware U and Udc modules measure the voltage reference for the entire DIRIS Digiware AC and DC system. The RJ45 Digiware bus transmits the voltage measurement as well as power supply to all products connected to the Digiware bus.



Flexible

- Complete, dedicated offer for metering, monitoring and power quality analysis.
- AC or DC electrical installations.







Safe

- No hazardous voltage on panel doors.

Bonus

Only **one voltage tap** for the entire system means that cabling and fuse protection are minimised inside electrical panels.

Applications	AC voltage measurement		DC voltage measurement	
	Metering	Analysis	Analysis	Analysis
				
DIRIS Digiware U	U-10	U-30	U-31dc	U-32dc
Measuring range (min-max)	50-300 VAC Ph/N		19.2VDC - 60VDC	48VDC - 180VDC
Multi-measurement AC				
U12, U23, U31, V1, V2, V3, f	•	•		
U system, V system		•		
Ph/N & Ph/Ph unbalance		•		
AC quality				
THD U, THD V		•		
Individual harmonics U/V		•		
Voltage dips, interruptions and swells (EN50160)		•		
Multi-measurement and DC quality				
DC voltage (VDC)			•	•
Ripple voltage (V ripple)			•	•
Vrms			•	•
Alarms (threshold)		•	•	•
History of average values		•	•	•
Format/Number of modules	18 mm/1	18 mm/1	18 mm/1	18 mm/1

U500dc, U1000dc and U1500dc adaptors

They can be combined with a DIRIS Digiware Udc module

The DC voltage adaptors are optionally used in addition to Udc voltage acquisition modules enabling the measurement of higher voltages up to 1500 VDC.

These adaptors make the DIRIS Digiware DC system suitable for use anywhere along the low voltage DC electrical distribution, regardless of the voltage level.



All-in-one current acquisition modules

DIRIS Digiware S



DIRIS Digiware S combines a Power Monitoring Device and current sensors to deliver the ultimate all-in-one solution. The DIRIS Digiware S module has 3 integrated current sensors for the measurement of three-phase or single-phase circuits up to 63 A with class 0.5 accuracy.



Did you know?

DIRIS Digiware S comes with integrated technologies as standard.



Smart monitoring of your protective devices

- Across your entire electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring.



Compact

- Power meter and the current sensors become one.
- Best compactness/performance ratio on the market.
- Delivers practical solutions to space constraints inside electrical panels.




Powerful

- DIRIS Digiware S goes beyond standard meters in terms of measurement capabilities and accuracy.
- Advanced monitoring of critical loads - even in the terminal distribution.

Bonus

The module can be **directly mounted** onto a protective device for electrical panels with minimal space available.

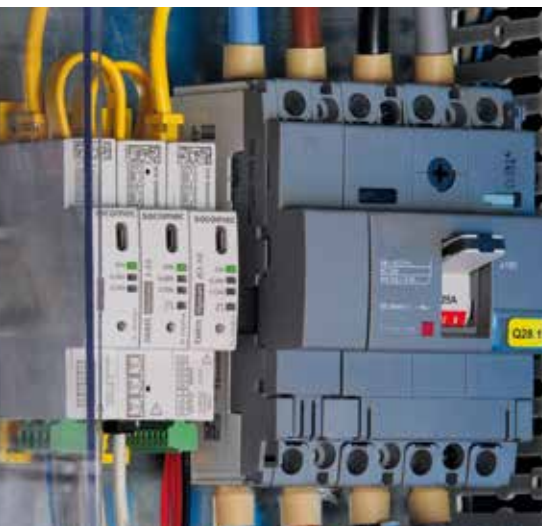
		
	S-130	S-135
DIRIS Digiware S		
Number of current inputs	3	3
Application	Metering	Analysis
Metering		
+/-kWh, +/-kvarh, kvah	•	•
Multi-tariff (max. 8)		•
Load curves		•
Maximum demand		•
Multi-measurement		
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•
P, Q, S, PF by phase		•
Predictive power		•
Current unbalance		•
Phi, cosPhi, tanPhi		•
Quality		
THD I		•
Individual harmonics I		•
Overcurrents		•
Alarms (threshold)		•
History of average values		•



3 Current acquisition modules

DIRIS Digiware I & Idc

The DIRIS Digiware I and Idc modules are associated with external smart current sensors for energy metering, power monitoring and power quality analysis of AC and DC loads.



Plug & Play

- Fast RJ45 connection of modules.
- Colour-coded RJ12 cables make wiring easy and error-free.
- Automatic configuration of connected current sensors: type, current rating, orientation and load type.



Comprehensive

- A complete range dedicated to energy metering, power monitoring and power quality analysis applications.
- Available in versions with 3, 4 or 6 current inputs.
- Modules for both AC and DC electrical installations.

Bonus

The RJ45 connection allows you to **quickly add** up to 32 DIRIS Digiware I or Idc modules, therefore enabling the monitoring of a large number of circuits.

	I-30		I-31		I-35		I-43		I-45		I-60		I-61		I-30dc		I-35dc		
	Current measurement (AC)				Current measurement (DC)														
Application	Metering		Analysis		Monitoring		Analysis		Metering				Metering		Analysis				
Number of current inputs	3	3	3	3	4	4	4	4	6	6	6	6	6	6	3	3	3	3	3
Metering																			
+/- kWh, +/- kVarh, kVAh	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Multi-tariff (max. 8)		•	•	•															
Load curves		•	•	•															
Maximum demand			•	•															
Multi-measurement AC																			
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•	•	•	•	•	•	•					
P, Q, S, PF per phase		•	•	•	•	•	•	•						•					
Predictive power				•				•											
Current unbalance				•				•											
Phi, cos Phi, tan Phi				•															
AC quality																			
THDI				•	•	•	•	•											
Individual harmonics I				•				•											
Overcurrents				•				•											
Multi-measurement DC																			
DC current and power (I DC, P DC)																•			•
DC predictive power																			•
DC quality																			
Ripple current (I ripple)																			•
I RMS																			•
Alarms on thresholds		• (Power)	•					•						• (Power)					•
Inputs/outputs							2/2	2/2											
History of average values				•				•											•
Format/number of modules	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	36 mm/2	36 mm/2	36 mm/2	36 mm/2	36 mm/2	18 mm/1	18 mm/1	18 mm/1	18 mm/1	18 mm/1	18 mm/1

Removable connector

For busway and MCC drawers

The removable Digiware connector allows you to disconnect a Digiware module from the bus, while ensuring the continued operation of the rest of the DIRIS Digiware system. The accessory is very useful in applications using pullout drawers or for busway distributions in data centres.



DIRIS 0.025

4 Current sensors

TE, TR, iTR & TF sensors

A wide range of solid-core, split-core and flexible current sensors is available to meet any integration requirements from 5 to 6000 A. Totally flexible, they measure the current in new or existing installations.



Did you know?

Current sensors integrate exclusive technologies.



Best-in-class accuracy

- For the global measurement chain.
- Even at low load current.



Guaranteed reliability

- Automatic detection of wiring errors.
- Remote software correction.
- Feature available off-load.



Smart sensors

- Automatic rating detection.
- Safe disconnection of the current sensor under load.
- Fast connection via RJ12 and identification of cables by colour-coding.





Compact


- The most compact current sensors on the market.
- Linear or staggered assembly to match the pitch of protective devices.

Bonus

Class 0.5 system accuracy on a wide measurement chain (2 – 120 % I_n) with TE, iTR and TF current sensors.

TE solid-core sensors	Rated currents (A)										Real range covered (A)	Pitch (mm)	Aperture (mm)	Dimensions (mm)		
	5	20	25	40	63	160	250	400	600	630					1000	2000
													12 ... 2400	90	64 x 64	126 x 90 x 24.6
													8 ... 1200	55	41 x 41	100 x 55 x 32.5
													3.2 ... 756	45	31 x 31	86 x 45 x 32.5
													1.26 ... 300	35	21 x 21	71 x 35 x 32.5
													0.8 ... 192	25	13.5 x 13.5	65 x 25 x 32.5
													0.5 ... 75	18	Ø 8.6	45 x 28 x 20
													0.1 ... 24	18	Ø 8.6	45 x 28 x 20

TR/iTR split-core sensors	Rated currents (A)						Real range covered (A)	Aperture (mm)	Dimensions (mm)
	25	40	63	160	250	600			
							3.2 ... 720	Ø 32	53 x 86 x 47
							1.26 ... 300	Ø 21	37 x 65 x 43
							0.8 ... 192	Ø 14	29 x 67 x 28
							0.5 ... 75	Ø 10	26 x 44 x 28

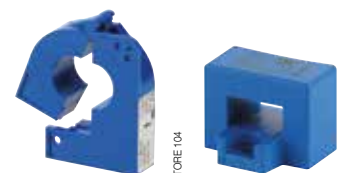
TF flexible sensors	Rated currents (A)								Real range covered (A)	Aperture (mm)
	100	150	400	600	1600	2000	4000	6000		
									32 ... 7200	Ø 600
									32 ... 7200	Ø 300
									12 ... 4800	Ø 200
									8 ... 2400	Ø 120
									3 ... 720	Ø 80
									3 ... 720	Ø 55
									2 ... 480	Ø 40

DC current sensors

DC current sensors measure the load currents of a DC electrical installation and transmit the information to DIRIS Digiware Idc modules via a fast RJ12 connection with colour-coded cables for the easy identification of circuits.

The range comprises solid-core and split-core sensors, from 50 to 5000 A in various sizes, suitable for new or retrofit applications.

- Easy connection to prevent wiring errors.
- Up to 3 sensors on each DIRIS Digiware Idc measurement module.



5 Input/output modules

DIRIS Digiware IO

The IO-10 modules have 4 digital inputs and 2 digital outputs to monitor the status of protective devices (ON/OFF/TRIP) or to collect pulses from multi-utility meters (gas, water...).

The IO-20 modules have 2 analogue inputs allowing the collection of measurements from analogue sensors (pressure, humidity, temperature) and the monitoring of levels by setting up alarms on preset thresholds.

Load shedding

- IO-10 modules automatically send output signals when an alarm is activated on any other Digiware module. Example: automatic load shedding if a power consumption alarm is configured on a Digiware I module.

Multi-fluid



Collect pulses from multi-utility meters on IO-10 modules and visualise consumption on the local D-xx display or remotely on WEBVIEW.

Connected

All data collected by IO-10 and IO-20 modules can be visualised on D-xx displays or WEBVIEW.

Bonus

Extra I/O functions within the same ecosystem provide a truly comprehensive solution.

		
Applications	Monitoring	Metering
DIRIS Digiware IO	IO-10	IO-20
Number of digital inputs/outputs	4/2	-
Number of analogue inputs	-	2
Multi-tariff (max. 8)	•	
Alarms (threshold)	•	•
Alarms (change of status)	•	
History of average values		•
Format/number of modules	18 mm/1	18 mm/1



Energy server solution embedded in the communication gateways

WEBVIEW

Socomec's displays and communication gateways centralise the measurement data from both DIRIS Digiware AC and DC systems. They embed the WEBVIEW software solution for visualisation and analysis of real time and historical measurements from a large number of connected devices.



Embedded web based software

- No installation required and no licence free: WEBVIEW-M is embedded in DIRIS Digiware M-70 and D-70. WEBVIEW-L is embedded in DATALOG H80 dataloggers.



Cyber security

- New cyber security features secure the confidentiality, integrity and availability of data.



Photoview functionality

- Display of electrical parameters from multiple devices on a customised background picture such as an electrical diagram, a site map or drawing.



Monitoring

- Visualisation of real-time measurements.
- Power quality analysis of the electrical network and loads.
- Visualisation of measurements on a user-customisable dashboard.

Alarming

- Overview of active alarms.
- Log of finished alarms.
- Email notification when a new alarm is activated.

Analysis

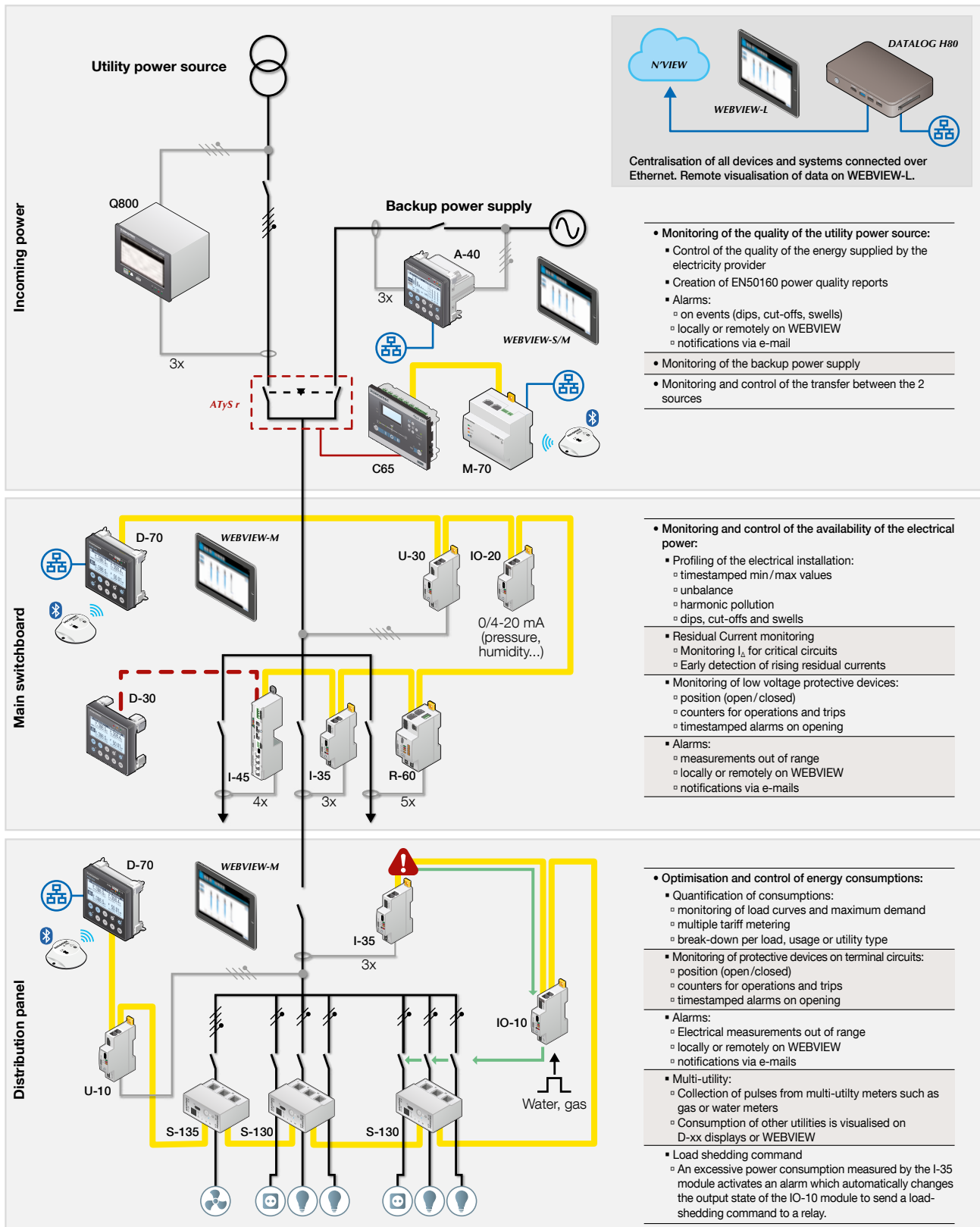
- High storage capacity of consumption and measurement trends.
- Breakdown of consumption by location, usage and utility type.
- Automatic export of stored data in CSV format.

WEBVIEW-L focus

- High storage capacity (64 GB).
- Compatible with third-party Modbus devices.
- Display of measurement trends from multiple devices on a single graph.
- Data export through 3G connection.



Example of *DIRIS Digiware* system architecture



Centralisation of all devices and systems connected over Ethernet. Remote visualisation of data on WEBVIEW-L.

- **Monitoring of the quality of the utility power source:**
 - Control of the quality of the energy supplied by the electricity provider
 - Creation of EN50160 power quality reports
 - Alarms:
 - on events (dips, cut-offs, swells)
 - locally or remotely on WEBVIEW
 - notifications via e-mail
- **Monitoring of the backup power supply**
- **Monitoring and control of the transfer between the 2 sources**

- **Monitoring and control of the availability of the electrical power:**
 - Profiling of the electrical installation:
 - timestamped min/max values
 - unbalance
 - harmonic pollution
 - dips, cut-offs and swells
 - Residual Current monitoring
 - Monitoring I_n for critical circuits
 - Early detection of rising residual currents
 - Monitoring of low voltage protective devices:
 - position (open/closed)
 - counters for operations and trips
 - timestamped alarms on opening
 - Alarms:
 - measurements out of range
 - locally or remotely on WEBVIEW
 - notifications via e-mails

- **Optimisation and control of energy consumptions:**
 - Quantification of consumptions:
 - monitoring of load curves and maximum demand
 - multiple tariff metering
 - break-down per load, usage or utility type
 - Monitoring of protective devices on terminal circuits:
 - position (open/closed)
 - counters for operations and trips
 - timestamped alarms on opening
 - Alarms:
 - Electrical measurements out of range
 - locally or remotely on WEBVIEW
 - notifications via e-mails
 - Multi-utility:
 - Collection of pulses from multi-utility meters such as gas or water meters
 - Consumption of other utilities is visualised on D-xx displays or WEBVIEW
 - Load shedding command
 - An excessive power consumption measured by the I-35 module activates an alarm which automatically changes the output state of the IO-10 module to send a load-shedding command to a relay.

Legend:

- Heat pump
- Receptacles
- Lighting

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- Measurement and analysis
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- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

28 subsidiaries and commercial locations

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- Dubai (United Arab Emirates) • France • Germany
- India • Indonesia • Italy • Ivory Coast • Netherlands
- Poland • Portugal • Romania • Serbia • Singapore
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- Thailand • Tunisia • Turkey • UK • USA

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