

# Power metering and monitoring system for AC and DC electrical installations

*DIRIS Digiware*



When **energy** matters

# 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 revolutionized 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 unrivaled 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.
- One system to monitor from the main incomer down to individual branch circuits.
- Complete solution from current sensors to software.

### Scalable

**Evolving with you, for you – at your pace**

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

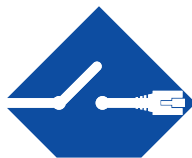
## Groundbreaking technologies for greater simplicity and performance\*



### PreciSense

**Best-in-class accuracy**

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



### VirtualMonitor

**Smart monitoring of your protective devices**

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



### AutoCorrect

**Guaranteed reliability**

- Automatic detection of wiring errors.
- Remote software correction.
- 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**




**DIRIS Digiware BCM**

# 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

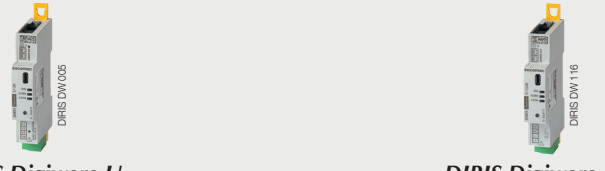
**1**



*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 measurements

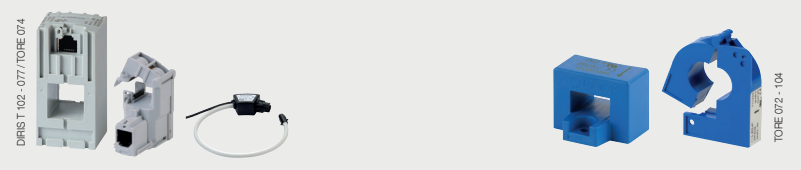
**3**



*DIRIS Digiware S*      *DIRIS Digiware BCM*      *DIRIS Digiware I*      *DIRIS Digiware Idc*  
All-in-one with 3 integrated current sensors      All-in-one with 21 integrated current sensors      To be associated with external AC or DC sensors

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

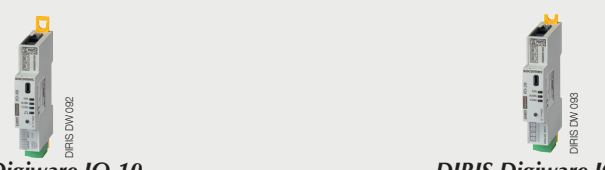
**4**



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

Digital and analog input/output modules

**5**



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

Create your project

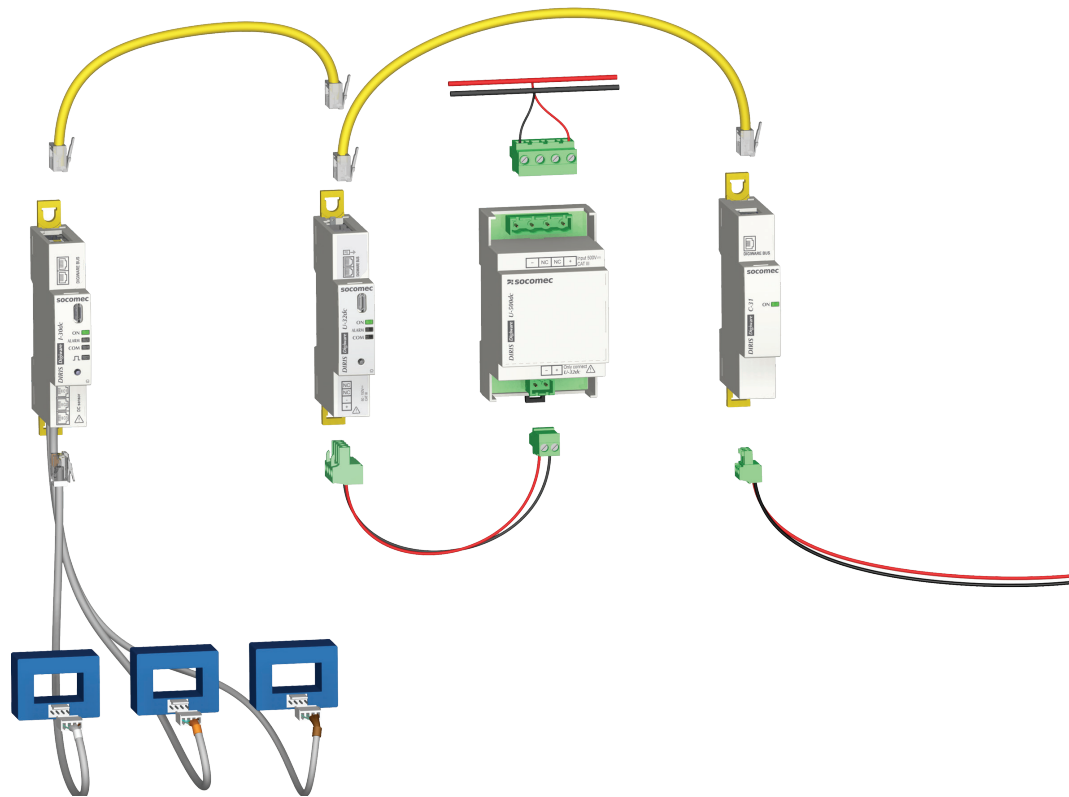
[www.meter-selector.com](http://www.meter-selector.com)

**METER** | **SELECTOR**   
DIGITAL TOOL AVAILABLE

# Elevating power monitoring to a new level.

Infinite scalability. Unique versatility. Unrivaled intelligence.

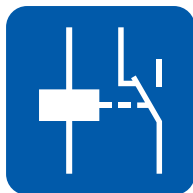
## *DIRIS Digiware* DC system



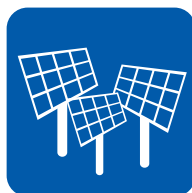
The solution for



Telecom



Control  
circuits

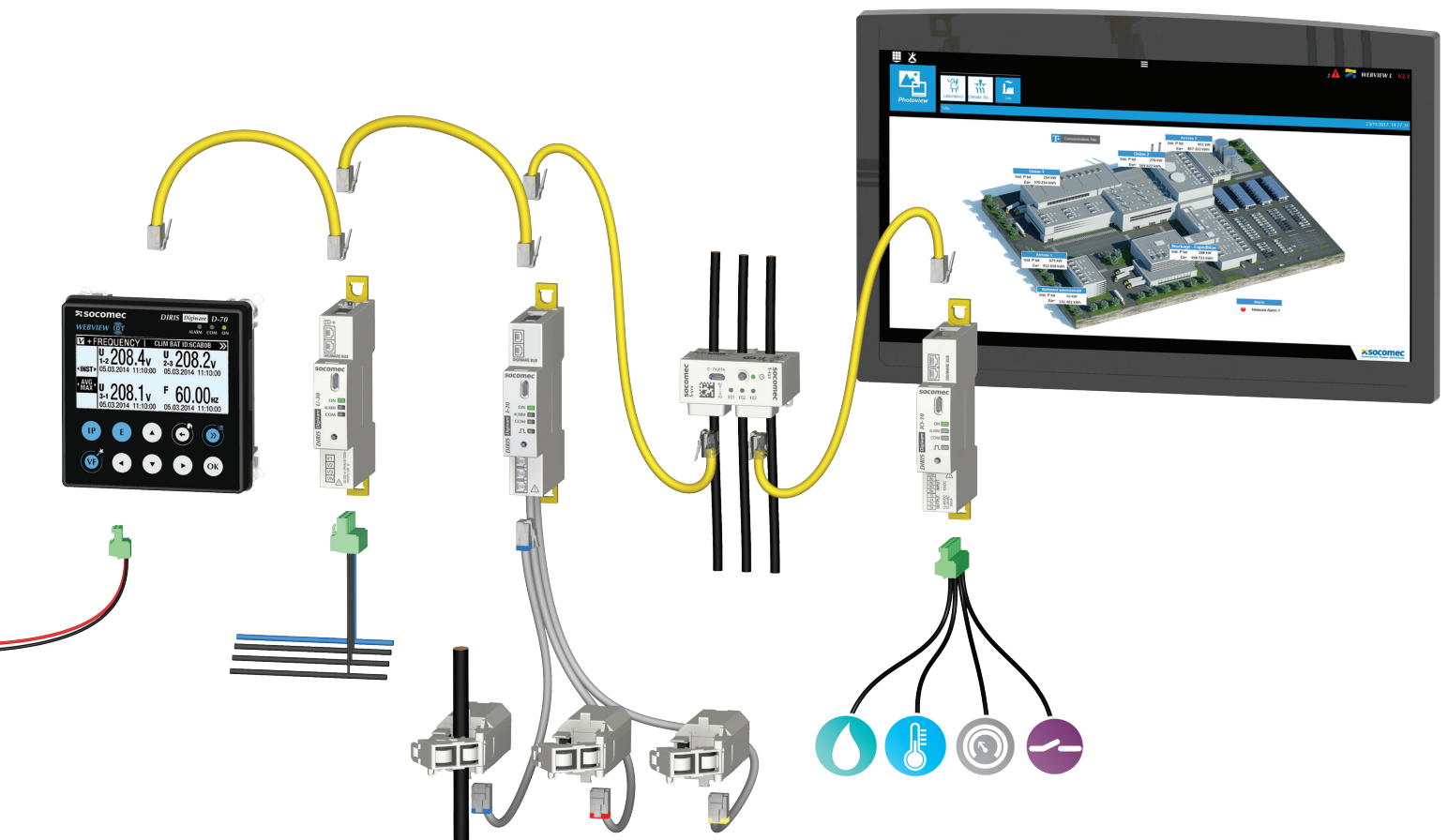


Renewable  
power

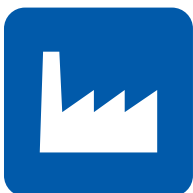


Micro grid

# DIRIS Digiware AC system



The solution for



Industry



Building



Data center



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.



### Embedded software

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



### IOT ready






- Automatic data export with customizable 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.



APPLU 637

	Panel mounted display		DIN rail mounted interface and gateway		
					
	<b>D-50</b>	<b>D-70</b>	<b>C-31</b>	<b>M-50</b>	<b>M-70</b>
<b>Inputs</b>	Digiware/RS485	Digiware/RS485	Digiware	Digiware/RS485	Digiware/RS485
<b>Outputs</b>	Ethernet/RS485	Ethernet/RS485	RS485	Ethernet/RS485	Ethernet/RS485
<b>Protocols</b>	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
<b>Data export</b>	•	•		•	•
<b>Webserver</b>	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 minimized inside electrical panels.

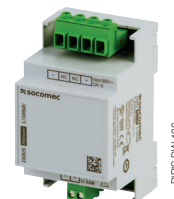
Applications	AC voltage measurement		DC voltage measurement	
	Metering	Analysis	Analysis	Analysis
				
<b>DIRIS Digiware U</b>	<b>U-10</b>	<b>U-30</b>	<b>U-31dc</b>	<b>U-32dc</b>
<b>Measuring range (min-max)</b>	50-300 VAC Ph/N		19.2 VDC - 60 VDC	48 VDC - 180 VDC
<b>Multi-measurement AC</b>				
U12, U23, U31, V1, V2, V3, f	•	•		
U system, V system		•		
Ph/N & Ph/Ph unbalance		•		
<b>AC quality</b>				
THD U, THD V		•		
Individual harmonics U/V		•		
Voltage sags, interruptions and swells (EN50160)		•		
<b>Multi-measurement and DC quality</b>				
DC voltage (VDC)			•	•
Ripple voltage (V ripple)			•	•
Vrms			•	•
<b>Alarms (threshold)</b>		•	•	•
<b>History of average values</b>		•	•	•
<b>Width/Number of modules</b>	<b>0.70 in/1</b>	<b>0.70 in/1</b>	<b>0.70 in/1</b>	<b>0.70 in/1</b>

## 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.

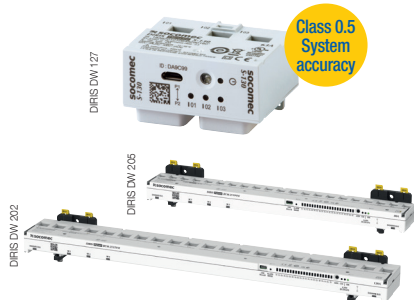
These adaptors make the DIRIS Digiware DC system suitable for use anywhere along the low voltage DC electrical distribution, regardless of the voltage level.



# Multi-circuit current acquisition module with integrated sensors

## DIRIS Digiware S & DIRIS Digiware BCM

Positioned directly above or below the protective devices, DIRIS Digiware S & BCM modules are associated with the DIRIS Digiware U voltage measurement module to measure consumption, to monitor the electrical installation and the quality of the power supply.



**DIRIS Digiware S** is a multi-circuit current measurement module with 3 integrated sensors and allows the monitoring of three-phase or single-phase circuits up to 63 A.

**DIRIS Digiware BCM** is a multi-circuit current measurement module with 21 integrated sensors and allows individual branch-circuit monitoring of any electrical panelboard. It is also equipped with three RJ12 channels to connect TE/TR/ITR/TF current sensors or ΔIC zero sequence CTs for earth leakage monitoring.



### Did you know?

DIRIS Digiware BCM and DIRIS Digiware S come with exclusive technologies.



#### Smart monitoring of your protective devices

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



#### Guaranteed reliability

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

**3x** 3x quicker to install than standard solutions

- The integrated current sensors do not require any extra wiring for CTs.
- Quick RJ45 connection between Digiware modules.

**2x** 2x quicker to configure than standard solutions

- Easy Config System Software - free of charge – simplifies configuration by providing configuration templates that can be saved and uploaded quickly on multiple Digiware modules.









#### Maximum reliability

- Class 0.5 accuracy according to ANSI C12.20 and IEC 61557-12 standards for accurate measurements over a wide measurement range.

### The advantages of the DIRIS Digiware BCM module

- The same Digiware BCM module can monitor 21 circuits plus a main feed.
- No additional CT leads required.
- Power metering and earth leakage monitoring.
- A robust plastic cover safeguards the electronic components and reduces the risk of breakage.

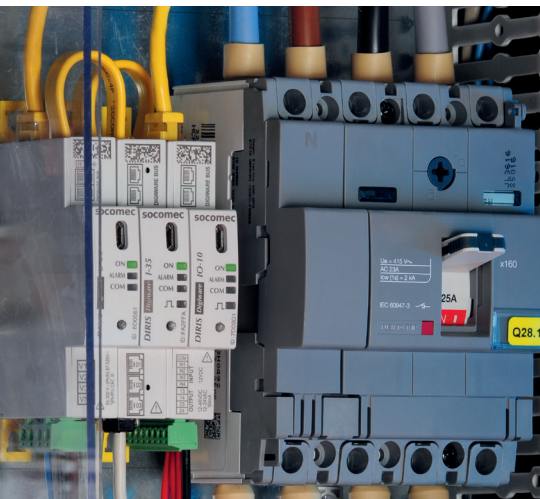
						
DIRIS Digiware	S-130	S-135	BCM-2119	BCM-2119VM	BCM-2125	BCM-2125VM
<b>Number of current inputs</b>	3	3	21 + 3x RJ12	21 + 3x RJ12	21 + 3x RJ12	21 + 3x RJ12
<b>Maximum current (A)</b>	63	63	80	80	120	120
<b>Metering</b>						
+/-kWh, +/-kvarh, kvah	•	•	•	•	•	•
Multi-tariff (max. 8)		•	•	•	•	•
Load curves		•	•	•	•	•
<b>Multi-measurement</b>						
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•
P, Q, S, PF by phase		•	•	•	•	•
Predictive power		•	•	•	•	•
Current unbalance		•	•	•	•	•
Phi, cosPhi, tanPhi		•	•	•	•	•
Virtual Monitor	•	•		•		•
<b>Quality</b>						
THD I		•	•	•	•	•
Individual harmonics I		•	•	•	•	•
Overcurrents		•	•	•	•	•
<b>Alarms (threshold)</b>		•	•	•	•	•
<b>History of average values</b>		•	•	•	•	•



# 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 interconnection of modules (Digiware bus).
- Color-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
<b>Application</b>	<b>Current measurement (AC)</b>						<b>Current measurement (DC)</b>		
	<b>Metering</b>		<b>Analysis</b>	<b>Monitoring</b>	<b>Analysis</b>	<b>Metering</b>		<b>Metering</b>	<b>Analysis</b>
<b>Number of current inputs</b>	3	3	3	4	4	6	6	3	3
<b>Metering</b>									
+/- kWh, +/- kVarh, kVAh	•	•	•	•	•	•	•	• (+/-) kWh	• (+/-) kWh
Multi-tariff (max. 8)		•	•		•		•		•
Load curves		•	•		•		•		•
Maximum demand			•		•				•
<b>Multi-measurement AC</b>									
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•		
P, Q, S, PF per phase		•	•	•	•		•		
Predictive power			•		•				
Current unbalance			•		•				
Phi, cos Phi, tan Phi			•						
<b>AC quality</b>									
THDI			•	•	•				
Individual harmonics I			•		•				
Overcurrents			•		•				
<b>Multi-measurement DC</b>									
DC current and power (I DC, P DC)								•	•
DC predictive power									•
<b>DC quality</b>									
Ripple current (I ripple)									•
I RMS									•
<b>Alarms on thresholds</b>		• (Power)	•		•		• (Power)		•
<b>Inputs / outputs</b>				2/2	2/2				
<b>History of average values</b>			•		•				•
<b>Width / number of modules</b>	0.70 in/1	0.70 in/1	0.70 in/1	1.06 in/1.5	1.06 in/1.5	1.42 in/2	1.42 in/2	0.70 in/1	0.70 in/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 centers.



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 color-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<sub>n</sub>) with TE, iTR and TF current sensors.

TE solid-core sensors	Rated currents (A)										Real range covered (A)	Pitch (in)	Aperture (in)		
	5	20	25	40	63	160	250	400	600	630				1000	2000
													12 ... 2400	3.54	2.52 x 2.52
TE-55													8 ... 1200	2.16	1.61 x 1.61
TE-45													3.2 ... 756	1.77	1.22 x 1.22
TE-35													1.26 ... 300	1.37	0.82 x 0.82
TE-25													0.8 ... 192	0.98	0.53 x 0.53
TE-18													0.5 ... 75	0.7	Ø 0.33
TE-18													0.1 ... 24	0.7	Ø 0.33

TR/iTR split-core sensors	Rated currents (A)						Real range covered (A)	Aperture (in)
	25	40	63	160	250	600		
							3.2 ... 720	Ø 1.26
TR/iTR-21							1.26 ... 300	Ø 0.83
TR/iTR-14							0.8 ... 192	Ø 0.55
TR/iTR-10							0.5 ... 75	Ø 0.39

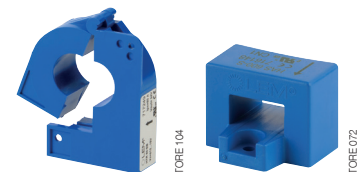
TF flexible sensors	Rated currents (A)								Real range covered (A)	Aperture (in)
	100	150	400	600	1600	2000	4000	6000		
									32 ... 7200	Ø 23.62
TF-300									32 ... 7200	Ø 11.81
TF-200									12 ... 4800	Ø 7.87
TF-120									8 ... 2400	Ø 4.72
TF-80									3 ... 720	Ø 3.15
TF-40									2 ... 480	Ø 1.57

## 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 color-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.



# 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 analog inputs allowing the collection of measurements from analog 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 visualize consumption on the local D-xx display or remotely on WEBVIEW.

### Connected

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

### Bonus

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

		
Applications	Digital I/O	Analog I/O
<b>DIRIS Digiware IO</b>	<b>IO-10</b>	<b>IO-20</b>
Number of digital inputs/ outputs	4/2	-
Number of analog inputs	-	2
Multi-tariff (max. 8)	•	•
Alarms (threshold)	•	•
Alarms (change of status)	•	•
History of average values	•	•
Width/number of modules	0.70 in/1	0.70 in/1



# Energy server solution embedded in the communication gateways

## WEBVIEW

Socomec's displays and communication gateways centralize the measurement data from both DIRIS Digiware AC and DC systems. They embed the WEBVIEW-M software solution for visualization 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 fee: 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 customized background picture such as an electrical diagram, a site map or drawing.



### Monitoring

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

### Alarming

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

### Analysis

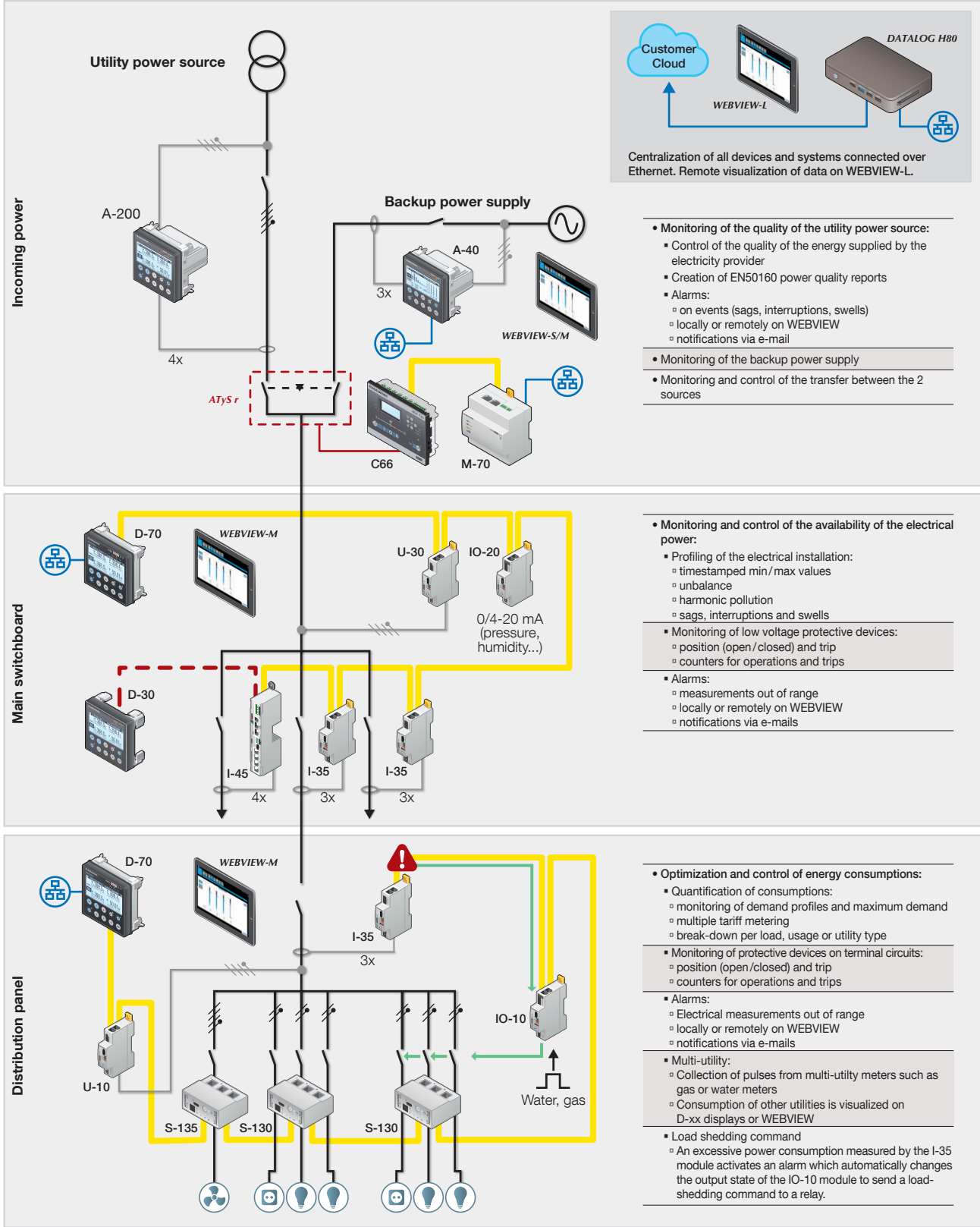
- High storage capacity of consumption and measurement trends.
- Breakdown of consumption by location, usage and utility type.
- Automatic export of stored data in CSV format with customizable layout for easy integration into any 3rd-party EMS.

## 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.



# Example of *DIRIS Digiware* system architecture



# Socomec: our innovations supporting your energy performance

**1** independent manufacturer

**3,900** employees worldwide

**8** % of sales revenue dedicated to R&D

**400** experts dedicated to service provision

## Your power management expert



POWER SWITCHING



POWER MONITORING



POWER CONVERSION



ENERGY STORAGE



EXPERT SERVICES

## The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimization
- Consultancy, commissioning and training

## A worldwide presence

**12** production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

**30** subsidiaries and commercial locations

- Algeria • Australia • Austria • Belgium • China
- Canada • Dubai (United Arab Emirates) • France
- Germany • India • Indonesia • Italy • Ivory Coast
- Netherlands • Poland • Portugal • Romania • Serbia
- Singapore • Slovenia • South Africa • Spain • Sweden
- Switzerland • Thailand • Tunisia • Turkey • UK • USA

**80** countries

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Fax 617 245 0437  
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