DIRIS Digiware

Power metering and monitoring system
for AC and DC electrical installations

When **energy** matters

socomec

Innovative Power Solutions

DIRIS Digiware

Power monitoring, accessible everywhere, for everyone

The DIRIS Digiware system is a hub of technological innovations that revolutionizes the world of electrical 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 for measuring and monitoring the quality of electrical energy in industrial and commercial applications.

Flexible

- First measurement system that is 100% customizable and scalable.
- Complete Socomec solution: from the power monitoring devices to the current sensors, including the visualization and analysis software
- Compatible and interoperable ecosystem.

Accessible to all

- For the measurement of AC and DC loads.
- Use one measurement system from the main incomer to branch circuit monitoring and DC loads.
- Implementation in a quarter of the time for multi-point measurement.

Powerful & innovative

- RJ45 interconnection of modules (Digiware bus).
- Fast RJ12 current sensor connection.
- The best compactness/performance ratio of the market: Digiware S embeds the power monitoring function and 3 current sensors all in one.
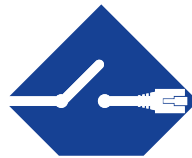
Groundbreaking technologies for greater simplicity and performance[*]

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**
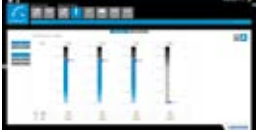
DIRIS Digiware S

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

1

DIRIS Digiware D

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
All-in-one with 3 integrated current sensors

DIRIS Digiware I
To be associated with external AC or DC sensors

DIRIS Digiware Idc

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
4 digital inputs/2 digital outputs

DIRIS Digiware IO-20
2 analog inputs

METER ▶ SELECTOR
DIGITAL TOOL AVAILABLE

DIRIS Digiware DC system
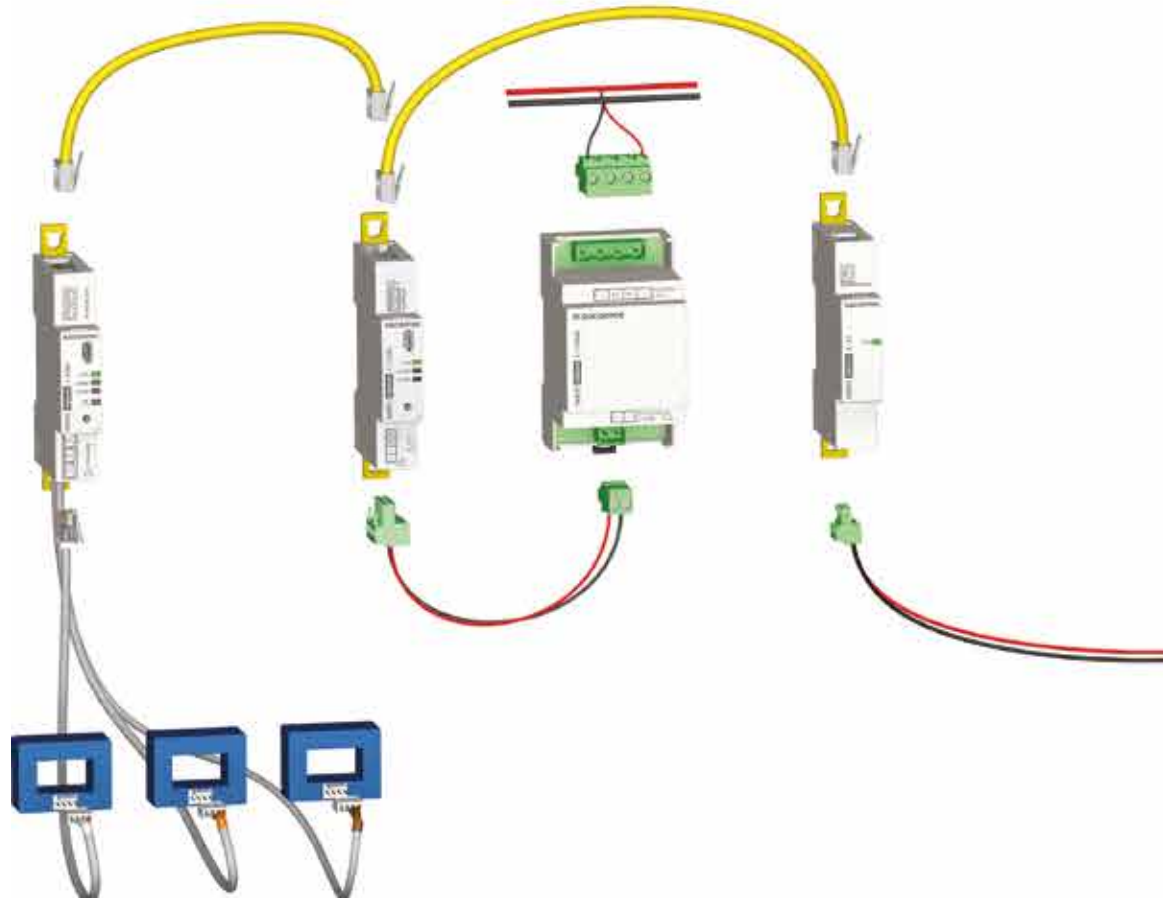
The solution for

Telecom
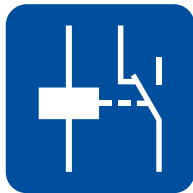
Control
circuits

Renewable
power

Micro grid

DIRIS Digiware AC system
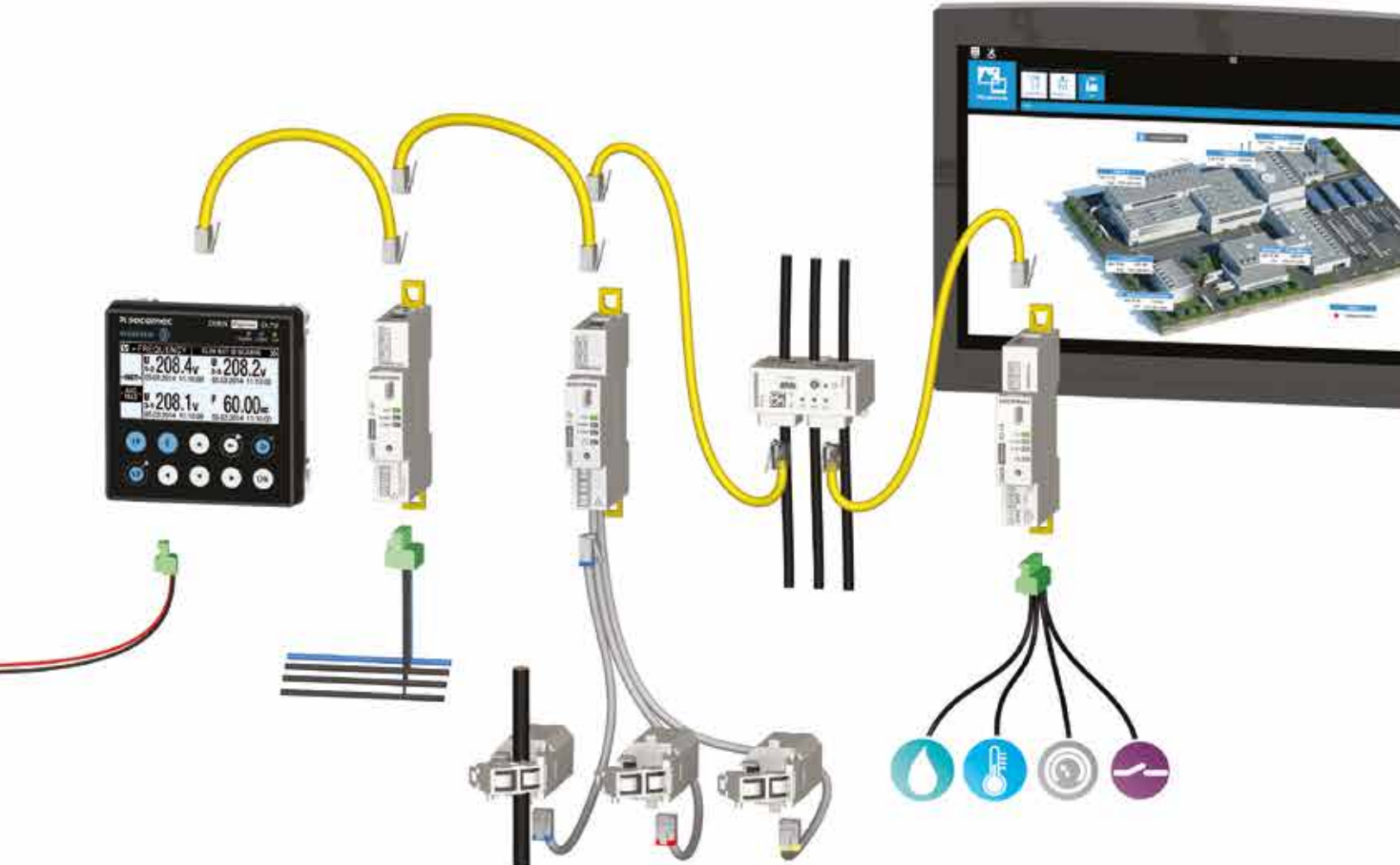
1 A single point of access to AC and DC measurement data

DIRIS Digiware D

DIRIS Digiware D remote displays offer:
- A local view of the measurement data from DIRIS Digiware U, I, S and IO modules.
- A 24 VDC control power for the entire DIRIS Digiware system.
- The gateway function: an access to data over Ethernet (D-50/D-70) or RS485 (D-40).

APPLL637_C

Connected

Multi-protocol (D-50/D-70):
Modbus TCP, BACnet IP,
SNMP v1, v2, v3.

EMS embedded

Analysis and monitoring software
WEBVIEW-M integrated in the D-70.

IOT ready

Automatic and secured export
of data via FTPS.

Ports	D-40	D-50	D-70
Inputs	Digiware	Digiware/RS485	Digiware/RS485
Outputs	RS485	Ethernet	Ethernet
Protocols	Modbus RTU	Modbus TCP/BACnet IP SNMP v1, v2, v3	Modbus TCP/BACnet IP SNMP v1, v2, v3
Webserver	-	-	WEBVIEW-M

Solution without screen
DIRIS Digiware C-31

For applications
without a local display,
the DIRIS Digiware C-31
interface centralizes all
of the system's data and
communicates them
via an RS485 Modbus
output.

DIRIS-DW_142_A.EPS

AC or DC voltage acquisition modules

DIRIS Digiware U

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

A complete, dedicated offer for metering, monitoring and quality analysis of the voltage supplied to AC or DC electrical installations.

Safe

No hazardous voltage on panel doors.

DIRIS-DW_005.PSD

Applications	AC voltage measurement			DC voltage measurement	
	Metering	**Monitoring**	**Analysis**	**Analysis**	**Analysis**
DIRIS Digiware U	**U-10**	**U-20**	**U-30**	**U-31dc**	**U-32dc**
Measuring range (min-max)	50-300 VAC Ph/N			19.2 VDC - 60 VDC	48 VDC - 180 VDC
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 sags, 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	**0.71 in/1**	**0.71 in/1**	**0.71 in/1**	**0.71 in/1**	**0.71 in/1**

U500dc, U1000dc and U1500dc adaptors
To 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 anywhere along the low voltage DC electrical distribution, regardless of the voltage level.

DIRIS-DW_126.PSD

All-in-one current acquisition modules

DIRIS Digiware S

DIRIS Digiware S is a Power Metering and Monitoring Device with 3 integrated current sensors enabling the measurement of one three-phase or three single-phase circuits up to 63 A.
Opt for the DIRIS Digiware system, combining Digiware I modules with external sensors for the monitoring of incomers and subfeeds, and Digiware S modules for outgoing branch circuits. Thanks to Digiware, you have access in record time to high-end monitoring of your entire new or existing electrical panel.

AutoCorrect

VirtualMonitor

DIRIS-DW_127.PSD

APPL_811.EPS

Compact

DIRIS Digiware S is the combination of a DIRIS Digiware I module and 3 current sensors associated with 3 RJ12 cables. Matching the spacing of protective devices, Digiware S modules solve issues of space constraints inside electrical panels.

Intelligent

DIRIS Digiware S can be mounted upstream or downstream of the protective device. The VirtualMonitor technology allows an advanced monitoring of the protective device (position, trip etc.) without using auxiliary contacts. The phase sequencing detection and configuration are automatic thanks to the AutoCorrect technology.

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

AC or DC current acquisition modules

DIRIS Digiware I

The DIRIS Digiware I and Idc modules are associated with external current sensors for metering, monitoring and analysing the quality of AC and DC loads.
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 loads.

DIRIS Digiware I

DIRIS Digiware Idc

Plug & Play

- RJ45 interconnection of modules (Digiware bus).
- Fast RJ12 connection of current sensors.
- Automatic configuration of connected current sensors load type, sensor type and rating, verification of current flow direction.

Efficient

- A complete range dedicated to the metering, monitoring and analysis of the quality of AC or DC loads.
- Available in versions with 3, 4 or 6 outgoing circuits.

Removable connector

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.
This accessory is very useful in applications using pullout drawers or critical applications such as data centers.

	I-30	I-31	I-33	I-35	I-43	I-45	I-60	I-61	I-30dc	I-35dc
	Current measurement (AC)								Current measurement (DC)	
Application	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering		Metering	Analysis
Number of current inputs	3	3	3	3	4	4	6	6	3	3
Metering										
+/- kWh, +/- kVarh, kVAh	•	•	•	•	•	•	•	•	• (+/-) kWh	• (+/-) kWh
Multi-tariff (max. 8)		•		•		•		•		•
Demand profiles		•		•		•		•		•
Maximum demand				•		•				•
Multi-measurement AC										
I1, I2, I3, In, ∑P, ∑Q, ∑S, ∑FP	•	•	•	•	•	•	•	•		
P, Q, S, FP 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				•		•				•
Inputs/outputs					2/2	2/2				
History of average values				•		•				•
Format/ number of modules	0.71 in/1	0.71 in/1	0.71 in/1	0.71 in/1	1.06 in/1.5	1.06 in/1.5	1.42 in/2	1.42 in/2	0.71 in/1	0.71 in/1
Accessories										
Digiware removable connector (x5)	Allows you to disconnect a Digiware module form the bus while ensuring the system continues to run downstream									

AC or DC current sensors

Smart sensors

- Sensors with an extended operational range.
- Automatic rating configuration.
- Safe disconnection of the current sensor under load.
- Fast connection via RJ12 and color coded identification of cables.

Compact

- The most compact in the market.
- Linear assembly.
- Staggered assembly.
- Match the pitch of protective devices.

PreciSense

Better than revenue grade, accuracy for the global measurement chain including current sensors on the full scale (from 2 to 120% In):
- class 0.5 with TE, iTR, or TF current sensors.
- class 1 with TR sensors

TE solid-core sensors	Rated currents (A)												Real range covered (A)	Pitch (in/mm)	Aperture (in/mm)	Dimensions (in/mm)
	5	20	25	40	63	160	250	400	600	630	1000	2000				
TE-90													12 … 2400	3.54/90	2.52 x 2.52 64 x 64	4.96 x 3.54 x 0.97 126 x 90 x 24.6
TE-55													8 … 1200	2.16/55	1.61 x 1.61 41 x 41	3.93 x 2.16 x 1.28 100 x 55 x 32.5
TE-45													3.2 … 756	1.77/45	1.22 x 1.22 31 x 31	3.38 x 1.77 x 1.28 86 x 45 x 32.5
TE-35													1.26 … 300	1.37/35	0.82 x 0.82 21 x 21	2.79 x 1.37 x 1.28 71 x 35 x 32.5
TE-25													0.8 … 192	0.98/25	0.53 x 0.53 13.5 x 13.5	2.56 x 0.98 x 1.28 65 x 25 x 32.5
TE-18													0.5 … 75	0.7/18	Ø 0.33 Ø 8,6	1.77 x 1.10 x 0.79 45 x 28 x 20
TE-18													0.1 … 24	0.7/18	Ø 0.33 Ø 8,6	1.77 x 1.10 x 0.79 45 x 28 x 20

TR / iTR split-core sensors	Rated currents (A)						Real range covered (A)	Aperture (in/mm)	Dimensions (in/mm)
	25	40	63	160	250	600			
TR/iTR-32							3.2 … 720	Ø 1.26 Ø 32	2.08 x 3.38 x 1.85 53 x 86 x 47
TR/iTR-21							1.26 … 300	Ø 0.83 Ø 21	1.46 x 2.60 x 1.69 37 x 65 x 43
TR/iTR-14							0.8 … 192	Ø 0.55 Ø 14	1.14 x 2.63 x 1.10 29 x 67 x 28
TR/iTR-10							0.5 … 75	Ø 0.39 Ø 10	1.02 x 1.73 x 1.10 26 x 44 x 28

TF flexible sensors	Rated currents (A)							Real range covered (A)	Aperture (mm)
	150	400	600	1600	2000	4000	6000		
TF-600								32 … 7200	Ø 23,62 Ø 600
TF-300								32 … 7200	Ø 11.81 Ø 300
TF-200								12 … 4800	Ø 7,87 Ø 200
TF-120								8 … 2400	Ø 4.72 Ø 120
TF-80								3 … 720	Ø 3,15 Ø 80
TF-55								3 … 720	Ø 55

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 quick RJ12 connection with color-coded cables for an 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.

TORE_104_A_OPEN_FRONTERS

TORE_072_PSD

DIRIS Digiware IO

The DIRIS Digiware IO input/output modules enrich the measurement system with multiple features.

The IO-10 modules have 4 digital inputs and 2 digital outputs, which can be used:
• To monitor the position of protective devices and pull-out drawers (open/closed, trip).
• To monitor changes of status of an input.
• To collect pulses from multi-fluid meters (water, gas…).
• To remotely command devices by sending a digital output signal.

The IO-20 modules have 2 analog inputs allowing:
• To collect data from analog sensors, e.g. pressure, humidity, temperature, levels (fuel…).
• To access via communication the measurements from devices with analog outputs.
• To monitor levels by setting up alarms on chosen thresholds.

DIRIS Digiware IO-10

DIRIS Digiware IO-20

Ease of integration
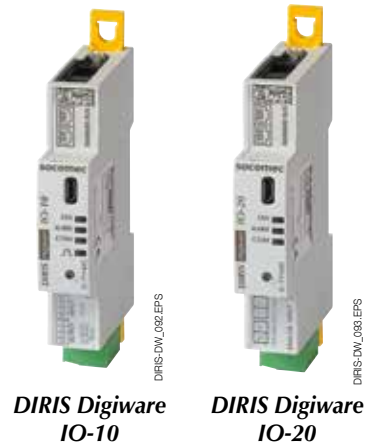
The IO modules can be easily added anywhere within the measurement system thanks to a quick RJ45 connection. Their modular format allows the quick connection of a large number of modules.

Connected

All the reported information is accessible from the displays, from our WEBVIEW software solution or from any other centralized management software.

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	0.71 in/1	0.71 in/1

WEBVIEW energy server solution embedded in the communication gateways

The embedded software solution WEBVIEW is used for visualization and analysis of real time as well as historical measurements from a large number of connected devices.

Embedded EMS

No installation required: WEBVIEW analysis and monitoring software is integrated in DIRIS G, DIRIS Digiware D 70 and DATALOG H products.

Connected to the cloud

DIRIS Digiware D-70, DIRIS G and DATALOG H products are connected to the cloud offering a higher level of analysis.

Photoview functionality

Display of electrical parameters from multiple devices on a customized background picture such as an electrical diagram or a site drawing.

Monitoring and alarms

- Measurement in real-time of electrical values.
- Power quality analysis of the grid and loads.
- Alarms whenever thresholds are exceeded.
- Summary of alarms in progress and log of finished alarms
- Sending of alarms by e-mail.

Viewing

- Graphical visualization of real-time and historical values.
- High storage capacity of historical records of measurements and consumptions.
- User-customizable overview of the electrical installation.
- Cartography of the metering system.

Analysis

- Analysis of energy consumption.
- Distribution by location, usage and fluid type.
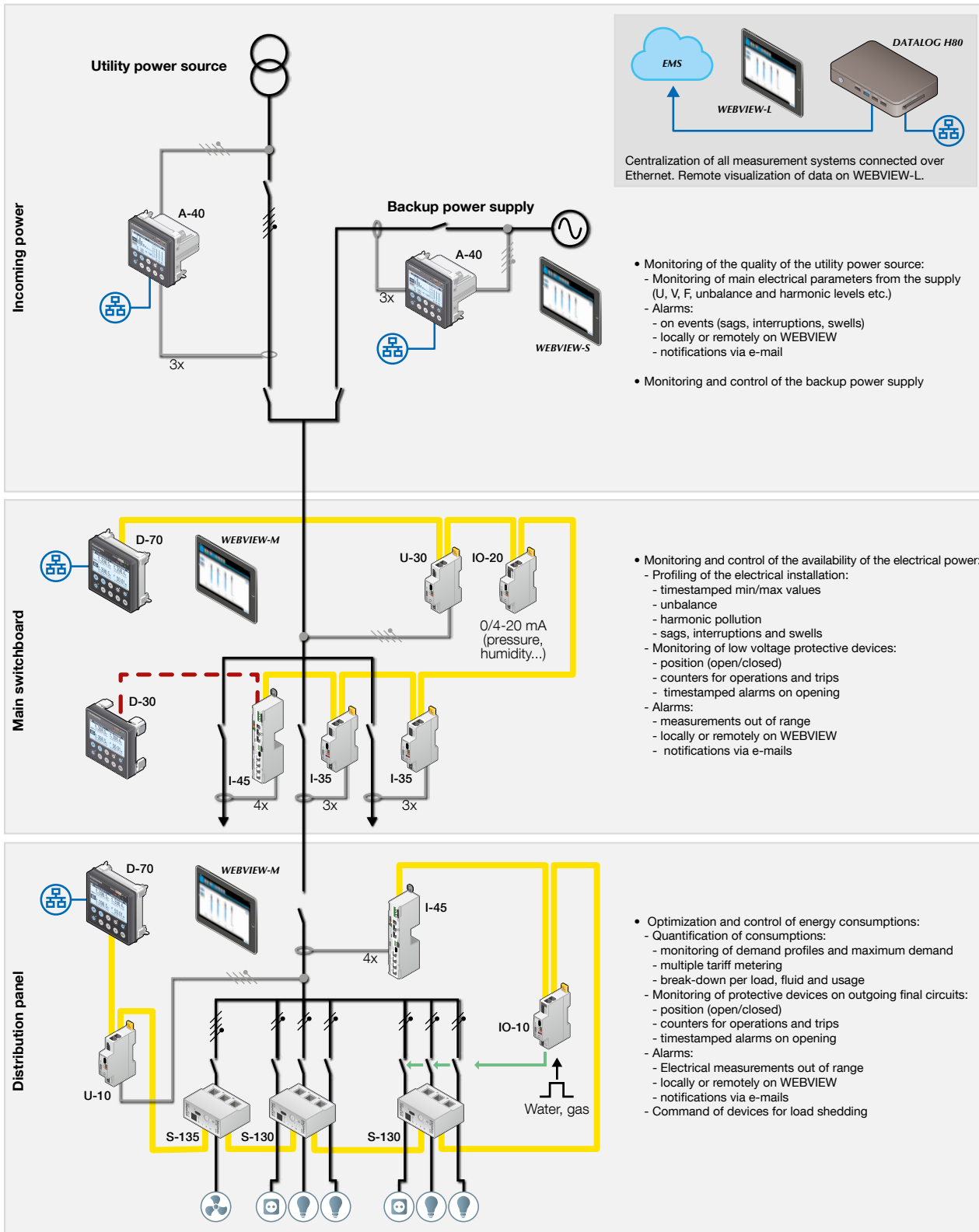- Secured automatic export of data in CSV format.

SOFT_070_A.PSD

WEBVIEW-L solution

WEBVIEW-L is available as an integrated software solution with the DATALOG H:
- Connection of up to 200 devices.
- Retrieval of data from third-party applications and equipment.
- Display of measurements from multiple devices on a single graph.
- Data export through 3G connection.

datal_018_a

Example of *DIRIS Digiware* system architecture

Incoming power

Utility power source

A-40

Backup power supply

A-40

3x

3x

WEBVIEW-S

EMS

WEBVIEW-L

DATALOG H80

Centralization of all measurement systems connected over Ethernet. Remote visualization of data on WEBVIEW-L.

- Monitoring of the quality of the utility power source:
  - Monitoring of main electrical parameters from the supply (U, V, F, unbalance and harmonic levels etc.)
  - Alarms:
    - on events (sags, interruptions, swells)
    - locally or remotely on WEBVIEW
    - notifications via e-mail

- Monitoring and control of the backup power supply

Main switchboard

D-70

WEBVIEW-M

U-30   IO-20

0/4-20 mA (pressure, humidity...)

D-30

I-45   I-35   I-35

4x   3x   3x

- Monitoring and control of the availability of the electrical power:
  - Profiling of the electrical installation:
    - timestamped min/max values
    - unbalance
    - harmonic pollution
    - sags, interruptions and swells
  - 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

Distribution panel

D-70

WEBVIEW-M

I-45

4x

IO-10

Water, gas

U-10

S-135   S-130   S-130

- Optimization and control of energy consumptions:
  - Quantification of consumptions:
    - monitoring of demand profiles and maximum demand
    - multiple tariff metering
    - break-down per load, fluid and usage
  - Monitoring of protective devices on outgoing final 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
  - Command of devices for load shedding

Legend:

Heat pump   Receptacles   Lighting

Socomec: our innovations supporting your energy performance

1 independent manufacturer

3,600 employees worldwide

10 % 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)

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

80 countries where our brand is distributed

SOCOMEC, Inc.

Test Equipment Depot
1-800-517-8431

99 Washington Street
Melrose, MA 02176
Phone 781-665-1400
Toll Free 1-800-517-8431

Visit us at www.TestEquipmentDepot.com

ENERGY SPECIALIST SINCE **922**

socomec
Innovative Power Solutions