

# Socomec Branch Circuit Monitoring System



Display Options Available!



When **energy** matters



# DIRIS Digiware SBCM

## Branch Circuit Monitoring System



.5% Global Accuracy



3X faster to install



Robust & Reliable



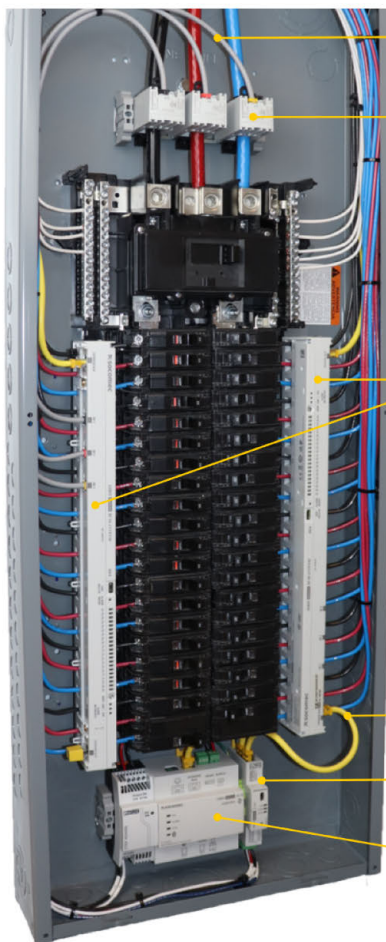
Minimal footprint



Easy to Configure

The DIRIS Digiware SBCM, a revolutionary Branch Circuit Monitoring system by Socomec, is a complete metering solution explicitly designed for your unique need to monitor data and collect measurements from every branch-circuit in a panelboard to ensure energy management and preventative maintenance with revenue grade accuracy. Measurement data can be reported to any EPMS, DCIM or SCADA systems using multiple communication buses and protocols.

### FUNCTIONAL DIAGRAM



RJ12 sensor leads

Current sensors for main feed

Branch-circuit meter strip with integrated CTs

RJ45 Digiware Bus

Voltage Measurement Module

RS485 & Ethernet Communication Interface

### APPLICATIONS

- Data Centers
- Tenant Sub-Metering / Billing
- Cost Allocation
- Demand Response
- Lighting Control
- Energy Savings Management
- Overload Alarming & Balancing

### SUPPORTED PROTOCOLS

- Modbus RTU
- Modbus TCP/IP
- SNMP
- BACnet IP

### EMBEDDED WEBSERVER

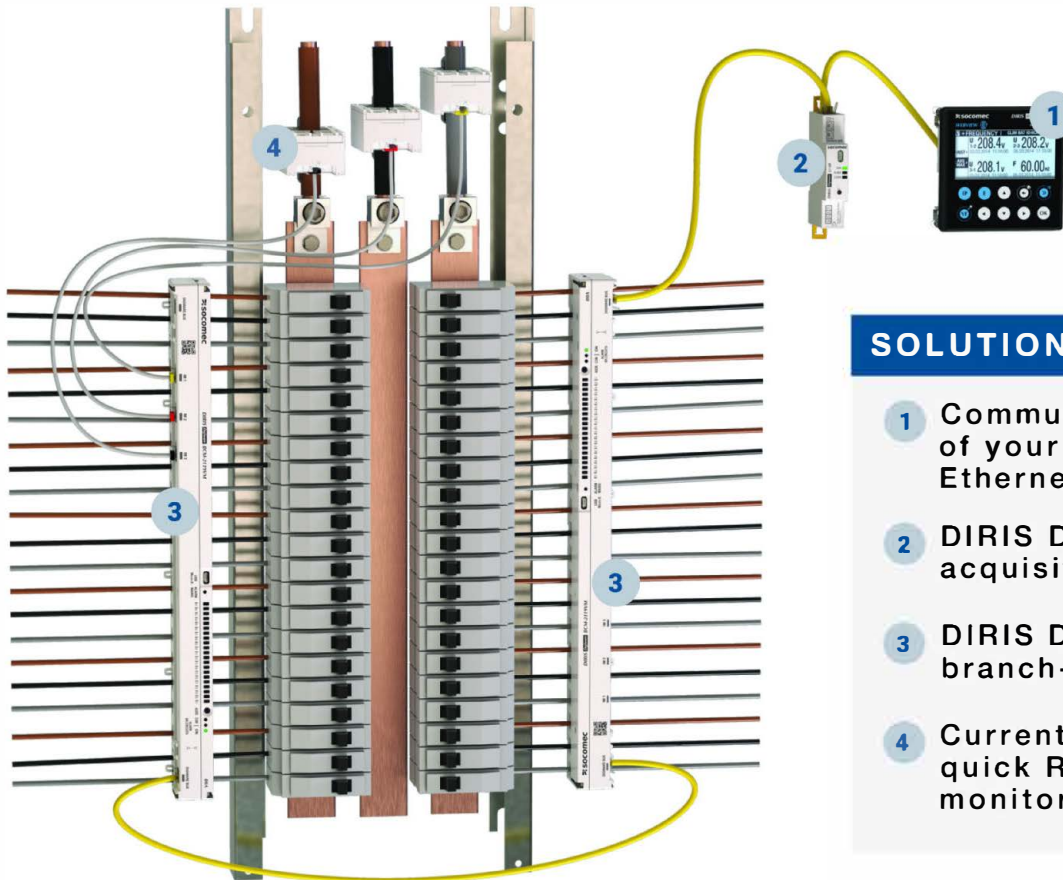
WEBVIEW, an embedded webserver technology that delivers real-time measurements from up to 32 devices. Uncover the cause of any electrical disturbance and anticipate maintenance requirements using the historical records of multiple electrical parameters.

**WATCH OUR VIDEO TO LEARN MORE ABOUT WEBVIEW**



# DEFINE YOUR SOLUTION

Customize your DIRIS Digiware SBCM system by choosing the desired product and required quantity at each step. The DIRIS Digiware SBCM's flexibility makes it suitable to monitor any type of electrical panel (RPP, PDU, panelboards, etc.). The DIRIS Digiware SBCM system is user configurable to monitor any combination of 1-, 2-, 3-Phase outgoing circuits.



## SOLUTIONS INCLUDE:

- 1 Communication interface of your choice (RS485 or Ethernet)
- 2 DIRIS Digiware U voltage acquisition module
- 3 DIRIS Digiware BCM branch-circuit meter strips
- 4 Current sensors with quick RJ12 connection for monitoring of main feed



## Your Perfect Solution

Meter Selector helps you find in a few clicks, the best Digiware system architecture for your power and insulation monitoring projects! The Meter Selector integrates all of our metering and monitoring products including DIRIS Digiware, BCM, our enclosed DigiBOX solutions, and more!

- Specify your metering project requirements
- Download the system diagram and bill of material
- Find all your archived projects in your personal account





## Step 1

### Choose your power and communication interface



The DIRIS Digiware C-31 module is a DIN rail mounted system interface communicating measurements from the entire DIRIS Digiware SBCM system via RS485 Modbus RTU.



The DIRIS Digiware M-50 and M-70 act as communication gateways, communicating measurements via RS485 or Ethernet (Modbus RTU, Modbus

TCP/IP, SNMP, BACnet IP). With the DIRIS Digiware M-70 gateway, measurements can be visualized on WEBVIEW-M, a web-based energy management software embedded in the M-70 gateway.



The DIRIS Digiware D-50 and D-70 are panel mount displays for local visualization of measurements from the entire DIRIS

Digiware SBCM system. They also act as communication gateways, communicating measurements via RS485 or Ethernet (Modbus RTU, Modbus TCP/IP, SNMP, BACnet IP). With the DIRIS Digiware D-70 display, measurements can be visualized on WEBVIEW-M, a web-based energy management software embedded in the D-70 display.

DIRIS Digiware	C-31	M-50	M-70	D-50	D-70
Part Number	4829 0101	4829 0221	4829 0222	4829 0204	4829 0203
<b>Function</b>					
System interface	RS485	RS485 / Ethernet	RS485 / Ethernet	RS485 / Ethernet	RS485 / Ethernet
High resolution LCD display				✓	✓
<b>Communication</b>					
Modbus RTU	✓	✓	✓	✓	✓
Modbus TCP/IP		✓	✓	✓	✓
SNMP v1, v2, v3 & Traps		✓	✓	✓	✓
BACnet		✓	✓	✓	✓
Embedded web server		WEB-CONFIG	WEBVIEW-M	WEB-CONFIG	WEBVIEW-M
<b>Power Supply</b>					
24 VDC	✓	✓	✓	✓	✓

## Step 2

### Add voltage acquisition module



The DIRIS Digiware U module provides a unique voltage measurement reference for the entire Digiware SBCM system, which also means a single point of protection.

The DIRIS Digiware U-30 module monitors power quality such as harmonics, sags, swells to ensure reliable operation of critical assets and minimize the risk of power-related problems.

DIRIS Digiware	U-10	U-30
Part Number	4829 0105	4829 0102
<b>Multi-measurement</b>		
U12, U23, U31, V1, V2, V3, F	✓	✓
U system, V system		✓
Ph/N unbalance		✓
Ph/Ph unbalance		✓
<b>Quality analysis</b>		
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		✓
Crest factors V1, V2, V3, U12, U23, U31		✓
Individual harmonics U & V (up to 63rd)		✓
Voltage sags, interruptions and swells (EN50160)		✓
<b>Alarms</b>		
Measurement thresholds		✓
<b>Trends</b>		
Average values		✓


## Step 3

### Choose your branch-circuit monitoring with integrated sensors



The DIRIS Digiware BCM is a branch-circuit monitoring strip with 21 integrated current sensors for the individual circuit monitoring within Remote Power Panels (RPPs) or electrical panel boards.

Several DIRIS Digiware BCM can be daisy chained together via an RJ45 bus (DigiBUS) to monitor 42-circuit and 84-circuit panels. Each DIRIS Digiware BCM is also equipped with 3 x RJ12 current inputs to connect TE, TR/iTR or TF current sensors, for the monitoring of a main feed or extra circuits.

DIRIS Digiware BCM-xxVM versions embed a patented  VirtualMonitor technology which uses a voltage detection to determine real time breaker status of each individual branch breaker. This allows site operators to be notified in case of an opening or a trip to avoid loss of redundancy of critical assets.

DIRIS Digiware	BCM-2119	BCM-2119VM	BCM-2125	BCM-2125
Part Number	4829 0167	4829 0168	4829 0169	4829 0170
<b>Characteristics</b>				
Number of direct current inputs	21	21	21	21
Number of extra RJ12 inputs	3	3	3	3
Pitch	3/4 in / 19 mm	3/4 in / 19 mm	1 in / 25 mm	1 in / 25 mm
Nominal current range In	32 - 63 A	32 - 63 A	40 - 100 A	40 - 100 A
Maximum current Imax	80 A	80 A	120 A	120 A
<b>Load type accepted</b>				
1P + N	✓	✓	✓	✓
2P / 2P + N	✓	✓	✓	✓
3P / 3P + N	✓	✓	✓	✓
<b>Metering</b>				
± kWh, ± kvarh, kVAh	✓	✓	✓	✓
ΣP, ΣQ, ΣS, ΣPF	✓	✓	✓	✓
P, Q, S, PF per phase	✓	✓	✓	✓
<b>Multi-measurement</b>				
I1, I2, I3, In	✓	✓	✓	✓
P, Q, S, PF per phase	✓	✓	✓	✓
Current unbalance (Inba, Inb, Idir, linv, lhom)	✓	✓	✓	✓
Phi, cos Phi, tan Phi	✓	✓	✓	✓
<b>Power Quality</b>				
THDi1, THDi2, THDi3, THDIn	✓	✓	✓	✓
Individual harmonics I (up to 63rd)	✓	✓	✓	✓
Crest factors U, V, I	✓	✓	✓	✓
K factor	✓	✓	✓	✓
Overcurrents	✓	✓	✓	✓
<b>Alarms</b>				
Measurement thresholds	✓	✓	✓	✓
VirtualMonitor (breaker status)	✓	✓	✓	✓
Wiring errors	✓	✓	✓	✓
<b>Trends</b>				
Average values	✓	✓	✓	✓

## Step 4

### Add current sensors for main feed or extra circuit monitoring



Solid-core current sensors	TE-25	TE-35	TE-45	TE-55	TE-90
Part Number	4829 0502	4829 0503	4829 0504	4829 0505	4829 0506
Nominal current In (A)	40 - 160	63 - 250	160 - 630	400 - 1000	600 - 2000
Real range covered (A)	0.8 - 192	1.26 - 300	3.2 - 756	8 - 1200	12 - 2400
Window (mm)	13.5 x 13.5	21 x 21	31 x 31	41 x 41	64 x 64
RJ12 Connection	✓	✓	✓	✓	✓



Split-core current sensors	TR-10	iTR-10 (*)	TR-14	iTR-14 (*)	TR-21	iTR-21 (*)	TR-32	iTR-32 (*)
Part Number	4829 0555	4829 0656	4829 0556	4829 0656	4829 0557	4829 0657	4829 0558	4829 0658
Nominal current In (A)	25 - 63	25 - 63	40 - 160	40 - 160	63 - 250	63 - 250	160 - 600	160 - 600
Real range covered (A)	0.5 - 75.6	0.5 - 75.6	0.64 - 120	0.64 - 120	1.26 - 200	1.26 - 200	4 - 720	4 - 720
Window (mm)		Ø 10		Ø 14		Ø 21		Ø 32
RJ12 Connection	✓	✓	✓	✓	✓	✓	✓	✓

(\*) iTR current sensors embed a voltage sensing technology allowing for breaker status without using auxiliary contacts.



Flexible current sensors	TF-40	TF-80	TF-120
Part Number	4829 0573	4829 0574	4829 0575
Nominal current In (A)	100 - 400	150 - 600	400 - 2000
Real range covered (A)	2 - 480	3 - 720	8 - 2400
Window (mm)	Ø 40	Ø 80	Ø 120
RJ12 Connection	✓	✓	✓



## Step 5

Select your RJ12 lead cables for connecting current sensors



RJ12 Connection Cables		
Number of Cables	Length (ft/m)	Reference
1	16.4/5	4829 0602
	32.8/10	4829 0603
3	0.96/0.3	4829 0582
	1.64/0.5	4829 0595
	3.3/1	4829 0583
	6.5/2	4829 0584
	9.84/3	4829 0606

## Step 6\*

Add extra meter module for additional circuit monitoring



The DIRIS Digiware I meter modules connect to external TE, TR/ITR or TF current sensors to monitor an extra circuit (3 x single-phase or 1 x three-phase for example). Multiple DIRIS Digiware I modules can be daisy chained together via the RJ45 DigiBUS if additional circuits need to be monitored.

DIRIS Digiware	I-30	I-35
Part Number	4829 0110	4829 0130
<b>Metering</b>		
± kWh, ± kvarh, kVAh	✓	✓
Load curves		✓
Multi-tariff		✓
<b>Multi-measurement</b>		
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	✓	✓
P, Q, S, PF per phase		✓
Predictive power		✓
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)		✓
Phi, cos Phi, tan Phi		✓
<b>Quality</b>		
THDi1, THDi2, THDi3, THDin		✓
Individual harmonics I (up to 63rd)		✓
Crest factors I1, I2, I3, In		✓
Overcurrents		✓
<b>Alarms</b>		
Measurement thresholds		✓
<b>Trends</b>		
Average values		✓

## Step 7\*

Add I/O (input/output) modules



The DIRIS Digiware IO-10 module has 4 digital inputs and 2 digital outputs. The 4 digital inputs can be used to monitor the status of protective devices (open/closed position, trip, trip counter). The 2 digital outputs can be used to control a third-party device (relay, contactor) or to report a condition happening on a different DIRIS Digiware U / BCM / I module. Example: a summary NO/NC contact in the event a measurement threshold is exceeded on any of the other Digiware modules. The DIRIS Digiware IO-20 module has 2 analog inputs (0/4-20 mA) which can be used to monitor analog signals such as humidity, temperature, pressure etc.

DIRIS Digiware	IO-10	IO-20
Part Number	4829 0140	4829 0145
<b>Inputs / Outputs</b>		
Number of digital inputs	4	
Number of digital outputs	2	
Number of analog inputs		2

## Step 8

Select your RJ45 cables to interconnect Digiware modules



RJ45 Cables for Digiware Bus	
Length (ft/m)	Reference
0.2/0.06	4829 0189
0.32/0.10	4829 0181
0.64/0.20	4829 0188
1.64/0.50	4829 0182
3.28/1	4829 0183
6.56/2	4829 0184
9.85/3	4829 0190
16.4/5	4829 0186
32.8/10	4829 0187

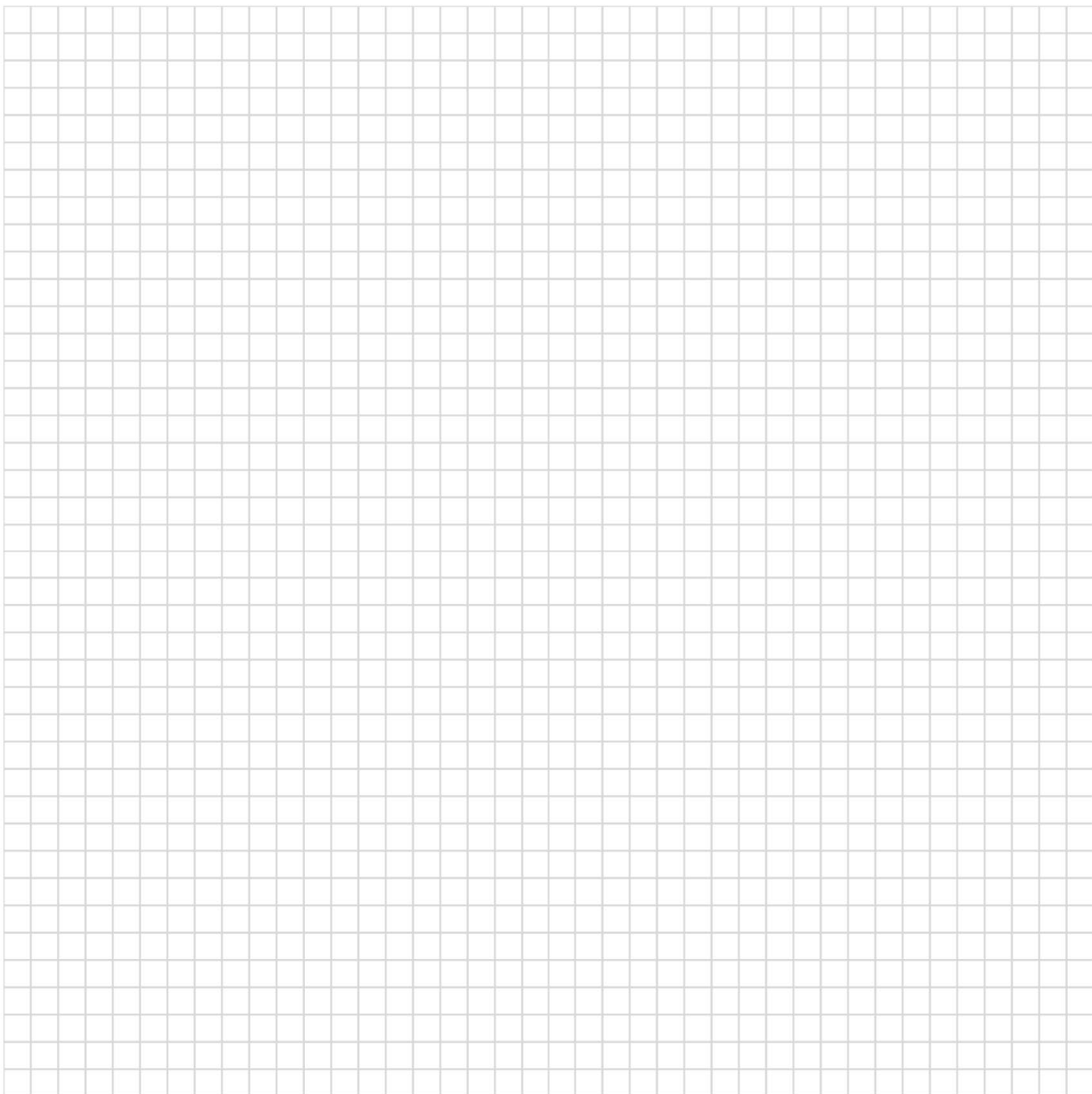
\*Step is optional. Please consult a technical expert to learn if this addition is right for your application.

# Notes

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# Socomec: our innovations supporting your energy performance

**1** Independent manufacturer

**3,700** employees worldwide

**8** % of sales revenue allocated 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 • Serbia • Singapore
- Solveiria • South Africa • Spain • Switzerland
- Thailand • Tunisia • Turkey • UK • USA

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