



When **energy** matters

Power Availability vs Energy Performance

The proper Electrical Infrastructure to find the Best Compromises



In summary

“An electrical equipment engineering and manufacturing company, specialising in low voltage energy performance”

99

years

3 600

employees

12

production sites

544

M€ turnover

10%

of turnover in R&D

28

subsidiaries

Our solutions for Data Centre

Power source switching

Motorsed and automatic transfer switches from 40 to 6300 A

ATS

High energy efficiency UPS

LPS from 200 to 4 MW
 LPS from 10 to 160 kVA
 LPS from 10 to 160 kVA/kW

DELPHIS CP 2.0 MASTERYS BC MASTERYS GP

Power & Energy monitoring

Multi-circuit plug & play measurement and monitoring system

DIRIS Digwatt & DIRIS A-40

Solutions engineered for your system architecture

The supply of reliable, cost-effective power which can be scaled to meet the rapidly changing demands of a data centre is the foundation upon which our clients' businesses are built.

Socomec invests heavily in pioneering research and product design in order to deliver world-class innovations to solve your greatest challenges in terms of energy availability, efficiency, capacity, flexibility and sustainability.

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Fast transfer system

Static Transfer System from 32 to 1000 A

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Ultimate Modular UPS

Hot-scalable UPS from 200 to 4800 kVA kW
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MODULYS XL MODULYS XS/EM/GP

Rack mount UPS

Single-phase UPS from 5 to 11 kVA

NEFYX RT

Services

- PRISM Availability services: A manufacturer's global services to secure your critical power & investment
- LINK-UPS Remote monitoring service

Legend:
 - Alarm notification
 - Remote diagnosis
 - Remote monitoring reports

The challenges we face together



No Downtime
Costs



Reducing Operational
Cost



Optimised Project
Design Costs

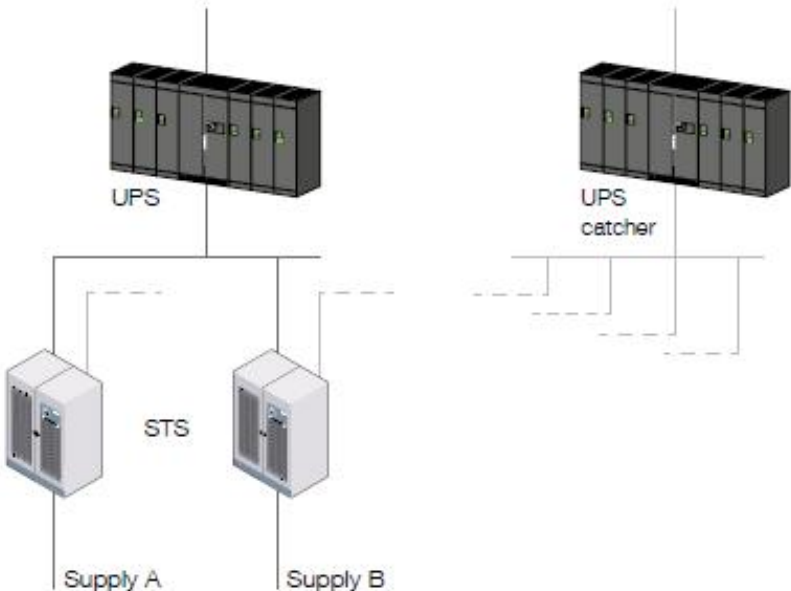


Optimised
Maintenance



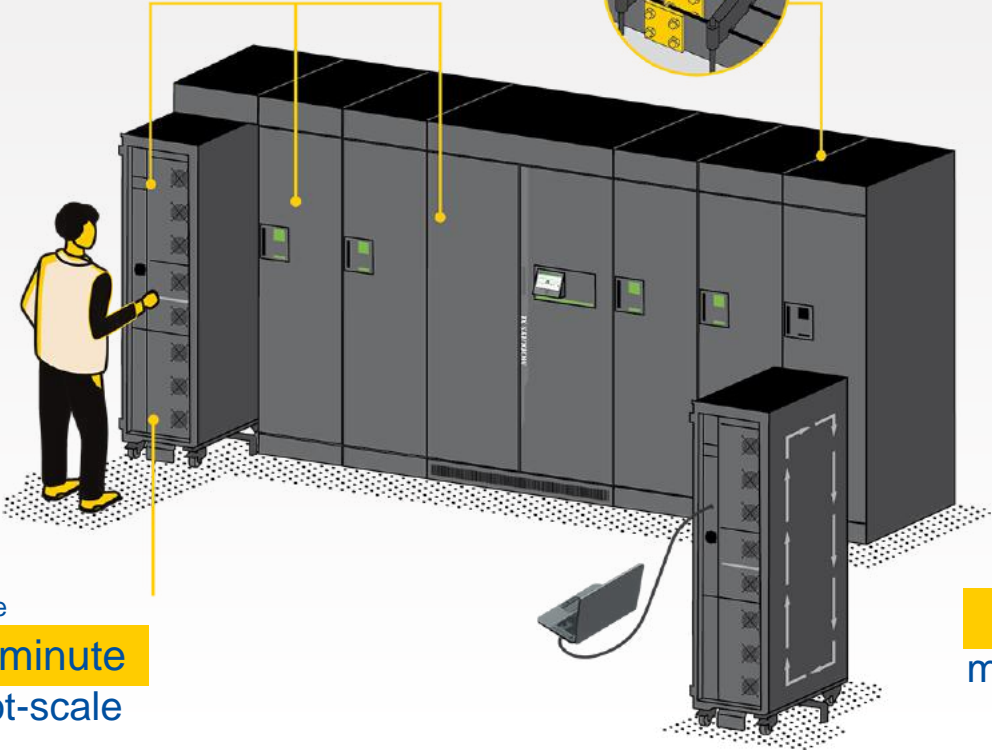
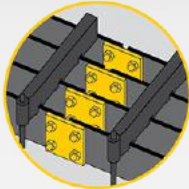
Reducing carbon
footprint

Electrical Infrastructure



3 standard bricks
to design your very own system

Safe and easy
deployment



The
5 minute
hot-scale

Risk-free
maintenance

3 standard bricks

to design your very own system

Configured for **today** – ready for **tomorrow**

3 standard bricks - to build your own modular UPS

Power hub



Power connection area
Local and remote user interfaces
Full rated centralized bypass



Power slot



Pre-connected bay
Ready for power module hot plug-in



Power module



Complete 200kW module
Hot-pluggable into Power slots

The 5 minute hot-scale

Fast and safe hot-scalable, without risks



Easy plug-in
200kW - 1 Person

- No need of engineering expertise
- Power & control cabling free
- Easy configuration on the display



Fully protected

- Fool proof scalability
- Firmware auto-alignment
- Self-testing and auto configuration



Risk-free maintenance

Eliminate life management
risk e

Risk-free maintenance

Low MTTR – online maintenance



Safe intervention

- Critical load remains fully protected
- Zero-risk to affect the running UPS system
- Removal of human error risks



Power Module Maintenance

Risk-free maintenance

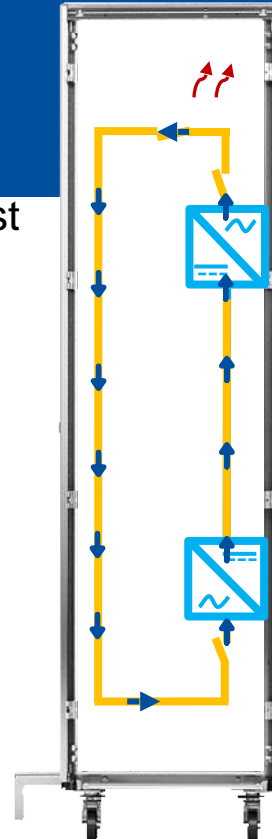
Low MTTR – online maintenance



Full confidence

- Pre-tests, outside the critical system avoiding fault propagations
- Full power (heat-run test) at 200 kW
- No need of a dummy load

200 kW
Heat-run test



Connected to the system
or another dedicated socket



Losses compensation
related to efficiency

The reasons to use Power Monitoring in Data Centers

Power monitoring

PUE optimization

Capacity planning

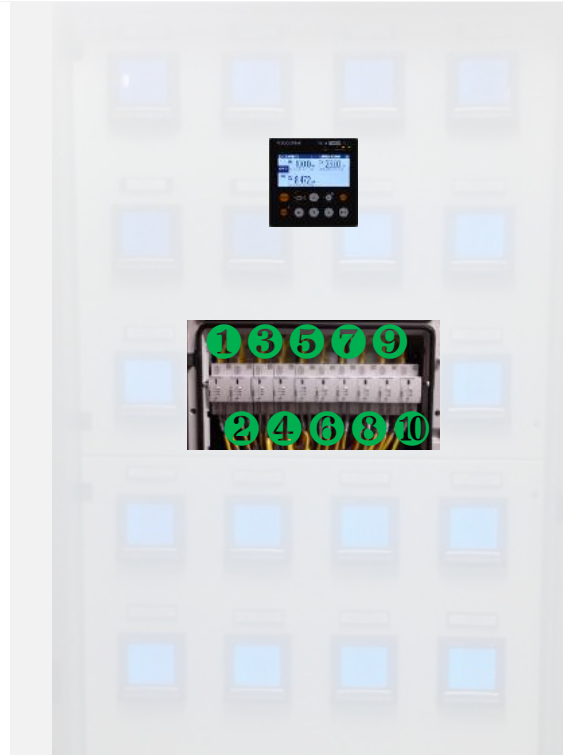
Tailored billing

Power monitoring in RPP/PDU IT power distribution



1200 x **600** mm.

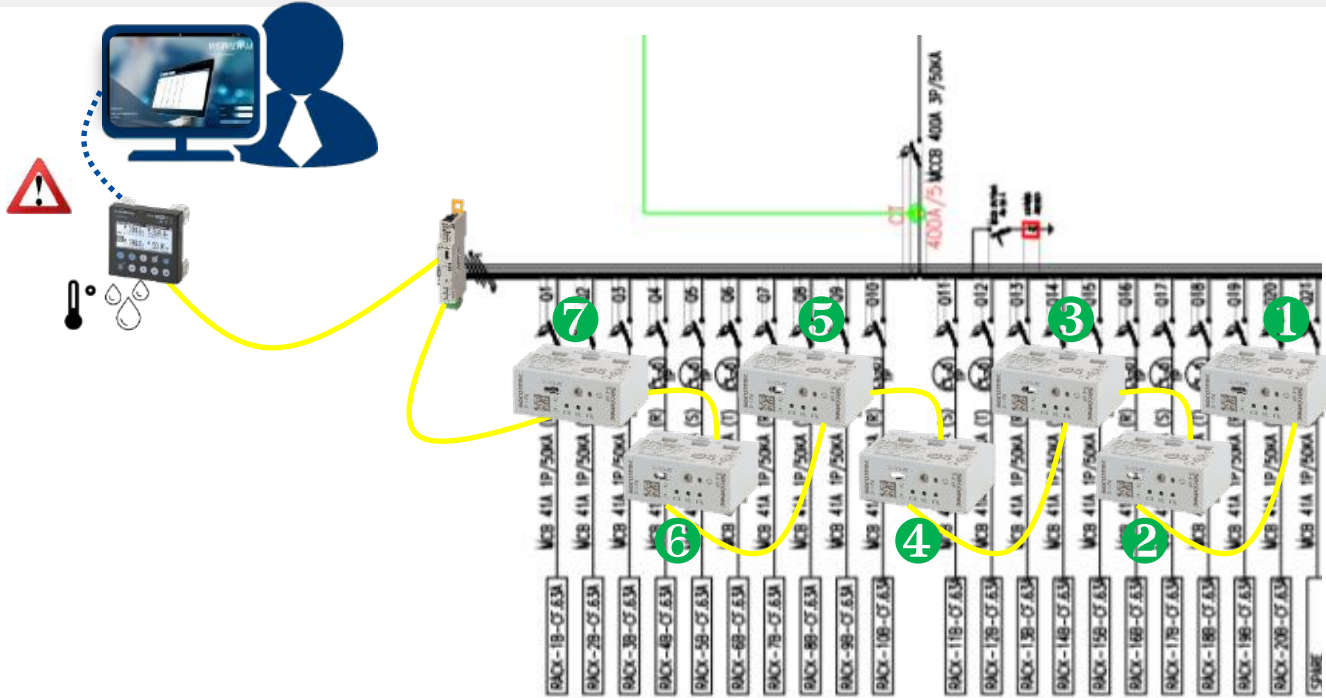
300 cables to connect



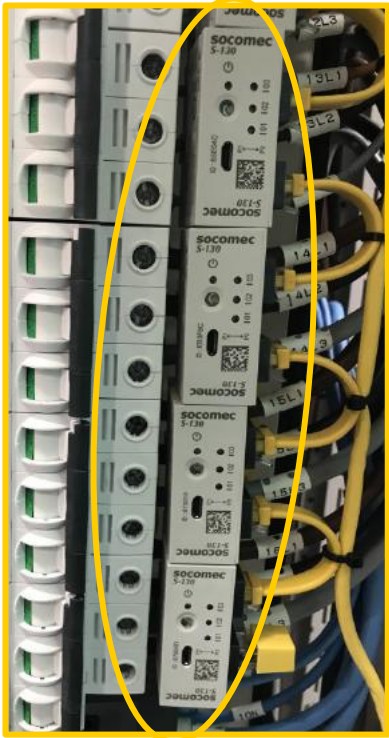
400 x **200** mm.
(24 DIN modules)

6 cables to connect
12 RJ45 cables
60 RJ12 cables

Power monitoring in RPP/PDU IT power distribution



Power monitoring in RPP/PDU IT power distribution



IEC 60364: Low voltage electrical installations – Part 6: Verification

6.5 Periodic verification

6.5.1.2 Periodic inspection shall be carried out without dismantling, or with partial dismantling, as required, supplemented by appropriate tests and measurements from Chapter 64, to provide for:

- a) The safety of persons and livestock against the effects of electric shock and burns
- b) Protection against damage to property by fire and heat arising from an electrical installation defect
- c) Confirmation of correct rating and setting of protective devices required by IEC 60364-4-41,
- d) Confirmation of correct rating and setting of monitoring devices
- e) Confirmation that the installation is not damaged or deteriorated so as to impair safety
- f) The identification of installation defects and non-compliances with the requirements of the relevant parts of the IEC 60364 series, that may give rise to danger,
- g) Confirmation of correct rating and setting of protective devices, and

Where a circuit is permanently monitored by an RCM in accordance with IEC 62020 or an IMD in accordance with IEC 61557-8 it is not necessary to measure the insulation resistance if the functioning of the RCM or IMD is correct.

The functioning of the RCM or IMD shall be verified.

NOTE: Existing installations may have been designed and installed to conform to previous editions of IEC 60364, applicable at the time of their design and erection. This does not necessarily mean that they are unsafe.

6.5.1.3 Precautions shall be taken to ensure that the periodic verification shall not cause danger to persons or livestock and shall not cause damage to property and equipment even if the circuit is defective.

Measuring instruments and monitoring equipment and methods shall be chosen in accordance with the relevant parts of IEC 61557. If other measuring equipment is used, it shall provide no less a degree of performance and safety.

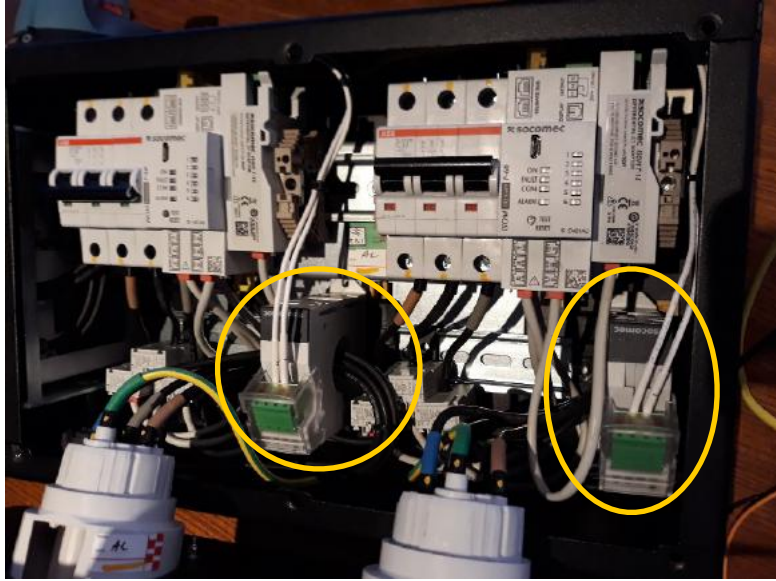
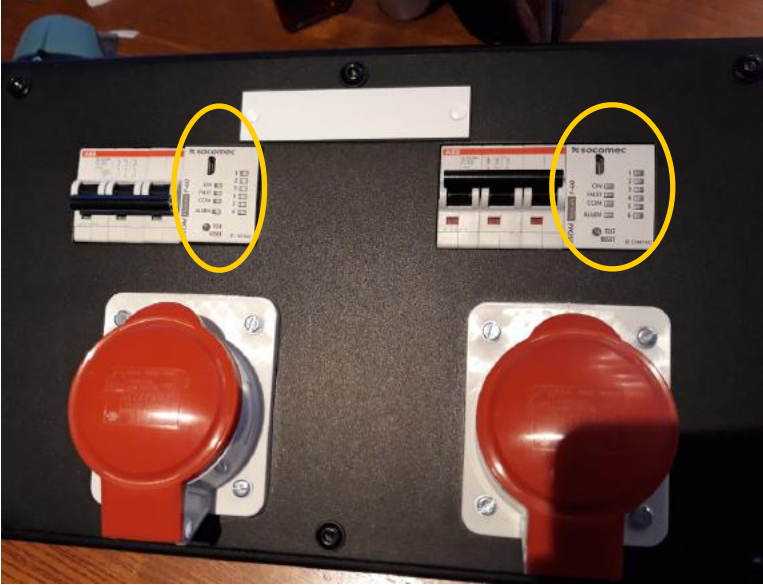
6.5.1.4 Details of any damage, deterioration, defects or dangerous conditions shall be recorded in the report.

6.5.1.5 The verification shall be made by a skilled person, competent in verification.

What the installation standard says...

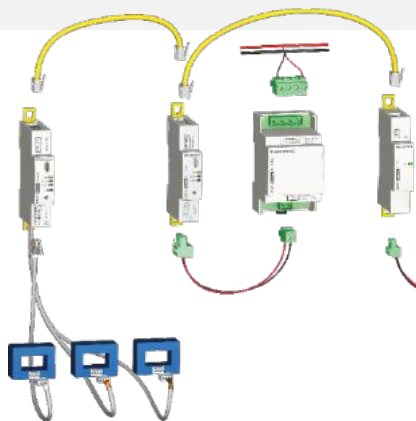
- IEC 60364 / BS 7671-651 calls for a periodic insulation resistance testing on every circuit of the installation
- This periodic testing is a laborious task
 - > It must be carried out by an approved third-party organisation
 - > It is intrusive because it involves opening the main protective device and injecting a voltage of 500 VDC
 - > It can cost tens of thousands of euros depending on the size of the electrical installation
- Testing interval depends on local regulations but is generally every year or every 2 years if the last report did not show any observations
- The periodic insulation resistance testing becomes optional if a permanent IEC 62020-compliant RCM system is installed

Example of RCM integration in a Tap-off box

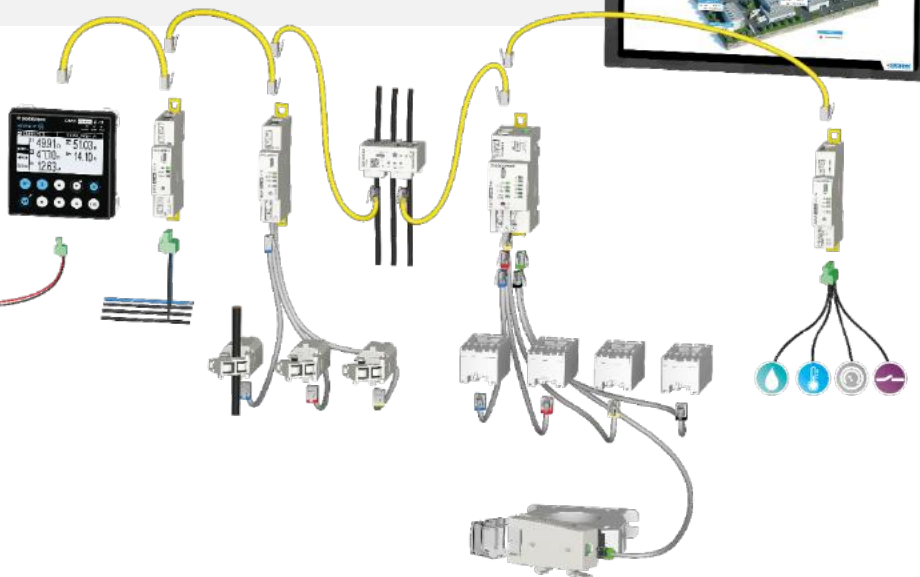


With *DIRIS Digiware*, visualise et analyse your consumptions (AC and DC) within the same system

DC measurement



AC measurement



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Speaker

Jérémie PLEYNET – Segment & Specification Dev. Man.

In charge of specification activities since 2008

Focus on critical applications

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thank you **SO** much!