Okken™ Lean

Innovative & Sustainable LV Switchboard

se.com

Life Is On Schneider Electric

Okken LV Switchboards

More than 200 000 cubicles installed

Trusted by customers worldwide

Table of contents

A sustainable green future 4

Innovation on Okken Lean 6

Decarbonization 7

Compact design 8

From preventive to predictive maintenance 9

Wireless Okken LV thermal monitoring solution 10

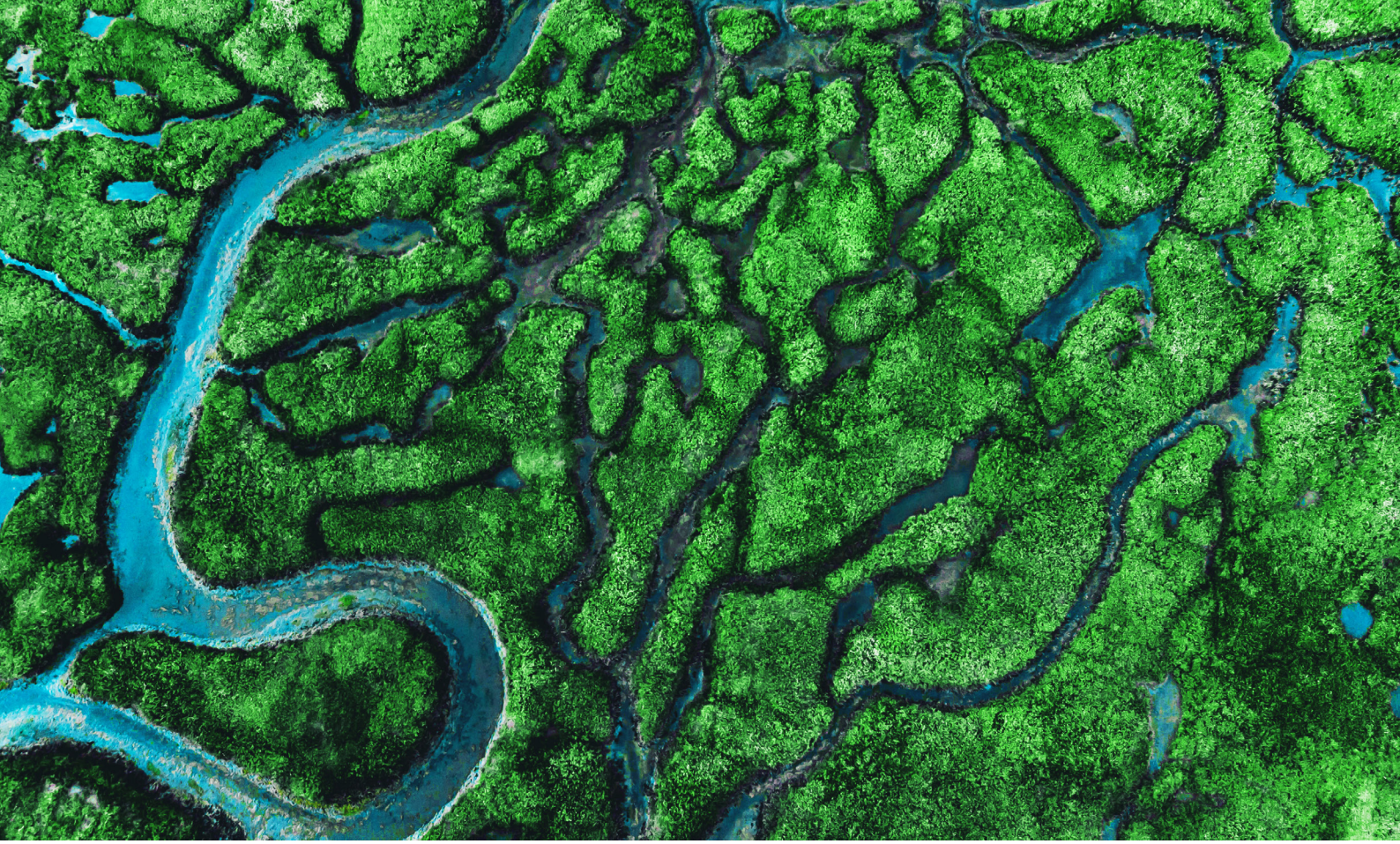
EcoStruxure Power – your complete solution 11

Toss the paper, deliver switchboard project digitally 12

Okken Lean 14

Technical specification 16

Green Premium 18



A sustainable green future

The Intergovernmental Panel on Climate Change (IPCC) warns we must limit human-caused global warming to 1.5 °C or risk catastrophic planetary impacts.[1] The impacts being felt today will increase dramatically without immediate and substantial greenhouse gas emissions reductions.

Climate change is now a top concern among government leaders and major corporations. Corporate strategies are evolving, driven by regulations and a growing understanding that environmental, social, and governance (ESG) issues impact financial performance and corporate value.

- ~140 countries have proposed or committed to net-zero 2050 goals.
- 80% of the top 100 companies per country now publicly report on their sustainability.[2]
- 63% of the 2022 Global Fortune 500 companies committed to delivering a significant climate milestone by 2050, a 12% increase in one year.[3]

The technology and services to support this transformation are available today

Schneider Electric™ is a leading expert in sustainability and decarbonization solutions. We're also a clean energy leader in microgrid systems and consulting on renewable energy purchasing. 40% of the Fortune 500 companies trust Schneider Electric to provide cost-effective, sustainable energy solutions, and services.

Reference:
1 "Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments," IPCC, 2018
2 "The time has come - KPMG Survey of Sustainability Reporting 2020," KPMG
3 "Big companies keep increasing their climate commitments—especially when governments tell them to," Fortune, September 2022

Data Centers

Data centers represent 1~2%[1] of total global electricity consumption today. Digital transformation and automation occurring all around us requires more IT compute capacity and more data centers, which has drawn the attention of environmental groups and consumers concerned about the climate change, the most pressing issue society faces todays.

Data center colocation providers have focused on improving energy efficiency over the last two decades. Not only has this been good for business, but good for the planet as well. Today, the focus is expanding beyond efficiency into environmental sustainability including renewable energy, greenhouse gas (GHG) emissions, water, waste, and land & biodiversity. Data center owners benefit from improving their overall environmental footprint by making improvements beyond efficiency.

Every data center project comes with its unique parameters and requirements, so it is necessary to create the best-fit data center design for your facility to operate effectively and efficiently.

Semiconductors

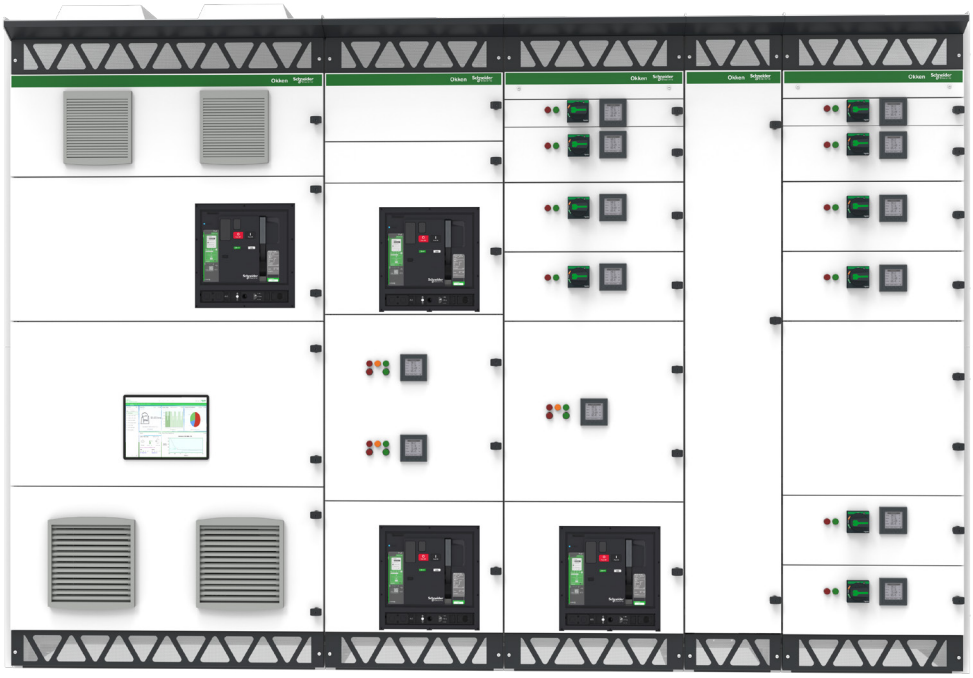
Imagine life without computers, mobile phones, sophisticated medical devices, and even video game consoles. We've grown accustomed to these technologies to manage our day-to-day lives, communicate with each other, keep us healthy, and entertain ourselves. The truth is: semiconductors allow us to take advantage of these modern conveniences.

For companies in the high-tech and manufacturing industries involved in processes to transform bare silicon into ingots, wafers, chips, and ultimately circuits used in electronics and electrical devices, power availability of critical systems is paramount for precision-intensive physical and chemical processes. In addition, reliability, maintainability, safety, and efficiency of sensitive equipment and clean room applications are required at the highest levels to ensure productive and profitable manufacturing environments.

In addition to our overall offering and expertise, Schneider Electric™ is a trusted advisor. Our capabilities include designing and delivering high quality, end-to-end solutions for excellent power quality and energy efficiency, continuous availability of equipment and utilities, increased power availability of tools and utilities, and environmental compliance

Reference:
1 Masanet, Shehabi, Lei, Smith, Koomey, Recalibrating global data center energy-use estimates, 2020

Innovation on Okken Lean



Innovative Architecture in Low-voltage switchboard

- Main busbar at the rear middle low position, can provide max. flexibility for customer connection
- Single run of main busbar up to 6600A thanks to unique architecture
- Flexible shipping unit single or multi columns

Innovative design of Busbar support and fishplate connection

Provide customer easier connection/access from the front side, minimize the labor cost from installation/maintenance time saving.

- HBB ends inside cubicle and two cubicle connection by fishplates
- Fishplate for Easy connection/access from the front side

Enhanced safety and reliability within your reach

Embodying decades of expertise, Okken Lean solutions are engineered to be complete and personalized low voltage switchboards for power distribution. Okken Lean switchboards answer the need for superior operational safety in today's high performance LV power applications. Versatile and durable, Okken Lean switchboards have the comprehensive capabilities and intelligence you need to keep your business competitive.

Greater reliability, flexibility, and intelligence

Okken Lean solutions combine industry-leading features and designs with Schneider Electric™ support to make implementation and operation quicker and more reliable so that you can lower costs and realize a faster return on your investment. A fully functional switchboard with built-in intelligence for energy efficiency, Okken Lean is a simple and modular solution. It is easy to choose, intuitive to use, cost effective and simple to install and upgrade.

Decarbonization

Schneider Electric™ is helping our customers and partners to decarbonize is at the core of Energy Management strategy. Okken Lean provides the fastest path to Net Zero and we need more experts who understand the complexities and best practices of decarbonization to help our customers reach their sustainability ambitions faster.

Decarbonization

Up to 30% CO_2 reduction

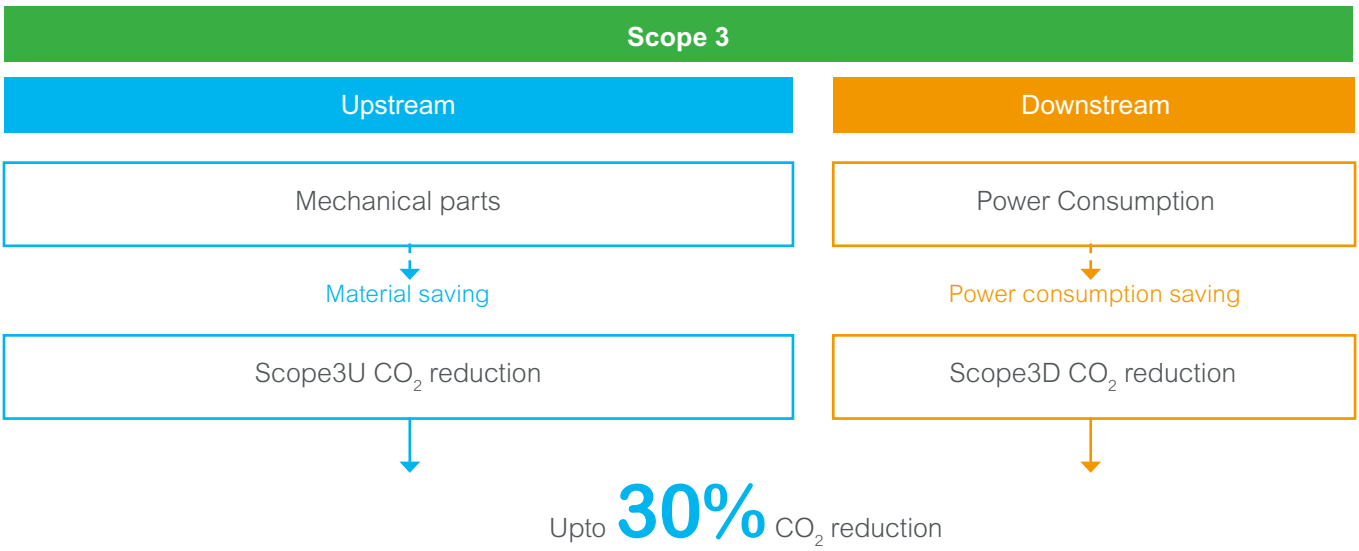
Material saving & power loss reduction

Material saving & Power loss reduction

Okken Lean reduce carbon and frame footprints, help you to meet the sustainability goals. The product is also simplified and streamline power distribution system, making you easier to install, commission, and maintain. Additionally, the real-time thermal monitoring solution, advanced wireless connection, and predictive maintenance features ensure the reliable and efficient operation of power distribution systems, minimizing energy waste and reducing emissions.

Investing in sustainable Okken Lean solution can also help future-proof operations by ensuring that power distribution systems can adapt to changes in energy efficiency regulations, energy costs, and other factors that may affect operations.

Okken Lean is promising solutions for the low-carbon future of LV power distribution. As more companies prioritize sustainability, these products can help to a more sustainable and environmentally responsible future. By adopting low-carbon power distribution solutions, these industries can reduce their carbon footprint, improve their operational efficiency, and enhance the reputation as environmentally responsible companies.



Compact design

Horizontal busbar system

Okken Lean is redesigned the architecture with innovation. The horizontal busbar system is arranged in the rear middle low position of the switchboard. This compact design brings the benefits for framework and total footprint of a sets of switchboards.

No additional holes are required for connection, make manufacturing and assembly simplify.

The innovation main busbar system reserved the maximum space between the operators and the busbar for easy installation and maintenance.

Compact Design

Up to **30%** footprint reduction
thanks to new busbar architecture

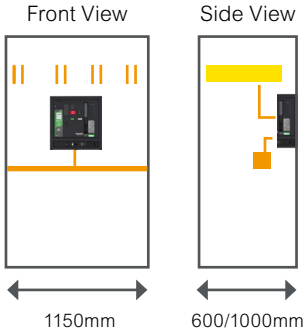
Incomers Air Circuit Breakers up to 6300A

High design quality provides high performance, the rated current of ACB provide up to 6300A performance.

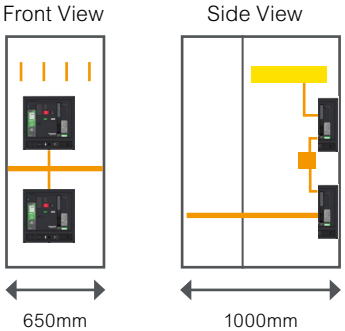
Vertical busbar system

Optimized Vertical busbar system & link bar system, no need additional space for VBB arrangement. Okken Lean offer more size of vertical busbar options.

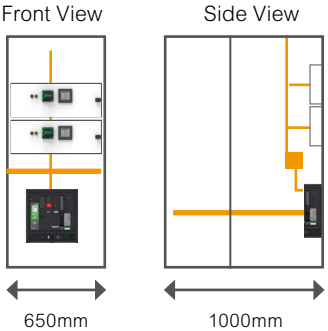
230 Lean
6300/5000 A



115 Lean
Breaker up to 4000A



70F / 115 Lean
Breaker up to 4000A



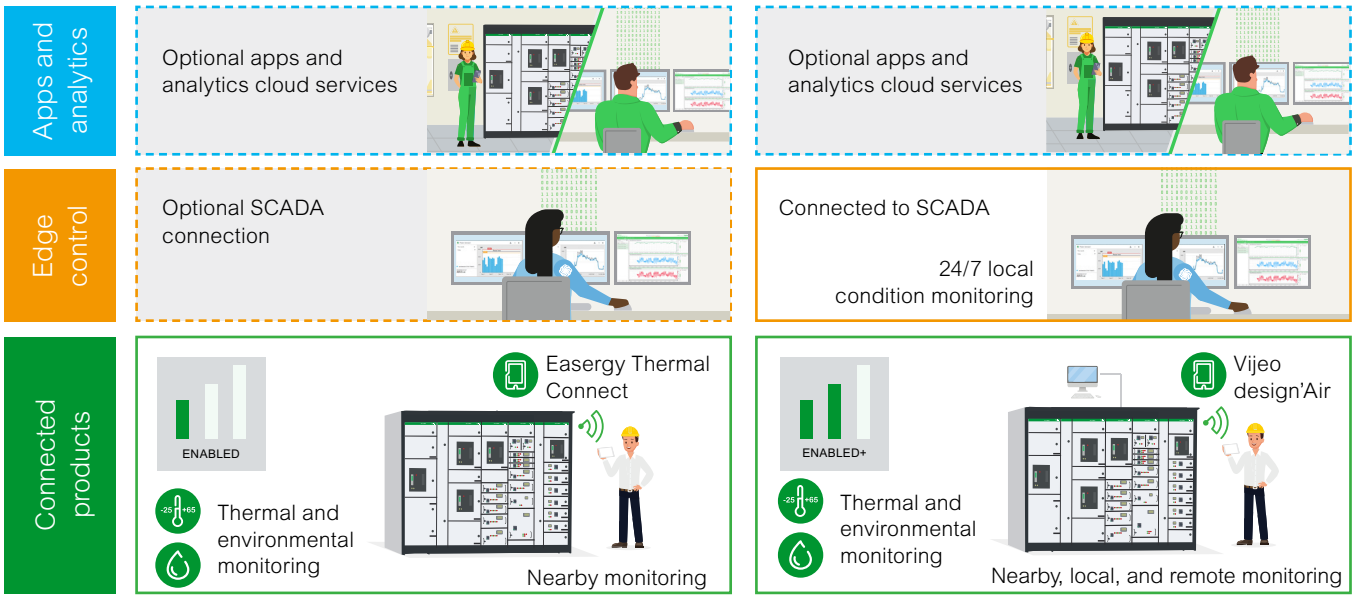
From preventive to predictive maintenance

Minimize downtime, increase reliability

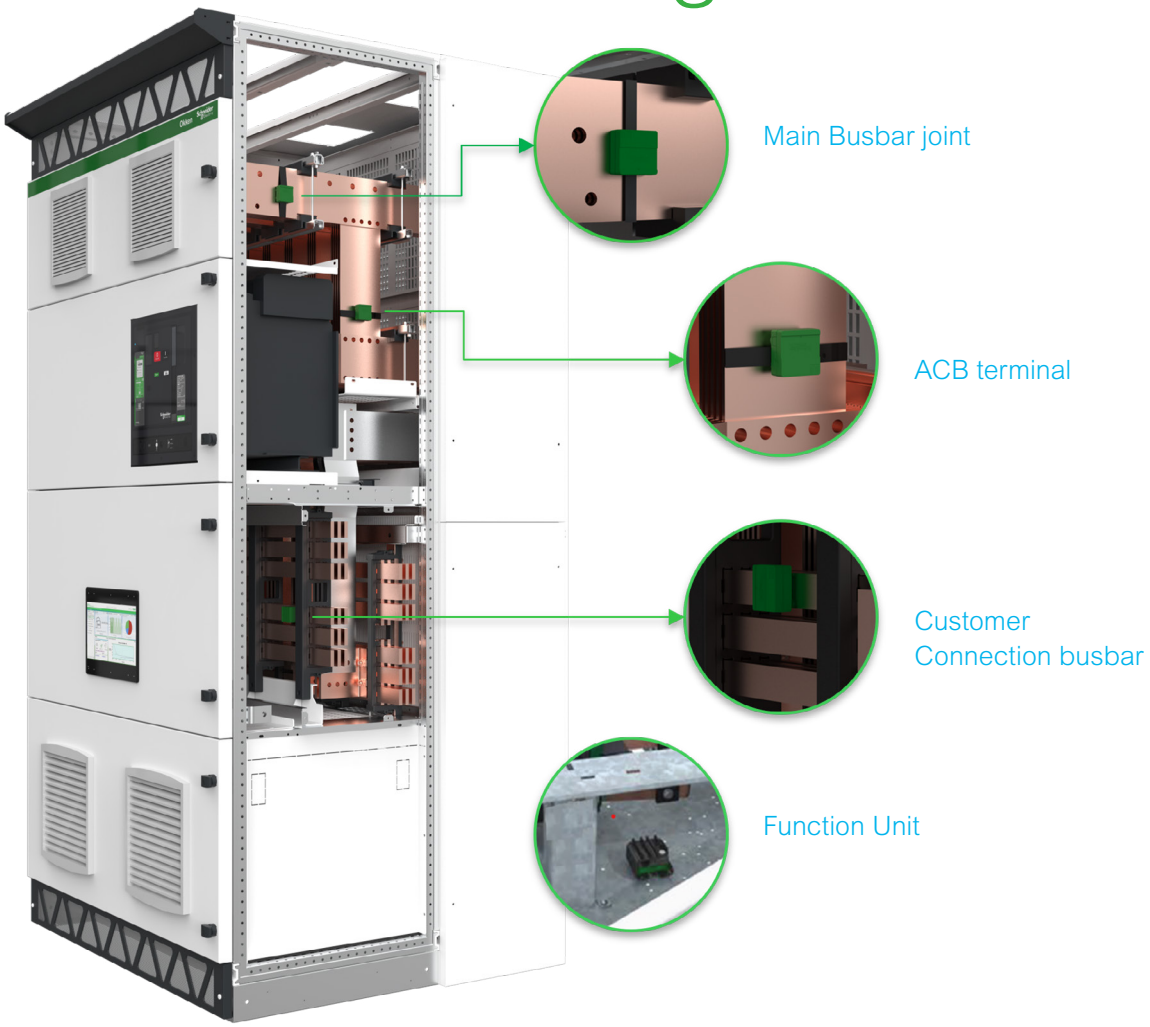
How much does an hour of downtime cost? At a stock exchange, lost transactions total €6 million. A petrochemical plant will forfeit €100,000 in productivity. And for hospitals, the cost is human lives.[1]

Predictive Maintenance

Minimize downtime through 24/7 thermal risk detection via real time monitoring



Wireless Okken Lean thermal monitoring solution



Easergy TH110 Wireless Thermal sensor

- Temperature

Easergy CL110 Wireless Environmental sensor

- Temperature
- Hudmidity

Okken Lean thermal monitoring minimizes downtime and increase safety while reducing insurance premiums related to fire risks. To keep critical equipment up and running is a priority in Data centers and Semiconductors worldwide.

The objectives are three-fold:

- Maintain operational uptime and business continuity
- Reduce operational expenses and total cost of ownership
- Protect building occupants and electrical distribution equipment

The Okken Lean Thermal Monitoring design combines a robust and proven architecture, standardized modules, and Schneider Electric devices. Permanently installed sensors on busbar connections, cable Environmental sensor compartments, and breaker contacts provide continuous monitoring perform predictive maintenance. While IR inspections may miss critical conditions that happen between scheduled scans.

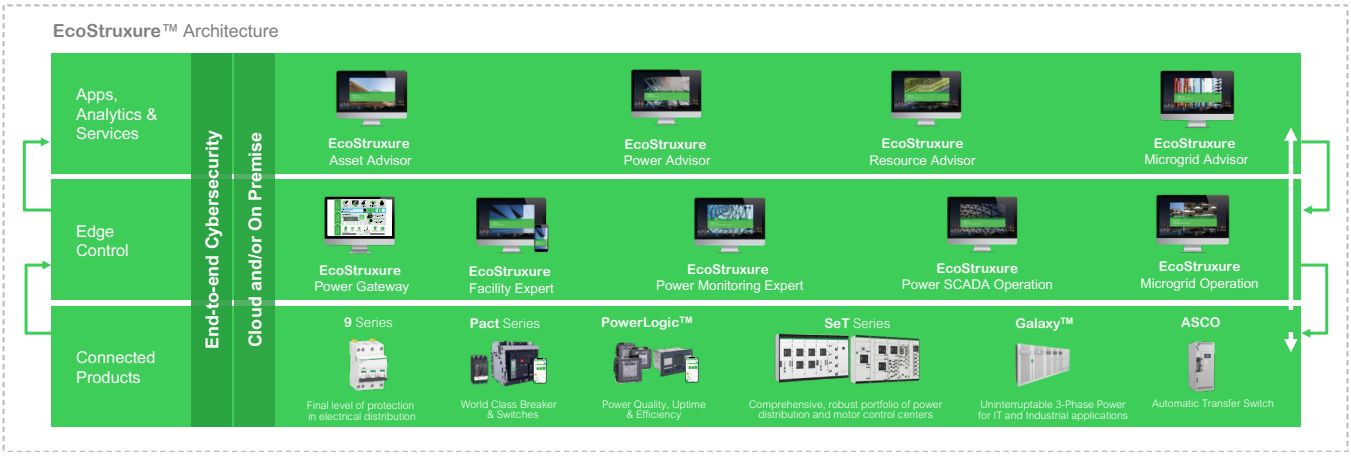
Okken Lean Thermal Monitoring not only detects potential hazards but immediately sends alerts to operations and maintenance teams, allowing them to respond before any unsafe or damaging conditions occur.

EcoStruxure Power – your complete solution

Innovation at every level for a connected, three-tiered system

At the core of all the EcoStruxure Power solutions are three interwoven levels of innovation: connected products, edge control, and apps, analytics, and services. Continously communicating in real time within a cybersecure environment, they give you complete visibilty to optimize your network.

EcoStruxure™ Power
Innovation At Every Level



Toss the paper, deliver switchboard project digitally!

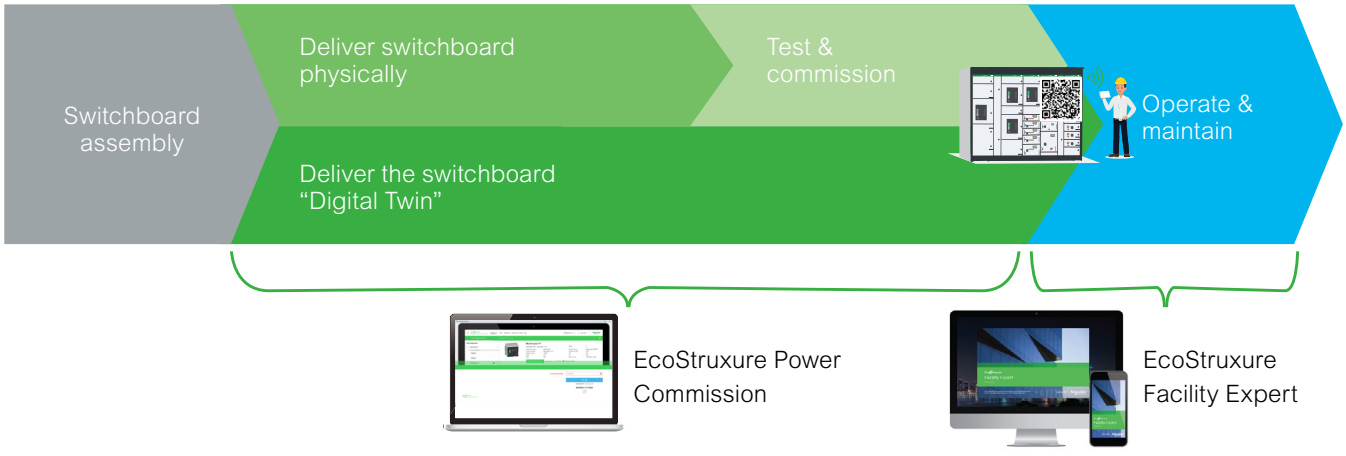
Project location	Design docs	Switchboard docs	Commissioning doc	Commercial docs	Maintenance docs
• Project location • EU customer info • Commissioning date	• Single line diagram • Protection setting	• CAD Drawings • Switchboard photos • User manual • Single line diagram • Bill of material • Device serial number	• Device password • IT network configuration • EPC project report • EPC com test report	• Product & service brochure • Warranty doc	• Maintenance plan • Maintenance guide • Spare part lists

Receive digital twin of the switchboard through QR code, information at fingertips!


Panel Builder


Contractor


End User



EcoStruxure Power Commission

EcoStruxure Facility Expert

Okken Lean

The future of electrical solutions incorporating the **Sustainable, digital proficiency, innovative compact design**, and with **predictive maintenance** products and systems from Schneider Electric™.

Innovative horizontal busbar architecture,

- Main busbar at the rear middle low position
- Provide maximum flexibility for customer connection
- Easy manufacturing, and easy installation
- Access from the front side possible

Fishplate

- Innovation design of fishplate connection
- Easy connection/access from the front side

VBB

- VBB in the same column as Functional Unit saving the footprint

Integrated horizontal busbar support

- Icw up to 100kA/1s
- Simplified installation thus reducing labor time

High performance

- Single run of main busbar up to 6600A thanks to the unique architecture

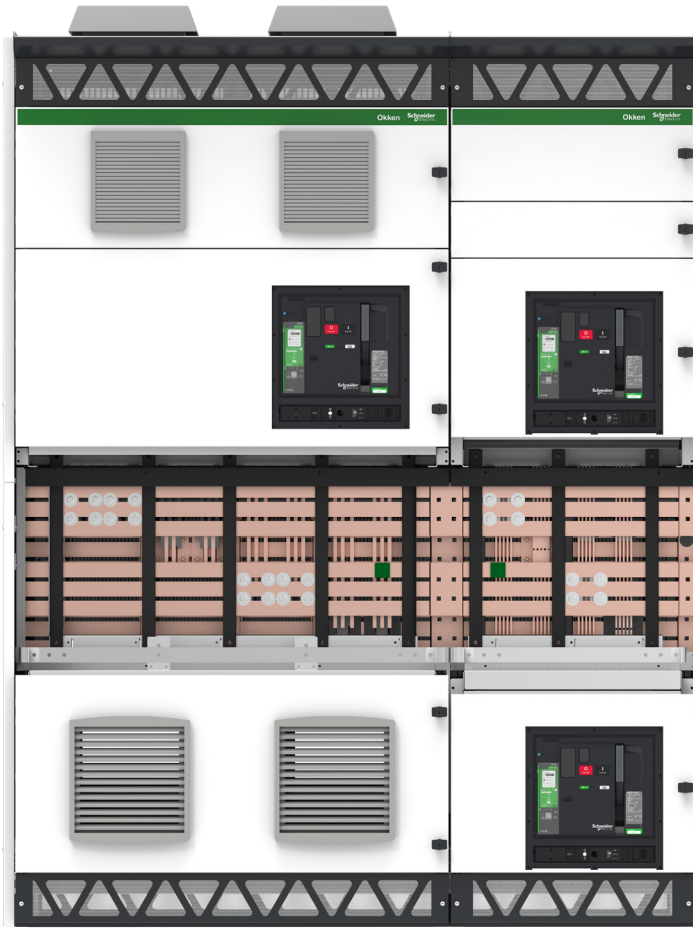
Flexible transportation

- Single or multi columns are available for shipping

Safety

- Ingress protection up to IP54
- Forms of internal separation up to 4b
- Operator protection at horizontal & vertical busbars

IEC 61439-1/2
IEC TR 61641 edition 3



Internal arc containment 100 kA/0.5s

- High internal arc withstand performance
- Certified on the 7 criteria as per standard requirement (IEC TR 61641 edition 3)
- Arc Flash Monitoring with VAMP

Wireless LV thermal monitoring

- Predictive maintenance to increase the reliability of switchboard
- Nearby or remote monitoring
- 24/7 access

Full compliance with IEC standards

- Type test campaign carried out according to IEC 61439-1/2
- Certificated by ASTA, tested by recognized laboratories.

Designed for difficult environment

- Severe earthquake conditions 2.7G, Zone 4(Richter scale level 9)

Flexibility

- Cable connections from rear side, to optimize the switchboard length footprint
- Cable connections from front side, to limit rear area at backside of switchboard
- Cable connections from top or bottom, according to application needs

An ‘install-and-forget’ level of dependability

- All components and devices are designed by Schneider Electric and manufactured to rigorous quality standards
- Tested and validated compatibility between switchboards, functional units, and built-in devices
- Outstanding electrical and mechanical consistency and electromagnetic compatibility (EMC) of all Schneider Electric components

Technical specification

General data	
Applications	Power distribution
PCC (Power Control Centre)	incomer & feeder up to 6300 A
Standards	IEC 61439-1 & 2, IEC TR 61641, IEC 60529, IEC60947-1&2
Certification	ASTA
Electrical data	
Voltage	up to 480 Vac (50/60 Hz)
Main busbar rating	up to 6600 A
Distribution busbar rating	up to 2100 A
Rated short-time current (Icw)	
horizontal main busbar	up to 100 kA rms - 1s (peak current Ipk up to 220 kA)
vertical distribution busbar	up to 100 kA rms - 1s (peak current Ipk up to 220 kA)
Conditional short-circuit current (Isc)	up to 100 kA
Internal arc withstand current	100 kA – 0.5 s (IEC TR 61641 edition 3)
Earthing system	TT-IT-TNS-TNC
Communication	
Protocols	Ethernet/IP, ModBus TCP/IP, Profibus DP
Mechanical data	
Form	2b/3b/4a/4b
Seismic withstand	Upto 2.7G
Installation	indoor environment type 2
Degree of protection	IP20, IP31, IP41, IP54
Operating temperature	- 5 °C to 50 °C

Okken Lean

A Green Premium™ Equipment

Green Premium™

More than 75% of our product sales offer superior transparency on the material content, regulatory information and environmental impact of our products:

- RoHS compliance
- REACh substance information
- Industry leading # of PEP's*
- Circularity instructions

Learn more about Green Premium

Green Premium promises compliance with the latest regulations, transparency on environmental impacts as well as circular and low-CO2 products.

CO_2 and P&L impact through… Resource Performance

Green Premium brings improved resource efficiency throughout an asset's lifecycle. This includes efficient use of energy and natural resources, along with the minimization of CO_2 emissions.

Cost of ownership optimization through… Circular Performance

We're helping our customers optimize the total cost of ownership of their assets. To do this, we provide IoT-enabled solutions, as well as upgrade, repair, retrofit, and remanufacture services.

Peace of mind through… Well-being Performance

Green Premium products are RoHS and REACh compliant. We're going beyond regulatory compliance with step-by-step substitution of certain materials and substances from our products.

Improved sales through… Differentiation

Green Premium delivers strong value propositions through third-party labels and services. By collaborating with third-party organizations we can support our customers in meeting their sustainability goals such as green building certifications.

*PEP: Product Environmental Profile (i.e. Environmental Product Declaration)

Well-being and circularity

Superior environmental performance with Green Premium

The Okken Lean is RoHS and REACh compliant

- Transparent environment information
- Product Environment Profile, compliant with ISO14025
- Circular instructions

Resource

Sustainable packaging

- Complying with sustainable packaging guideline, wood pallet is certified as FSC 100% from DC

Well-Being

Legal compliance

- Ensure full regulation compliance about substances and chemical components

Circular

Upgradeability and recyclability

- The function of equipment can be improved when the devices installed in enclosure are updated
- Recycling rate: 94%

Life Is On | Schneider Electric™

se.com

Schneider Electric Industries SAS
35 Rue Joseph Monier
92506, Rueil Malmaison, France

998-22875352