

A photograph of three surgeons in an operating room, wearing blue scrubs, masks, and hairnets. They are focused on a surgical procedure, with bright overhead lights illuminating the scene. The image is partially covered by a green overlay at the bottom.

The ultimate in power availability, operational efficiency and patient safety in hospitals

Isolated Power Solutions for Operating Rooms

Life Is On

Schneider
Electric

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Discover Isolated Power Solution

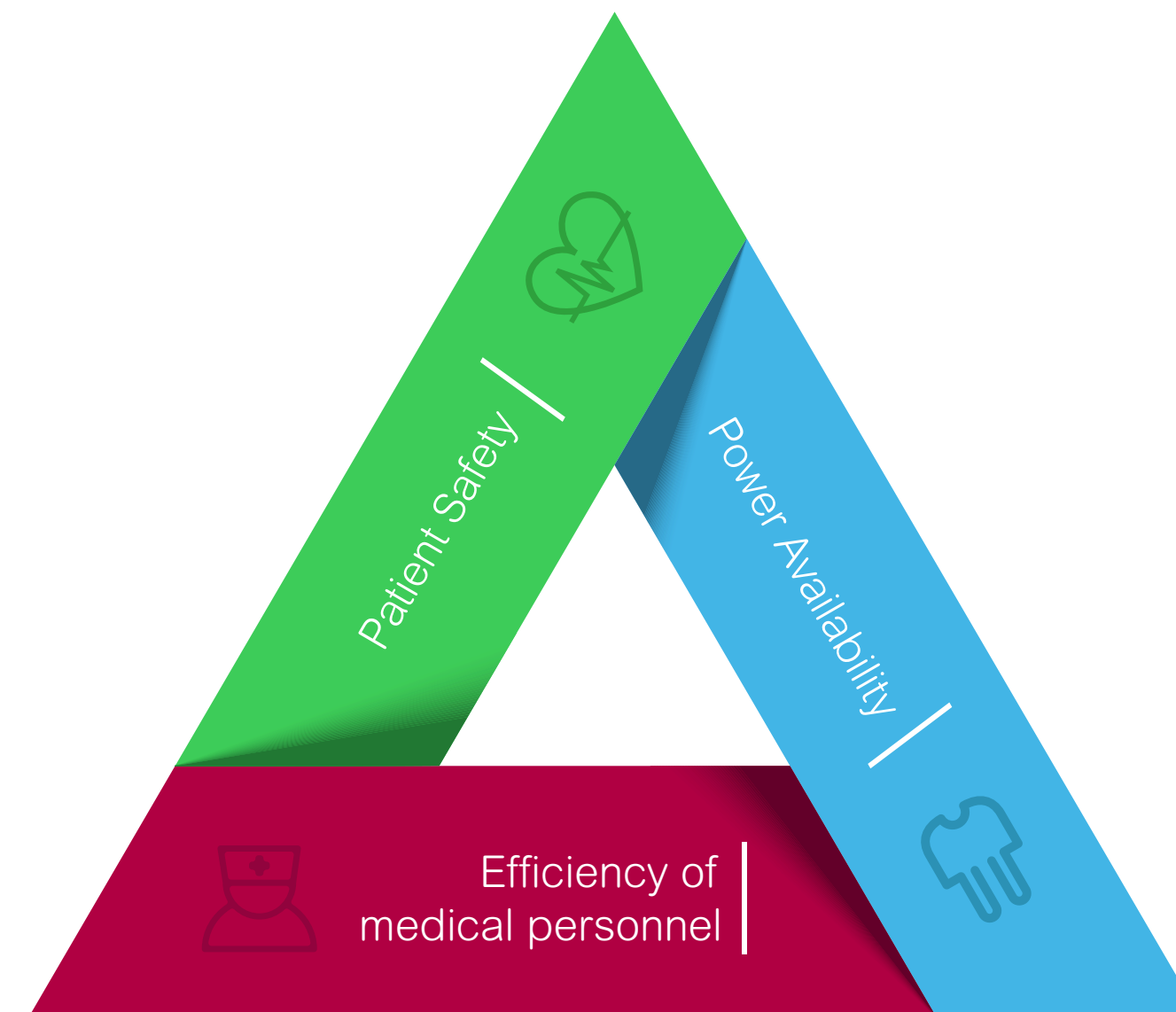
Improve operating room performance

Schneider Electric™ is the number one provider of secure power distribution systems and components worldwide. We understand electrical installations in critical environments where protection of people and availability of power is vital. This is why you can trust our Isolated Power Solution for Operating Rooms.

Engineered for patient safety, power availability and efficiency of medical personnel, the Isolated Power Solution provides essential, timely and secure information about electrical system status and diagnostics to key staff, either on-site or remotely.

Our solution is built on high-availability architecture comprised of quality components designed, manufactured and tested by Schneider Electric and complies with the most stringent electrical safety standards, including IEC 60364-7-710.

Backed by Schneider Electric services and a global network of certified EcoXpert™ partners, the Isolated Power Solution will deliver maximum performance throughout the lifecycle of your installation.



A solution you can trust
from design to installation to
operation and maintenance.

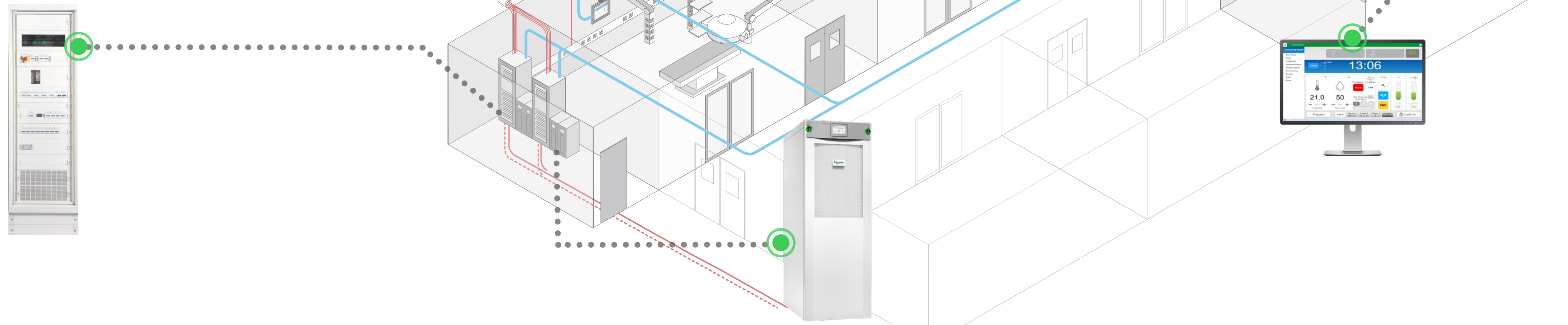


IEC 60364-7-710
COMPLIANT

Improve operating room performance

A reliable, efficient solution, from a single manufacturer providing easy access to information concerning the electrical and environmental state of operating rooms:

- Inform maintenance and medical personnel in real-time in the event of an electrical fault or insulation failure
- Monitor the operating room environment and record all environmental and electrical events for traceability



Anatomy of the Prisma P Isolated Power switchboard



Built for safety, efficiency and longevity

Prisma P Isolated Power switchboards are made with high-quality electrical components, designed to protect operators from direct contact and engineered to eliminate electromagnetic disturbances in accordance with IEC 60364-4-44, IEC 61000-6-2 and IEC 61000-6-3:

- Modular functional units, IEC 61439-1&2 compliant, with steel metal sheets with cathaphoresis treatment
- Functional units and components are physically organized by functions performed: Continuous isolation monitoring devices, IT circuit breaker devices, TNs circuit breaker devices, isolation transformer, earthing equipotential bonding busbar
- Exposed conductive parts are linked to reduce the common impedance between devices
- Low emission - high immunity devices are used

Explore Isolated Power Solution



Explore Isolated Power Solution

Our Isolated Power Solution is designed to provide the right information to the right people when they need it. Built on a flexible, scalable architecture, our solution offers three levels of monitoring from insulation and electrical fault detection in the operating rooms to a complete monitoring solution, providing nurses, medical staff and maintenance personnel the operational intelligence they need to be safe, efficient and productive.

Classic Solution

Simple solution for insulation fault and isolation transformer monitoring and alarming (visible indicators and audible alarm) to medical staff in an operating room. This solution is pre-engineered to easily connect to the local area ethernet network to share its data with any Modbus Master device or supervisory software (Building Management or Power Management system) connected to the network.

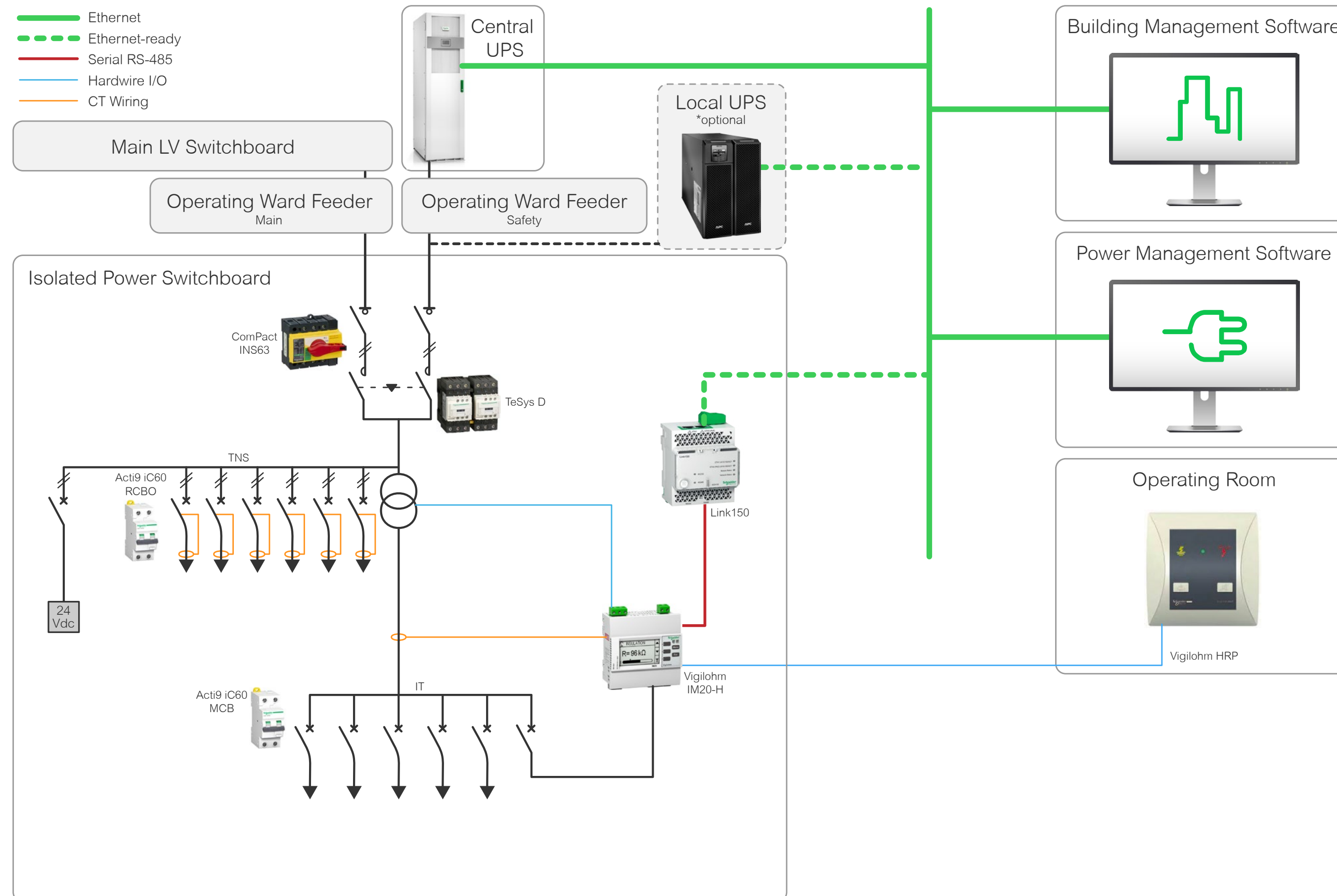
Advanced Solution

Comprehensive solution providing electrical monitoring and alarming (visible indicators and audible alarm) with insulation fault location to medical staff working in an operating room and remotely to supervisors and maintenance personnel. Backed by EcoStruxure Power Management software, the solution captures historical electrical event information from all operating rooms for diagnostics, maintenance, traceability and regulatory compliance.

Full Solution

Scalable electrical and environmental monitoring solution that extends beyond operating rooms. Leveraging EcoStruxure Building Operation and EcoStruxure Power Management software, this fully integrated solution provides information about how the critical infrastructure of the hospital is performing at all times with visibility across the entire electrical infrastructure and complete control of environmental conditions throughout the hospital.

Classic Solution



Insulation Monitoring and Communications



VigiloHM IM20-H Insulation Monitoring Device

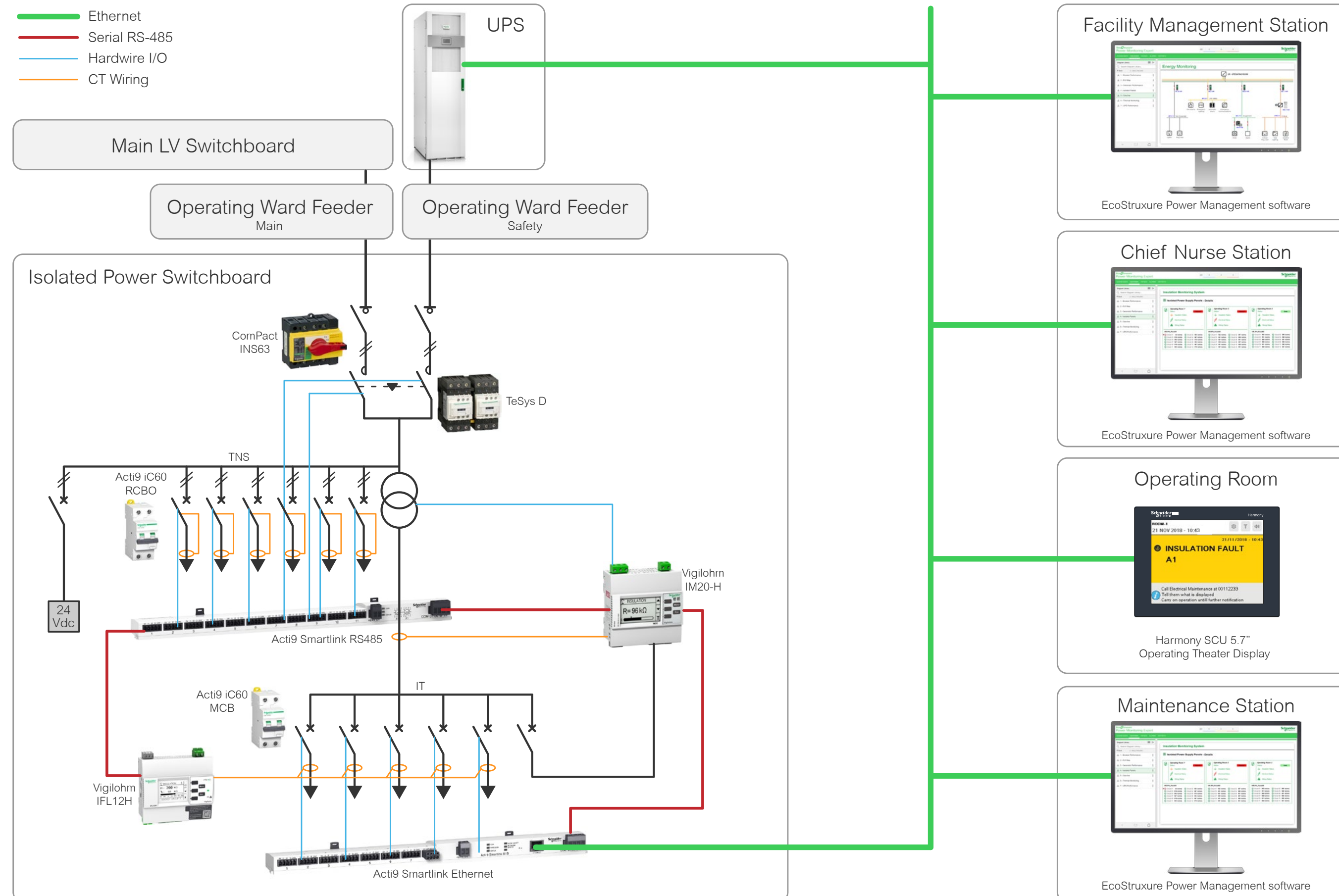
Monitors, logs events and alarms when an insulation fault, IT transformer overload or overheating event occurs



Link150

Enables Isolated Power Supply Panel to connect to an Ethernet network to provide insulation fault, transformer overload, transformer overheating and UPS status information to supervisory monitoring systems such as a Building Management or Power Management system

Advanced Solution



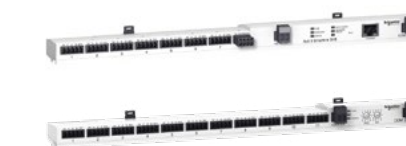
Insulation Monitoring and Communications



Vigilohm IM20-H Insulation Monitoring Device
Monitors, logs events and alarms when an insulation fault, IT transformer overload or overheating event occurs

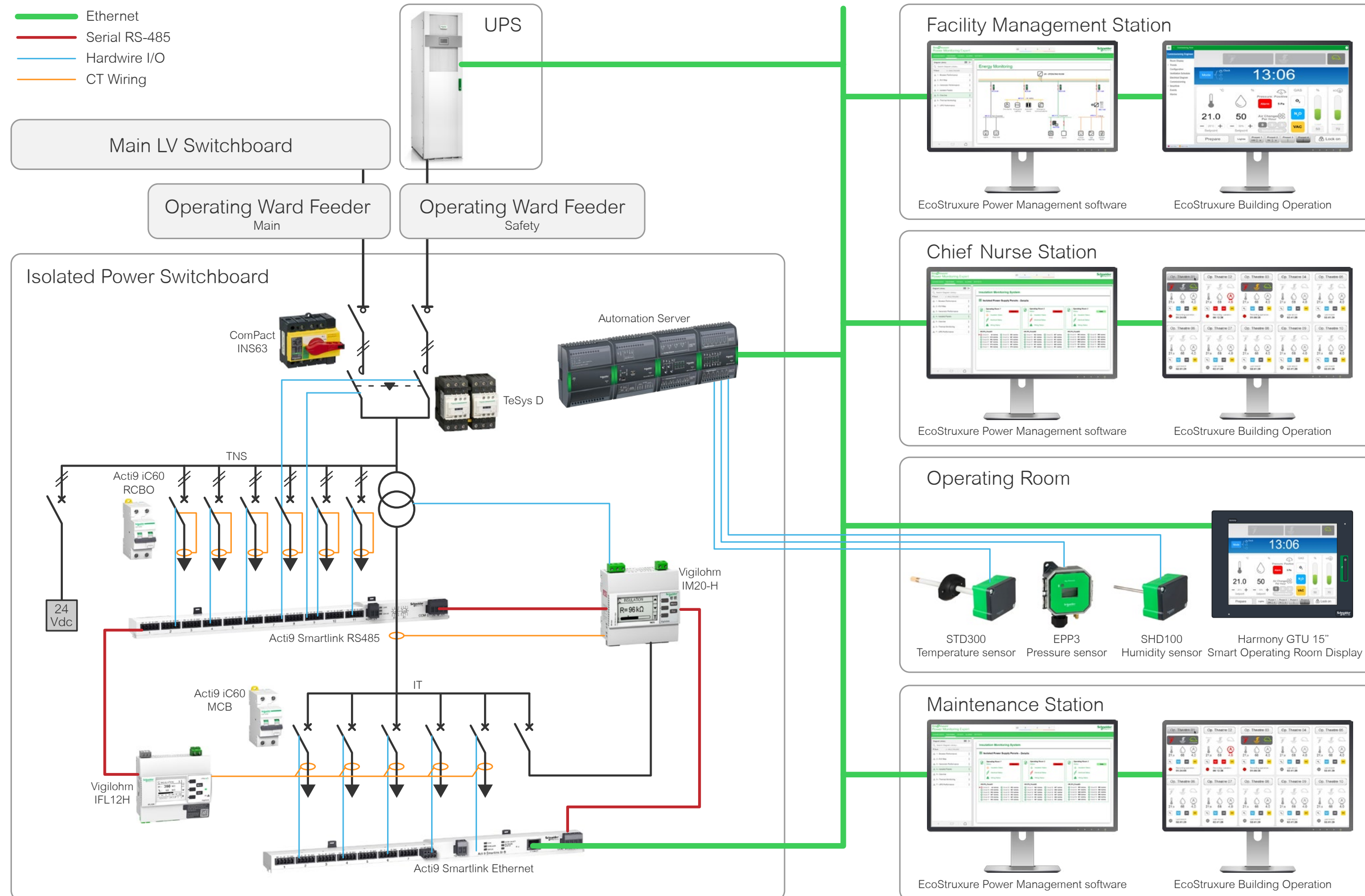


Vigilohm IFL12H Insulation Fault Locator
Works in conjunction with Insulation Monitoring Device (IMD) to determine the insulation integrity on each IT circuit



Acti9 Smartlink
Monitors circuit breaker status and makes it available to devices and software systems upstream (EcoStruxure Power Monitoring Expert software or BMS software)

Full Solution



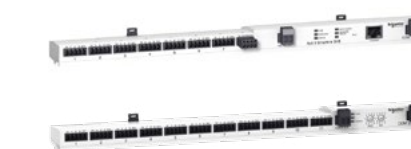
Insulation Monitoring and Communications



Vigilohm IM20-H Insulation Monitoring Device
Monitors, logs events and alarms when an insulation fault, IT transformer overload or overheating event occurs



Vigilohm IFL12H Insulation Fault Locator
Works in conjunction with Insulation Monitoring Device (IMD) to determine the insulation integrity on each IT circuit



Acti9 Smartlink
Monitors circuit breaker status and makes it available to devices and software systems upstream (EcoStruxure Power Monitoring Expert software or BMS software)



Automation Server
Collects information from monitoring devices (via communications) and environmental and medical gas sensors (via I/O) and makes it available to software systems (EcoStruxure Building Operation & EcoStruxure Power Monitoring Expert) upstream



Perfect for
your business

Productive and safe conditions in the operating room

There is no greater need for power reliability and environmental control than in the operating room. This is where patient and staff safety is top priority and every second counts. The Isolated Power Solution enables medical personnel working in the operating room to:

- Monitor and control operating room environmental conditions
- Conduct insulation monitoring system test at start-up
- Ensure supply power and electrical outlets in operating room are safe to use
- Receive highly visible and audible alarms if there is an electrical or environmental problem in the operating room
- Take corrective action when an electrical or environmental problem arises
- Be notified of any work performed by maintenance personnel



Efficient maintenance for safe, reliable operations

Hospitals cannot afford unplanned downtime due to electrical or equipment failure. The Isolated Power Solution provides maintenance personnel the real-time and historical information they need to maintain the electrical and mechanical systems that serve all parts of the hospital, especially the operating rooms and intensive care units.

It is designed to:

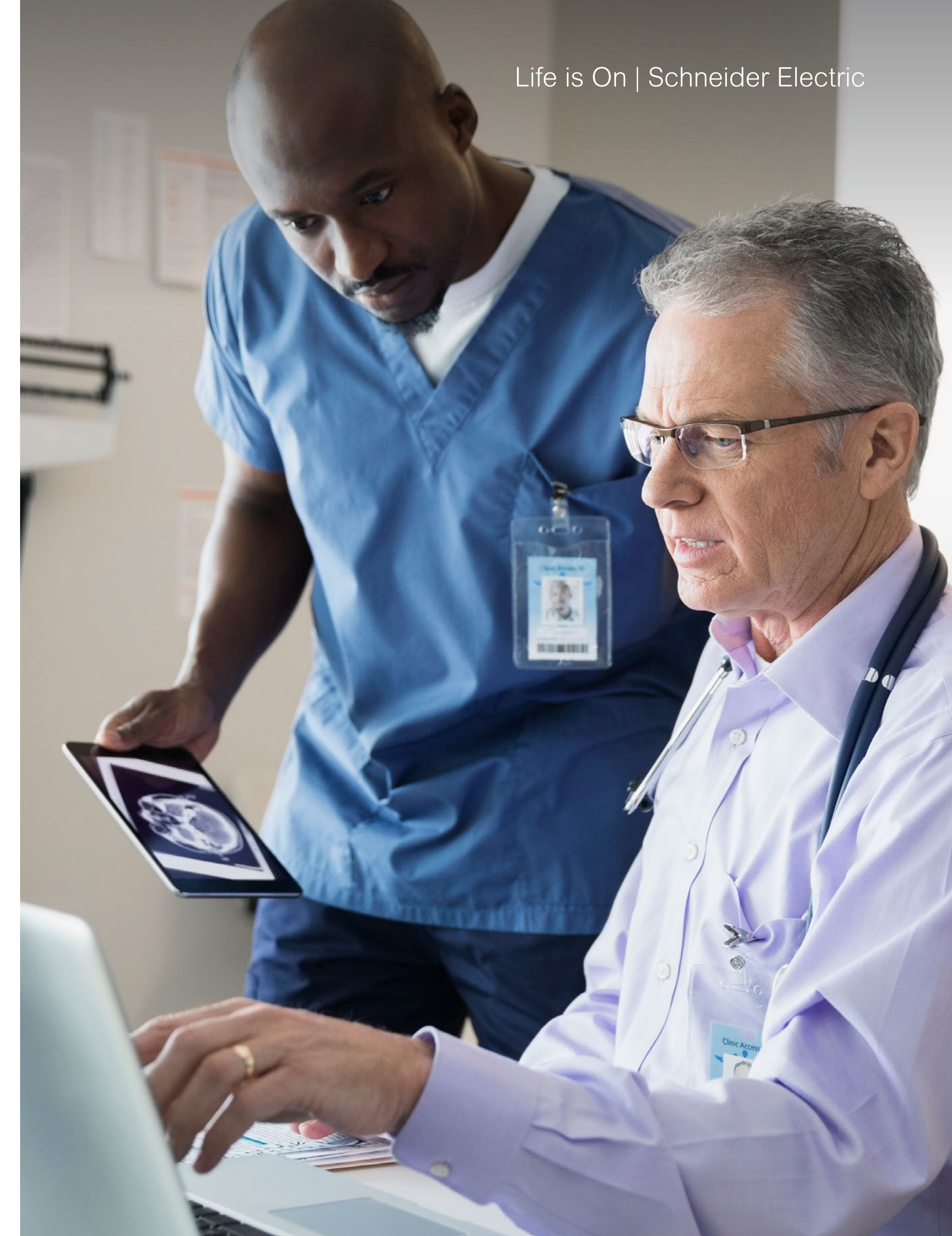
- Notify immediately via email or text message if an electrical fault or environmental problem occurs
- Display real-time status of all Isolated Power Solution switchboards, Uninterruptible Power Supply units and IT medical outlets supplying power to the operating rooms
- Capture historical electrical information for traceability, diagnostics, maintenance planning and servicing
- Notify medical personnel of maintenance activities and status of electrical outlets in the operating rooms



Effective oversight and management of critical areas

Moving patients in and out of operating rooms and intensive care units is a crucial process requiring precision and the utmost attention to detail. In this dynamic environment, medical supervisors need to know what is going on in the OR's and ICU's at all times to be effective. The Isolated Power Solution provides medical supervisors the visibility and control they need to:

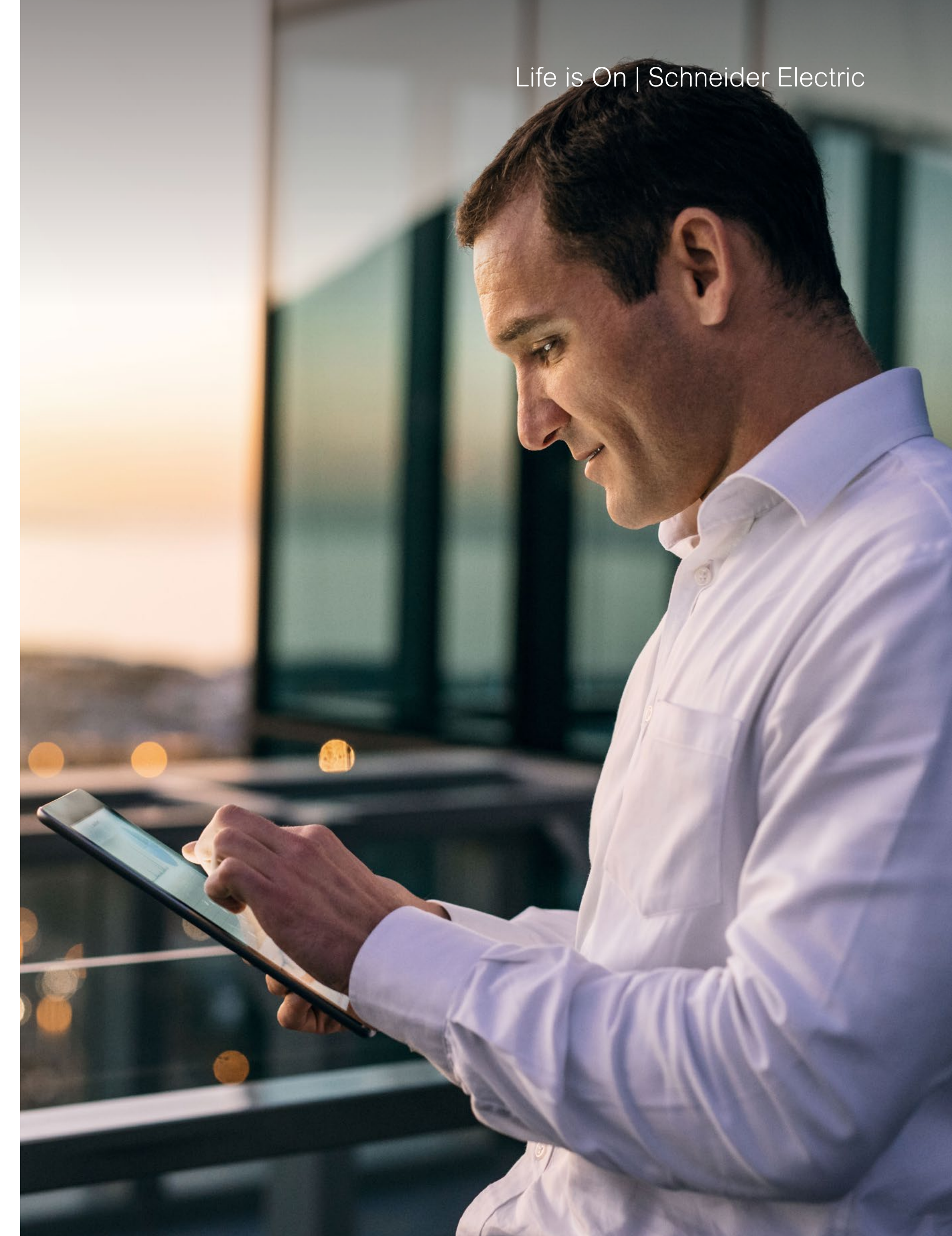
- Manage environmental conditions across all OR's and ICU's
- Display real-time status of all Isolated Power Solution switchboards, Uninterruptible Power Supply units and IT medical outlets supplying power to the operating rooms
- Notify immediately via email or text message if electrical fault or environmental problem occurs
- Take corrective actions when an electrical or environmental problem arises
- Capture historical information for traceability and event reporting
- Be notified of any work performed by maintenance personnel



Comprehensive supervision across your entire hospital

Facility management is the backbone for reliable and efficient hospital operations. They are responsible for the electrical infrastructure and building systems that keep patients and staff safe and comfortable 24/7. They also play a large role in energy management and sustainability as hospitals strive to reduce their energy spend and decrease their carbon footprint. As part of the Isolated Power Solution, facility managers use EcoStruxure Building Operation and EcoStruxure Power Management software to:

- Ensure power is safe and always available to serve the critical functions of the hospital and the electricity is clean and stable for power sensitive equipment such as imaging and blood dialysis machines
- Control the environment (lighting, temperature, humidity, pressure, ventilation and air quality) in all parts of the hospital, including public areas, staff areas, wards, labs, OR's and ICU's
- Use less energy and make informed decisions to lower operating expenses





Technical characteristics

Solution Features



Conformity with standards	
Solution for operating rooms	IEC 60364-7-710
Switchboard	IEC 61439-1 and -2
Electromagnetic compatibility	IEC 60364-4-44 IEC 61000-6-2 and -3
Double incomers with change over	IEC 60947-6-1:2005, AMD:2013
Isolation transformer	IEC 61558-2-15
Miniature circuit breakers	IEC 60898-1
Residual current devices	IEC 61009-1
Continuous insulation monitor	IEC 61557-8

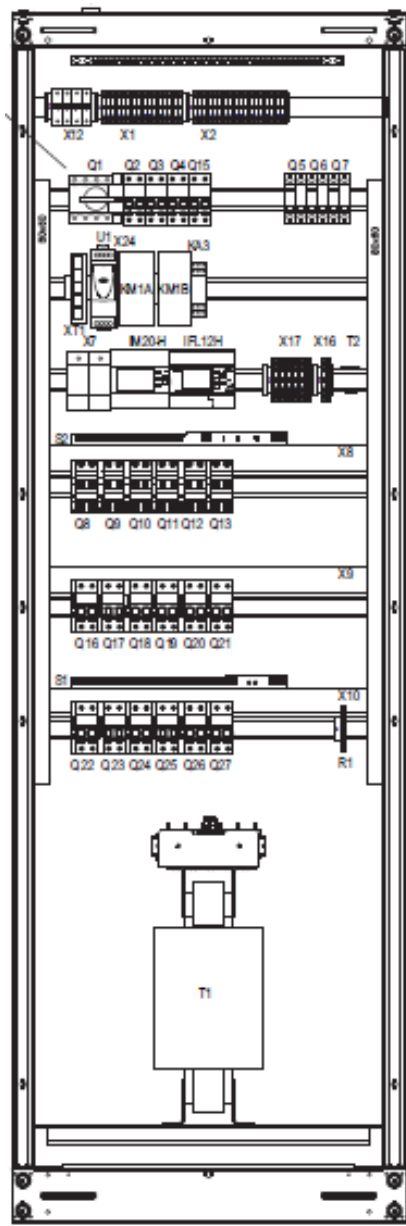
	Classic	Advanced	Full
Central Access via Computer Workstation	Monitoring		
	Insulation fault		●
	Transformer alarms	●	●
	Insulation fault location	●	●
	Breaker status	●	●
	UPS status	●	●
	Medical gas alarms		●
	Monitor conditions across all operating rooms	●	●
	Environmental (temperature, humidity, pressure)		●
	Control		
	Insulation test	●	●
	Send notifications for alarm conditions	●	●
	Lighting control		●
	Change environmental conditions across all operating rooms		●
Local Access via Operating Room Display	Monitoring		
	Insulation fault	●	●
	Transformer alarms	●	●
	Insulation fault location		●
	UPS status		●
	Medical gas alarms		●
	Environmental (temperature, humidity, pressure)		●
	Control		
	Silence alarm buzzer	●	●
	Insulation test	●	●
	Integrated change over	●	●
	Lighting control		●
	Change environmental conditions		●

Prisma P Isolated Power Enclosures

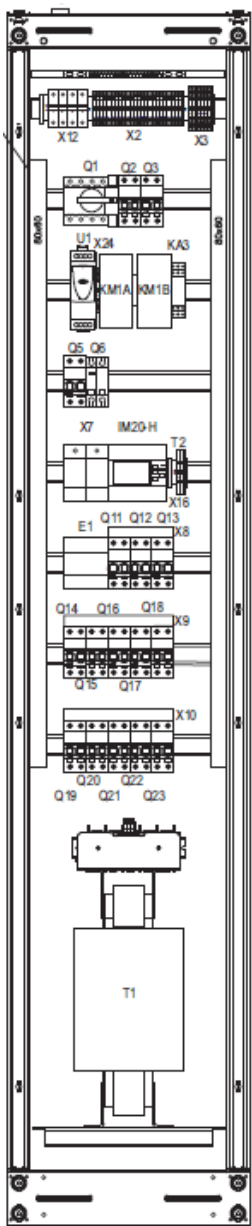
Floor-standing switchboard with integrated IT transformer conforming to IEC 61439-1 and -2

Electrical characteristics	
Rated insulation level of main busbars	1000 V
In (A) max	4000 A
Rated peak withstand current I _{pk}	220 kÂ
Rated short-time withstand current I _{cw}	100 kA rms / 1 second
Frequency	50/60 Hz
Voltage Use	690 V under conditions

Mechanical characteristics	
Steel sheet metal, cataphoresis treatment + hot-polymerized polyester epoxy powder, white colour RAL 9001	
Degree of protection	IP30: with IP30 cover panels including a door or a cover frame
	IP31: with IP30 cover panels including a door + gasket
	IP55: with IP55 cover panels
Degree of protection against mechanical shocks	IK07: with cover frame
	IK08: with IP30 door
	IK10: with IP55 door



Full and Advanced Single IT TNS Dimensions	
Height	2000 mm
Width	650 mm
Depth	500 mm



Classic Single IT Dimensions	
Height	2000 mm
Width	450 mm
Depth	500 mm

Automation Servers



AS-B Automation Server

Standalone server with embedded software supporting control logic, trend logging, alarm supervision and web accessible graphical user interfaces
Supports BACnet, LonWorks and Modbus protocols
10/100 Mbps Ethernet LAN interface with support for IPv6, DHCP/DNS, HTTP/HTTPS, NTP, SMTP, SNMP
Two RS-485 ports and supports
Built-in FTT-10 port to connect to TP/FT-10 LonWorks networks
Built-in I/O bus port for controlling I/O modules (up to 464 I/O points)
BTL-listed as a BACnet Building Controller (B-BC) and BACnet Operator Workstation (B-OWS)
Serves as a BACnet Broadcast Management Device (BBMD)
4 GB onboard memory (2 GB application/historical data and 2 GB dedicated for backup storage)
Support for SSL Certificates: Secure Socket Layer (SSL 1.0, 2.0, 3.0, and TLS 1.0)

UI-8/DO-FC-4 Module

I/O module for collecting temperature and humidity readings
8 Universal Inputs (analog) and 4 Relay Outputs (digital)

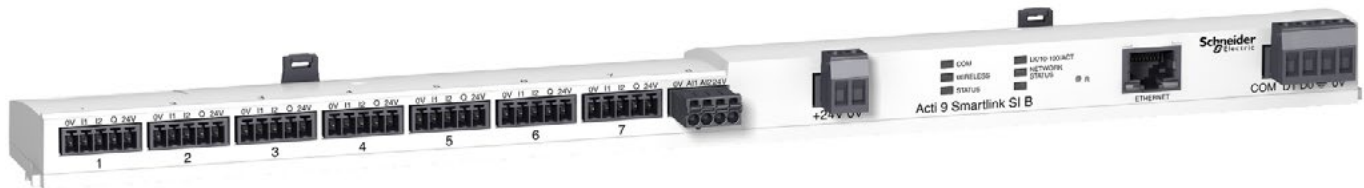
DI-16 Module

Digital Input module for capturing status of medical gases
16 Digital Input channels
Dry contact switch closure or open collector/open drain, 24 VDC, 2.4 mA

PS-24V Power Supply Module

Accommodates 24 VAC or 24 VDC inputs

Acti9 SmartLink Communication Modules



Acti9 Smartlink SI B Ethernet
Communication module for breaker status and trip alarming
7 digital channels with 2 inputs and 1 output per channel
1 analog channel with 2 inputs (4-20 mA or 0-10 V DC)
Electronic filtering time for digital and analog inputs: 2 ms from state 0 to state 1
Current sink for digital input, 24 V DC +/- 20 % at 2.5 mA
Maximum permanent current for digital input: 5 mA
Logic current source for digital output: 24 V - DC - 100 mA
Maximum voltage drop for digital output <1 V at state 1
Serial RS485 Modbus RTU master communication port
Ethernet Modbus TCP/IP server communicaion port
Wireless communication support for PowerTag energy sensors



Acti9 Smartlink Modbus RS485
Communication module for breaker status and trip alarming
11 digital channels with 2 inputs and 1 output per channel
Electronic filtering time for digital inputs: 2 ms from state 0 to state 1
Current sink for digital input, 24 V DC +/- 20 % at 2.5 mA
Maximum permanent current for digital input: 5 mA
Logic current source for digital output: 24 V - DC - 100 mA
Maximum voltage drop for digital output <1 V at state 1
Serial RS485 Modbus RTU master communication port

Vigilohm Insulation Monitoring Devices



Vigilohm IM20-H Insulation Monitoring Device

Measures insulation resistance from 0.1 KΩ to 10 MΩ

Displays insulation resistance of IT network

1 settable alarm 50 KΩ - 500 KΩ

Manual and automatic (every 5 hours) Self test

Monitors the IT transformer overload and overheat

Supports fault location monitoring when paired with IFL device

Displays electrical and IT tranformer alarms

Historical residence log

Timestamped event log

Modbus RS485 communication port



Vigilohm IFL12H Insulation Fault Locator

Measures and displays insulation resistance to ground for up to 12 IT feeders

Settable alarm threshold 50KΩ - 200KΩ per feeder

5 sec response time

Timestamped event log

Modbus RS485 communication port

Smart-UPS RT On-Line



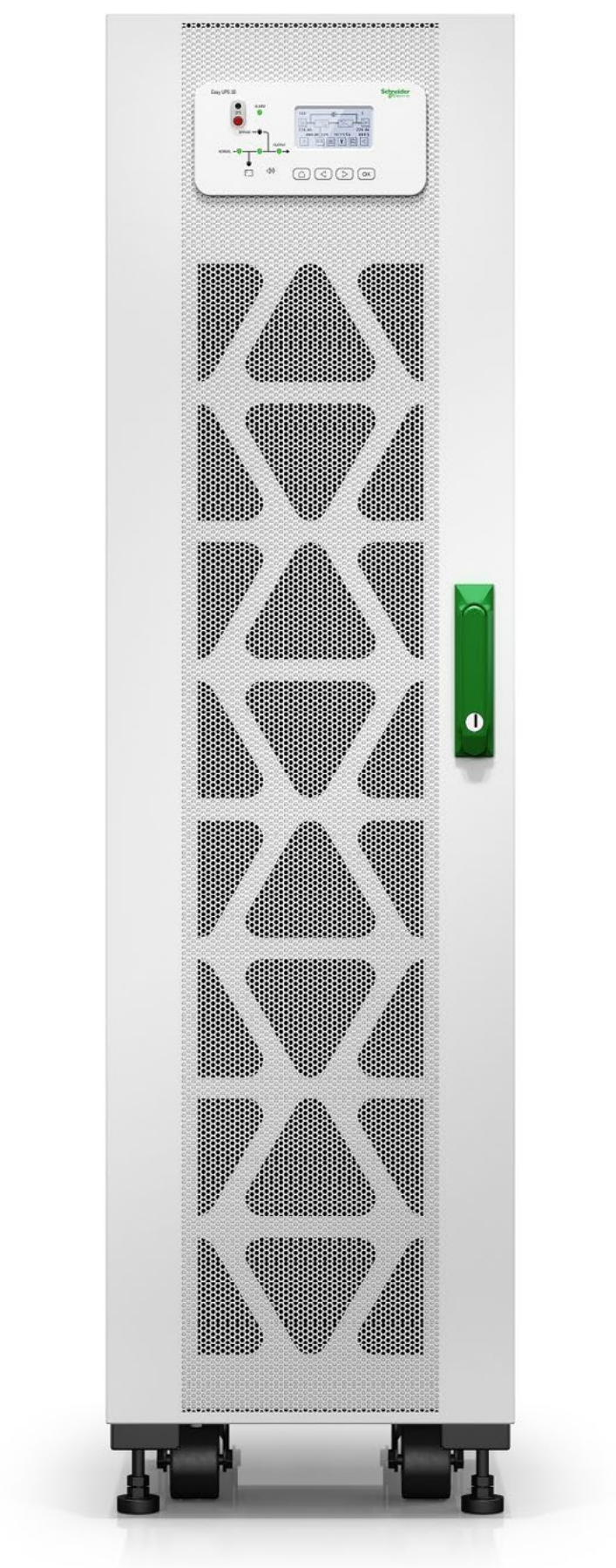
Smart-UPS RT On-Line	
Output Power rating	6 kVA/kW / 8 kVA/kW / 10 kVA/kW
Nominal output voltage	220 / 230 (default) / 240V
Output frequency	50/60 Hz ± 4 Hz (auto sense) 50/60 Hz ± 0.1 Hz (user selectable)
Topology	Double-conversion online
Typical efficiency at full load (Online)	94%
Typical efficiency at full load (Green mode)	98%
Output connections (switched groups)	Terminal block, (2) IEC C13 / (1) IEC C19
Nominal input voltage	220/230/240 VAC (user selectable)
Input voltage range full load	160 - 285 VAC
Input frequency	40 – 70 Hz
Input connection	Hardwire three-wire (1 Ph+N+G)
Battery type	Maintenance-free sealed lead-acid battery with suspended electrolyte, leak proof
Typical backup time at ½ load (min)	9.0 min. for 6 kVA model / 11.9 min. for 8 kVA model / 9.1 min. for 10 kVA model
Typical backup time at full load (min)	2.1 min. for 6 kVA model / 3.0 min. for 8 kVA model / 2.0 min. for 10 kVA model
Interface ports	Serial (RJ45), USB (Type B) and Smart-Slot (pre-installed with AP9631 includes ethernet port)
Control panel	Multi-color LCD with 5 front panel buttons (320x240 pixel display)
Emergency power off (EPO)	Yes
Conformity to Standards	CE, CB

Easy UPS SRV



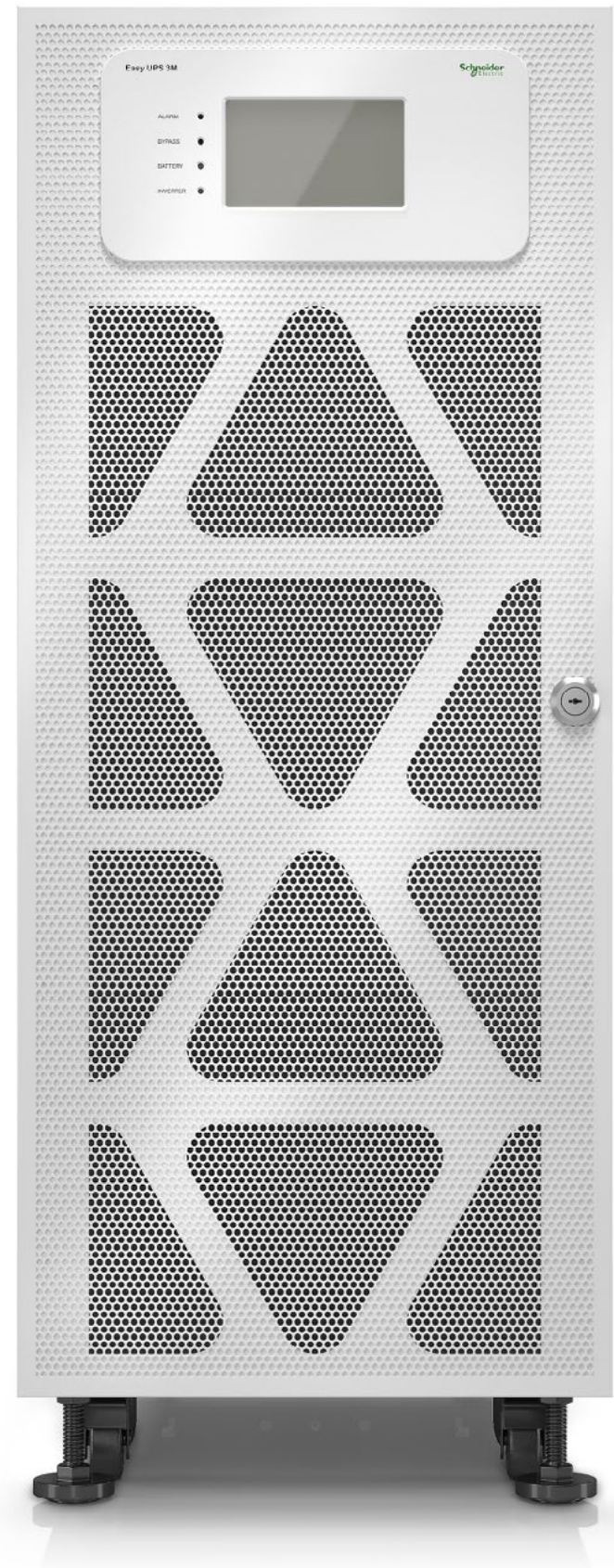
Easy UPS SRV	
Output Power rating	6 kVA/kW or 10 kVA/kW
Nominal output voltage	220/230/240 VAC
Output frequency range (sync mode)	60 Hz or 50 Hz +/-0.1 Hz
Topology and output waveform	Double-conversion online; sine wave
Output connections (switched groups)	Terminal block
Nominal input voltage	220/230/240 VAC
Input voltage range	110-300 at 60% load
Input frequency	40 – 70 Hz
Input connection	Terminal block
Battery type	12 V / 7 AH x 16 for 6 kVA model, 12 V / 9 Ah x 16 for 10 kVA model
Half load runtime (min)	10 min. for 6 kVA model / 7 min. for 10 kVA model
Full load runtime (min)	3.5 min. for 6 kVA model / 2 min. for 10 kVA model
Interface ports	RS-232, mini slot
Control panel	Multi-function LCD status and control console
Emergency power off (EPO)	Yes
Conformity to Standards	CE

Easy UPS 3S



Easy UPS 3S	
Output power rating	10 kVA/kW, 15 kVA/kW, 20 kVA/kW, 30 kVA/kW, 40 kVA/kW
Nominal output voltage	3:1 – 220/230/240 V, 3:3 – 380/400/415 V
Efficiency: Double conversion mode	Up to 96%
Efficiency: ECO mode	Up to 99%
Nominal input voltage	380/400/415 V (Three-phase + Neutral)
Input voltage range	304V to 477V at full load
Input frequency	45 – 65 Hz
Battery type	VRLA
Overload capacity in normal operation	130% for 10 minutes and 130-150% for one minute
Output voltage tolerance	+/-1%
Communication interface	RS232, RS485, USB, dry contact, Modbus TCP/IP, optional network card
Control panel	Multi-function LCD, status and display console
Protection class	IP20
Conformity to standards	CE, RCM, EAC, WEEE, IEC/EN62040-1-1, IEC 62040-2, IEC 62040-3, IEC 62040-4

Easy UPS 3M



Easy UPS 3M	
Output power rating	60 kVA/kW, 80 kVA/kW, 100 kVA/kW, 120 kVA/kW, 160 kVA/kW, 200kVA/kW
Nominal output voltage	3:3 - 380/400/415 V
Efficiency: Double conversion mode	Up to 95.5%
Efficiency: ECO mode	Up to 99%
Nominal input voltage	380/400/415 V (Three-phase + Neutral)
Input voltage range	342 V to 477 V at full load at 40°C*
Input frequency	40-70 Hz
Battery type	VRLA
Overload capacity in normal operation	125% for 10 minutes, 150% for 1 minute**
Output voltage tolerance	+/-1%
Communication interface	RS485, USB, Dry contact, Modbus TCP/IP (SNMP optional)
Control panel	Five inch touchscreen LCD, status, and display console
Protection class	IP20
Conformity to standards	CE TUV, IEC/EN 62040-1, IEC 62040-2, IEC 62040-3, IEC 62040-4

Galaxy VS



Galaxy VS	
Output Power rating	10-150 kVA/kW
Nominal output voltage	380 / 400 / 415 V
Output frequency	50 / 60 Hz +/-0.1% free running
Topology	On-line double conversion
Double conversion mode	Up to 97%
ECO mode	Up to 99%
ECO nversion mode	Up to 99%
Nominal input voltage	380 / 400 / 415 V
Input voltage range (phase to phase)	+/-15%
Input frequency	40 – 70 Hz
Battery type	VRLA, Li-ion
N+1 redundancy option	20-50 kW N+1
Parallel capability	Simplified 1+1 parallel (for redundancy); Up to 3 UPSs for capacity or 3+1 UPSs for redundancy
Interface ports	Ethernet (SNMP) and Modbus. 8 dry contacts (4 inputs, 4 outputs)
Control panel	Color touch screen, 4.3 inches, status LED, mimic on display
Protection level	IP20
Conformity to Standards	IEC 62040-3 Class 1

A low-angle, upward-looking perspective of several modern skyscrapers with glass facades. The buildings are arranged in a way that creates a strong sense of height and architectural scale. The sky is a clear, pale blue. The overall color palette is dominated by the blues and greys of the buildings and sky, with a bright green horizontal bar at the bottom.

Take it further with EcoStruxure

Integrated Building and Power Management:
Connected devices, edge control software and digital
services for enhanced productivity and improved resilience

EcoStruxure simplifies your operations and provides the insights and decision support you need to maximize:



Safety

Reduce risk of electrical fires, ensure safe operation of electrical systems and protect staff and patients from electrocution and shock.



Availability

Gain resilience with distributed energy resources, enhance electrical asset maintenance and avoid unplanned downtime from electrical failure.



Efficiency

Reduce energy usage and costs, improve operational efficiency and achieve greater sustainability.



Comfort

Optimise patient comfort and staff productivity throughout the hospital using intelligent automation and controls.

EcoStruxure edge control software

Future-proof your hospital with EcoStruxure supervisory software to get the right information to the right people at the right time. Our edge control software platforms are engineered to work together to provide real-time visibility of electrical and critical building infrastructure and allow you to control the environmental conditions in every part of your hospital.



EcoStruxure Building Operation

Power Monitoring Expert

Power SCADA Operation

Digital Services

Expert analysis and recommendations

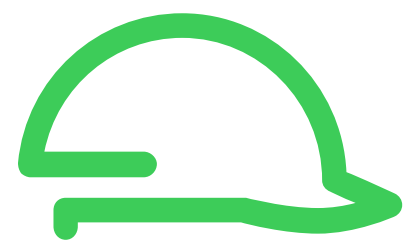
Reduce maintenance costs and maximize system uptime with real-time data on infrastructure performance. Get actionable predictive maintenance information that protects your customers, safeguards your reputation and minimizes financial impact.

- Optimize energy efficiency and reduce energy-related costs
- Reduce downtime from network issues or equipment failure
- Improve predictive maintenance and reduce reactive maintenance issues



Field Services

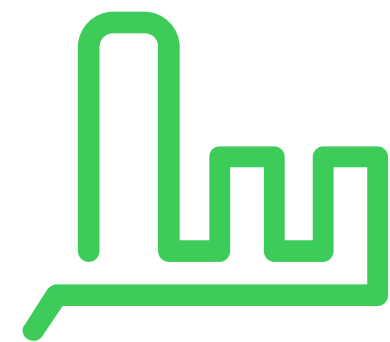
Understanding and managing the complexities of your operations



Site Safety

- Reduce risks during operations
- Maximize site availability and utilization
- Reduce insurance cost

- ▶ Electrical Installation and Safety Training
- ▶ Consultancy Services



New Installations

- Certify the reliability and safety of your equipment
- Fully understand your new installation
- Have a single point of contact during on-site work

- ▶ Installation and Commissioning Services
- ▶ Service Plans



Infrastructure Maintenance

- Fast replacement of obsolete components with newer, more efficient equipment
- Enhance cybersecurity and safety
- Have access to the right parts at the right time

- ▶ Modernization services
- ▶ Spare Parts Management

Built by certified innovators

The Isolated Power Solution is backed by our global network of certified Digital Panel EcoXperts who have proven expertise in delivering efficient, tested, commissioned, ethernet-ready smart panels.

Trained and certified by Schneider Electric, our ecosystem of EcoXpert partners provide best-in-class services and digital solutions that will exceed your expectations.



EcoStruxure for healthcare



Learn More

IoT EcoStruxure™ Powers Peace of Mind for Grand Medica

EcoStruxure™: University of Rochester Medical Center Predicts Power Failures

IoT EcoStruxure™ at Nemours Hospital Ensures Reliability

IoT EcoStruxure™: RTLS for Moorfields Eye Hospital

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