



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

Isolated Power Solutions for Operating Rooms

Life Is On

**Schneider**  
Electric

# Table of contents



A photograph of three surgeons in an operating room, wearing blue scrubs, masks, and caps. They are focused on a surgical procedure. The scene is dimly lit, with bright surgical lights visible in the background. The text 'Discover Isolated Power Solution' is overlaid in white on the left side of the image.

# Discover Isolated Power Solution

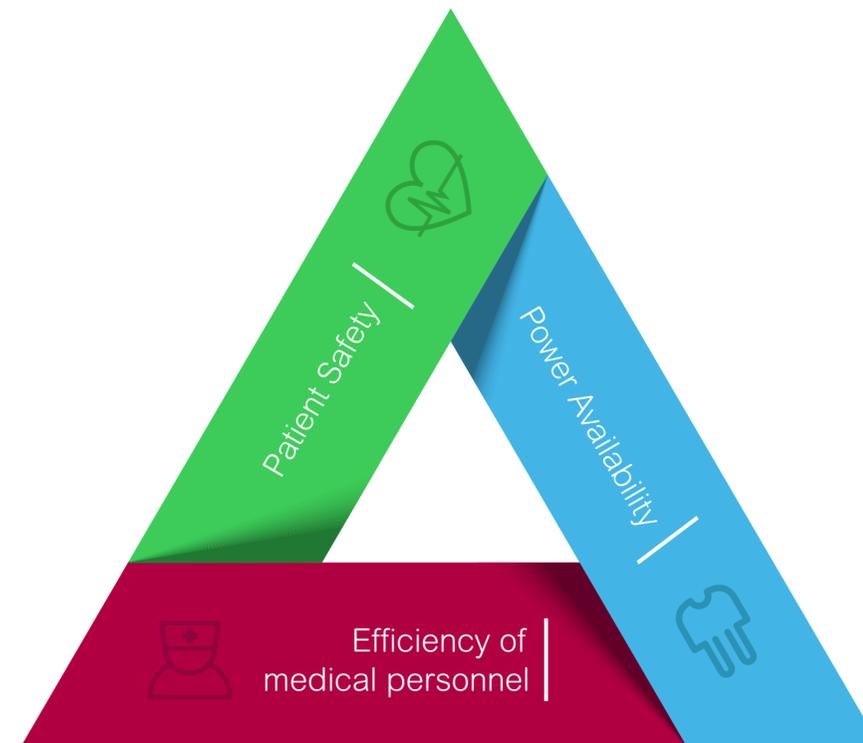
# Improve operating room performance

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.



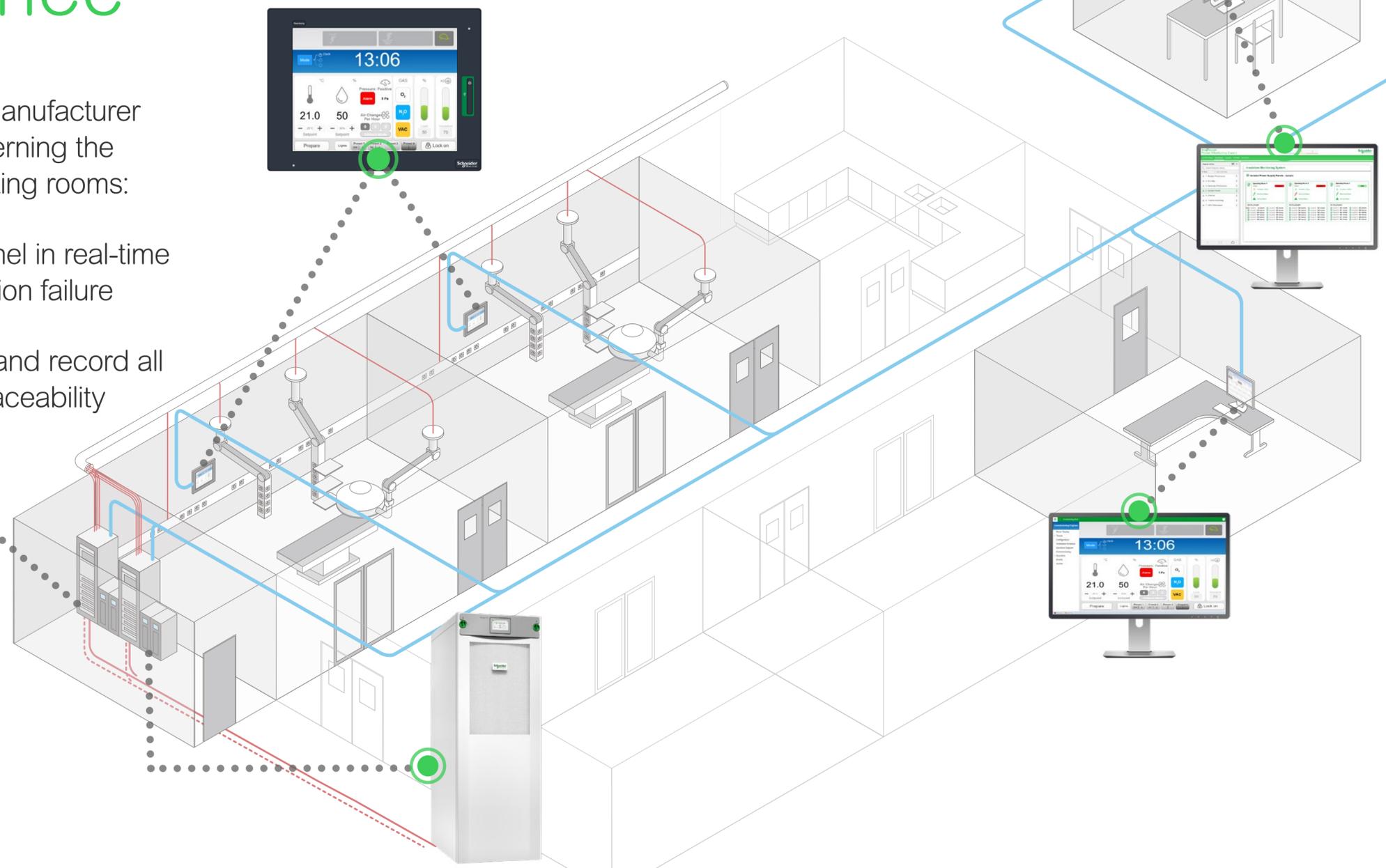
A solution you can trust from design to installation to operation and maintenance.



# 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 cathodolysis 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

A photograph of a surgical team in an operating room. Three surgeons in blue scrubs and masks are focused on a patient lying on a table. A large overhead surgical light illuminates the scene. To the right, medical monitors display vital signs: a top monitor shows 58, 97, 55, and 128/73(95); a bottom monitor shows various waveforms and numbers like 5.3, 26, 445, 8, 12, and 3. An IV drip is visible on a stand. The overall atmosphere is professional and clinical.

# 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.

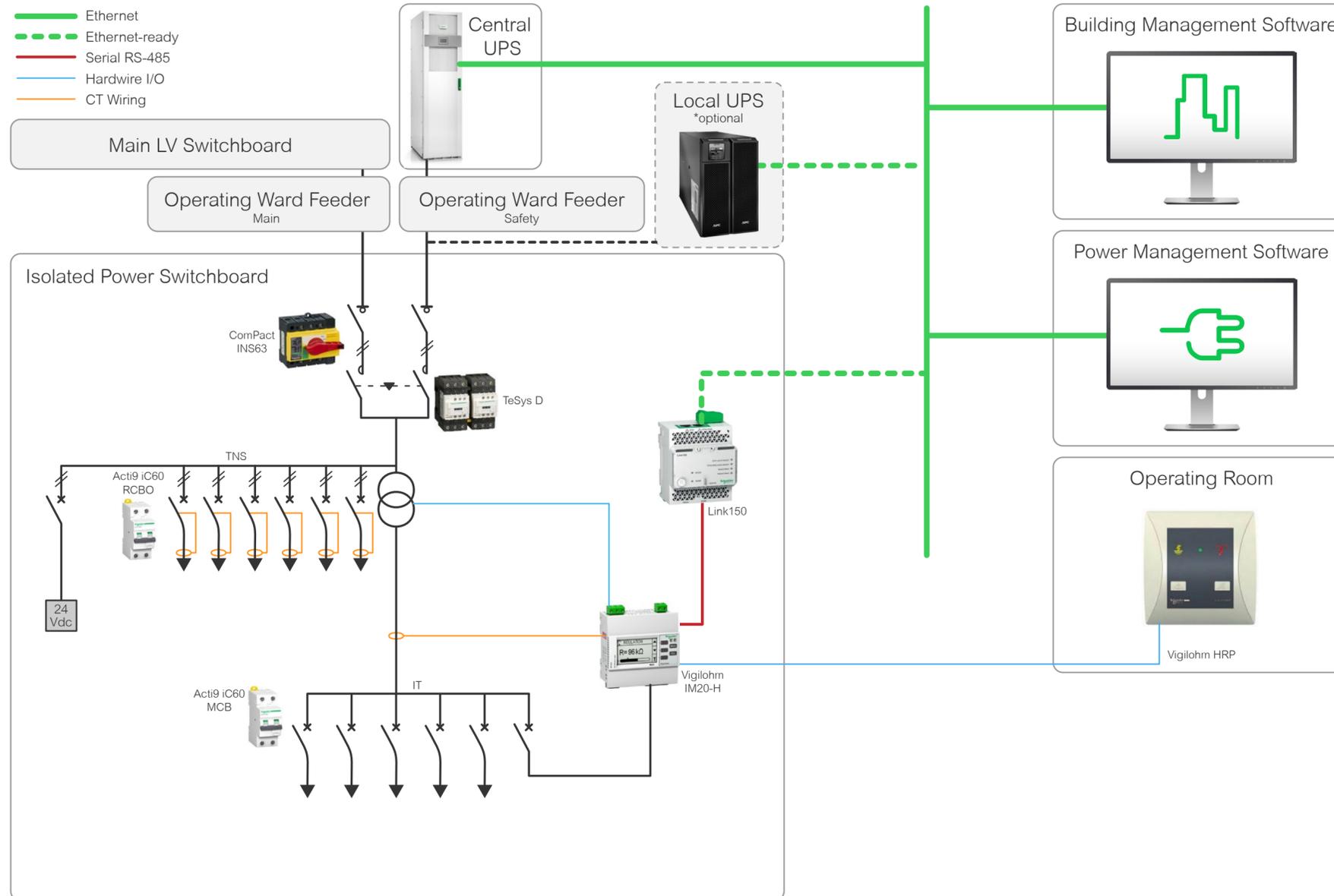
## Advanced Solution

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

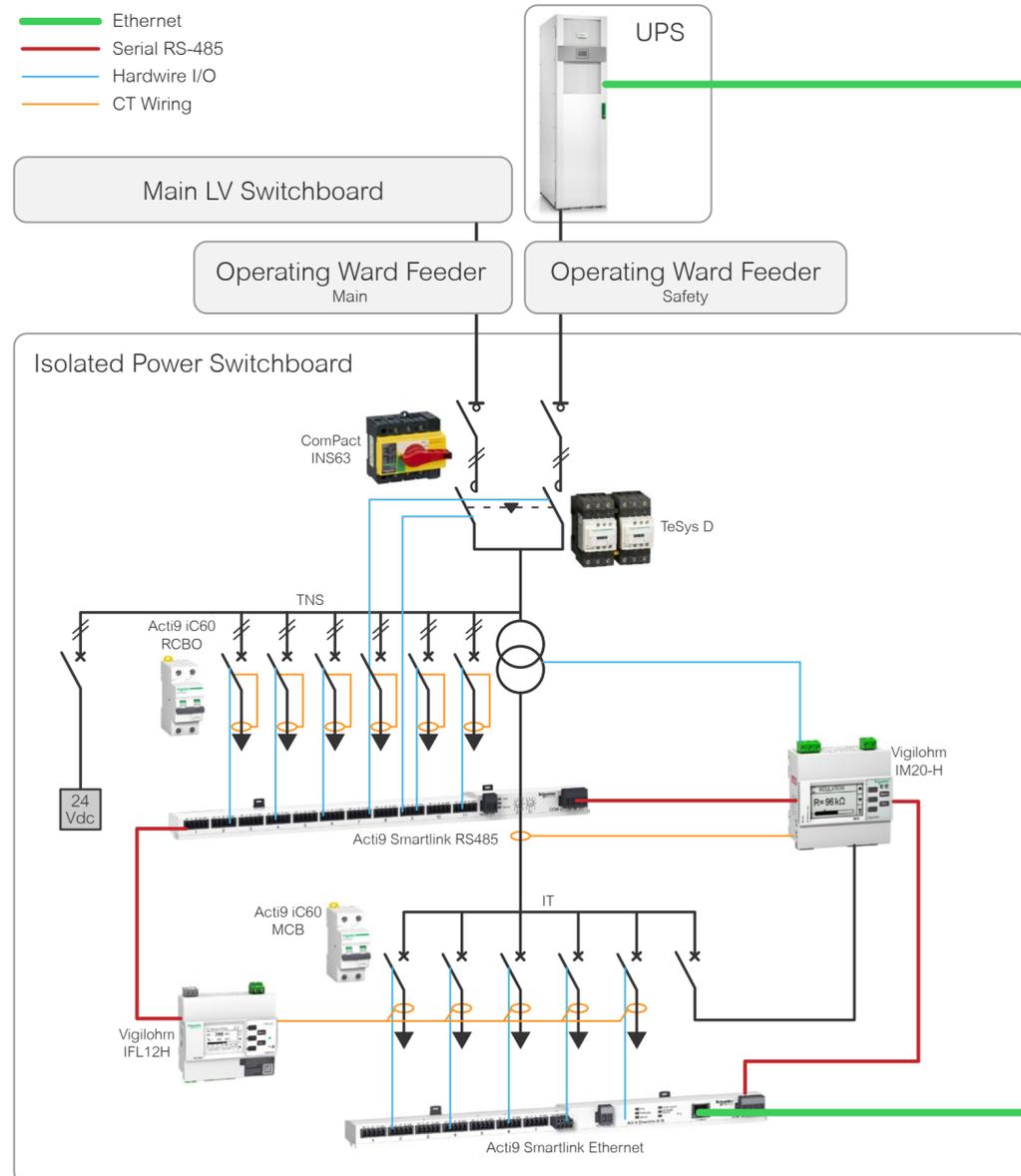


**Link150**  
Enables Isolated Power Supply Panel to connect to an Ethernet network to provide insulation fault, transformer overload, transformer overheating and UPS status information to supervisory monitoring systems such as a Building Management or Power Management system



Vigilohm HRP

# 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



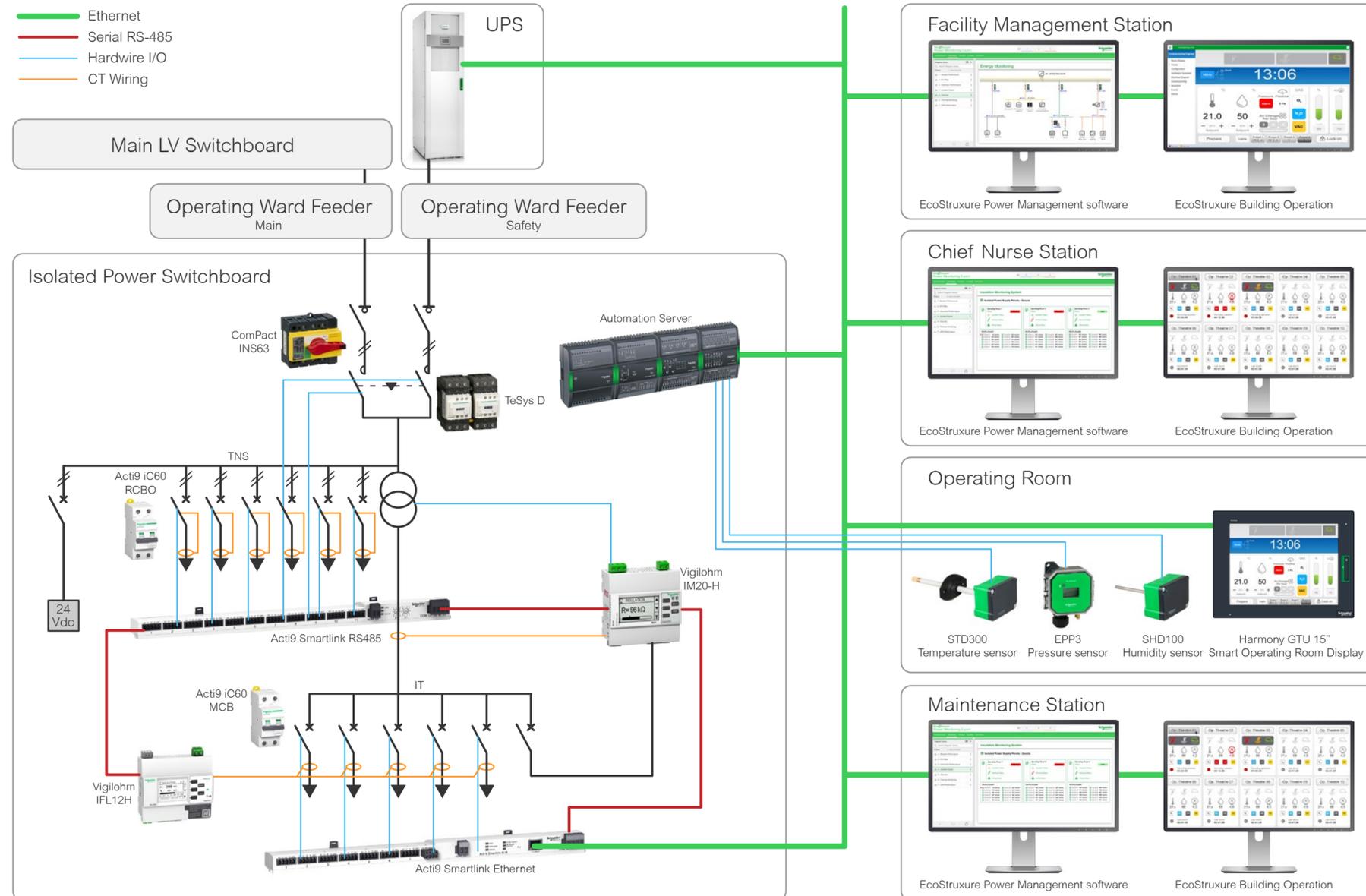
**Vigilohm IFL12H Insulation Fault Locator**  
Works in conjunction with Insulation Monitoring Device (IMD) to determine the insulation integrity on each IT circuit



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

Advanced

# Full Solution



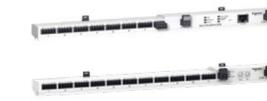
## Insulation Monitoring and Communications



**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**  
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**Acti9 Smartlink**  
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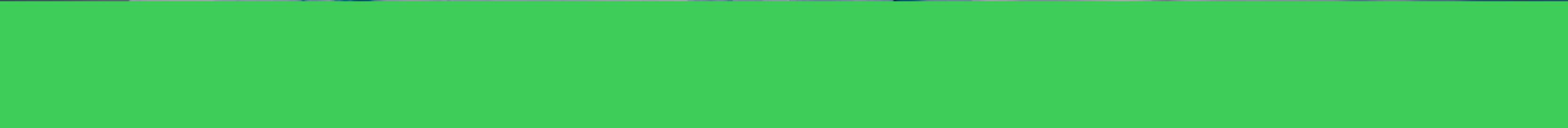


**Automation Server**  
Collects information from monitoring devices (via communications) and environmental and medical gas sensors (via I/O) and makes it available to software systems (EcoStruxure Building Operation & EcoStruxure Power Monitoring Expert) upstream

Full



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:

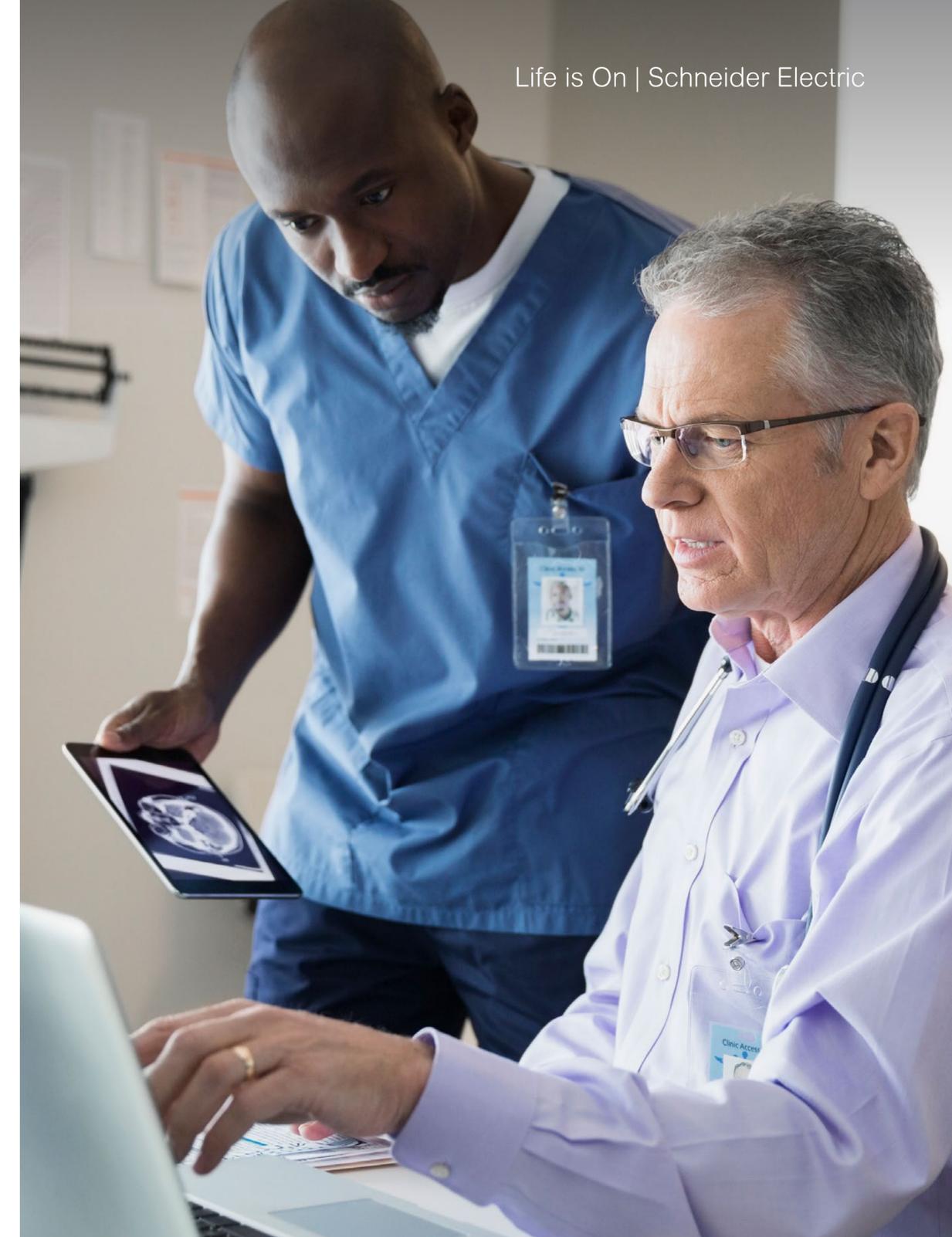
- Notify immediately via email or text message if an electrical fault or environmental problem occurs
- Display real-time status of all Isolated Power Solution switchboards, Uninterruptible Power Supply units and IT medical outlets supplying power to the operating rooms
- Capture historical electrical 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:

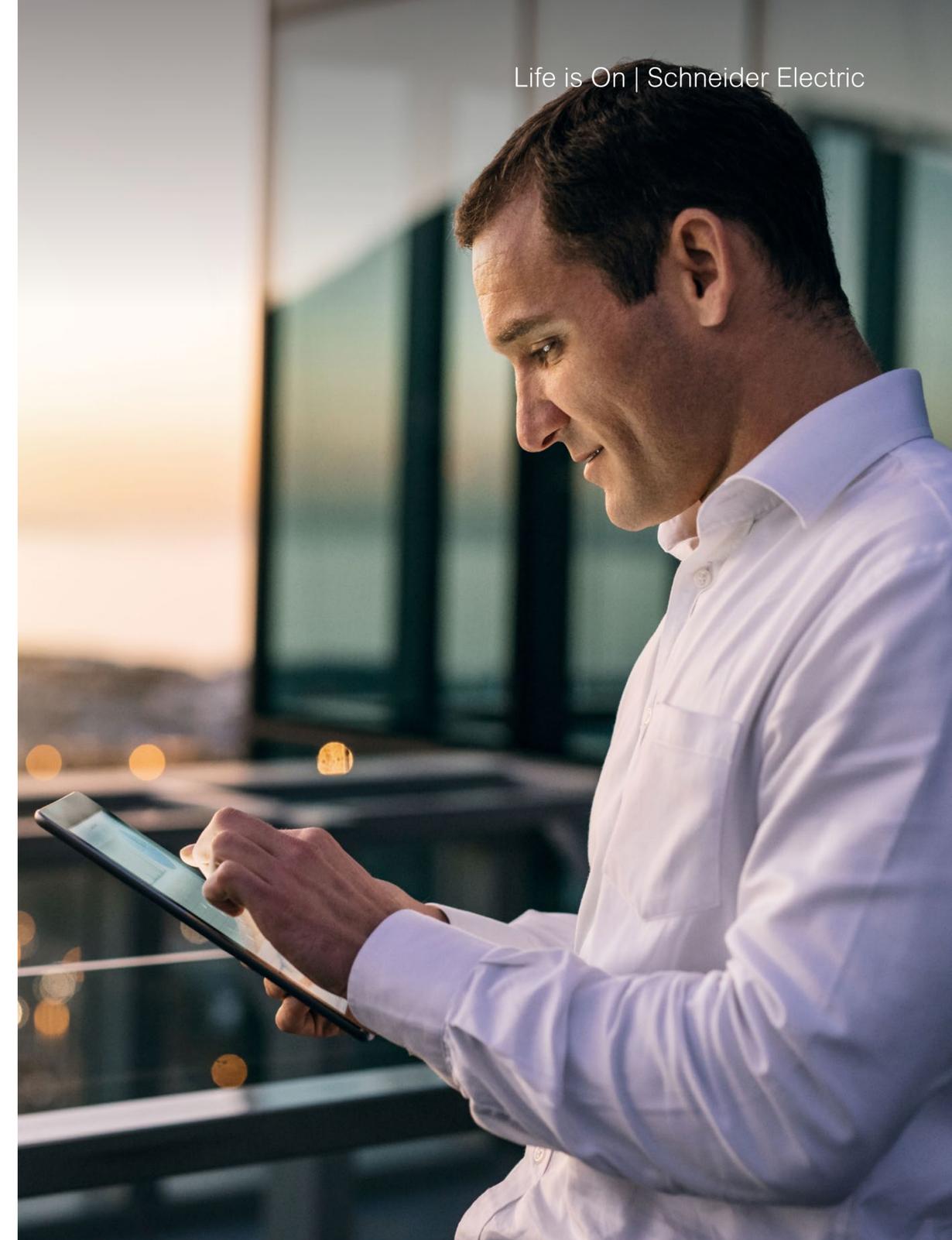
- Manage environmental conditions across all OR's and ICU's
- Display real-time status of all Isolated Power Solution switchboards, Uninterruptible Power Supply units and IT medical outlets supplying power to the operating rooms
- Notify immediately via email or text message if electrical fault or environmental 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

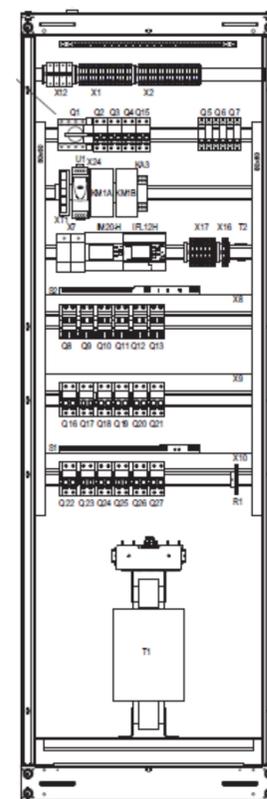
## Electrical characteristics

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

## Mechanical characteristics

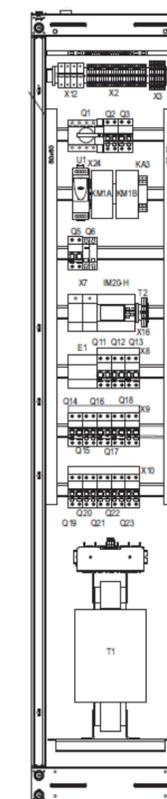
Steel sheet metal, cataphoresis treatment + hot-polymerized polyester epoxy powder, white colour RAL 9001

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 communication 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 K $\Omega$  to 10 M $\Omega$

Displays insulation resistance of IT network

1 settable alarm 50 K $\Omega$  - 500 K $\Omega$

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 transformer alarms

Historical resistance 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 50K $\Omega$  - 200K $\Omega$  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 $\pm$ 4 Hz (auto sense) 50/60 Hz $\pm$ 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



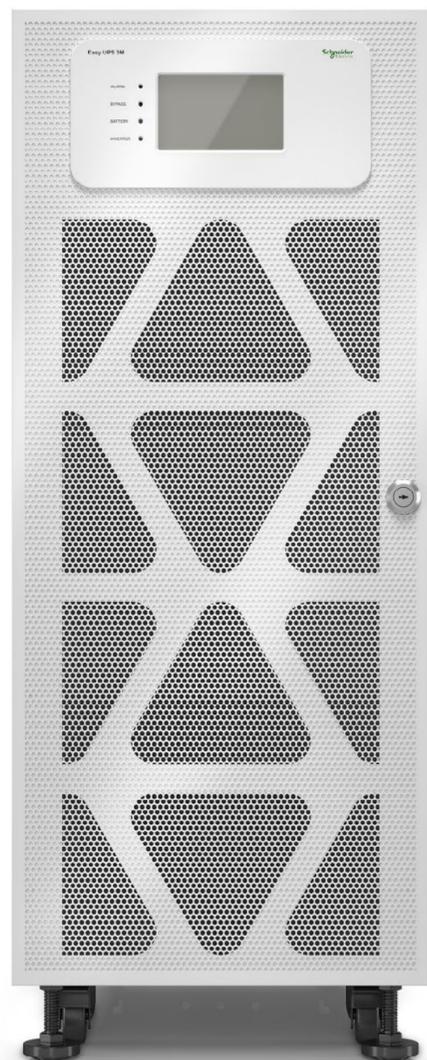
Easy UPS SRV	
Output Power rating	6 kVA/kW or 10 kVA/kW
Nominal output voltage	220/230/240 VAC
Output frequency range (sync mode)	60 Hz or 50 Hz +/-0.1 Hz
Topology and output waveform	Double-conversion online; sine wave
Output connections (switched groups)	Terminal block
Nominal input voltage	220/230/240 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%
ECOInversion 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

# 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.

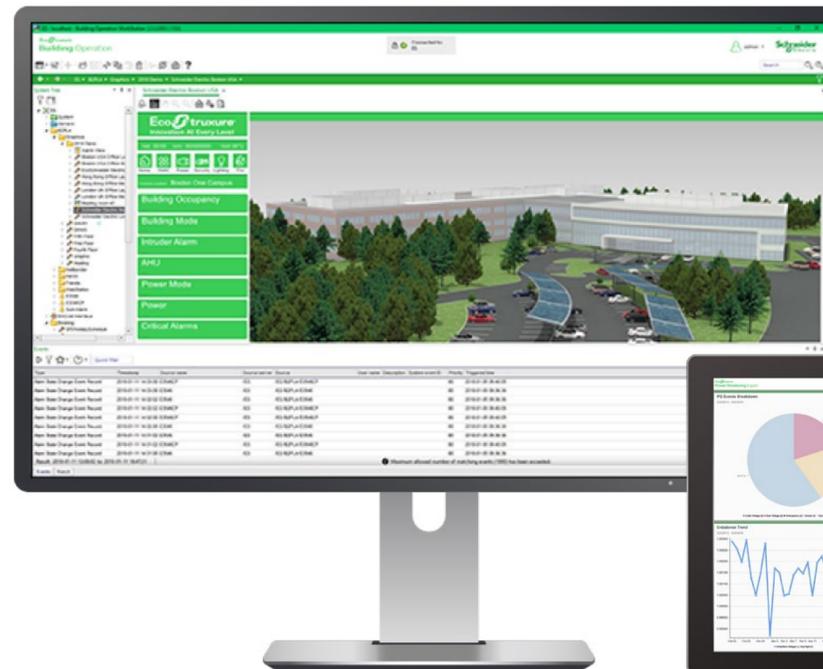


## Comfort

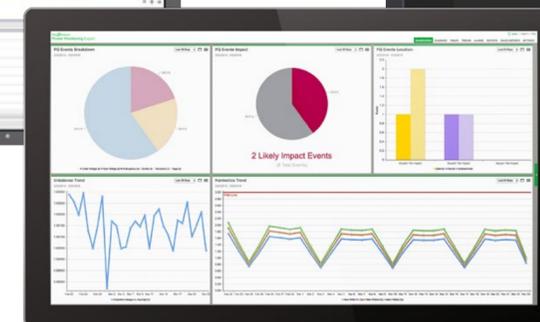
Optimise patient comfort and staff productivity throughout the hospital using intelligent automation and controls.

# EcoStruxure edge control software

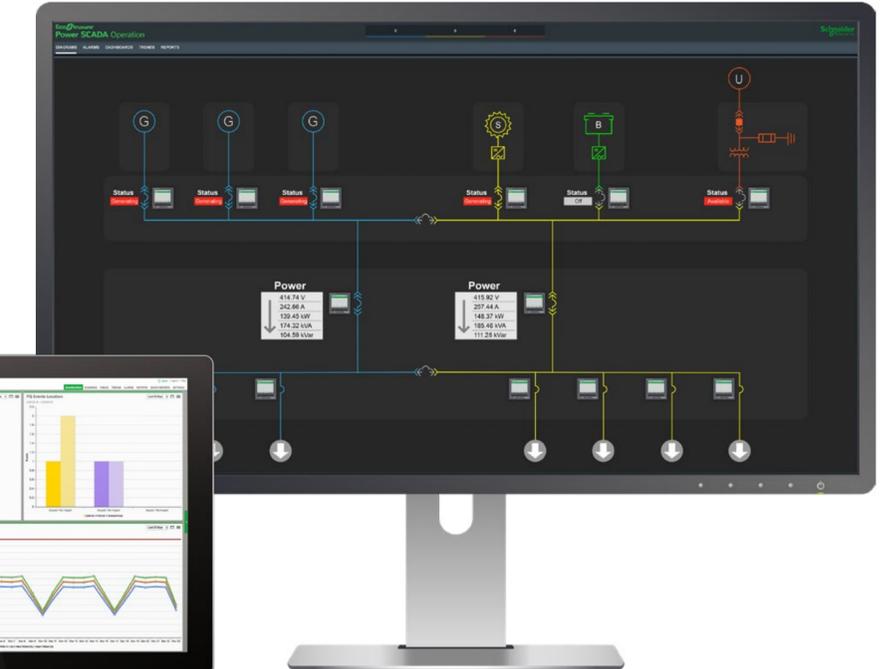
Future-proof your hospital with EcoStruxure supervisory software to get the right information to the right people at the right time. Our edge control software platforms are engineered to work together to provide real-time visibility of electrical and critical building infrastructure and allow you to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

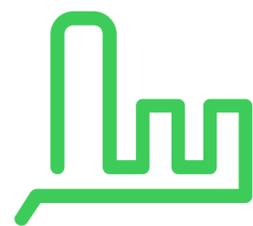
Understanding and managing the complexities of your operations



## 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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