

A woman in a surgical mask and cap looking forward in an operating room. The background shows other medical staff and bright surgical lights.

EcoStruxure™ Power

Insulation Fault Monitoring eGuide



Life Is On

Schneider
Electric



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EcoStruxure Power digitizes electrical distribution

EcoStruxure Power helps critical power facilities detect electrical faults and ensure power protection

For medium and large hospitals as well as smaller outpatient facilities, 24/7 power is critical. To help ensure safe and reliable power for patient and staff well-being, it's important to safeguard against risks and find issues quickly, before problems occur:

- Insulation monitoring
- Arc fault protection
- Power restoration

EcoStruxure Power's insulation fault monitoring helps you comply with the latest standards evolution and provides key information on the location of the fault.

[Read the white paper](#)



Digitizing Electrical
Distribution



Challenges and
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Challenges and Opportunities

Digitizing Electrical
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Electric shock is a concern in healthcare

Systems are highly regulated

In operating rooms and intensive care units, ground faults in medical equipment can be lethal for the patient. Patients are exposed because the natural insulation of the skin during surgery doesn't protect the patient, thus they are especially susceptible to electric shock.

Electric shock risk

IEC 60364-7-710



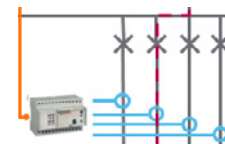
- Resistive measurement 50KΩ
- Isolated transformer overload and overheating alarm
- One insulation monitoring system near operating theatre

NFPA 99 & 110



- Resistive + capacitive hazard current measurement 5 or 2 mA
- Up to six monitoring near operating theatre to limit alarm disturbance

HTM 06-01

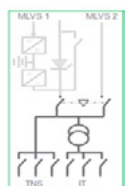


- Insulation fault location by feeder
- Limited segregation between two operating rooms

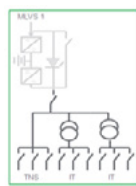
1 in 300

chance of patient harm during a health care stay

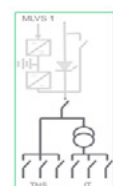
Continuity of services



- Two incomers with automatic change over
- Dealing with 500 ms performance
- Total discrimination



- Overload tripping
- Flash mounted panel in the operating room



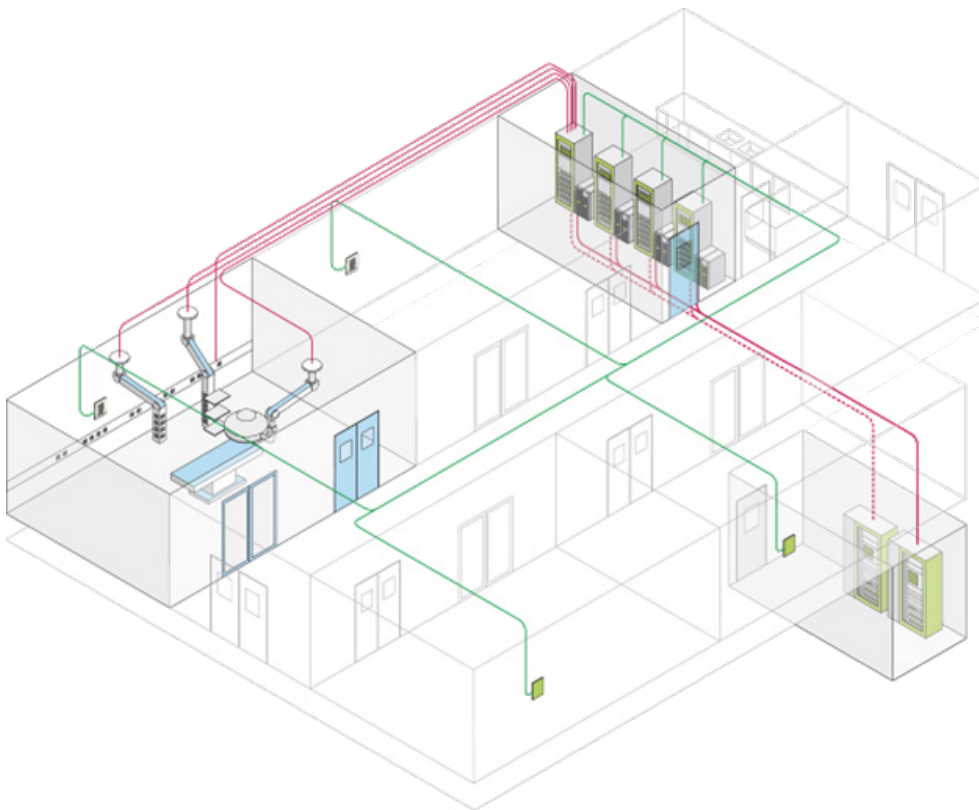
- Insulation fault location by feeder
- Limited segregation between two operating rooms

Read more:

- [IEC 60364-7-710](#)
- [NFPA 99 & 110](#)
- [HTM 06-01](#)

Avoid electrical shock and ensure protection

Help ensure patient safety with Smart Power Management



The three classifications of sensitivity

Group 2:

- Medical location where medical electrical equipment have to be used into the body
- Isolated ground system is mandatory

Group 1:

- Medical location where medical electrical have to be used as follows:
 - Externally
 - Invasively to any part of the body
- A limited residual 30mA current device is mandatory

Group 0:

- Medical location where no medical electrical equipment is in contact with the body

A low-angle, night-time photograph of a modern glass skyscraper. The building's facade is composed of a grid of dark frames and large glass panels, many of which are illuminated from within, creating a bright, glowing effect against the dark blue night sky. The perspective is looking up, emphasizing the height and architectural details of the building.

IoT enabled applications for optimizing insulation fault monitoring

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Power system performance

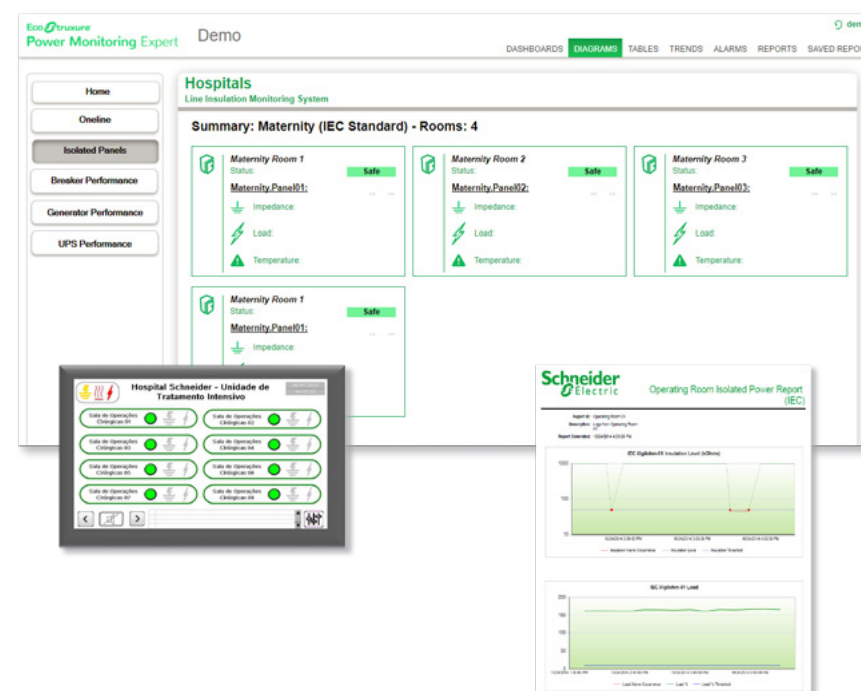
How can you help ensure patient safety by detecting insulation faults and solving them fast?

OT, ICU Insulation monitoring

I want to view the status of the isolated power in my operating rooms and intensive care units, and in case of any insulation fault, I want to know the location of the fault.

Detect electrical shock and inform the right stakeholders

- Isolated Smart Panels protect the patient and medical staff against electrical shock
- The Insulation Monitoring Device activates an alarm in case the resistance to equipotential bonding drops below 50 K Ω
- The (IEC) fault location device pinpoints the location of the insulation fault (feeder /sockets) for quick troubleshooting.
- The monitoring system serves up this information to the chief nurse and/or the facility manager in real time
- Stakeholders identify the equipment problem set to work resolving the issue.



[Read the blog](#)

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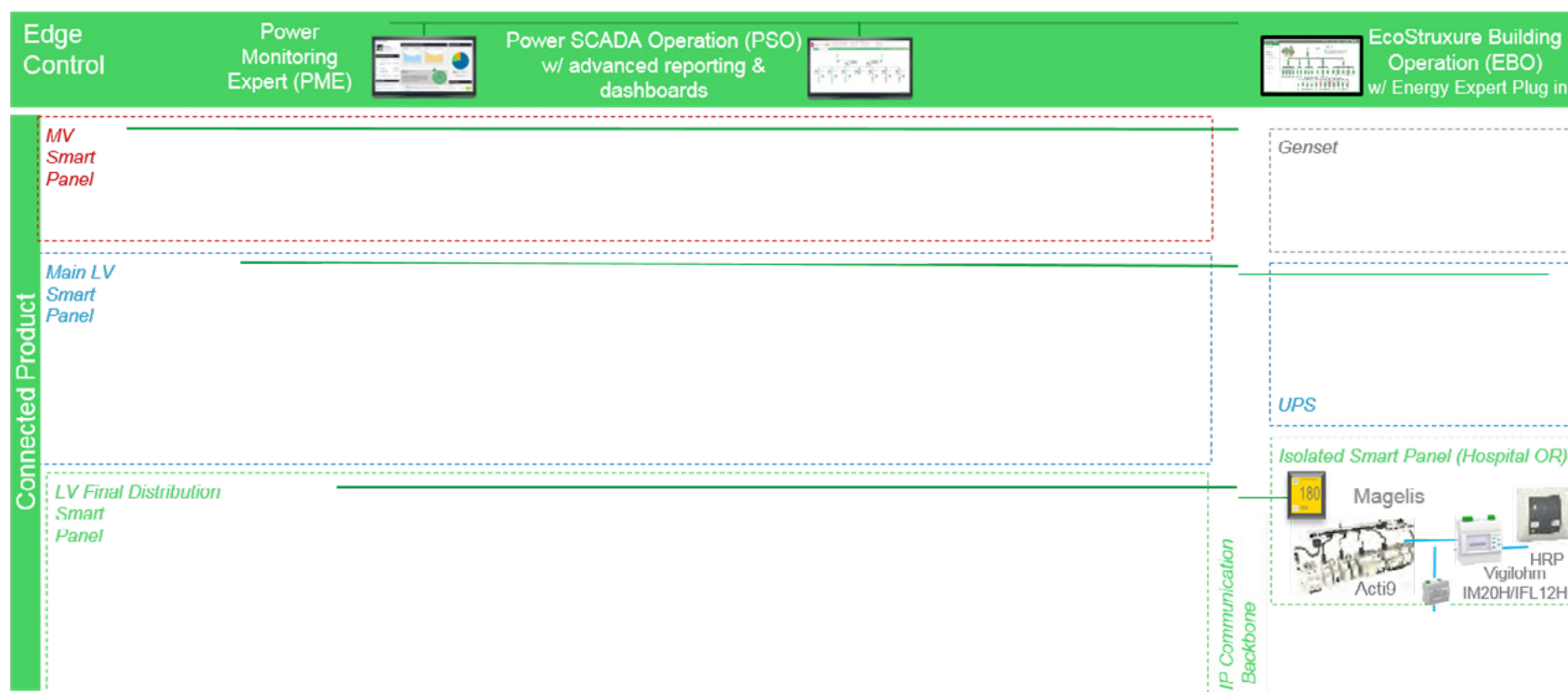
Architectures

Architecture 1

Architecture 2

Insulation monitoring (IEC)

Avoid electrical fires and ensure protection



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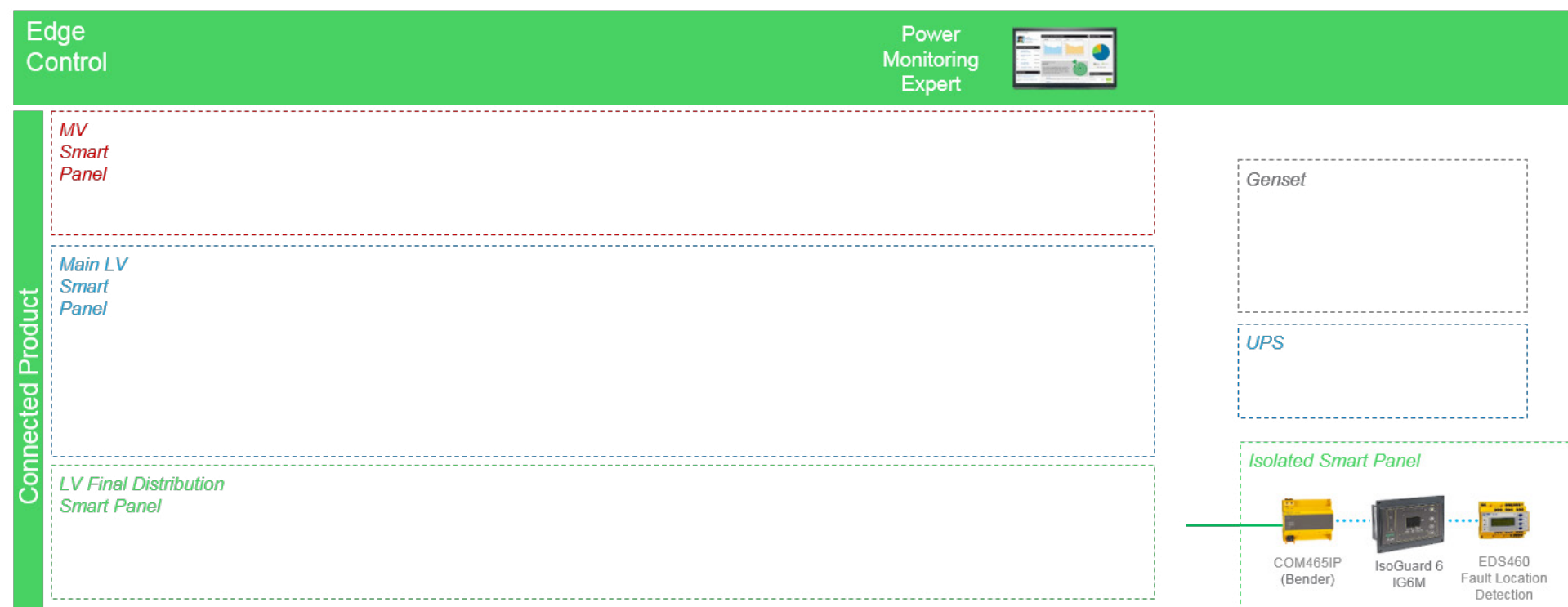
Architectures

▶ Architecture 1

◀ Architecture 2

Insulation monitoring (NEMA)

Avoid electrical fires and ensure protection.



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Learn more



Customer success: Moorfields Eye Hospital gains new visibility



Video: EcoStruxure Power and EcoXPerts deliver clean power



White paper: Bringing critical power distribution out of the dark



Contact us to start your journey.

This document presents general, non-binding information regarding the potential value that digitized power distribution products and solutions can bring to the user. Due to varying user situations and goals, Schneider Electric does not warranty or guarantee that the same or similar results represented in this document can be achieved. Please refer to Schneider Electric product and solution catalogs for actual specifications and performance.

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