

Insulation monitoring devices

An IT earthing system allows your electrical distribution system to continually operate, even in the presence of an insulation fault, without endangering people or property. Required as part of an IT earthing system, an insulation monitoring device (IMD) detects the initial fault so you can make repairs before a second fault occurs, which could trigger protective devices and halt operations.



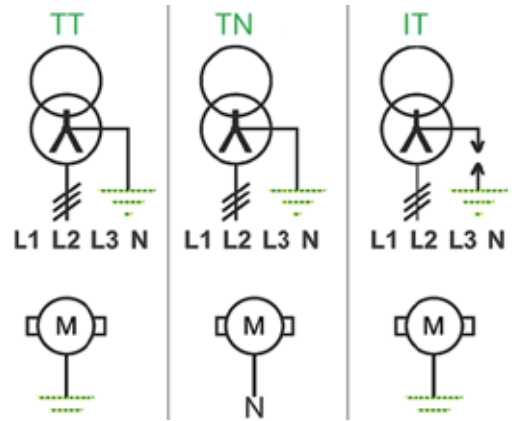
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Insulation Monitoring of IT / Ungrounded Networks

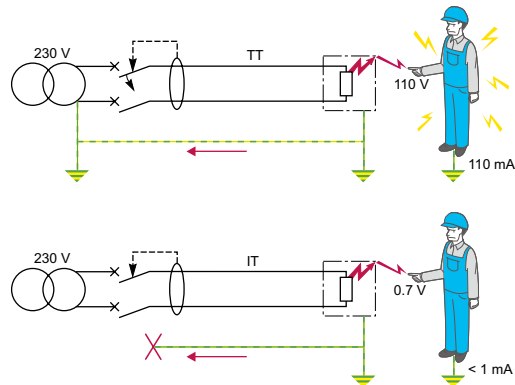
Unlike the TT or TN earthing systems, the neutral of the transformer is isolated from the ground for an IT earthing system (also called Ungrounded system).



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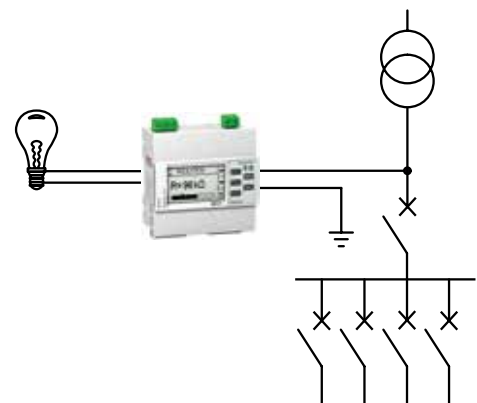
The main interest of IT systems is that in case of one insulation fault, no trip of protective device is required as the faulty current remains low.

- Advantages of IT networks include:
- Enhanced continuity of service of the network (no trip if there is one insulation fault on the network).
- Reduced risk of electric shock.
- Reduced risk of fire or explosion (low faulty current in case of insulation fault).
- Reduced stress on the network and increased equipment life (low faulty current in case of insulation fault).



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- In a situation with several insulation faults, the faulty current is no longer negligible and will cause trip of the protections.
- For this reason, Insulation Monitoring Devices are used on IT networks in order to detect a first insulation fault and indicate its location so that the fault can be repaired; hence avoiding situations with several insulation faults and maintaining the continuity of service on the network.



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Example of simple insulation monitoring system

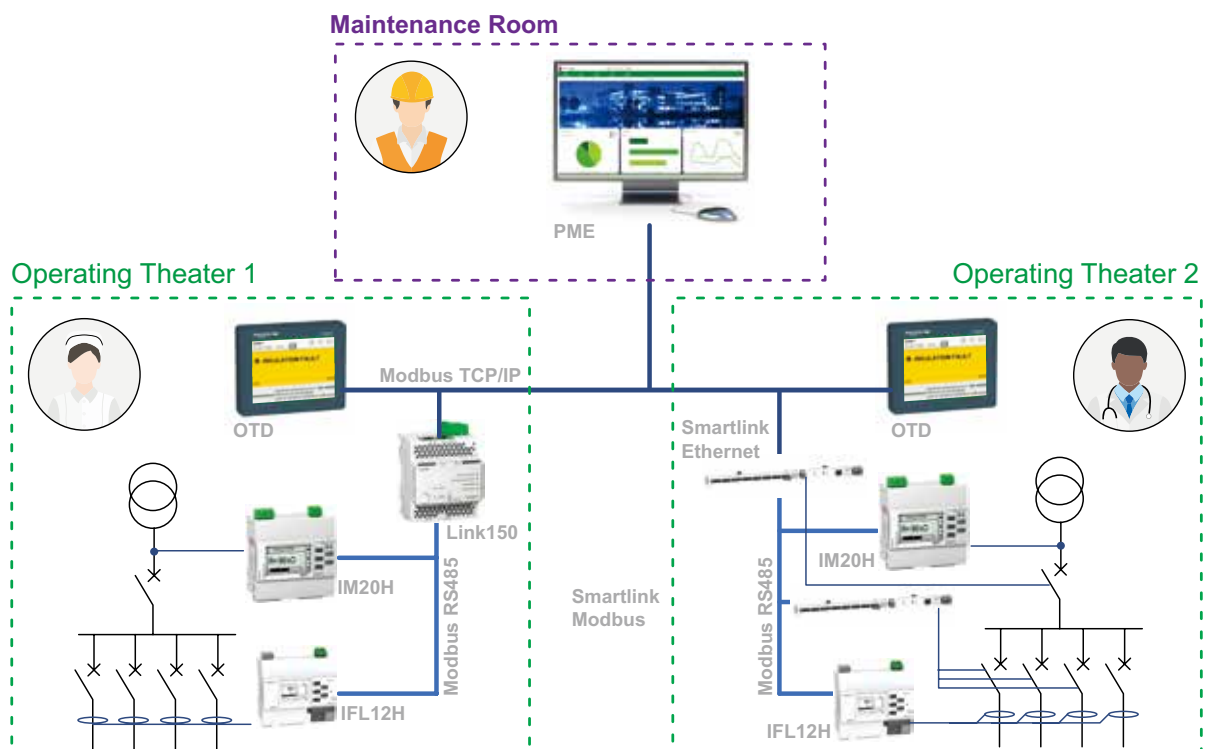
Insulation Monitoring of IT / Ungrounded Networks

IT earthing systems are used for applications requiring continuity of service, such as:

- Healthcare: critical rooms in medical premises such as operating theaters, intensive care units, recovery rooms.
- Industry: critical processes in cement, steel, chemical factories, food processing, car manufacturing, water, and waste water.
- Infrastructure: control tower and take-off path in airports, lighting, and signaling networks in rail.
- Utilities: power plants and control command systems.
- Photovoltaic: solar farms.
- Marine: electrical distribution of any type of ship.
- DC applications such as electrical vehicle charging stations.

The Vigilohm catalog offers a range of products suitable for these various applications, from the simplest insulation monitoring systems to the most advanced ones, including individual insulation monitoring per feeder and communication with supervision.

Example of Healthcare network monitored by Vigilohm Insulation Monitoring Devices in compliance with IEC 60364-7-710.



Medical staff is informed of electrical faults in the operating theater room through the local HMI (Operating Theater Display - OTD)

Technical staff is informed of any fault in the various operating theaters via a supervision system such as EcoStruxure Power Monitoring Expert.

Vigilohm Range Overview for Industrial Networks

A simple range to meet your needs
Industrial networks

Monitoring and Control
Power Monitoring & SCADA system

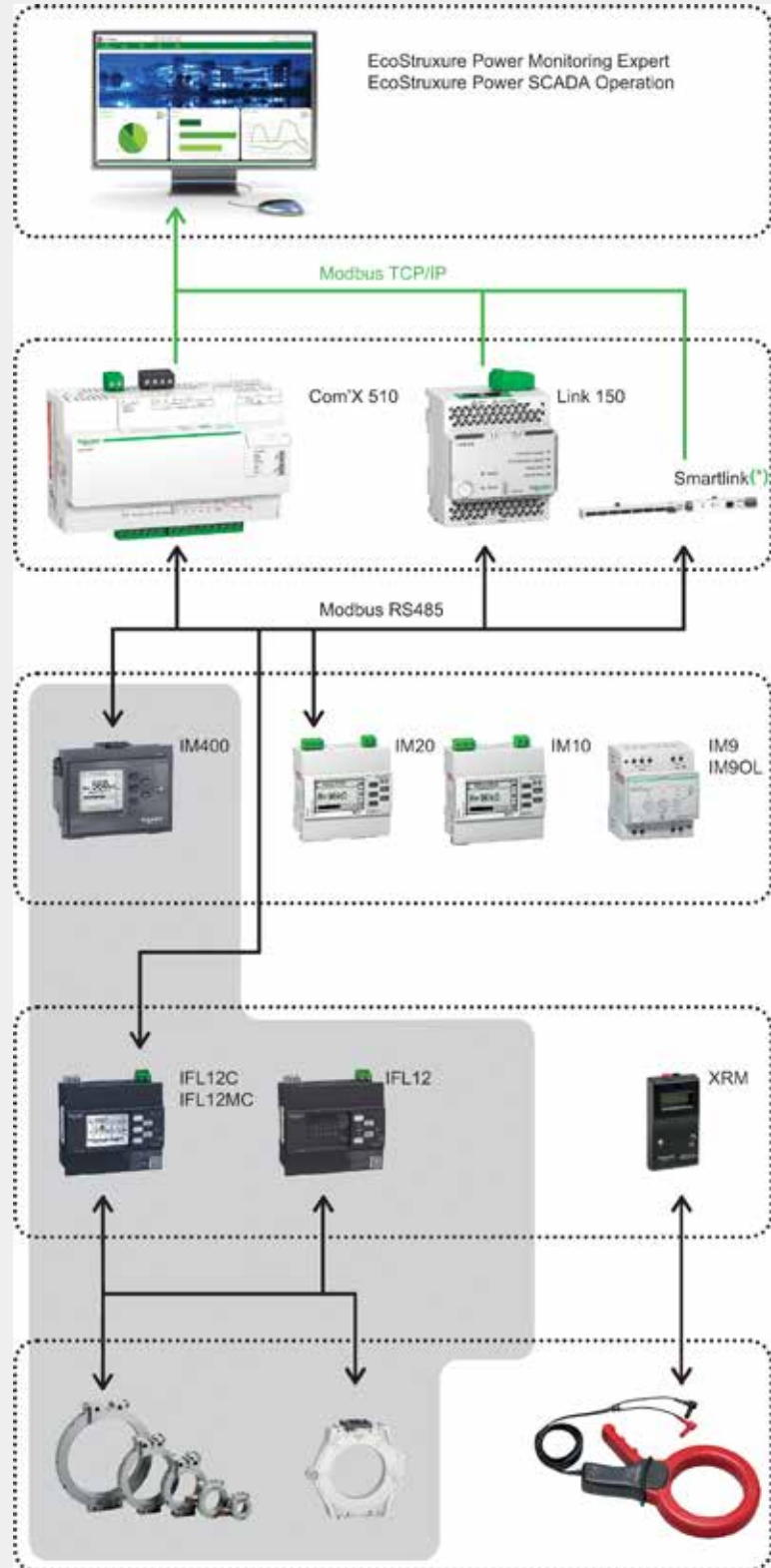
Communication and Simple Monitoring
Gateway, Data logger & Web Server

Insulation Monitoring Devices
Gateway, Data logger & Web Server

Insulation Fault Locators
Identification of the faulty feeder

Toroids

Used along with the Fault Locators

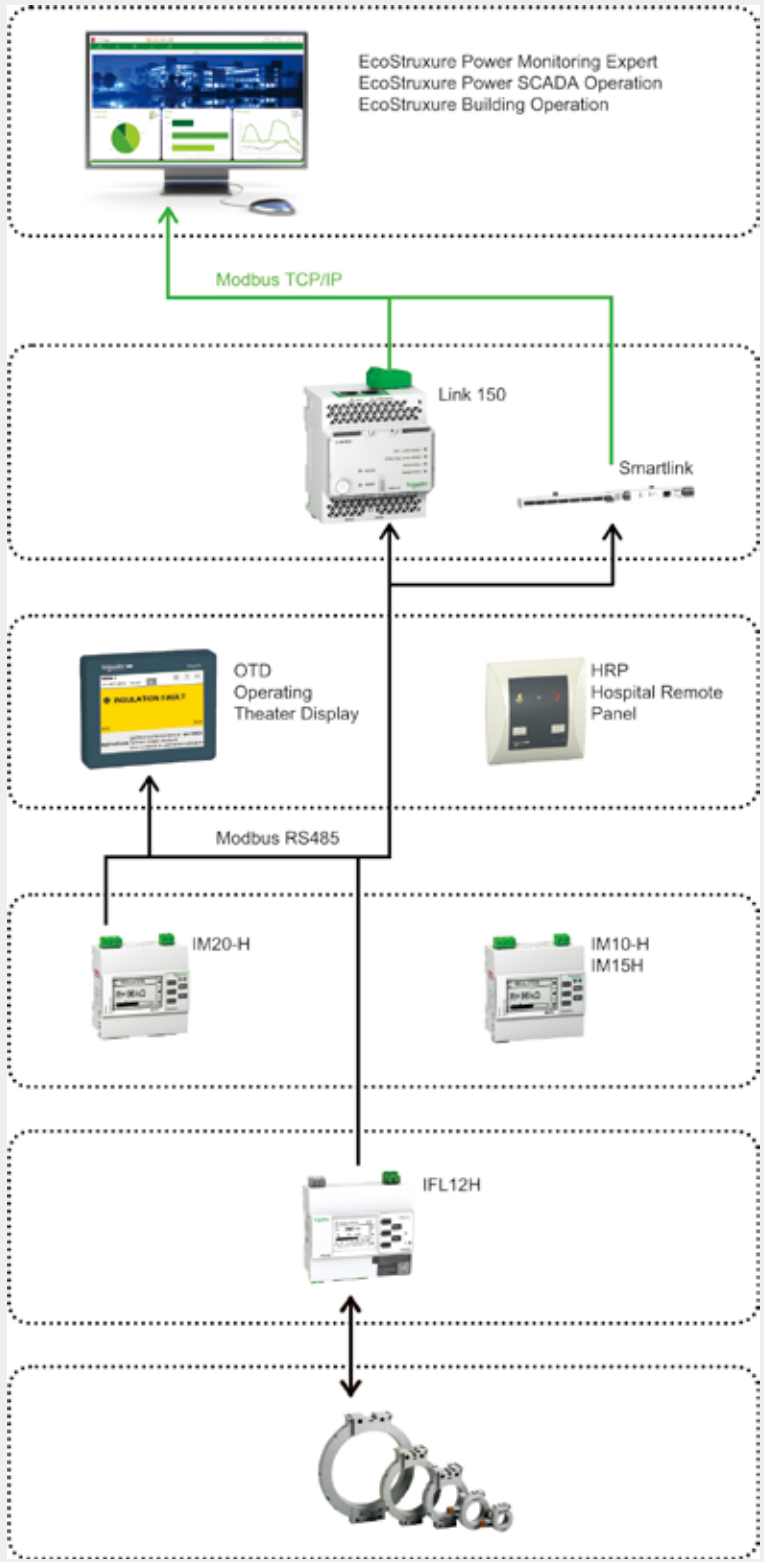


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Vigilohm Range Overview for Healthcare

Dedicated offers for critical rooms compliant with IEC60364-7-710

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Monitoring and Control

Power Monitoring & SCADA system

Communication

Gateway

Local Displays

HMI in the medical room

Local Displays

HMI in the medical room

Insulation Fault Locators

Identification of the fault

Toroids

Used along with the Fault Locators