Insulation Monitoring Ensures Electrical Safety in the Operating Room

Even the slightest equipment failure and leakage current can lead to burns, fire and even severe electric shock.

MEV-8 Insulation Monitoring System in the Finnish operating room.

HELSINKI, UUSIMAA, FINLAND, April 7, 2021 /EINPresswire.com/ -- Any electrical malfunctions in an operating room could be fatal. Insulation monitoring is the best way to guarantee electrical safety.

Operating rooms are so-called group II medical facilities where the interfaces of electrically operated medical devices are used for near-heart functions. Faulty electrical equipment can be life-threatening for the patient and staff. Even the slightest equipment failure and leakage current can lead to burns, fire and even severe electric shock. Detecting electrical problems at an early stage is an extremely important issue in the operating room.

> Faulty electrical equipment can be life-threatening for the patient and staff in the operating room."
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> *CEO Timo Ohtonen, PPO-Elektroniikka Oy*

At the beginning of the 1980s, PPO-Elektroniikka Oy developed an MEV insulation level monitoring system for this monitoring task. The first analogue equipment was completed in 1981, and the second-generation digital equipment in 1983. In the same year, the insulation level monitoring system became mandatory in Finland. Finland was a pioneer; elsewhere in Europe, such equipment became mandatory in 2015.

This is how the MEV-8 Insulation-level monitoring system works

- The operating room's electric power network is separated from the electrical grid by a medical

insulation transformer.
•The insulation-level monitoring system monitors all the electrical devices connected behind this transformer. Units control the insulation level of the IT system, the transformer load, temperature, and the continuity of protective earth 24/7.
•The equipment indicates the faults and problems before dangerous situations arise.

A commonly used residual-current device reacts too late; the damage will already have happened. This causes real danger to the patient and personnel. In addition to that, connected devices are without electricity, and the operation must be suspended. Therefore, it is a matter of safety, efficiency and cost savings.

The insulation monitoring system
- protects the patients and personnel,
- ensures that the service life of surgical equipment is extended,
- ensures that the unnecessary downtime can be avoided,
- prevents electrical fires and burns.

The MEV system has been protecting Finnish operating rooms since 1981. We have delivered over 31 000 systems, and our market share is nearly 100 % in Finland. In 2019, we launched our export with the fifth-generation MEV-8. At the beginning of 2021, we have distributors in 17 countries.
We are looking for new distributors both in Europe and on other continents, where we do not yet have a partner.

MEV-8 Insulation Monitoring System in an IPS rack

MEV-8 Insulation Monitoring Demo Case

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Read our article In the September 2020 edition of the Health Estate Journal: Insulation monitoring brings safety and cost-savings
(page 69-72).

MEV-8 video: Electrical safety in the operating room

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