



## ISCM – Cable Monitoring

For highest-quality energy supply and reduced operating costs

Answers for energy.

**SIEMENS**



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The Cable Monitoring System presents today's leading technologies for cable condition monitoring. Harsh and diverse environmental conditions cause global degradation and/or local defects on cables. As cable technology advances, the need for better diagnostic tools increases. Online Cable Monitoring allows for early detection of progressive degradation of the cable insulation and incipient failures, specifically those exhibiting impedance variations, partial discharge, or hot spots in cables. This is of significant benefit in terms of quality of supply and ensures maximum customer satisfaction.

### Valuable information at your fingertips

Cable-Monitoring is one of the modules of ISCM, our integrated and flexible solution for energy networks. ISCM covers all relevant components of your electricity supply network – from transformers and switchgear to overhead lines and cables – all monitored, analyzed, and visualized with one system. It can be seamlessly integrated in the existing substation infrastructure. Thus, ISCM provides a major contribution to reliable network operation and management.

All relevant data is well documented and stored for further investigations and as reference for future surveys regarding similar conditions and events.

For example, the system can provide the following two condition-monitoring indicators that can be used for the assessment of an installed cable:

- the line impedance phase shift.
- the HotSpot Detector signature.

The first indicator is used both for local and global aging assessment. In global assessment, it must be used together with a baseline condition that is considered the reference point, or initial condition of the cable. For local fault detection, the two indicators work together,

where the phase shift is used as a real-time early warning of a developing fault and the Hot-spot detector quantifies and localizes the fault along the cable.

### Reliable diagnoses through advanced knowledge modules

The insulation performance of the cable system is recorded on site, continuously or periodically, by sensor couplers which are specially developed for a simple configuration and installation.

After the acquisition and processing of sensor signals, a reliable data evaluation and trending is carried out and clearly presented by our advanced platform-independent database system called knowledge module.

In this manner the early detection and location of defects can be realized and the operating load of cables can be optimized, improving at the same time the power quality and supply reliability.

The performance of this strategy allows condition-based operation and management of the – in sum most valuable – assets in power grids.



## Your benefits at a glance

- Cost-effective operation with minimal personnel effort required after installation
- Detecting defects occurring shortly before failure
- Improvement of cable grid reliability by detection of pending failures
- Reduction of unexpected outages
- Planable shutdown times in line with maintenance strategy
- Reduced repair costs since repair works become planable
- Maintaining continuous power supply during measurements
- Continuously registering data that captures time-related information for trend analysis
- Technical evidence for condition-based maintenance programs

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