

Assetguard PDM



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Introduction

Most failures at GIS are in coincidence with partial discharge from an early stage of the particular failure. Detecting and analyzing those partial discharges via the emitted UHF signals is the method of choice for failure detection in gas-insulated switchgear.

Siemens Energy Assetguard PDM is a highly accurate online condition monitoring system for GIS, analyzing the UHF signals for severity and type of fault, providing a comprehensive early warning system for GIS failures and is compliant with **"IEC TS 62478: High Voltage Test Techniques – Measurements of partial discharges by electromagnetic and acoustic methods"**.

Features

Assetguard PDM is a modular system to cover all sizes and manufacturers of GIS substation. It can be operated with internal and external UHF sensors, has superior qualities regarding environmental, electro-magnetic and ingress protection - so is perfect for retrofit or new switchgear, indoor or outdoor installation.

Assetguard PDM performs the UHF signal analysis in terms of observing the intensity as well as providing diagnostic results regarding the source of partial discharge by usage of the built-in neural network for pattern recognition

Besides alarming using state-of-the-art communication protocols, an individual and interactive single-line diagram

allows to quickly localize and qualify those alarms. Furthermore, the alarms are easily forwarded to Siemens Energy Customer Support Center for expert involvement.

The web-based user interface presents its information, including live data and diagnostic results simultaneously for various users on different locations even on mobile devices.

Partial Discharge experts can use the built-in user interface features to assess historical data. This data can also be exported and provided to a remote expert from Siemens Energy for asset condition reports or on-site condition assessments.

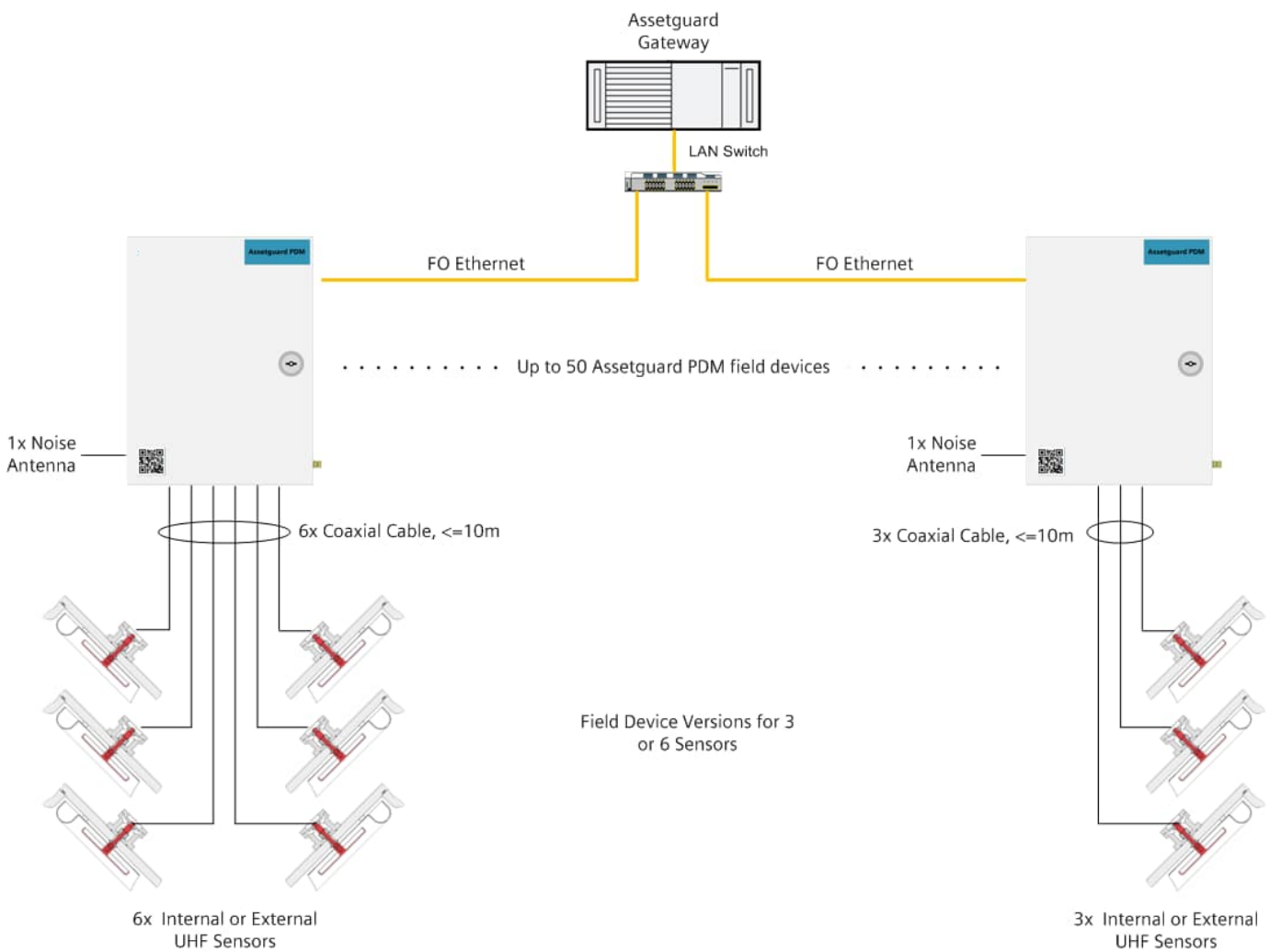
Benefits

- Early warning in case of evolving dielectric failure
- Expert system that gives diagnostic of reason for partial discharge sources
- Avoidance of unplanned outages and support of maintenance planning
- Facilitate integration (e.g., in SCADA Systems or Asset Management Platforms) and usability in current utilities networks
- Easy involvement of Siemens Energy Customer Support
- Seamless combination with Assetguard products for gas density and circuit breaker monitoring

Scope of Work / Deliverables

- Optional external UHF sensors for retrofit installations
- Assetguard PDM field devices for signal acquisition
- Assetguard Gateway to integrate the data from the PDM field devices and optional gas density or circuit breaker field devices
- Web based user interface
- Central cubicle containing Assetguard Gateway and further needed network and communication components

Architecture



Specification

Acquisition		Field Device	
UHF Detection Sensitivity	-85dBm	Input Channels	3 or 6 PD UHF channels plus 1 noise detection input
Dynamic Range	60dBm typical	Enclosure Dimensions	400 x 300 x 225 mm
Frequency Response	145 to 1700 MHz, selection Gain and Filter Bands	Environmental Conditions	25°C to +55°C, 93% RH
Acquisition	12-bit A/D @ 5kS/s	Shock Resistance	Vibration (1g) Shock (15g)
PD Expert Analysis	Neural Network with pattern recognition	EMC Standards	IEC 61000-6-5
Noise Management	Noise cancellation and Noise Pattern recognition	Ingress Protection Rating	IP54 or higher
Gateway			

IEC 61850, DNP3, Volt-Free Contact, API, Min. 2year data storage, Web based UI

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