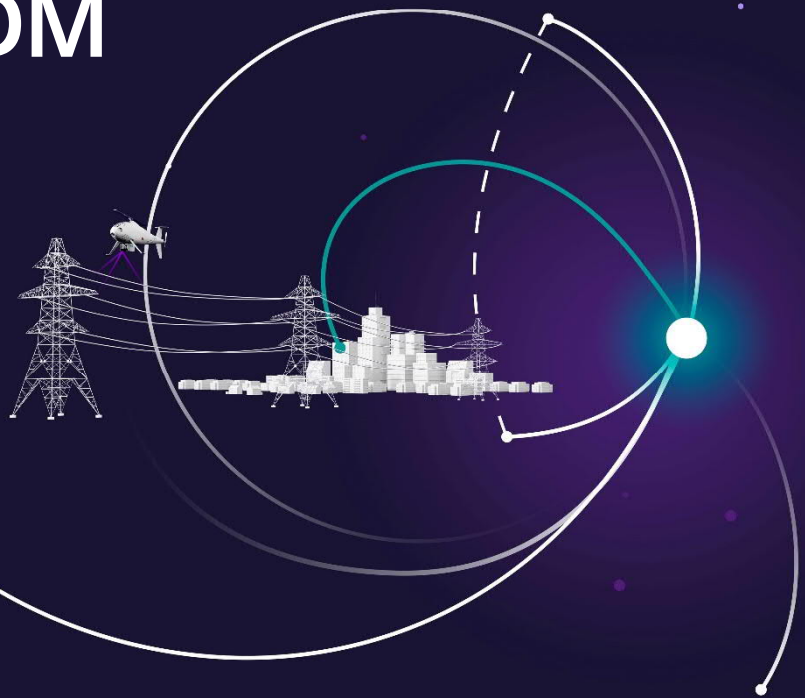


# Assetguard GDM

Gas Density Monitoring  
for Gas Insulated Equipment



[siemens-energy.com/t-service](http://siemens-energy.com/t-service)

## Introduction

The recent European and North American legislation has focused on green-house gases such as SF<sub>6</sub>, with the target of reducing emissions to 0,5% per an-num. As a result, gas density monitoring is essential to improve leakage visibility, notwithstanding the superior performance of modern Gas Insulated Switchgear (GIS).

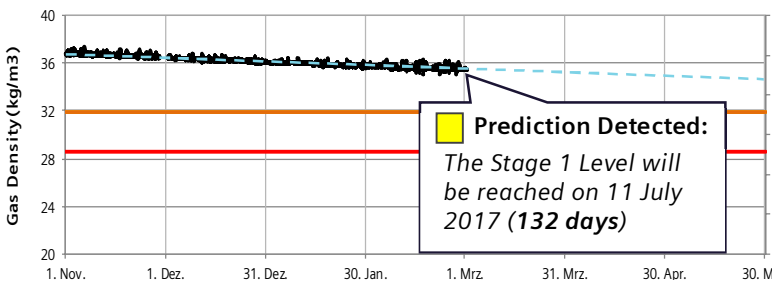
The Siemens Energy Assetguard GDM takes care of the actual SF<sub>6</sub> gas condition and helps manage a more dynamic and extensive network where conventional routine inspections are not viable such as offshore installations.

## Features

- With its state-of-the-art web-based user interface, it provides Single Line Diagram view (SLD) for easy localization
- Gas density measurement with high accuracy, recognition of trends and prediction of intervention dates
- Overall SF<sub>6</sub> gas inventory
- Data storage for expert analysis
- Alarm forwarding to Siemens Energy Customer Support Center
- Easy navigation to investigate actual condition or an alarm status
- Simultaneous access of different users, even on mobile devices with-out disturbing other systems for control, protection, and automation
- Reuse of graphical web elements in other applications
- Multi-language and user based Permissions

## Benefits

- Early warning in case of SF<sub>6</sub> gas leakage (Time to next Alarm)
- Gas Lost Report for asset managers
- Facilitate the integrability (e.g., in SCADA Systems or Asset Management Platforms)
- Easy involvement of Siemens Energy Customer Support
- Integration of monitoring gas zones in one single HMI



In-built Calculation of Predictions (time to next Alarm)

## Scope of Work / Deliverable

The Assetguard GDM Application has been adapted to monitor Gas Density Sensors / Hybrid Density monitors with a Modbus RTU interface. Thus, a single Assetguard GDM system can be configured to monitor up to 512 Modbus Sensors, seamlessly integrated in a single User Interface i.e., Assetguard Gateway. Depending on the project specific requirements the system can be delivered with:

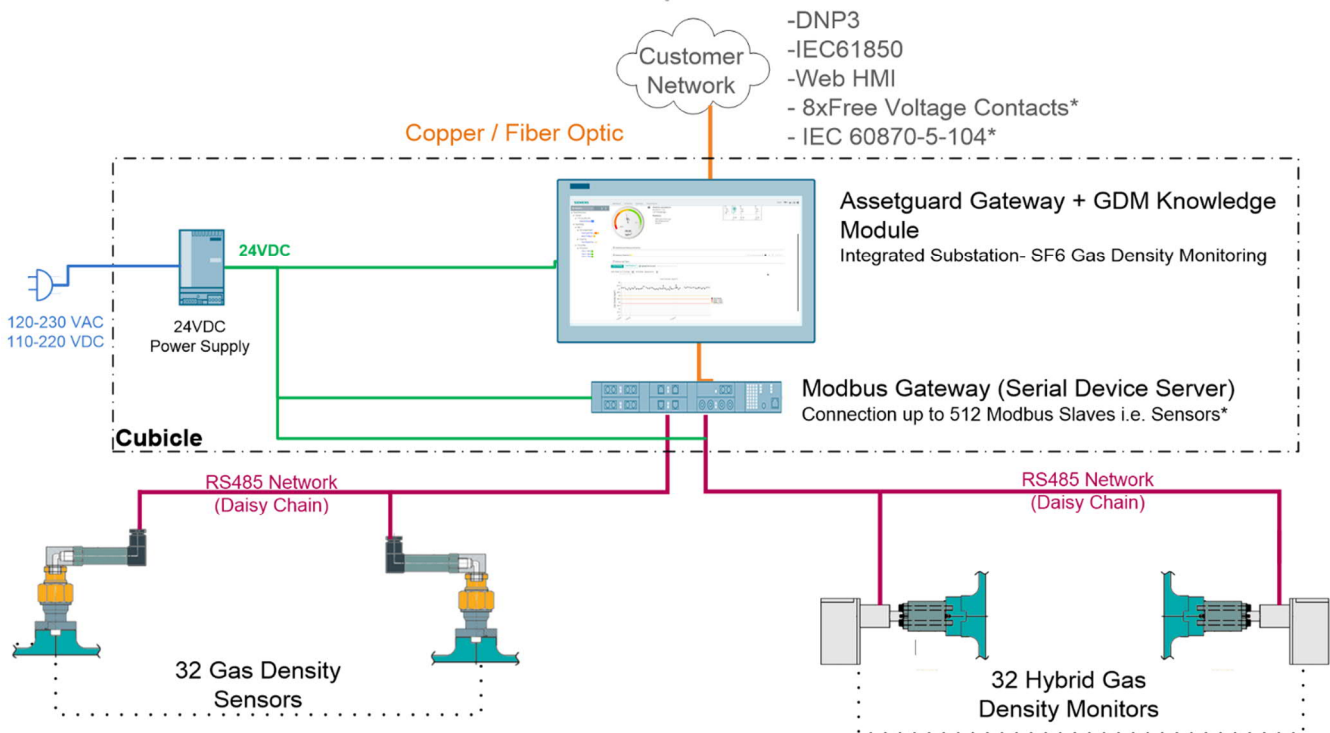
- [Optional] Modbus Gas Density Sensors / Hybrid Density Monitors
- Wiring for the connection of the Modbus Sensors in a RS485 Network (Daysi Chain)
- Modbus Gateway for the communication with the Sensors
- Assetguard Gateway + GDM Knowledge Module running in an industrial PC
- Web based User Interface
- Central Cubicle containing the Industrial PC, further needed communication and power supply components
- NTP Time synchronization
- Communication Protocols and Free Voltage Contacts
- Uninterrupted Power Supply (UPS)
- [Optional] Integration with other Monitoring Systems (partial dis-charge, circuit breaker)
- Early warning in case of SF<sub>6</sub> gas leakage (Time to next Alarm)

## Measurement Characteristics

<b>Acquisition</b>	Modbus RTU
<b>Self-Test</b>	broken cable detection, Sensor failure
<b>Gas Density Alarms</b>	Warning, Stage 1 (Low-Pressure), Stage 2 (Block-out), Time to next Alarm (next 90 days), Overpressure

## General Component Properties

<b>Input Channels</b>	Scalable up to 512 Sensors (32 Sensors per RS485 Network)
<b>Enclosure Dimensions</b>	600x625x600 mm (other dimensions under request)
<b>Environmental Conditions</b>	Operating Temperature: -25°C to 55°C; Humidity: =93%RH non-condensing
<b>EMC Standards</b>	Immunity for usage in power station or substation environment, IEC 61000-6-5



\* Additional components are required. The System architecture may vary.

## Assetguard Gateway Features

<b>Communication Protocol</b>	IEC 61850, IEC 60870-5-104, DNP3, Rest API, Voltage-Free Contacts
<b>Historical Data Storage</b>	Min. 5 years
<b>Gas Density Analysis</b>	Time to next Alarm (Predictions), Gas Loss report (kg)

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Transmission Service  
Humboldtstr. 64  
90459 Nuremberg, Germany

Customer Support Center  
Phone: +49 911 6505 6505  
E-Mail: support@siemens-energy.com

For more information, please visit our website:

[siemens-energy.com/t-service](https://www.siemens-energy.com/t-service)

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