



# USENS-G

GIS UHF Internal Sensor

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Highly sensitive and accurate Partial Discharge sensor for measuring ultra high frequency signals emitted by partial discharge activity inside Gas Insulated Switchgears (GIS).

Monitoring partial discharge (PD) activity into the GIS (Gas Insulated Switchgear) is very important in determining the condition of the GIS and decide on condition-based maintenance. All major power utilities and industrial customers are demanding for built-in PD sensors in their new GIS installations. Rugged Monitoring has developed the most advanced UHF PD sensor for GIS, capable of detecting smallest PD signals.

USENS-G is an Ultra High Frequency (UHF) antenna that can detect smallest UHF frequencies emitted by the partial discharge (PD) activity. The sensors are suitable for all types of GIS, and easy installation on the GIS flange. The sensors can easily be bolted on GIS flange. The IP65 rated ingress protection allows sensor to be installed at Outdoor GIS installations. Their wide band (200 - 3000 MHz) frequency response and high sensitivity (up to -90dBm) enables lower cost of PD monitoring system and higher ROI (Return on Investment).

Rugged Monitoring USENS-G is designed to fit into most of the GIS at all voltage levels. The sensors can also be customized according to GIS design and customer technical requirements. The sensors come with built-in overvoltage protections and N-type connection. The sensors can relate to any UHF based PD monitoring system regardless of manufacturers.

## » Benefits

- Higher sensitivity (-90dBm) ensure higher ROI of monitoring
- Wide frequency response, compatible with all PDM systems
- Easy installable, and High Dielectric strength, Safest Sensors
- Shielded Sensor, Noise Immunity
- Built-in overvoltage protection keeps the PDM electronics safer
- IP65 protection and rugged design, suitable for outdoor installations
- Leak proof sensors enables safety and 0% SF6 leakage
- Customizable according to GIS design and customer requirements

## » Features

- Wide band, Highly Sensitive, UHF PD Sensors for GIS
- High Dielectric, Rugged, and Reliable design
- Built-in overvoltage (transient) protection
- Shielded to avoid electromagnetic interface
- 100% Leak proof and pressure tested for 10 bar (Helium)
- Suitable for an extreme environment
- Outdoor Substation
- Customized according to GIS flange design & voltage level

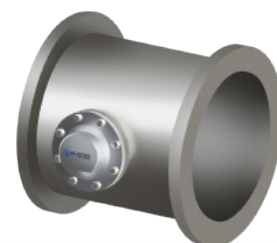
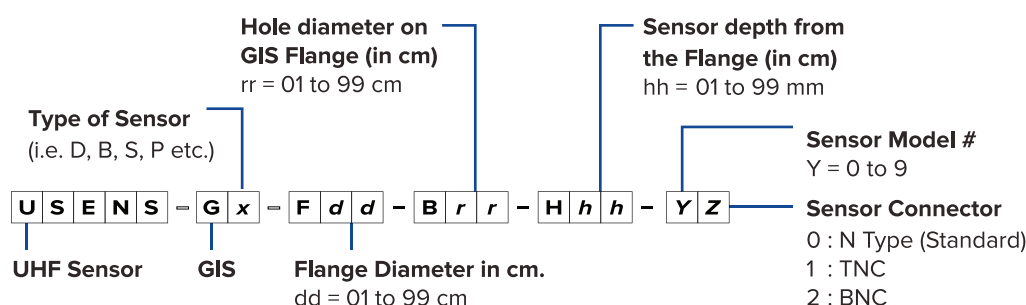
## » Applications

- Continuous Online Partial Discharge Monitoring
- Periodic Partial Discharge Testing and Measurements
- High Voltage Testing during Commissioning
- GIS PD Testing and Monitoring
- MV Switchgear PD Testing and Monitoring
- Circuit Breaker PD Testing and Monitoring

## » Technical Specifications

UHF Frequency Response	200 - 3000 MHz
Sensitivity	up to -90 dBm
Average Effective Height over 500MHz – 1500MHz	25mm+
Min. Effective Height over 500MHz – 1500MHz	16mm+
Withstand Voltage	up to 1500 kV
Output	N-Type connector; Customized option available
Connector Circuit Impedance	50 Ω
Pressure Testing	up to 10bar (with Helium Gas)
Vibration Testing	Suitable for HV - GIS and Transformer applications
Ingress Protection (IP)	IP-65
Ambient (Operating Temperature)	-60 °C to +100 °C
Storage Temperature	-60 °C to +100 °C
Operating Humidity	95% humidity at 50 °C
Dimensions	Customized as per GIS design
Weight	app. 2.0 KG; Customized as per customer requirements
Install Position	GIS Enclosure
Signal Cable	Very low attenuation UHF (Coax) cable

## » Ordering Code



### CERTIFICATIONS



ISO 9001



ISO 14001



OHSAS  
18001



Lloyd's  
Register



Atex  
Certification



NIST  
Certification



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