



USENS-V

UHF PARTIAL DISCHARGE SENSOR



Highly sensitive and accurate
Partial Discharge sensor for measuring
ultra-high frequency signals emitted by partial
discharge activity inside Transformers.

USENS-B

UHF PARTIAL DISCHARGE SENSOR



- **Rugged Design, Easy installation on the GIS Barrier**
- **High Dielectric and Built-in overvoltage protection**
- **Highly Sensitivity, and Wide band UHF PD Sensor**
- **Shielded to avoid electromagnetic interface**
- **IP66 rated, suitable for outdoor substation environment**
- **Customized to fit any size of barrier openings**

It is a well proven fact that Partial Discharge (PD) monitoring systems have saved many catastrophic failures into switchgears and GIS globally. Most of the new GIS installations are now coming up with pre-installed UHF PD sensors. For older GIS substations, with opening on the barrier's, Rugged Monitoring has developed the most sensitive UHF PD sensor.

USENS-B is an Ultra High Frequency (UHF) antenna that can detect smallest UHF frequencies emitted by the partial discharge (PD) activity. The sensors are customized to fit on different kind of GIS barrier openings. The sensors can easily be placed on the Barrier opening and then fixed with the belt coverage for PD monitoring.

Rugged Monitoring's USENS-B can be customized to fit into any size of GIS Barrier opening with higher response. The sensors come with built-in overvoltage protection and N-type connection. The sensors can relate to any UHF based PD monitoring systems regardless of manufacturers.

High sensitivity, designed for reliability, Customised UHF technology based Partial Discharge sensors for GIS barrier openings.

Applications

- Periodic Partial Discharge Testing and Measurements
- Continuous Online Partial Discharge Monitoring
- High Voltage Testing after maintenance/ Overhaul
- GIS/ GIL PD Testing and Monitoring
- GIT (Gas Insulated Transformers) PD Testing & Monitoring
- Circuit Breaker PD Testing and Monitoring

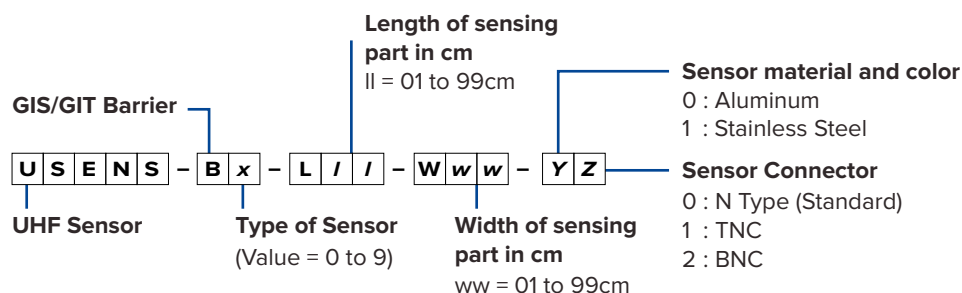
Benefits

- Higher sensitivity (-70dBm) 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
- Customized according to Barrier Opening and customer requirements

Technical Specifications

UHF Frequency Response	200 - 3000 MHz
Sensitivity	up to -70 dBm
Average Effective Height over 500MHz – 1500MhHz	06 mm+
Withstand Voltage	up to 1500 kV
Output	N-Type connector; Customized option available
Connector Circuit Impedance	50 Ω
Vibration Testing	Suitable for HV - GIS and Transformer applications
Ingress Protection (IP)	IP-66
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 different GIS Barrier Types and Openings
Weight	Customized as per different GIS Barrier Types and Openings
Install Position	GIS / GIT / GIL Barrier Openings
Signal Cable	Very low attenuation UHF (Coax) cable

Ordering Code



Asset Monitoring : Enterprise Architecture

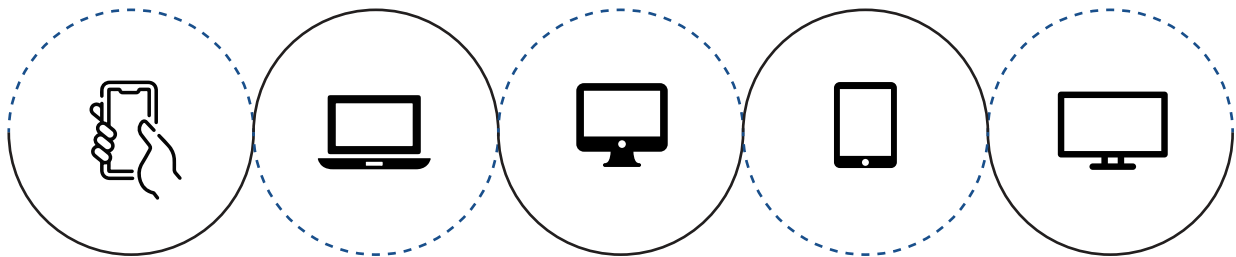
Compatible with Rugged Monitoring Enterprise Solution

UI/UX



- Data Layer
- Analytics
- User Interface
- Custom Dashboards
- Reporting
- Email/SMS Notifications

RM EYE



Private Cloud (Customer Cloud),
Rugged Monitoring Cloud

IEC 60870-104

IEC 61850

FTP/SFTP

- XML, JSON

- CSV, COMTRADE



Data Collection

ODBC

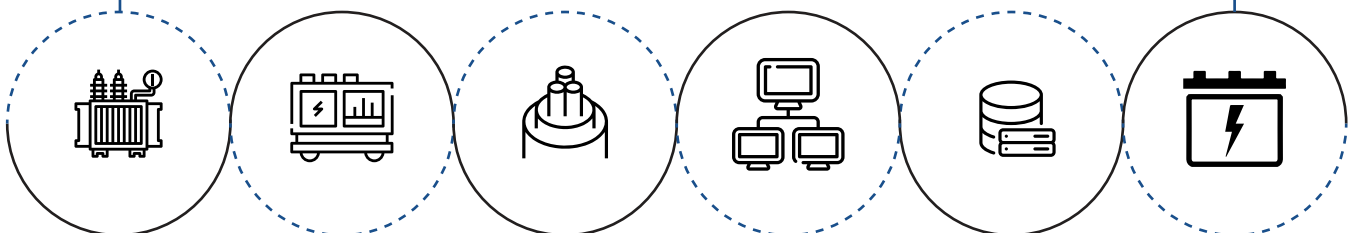
MODBUS

DNP 3.0

HTTPS

MQTT

Asset Data



Transformer
Monitoring
System

Switchgear
Monitoring
System

Power Cable
Monitoring
System

- Offline Test Results
- Inspection Records
- Name Plate

- Historian
- CMMS
- SCADA/ DCS

Power Electronics
(Battery, UPS,
VFD, Relay)

One Solution for Advanced Asset Performance Management System

Manage different industrial assets on one platform without human intervention

Features

- **Advanced and Exceptional Reporting** Technology with automated alerts
- **Modern remote monitoring solutions** provide valuable insights to Multiple Assets at Multiple Sites on real-time
- **Robust asset health monitoring** with analysis and recommendations support asset effectiveness in addition to maximizing equipment uptime
- **Establish a real time and consistent monitoring** by getting the right information into right hands
- **An efficient, reliable partial discharge monitoring** for all the assets
- **A detailed comprehensive DGA Analysis**
- **Lifetime Consumption details.**
- **Built on well-established remote and cloud-based monitoring technology**
- **Simple user-friendly interface** providing fast access to all the features and commands
- **Quick and easy 1 step configuration setup**
- **Encompasses a secure access to data and configuration**
- **Advanced asset algorithms** based on standard ones with new ideas
- **Systematic fleet management and analysis**
- **Extended multilingual support** to handle product inquires or troubleshoot problems proactively
- **Up System Level Reporting**
- **Industrial IoT**

Features Specific to PD Monitoring

- Partial Discharge monitoring and Analysis
- PRPD : Phase resolve partial discharge
- Partial Discharge Amplitude and Discharge rate trend analysis
- Partial Discharge Fault localization
- Artificial Intelligence based PD fault Identification
- Realtime PD Alarm system
- Get Alarm notifications for individual bushing parameters over Email, sms and push notifications
- Analytics on Online, and offline partial discharge test data

Why Customers Choose Us?

RM solution, the trusted monitoring solution for over 10000+ assets across 50+ countries. We are a leading High Value Electrical Asset Monitoring Company integrating fibre optic technology to the assets.



Attention to Detail

It's our attention to the small stuff, scheduling of timelines and keen project management that makes us stand out from the rest.



A plan for Success

Our Customers are well satisfied with the advisory services that we offer to help them with best in class technological performance and a long durable life.



Experts only

We bring in our diversified experienced team with over 100+ years of experience in Asset Monitoring



Meeting Deadlines

Work with us, and you'll work with seasoned professionals – vigilant of deadlines, and committed to exceeding client expectations.



Money Matters

We protect you against currency fluctuation with competitive and fair market prices



Rugged Monitoring Services

Rugged Monitoring provides customization of sensors, monitors & software. In addition we offer on-site commissioning services, maintenance contracts and technical support to all customers worldwide.

About Rugged Monitoring

Industry's leading team of asset condition monitoring experts with 100+ years of combined experience committed to delivering customizable solutions for challenging applications. We offer a range of reliable, high performance, customizable sensors and monitoring solutions that are immune to external influence.

Certification



ISO 9001



ISO 14001



ISO 45001/
OHSAS 18000



Lloyd's
Register



ATEX
Certification

Our Presence Across the Globe



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