

PTSPD4000W Continuous Online Partial Discharge Monitoring

Product Overview

The PTSenR™ PTSPD4000W Continuous Online Partial Discharge (PD) Monitoring Sensor is a wireless, five-in-one device designed to provide comprehensive monitoring of partial discharge, temperature, and humidity. This sensor is particularly effective in identifying partial discharge phenomena caused by material aging, poor contact, current overload, and other factors that pose hidden failure risks. It is designed to operate reliably in both high and low-temperature environments, offering small size, light weight, and wide application adaptability.

The sensor employs advanced monitoring technologies including ultra-high frequency (UHF), ultrasonic (AE), and transient ground wave (TEV) for accurate and sensitive detection. It is compatible with both external power supply and battery power, addressing long-term power supply issues with its low-power microelectronics technology. The sensor boasts a lifespan greater than 10 years, with safety, reliability, and maintenance-free operation, powered by industrial batteries.

System Architecture



Applications

Air Insulated Switchgear

Gas Insulated Switchgear

Ring Main Units



Characteristics

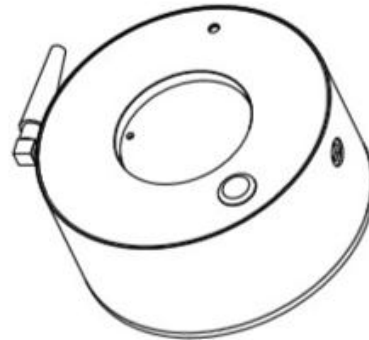
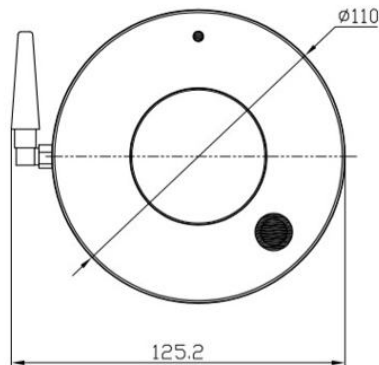
The PTSPD4000W sensor operates using several advanced principles. The UHF method detects electromagnetic waves radiated by steep current pulses during partial discharge events, providing precise monitoring within the frequency range of 500MHz to 1500MHz. The ultrasonic method captures the broad spectrum of sound waves generated by local discharges, ranging from tens of Hz to several MHz. Additionally, the TEV method senses the excitation frequencies in the ground housing and ground wire caused by local discharge, with a frequency range between 3MHz and 100MHz. These combined monitoring techniques ensure high-dimensional sensitivity and accuracy.

This sensor is fast and easy to deploy, requiring no wiring, and boasts high anti-jamming capabilities. Its five-in-one functionality includes monitoring ultra-high frequency signals, transient ground waves, ultrasonic emissions, ambient temperature, and humidity.



Dimensions

(Unit: mm)



Specifications

Operational Supply	3.7V Lithium Battery / 24 VDC	Humidity	10~95%RH (non-condensing)
Power Consumption	120 mA	Protection Level	IP 54
Type of Monitoring	Ultra-High Frequency (UHF) 500MHz to 1500MHz, Transient Ground Waves (TEV) 3MHz to 100MHz, Ultrasonic (AE) 20k to 200kHz, Ambient Temperature (T) & Humidity (RH)	Installation Mode	Magnetic Suction, Nut Type
Operational Voltage	3.3kV ~ 40.5kV	Certification	EN 60270.2000, EN 61000-4-2:2008, EN 60068-2-1.2007, EN 60068-2-2.2007, EN 61000-6-2:2005+AC; EN 61000-4-3:2010, EN 61000-6-4:2007+A1:2011; EN 61000-4-4:2012; EN 60255-26:2013; EN 62366-1:2014+A11:2017
Wireless Operating Bandwidth	433.92 MHz	Ordering Information	
Transmission Power	≤10dBm	Part Number	Product Description
Sampling Cycles	3Sec (Can be set)	PTSPD4000W	PTSenR™ Continuous Online Partial Discharge Monitoring
Wireless Transmission Distance	≥300meter (open space)		
Reception Sensitivity	5 dBm		
Security	SM1/SM7 Hard encrypted chips		
Operating Temperature	-40°C ~ 85°C		