

PCM-3227 Breeze Vibration Sensor



Brief introduction of the installation

When the conductor (or lightning cable) of the overhead transmission line is blown vertically by a uniform and stable breeze, an airflow vortex with alternating up and down at a certain frequency is formed behind the wire, and when the alternating change frequency of the airflow vortex is equal to the inherent natural frequency of the wire, the wire resonates in the vertical plane and causes the conductor to vibrate. The vibration of the wire causes the wire to be repeatedly bent at the outlet of the clamp, causing material fatigue. Finally, it leads to the accident of broken strands and broken lines, which is more harmful to the normal and safe operation of the line.

According to the characteristics of the breeze vibration of the wire, the online monitoring device of wire breeze vibration is based on the principle of acceleration difference method to realize the real-time monitoring of the wire bending amplitude and frequency at the outlet of the wire clamp. The displacement and frequency characteristic information of the breeze vibration of the transmission line are obtained through the embedded amplitude-frequency calculation, and the amplitude-frequency characteristic values are wirelessly transmitted to the gateway and system platform. Realize online monitoring of line wire vibration data.

Features:

- Breeze vibration monitoring: It can monitor the bending amplitude and frequency characteristic quantity of the wire
- Conductor temperature monitoring: Integrated contact conductor temperature monitoring
- Intelligent power management: According to the battery power level and the charging and discharging situation of the device, the power supply of the system is intelligently managed, and the device can

automatically adjust the working mode according to the power level

- Working status monitoring: real-time monitoring of battery power, solar panel voltage, working temperature, charge and discharge status, and charge and discharge current
- **Technical parameters**

Monitoring parameters

Bending amplitude	Scale: 0 ~ 1.3mm (p-p) Accuracy: <10%
Vibration frequency	Range: 0~150Hz Accuracy: <10%
The frequency at which the data is sampled	Not less than 1000Hz
The number of points sampled at a time	Not less than 1024 points
Wire temperature measurement	Measuring range: -40°C~+120°C Accuracy: ±1.0°C

Network and communication capabilities

Communication frequency bands	433MHz
Communication protocols	IEEE 802.15.4 6LoWPAN
information security	SM1/SM7

Power supply system

Power supply mode	Photovoltaic power supply
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System parameters

quality	SENSOR ≤ 1.5KG
power supply	4.2V
power consumption	Gateway sleep power consumption: <0.2W; Sensor sleep power consumption: <2mW
Standby time	20 days without matte work≥
Working environment	Temperature: -40 ° C~70 ° C; Humidity 5%~100% RH
Ingress protection	IP67, TVS 6000V Antivirus, ESD protection level GB/T17626.5 IV

Application scenarios

