SF_6 Gas Monitor and Receiver Based on LoRa Wireless Transmission Technology

SF_6 Gas Monitor and Receiver Based on LoRa Wireless Transmission Technology (LS-WC and LS-WT Series)

Product Overview

SF_6 (Sulfur Hexafluoride) gas is widely used as an excellent insulating and arc-suppressing medium in medium and high voltage, as well as in high voltage switchgear and GIS. The density index of SF_6 gas is crucial to its insulation and arc-suppressing performance.

SF_6 Gas State Monitor and Receiver (LS-WC and LS-WT series) are self-developed monitoring products by our company. The monitor can adapt to our full range of transmitters and remote density relays, monitoring SF_6 gas pressure, temperature, density, and moisture content in real time. The data is transmitted back to the background system in real time through wireless LoRa data transmission. The background system can perform online monitoring and analysis, and achieve functions such as real-time data query, historical data statistics, pre-set alarm reminders, and data curve query for all data. This system is mainly designed for real-time monitoring of critical equipment such as SF_6 gas insulated switchgear, GIS, transformers, and mutual inductors in various high-voltage electrical devices.

The monitor is powered by a battery and transmits data wirelessly, without the need for cables on site. The transmitters and remote density relays can be powered by the monitor, without the need for separate power supply on site.

Applications

- SF_6 Insulated Combination Apparatus (GIS)
- SF_6 Insulated Circuit Breaker
- SF_6 Insulated On-site Switch
- SF_6 Insulated Transformer
- SF_6 Insulated Mutual Inductor
- SF_6 Insulated Busbar System

Options

- The receiver has an RS485 MODBUS RTU output or a network port TCP/IP output.
- It comes with a background software package.
- The receiver can be equipped with an instrument cabinet.

Features

- The monitor is powered by a battery, without the need for cables on site, enabling non-stop upgrade and transformation of online monitoring systems.
- The monitor and receiver have user-friendly human-machine interfaces, facilitating field debugging and testing.
- The monitor can adapt to our full range of transmitters and remote density relays (with a accuracy of full scale 1.0), which can be configured according to customer needs with different functions, ranges, and interface sizes.
- It is suitable for both indoor and outdoor installations.
- The battery uses a large capacity lithium battery, with a service life of over 10 years (related to the data collection period).
- The receiver has data storage function; it can store data for over 10 years.
- The background software has data storage, query, and statistical analysis functions.
- It has a RS485 bus interface that can upload pressure, temperature, and density data in real time.
- It has 470MHz and 2.4GHz optional frequencies for wireless transmission.

Technical Parameters

Monitor	Button	Membrane keypad, with a life of 2 million presses at a force of 300gf Keypad
	Screen	Resolution: 128x64 Dot ; Viewing size: 54.2x32.5mm; Supply voltage: 3.3V; Supply current: 45mA
	Battery	Type: Lithium thionyl chloride battery; Nominal capacity: 19AH; Voltage: 3.6V
	Transmitter interface	Power supply: 12V@20mA; Communication: RS485 rotocol; Private protocol can be customized
	Standby current	<10uA
	Protection grade	IP65
	Operating temperature	-40° C ~ +70° C
	Installation method	Metal zip tie installation
Receiver	Screen	Resistive touch 7-inch LCD screen; Resolution: 1024*600
	Power supply	12V DC @1A (manufacturer can provide 220Vac adapter)
	Signal interface	Double RS485 interface, two interfaces can use different communication protocols; RJ45 interface: 10M/100M; USB interface: 2.0
	Other hardware	16G SD card
	Antenna	Suction cup antenna; Feeder line: 2m (2m~20m)
	Installation method	Wall mounted installation

Dimensions

Monitor: 144 × 88.5 × 66.5mm
Receiver: 226 × 162 × 40mm
Instrument box: 330 × 235 × 68mm