Fire Pipe Water Pressure Monitoring Solutions

Programme Background

    With the rapid development of urban scale, high-rise buildings are increasing day by day. On the one hand, the high-rise buildings are large and complex, densely populated, with many modern facilities. Once a fire occurs, it is easy to produce chimney effect and wind effect, and the fire spreads rapidly, which is very difficult to put out. On the other hand, in the use of high-rise buildingsi, the awareness of property management units of fire fighting is relatively weak, and it is often easy to ignore the management and maintenance of fire fighting systems such as fire fighting water supply system and automatic sprinkler system.

    At present, there is no real-time remote online monitoring of the water pressure of the fire protection system pipeline, resulting in the fire department is difficult to effectively supervise the fire protection water pressure, resulting in part of the fire protection system in long-term water pressure is insufficient or even no water state. Once the fire occurs, the fire fighting system can't do timely linkage, and it is just like a decoration device, the fire fighting hidden danger is very serious, which will undoubtedly bring great harm to the life and property of the public. And in practice, once the fire pipeline water pressure anomaly, by the inspection staff to notify the fire department personnel to the scene of emergency repair, the whole process is relatively long, and some fire pipeline water pressure anomaly can not be found in time, the inspection staff is not easy to clear the reason for the anomaly, delaying the time to solve the anomaly.
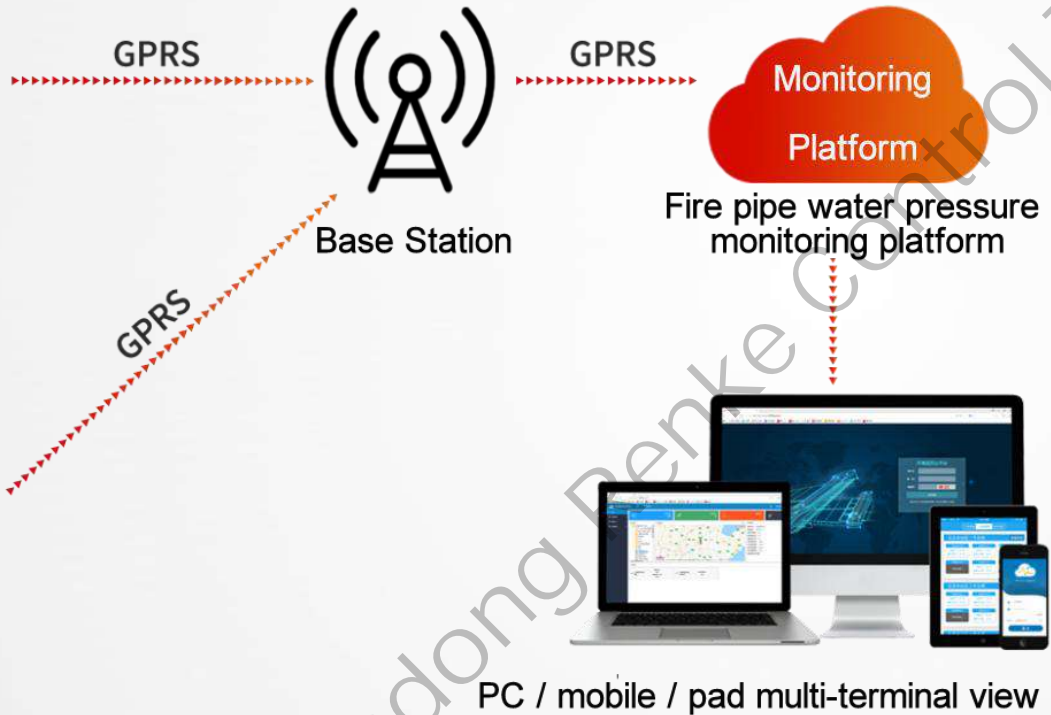
Programme Overview

GPRS

GPRS

Base Station

Monitoring Platform

Fire pipe water pressure monitoring platform

Monitoring Site No.1

GPRS

Monitoring Site No.2

PC / mobile / pad multi-terminal view

The fire pipes water pressure monitoring solution is mainly to install pressure transmitters in key parts of the building fire pipes to realize the pressure monitoring of fire pipes in the building.The monitoring data is transmitted to the fire pipe water pressure monitoring platform via GPRS communication to realize the **alarm of abnormal data**, and the online monitoring and comprehensive analysis of the operation of the whole fire water system.It can quickly locate the fault points in the fire pipes, and push the alarm information to the relevant management personnel through **SMS, WeChat, email,** etc.The timely disposal of fire pipes failure or alarm problems reduces fire safety hazards and ensures that the fire water system can play a real role in the event of a fire.

Perception Layer

Pressure Transmitter
(PM300 Series)

The perception layer is located in the bottom layer of the three-layer structure of the Internet of Things, and its function is "perception", that is, to obtain environmental information through the sensing network, which is the core of the Internet of Things. The perception layer of the fire pipe water pressure monitoring system is mainly a pressure transmitter, which is the key part of the fire pipe water pressure information collection.

Product Description

The pressure transmitter adopts high-performance pressure-sensing chip, with advanced circuit processing and temperature compensation technology, the pressure change into a linear current or voltage signal. The product is compact, easy to install, using stainless steel shell isolation and anti-corrosion, suitable for measuring and contact part of the material compatible with the gas and liquid and other media, it can be used to measure gauge pressure, negative pressure and absolute pressure.

Applications

Applicable to the measurement of process control pressure in industrial sites. Widely used in water factory, oil refinery, sewage treatment factory, building materials, light industry, machinery and other industrial fields, to achieve the measurement of liquid, gas, steam pressure.

Product Features

✓Reverse polarity protection and instantaneous over-current and over-voltage protection, in line with EMI protection requirements.
✓Using the laser tuning resistance temperature compensation process, the measurement value is more stable.
✓Wide range coverage, -0.1~100MPa available.
✓ Automatic temperature compensation and automatic temperature drift correction.
✓ Strong overload and anti-interference capability, economical and stable.
✓Compact structure and easy installation.

Technical Parameter

Measurement Range	-0.1-100Mpa (Optional)
Measurement Accuracy	0.2%FS，0.5%FS
Output Signal	RS485，4-20mA，0-5V，0-10V
Protection Level	IP54
Temperature Drift	0.03%FS/℃
Power Supply	12-36VDC Typical 24V
Environment Temperature	-40℃-80℃
Measurement Medium	Non-corrosive gas and liquid to stainless steel

Pressure Transmitter

Perception Layer

GPRS collector is a terminal device suitable for field equipment monitoring and control and wireless transmission through GPRS, with the function of 4-channel analog signal acquisition, 4-channel switch signal (or active signal) acquisition and control of 2-channel independent switch (optional), the product is completely waterproof. Product features are as follows:

Support for customization of SMS alarm content for switching signals and customization of alarm recovery content;

✓Low mobile data, less than 30M per month, supporting China Mobile or China Unicom 2G/3G/4G mobile cards;

✓Built-in antenna or external suction cup antenna optional (default built-in), the device supports secondary development, please consult our technical staff for details;
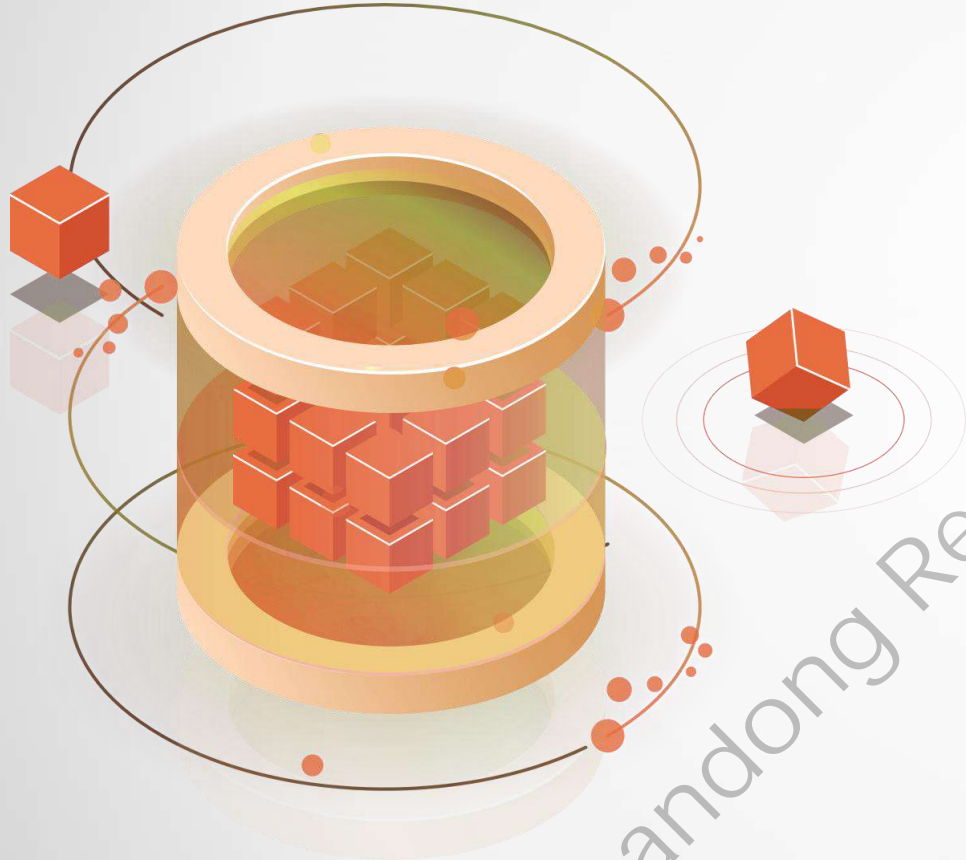
✓All parameters are set by SMS, SMS query, offline SMS alarm and voice ringing alarm can be realized (up to 5 target numbers can be set).

GPRS Data Collector

Real-time GPRS transmission

Wide coverage and more connections

High speed and low cost

Low power consumption ,excellent architecture

The network layer is the core of data communication and is the main channel of data transmission. The network layer of fire pipe water pressure monitoring system mainly adopts GPRS communication network, which has the characteristics of wide coverage, many connections, fast rate, low cost, low power consumption, excellent architecture and strong real-time performance.

Application Layer

The application layer is the fire pipe water pressure monitoring platform and the third-party application platform, which realizes real-time monitoring of the location of monitoring points, equipment types and real-time data of the fire pipe water pressure monitoring system, and also pushes real-time monitoring and alarm information to managers through mobile phones, pads, computers and other information terminals to facilitate timely maintenance by staff and improve the safety and reliability of the entire fire protection system.

System Functions

Real-time Monitoring

Pressure monitoring of the sprinkler end of the building's fire water system, fire hydrant unfavorable points, etc.

Alarm Analysis

Alarm thresholds can be set for pressure data, monitoring and alarm data can be analyzed.

Data Query

Equipment information of each monitoring point can be queried through the system, and equipment monitoring data and historical data can be queried.

APP Monitoring

APP can be mobile online monitoring pressure data, real-time query, locate the alarm location, and query the alarm equipment information, etc.

System Features

Clear Structure

The architecture is clear and hierarchical, and the device has low power consumption and long life to meet a variety of needs.

Intelligent

Intelligent judgment of the upper and lower alarm values, and the use of different collection and transmission frequencies according to different alarm levels to achieve intelligent monitoring.

Reliable

Low power consumption design, effective data transmission with fire protection pipeline water pressure monitoring platform via GPRS communication, with strong stability and reliability.

Remote Monitoring

It is possible to configure parameters and set thresholds for the device by remote means, monitor data and query historical data through mobile phone APP, and export data reports.