

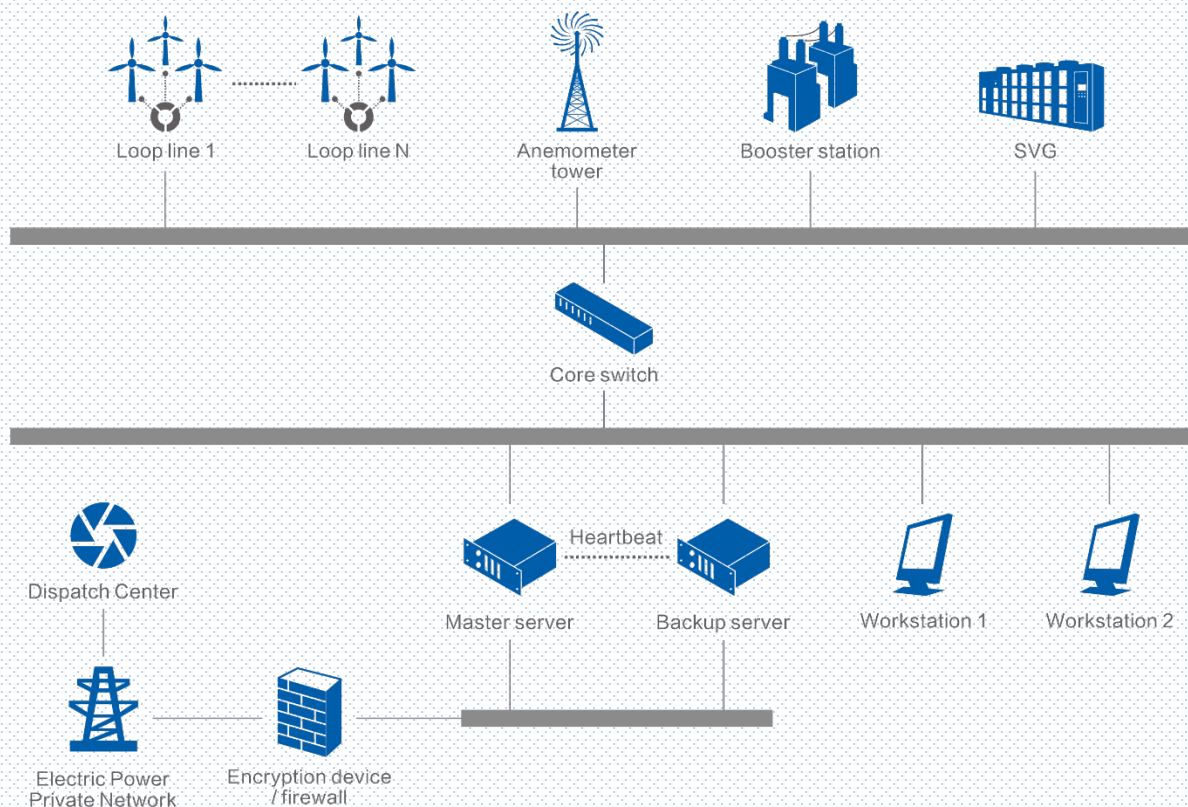
FW013-SCADA Wind Farm SCADA System

- The system collects data from wind turbines and related equipment within the wind farm (such as wind towers, plant transformers, etc.), and centrally monitors their status, performing remote control when necessary.
- Additionally, the collected data is analyzed to generate intuitive reports or charts.

✧ Key Features

User management, group management, multilingual support, wind farm view, wind turbine view, wind turbine information (real-time data categorization, unit event viewing, real-time curve viewing), unit control, event/alarm query, abnormal data query, data snapshot, custom reporting, dual-machine redundancy, system logs (wind turbine status logs, system operation logs), chart statistics (power curve, wind frequency diagram, wind rose diagram, electricity power bar chart), batch control, etc.

✧ Network Topology





✧ Main Parameter

Parameter	Value
Operating Platform	Mobile, Tablet, Desktop (Operating Systems include: Windows, Linux, MacOS)
Development Environment	JAVA
Unit Management	200 WTGs/Site, supports mixed wind farm management for multiple models
Communication Protocol	Modbus TCP, OPC UA, IEC61400-25, IEC60870-5, SVI (BACHMANN), ADS (BECKHOFF), etc., customizable API
Network Topology	Supports multi-level network security zones, Ethernet based on twisted pair, fiber optic, wireless communication
Language	Supports multiple languages (English, Chinese, etc.), switchable as needed
Voice Announcement	Three modes available: repeat announcement, single announcement, no announcement
Data Recording	Full data recording, full lifecycle, event snapshot, operation log
Statistical Charts	Statistical reports, trend charts, bar graphs, wind frequency graphs, power curves, wind rose diagrams, etc.
Operational Safety	User group-based hierarchical management, no operation timeout recovery, double confirmation for critical operations, unit lock
System Security	Hardware encryption, dual hot standby (hard disk I/O level)
MTTR	≤1h
MTBF	≥10000h

✧ System Expansion

- ▶ For user development, we provide standard data interfaces to facilitate the implementation of more diversified functions. In addition, we also offer customized development services to customize our general version according to user requirements.
- ▶ The system is equipped with a communication protocol conversion module that can convert wind field data into other communication protocols and transmit them to other third-party manufacturers.



Multi-model Support

- For wind farms with multiple WTG models, the system can also provide good support. Users can achieve unified monitoring and control of all turbines through this system without the need for differentiated management.
- Data processing flow: raw data acquisition > dimensional conversion > data model conversion > alarm model conversion > control logic conversion > unified business > data interface.

System Security

- The server adopts a disk array based on RAID1. When 50% of the disks fail, it does not affect the normal operation of the system, and the damaged disk supports hot swapping.
- The server adopts a dual-machine hot standby solution at the disk I/O level. When one server suffers a catastrophic failure, the other server can immediately take over the work, ensuring data consistency. The switching process is completely automatic and does not require manual intervention.
- The data interface adopts firewall mechanism and access authentication mechanism to prevent data leakage.

System Interface



