

ZPW-2000S Jointless Track Circuit Equipment



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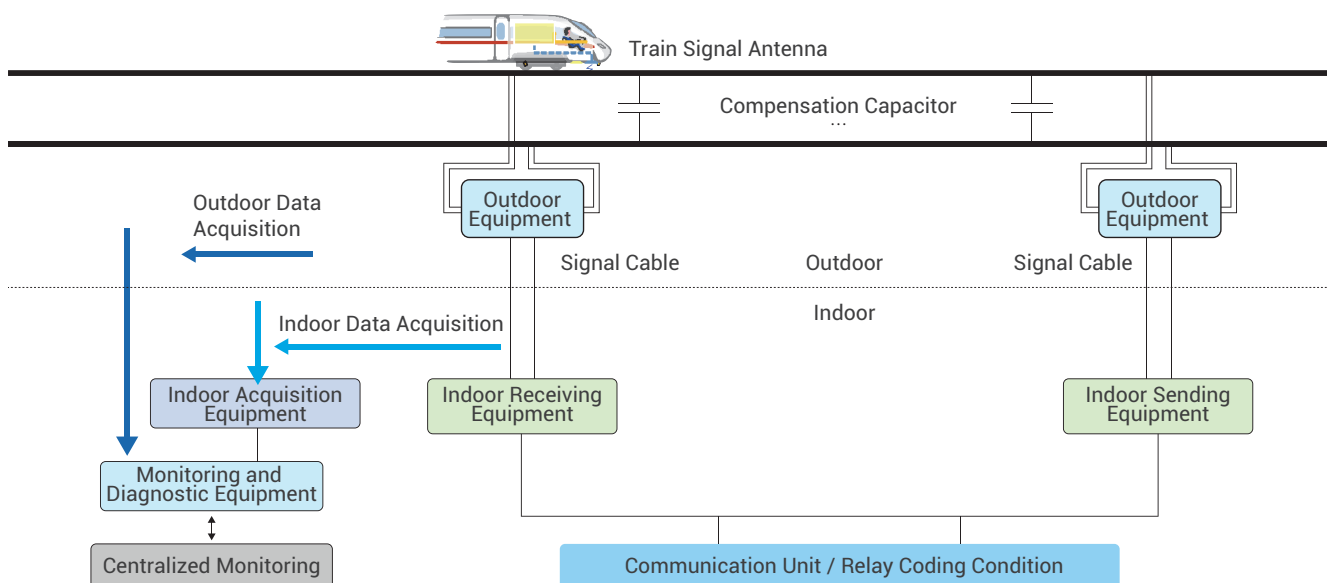
ZPW-2000S equipment, developed by HollySys, supports both communication coding and relay coding, and is applicable to high-speed, conventional, and intercity railway lines.

System Function

ZPW-2000S Jointless Track Circuit is a basic signalling safety equipment that uses the rail as the transmission medium. Its major functions are as follows:

- Provide track section occupied/clear status information for the trackside signalling system.
- Broken rail detection (when a rail break occurs and results in an electrical open circuit).
- Continuously transmit 18 types of real-time low-frequency control information to the onboard equipment.

The block diagram of the track circuit system principle is as follows:



Technical Features

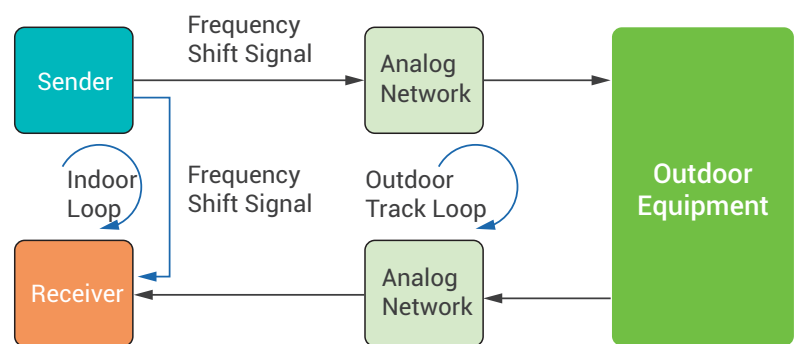
High Safety and Reliability

01. "2oo2×2" Hardware Redundancy Structure

The system adopts a "2oo2×2" hardware redundancy structure, with indoor control units integrating two sets of CPUs. The configured dual control units form a dual-machine operation and hot standby system, ensuring higher safety and reliability.

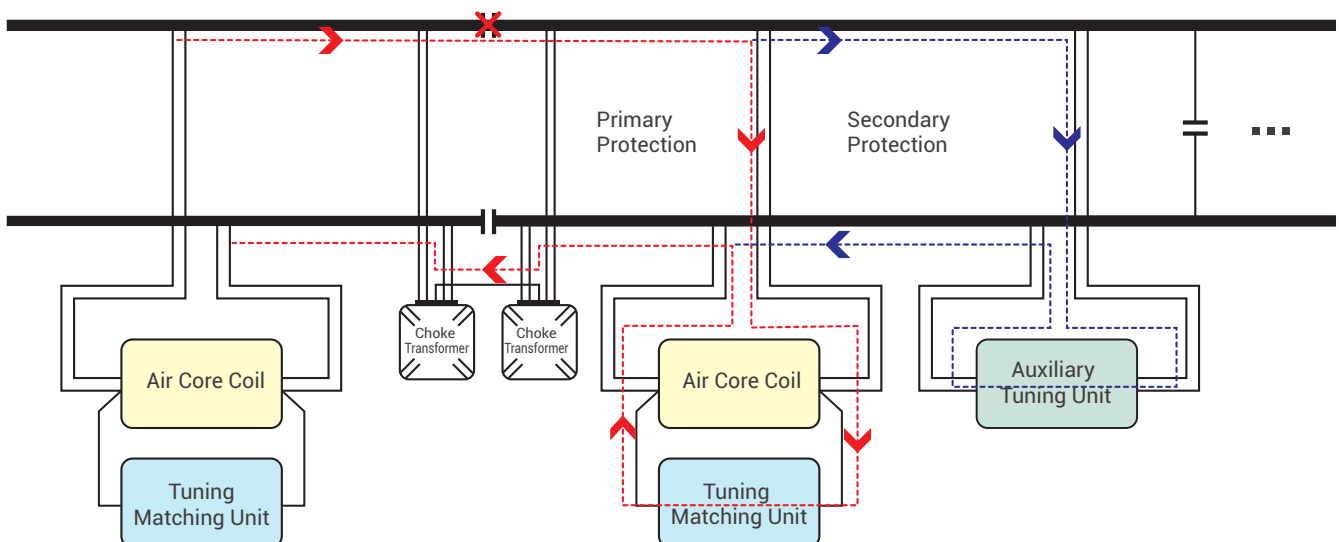
02. Double Safety Check

The system employs double safety check technology with added internal check loops between the sender and the receiver to double check the frequency shift signal of the indoor and outdoor loops. It can protect the crosstalk of frequency shift signal, thereby improving the safety of the system.



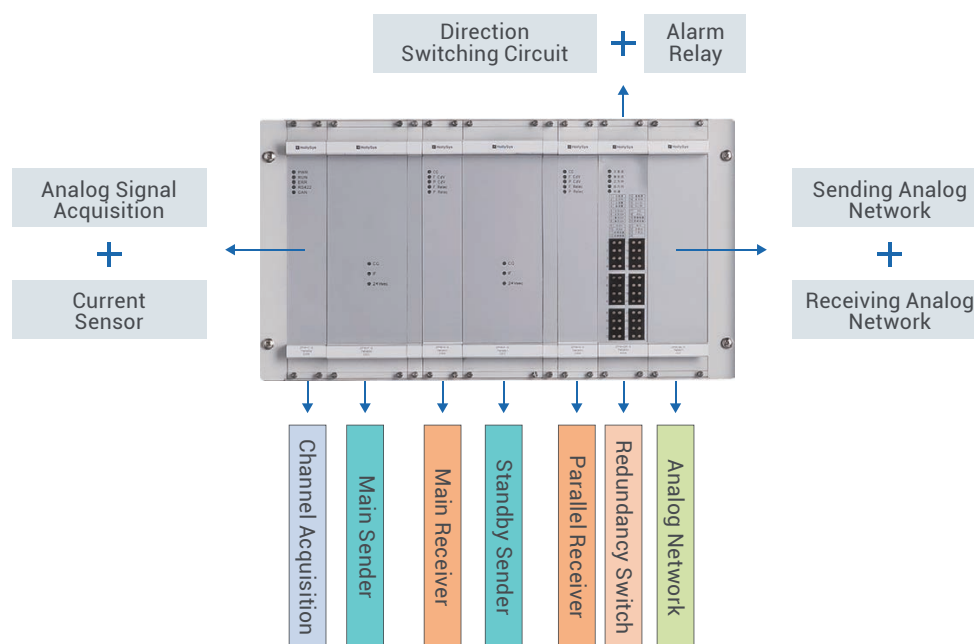
03. Outdoor Equipment Dual Isolation Redundant Protection

The outdoor equipment employs a dual isolation protection design. Auxiliary tuning units and tuning matching units are installed at the mechanical insulation joints at both ends of the platform track. When the mechanical insulation is damaged or the tuning matching unit malfunctions, this can ensure safe transmission of the outdoor frequency shift signal.



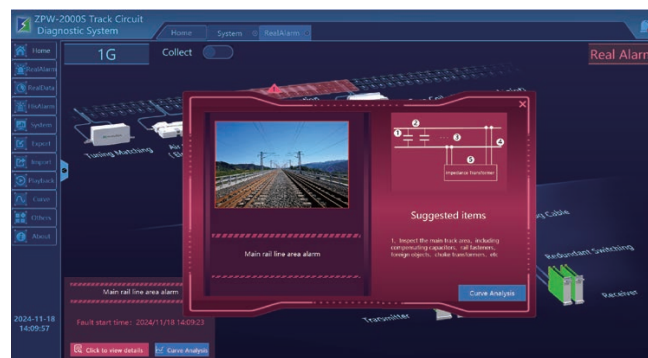
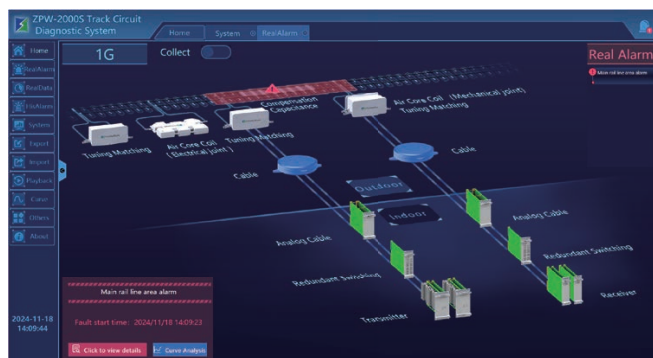
High Integration and Easy Installation

The system adopts an integrated design, with the indoor equipment incorporating an analog network, direction switching circuits, analog signal acquisition circuits, current sensors, and alarm relays. This reduces external cable connections, saves corresponding relays, simplifies installation, effectively reduces project costs, and facilitates engineering design, implementation, and maintenance.



Maintenance Friendly

The system adopts intelligent remote maintenance technology, equipped with monitoring and diagnosis devices. It features indoor and outdoor monitoring, visual display of station and equipment status, data and curve query, early warning of equipment abnormalities, fault area diagnosis, on-site maintenance guidance, historical data playback, and centralized monitoring and communication. These functions enable remote fault diagnosis and precise location of track circuit failures, enhance capabilities in intelligent analysis, operations, maintenance, and decision-making, reduce fault delays, and improve transportation efficiency.



ZPW-2000S Track Circuit Products have been applied to 24 railways worldwide, supporting diverse railway line types with operating speeds ranging from 120 km/h to 350 km/h and covering a total distance of 1286 kilometers.

Applied Cases

- Xingguo-Quanzhou Railway
- Chengxiang Railway Station
- Chengdu-Ya'an Railway
- Shenyang-Dalian Railway
- Zibo-Boshan Railway
- Shijiazhuang-Taiyuan High-speed Railway
- Guiyang South-West Ring Railway
- Jingbian-Shenmu Railway
- Beijing Fengshuang Railway
- Jining-Datong-Yuanping High-speed Railway
- Baotou-Yinchuan High-speed Railway
- Lanzhou-Zhangye No.3 & No.4 Line High-speed Railway

Qualifications and Honors



Certificate of Railway Transport Infrastructure Equipment Manufacturer from National Railway Administration of the People's Republic of China



Railway product certificates from CRCC (China Railway Test & Certification Center)



SIL4 certificate from Ricardo Certification



First Prize for Scientific and Technological Progress from China Communications and Transportation Association



Invention Patents



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