

Rail Transit Substation Automation System

System introduction

Main substation secondary system for urban rail transit

In the centralized power supply mode, each line is equipped with 2 or 3 110kV main substations, including subway, light rail and urban railway.

- Telecontrol communication management machine and A RTU measuring and control device
- Relay protection device, fault recorder, little current ground connection system
- Automatic standby power switch device, frequency voltage emergency control device, security and stability control equipment, oscillation splitting device

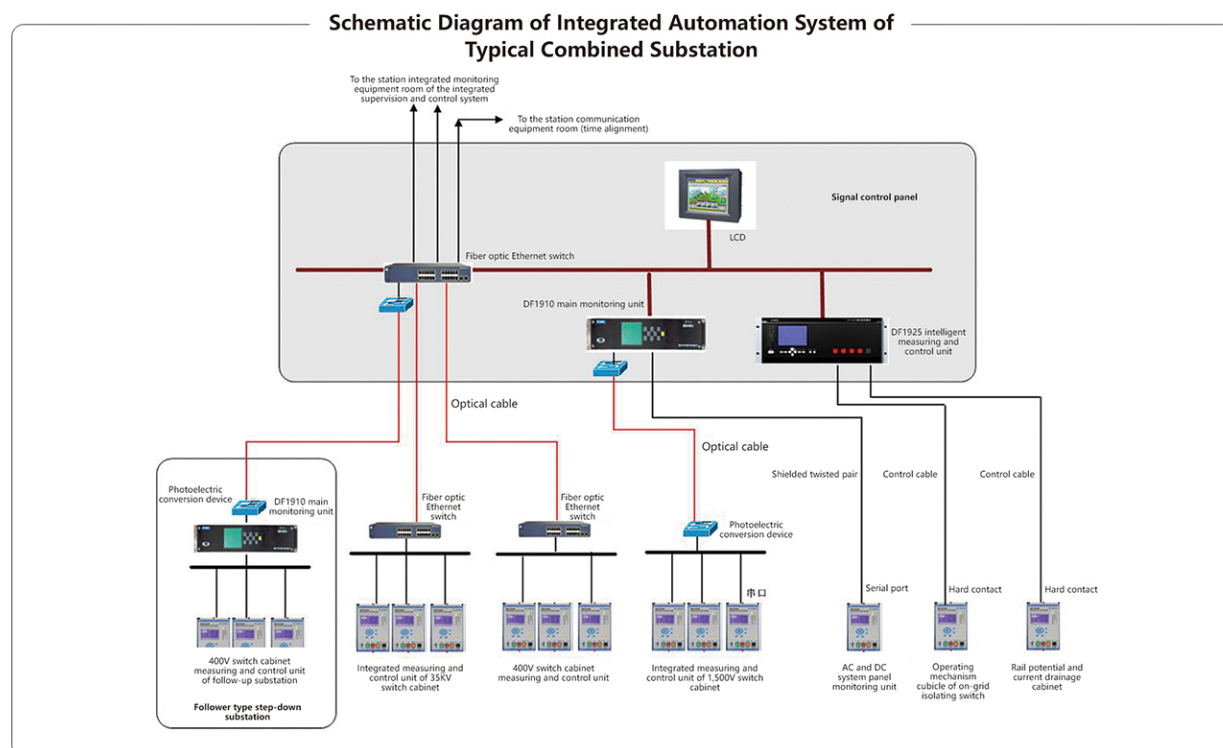


PSCADA system for urban rail transit

Monitor the combined substations, step-down substations and follow-up substations.

- PSCADA system, substation protection system and network security device independently developed by DFE have successfully passed the test of China Academy of Railway Sciences and actually been put into operation.

Substation Automation - System Architecture



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Industry Performance

Urban rail transit performance

Integrated Supervision and Control System (ISCS)	Wuhan Metro Line 3/4, Suzhou Metro Line 4, Changsha Metro Line 1, Shijiazhuang Metro Line 1, Changchun Metro Line 1, Qingdao Metro Line 2/3, Harbin Metro Line 1, Nanjing Metro Line 10 and Guangzhou Metro Line 6
Scheduling network and safety protection equipment	Nanchang Metro Line 2
Static var generator (SVG)	Qingdao Metro Line 3/11, Nanning Metro Line 1, Chongqing Metro and Changsha Metro
Substation PSCADA	PSCADA transformation of Tianjin Metro Line 4, Puyou Station of Shanghai Metro, Eastern Loop Line of CARS National Railway Test Center, Xi'an Metro Line 5 Phase I/2, Wenshan Tram Line 4 and Shanghai Metro Line 2
Environmental monitoring and energy saving control	High/low-voltage integration in air conditioning room of Zhengzhou Metro Line 2, Chongqing Rail Transit Line 4/10 Line/Loop Line, Chongqing Rail Transit Line 2 Phase I, Capital Airport Express of the Beijing Subway, East Section of Beijing Metro Line 15, Chongqing Metro Line 3 Phase II, Chongqing Metro Line 6 Phase I, Branch Line of Chongqing Metro Line 6, Harbin Metro Line 1/2 and West Section of Beijing Metro Line 15
Power supply scheduling system for urban rail transit	Shenzhen Metro NOCC power supply scheduling system and Wenshan Tram Line 4
Video security	Main substation of Chengdu Metro Line 13
AC/DC power	Beijing Subway Capital Airport Express, Beijing Metro Line 14/15/16, Hunnan Tram, Chongqing Line 2/3/6, Qingdao Metro Line 3, Harbin Metro Line 3, Nanchang Metro Line 2 Phase I, Harbin Metro Line 1/2, Modern Tram in Hunnan New District of Shenyang
Intelligent O&M system for power supply	Pilot of Beijing Metro Line 8 and Shanghai Metro Line 2
Intelligent patrol robot	Pilot of Qingdao Metro Line 11

Railway performance

Substation protection monitoring	Changbai Railway - External Power Supply Project, External Power Supply Project of Da'an Traction Station in Baicheng City, Jilin Province, External Power Supply Project of Baicheng - Arxan Railway-Jilin Baicheng Western Traction Substation, External Power Supply Project of Tongliao - Ranghulu Railway-Jilin Songyuan Qian'an Traction Station, Siping - Qiqihar Railway-Baicheng Kaitong Traction Station, Zhenlai Traction station, Tantu traction station, Chongqing - Guiyang Railway-Chongqing Western Traction Station Project, Chongqing - Guiyang Railway - Chongqing Shuangshan Substation Project, Wanhua Railway Substation, Xi'an - Chengdu High-Speed Railway Traction Station, Eastern Loop Line of CARS National Railway Test Center
Primary switch cabinet	Beijing Pingxifu Depot, Distribution Station of Shenhua Railway Huanghua Port, State Grid, China Southern Power Grid
AC/DC power supply panel	Datong - Qinhuangdao Railway, Shenyang - Tieling Intercity Railway, State Grid and China Southern Power Grid
Electric energy metering	National Railway Administration (procurement and installation of State Grid), State Grid, China Southern Power Grid
Substation RTU	Eastern Loop Line of CARS National Railway Test Center, State Grid, China Southern Power Grid
Substation auxiliary monitoring	State Grid, China Southern Power Grid
Substation and line online monitoring system	Online temperature measurement at Yamenkou Substation of China Railway Beijing Group Co., Ltd., State Grid, China Southern Power Grid
Energy management system	State Grid, China Southern Power Grid
Unattended substation system integration	Yamenkou Substation of China Railway Beijing Group Co., Ltd., State Grid, China Southern Power Grid