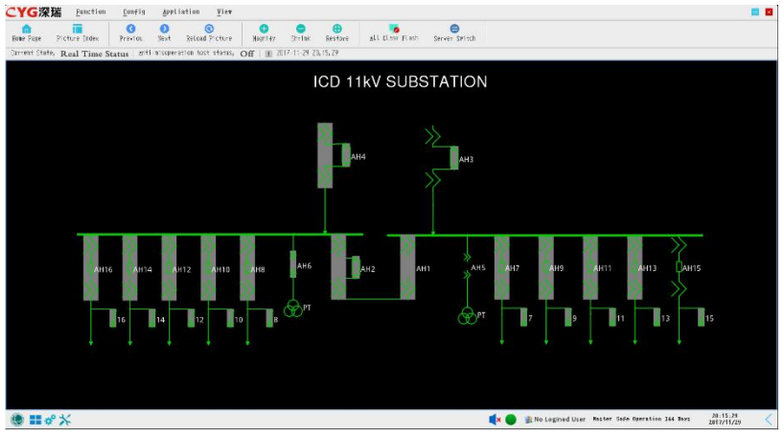
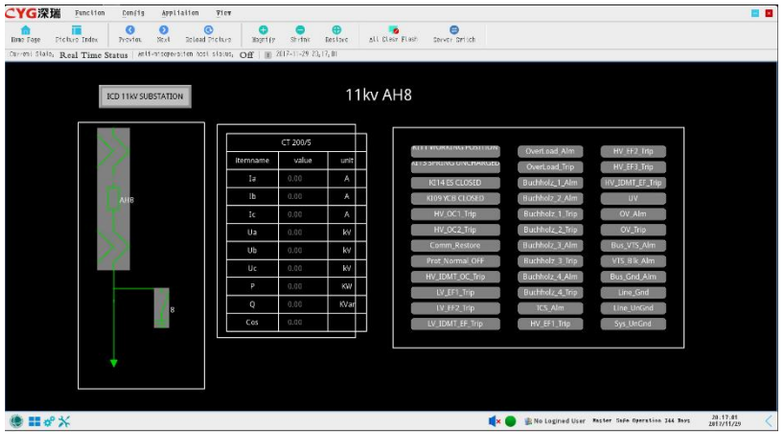
PRS-7000

General Application

PRS-7000 integrated monitoring system is an integration of the advanced distributed-type network technology, object-oriented database technology and cross-platform visualization technology, fully complied with multiple international standards (IEC60870-5-103, IEC-61850, etc.). PRS-7000 fully adheres to the basic requirements for station information digitalization, communication platform networking and information sharing standardization.



❖ **Main Diagram**



❖ **Bay Diagram**

Feature

Item	Parameter
Platform	Crossing the Unix/Linux/Windows operating system platform
Database	On-line adding, deleting and modifying various data
Module	Includes data configuration (modeling) tool, database system supporting dynamic model, communication unit configuration tool, graphic configuration, communication protocol processing module, data bus module, system function redundant control module, statistical calculation, SCADA module, etc.
Graphic	The graphic system supports some standard graphic formats (SVG, CIM/G, etc.), with good interaction
Analog	Support the protocol IEC60870-5-103, IEC61850 and GOOSE, constantly measures and calculates voltage, current, power and frequency.
Anti-maloperation	Selects measuring points from automation data and edits anti-maloperation attributes, including close/open rule, operational terms, etc.

Functions

Item	Description
Running Monitoring	Power grid monitoring, Equipment monitoring, Visual show, Remote browsing
Operating & Control	Station control, Dispatching control, Interlock, Reactive power optimization
Alarm & Analysis	Data identification, Fault analysis
Running Management	Authority management, Equipment management, Setting value management, Maintenance management
Auxiliary Application	Power monitoring, Environment monitoring, Auxiliary control
Sequence control	Automatic control, Automatic check and Verification, Visualizing the operation process, Follow the interlocking rules of the breaker
Switch State Monitoring	When we locate the error device, it is always a trouble to find the cable connected. However, the SNMP function can easily diagnose the faulted port.
Intelligent alarms and analysis decisions	Classification and filtering of alarm information, protection records, event records, and expert databases can reduce unscheduled outages and lifetime maintenance costs, increase equipment life expectancy and improve maintenance skills.
Economic operations and control	Intelligent load control, Intelligent reactive power optimization, Interaction with the dispatching center

Technical Specifications

System Response Index

No.	Item		Unit	System Capacity
1	Event sequence record resolution (SOE)	Station layer	ms	≤2
		bay layer measuring and control unit	ms	≤1
2	Over deadband transmission time of analog quantity (to station layer)		s	≤2
3	Status value change transmission time (to station layer)		s	≤1
4	Response time of analog information (from I/O input terminal to remote communication device output)		s	≤3
5	Status quantity change response time (from I/O input end to remote communication device outlet)		s	≤2
6	Time from generating to outputting of control execution command		s	≤1
7	Picture response		s	≤1
8	Image refreshing period		s	≤1
9	Scada master-slave switching time		S	≤10

System Reliability Index

No.	Item		Unit	System Capacity
1	Measuring error of current, voltage		%	≤0.2
2	Measuring error of active power and reactive power		%	≤0.5
3	Measuring error of grid frequency		Hz	≤0.01
4	Over deadband transmission setting value of analog quantity		%	<0.1 rated value, each point can be adjusted
5	Availability ratio of dual-host system		%	≥99.9
6	Response ratio of remote signal		%	100
7	Accuracy of control operation		%	100
8	Mean time between failures (MTBF) in station layer		h	≥30000
9	Mean time between failures of bay level measure and control unit		h	≥30000
10	Mean load rate of CPU in each workstation	Under normal condition (within 30min)	%	≤30
11		Power system breakdown (within 10s)	%	≤50
12	Mean load rate of network	Under normal condition (within 30min)	%	≤20
13		Power system breakdown (within 10s)	%	≤40

Technical Specifications

No.	Item		Unit	System Capacity
14	Time from automatic switching to functional recovery of dual host		s	≤15
15	Accuracy of synchronous phase	Amplitude	%	≤0.2
16		Phase angle	°	≤0.2
17		Time synchronization	μs	≤1
18	Storage of synchronous phase	Continuous recording time	day	≥14

System Load Rate Index

No.	Item		Unit	System Capacity
1	CPU mean load rate of each workstation	Under normal condition (within 30min)	%	≤30
2		Power system breakdown (within 10s)	%	≤50
3	network average load factor	Under normal condition (within 30min)	%	≤20
4		Power system breakdown (within 10s)	%	≤40

System Working Environment and Power Supply Index

No.	Item	Unit	System Capacity
1	AC voltage	V	176V~264V AC
2	Cycle	HZ	48Hz~52Hz
3	Ground resistance	Ω	<0.5Ω
4	Temperature	℃	≤55℃
5	Related humidity	%	5%~95%
6	Ambient environment	None	No explosion hazards, no corrosive gas, no conducting dust, no violent vibration and impulse source

System Capacity Index

No.	Item		Unit	System Capacity
1	Capacity of real-time database	Analog quantity	Sample point	≥50000
		Status value	Sample point	≥100000
		Remote control	Sample point	≥10000
		Calculated quantity	Sample point	≥2000
2	Storage capacity of historical database	Historical curve sampling interval	min	1~30 (Adjustable)
		Historical trend curve, storage duration of daily report, monthly report and annual report	year	≥2
		Number of historical trend curves	PCS.	≥300
3	Synchronous vector storage	Continuous recording time	day	≥14

Technical Specifications