

# Automatic Control System



## AS-900 Series Power Distribution Automation Terminal Device

### **About the Product:**

AS-900 Series Power Distribution Automation Terminal Device is developed by Shanghai Jinzhong Group Australia Shanghai Electrical Appliances Co. Ltd to meet the needs of domestic power distribution network. It is remote terminal device of power distribution automation. It can be used as outdoor power distribution switch intelligent terminal device (FTU-Feeder Terminal Unit) carries out remote monitoring, failure detection, failure isolation, accident restoration and load control of the power system and equipments. It is applied to the implement and reform of power distribution automation in various urban, rural and enterprises grids. It also can automatically monitor, control and protect the feeder switches of circuit breakers, load switches, reclosers and partition devices. It can be combined with the communication system into ring or non-ring net power distribution automation system with communication channels.

The product boasts compact structure, good expansion performance and strong anti-interference and anti-shake abilities. Users can configure the device flexibly to reach the best performance price ratio. AS-900 is composed of core control unit, AS-910 and outdoor pole-mounted control box as well as other components. Optional components include fiber access equipment, maintenance-free lead-acid batteries and high performance energy storage capacitors, etc.

**Product Feature** It adopts international leading failure isolation independent patent technology.

In the absence of specific requirements to the system, the patent technology can accurately, rapidly isolate failures and resume power supply without delay. Currently, it is the most advanced international distribution network automation technology.

### **Leading Technical Standards**

The parameters of the device have reached or even exceeded domestic and international latest standards in electrical power field, which can operate under harsh environments and satisfy majority users functional requirements.

#### **Advanced CPU Hardware Platform**

It adopts advanced 32-bit microprocessor chip and 10/100M high speed network communication. Meanwhile, it is configured with 2M bits FLASH space, 16M bits SDRAM space and 512K bits non-losable SRAM space. Advanced design concepts allows strong expansion and high performance to carry out powerful failure detection, communications, maintenance, diagnostics, data storage and other services management capabilities.

#### **High-precision synchronization technology**

It adopts software and hardware combined frequency sampling and tracking technology, which provide theoretical basis for FFT transfer. The 12-channel high-density 16-bit AD synchronous sampling not only ensures the accuracy of the frequency signal sampling, and also guarantees the sampling accuracy of harmonic signal.

#### **Accurate temperature measurement and compensation technology**

Accurate temperature measurement technology and temperature amendment programmes with high-performance transformer as well as industrial chip AD enable voltage and current measurement accuracy of the device reach 0.5 level under various temperature. It can provide a theoretical guarantee for the failure location and grounding inspection of the power distribution network.

#### **Advanced non- master station failure isolation technology**

It adopts independent patent technology. When setting the non-master station interference failure isolation function, it can automatically exchange failure information between adjacent FTU and complete failure isolation and service restoration functions. If some FTU decommission due to one reason or another during the accident, the failure isolation technology can guarantee the minimization of failure isolation, and would not result in the expansion of the accident.

#### **Powerful Communications Capability**

Besides a 10M/100M interface, the device has installed another two RS232/485 serial interfaces to facilitate the communication with other intelligent devices. Each serial interface and network interface has independent communication rules. In terms of networking, each device can directly access to the system by the network and the information will be automatically uploaded to the sub-stations and main stations of power distribution. It is genuinely of multi main structures and high real-time capabilities.

Complete Communication Protocol     The network supports TCP and UDP protocols. The application layer supports DT92、 IEC870-5-101、 103、 104、 DNP3.0 rules which can be expanded if necessary.

### **Improved power supply management mode**

The power supply of the device adopts leading switch technology which realizes multi-circuit AC, DC, auto-switch of the batteries and intelligent management. It adapts for special and diversified power supply of current power distribution network to guarantee reliable power supply of the system. It permits multi-circuit isolate power supply/charge to achieve continuous charging and diagnostic maintenance of 24V batteries. It supports activation management of lead-acid batteries and monitors voltage and current of charging or discharging batteries.

### **Good anti-lightening effect**

With the consideration of operation environment of the device, special safety protection function is set for the input and output terminals which has good anti-lightening effect. Users can install professional anti-lightening terminal if necessary.

### **Independent operation circuit and flexible operation power supply**

The operation circuit of the device adopts high performance super-mini relay, which is compact and reliable. It is independent and can directly drive the switch to work. The capacity of the control access is up to 10A/250VAC. There is special voltage boosting circuit inside the device which can automatically boost the working voltage to DC220V/110V/48V/24V switch operation voltage.

### **Powerful FT management function**

The device has powerful functions: Not only general monitor, control/remote brake function as: remote measure, remote communication, remote control and communications but also failure detecting/protection functions as: overload current and zero-order current. It also has various feeder wire failure processing modes which can be configured flexibly so as to function in different occasions.

### **Real-time wave record function and incidence record with huge capacity**

The device has dispersed wave record function which can realize the remote transmission of failure waveform data for failure analysis. The failure wave record adopts standard COMTRADE format with 2s total recording time. In addition, the SOE record, protection report text record, self-detection record of the device can respectively store 512 records.

### **Comprehensive backstage maintenance software**

The maintenance software is not only easy to handle but also can provide on the spot or remote waveform analysis, equipment online upgrades, parameters and definite values browse or modify as well as visit history data: SOE, protection report text, self-detection information, history load curve and so on.

# AS-4000 Integrated Substation Automation System Network Chart

设备节点名称	设备地址
1. 变电站	10.10.10.1
2. 变电站	10.10.10.2
3. 变电站	10.10.10.3
4. 变电站	10.10.10.4
5. 变电站	10.10.10.5
6. 变电站	10.10.10.6
7. 变电站	10.10.10.7
8. 变电站	10.10.10.8
9. 变电站	10.10.10.9
10. 变电站	10.10.10.10
11. 变电站	10.10.10.11
12. 变电站	10.10.10.12
13. 变电站	10.10.10.13
14. 变电站	10.10.10.14
15. 变电站	10.10.10.15
16. 变电站	10.10.10.16
17. 变电站	10.10.10.17
18. 变电站	10.10.10.18
19. 变电站	10.10.10.19
20. 变电站	10.10.10.20
21. 变电站	10.10.10.21
22. 变电站	10.10.10.22