



CHNT

正泰电气

自动化产品总览

Automation Product Overview

智能电气与能效解决方案提供商

Smart Electricity and Energy Efficiency Solutions Provider

SHENFAI

2020/2021

自动化产品总览

Automation Product Overview

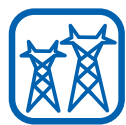


正泰集团

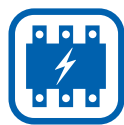
- 正泰集团是我国工业电器龙头企业和新能源领军企业，年销售额700多亿元，员工3万多名。
- 产业覆盖“发、输、变、配、用、储”电力设备全产业链，并布局城市轨道交通、能源装备制造业、储能新材料、能源互联网、投融资平台与企业孵化园等领域。
- 产品畅销世界140多个国家和地区，并已进入欧洲、亚洲、中东和非洲等国际主配套市场。
- 集团综合实力名列中国民营企业500强前茅。



新能源



输配电设备



低压电器



仪器仪表



自动化



建筑电器



高端装备



汽车科技



投资金融



正泰电气

- 松江工业园是正泰集团总投资35亿元，占地1350亩的输配电设备产业基地，是上海市20家重大产业升级项目之一。
- 目前注册资金为8.85亿元，拥有员工4850余人。

产品范围

- 电力变压器 (750kV级及以下)
- 气体绝缘金属封闭开关设备 (GIS)
- 中低压开关成套设备 & 箱式变电站
- 高压电容器
- 隔离开关
- 电线电缆
- 母线槽
- 中压开关
- 避雷器、绝缘子、熔断器
- 中高压互感器
- 配电自动化
- 低压终端箱
- 电力工程总包



BUSINESS SCOPE

Power Transmission & Distribution
Equipment & EPC Service



CHINT Group

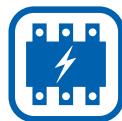
- CHINT Group is a leading enterprise in industrial electrical equipment and new energy industry in China, with annual sales of more than RMB 70 billion and employees of over 30,000.
- Its industry covers the entire industrial chain of power equipment from power generation, transmission, transformation, distribution to power utilization, and it also involves in such fields as urban rail transit, energy equipment manufacturing, new energy storage materials, energy internet, platform of investment and financing, and enterprise incubator park.
- Its products are sold well in more than 140 countries and regions and have entered international main supporting markets, including Europe, Asia, the Middle East and Africa, etc.
- The Group ranks at the top of the List of China's Top 500 Private Enterprises for its comprehensive strength.



New energy



Power transmission
& distribution equipment



Low-voltage
apparatus



Instrumentation



Automation



Building electrical
appliances



High-end
equipment



Automobile science
& technology



Investment &
Finance



PRODUCT RANGE

Power T&D Equipment up to 1000kV



CHINT ELECTRIC

- Shanghai Industrial Park, one of 20 major industrial upgrading projects in Shanghai, is a power transmission and distribution equipment industrial base of CHINT Group, with a total investment of RMB 3.5 billion and an area of 1,350 mu.
- It currently has a registered capital of RMB 885 million, and has over 4,850 employees.

Range of Products

- Power transformer (750 kV and below)
- Gas-insulated metal-enclosed switchgear (GIS)
- Medium and low voltage switchgear assembly & box-type substation
- High-voltage lightning arrester and insulator
- High-voltage capacitor
- Power distribution automation
- HV/LV busbar
- HV circuit breaker
- Disconnecter & MV switch
- LV terminal box
- HV transformer
- Electric wire and cable
- Power engineering EPC

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自动化类 Automation class

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箱变测控装置 Box transformer measurement and control device

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NZK328

智能复合开关 Intelligent combination switch

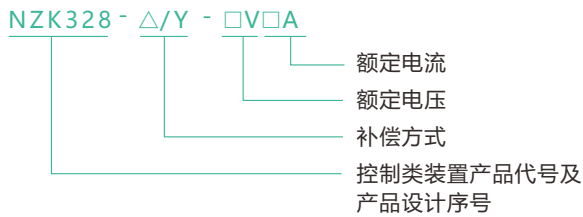
Protection function

- Voltage fault phase loss protection: to power the system voltage in case of phase loss, the switch refuses to turn on;
- If there is a phase loss after connection, the switch will automatically turn off;
- Power supply phase loss protection: When the working power supply works in case of phase loss, the switch refuses to close; If there is a phase loss after connection, the switch will automatically turn off.
- Undervoltage protection: When the voltage is $\leq 20\%$ of rated voltage (220V), the switch refuses to turn on;
- Self-diagnostic fault protection: The system automatically monitors the operation of thyristors and magnetic latching relays.
- In case of failure, the switch will refuse to turn on or is automatically disconnected;
- Power failure protection: In the case of sudden power outage during power-on, the switch will trip and is automatically disconnected; no harmonic wave injection: As the instant connection is triggered by the thyristor zero crossing, and the turn-on and connection is controlled by the relay after delay, but no harmonic wave will not be generated when the turn-on and connection is controlled by the relay;
- Low power consumption: As the magnetic latching relay is used, the control device only works at the switching moment without electricity consumption usually. Furthermore, as the contact resistance of the magnetic latching relay is miniature, no heating occurs, so no cooling fin or fan is required, thus reducing the cost, which completely avoid the burns of thyristors without damage to other running electrical devices, to truly achieve the purpose of saving energy and reducing consumption;
- Optoelectronic isolation between the input signal and the combination switch: With the strong anti-interference ability and the safe and reliable operation, the product uses advanced smart control technology and the latest electronic components, having the excellent performance advantages in terms of inrush current, safety and reliability compared to similar products.

保护功能

- 电压故障缺相保护：系统电压缺相供电时，开关拒绝闭合；接通后若出现缺相则自动退投；
- 电源电压缺相保护：工作电源缺相供电时，开关拒绝闭合；接通后若出现缺相则自动退投；
- 欠压保护：电压 \leq 额定电压(220V)的20%时开关拒绝闭合；
- 自诊断故障保护：系统自动监控可控硅、磁保持继电器的运行状态，若其出现故障，则拒绝闭合或自动退投断开；
- 停电保护：接通后遇突然停电时，自动跳闸断开；无谐波注入：由于导通瞬间是由可控硅过零触发，延时后由继电器吸合、导通，而继电器吸合导通就不会产生谐波；
- 功耗小：由于采用了磁保持继电器，控制装置只在投切动作瞬间耗电，平时不耗电；且由于磁保持继电器的接触电阻小，因而不发热，不用外加散热片或风扇，降低了成本。彻底避免了可控硅的烧毁现象，同时也对同机运行的其它电器不造成危害，真正达到了节能降耗的目的；
- 输入信号与复合开关光电隔离：抗干扰能力强，工作安全可靠，产品采用先进的智能控制技术与最新的电子元器件，与同类产品相比，在涌流和安全性方面具备性能优势。

型号及含义



其中:

NZK - 表示控制类装置代号;

328 - 产品设计序号;

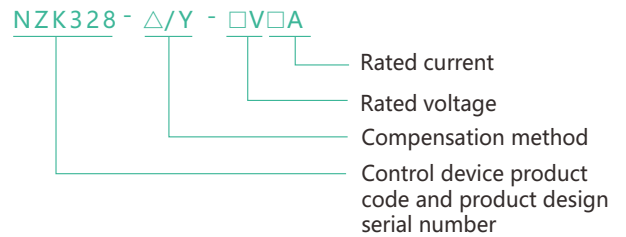
Δ/Y 表示补偿电容器接法 - 其中“ Δ ”表示补偿电容器为共补的三角形接法,“Y” - 表示补偿电容器为分补的星形接法;

V表示开关的额定电压;

A表示本开关的额定电流量。

如NZK328 - Δ 380V45A, 表示智能复合开关, 补偿电容器是三角形接法共补, 额定电压为380V, 额定电流值为45A。

Model and meanings



Where:

NZK- means the control device code;

328- product design serial number;

Δ/Y means the compensation capacitor connection-where " Δ " means that the three-phase compensation capacitor uses a triangle connection; "Y"-means that the single-phase compensation capacitor uses a star connection;

V means the rated voltage of the switch;

A means the rated current value of this switch.

For example, NZK328- Δ 380V45A means that the intelligent combination switch is used, the compensation capacitor uses a triangle connection of three phases, rated voltage is 380V, and rated current is 45A.

主要技术参数和性能指标

工作环境条件

- 环境温度: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$
- 相对湿度: 40°C 时, 20%~90%

额定电压、工作电源

- 额定电压: 380V/220V三相四线交流50Hz
- 允许偏差: 三相电压同步变化不大于 $\pm 20\%$
- 波形为正弦波, 失真度小于5%
- 额定频率: $50\text{Hz} \pm 5\%$
- 工作电源: 220V, 50Hz

安全保护功能

- 电压故障缺相保护
- 电源电压缺相保护
- 欠压保护
- 自诊断故障保护
- 停电保护

主要技术指标

- 使用寿命: 10万次
- 相数: 三相(Δ 型接法)单相(Y形接法)
- 控制容量: 三相共补 $\leq 50\text{kVar}$
- 单相分补: $\leq 17\text{kVar}$
- 功耗: $\leq 3\text{VA}$
- 接触压降: $\leq 100\text{mV}$
- 接点耐压: $\geq 1600\text{V}$
- 响应时间: $\leq 100\text{ms}$
- 每次接通与关断间隔: $\geq 1\text{s}$
- 连续两次接通间隔: $\geq 120\text{s}$
- 绝缘等级: 在正常大气条件下, $\geq 10\text{M}\Omega$
- 启动电压: 直流: 12V; 交流: 220V
- 输入阻抗: $\geq 6.8\text{k}\Omega$
- 导通阻抗: $\leq 0.003\Omega$

Main technical parameters and performance indicators

Working environment conditions

- Ambient temperature: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$
- Relative humidity: 20% to 90% at 40°C

Rated voltage, working power

- Rated voltage: 380V/220V three-phase four-wire AC 50Hz
- Allowable deviation: the synchronous change of three-phase voltage is not more than $\pm 20\%$
- The waveform is sine wave with the distortion of less than 5%
- Rated frequency: $50\text{Hz} \pm 5\%$
- Working power supply: 220V, 50Hz

Safety protection function

- Voltage fault phase loss protection
- Power supply phase loss protection
- Undervoltage protection
- Self-diagnosis fault protection
- Power failure protection

Main technical indicators

- Service life: 100,000 times
- Number of phases: three-phase (Δ - connection); single-phase (Y-connection)
- Control capacity: three-phase compensation $\leq 50\text{kVar}$
- Single-phase compensation: $\leq 17\text{kVar}$
- Power consumption: $\leq 3\text{VA}$
- Contact pressure drop: $\leq 100\text{mV}$
- Contact withstand voltage: $\geq 1600\text{V}$
- Response time: $\leq 100\text{ms}$
- Each turn-on and turn-off interval: $\geq 1\text{s}$
- Two consecutive connection intervals: $\geq 120\text{s}$
- Insulation class: $\geq 10\text{M}\Omega$ under normal atmospheric conditions
- Starting voltage: DC: 12V; AC: 220V
- Input impedance: $\geq 6.8\text{k}\Omega$
- Turn-on resistance: $\leq 0.003\Omega$



NZK329

功率因数智能测控装置 Power factor controller

Product functions and features

NZK329 power factor controller is a cost-effective and fully functional low-voltage distribution network smart measurement and control management device having the functions of voltmeter, ammeter, power factor meter, auto voltage recorder, voltage quality monitor, active energy meter, inactive energy meter, harmonic measurement and control, and reactive power compensation controller.

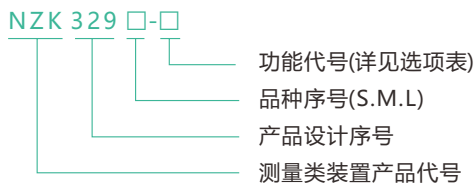
NZK329 power factor controller supports RS232/RS485 communication. Cooperated with its humanized background software, the various indicators such as power supply quality, statistical power supply reliability, voltage eligibility rate, and load rate can be comprehensively analyzed, data columns can be displayed and the curve is drawn.

产品功能与特点

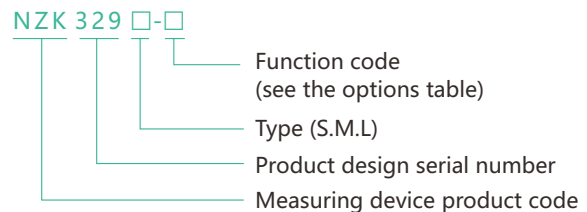
NZK329功率因数智能测控装置集电压表、电流表、功率因数表、电压自动记录仪、电压质量监测仪、有功电度表、无功电度表、谐波监测、无功补偿控制器等功能于一体，是性价比高、功能齐全的低压配电网智能监测管理的装置。

NZK329功率因数智能测控装置支持RS232/RS485通讯。与其人性化的后台软件配合，能综合分析供电质量、统计供电可靠性、电压合格率、负荷率等指标，并显示各种数据列表、绘制曲线图。

型号及含义



Model and meanings



NZK329

NZK329S/M/L系列功率因数智能测控装置选型表
NZK329S/M/L power factor controller options table

表1 NZK329选型表
Table 1 NZK329

NZK329							
品种序号	Type						
基本型	Basic type	S					
扩展型	Extended type	M					
增强型	Enhanced type	L					
控制输出		Control output					
控制接触器	Control contactor			1			
控制复合开关	Control combination switch			0			
输入信号		Input signal					
三相	Three-phase				1		
单相	Single-phase				0		
以下功能选项，只针对选择NZK329M（扩展型）的用户 The following functional options are only available for users who choose NZK329M (extended type)							
通讯		Communication					
有通讯	With communication					1	
无通讯	Without communication					0	
谐波检测		Harmonic detection					
有谐波检测	With harmonic detection						1
无谐波检测	Without harmonic detection						0
数据统计		Data statistics					
有数据统计检测	With data statistics detection						1
无数据统计检测	Without data statistics detection						0

例如:

For example:

NZK329 -

表示: NZK329M功率因数智能测控装置(扩展型), 控制复合开关、三相输入、有通讯功能、有谐波测量、无数据统计检测。

Meaning: NZK329M power factor controller (extended type) is used, with control combination switch, three-phase input, communication function, harmonic measurement and without data statistics detection.

主要技术参数和性能指标

工作贮存条件

- 工作电压: 176-264V/50Hz
- 工作温度: -25°C ~ +55°C
- 大气压力: 79.5 ~ 106.0kPa(海拔2000m及以下)
- 相对湿度: 40°C时, 20% ~ 95%
- 贮存温度: -40 ~ 70°C
- 贮存湿度: <95%
- 功耗: <5VA
- 周围环境: 无腐蚀性气体, 无导电尘埃, 无易燃易爆介质存在

接口

- 测量回路: 6路
- 控制回路: 12/18路(复合开关及接触器)
- 显示: 128×64液晶/数码管
- 通讯: RS485, RS232各一路

安装方式

- 嵌入式

Main technical parameters and performance indicators

Working storage conditions

- a) Working voltage: 176-264V/50Hz
- b) Operating temperature: -25°C ~ +55°C
- c) Atmospheric pressure: 79.5~106.0kPa (altitude 2000m and below)
- d) Relative humidity: 20% to 95% at 40°C
- e) Storage temperature: -40 to 70°C
- f) Storage humidity: <95%
- g) Power consumption: <5VA
- h) Ambient environment: no corrosive gas, no conductive dust, no flammable and explosive medium

Interface

- a) Measurement circuit: 6
- b) Control circuit: 12/18 circuits (combination switch and contactor)
- c) Display: 128×64 LCD/digital tube
- d) Communication: RS485, RS232

Installation method

- a) Embedded

配置选型说明

本装置具有NZK329L、NZK329M、NZK329S三种型号，可供不同补偿容量用户选择使用。其中NZK329L是一种全新概念的功率因数智能测控装置(无功补偿控制器)，集无功补偿控制(支持远方控制)、数据统计、测量指示功能为一体，NZK329S为传统意义上的无功补偿控制器。下表中的基本功能包括：控制功能、液晶显示、数据显示功能(电压/电流畸变率除外)、参数设置功能、事件记录、输出编码等。

Configuration Selection Instructions

This device has three models, namely NZK329L, NZK329M and NZK329S, for selection by the user according to the different compensation capacity. The NZK329L is a newly conceptual power factor intelligent measurement and control device (reactive compensation controller) integrating reactive power compensation control (supporting remote control), data statistics and measurement indication functions. NZK329S is a reactive compensation controller traditionally. The basic functions in the table below include: control functions, liquid crystal display, data display function (except for voltage/current distortion rate), parameter setting function, event recording, and output encoding.

序号 No.	功能及代号 Function and code	NZK329L	NZK329M	NZK329S
0	基本功能 Basic function	√	√	√
1	谐波检测 Harmonic detection	√	可选择 Optional	
2	通讯功能 Communication function	√	可选择 Optional	
3	数据统计 Data statistics	√	可选择 Optional	
4	单相三相 Single phase / three phase	√	可选择 Optional	可选择 Optional
5	控制输出: 继电器触点复合开关 Control output: relay contact combination switch	√	√	√

NZB379S



NZB379S

电动机智能控保装置

Protection and control device of motor

Overview

This device is used to monitor, measure and protect the low-voltage motor, forming a control system of the motor together with the AC connector, suitable for the comprehensive measurement control and protection of various 380V low voltage asynchronous motor with the power of 400kW and below. It is widely used in three-phase power supply system in the fields of petroleum, chemical industry, machinery, textile and smelting industries, especially suitable for the motor control center (MCC) cabinet with a higher integration level. This device can be used as an independent motor protector.

概述

本装置实现对低压电动机的监视、测量、保护，与交流接触器组成电动机控制系统。适用于400kW以下各种380V低压异步电动机的综合测控和保护。广泛应用于石油、化工、机械、纺织、冶炼等领域的三相供电系统中，特别适合在集成度要求较高的电动机控制中心(MCC)柜上使用。可以单独作为电动机保护器使用。

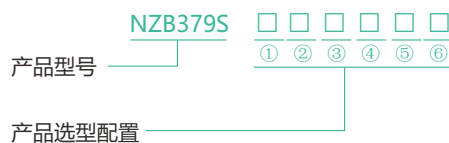
Features

- With a rich protection function to achieve various protections in case of too long startup time, short circuit, definite-time over-current, stall, electric leakage, underload, and imbalance/phase loss.
- With the standard DC 4~20 (mA) analog output interface to provide a great convenience to DCS system for measurement and control the field equipment.

特点

- 具有丰富的保护功能，实现启动时间过长、短路、定时限过流、堵转、漏电、欠载、不平衡/缺相等多种保护功能。
- 标准的直流4~20(mA)模拟量输出接口，为DCS系统对现场设备监控提供了极大的便利。

型号及含义



Model and meanings



NZB379S

NZB379S电动机智能控保装置选型表

相CT输入						
5A 自带小型三相CT	1					
12.5A 自带小型三相CT	2					
63A 自带小型三相CT	3					
70A 自带小型三相CT	4					
70A以上(外置保护互感器, 二次5A信号自带三相CT上一次穿芯)	6					
30A 自带小型三相CT (新增)	7					
零序CT电流						
无外外置互感器		1				
1A(不自带)		2				
5A(不自带)		3				
电压测量(无电压测量)						
无			0			
带电压测量功能(系统电压380V)(暂无)			1			
通信接口/4~20mA变送输出接口						
无				0		
1路RS485(MODBUS-RTU协议)				1		
1路DC4~20mA变送输出(对应B相电流)				2		
装置机构						
一体式(暂无)					0	
分体式					1	
显示操作模块						
数码						0
液晶(暂无)						1

NZB379S protection and control device of motor options table

Phase CT input						
5A with miniature three-phase CT	1					
12.5A with miniature three-phase CT	2					
63A with miniature three-phase CT	3					
70A with miniature three-phase CT	4					
70A or more (external protection transformer, secondary 5A signal with three-phase CT last thro-core)	6					
30A with miniature three-phase CT (newly added)	7					
Zero sequence CT current						
No external transformer		1				
1A (not include)		2				
5A (not include)		3				
Voltage measurement (no voltage measurement)						
No			0			
With voltage measurement function (system voltage 380V) (not available)			1			
Communication interface / 4 ~ 20mA transmission output interface						
No				0		
1-circuit RS485 (MODBUS-RTU protocol)				1		
1-circuit DC4~20mA transmission output (corresponding to B phase current)				2		
Device mechanism						
Integrated type (not available)					0	
Split type					1	
Display operation module						
Digital						0
LCD (not available)						1

NZB379S

例如:

For example:

NZB379S

2	1	0	1	1	0
---	---	---	---	---	---

[注1]: 图中MCT为保护器自带电流互感器, $\leq 70A$ 电流规格保护器, 主线路A、B、C三相一次穿芯即可;

当电动机的额定电流大于70A时, 需接外部保护CT, 将CT二次侧5A电流线每相在保护器MCT上绕5匝。

[注2]: 保护器所配电流互感器MCT为通用型, 不同规格保护器也可互换电流互感器MCT。

[Note 1]: MCT shown in figure is a protector with a current transformer, with the current size of $\leq 70A$ and with the one-time thro-core available for phases A, B and C of the main line; when the rated current of the motor is greater than 70A, the external protection CT is required. For this, 5A current line at the secondary side of CT is wound five turns on the protector MCT for each phase.

[Note 2]: The current transformer MCT used in the protector is of the general type, and can be exchanged for various protectors.

主要功能 Main functions

功能 Function	功能描述 Function description
参数配置功能 Parameters configuration	通过面板或后台软件设置装置通讯参数、保护定值等参数 Set the parameters such as device communication parameters and protection setting value through the panel or the background software

主要技术参数及性能指标

使用环境

- 环境温度: $-10^{\circ}C \sim +55^{\circ}C$, 相对湿度: $\leq 90\%RH$;
- 贮存温度: $-25^{\circ}C \sim +70^{\circ}C$;
- 大气条件: 没有会引起爆炸危险的介质, 也没有会腐蚀金属和破坏绝缘性能及导电尘埃;
- 海拔高度不超过2500米;
- 安装在无强烈冲击振动和雨雪侵袭的地方;
- 安装在无强磁干扰的地方, 避免与软启动器和变频器一起安装, 尽量拉长安装距离;
- 使用地点不允许有爆炸危险介质, 周围介质中不应含有腐蚀金属和破坏绝缘的气体及导电介质, 不允许充满水蒸气及有严重的霉菌存在。

Main technical parameters and performance indicators

Use environment

- Ambient temperature: $-10^{\circ}C \sim +55^{\circ}C$; relative humidity: $\leq 90\% RH$;
- Storage temperature: $-25^{\circ}C \sim +70^{\circ}C$;
- Atmospheric conditions: There is no medium that may cause an explosion hazard, nor dusts that may cause corrosion to metals and damage to insulation properties and conduction;
- The altitude does not exceed 2,500 meters;
- Installed in places where there is no strong impact vibration and no rain or snow invasion;
- Installed in a place without strong magnetic interference, avoiding installation with soft starter and inverter, with as long installation distance as possible;
- There is no explosive hazardous medium at the use place. The surrounding medium should not contain corrosive metals and gases and conductive medium that damage insulation; also, filling with water vapor and serious mold are not allowed.

NZB379S

主要技术参数及性能指标

输入输出	
继电器输出容量	250VAC/5A; 24VDC/5A;
辅助电源交流电源	电压AC220V±15%; 频率50Hz
电气试验	
引用标准	GB/T 7261
介质强度试验	强电回路: AC 2kV或DC 2.8kV,1min. 弱点回路: AC 0.5kV或DC 0.7kV,1min.
冲击电压实验	强电回路: 1.2/50 μs,5kV. 弱点回路: 1.2/50 μs,1kV.
EMC 抗干扰	
引用标准	GB/T15153
静电放电	3级
快速瞬变干扰	B级
1MHz脉冲群干扰	3级
辐射电磁场干扰	3级
浪涌抗扰度	差模 ±2kV ;共模 ±1kV
射频场感应的传导骚扰抗扰度	扫频 150kHz~80MHz;点频 27MHz、68MHz
阻尼振荡	5级; 100A/m

Main technical parameters and performance indicators

Input and output	
Relay output capacity	250VAC/5A; 24VDC/5A;
Auxiliary AC power supply	Voltage AC220V ± 15%; frequency 50Hz
Electrical test	
Reference Standard	GB/T 7261
Medium strength test	Strong electric circuit: AC 2kV or DC 2.8kV, 1min. Weak circuit: AC 0.5kV or DC 0.7kV, 1min.
Impulse voltage test	Strong electric circuit: 1.2/50 μs, 5kV. Weak circuit: 1.2/50 μs, 1kV.
Anti-interference	
Reference Standard	GB/T15153
Electrostatic discharge	Level 3
Fast transient interference	Class B
1MHz burst interference	Level 3
Radiated electromagnetic field interference	Level 3
Surge immunity	Differential mode ±2kV; common mode ±1kV
Conducted disturbance immunity of RF field induction	Sweep frequency 150kHz~80MHz; dot frequency 27MHz, 68MHz
Damped oscillation	Level 5, 100A/m



概述

本装置实现对低压电动机的监视、测量、保护、控制，与交流接触器组成电动机控制系统。适用于400kW以下各种380V低压异步电动机的综合测控和保护。广泛应用于石油、化工、机械、纺织、冶炼等领域的三相供电系统中，特别适合在集成度要求较高的电动机控制中心(MCC)柜上使用。可以单独作为电动机保护器使用，或作为配电监控系统或DCS系统的一部分，实现“三遥”监控功能及各种报警功能。

特点

- 具有丰富的保护功能，实现启动时间过长、短路、定时限过流、反时限过流、堵转、漏电、欠载、过压、不平衡/缺相、欠压等多种保护功能。能实现对直接启动、可逆启动、星-三角等多种运行方式下的启动控制和管理；
- 8路开关量输入从容满足现场需要，其中含有多路可编程开关量；
- 显示操作模块可直观地显示电机的状态、各种电量、事件记录等，特别设计了定显调试功能，方便生产调试与现场巡检；
- 标准的直流4~20mA模拟量输出接口，为DCS系统对现场设备监控提供了极大的便利；
- 保护测控主体模块与显示操作模块分开，可满足不同场合的安装需求，并可根据实际需要选择是否采用操作显示模块。

NZB379L/M

电动机智能控保装置

Protection and control device of motor

Overview

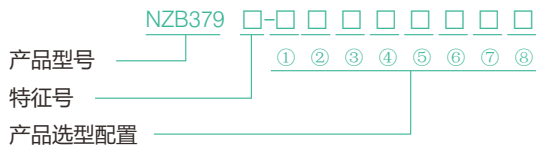
This device is used to monitor, measure, protect and control the low-voltage motor, forming a control system of the motor together with the AC connector, suitable for the comprehensive measurement control and protection of various 380V low voltage asynchronous motor with the power of 400kW and below. It is widely used in three-phase power supply system in the fields of petroleum, chemical industry, machinery, textile and smelting industries, especially suitable for the motor control center (MCC) cabinet with a higher integration level. This device can be used as an independent motor protector, or as part of the power distribution measurement and control system or DCS system to achieve "three-remote" measurement and control functions and various alarm functions.

Features

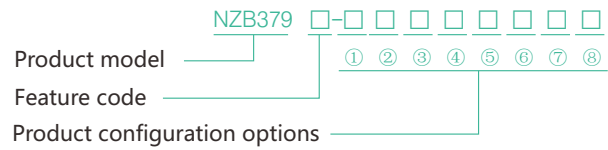
- With rich protection functions to achieve various protections in case of too long startup time, short circuit, definite-time over-current, stall, electric leakage, underload, over-voltage and imbalance/phase loss and under-voltage to achieve start control and management under various operating modes such as direct start, reversible start, and star and triangle modes;
- With 8-way digital input, satisfy the needs of the site, including multiple ways that can be programmed into switching quantities;
- The display operation module can visually show the status of the motor, various power levels, and event records. The timing display and debugging functions are specially designed to facilitate production debugging and on-site inspection;
- Standard DC 4~20mA analog output interface provides great convenience for DCS system to monitor field devices;
- The protection measurement and control main module is separated from the display operation module to meet the installation requirements in different occasions. The operation display module can be selected according to actual needs.

NZB379L/M

型号及含义



Model and meanings



NZK379L/M电动机智能控保装置选型表

表1 NZB379L/M选型表

序号	参数	产品选型配置		
		代码	功能特征号	
			M (扩展型)	L (增强型)
2	相CT输入			
	5A (自带三相CT一次穿芯)	1		
	12.5A (自带三相CT一次穿芯)	2		
	30A (自带三相CT一次穿芯)	3		
	100A (自带三相CT一次穿芯)	4		
	100A以上 (外置保护互感器, 二次5A信号在自带三相CT上一次穿芯)	5		
3	零序CT二次电流			
	无外外置互感器	0		
	1A(不自带)	1		
4	5A(不自带)	5		
	显示操作模块			
	无	0		
5	液晶	1	2	1
	数码(新增)	2		
	控制功能			
6	无(为保护模式)	0		
	有(直接启动等控制功能可选择)	1	0	1
7	电压测量			
	无	0		
	带电压测量功能 (系统电压380V)	1		
	带电压测量功能 (系统电压660V)	3		
8	非标电压	4		
	通信接口			
	无	0		
9	1路RS485(MODBUS-RTU协议)	1		
	事件记录功能			
10	无	0		
	有	1		
	4-20mA直流输出			
11	无	0		
	1路DC4~20mA变送输出(对应B相电流)	1		

NZB379L/M

NZK379L/M protection and control device of motor

Table 1 NZB379L/M Options Table

No.	Parameters	Product options configuration		
		Code	Feature code	
			M (Extended)	L (Enhanced)
2	Phase CT input			
	5A (with three-phase CT one-time thro-core)	1		
	12.5A (with three-phase CT one-time thro-core)	2		
	30A (with three-phase CT one-time thro-core)	3		
	100A (with three-phase CT one-time thro-core)	4		
	100A or more (external protection transformer; secondary 5A signal passing through the core one time on the three-phase CT)	5		
	63A (with three-phase CT one-time thro-core) (newly added)	6		
3	Zero sequence CT secondary current			
	No external transformer	0		
	1A (not include)	1		
	5A (not include)	5		
4	Display operation module			
	No	0		
	LCD	1	2	1
	Digital (newly added)	2		
5	Control function			
	No (protection mode)	0	0	1
	Yes (the control function such as direct start can be optional)	1		
6	Voltage measurement			
	No	0		
	With voltage measuring function (system voltage 380V)	1		
	With voltage measuring function (system voltage 660V)	3		
	Non-standard voltage	4		
7	Communication interface			
	No	0		
	1-way RS485 (MODBUS-RTU protocol)	1		
8	Event log function			
	No	0		
	Yes	1		
9	4-20mA DC output			
	No	0		
	1-way DC4~20mA transmission output (corresponding to B phase current)	1		

例如:

NZB379

M	2	1	2	1	1	1	1	1	0
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[注]: 其中M表示可选型电动机保护、2为相CT额定值为12.5A, 1为零序二次额定值为1A, 2为数码显示模块, 0为保护模式控制功能, 1为电压测量系统电压为380V, 1为1路RS485通信, 1为具有事件记录功能, 1为1路4mA ~ 20mA变送输出。

[注]: 当电动机的额定电流大于100A时, 需接外部CT, 将CT二次侧电流接入保护器; CT变比可以在保护器内设置。对于外部CT, 建议选用保护CT, 即CT的过载能力为8倍额定值以上。

NZB379L/M

For example:

NZB379

M	2	1	2	1	1	1	1	0
---	---	---	---	---	---	---	---	---

[Note]: Where, M means optional motor protection, 2 means that phase CT rated value is 12.5A, 1 means that zero sequence secondary rating value is 1A, 2 means digital display module, 0 means protection mode control function, 1 means that the voltage of the measurement system voltage is 380V, 1 means 1-way RS485 communication, 1 means event logging function, 1 means 1-way 4mA~20mA transmission output.

[Note]: When the rated current of the motor is greater than 100A, an external CT is required to access the CT secondary side current to the protector; the CT transformation ratio can be set in the protector. For external CT, it is recommended to use a protection CT; that is, the overload capacity of CT is 8 times or more rated value.

主要功能

表2 主要功能

序号	功能	功能描述
1	测量功能	三相电流/电压、频率、有功/无功功率、功率因数等
2	保护功能	启动保护、短路保护、堵转保护、过载保护、欠载保护、漏电保护、过压保护、欠压保护、不平衡保护、定时限过流、缺相保护等
3	控制功能	直接启动、可逆启动、星三角启动等
4	事件记录功能	记录电动机最近5次启动的结果及时间、最近5次保护告警的原因及时间、最近5次保护跳闸的原因及时间(掉电信息不丢失)
5	通信功能	RS485接口, ModbusRTU规约
6	参数配置功能	通过面板或后台软件设置装置通讯参数、保护定值、控制方式等参数

Main functions

Table 2 Main functions

No.	Function	Function description
1	Measurement function	Three-phase current / voltage, frequency, active / reactive power, and power factor
2	Protection function	Start protection, short circuit protection, stall protection, overload protection, underload protection, leakage protection, overvoltage protection, undervoltage protection, unbalance protection, definite-time overcurrent protection, and phase loss protection
3	Control function	Direct start, reversible start, star triangle start
4	Event logging function	Record the results and time of the last 5 starts of the motor, the cause and time of the last 5 protection alarms, the cause and time of the last 5 protection trips (no information is lost in case of power failure)
5	Communication function	RS485 interface, ModbusRTU protocol
6	Parameter configuration function	Set the parameters such as device communication parameters, protection settings, and control methods through the panel or the background software



NZK6

开关柜智能操控装置

Switchgear intelligent control device

Overview

NZK6 series switchgear intelligent control device is used in the 3~35kV indoor switchgear, suitable for various switchgear such as centrally installed switchgear, handcart cabinet, fixed cabinet, and ring main unit. It has functions such as dynamic primary simulation map, live display and lockout, temperature and humidity control, automatic heating and control, circuit breaker ON-OFF status indication, energy storage indication, grounding switch status indication, trolley position indication, open and closing circuit good status indication, pre-open and pre-closed flash indication, secondary open and closing circuit voltage measurement and display, human body induction and cabinet lighting, voice error prevention prompt, remote / local operation, and remote communication, and also can be used as three-phase multi-function power meter.

概述

NZK6系列开关柜智能操控装置用于3~35kV户内开关柜，适用于中置柜、手车柜、固定柜、环网柜等多种开关柜。不仅具有动态一次模拟图、带电显示及闭锁、温湿度控制、自动加热除湿数值显示及控制、断路器分合状态指示、储能指示、接地开关状态指示、小车位置指示、分合闸回路完好指示、预分预合的闪光指示、二次分合闸回路电压测量及显示、人体感应及柜内照明、语音防误提示、远方/就地操作、远程通信等功能，还具有三相多功能电能表功能。

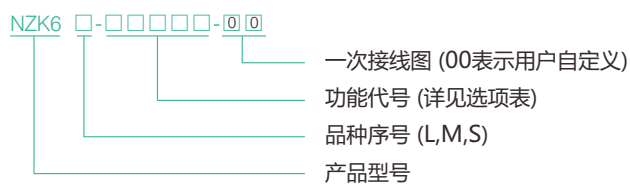
Features

- The industrial grade electronic components are used, featuring with high reliability and long life.
- With unique anti-interference technology, it has a strong anti-interference ability
- With novel design and fine workmanship, simplifying and beautifying the switchgear panel

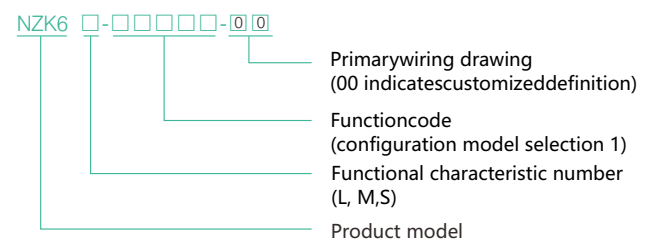
特点

- 采用工业级电子元件，具有可靠性高、寿命长等特点
- 采用独特的抗干扰技术，抗干扰能力强
- 外观设计新颖，做工精细，简化、美化了开关柜面板

型号及含义



Model and meanings



NZK6

NZK6系列开关柜智能操控装置选型表
NZK6 Model Selection

表1
Table 1

序号 No.	品种系列 Series	S	M	L
1	高压三相带电显示 High voltage three-phase electrified display			
	无 No	0	0	0
	有 Yes	1	1	1
2	温湿度控制 Temperature and humidity control			
	无 No	0	0	0
	1路 Line 1	1	1	1
	2路 Line 2	2	2	2
3	电力参数测量/触头、电缆接头在线测温 Electrical parameters measurement/contact, Wireless temperature measurement			
	无 No	0	0	0
	电力参数测量 Electrical parameters measurement	0	0	1
	无线测温 (母排三点) Wireless temperature measurement (busbar three-point)	0	0	2
	无线测温 (断路器触头三点) (breaker contact three-point)	0	0	3
	无线测温 (母排六点) (busbar six-point)	0	0	4
	无线测温 (断路器触头六点) (breaker contact six-point)	0	0	5
	无线测温 (母排三点, 触头三点) (busbar three-point, breaker contact three-point)	0	0	6
	无线测温 (母排三点, 触头六点) (busbar three-point, breaker contact six-point)	0	0	7
	无线测温 (母排六点, 触头三点) (busbar six-point, breaker contact three-point)	0	0	8
无线测温 (母排六点, 触头六点) (busbar six-point, breaker contact six-point)	0	0	9	
4	储能/未储能 Energy storage/no energy storage			
	无 No	0	0	0
	有 Yes	1	1	1
5	通讯 (RS485) Communication (RS485)			
	无 No	0	0	0
	有 Yes	1	1	1

注： 1. 选用温湿度控制功能后，S、M型可自行选配（单控温型、单除湿型、温湿度双控型），L型为温湿度双控型
2. S无操作功能，M/L带面板操作功能。
3. 无线测温测触头温度传感器规格需要注明。

Note:

- After selecting temperature and humidity control function, S and M-type can be selected by yourself (single temperature control type, single humidity removal type, temperature and humidity dual-control type). L-type is temperature and humidity dual-control type.
- S type no-panel operation function, M/L type panel operation function. Only L-type has human body induction function.
- The sensor specifications of wireless temperature need to be indicated.

表2 触头测温传感器类别及规格
Table 2 Sensor Specifications of breaker static contact

传感器型号 Type	适用静触头规格 Apply to static contact	适用额定电流 Current Rating
NZK6L-101	Φ35×72 (82)	630A
NZK6L-102	Φ49×72 (82)	1250A
NZK6L-103 (暂无)	Φ55×72 (82)	1600A
NZK6L-104	Φ79×102 (112)	2000A (2500A)
NZK6L-105	Φ109×107 (117)	3150A (4000A)
NZK6L-106	非标准触头及电缆接点 Non-standard static contact or Cable	

NZK6

例如：

NZK6 □-□□□□□ □注：NZK6L-103

表示：NZK6L带动态模拟图的高压三相带电指示，二路温湿度控制，断路器三点无线测温，带储能显示，带通讯功能，传感器Φ55。

For example:

NZK6 □-□□□□□ □Note:NZK6L-103

Meaning: NZK6L has functions such as high-voltage three-phase live indication with dynamic analog diagram, two-way temperature and humidity control, three-point wireless temperature measurement of circuit breaker, energy storage display, and communication; sensor Φ55.

主要技术参数和性能指标

- 电源：AC/DC100~240V
- 工作环境：-5℃~50℃，≤93%RH
- 无线温度控制范围：-20℃~120℃；精度±1℃
- 湿度控制范围：40%~95%RH；精度±5%RH
- 有功电能、无功电能1级
- 功耗：小于10W
- 抗电强度：外壳与端子之间大于AC2000V
- 绝缘性能：外壳与端子之间大于100MΩ

定货须知

- 根据需要的功能注明产品的名称、型号，有用到特殊功能时，请详细说明
- 提供详细的一次方案图
- 具备温湿度控制功能的装置，需注明温湿度传感器的接线长度
- 有用到加热器时，需注明加热器的类型、功率、数量
- 需要用到RS-485通讯功能的装置，订货时请注明

Main technical parameters and performance indicators

- Power supply: AC/DC100~240V
- Working environment: -5°C ~ 50°C, ≤ 93% RH
- Wireless temperature control range: -20°C ~ 120°C; accuracy ± 1°C
- Humidity control range: 40% to 95% RH; accuracy ± 5% RH
- Active energy, reactive energy level 1
- Power consumption: less than 10W
- Electric strength: greater than AC2000V between the housing and the terminal
- Insulation performance: greater than 100 MΩ between the housing and the terminal

Ordering information

- Please specify the name and model of the products according to the required function, and indicate the special functions if required in details
- Provide a detailed primary plan
- For devices with temperature and humidity control, indicate the wiring length of the temperature and humidity sensor.
- If the heater is used, please indicate the type, power and quantity of the heaters.
- Please indicate when ordering if the device that needs RS-485 communication function is required.

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微机保护装置

Microcomputer-based protection relay

Overview

- 1.1 New power distribution protection device for 10kV and below distribution networks and substations;
- 1.2 Integrated protection, control, and intelligent interface in one;
- 1.3 Serialized, cost-effective microcomputer protection device.
 - NZB6001 microcomputer PT measurement and control device
 - NZB6011 microcomputer line protection device
 - NZB6021 microcomputer capacitor protection device
 - NZB6071 microcomputer motor protection device

概述

- 1.1 适用于10kV及以下配电网和变电站的新型配用电保护装置；
- 1.2 集成保护、控制、智能接口等功能于一体；
- 1.3 系列化、高性价比的微机保护装置。
 - NZB6001微机PT测控装置
 - NZB6011微机线路保护装置
 - NZB6021微机电容器保护装置
 - NZB6071微机电动机保护装置

型号及含义 Model and meanings

PT测控	PT measurement and control	NZB6001-				
线路保护	Line protection	NZB6011-				
电容器保护	Capacitor protection	NZB6021-				
电动机保护	Motor protection	NZB6071-				
频率 Frequency						
50Hz		1				
60Hz		2				
工作电源 Working power						
110V DC			1			
220V AC/DC			2			
相CT二次电流 Phase CT secondary current						
无 No				0		
1A				1		
5A				5		
零序CT二次电流 Zero sequence CT secondary current						
无 No					0	
1A					1	
5A					5	
开入量形式 Input form						
外部电源: External power supply	AC/DC110V					1
外部电源: External power supply	AC/DC220V					2

使用条件

- 正常工作环境温度：-25°C ~ +55°C；
- 装置的贮存、运输允许的环境温度为-40°C ~ +70°C
- 正常工作相对湿度：5%~95%；(产品内部不凝露，不结冰)；
- 正常工作大气压力：66kPa ~ 110kPa。

性能特点

该系列装置具备如下特点：

完备的保护功能配置

装置已配置了各种保护功能。

一体化设计

装置兼有遥测、遥控、遥信功能；

遥信可采用强电电源 (110V/220V AC) 直接输入，抗干扰性强。每路具有独立可设的多种属性，满足不同速度、不同性质信号的快速捕捉；

遥控出口支持接点监视反馈，为主站控制提供防误功能；

防水、防尘、抗振动设计，可安装于环境条件较为恶劣的现场运行。

人性化设计

产品采用全汉化液晶显示，人机界面清晰易懂；

实时显示及传送各种运行状态及数据，便于当地及远方巡检；

配备计算机界面的调试与分析软件，调试及维护简单方便；

大资源

保护功能模块的核心为32位微处理器，配置以大容量的RAM和Flash Memory，使本产品具有极强的数据处理、逻辑运算和信息存储能力。可记录的事件数不少于200次，且信息在装置掉电后不会丢失；

采用12位的高精度A/D转换器，完全满足各项测量指标；

配置了8组开关量输入，方便外部遥信量的接入；

设置了高精度的时钟芯片，并配置有GPS硬件对时回路，便于全系统时钟同步；

配备485串口，并集成了IEC60870-5-103标准通信規約。

Use Conditions

- Normal working environment temperature: -25°C~+55°C;
- The ambient temperature allowed for storage and transportation of the device is ranged -40°C to +70°C
- Normal working relative humidity: 5%~95%; (no condensation and freezing inside the product);
- Normal working atmospheric pressure: 66kPa~110kPa.

Performance features

This series devices has the following features:

Complete protection function configuration

The device has been configured with various protections.

Integrated design

The device has remote measurement, remote control and remote communication functions;

The remote communication uses a direct strong power source (110V/220V AC) input with strong anti-interference. Each channel has a variety of independent properties that can be set to achieve rapid capture of signals of different performance at the different speed;

The remote control outlet supports contact measurement and control feedback, and provides anti-error function for main station control;

With waterproof, dust proof and vibration resistant design, installed on the site with harsh environmental conditions.

Humanized design

The product adopts full Chinese LCD display, and the man-machine interface is clear and easy to understand;

Real-time display and transmission of various operating status and data for local and remote inspections;

With commissioning and analysis software for computer interface, easy and convenient to debug and maintain;

Large resources

The core of the protection function module is a 32-bit microprocessor equipped with large-capacity RAM and Flash Memory, making this product has the extremely powerful processing, logic operations, and information storage capabilities. At least 200 events can be recorded, and the information will not be lost in case of the power failure.

A 12-bit high-precision A/D converter is used to fully satisfy the measurement specifications;

8 sets of digital input are configured to facilitate access of external remote signaling;

A high-precision clock chip is provided, with a GPS hardware timing loop to facilitate full-system clock synchronization;

With a 485 serial port, the IEC 60870-5-103 standard communication protocol is integrated.

NZB60

产品功能配置 Product function configuration

功能配置 Functional configuration	PT测控 NZB6001 PT measurement control	线路保护 NZB6011 Line protection	电容器保护 NZB6021 Capacitor protection	电动机保护 NZB6071 Motor protection
三段式过流保护	Three-step overcurrent protection	√		
二段式过流保护	Two-step overcurrent protection		√	
过流速断保护动作	Instantaneous over-current protection			√
定时限过流保护动作	Definite-time over-current protection action			√
反时限过流保护	Inverse time overcurrent protection	√	√	
三段式零序过流保护	Three-step zero sequence overcurrent protection	√		
二段式零序过流保护	Two-step zero sequence overcurrent protection		√	
反时限零序过流保护	Inverse time zero sequence overcurrent protection	√	√	
后加速过流保护	Post-acceleration overcurrent protection	√		
后加速零序过流保护	Post-acceleration zero-sequence overcurrent protection	√		
低压侧零序过流保护	Low-voltage side zero-sequence overcurrent protection	√		√
零序过流保护/告警	Zero sequence overcurrent protection/alarm			
低压侧反时限零序过流保护	Low-voltage side inverse time zero-sequence overcurrent protection	√		√
定/反时限负序过流保护动作	Fixed/inverse time negative sequence overcurrent protection action			
3U0 越限告警	3U0 out-of-limit alarm	√		
不平衡电压保护	Unbalanced voltage protection		√	
不平衡电流保护	Unbalanced current protection		√	
低电压保护	Low voltage protection	√	√	√
过电压保护	Overvoltage protection	√	√	
TV 断线判别	TV disconnection judge	√	√	√
非电量保护	Non-electric quantity protection	√	√	√
两段式母线低电压保护	Two-step busbar low voltage protection	√		
零序过电压保护	Zero sequence overvoltage protection	√		
控制回路断线告警	Control loop disconnection alarm	√	√	√
开关量录波功能	Switching wave recording function		√	
过热保护	Overheating protection			√
长启动保护	Long start protection			√
过负荷保护	Overload protection			√



NZB60E

微机保护装置

Microcomputer-based protection relay

NZB601E系列线路保护装置

NZB602E系列电容器保护装置

NZB607E系列电动机保护装置

NZB608E系列变压器保护装置

NZB601E series line protection relay

NZB602E series capacitor protection relay

NZB607E series motor protection relay

NZB608E series transformer protection relay

简介

NZB60E系列微型保护装置是建立在一个通用平台上模块化设计的新一代继电保护产品，适用于35kV及以下配电网和变电站。

NZB60E系列装置按照不同的保护对象合理配置了高性能的保护功能，并将保护、控制、及智能接口等多种功能集成于一体，可就地安装在开关柜上或集中组屏，是构成电力自动化系统的理想组成部件。整个系列产品规格齐全、可靠性高、使用灵活方便，能够充分适应35kV及以下电网不断发展的需要。

NZB60E系列产品能为各种设备提供完整的保护，所有这些保护功能都能任意组合，针对不同保护对象及要求可设定相应的保护功能，每一种保护都可根据要求发跳闸指令或告警信号。每种保护功能都可单独进行投退。

线路保护—NZB601E系列

NZB601E系列线路保护分为线路、馈线、进线、母联等保护单元，各单元保护功能各异。其中进线保护单元及母联保护单元通过相关回路配合，可实现各种要求的备自投功能，无须再选用专门的备自投装置。

NZB6011E主要作为辐射型电网的母线分支线路、馈电线路的综合保护。

NZB6012E为带方向过流保护和检同期合闸的双侧电源线路的综合保护。

NZB6013E主要作为一般进线和带备自投功能的进线保护。

NZB6014E主要作为母线分段开关和带备自投功能的分段（联络）开关的综合保护。

电容器保护—NZB602E系列

NZB602E系列可满足各种中低压电力电容器的综合保护要求，包括反映桥接电容器组内部故障的差流以及反映多段多分支电容器中故障段与正常段之间电压差的差电压保护功能。

NZB6021E适用于电容器组的综合保护。

电动机保护—NZB607E系列

NZB6071E适用于2000kW以下异步电动机的综合保护。

变压器保护—NZB608E系列

NZB608E系列装置适用于各种容量变压器的综合及后备保护。

NZB6081E适用于熔断器-接触器(FC)或断路器(CB)控制的厂用变的综合保护。

NZB6082E适用于小电流接地系统侧变压器的后备保护。

NZB6083E适用于大电流接地系统侧变压器的后备保护。具有零序、间隙保护功能。

Introduction

The NZB60E series microcomputer-based protection device is a new generation of relay protection product modularly based on a common platform, suitable for 35kV and below distribution networks and power substation.

NZB60E series devices are configured with high performance protections reasonably according to the different protection objects, integrating with multiple functions such as protection, control, and intelligent interface. It can be locally installed on the switchgear or the centralized group screen, which is an ideal component to form the power automation system. The entire series products features with complete specifications, high reliability, and flexible and convenient use, to fully meet the needs of the continuous development of 35kV and below power grids.

The NZB60E series offers complete protections for all types of equipment. All protection functions can be combined randomly, and the corresponding protection functions can be set for different protected object. For each protection, a trip command or an alarm signal can be issued according to the requirements. Each protection function can be activated separately.

Line Protection-NZB601E Series

NZB601E series line protection is divided into various protection units such as lines, feeder lines, incoming lines and buscouple. Each unit has different protection function. Among them, the incoming protection unit is cooperated with the buscouple protection unit to achieve various spare power automatic switching functions without special self power input device required.

NZB6011E is mainly used as the comprehensive protection for bus branch line and feeder line of the radiated power grid.

NZB6012E is used as the comprehensive protection for the double-sided power line with directional overcurrent protection and closed-by-synchrocheck function.

The NZB6013E is mainly used as a protection for general incoming line and for the incoming line with spare power automatic switching function.

The NZB6014E is mainly used as a comprehensive protection for a busbar sectional switch and for a sectional (connected) switch with spare power automatic switching function.

Capacitor Protection-NZB602E Series

The NZB602E series meets the comprehensive protection requirements of various medium and low voltage power capacitors, including differential currents that reflect internal faults in the bridged capacitor bank and difference voltage protection function of reflecting the fault segment in the multi-segment multi-branch container and the voltage difference between the normal segments.

The NZB6021E is suitable for comprehensive protection of capacitor banks.

Motor Protection-NZB607E Series

The NZB6071E is suitable for comprehensive protection of asynchronous motors up to 2000kW.

Transformer Protection-NZB608E Series

The NZB608E series are suitable for comprehensive and backup protection of transformers with various capacity.

NZB6081E is used as the comprehensive protection for the factory transformer controlled by the fuse-contactor (FC) or circuit breaker (CB).

The NZB6082E is suitable for backup protection of the transformer at the small current grounding system side.

The NZB6083E is suitable for backup protection of the transformer at the high current grounding system side with zero sequence and gap protection functions.

特点

- 硬件平台采用基于ARM(Advanced RISC Machines)内核的32位高性能微处理器并采用多CPU系统架构。集成度更高，功能更强，速度更快，功耗更低。
- 采用14位AD 24点采样，精度更高。
- 装置结构紧凑，体积小，更适宜开关柜面板安装。
- 具有完善的自检功能，关键元器件损坏不会导致保护误动。
- 可靠存储保护动作报告及事件记录，掉电不丢失，便于事故分析。
- 标准通信接口可方便地实现与监控中心联网。
- 调试更简单、方便。
- 更加节省使用和维护成本。
- 保护回路独立设计。
- 具有自适应功能，保证在重大的区内故障时保护快速动作，又保证正常运行及区外故障时不误动。

用户界面

NZB60E采用160*160点阵大屏幕液晶显示，界面友好，操作方便。利用装置的4套定值区，对相关的控制字、电流、电压及时限定值进行整定，用户很容易实现人机对话和设置。相关信息会在液晶显示器上显示。

录波

装置记录保护动作前4周波，动作后6周波的采样数据，保护跳闸后将相关信息上送至监控主站，可以用于分析装置的跳闸行为。

自检功能

装置具有完善全面的自检功能，在硬件及软件自检中设有程序求和自检、定值区号自检、继电器自检、开入自检、储能铁链自检等。若发生故障，装置的LCD可以显示故障信息，并闭锁保护的开出回路。

NZB60E

结构

采用标准6U高度、宽150mm统一机箱结构。插件采取前插拔方式，强弱电完全隔开。

交流输入

11路模拟量输入：

- 4路保护CT，CT二次额定电流：1A或5A
- 4路PT，PT二次额定电压：57.7V或100V

开入开出接口

- 8路有源开关量输入接点
- 2路继电器开关量跳合闸接点输出
- 6路继电器开关量信号接点输出

通信接口

- RS485标准通信接口
- DL/T667(IEC-60870-5-103)规约
- 4800bps~19200bps

Features

- Hardware platform uses a 32-bit high-performance microprocessor based on ARM (Advanced RISC Machines) core and a multi-CPU system architecture, featuring with high integration, powerful function, faster speed and low energy consumption.
- 14-bit AD 24-point sampling is used with higher accuracy.
- The device features with compact structure and small size, more suitable for installation on the panel of switchgear.
- With perfect self-check function, damage to key components will not cause protection misoperation.
- Reliable storage protection action report and event record will not be lost in case of power failure for convenient accident analysis.
- The standard communication interface makes it easy to network with the measurement and control center.
- Debugging is simpler and more convenient.
- More savings in use and maintenance costs.
- The protection circuit is designed independently.
- With adaptive function, ensure fast protection in case of major regional faults, and ensure the normal operation and no misoperation in case of the external failure.

User Interface

NZB60E adopts 160*160 dot matrix large screen LCD display with friendly interface and easy operation. The four sets of fixed value areas of the device are used to set the relevant control words, the current, the voltage and the time limit, so the user can easily realize the man-machine interaction and setting. Related information will be displayed on the LCD display.

Wave Recording

The device records the sampling data of front four cycles before action and of late six cycles after action and send the relevant information to the main measurement and control station when the protection trip works for analysis of the tripping action of the analysis device.

Self-check function

The device has a comprehensive self-check function, and there are program summation self-check, fixed area code self-check, relay self-check, input self-check, and storage iron chain self-check in the hardware and software self-check. In case of failure, the fault information can be displayed on the LCD display and the output circuit of the protection will be locked.

Structure

The standard unified chassis structure with the height of 6U and with the width of 150mm is used. The plug-in uses the front plugging method, and the strong current is completely separated from the weak current.

AC input

11-way analog inputs:

- 4-way protection CT, CT secondary rated current: 1A or 5A
- 4-way PT, PT secondary rated voltage: 57.7V or 100V

Input and output interface

- 8-way active switching input contacts
- 2-way relay switch trip switch contact output
- 6-way relay switch signal contact output

Communication Interface

- RS485 standard communication interface
- DL/T667 (IEC-60870-5-103) protocol
- 4800bps~19200bps

NZB60E

NZB60E功能配置表

类别	功能 Function	ANSI	线路				电容器	电动机	变压器		
			NZB6011E	NZB6012E	NZB6013E	NZB6014E	NZB6021E	NZB6071E	NZB6081E	NZB6082E	NZB6083E
保护 Protection	相过流	Phase overcurrent	50P	■	■	■	■	■	■	■	■
	零序过流	Zero sequence overcurrent	50G		■			■	■		■
	反时限	Inverse time limit	51	■		■	■	■			
	低压闭锁三段过流	Undervoltage lockout three-step overcurrent	50/27	■	■	■					
	方向闭锁三段过流	Directional lockout three-step overcurrent	50/67		■						
	复压闭锁过流	Compound voltage lockout overcurrent	50/27Q							■	■
	加速段	Acceleration section	50	■	■	■					
	低周减载	Low cycle load shedding	81	■	■						
	过负荷	Overload	50	■	■	■	■	■	■		
	不平衡电流	Unbalanced current	46								
	低电压保护	Low voltage protection	27				■	■	■		
	过电压保护	Overvoltage protection	59				■	■			
	电机启动时间过长	Motor start-up time is too long	66					■			
	负序过流	Negative sequence overcurrent	46					■	■		
	过热保护	Overheating protection	49					■			
	间隙保护	Gap protection	59G								■
	闭锁调压	Lockout voltage regulation	50P								
	充电保护	Charging protection	50P				■				
	启动通风	Start ventilation									
零序过压	Zero sequence overvoltage					■				■	
控制 Control	断路器分/合闸	Circuit breaker open/closed	94	■	■	■	■	■	■	■	■
	重合闸	Reclosing	79	■	■						
	进线自投	Incoming line auto switch over				■					
	母联分段自投	Buscouple sectional auto switch over				■					
防跳	Anti-jump	68	■	■	■	■	■	■	■	■	
监视 Measurement and	断路器控制回路断线	Circuit breaker control loop disconnection		■	■	■	■	■	■	■	■
	TV(PT)断线	TV (PT) disconnection		■	■	■	■	■	■	■	■
	装置故障	Device failure		■	■	■	■	■	■	■	■
	断路器状态	Circuit breaker status		■	■	■	■	■	■	■	■
通信	RS485接口	RS485 interface		■	■	■	■	■	■	■	

NZB60E

NZB60E订货选型

线路 NZB601×E—

电动机 NZB607×E—

电容器 NZB602×E—

变压器 NZB608×E—

语言									
汉语									1
频率									
50Hz									1
工作电源									
110V DC									1
220V AC/DC									2
相CT二次电流									
无									0
1A									1
5A									5
零序CT二次电流									
无									0
1A									1
5A									5
PT接线型式									
无									0
三相四线									1
三相三线									2
V形接线									3
3U0二次电压									
无									0
100V									1
300V									2
开入量形式									
外部电源: AC220V									0
外部电源: DC110V									1
外部电源: DC220V									2
操作回路									
内部不带防跳回路									0
内部带防跳回路 DC110V									1
内部带防跳回路 DC220V									2
内部不带防跳回路 DC110V(带操作回路)									3
内部不带防跳回路 DC220V(带操作回路)									4

注: 如有特殊订货要求, 请与本公司联系。

NZB60E

NZB60E ordering options

Line NZB601×E—

Motor NZB607×E—

Capacitor NZB602×E—

Transformer NZB608×E—

Language									
Chinese									1
Frequency									
50Hz									1
Working power									
110V DC									1
220V AC/DC									2
Phase CT secondary current									
No									0
1A									1
5A									5
Zero sequence CT secondary current									
No									0
1A									1
5A									5
PT wiring type									
No									0
Three-phase four-wire									1
Three-phase three-wire									2
V-shaped wiring									3
3U0 secondary voltage									
No									0
100V									1
300V									2
Input type									
External power supply: AC220V									0
External power supply: DC110V									1
External power supply: DC220V									2
Operating circuit									
Without anti-jump circuit inside									0
With anti-jump circuit inside DC110V									1
With anti-jump circuit inside DC220V									2
Without anti-jump circuit inside DC110V (with operating circuit)									3
Without anti-jump circuit inside DC220V (with operating circuit)									4

Note: If you have special order requirements, please contact us.



概述

环网柜保护-NZB7011

NZB7011微机保护装置主要适用开关柜或环网柜，具有体积小、深度浅、具有完整的电流保护、电压保护功能。可满足用户10kV及以下电压等级的线路保护。

功能配置

- 三段式过流保护（可选闭锁过流）
- 两段式零序电流保护
- 过负荷保护
- 重合闸（选配）
- 后加速保护（选配）
- 低电压保护
- 过电压保护
- TV断线

NZB7011

微机保护装置

Microcomputer-based protection relay

Overview

Ring main unit protection - NZB7011

NZB7011 microcomputer-based protection relay is mainly used in the switchgear or ring main unit, featuring with small volume, shallow depth, complete current protection, and voltage protection, to satisfy the line protection with voltage levels of 10kV and below in the user end.

Function configuration

- Three-step overcurrent protection (optional lockout overcurrent)
- Two-step zero sequence current protection
- Overload protection
- Reclosing (optional)
- Post-acceleration protection (optional)
- Low voltage protection
- Overvoltage protection
- TV line disconnection

产品特点

- 硬件平台采用内核为CortexTM-M3的32位ARM，配置以大容量Flash Memory，使本产品具有极强的数据处理、逻辑运算和信息存储能力；
- 大液晶模块显示，参数简洁明了，实时响应快；
- 装置配备了完善的保护功能，安装方便，接线简单，操作易上手；
- 装置的遥信功能允许用户接入最多8路外部开入量；
- 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；
- 装置采用专用芯片，在掉电情况下，基本数据保存不丢失，恢复电源后，装置可继续可靠的运行；
- 配备485串口，并集成了103通信规约和Modbus规约；
- 完善的自检功能，满足状态检修的要求；

用户界面

人性化设计，产品采用全汉化液晶显示，人机界面清晰易懂；实时显示及传送各种运行状态及数据，便于当地及远方巡检；配备计算机界面的调试与分析软件，调试及维护简单方便；

电源

- 三种电源模式可选：DC48V或DC/AC220V或自供电（PT取电）；

交流输入

- CT二次额定电流：1A或5A
- PT二次额定电压：57.7V或100V

开入开出接口

- 8路无源开关量输入接点
- 2路继电器开关量跳合闸接点输出
- 2路继电器开关量信号接点输出

通信接口

- RS485标准通信接口
- 103通信规约或Modbus通信规约
- 4800bps~19200bps

Product Features

- The hardware platform uses a 32-bit ARM with CortexTM-M3 core, configured with large-capacity Flash Memory, making this product extremely powerful in data processing, logical operations and information storage capabilities.
- With large LCD module display, the parameters are simple and clear, and the real-time response is fast;
- The device has perfect protection function, easy to install, easy to connect wires and easy to operate.
- The remote communication function of the device allows the user to access up to 8 ways of the external inputs;
- With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear or group screen;
- The device uses a dedicated chip. In case of power failure, the basic saved data is not lost. The device can continue to operate reliably after power is restored.
- Equipped with 485 serial port and integrated 103 communication protocol and Modbus protocol.
- Perfect self-check function to meet the state maintenance requirements;

User Interface

With humanized design, the product adopts full Chinese LCD display, and the human-machine interface is clear and easy to understand;

Real-time display and transmission of various operating status and data for local and remote inspections;

Commissioning and analysis software is provided for computer interface, easy to debug and maintain;

Power supply

Three power modes are available: DC48V or DC/AC220V or self-powered (power from PT);

AC input

- CT secondary rated current: 1A or 5A
- PT secondary rated voltage: 57.7V or 100V

Input and output interface

- 8-way input contacts
- 2-way relay switch trip switch contact output
- 2-way relay switch signal contact output

Communication Interface

- RS485 standard communication interface
- 103 communication protocol or Modbus communication protocol
- 4800bps~19200bps

NZB7011

NZB7011订货选型 Order options

NZB7011-

语言	Language								
汉语	Chinese		1						
频率	Frequency								
50Hz			1						
开孔方向	Opening direction								
横向	Lateral			1					
工作电源	Working power								
48V DC						1			
220V AC/DC						2			
相CT二次电流	Phase CT secondary current								
无	No						0		
1A							1		
5A							5		
零序CT二次电流	Zero sequence CT secondary current								
无	No							0	
1A								1	
5A								5	
PT接线型式	PT wiring type								
无	No								0
三相四线	Three-phase four-wire								1
三相三线	Three-phase three-wire								2
V形接线	V-shaped wiring								3
3U0二次电压	3U0 secondary voltage								
无	No								0

注：如有特殊订货要求，请与本公司联系。

Note: If you have special order requirements, please contact us.



NZB65

微机保护测控装置

Microcomputer-based protection relay

NZB651系列线路保护测控装置

NZB652系列电容器保护测控装置

NZB657系列电动机保护测控装置

NZB658系列变压器保护测控装置

NZB650系列PT测控装置

NZB651 series line protection and measurement and control relay

NZB652 series capacitor protection and measurement and control relay

NZB657 series motor protection and measurement and control relay

NZB658 series transformer protection and measurement and control relay

NZB650 series PT measurement and control relay

简介

NZB65系列微型保护测控装置是建立在一个通用平台上模块化设计的新一代继电保护产品，适用于35kV及以下配电网和变电站。

NZB65系列装置按照不同的保护对象合理配置了高性能的保护功能，并将保护、测量、控制、及智能接口等多种功能集成于一体，可就地安装在开关柜上或集中组屏，是构成电力自动化系统的理想组成部件。整个系列产品规格齐全、可靠性高、使用灵活方便，能够充分适应35kV及以下电网不断发展的需要。

线路保护—NZB651系列

NZB651系列线路保护分为线路、馈线、进线、母联等保护单元，各单元保护功能各异。其中进线保护单元及母联保护单元通过相关回路配合，可实现各种要求的备自投功能，无须再选用专门的备自投装置。

NZB6511主要作为辐射型电网的母线分支线路、馈电线路的综合保护和测控。

NZB6512为带方向过流保护和检同期合闸的双侧电源线路的综合保护和测控。

NZB6513主要作为一般进线和带备自投功能的进线保护和测控。

NZB6514主要作为母线分段开关和带备自投功能的分段（联络）开关的综合保护和测控。

Introduction

The NZB65 series microcomputer-based protection relay is a new generation of relay protection product modularly based on a common platform, suitable for 35kV and below distribution networks and power substation.

NZB65 series devices are configured with high performance protections reasonably according to the different protection objects, integrating with multiple functions such as protection, control, and intelligent interface. It can be locally installed on the switchgear or the centralized group screen, which is an ideal component to form the power automation system. The entire series products features with complete specifications, high reliability, and flexible and convenient use, to fully meet the needs of the continuous development of 35kV and below power grids.

Line Protection-NZB651 Series

NZB651 series line protection is divided into various protection units such as lines, feeder lines, incoming lines and buscouple. Each unit has different protection function. Among them, the incoming protection unit is cooperated with the buscouple protection unit to achieve various spare power automatic switching functions without special self power input device required.

NZB6511 is mainly used as the comprehensive protection for bus branch line and feeder line of the radiated power grid.

NZB6512 is used as the comprehensive protection for the double-sided power line with directional overcurrent protection and closed-by-synchrocheck function.

The NZB6513 is mainly used as a protection for general incoming line and for the incoming line with spare power automatic switching function.

The NZB6514 is mainly used as a comprehensive protection for a busbar sectional switch and for a sectional (connected) switch with spare power automatic switching function.

NZB65

电容器保护—NZB652系列

NB652系列可满足各种高压电力电容器的综合保护要求，包括反映桥接电容器组内部故障的差流以及反映多段多分支电容器中故障段与正常段之间电压差的差电压保护功能。

NZB6521适用于电容器组的综合保护和测控。

电动机保护—NZB657系列

NZB657系列包括异步电动机保护单元、同步电动机保护单元以及电机差动保护单元。

有四组不同特性的热过载反时限保护特性曲线可供选择，同一特性曲线可进行无级差设定，能够满足各种规格和特性的电机保护要求。

NZB6571适用于2000kW以下异步电动机的综合保护和测控。

NZB6572适用于2000kW及以上电动机的差动保护。与NZB6571配合实现大容量电动机的完整保护。

变压器保护—NZB658系列

NZB658系列装置适用于各种容量的变压器的保护和测控，对变压器绕组接线型式不同所造成的差流，由装置内部自动进行校正。

NZB6581适用于熔断器-接触器(FC)或断路器(CB)控制的厂用变的综合保护和测控。

NZB6582适用于小电流接地系统侧变压器的后备保护与测控。

NZB6583适用于大电流接地系统侧变压器的后备保护与测控。具有零序、间隙保护功能。

NZB6584适用于两圈变压器的差动保护。

特点

- 硬件平台采用基于ARM(Advanced RISC Machines)内核的32位高性能微处理器并采用多CPU系统架构集成度更高，功能更强，速度更快，功耗更低
- 采用14位AD 24点采样，精度更高
- 装置结构紧凑，体积小，更适宜开关柜面板安装
- 具有完善的自检功能，关键元器件损坏不会导致保护误动
- 可靠存储保护动作报告及事件记录，掉电不丢失，便于事故分析
- 保护测控一体化
- 标准通信接口可方便地实现与监控中心联网
- 调试更简单、方便
- 更加节省使用和维护成本
- 测量回路与保护回路独立设计，测量精度更高，保护的线性范围更宽
- 具有自适应功能，保证在重大的区内故障时保护快速动作，又保证正常运行及区外故障时不误动

Capacitor Protection-NZB652 Series

The NZB652 series meets the comprehensive protection requirements of various medium and low voltage power capacitors, including differential currents that reflect internal faults in the bridged capacitor bank and difference voltage protection function of reflecting the fault segment in the multi-segment multi-branch container and the voltage difference between the normal segments.

The NZB6521 is suitable for comprehensive protection of capacitor banks.

Motor Protection-NZB657 Series

The NZB6571 is suitable for comprehensive protection of asynchronous motors up to 2000kW.

Transformer Protection-NZB658 Series

The NZB658 series are suitable for comprehensive and backup protection of transformers with various capacity.

NZB6581E is used as the comprehensive protection for the factory transformer controlled by the fuse-contactor (FC) or circuit breaker (CB).

The NZB6582 is suitable for backup protection of the transformer at the small current grounding system side.

The NZB6583 is suitable for backup protection of the transformer at the high current grounding system side with zero sequence and gap protection functions.

The NZB6584 is suitable for differential protection of two-coil transformers.

Features

- The hardware platform uses a 32-bit high-performance microprocessor based on ARM (Advanced RISC Machines) core and a multi-CPU system architecture, featuring with high integration, powerful function, faster speed, and low power consumption.
- 14-bit AD 24-point sampling is used with higher precision;
- The device is compact in structure and small in size, more suitable for installing on the panel of switchgear.
- With perfect self-check function, damage to key components will not cause protection misoperation
- Reliable storage protection action report and event record will not be lost in case of power failure for convenient accident analysis.
- Protection and measurement and control integration
- Standard communication interface can easily realize networking with measurement and control center
- Debugging is simpler and more convenient
- More savings in use and maintenance costs
- Measurement circuit and protection circuit are designed independently, with higher measurement accuracy and wider linear protection range.

用户界面

NZB65采用 128*128 点阵大屏幕中英文界面液晶显示,界面友好,操作方便。利用装置的4套定值区,对相关的控制字、电流、电压及时限定值进行整定,用户很容易实现人机对话和设置。相关信息会在液晶显示器上显示。

录波

装置记录保护动作前4周波,动作后6周波的采样数据,保护跳闸后将相关信息上送至监控主站,可以用于分析装置的跳闸行为。

自检功能

装置具有完善全面的自检功能,在硬件及软件自检中设有程序求和自检、定值区号自检、开出测试自检、开入自检、存储自检等。若发生故障,装置的LCD可以显示故障信息,并闭锁保护的开出回路。

结构

采用标准6U高度、宽150mm统一机箱结构。插件采取前插拔方式,强弱电完全隔开。

交流输入

11路模拟量输入:

- 4路保护CT, CT二次额定电流: 1A或5A
- 4路PT, PT二次额定电压: 57.7V或100V
- 3路测量CT, CT二次额定电流: 1A或5A

开入开出接口

- 12路有源开关量输入接点
- 2路继电器开关量跳合闸接点输出
- 6路继电器开关量信号接点输出

通信接口

- RS485标准通信接口
- DL/T667(IEC-60870-5-103)正泰规约
- 4800bps~19200bps

- With the adaptive function, the protection can work quickly in case of major area failure, and no misoperation occurs during the normal operation and in case of failure outside the area.

User Interface

NZB65 adopts 128*128 dot matrix large screen full Chinese, English interface LCD display with friendly interface and easy operation. The four sets of fixed value areas of the device are used to set the relevant control words, the current, the voltage and the time limit, so the user can easily realize the man-machine interaction and setting. Related information will be displayed on the LCD display.

Wave Recording

The device records the sampling data of front four cycles before action and of late six cycles after action and send the relevant information to the main measurement and control station when the protection trip works for analysis of the tripping action of the analysis device.

Self-check function

The device has a comprehensive self-check function, and there are program summation self-check, fixed area code self-check, output test self-check, input self-check, and storage self-check in the hardware and software self-check. In case of failure, the fault information can be displayed on the LCD display and the output circuit of the protection will be locked.

Structure

The standard unified chassis structure with the height of 6U and with the width of 150mm is used. The plug-in uses the front plugging method, and the strong current is completely separated from the weak current.

AC input

11-way analog inputs:

- 4-way protection CT, CT secondary rated current: 1A or 5A
- 4-way PT, PT secondary rated voltage: 57.7V or 100V
- 3-way measurement CT, CT secondary rated current: 1A or 5A

Input and output interface

- 12-way active switch input contacts
- 2-way relay switch trip switch contact output
- 6-way relay switch signal contact output

Communication Interface

- RS485 standard communication interface
- DL/T667 (IEC-60870-5-103) Chint protocol
- 4800bps~19200bps

NZB65

NZB65功能配置表

类别	功能	ANSI	线路				断路器	电动机		变压器				测控
			NZB6511	NZB6512	NZB6513	NZB6514	NZB6521	NZB6571	NZB6572	NZB6581	NZB6582	NZB6583	NZB6584	NZB6501
保护	相过流	50P	■	■	■	■	■	■	■	■	■	■		
	零序过流	50G	■	■				■		■		■		
	反时限	51	■		■		■	■		■				
	低压闭锁三段过流	50/27	■	■	■									
	方向闭锁三段过流	50/67		■										
	复压闭锁过流	50/27Q									■	■		
	加速段	50	■	■	■									
	低周减载	81	■	■										
	过负荷	50	■	■	■	■		■		■			■	
	不平衡电流	46												
	低电压保护	27					■	■		■				■
	过电压保护	59					■	■						■
	纵差保护	87							■				■	
	电机启动时间过长	66						■						
	负序过流	46						■		■				
	过热保护	49						■						
	间隙保护	59G										■		
	闭锁调压	50P											■	
	充电保护	50P				■								
	启动通风												■	
零序过压						■					■		■	
测量	相电压Ua、Ub、Uc		■	■	■	■	■	■		■	■	■		■
	线电压Uab、Ubc、Uca		■	■	■	■	■	■		■	■	■		■
	零序电压		■	■	■	■	■	■		■	■	■		■
	负序电压		■	■	■	■	■	■		■	■	■		■
	计量电流Ia、Ib、Ic		■	■	■	■	■	■		■	■	■		■
	零序电流		■	■	■	■	■	■		■	■	■		■
	保护电流Ia、Ib、Ic		■	■	■	■	■	■		■	■	■		■
	线路抽取电压		■	■	■					■	■	■		
	功率因数		■	■	■	■	■	■		■	■	■		
	频率		■	■	■	■	■	■		■	■	■		
	有功功率		■	■	■	■	■	■		■	■	■		
	无功功率		■	■	■	■	■	■		■	■	■		
	脉冲电度		■	■	■	■	■	■		■	■	■		
	积分电度		■	■	■	■	■	■		■	■	■		
	谐波		■	■	■	■	■	■		■	■	■		
需量		■	■	■	■	■	■		■	■	■			
控制	断路器分/合闸	94	■	■	■	■	■	■		■	■	■		
	重合闸	79	■	■										
	进线自投				■									
	母联分段自投					■								
	防跳	68	■	■	■	■	■	■		■	■	■		
监视	断路器控制回路断线		■	■	■	■	■	■		■	■	■		
	TV(PT)断线		■	■	■					■	■	■		■
	TA(CT)断线								■					■
	装置故障		■	■	■	■	■	■	■	■	■	■		■
	断路器状态		■	■	■	■	■	■		■	■	■		■
通信	RS485接口		■	■	■	■	■	■	■	■	■	■	■	■

NZB65 function configuration table

Category	Function	ANSI	Line				Capacitor	Motor		Transformer				Measurement and control	
			NZB6511	NZB6512	NZB6513	NZB6514	NZB6521	NZB6571	NZB6572	NZB6581	NZB6582	NZB6583	NZB6584	NZB6501	
Protection	Overcurrent	50P	■	■	■	■	■	■	■	■	■	■	■	■	■
	Zero sequence overcurrent	50G	■	■				■		■		■			
	Inverse time limit	51	■		■		■	■		■					
	Undervoltage lockout three-step overcurrent	50/27	■	■	■										
	Directional lockout three-step overcurrent	50/67		■											
	Compound voltage lockout overcurrent	50/27Q									■	■			
	Acceleration section	50	■	■	■										
	Underfrequency load shedding	81	■	■											
	Overload	50	■	■	■	■		■		■				■	
	Unbalanced current	46													
	Low voltage protection	27					■	■		■					■
	Overvoltage protection	59					■	■							■
	Longitudinal differential protection	87							■					■	
	Motor start-up time is too long	66							■						
	Negative sequence overcurrent	46							■		■				
	Overheating protection	49							■						
	Gap protection	59G										■			
	Lockout voltage regulation	50P												■	
	Charging protection	50P				■									
	Start ventilation													■	
Zero sequence overvoltage							■					■		■	
Measurement	Phase voltage Ua, Ub, Uc		■	■	■	■	■	■	■	■	■	■	■	■	■
	Line voltage Uab, Ubc, Uca		■	■	■	■	■	■	■	■	■	■	■	■	■
	Zero sequence voltage		■	■	■	■	■	■	■	■	■	■	■	■	■
	Negative sequence voltage		■	■	■	■	■	■	■	■	■	■	■	■	■
	Metering currents Ia, Ib, Ic		■	■	■	■	■	■	■	■	■	■	■	■	■
	Zero sequence current		■	■	■	■	■	■	■	■	■	■	■	■	■
	Protection current Ia, Ib, Ic		■	■	■	■	■	■	■	■	■	■	■	■	■
	Line extraction voltage		■	■	■	■	■	■	■	■	■	■	■	■	■
	Power factor		■	■	■	■	■	■	■	■	■	■	■	■	■
	Frequency		■	■	■	■	■	■	■	■	■	■	■	■	■
	Active power		■	■	■	■	■	■	■	■	■	■	■	■	■
	Reactive power		■	■	■	■	■	■	■	■	■	■	■	■	■
	Pulse energy		■	■	■	■	■	■	■	■	■	■	■	■	■
	Integral energy		■	■	■	■	■	■	■	■	■	■	■	■	■
	Harmonic wave		■	■	■	■	■	■	■	■	■	■	■	■	■
	Demands		■	■	■	■	■	■	■	■	■	■	■	■	■
	Control	Circuit breaker open/closed	94	■	■	■	■	■	■	■	■	■	■	■	■
Reclosing		79	■	■											
Incoming line self-power input					■										
Buscouple sectional self-power input						■									
Anti-trip		68	■	■	■	■	■	■		■	■	■	■	■	■
Measurement & control	Circuit breaker control loop disconnection		■	■	■	■	■	■	■	■	■	■	■	■	■
	TV (PT) disconnection		■	■	■		■	■		■	■	■	■	■	■
	TA (CT) disconnection								■					■	■
	Device failure		■	■	■	■	■	■	■	■	■	■	■	■	■
	Circuit breaker status		■	■	■	■	■	■	■	■	■	■	■	■	■
Communication	RS485 interface		■	■	■	■	■	■	■	■	■	■	■	■	■

NZB65

NZB65订货选型

线路 NZB651×—

变压器 NZB658×—

电容器 NZB652×—

测控 NZB650×—

电动机 NZB657×—

语言									
汉语	1								
英语	2								
频率									
50Hz		1							
60Hz		2							
工作电源									
110V DC				1					
220V AC/DC				2					
相CT二次电流									
无					0				
1A					1				
5A					5				
零序CT二次电流									
无							0		
1A							1		
5A							5		
PT接线型式									
无								0	
三相四线								1	
三相三线								2	
V形接线								3	
3U0二次电压									
无									0
100V									1
300V									2
开入量形式									
外部电源: AC220V									0
外部电源: DC110V									1
外部电源: DC220V									2
操作回路									
内部不带防跳回路									0
内部带防跳回路 DC110V									1
内部带防跳回路 DC220V									2
内部不带防跳回路 DC110V(带操作回路)									3
内部不带防跳回路 DC220V(带操作回路)									4

注: 如有特殊订货要求, 请与本公司联系。

NZB65

NZB60E ordering options

Line NZB651×—

Transformer NZB658×—

Capacitor NZB652×—

Measurement & control

Motor NZB657×—

NZB650×—

Language									
Chinese		1							
English		2							
Frequency									
50Hz			1						
60Hz			2						
Working power									
110V DC				1					
220V AC/DC				2					
Phase CT secondary current									
No					0				
1A					1				
5A					5				
Zero sequence CT secondary current									
No						0			
1A						1			
5A						5			
PT wiring type									
No							0		
Three-phase four-wire							1		
Three-phase three-wire							2		
V-shaped wiring							3		
3U0 secondary voltage									
No								0	
100V								1	
300V								2	
Input type									
External power supply: AC220V									0
External power supply: DC110V									1
External power supply: DC220V									2
Operating circuit									
Without anti-jump circuit inside									0
With anti-jump circuit inside DC110V									1
With anti-jump circuit inside DC220V									2
Without anti-jump circuit inside DC110V (with operating circuit)									3
Without anti-jump circuit inside DC220V (with operating circuit)									4

Note: If you have special order requirements, please contact us.

NZB71/NZB71E



NZB71/NZB71E

微机保护测控装置

Microcomputer-based protection, metering and control relay

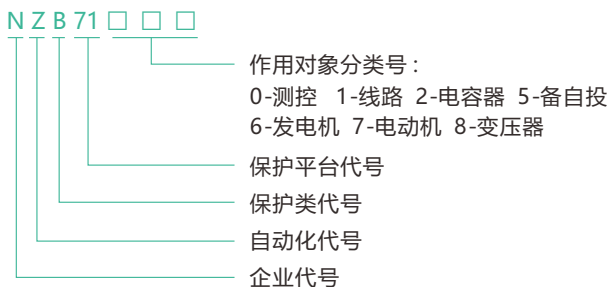
Overview

- 1.1 Applicable to substations and transmission and distribution networks with voltage levels of 110kV and below;
- 1.2 Perfect integration of protection, measurement, control, and intelligent communication interface functions;
- 1.3 Full series of protection and measurement and control devices:
 - NZB710 series PT metering and control relay
 - NZB711/NZB711E series feeder protection, metering and control relay
 - NZB712/NZB712E series capacitor protection, metering and control relay
 - NZB715 series spare power automatic switching device
 - NZB716 series generator protection, metering and control relay
 - NZB717 series motor protection, metering and control relay
 - NZB718/NZB718E series transformer protection, metering and control relay

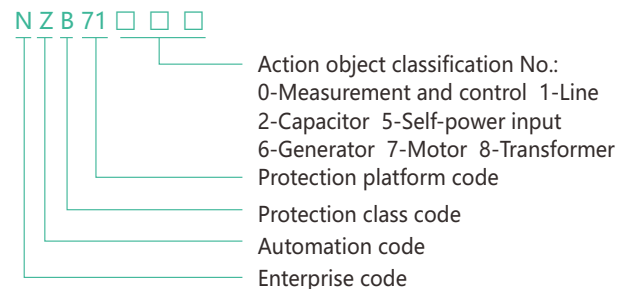
概述

- 1.1 适用于110kV及以下电压等级的变电站及输、配电网；
- 1.2 集成保护、测量、控制、智能通信接口功能于一体；
- 1.3 全系列保护测控装置：
 - NZB710系列微机PT测控装置
 - NZB711/NZB711E系列微机线路保护测控装置
 - NZB712/NZB712E系列电容器保护测控装置
 - NZB715系列微机综合备自投装置
 - NZB716系列微机发电机保护测控装置
 - NZB717系列微机电机保护测控装置
 - NZB718/NZB718E系列微机变压器保护测控装置

型号及含义



Model and meaning



Order options

PT测控 NZB710系列

本产品主要用于实现单母分段接线的电压小母线的并列，能够同时监视两个分段母线PT的电压，并配置了过压、欠压保护。可实现电压小母线的自动并列重动功能。

线路保护 NZB711/NZB711E系列

本产品分为线路、进线、母联等保护单元，各单元保护功能各异。其中进线保护单元及母联保护单元可通过相关回路配合，实现各种要求的备自投功能，无须再选用独立的备自投装置。

- NZB7111主要作为辐射型电网的母线分支线路、馈电线路的综合保护和测控；
- NZB7112主要作为方向过流保护和检同期合闸的双侧电源线路的综合保护和测控；
- NZB7113主要作为一般进线和带备自投功能的进线保护和测控；
- NZB7114主要作为母线分段开关和带备自投功能的分段（联络）开关的综合保护和测控。

电容器保护 NZB712/NZB712E系列

本产品可满足各种高压电力电容器的综合保护要求，包括反映桥接电容器组内部故障的差流以及反映多段多分支电容器中故障段与正常段之间电压差的差电压保护功能。同时可配合监控系统参与小电流接地选线。

- NZB7121适用于电容器组的综合保护和测控。可完成一路不平衡电流及一路不平衡电压保护。
- NZB7128适用于电容器组的综合保护和测控。可完成一路不平衡电流及三路不平衡电压保护。

综合备自投 NZB715系列

微机综合备自投装置适用于110kV及以下等级的各种配电系统；集多种备自投运行方式于一体，具有重要实用价值。该装置可以缩短备用电源的切换时间，保证供电的连续性和可靠性，减少变配电事故的影响范围。

发电机保护 NZB716系列

本产品适用于中小容量的发电机组，实现发电机的全套保护，包括差动保护、后备保护以及接地保护，并可与NZB718系列变压器保护组成发变组保护。

- NZB7161适用于中小容量发电机，作为后备保护和测控；
- NZB7162适用于中小容量发电机，作为发电机的主保护；

电动机保护 NZB717系列

本产品包括高压异步电动机保护单元、高压同步电动机保护单元以及电机差动保护单元。有四组不同特性的热过载反时限保护特性曲线可供选择，同一特性曲线可进行无级差设定，能够满足各种规格和特性的电机保护要求。

- NZB7171适用于2000kW及以下异步电动机综合保护和测控；
- NZB7172适用于2000kW及以上电动机差动保护，与NZB7171配合实现大容量电动机完整保护。

Function series

PT measurement and control NZB710 series

This product is mainly used to realize the juxtaposition of small voltage busbars with single female segment wiring. It can monitor the voltage of two segmented bus PTS at the same time, and configure over voltage and undervoltage protection. It can realize the automatic parallel re-energizing function of the small voltage bus.

Line Protection NZB711/NZB711E Series

This product is divided into line, incoming line, bus coupler and other protection units, each unit protection function different. The incoming line protection unit and the bus tie protection unit can be matched by the relevant circuit. A self-injection function that realizes various requirements does not require the use of an independent self-injection device.

- NZB7111 is mainly used as the comprehensive protection and measurement and control device for the bus branch line and the feeder line of the radiated power grid;
- NZB7112 is mainly used as the comprehensive protection and measurement and control device for the double-sided power supply for directional over current protection and synchrocheck closing action.
- NZB7113 is mainly used as the comprehensive protection and measurement and control device for the general incoming line and the incoming line with self-power input function;
- NZB7114 is mainly used as the comprehensive protection and measurement and control device for the bus sectional switch and the sectional (contact) switch with self-power input function;

Capacitor Protection NZB712/NZB712E Series

This product can meet the comprehensive protection requirements of various high voltage power capacitors, including the differential voltage protection of reflecting the differential current of the internal fault of the bridged capacitor bank, and reflecting the voltage difference between the fault segment and the normal segment of the multi-segment multi-branch capacitor. It can be used for selection of the small current grounding line by cooperating with the monitoring system.

- NZB7121 is suitable for comprehensive protection and measurement and control of capacitor banks, to achieve one-way unbalanced current and one-way unbalanced voltage protection.
- NZB7128 is suitable for comprehensive protection and measurement and control of capacitor banks to achieve one-way unbalanced current and three-way unbalanced voltage protection.

Comprehensive self-power input device NZB715 series

Microcomputer integrated self-power input device is suitable for various power distribution systems of 110kV and below. It integrates a variety of self-power input operation modes with important practical value. This device can shorten the switching time of the backup power supply and ensure the continuity and reliability of the power supply, and reduce the scope of impact of power distribution accidents.

NZB71/NZB71E

变压器保护 NZB718/NZB718E系列

本产品适用于各种容量变压器的保护和测控，对变压器绕组接线型式不同所造成的差流，由装置内部自动进行校正。

- NZB7181适用于6.3MVA容量及以下无需配置差动保护的厂用变压器保护；
- NZB7182适用于小电流接地系统变压器的后备保护与测控；
- NZB7183适用于大电流接地系统变压器的后备保护与测控，具有零序、间隙保护功能；
- NZB7184适用于两圈变压器的差动保护。

产品技术特点

高集成度的功能平台

- 采用32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有继电器实现实时计算，保证了保护的可靠性和速动性；
- 采用独立16位AD采样芯片，保证将动作精度控制在2.5%以内；
- 采用自适应算法，既能保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- 装置可存储10次故障录波数据，每次录波数据包含了故障前4周波和故障后6周波；
- 就地打印机可以打印事件记录、定值单、录波等信息；
- 通信配置齐全，包括打印机接口，调试接口，对时接口，两个RS485接口或两个以太网接口，支持电力行业通用的标准通信规约IEC60870-5-103。

友好的用户界面

- 128 x 128点阵液晶大屏幕，中英文界面显示，操作方便；
- 预置四套定值区，对相关控制字、电流、电压及时限定值进行整定，轻松实现人机对话；
- 独立的软压板控制菜单，方便保护投退；
- 液晶显示信息丰富。

详实的动作、录波数据

- 装置记录保护动作前4周波，动作后6周波的采样数据，保护跳闸后相关信息被送至监控主站以备跳闸行为分析；
- 可靠存储保护动作报告及事件记录，掉电不丢失，便于事故分析。

毫秒级GPS精准对时

- 通过与变电站自动化主站通信，获取年：月：日：时：分秒信息；
- 配置GPS对时接口，连接到站内GPS接收器的秒脉冲输出，实现误差小于1毫秒的精准对时。

Generator Protection NZB716 Series

This product is suitable for medium and small capacity generator sets to achieve complete protection of generators, including differential protection, backup protection and grounding protection, forming a generator set protection together with NZB718 series transformer protection.

- NZB7161 is suitable for medium and small capacity generators as backup protection and measurement and control;
- NZB7162 is suitable for medium and small capacity generators, as the main protection of generators;

Motor Protection NZB717 Series

This product includes high voltage asynchronous motor protection unit, high voltage synchronous motor protection unit and motor differential protection unit. Four sets of thermal overload inverse time protection characteristic curve with different characteristics can be optional, and the non-differential setting can be made for the same characteristic curve to satisfy protection requirements for motors of various specifications and characteristics.

- NZB7171 is suitable for comprehensive protection and measurement and control of asynchronous motors of 2000kW and below;
- NZB7172 is suitable for differential protection of motor of 2000kW and above, to achieve the complete protection of large capacity motors combined with NZB7171.

Transformer Protection NZB718/NZB718E Series

This product is suitable for the protection and measurement and control of transformers with various capacity. The differential current caused by the different winding wiring type of the transformer is automatically corrected inside the device.

- NZB7181 is suitable for factory transformer protection with 6.3MVA capacity and below without differential protection required.
- NZB7182 is suitable for backup protection and measurement and control of small current grounding systems transformers;
- NZB7183 is suitable for backup protection and measurement and control of high current grounding system transformers, with zero sequence and gap protection function;
- NZB7184 is suitable for differential protection of two-coil transformers.

NZB71/NZB71E

完善全面的自检功能

- 软、硬件自检中设有程序求和、定值、开出、开入等自检功能;
- 一旦发生故障, 液晶面板即时显示故障信息, 并闭锁保护的开出回路;
- 关键元器件损坏免致保护误动。

结构科学合理

- 后插拔式插件, 强弱电完全隔开;
- 装置结构紧凑, 体积小, 更适宜开关柜面板安装。

多达14路模拟量输入

丰富的开入开出接口

- 10路外部有源开关量输入接点;
- 22路内部开关量输入接点;
- 11路开关量输出接点;

标准通信接口随时联网监控中心

- RS485/RS422标准通信接口;
- 标准以太网通信接口;
- IEC60870-5-103正泰通信规约。

Product technical characteristics

Highly integrated functional platform

- 32-bit high-speed DSP ensures high-precision fast calculation, and 48-point sampling is performed per cycle to achieve real-time calculation for all relays every each sampling interval thus guaranteeing the reliability and quickness of protection;
- Independent 16-bit AD sampling chip ensures that the action accuracy is controlled within 2.5%.
- The adaptive algorithm is used to ensure fast protection in case of serious failure in the area and also prevent misoperation of the protection during the normal operation and in case of failure outside the area;
- The device can store fault recording data ten times, and each recording data contains data of four cycles before failure and of six cycles after failure;
- The local printer can print information such as event records, fixed values, and recorded waves;
- With complete communication configuration, include printer interface, debugging interface, timing interface, two RS485 interfaces or two Ethernet interfaces to support common standard communication protocol IEC60870-5-103 in the power industry.

Friendly user interface

- 128 x128 dot matrix LCD large screen and Chinese, English interface display, easy to operate;

- Preset four fixed value areas, and set the relevant control words, current, voltage and limit value, easy to achieve man-machine dialogue;
- Independent soft press plate control menu for easy the enabled and disabled actions of the protection;
- Rich information shown on the LCD display.

Detailed actions and recorded data

- The device records the sampling data of four cycles before the protection action and of six cycles after the action, and sends the relevant information to the main measurement and control station after the protection works for equipment trip behavior analysis; Reliable storage protection action report and event record are not lost in case of failure for easy accident analysis.

Millisecond GPS accurate timing

- By communicating with the substation automation master station, the information occurred at year: month: day: hour: minute and second can be obtained.
- Configure the GPS timing interface to connect to the second pulse output of the GPS receiver in the station, to achieve precision timing with an error of less than 1 millisecond.

Perfect and comprehensive self-check function

- In the software and hardware self-check, there are self-checking functions such as program summation, fixed value, output and input;
- In the event of a fault, the LCD panel displays the fault information immediately and the output circuit of the protection will be locked.
- Prevent the misoperation due to the damage of the key components.

Scientific and reasonable structure

- The rear plug-in type plug-in is used to completely separate the strong current from the weak current;
- The device is compact in structure and small in size, more suitable for installing on the panel of switchgear.

Up to 14-way analog inputs

Rich input and output interface

- 10-way external active switching input contacts;
- 22-way internal switch input contacts;
- 11-way switch output contacts;

Standard Communication Interface to achieve the connection with the Networked Measurement and control Center any time

- RS485/RS422 standard communication interface;
- Standard Ethernet communication interface;
- IEC60870-5-103 communication chint protocol.

NZB71/NZB71E

NZB71/NZB71E功能配置表

类别	功能	NZB7101	NZB7102	NZB7111	NZB7112	NZB7113	NZB7114	NZB7121	NZB7128	NZB7151	NZB7152	NZB7171	NZB7172	NZB7181	NZB7182	NZB7183	NZB7184
保 护	三段低压闭锁定时限过流			■	■	■						■				■	
	零序过流			■	■							■					■
	反时限过流			■	■	■		■	■			■		■			
	过负荷			■	■	■	■					■		■			■
	低频减载			■	■												
	低电压	■	■					■	■			■		■			
	过电压	■	■					■	■			■					
	不平衡电压							■	■								
	不平衡电流							■	■								
	三段低压闭锁方向过流				■												
	二段定时限过流								■	■		■		■			
	三段定时限过流			■	■	■	■										
	具有检同期功能的 三相一次重合闸				■												
	三相一次重合闸			■	■												
	后加速			■	■		■										
	进线备投						■				■	■					
	母联备投							■			■	■					
	母线充电保护							■									
	启动时间长保护												■				
	负序过流												■		■		
	过热保护												■				
	非电量保护												■		■		
	PT断线	■	■	■	■	■							■		■	■	
	差流速断												■	■			
	比例差动保护													■			
	CT断线													■			
	高压侧零序定时限过流														■		
	低压侧零序定时限过流														■		
	复压闭锁（方向） 过流二段保护															■	■
	间隙零序电流																■
	零序电压保护	■															■
	闭锁调压																
	启动通风																
并列重动																	
E型增加8路开出，15路开入			■														

NZB71/NZB71E

NZB71/NZB71E function configuration table

Category	Function	NZB7101	NZB7102	NZB7111	NZB7112	NZB7113	NZB7114	NZB7121	NZB7128	NZB7151	NZB7152	NZB7171	NZB7172	NZB7181	NZB7182	NZB7183	NZB7184
Protection	Three-step low-voltage lockout fixed time limit overcurrent			■	■	■											
	Zero sequence overcurrent			■	■							■				■	
	Inverse time overcurrent			■		■		■	■			■		■			
	Overload			■	■	■	■					■		■			■
	Under frequency load shedding			■	■												
	Low voltage	■	■					■	■						■		
	Overvoltage	■	■					■	■				■				
	Unbalanced voltage							■	■								
	Unbalanced current							■	■								
	Three-step low-voltage lockout direction overcurrent					■											
	Two-step fixed time limit overcurrent								■	■			■		■		
	Three-step fixed time overcurrent			■	■	■	■										
	Three-phase primary reclosing with the synchrocheck function					■											
	Three-phase primary reclosing			■	■												
	Post-acceleration			■	■		■										
	Incoming line self-power input						■				■	■					
	Buscouple self-power input							■			■	■					
	Bus charging protection							■									
	Long start time protection												■				
	Negative sequence overcurrent												■		■		
	Overheating protection												■				
	Non-electricity protection												■		■		
	PT disconnection	■	■	■	■	■							■		■	■	
	Differential current fast disconnection												■	■	■	■	
	Proportional differential protection												■				■
	CT disconnection												■				■
	High-voltage side zero-sequence time-limited overcurrent														■		
	Low-voltage side zero-sequence time-limited overcurrent														■		
	Complex voltage lockout (direction)															■	
	Overcurrent two-step protection															■	■
	Gap zero sequence current																■
	Zero sequence voltage protection	■															■
	Lockout voltage regulation																
	Start ventilation																
	Parallel re-action			■													
8-way output and 15-way input are added for E type			■														

NZB71/NZB71E

装置选型表

NZB71□□/NZB71□□E- □□□□□□□□□□□□

语言												
汉语	1											
英语	2											
频率												
50Hz		1										
60Hz		2										
工作电源												
110V DC			1									
220V AC/DC			2									
相CT二次电流												
无				0								
1A				1								
5A				5								
零序CT二次电流												
无					0							
1A					1							
5A					5							
PT接线型式												
无						0						
三相四线						1						
三相三线						2						
PT二次电压												
无							0					
100V							1					
300V							2					
开入量形式												
外部电源: 110V									1			
外部电源: 220V									2			
通讯方式												
2个工业以太网口 (RJ45)										1		
2个RS485口										2		
窗口打印功能												
无											0	
有											1	
操作回路(NZB710不带操作回路, 请选择 '无')												
无												0
内部取消防跳 AC110V												1
内部取消防跳 DC110V												2
内部取消防跳 AC220V												3
内部取消防跳 DC220V												4
内部带防跳 AC110V												5
内部带防跳 DC110V												6
内部带防跳 AC220V												7
内部带防跳 DC220V												8
B 码对时功能												
无												0
有												1

注: 窗口打印功能中无录波打印功能, 如需录波打印功能请另做说明。

NZB71/NZB71E

Device selection table

NZB71□□/NZB71□□E- □□□□□□□□□□□□

Language												
Chinese	1											
English	2											
Frequency												
50Hz		1										
60Hz		2										
Working power												
110V DC			1									
220V AC/DC			2									
Phase CT secondary current												
No				0								
1A				1								
5A				5								
Zero sequence CT secondary current												
No					0							
1A					1							
5A					5							
PT wiring type												
No						0						
Three-phase four-wire						1						
Three-phase three-wire						2						
PT secondary voltage												
No							0					
100V							1					
300V							2					
Input form												
External power supply: 110V								1				
External power supply: 220V								2				
Communication method												
Two industrial Ethernet ports (RJ45)									1			
Two RS485 ports									2			
Window printing function												
No										0		
Yes										1		
Operating circuit (NZB710 does not have an operating circuit, and please select 'No')												
No												0
Without anti-trip inside AC110V												1
Without anti-trip inside DC110V												2
Without anti-trip inside AC220V												3
With anti-trip inside DC220V												4
With anti-trip inside AC110V												5
With anti-trip inside DC110V												6
With anti-trip inside AC220V												7
With anti-trip inside DC220V												8
B code timing function												
No												0
Yes												1

Note: There is no recording printing function in the window printing function. Please indicate if the recording printing function is required.



概述

NZB7115适用于35kV及以下电压等级系统中线路的保护测控。可集中组屏，也可分散安装于开关柜。

基本功能

- 装置描述的远方查看
- 装置参数的远方查看
- 10套定值，保护定值、区号的远方查看、修改功能
- 软压板状态的远方查看、投退
- 装置保护开入状态的远方查看
- 装置运行状态(包括保护动作元件的状态和装置的自检信息)远方查看
- 虚遥信、虚遥测、虚拟事件对点功能，方便工程调试
- 远方对装置实现信号复归
- 故障录波功能，8套标准COMTRADE格式波形
- 打印功能，包括定值、事件和录波打印（选配功能，订货需注明

功能配置

保护功能

- 纵联电流差动保护
- 复压闭锁过流保护
- 过流加速保护
- PT断线相过流保护
- 零序过流保护
- 零序过流加速保护
- 重合闸
- 大电流闭锁重合闸
- 低频减载
- 低压减载
- 过负荷告警
- CT断线检测
- PT断线检测

NZB7115

微机保护测控装置

Microcomputer-based feeder protection, metering and control relay

Overview

NZB7115 is suitable for the protection and measurement and control of lines in systems with voltage ratings up to 35kV. The screens can be concentrated or decentralized in the switch cabinet.

Basic functions

- Remote view of device description
- Remote view of device parameters
- 10 sets of fixed values, protection fixed values, remote review of area code, modification function
- Remote viewing of soft platen status, and put into or out of the operation
- Remote view of device protection input status
- Device operating status (including the status of the protection action component and the self-check information of the device)
- Virtual remote communication, virtual remote measurement, virtual event-to-point function, convenient engineering debugging
- Remotely reset the signal to the device
- Fault recording function, 8 sets of standard COMTRADE format waveforms
- Print function, including fixed value, event and recording print (optional function, indicated on the order)

测控功能

- 检同期功能
- 逻辑闭锁功能
- 遥测
I_{am}、I_{bm}、I_{cm}、P、Q、cos、U_{ab}、U_{bc}、U_{ca}、U_a、U_b、U_c、3U₀、I₀、F_b（母线频率）、F_l（线路频率）
- 遥信
事故总信号、一个断路器位置（双位置遥信），15个备用开入，检修状态、闭锁重合闸
- 遥控
遥跳、遥合（4组）

模拟量输入

- 保护电流：I_a、I_b、I_c、I₀
- 测量电流：I_{ca}、I_{cb}、I_{cc}
- 电压：U_a、U_b、U_c、U_x

开关量输入

- 投逻辑闭锁
- 光纤纵差投入
- 低频减载投入
- 低压减载投入
- 停用重合闸
- 检修状态投入
- 保护远方操作
- 测控远方操作
- 弹簧未储能
- 信号复归
- 备用开入

开关量输出

- 三相跳闸
- 重合闸出口
- 4组遥控接口
- 保护动作信号
- 重合闸动作信号
- 控制回路断线
- 运行异常告警
- 装置故障告警
- 过负荷告警

Function configuration

Protection function

- Pilot current differential protection
- Complex voltage lockout overcurrent protection
- Overcurrent acceleration protection
- PT disconnection phase overcurrent protection
- Zero sequence overcurrent protection
- Zero sequence overcurrent acceleration protection
- Reclosing
- High current lockout recloser
- Low frequency load shedding
- Low voltage load shedding
- Overload alarm
- CT disconnection detection
- PT disconnection detection

Digital input

- Input logic lockout
- Fiber longitudinal differential input
- Under frequency load shedding
- Low voltage load shedding
- Disable reclosing
- Inspection status input
- Remote operation of the protection
- Remote operation of the measurement and control
- The spring does not store energy
- Signal reset
- Alternate input

Measurement and control functions

- Synchrocheck function
- Logical lockout function
- Remote measurement
I_{am}, I_{bm}, I_{cm}, P, Q, cos, U_{ab}, U_{bc}, U_{ca}, U_a, U_b, U_c, 3U₀, I₀, F_b (bus frequency), F_l (line frequency)
- Remote communication
Total accident signal, one circuit breaker position (two-position remote communication), 15 spare inputs, inspection status, lock reclosing
- Remote control
Remote open and remote closing (4 groups)

Analog input

- Protection current: I_a, I_b, I_c, I₀
- Measuring current: I_{ca}, I_{cb}, I_{cc}
- Voltage: U_a, U_b, U_c, U_x

Switch output

- Three-phase tripping
- Reclosing exit
- 4 sets of remote control interfaces
- Protection action signal
- Reclosing action signal
- Control circuit disconnection
- Operation abnormal alarms
- Device failure alarm
- Overload alarm

NZB7115

装置选型表

NZB7115-

--	--	--	--	--	--	--	--	--	--	--

语言										
汉语										1
频率										
50Hz										1
工作电源										
110V AC/DC										1
220V AC/DC										2
相CT二次电流										
无										0
1A										1
5A										5
零序CT二次电流										
无										0
1A										1
5A										5
PT接线型式										
无										0
三相四线										1
三相三线										2
PT二次电压										
无										0
100V										1
300V										2
开入量形式										
外部电源: 110V										1
外部电源: 220V										2
通讯方式										
2 个工业以太网口 (RJ45)										1
2 个RS485 口										2
窗口打印功能										
无										0
有										1
操作回路										
无										0
内部取消防跳 AC110V										1
内部取消防跳 DC110V										2
内部取消防跳 AC220V										3
内部取消防跳 DC220V										4
内部带防跳 AC110V										5
内部带防跳 DC110V										6
内部带防跳 AC220V										7
内部带防跳 DC220V										8
B 码对时功能										
无										0
有										1

NZB7115

Device selection table

NZB7115-

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Language																				
Chinese																				1
Frequency																				
50Hz																				1
Working power																				
110V AC/DC																				1
220V AC/DC																				2
Phase CT secondary current																				
No																				0
1A																				1
5A																				5
Zero sequence CT secondary current																				
No																				0
1A																				1
5A																				5
PT wiring type																				
No																				0
Three-phase four-wire																				1
Three-phase three-wire																				2
PT secondary voltage																				
No																				0
100V																				1
300V																				2
Input form																				
External power supply: 110V																				1
External power supply: 220V																				2
Communication method																				
Two industrial Ethernet ports (RJ45)																				1
Two RS485 ports																				2
Window printing function																				
No																				0
Yes																				1
Operating circuit																				
No																				0
Without anti-trip inside AC110V																				1
Without anti-trip inside DC110V																				2
Without anti-trip inside AC220V																				3
With anti-trip inside DC220V																				4
With anti-trip inside AC110V																				5
With anti-trip inside DC110V																				6
With anti-trip inside AC220V																				7
With anti-trip inside DC220V																				8
B code timing function																				
No																				0
Yes																				1

NZB7141/NZB7142



NZB7141

微机故障解列保护测控装置

Fault separation protection, metering and control relay

NZB7142

微机防孤岛保护装置

Anti-islanding protection relay

概述

NZB7141微机故障解列保护测控装置，适用于110kV及以下电压等级的负荷侧或小电源侧故障解列。多运用在新能源系统的升压站、并网点负荷侧，实现故障快速解列等保护功能。

NZB7141保护配置

- a) 两段零序过压解列功能
- b) 两段低压解列功能
- c) 两段低频解列功能
- d) 三段逆功率解列功能
- e) 母线PT断线告警功能

孤岛运行一方面危及电网线路维护人员和用户的生命安全，干扰电网的正常合闸；另一方面孤岛运行电网中的电压和频率不受控制，将对配电设备和用户设备造成损坏。

NZB7142微机防孤岛保护装置，是我司独立的防孤岛效应保护装置，能够满足各电压等级接入的新能源场站孤岛保护需求。

NZB7142保护配置

- a) 两段过压保护
- b) 两段低压保护
- c) 两段低频保护
- d) 两段高频保护
- e) 两段逆功率保护
- f) 一段频率滑差保护
- g) 外部开入联跳保护
- h) 母线PT断线告警功能

Overview

NZB7141 fault separation protection, metering and control relay is suitable for 110kV and below load side or the small power supply side fault uncoupling. the booster station and interconnection point load side of the new energy system are often running to achieve protections such as quick fault uncoupling.

NZB7141 protection configuration

- a) Two-step zero sequence overvoltage decoupling function
- b) Two-step low-voltage disarrangement function
- c) Two-step low-frequency decoupling function
- d) Three-step inverse power decoupling function
- e) Bus PT disconnection alarm function

The operation of the island will endanger the life safety of the maintenance personnel and users of the power grid and disturb with the normal closing of the grid; furthermore, the voltage and frequency in the island operating grid is not controlled, resulting in damage to power distribution equipment and user equipment.

NZB7142 microcomputer anti-island protection relay is our independent anti-islanding protection device, which can meet the needs of island protection of new energy stations access to each voltage level.

NZB7142 protection configuration

- a) Two-step overvoltage protection
- b) Two-step low voltage protection
- c) Two-step low frequency protection
- d) Two-step high frequency protection
- e) Two-step reverse power protection
- f) One-step frequency slip frequency protection
- g) External input shunt tripping protection
- h) Bus PT disconnection alarm function

主要特点

- 32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有继电器实现实时计算，提高了采样精度，保证了保护的可靠性和速动性；
- 采用自适应算法，既能保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- 综合能力强，保护测控一体化；
- 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；
- 装置可存储32次故障报告、32次事件记录，掉电不丢失，便于事故分析；
- 装置可存储10次故障录波数据，每次录波数据包含了故障前4个周波和故障后6个周波；
- 就地打印机可以打印事件记录、定值单、录波记录等信息，同时支持共享打印机配置接口。
- 通信配置齐全，包括打印机接口，Modem或IAP下载电缆接口，差分GPS脉冲对接接口，两个RS485接口，两个以太网接口，支持电力行业通用的标准通信规约IEC60870-5-103。

Main features

- 32-bit high-speed DSP guarantees high-precision fast calculation, and 48 points are sampled per cycle to achieve real-time calculations for all relays, improving the sampling accuracy to ensure the reliability and quickness of protection;
- The adaptive algorithm is used to ensure fast protection when serious faults occur in the area and also prevent misoperation during normal operation and in case of out-of-zone failure;
- Strong comprehensive ability to protect the measurement and control integration ;
- With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear installation or group panel installation;
- The device can store 32 fault reports and 32 event records; those records are not lost in case of power failure for convenient accident analysis;
- The device can store fault recording data ten times, and each recording data contains data of four cycles before failure and of six cycles after failure;
- The local printer can print information such as event records, fixed value sheet, and recording records, and support the shared printer configuration interface.
- With complete communication configuration, include printer interface, Modem or IAP download cable interface, differential GPS pulse timing interface, two RS485 interfaces, two Ethernet interfaces, and support the common standard communication protocol available in the power industry IEC60870-5-103.

NZB7141/NZB7142

装置选型表

NZB7141/NZB7142-

--	--	--	--	--	--	--	--	--	--	--

语言											
汉语	1										
英语	2										
频率											
50Hz		1									
60Hz		2									
工作电源											
110V DC			1								
220V AC/DC			2								
相CT二次电流											
无				0							
1A				1							
5A				5							
零序CT二次电流											
无					0						
1A					1						
5A					5						
PT接线型式											
无						0					
三相四线						1					
三相三线						2					
PT二次电压											
无							0				
100V							1				
300V							2				
开入量形式											
外部电源: 110V									1		
外部电源: 220V									2		
通讯方式											
2个工业以太网口 (RJ45)										1	
2个RS485口										2	
窗口打印功能											
无											0
有											1
操作回路(NZB710不带操作回路, 请选择 '无')											
无											0
内部取消防跳 AC110V											1
内部取消防跳 DC110V											2
内部取消防跳 AC220V											3
内部取消防跳 DC220V											4
内部带防跳 AC110V											5
内部带防跳 DC110V											6
内部带防跳 AC220V											7
内部带防跳 DC220V											8
B 码对时功能											
无											0
有											1

注：窗口打印功能中无录波打印功能，如需录波打印功能请另做说明。

NZB7141/NZB7142

Device selection table

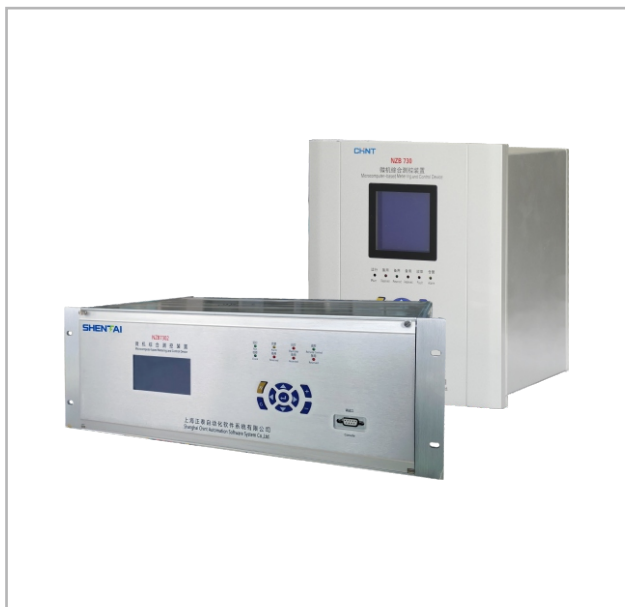
NZB7141/NZB7142-

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--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Language											
Chinese	1										
English	2										
Frequency											
50Hz		1									
60Hz		2									
Working power											
110V DC			1								
220V AC/DC			2								
Phase CT secondary current											
No				0							
1A				1							
5A				5							
Zero sequence CT secondary current											
No					0						
1A					1						
5A					5						
PT wiring type											
No						0					
Three-phase four-wire						1					
Three-phase three-wire						2					
PT secondary voltage											
No							0				
100V							1				
300V							2				
Input form											
External power supply: 110V								1			
External power supply: 220V								2			
Communication method											
Two industrial Ethernet ports (RJ45)									1		
Two RS485 ports									2		
Window printing function											
No										0	
Yes										1	
Operating circuit (NZB710 does not have an operating circuit, and please select 'No')											
No											0
Without anti-trip inside AC110V											1
Without anti-trip inside DC110V											2
Without anti-trip inside AC220V											3
With anti-trip inside DC220V											4
With anti-trip inside AC110V											5
With anti-trip inside DC110V											6
With anti-trip inside AC220V											7
With anti-trip inside DC220V											8
B code timing function											
No											0
Yes											1

Note: There is no recording printing function in the window printing function. Please indicate if the recording printing function is required.

NZB7302/7303



NZB7302/7303

微机测控装置

Microcomputer-based metering and control device

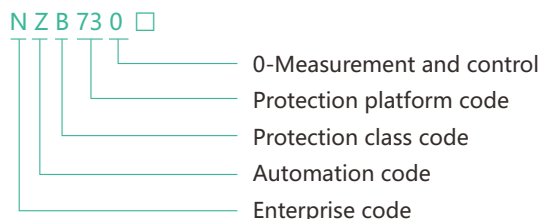
Overview

- 1.1 Applicable to substations and transmission and distribution networks with voltage levels of 110kV and below.
- 1.2 Perfect integration protection, measurement and control, control, smart communication interface.
- 1.3 NZB730 series microcomputer-based metering and control device.
 - NZB7303 microcomputer-based metering and control device.
 - NZB7302 microcomputer-based public metering and control device.

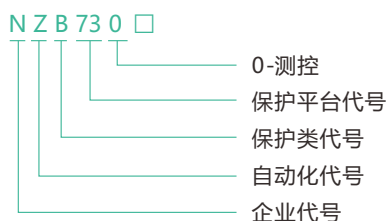
概述

- 1.1 适用于110kV及以下电压等级的变电站及输、配电网络。
- 1.2 完美集成保护、测控、控制、智能通讯接口于一体。
- 1.3 NZB730系列公共测控装置
 - NZB7303微机测控装置
 - NZB7302微机公共测控装置

Model and meanings



型号及含义



Function series

Microcomputer measurement and control device NZB7303

NZB7303 microcomputer-based metering and control device can form a combination of various measurement and control for various substations and power plants, with strong adaptability and flexibility to meet the different needs of 110kV and below substations and power plants.

Microcomputer common measurement and control device NZB7302

NZB7302 microcomputer-based public metering and control device is mainly applicable to the measurement and control of the substations and switching station with various voltage levels, with the automatic functions such as four-remote and synchronous closing to fully adapt to the relatively harsh on-site operating conditions.

功能系列

微机测控装置NZB7303

NZB7303系列微机综合测控装置可满足各种变电站和发电厂多种测控量的组合，具有强大的自适应性和灵活性，可适应110kV及以下变电站和发电厂的不同需求。

微机公共测控装置NZB7302

NZB7302公共测控装置主要适用于各电压等级变电站、开闭所等测量控制领域，实现四遥及同期合闸等自动功能，完全适应较为恶劣的现场运行条件。

产品技术特点

NZB7303特点

- 32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有继电器实现实时计算，提高了采样精度，保证了保护的可靠性和速动性。
- 采用自适应算法，既能保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- 采用16位AD采样芯片，实现高精度测控功能；
- 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；
- 装置可存储32次故障报告、32次事件记录，掉电不丢失，便于事故分析；
- 装置可存储10次故障录波数据，每次录波数据包含了故障前4个周波和故障后6个周波；
- 就地打印机可以打印事件记录、定值单、录波记录等信息，同时支持共享打印机配置接口。
- 通信配置齐全，包括打印机接口，Modem或IAP下载电缆接口，差分GPS脉冲对时接口，两个RS485接口，两个以太网接口，支持电力行业通用的标准通信规约IEC60870-5-103。
- 采用点阵式液晶，实现电力参数标准显示，实现可靠、友好的人界面操作。

NZB7302 技术特点

- 高性能、高可靠、模块化设计；
- 管理主模块采用飞思卡尔32位微处理器、子模块采用基于Cortex-M3内核的ARM32位微处理器技术，使产品的稳定性和运算速度得到保证；
- 交流采集采用16位数模转换器，使得采集动态范围宽，精度高；
- 每路遥信有独立可设的多种属性，满足不同速度、不同性质信号的快速捕捉，遥信分辨率 $\leq 2\text{ms}$ ；
- 直流采集模块弱电端采用专门隔离措施，排除任何可能薄弱环节引入外界干扰；
- 遥控模块设计了多环节闭锁及动态自检功能，可靠性高；
- 高精度的时钟芯片，并配置有GPS硬件对时电路，便于全系统时钟同步；
- 装置内部各模块与管理主模块采用高速可靠的CAN网通信，使得重要信息可迅速上传，增强系统响应速度；
- 具有灵活的在线、离线调试手段，可靠的程序升级、下载参数及数据查询功能，满足日新月异的网络信息时代要求；
- 对外接口配备高速以太网网络通信，并集成了IEC 60870-5-103标准通信规约；
- 优异的抗干扰性能，组屏或安装于开关柜时不需要其它抗干扰模块；
- 完善的自诊断功能

Product technical characteristics

NZB7303 features

- 32-bit high-speed DSP guarantees high-precision fast calculation, and 48 points are sampled per cycle to achieve real-time calculations for all relays at each sampling interval, improving the sampling accuracy and ensuring the reliability and quickness of protection.
- The adaptive algorithm is used to ensure fast protection in case of serious faults occurred in the area, and to prevent misoperation during normal operation and in case of out-of-area failure;
- 16-bit AD sampling chip is used to realize high-precision measurement and control function;
- With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear installation or group panel installation;
- The device can store 32 fault reports and 32 event records; those records are not lost in case of power failure for accident analysis;
- The device can store fault recording data ten times, and each recording data contains data of four cycles before failure and of six cycles after failure;
- The local printer can print the event records, the fixed value sheet, and the recording information, and the shared printer configuration interface is also supported.
- With complete communication configuration, include printer interface, Modem or IAP download cable interface, differential GPS pulse timing interface, two RS485 interfaces, two Ethernet interfaces, and support the common standard communication protocol available in the power industry IEC60870-5-103.
- The dot-type LCD is used to realize standard display of power parameters, achieving reliable and friendly human interface operation.

NZB7302 Technical Features

- High performance, high reliability and modular design;
- The main management module uses is based on Freescale 32-bit microprocessor and the sub-module uses ARM32-bit microprocessor technology based on Cortex-M3 core to guarantee the stabilization and computing speed of the product;
- AC acquisition is achieved through a 16-bit digital-to-analog converter to make the acquisition dynamic range wide and high accuracy.
- Each remote communication has multiple attributes that can be set independently to quickly capture the signals with different speeds and different natures. The remote communication resolution is $\leq 2\text{ms}$;
- The weak current terminal of the DC acquisition module adopts special isolation measures to avoid the external interference to the possible weakening link;
- The remote control module is designed with multi-link lockout and dynamic self-check function, with high reliability;
- High-precision clock chip with GPS hardware timing circuit is used to achieve the clock synchronization of the entire system;
- High-speed and reliable CAN network communication is used in each module and main management module of the device, enabling important information to be uploaded quickly and enhancing system response speed;
- Flexible online and offline debugging methods, reliable program upgrade, download parameters and data query functions can meet the ever-changing network information age requirements;
- The external interface is equipped with high-speed Ethernet communication and integrated with IEC 60870-5-103 standard communication protocol;
- With excellent anti-interference performance, other anti-interference module is not required when group panel installation or installed in the switchgear.
- Complete self-diagnosis function

NZB7302/7303

装置选型表

NZB7303-

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语言																				
汉语																				1
英语																				2
频率																				
50Hz																				1
60Hz																				2
工作电源																				
110V DC																				1
220V AC/DC																				2
相CT二次电流																				
无																				0
1A																				1
5A																				5
零序CT二次电流																				
无																				0
1A																				1
5A																				5
PT接线型式																				
无																				0
三相四线																				1
三相三线																				2
PT二次电压																				
无																				0
100V																				1
300V																				2
开入量形式																				
外部电源: AC 220V																				0
外部电源: DC 110V																				1
外部电源: DC 220V																				2
通讯方式																				
2个工业以太网口 (RJ45)																				1
2个RS485口																				2
窗口打印功能																				
无																				0
有																				1
操作回路(NZB710不带操作回路, 请选择 '无')																				
无																				0
内部取消防跳 AC110V																				1
内部取消防跳 DC110V																				2
内部取消防跳 AC220V																				3
内部取消防跳 DC220V																				4
内部带防跳 AC110V																				5
内部带防跳 DC110V																				6
内部带防跳 AC220V																				7
内部带防跳 DC220V																				8
B 码对时功能																				
无																				0
有																				1
直流量采集功能																				
无																				0
有																				1

NZB7302/7303

Device selection table

NZB7303-

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Language												
Chinese	1											
English	2											
Frequency												
50Hz		1										
60Hz		2										
Working power												
110V DC			1									
220V AC/DC			2									
Phase CT secondary current												
No				0								
1A				1								
5A				5								
Zero sequence CT secondary current												
No				0								
1A				1								
5A				5								
PT wiring type												
No						0						
Three-phase four-wire						1						
Three-phase three-wire						2						
PT secondary voltage												
No							0					
100V							1					
300V							2					
Input form												
External power supply: AC 220V								0				
External power supply: DC 110V								1				
External power supply: DC 220V								2				
Communication method												
Two industrial Ethernet ports (RJ45)									1			
Two RS485 ports									2			
Window printing function												
No										0		
Yes										1		
Operating circuit (as NZB710 does not include an operating circuit, please select 'No')												
No											0	
Without anti-trip inside AC110V											1	
Without anti-trip inside DC110V											2	
Without anti-trip inside AC220V											3	
With anti-trip inside DC220V											4	
With anti-trip inside AC110V											5	
With anti-trip inside DC110V											6	
With anti-trip inside AC220V											7	
With anti-trip inside DC220V											8	
B code timing function												
No												0
Yes												1
DC amount acquisition function												
No												0
Yes												1



概述

NZB7385变压器差动保护主要用于110kV及以下电压等级的四圈变压器，作为变压器的主保护。装置为由多微机实现的变压器差动保护，适用于110kV及以下电压等级的双圈、三圈变压器，满足四侧纵联差动的要求，并同时在变压器各侧配置零序差动保护。

本装置包括差动速断保护，比率差动保护，高、中、低侧零序差动保护，TA断线判别。NZB7385装置中的比率差动保护可通过控制字采用二次谐波制动或波形分析制动。

保护配置

- 纵差差动速断
- 纵差差动保护
- 纵差差流越限
- TA断线闭锁差动保护

产品特点

- a) 32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有采样数据实时计算，提高了采样精度，保证了保护的可靠性和速动性；
- b) 可保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- c) 综合能力强，保护测控一体化；
- d) 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；

NZB7385

微机变压器差动保护测控装置 Transformer differential protection relay

Overview

NZB7385 transformer differential protection relay is mainly used for four-coil transformer with the voltage level of 110kV and below as the main protection for transformer. The device is a transformer differential protection by a multi-microcomputer, suitable for two-coil and three-coil transformer with the voltage grade of 110kV and below. It satisfies the four-side longitudinal differential requirements, and simultaneously the zero sequence differential protection is provided at each side of the transformer.

The device includes differential quick-break protection, ratio differential protection, high, medium and low side zero sequence differential protection, and TA disconnection judgement. Ratio differential protection in the NZB7385 device can use the second harmonic restraint or waveform analysis braking through the control words.

Protection configuration

- Longitudinal differential quick-break
- Longitudinal differential protection
- Longitudinal differential current limit
- TA disconnection lockout differential protection

- e) 装置可存储32次故障报告、32次事件记录，掉电不丢失，便于事故分析；
- f) 装置可存储5次故障录波数据，每次录波数据包含了故障前4个周波和故障后6个周波；(录波功能需定制)
- g) 就地打印机可以打印定值清单、压板清单信息；
- h) 通信配置齐全，包括打印机接口，差分GPS脉冲对接接口，两个RS485接口或两个以太网接口，支持正泰103规约。

Product Features

- a) 32-bit high-speed DSP guarantees high-precision fast calculation, and 48 points are sampled per cycle to achieve real-time calculations for all relays at each sampling interval, improving the sampling accuracy and ensuring the reliability and quickness of protection;
- b) To ensure fast protection in case of serious faults occurred in the area, and to prevent misoperation during normal operation and in case of the out-of-area failure;
- c) With strong comprehensive ability and with the integration of the protection and measurement and control functions;
- d) With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear installation or group panel installation;
- e) The device can store 32 fault reports and 32 event records. Those records are not lost in case of power failure for accident analysis;
- f) The device can store fault recording data five times, and each recording data contains data of 4 cycles before failure and of 6 cycles after failure; (the recording function shall be customized)
- g) The local printer can print the list of fixed values and the list of pressboards;
- h) With the complete communication configuration, include printer interface, differential GPS pulse timing interface, two RS485 interfaces or two Ethernet interfaces to support the Chint 103 protocol.

基本技术数据

- 额定交流数据
 - a) 额定交流电流 I_n : 5A或1A;
 - b) 额定交流电压 U_n : 线电压 100V, 相电压 3/100V;
 - c) 额定频率: 50Hz.
- 额定电源数据
 - 直流220V或110V, 允许偏差 +15%, -20%.
- 机箱结构
 - 采用6U, 19/3英寸机箱, 采取后插拔, 强弱电完全分开的方式。
- 功率消耗
 - a) 交流电压回路: 当为额定电压时, 每相不大于0.5VA;
 - b) 交流电流回路: 当额定电流为1A时, 每相不大于0.5VA; 当额定电流为5A时, 每相不大于1VA;
 - c) 直流回路: 正常运行时, 保护逻辑回路不大于5W, 开入回路不大于15W; 保护动作时, 保护逻辑回路不大于10W.
- 热稳定性
 - a) 交流电流回路: 2 I_n 下连续工作; 10 I_n 下允许工作10s; 40 I_n 下允许工作1s;
 - b) 交流电压回路: 1.2 U_n 下可连续工作; 1.4 U_n 下允许工作10s.
- 绝缘性能
 - a) 绝缘电阻: 装置所有电路与外壳之间的绝缘电阻在标准实验条件下, 不小于100M;
 - b) 介质强度: 装置的额定绝缘电压小于60V的电路与外壳的介质强度能耐受交流50Hz, 电压500V(有效值), 历时1min试验; 其它电路与外壳的介质强度能耐受交流50Hz, 电压2kV(有效值), 历时1min试验, 而无绝缘击穿或闪络现象。

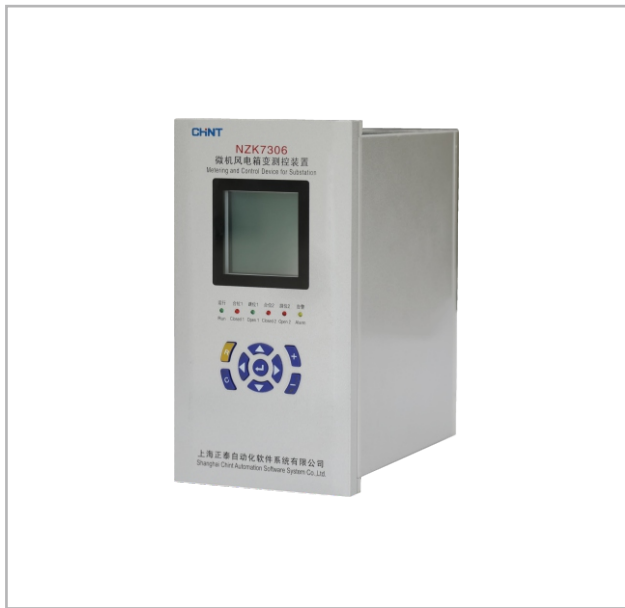
Basic technical data

- Rated AC data
 - a) Rated AC current I_n : 5A or 1A;
 - b) Rated AC voltage U_n : line voltage 100V, phase voltage 3/100V;
 - c) Rated frequency: 50Hz.
- Rated power data
 - DC 220V or 110V; allowable deviation: +15%, -20%.
- Chassis structure
 - 6U, 19/3 inch chassis is used, with rear-plugging, and the strong and weak power is completely separated.
- Power consumption
 - a) AC voltage circuit: The voltage of each phase is not more than 0.5VA at the rated voltage;
 - b) AC current circuit: When the rated current is 1A, the voltage of each phase is not greater than 0.5VA; when the rated current is 5A, the voltage of each phase is not more than 1VA;
 - c) DC circuit: During normal operation, the protection logic circuit is no more than 5W, and the input circuit is no more than 15W; when the protection works, the protection logic circuit is no more than 10W.
- Thermal stability
 - a) AC current circuit: continuous operation under 2 I_n ; operation is allowed under 10 I_n for 10s, and under 40 I_n for 1s;
 - b) AC voltage circuit: It can work continuously under 1.2 U_n ; it can work for 10s under 1.4 U_n .
- Insulation performance
 - a) Insulation resistance: the insulation resistance between each circuit and the housing of the device is not less than 100M under the standard experimental conditions;
 - b) Dielectric strength: The dielectric strength of the circuit with the rated insulation voltage of less than 60V and of the housing can withstand AC 50Hz and voltage 500V (effective value) for 1 minute. For other circuit and housing, the dielectric strength can withstand AC 50Hz and voltage 2kV (effective value) for 1 minute, without insulation breakdown or flashover phenomenon.

- 冲击电压
装置通信回路和24V弱电输入输出端子对地，能承受1kV(峰值)的标准雷电波冲击检验；其各带电的导电端子分别对地，交流回路和直流回路之间，交流电流回路和交流电压回路之间，能承受5kV(峰值)的标准电波冲击检验。
- 触点寿命
 - a) 电寿命：装置输出触点电路在电压不超过250V，电流不超过0.5A，时间常数为 $5\pm 0.75\text{ms}$ 的负荷条件下，产品能可靠动作及返回105次；
 - b) 机械寿命：装置输出触点不接负荷，能可靠动作和返回107次。
- 机械性能
 - a) 工作条件：能承受严酷等级为I级的振动响应，冲击响应检验；
 - b) 运输条件：能承受严酷等级为I级的振动耐久，冲击及碰撞检验。
- Impulse voltage
The device communication circuit and 24V weak current input and output terminals can withstand 1kV (peak) standard lightning wave impact to the ground; the 5kV (peak) standard lightning wave impact can be withstood between the live conductive terminal and the ground, between the AC circuit and the DC circuit, and between the AC current circuit and the AC voltage circuit.
- Contact life
 - a) Electrical life: The product can act and return 105 times reliably under the load conditions that the voltage does not exceed 250V and the current does not exceed 0.5A at the output contact circuit with the time constant of $5\pm 0.75\text{ms}$;
 - b) Mechanical life: The output contact of the device can act and return 107 times without connecting to the load.
- Mechanical properties
 - a) Working conditions: passed the vibration response and impact response test of the severity class I;
 - b) Transportation conditions: passed the vibration durability, impact and collision test of the severity class I.

主要技术指标

- 采样回路精确工作范围
 - a) 电压：0.5V-120V；
 - b) 保护电流： $5\%I_n-20I_n$ ；
- 电流整定值误差
 - a) $0.1I_n\sim 0.4I_n$ (含 $0.4I_n$) 范围内不超过 $\pm 0.015I_n$ ；
 - b) $0.4I_n\sim 20I_n$ 范围内不超过整定值的 $\pm 5\%$ 。
- 延时整定值误差
 - a) $0\text{s}\sim 2\text{s}$ (含 2s)范围内不超过40ms；
 - b) $2\text{s}\sim 100\text{s}$ 范围内不超过整定值的 $\pm 2\%$ 。
 - c) 差流速断保护动作时间(1.5倍整定电流时)不大于20ms；
 - d) 比率差动动作时间(2.0倍整定电流时)不大于30ms。
- Main technical indicators
 - Sampling circuit precise working range
 - a) Voltage: 0.5V-120V;
 - b) Protection current: $5\% I_n-20I_n$;
 - Current setting error
 - a) Within the range of $0.1I_n\sim 0.4I_n$ (including $0.4I_n$), the error does not exceed $\pm 0.015I_n$;
 - b) Within the range of $0.4I_n\sim 20I_n$, the error does not exceed $\pm 5\%$ of the setting value.
 - Delay setting error
 - a) Within $0\text{s}\sim 2\text{s}$ (including 2s), the error does not exceed 40ms;
 - b) Within $2\text{s}\sim 100\text{s}$, the error does not exceed $\pm 2\%$ of the setting value.
 - c) The differential current quick-break protection action time (1.5 times the set current) is not greater than 20ms;
 - d) The ratio differential action time (2.0 times the set current) is not greater than 30ms.



NZK7306

微机风电箱变测控装置 Metering and control device for substation

Overview

NZK7306 metering and control device can achieve the collection of all information at the low voltage side of the wind chassis, the non-electricity protection, the remote control and the communication functions to satisfy the operation management method of "less people on duty" or "unattended", applied to the remote management and automatic measurement and control of all information at the low voltage side of the box transformer at the wind power field.

概述

NZK7306微机风电箱变测控装置可完成风机箱变低压侧全部信息的采集、非电量保护、远方控制和通讯功能，满足风电工程“少人值守”或“无人值守”的运行管理方式。应用于风电场箱式变压器低压侧全部信息的远程管理和自动化监控。

特点

- 32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有继电器实现实时计算，提高了采样精度，保证了保护的可靠性和速动性；
- 采用自适应算法，既能保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- 配备大屏幕液晶显示器，不需说明书即能完成操作；
- 配备完善的LED灯光指示，装置状态及故障信息有液晶报告和LED灯光两种指示，运行人员一目了然；
- 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；
- 装置可存储64次故障报告、64次事件记录，掉电不丢失，便于事故分析；
- 通信配置齐全，支持正泰104规约；可配两路100BASE-FX(光口)和两路电口，组成自愈式光纤环型以太网；
- 完善的自检功能，装置无故障指示，即可正常运行，长期免校验；
- 装置采用背插式结构，实现了强弱电分离，内置完善的抗干扰组件，大大提高了装置的抗干扰性能，所有强电回路可以直接接入装置。

Features

- 32-bit high-speed DSP guarantees high-precision fast calculation, and 48 points are sampled per cycle to achieve real-time calculations for all relays at each sampling interval, improving the sampling accuracy and ensuring the reliability and quickness of protection.
- The adaptive algorithms is used to ensure fast protection in case of serious faults occurred in the area, and to prevent misoperation during normal operation and in case of the out-of-area failure;
- Equipped with large-screen LCD display, to complete the operation without a manual;
- Equipped with complete LED lighting indicators; there are LCD report and LED lighting indicators for device status and fault information, so the operator can see at a glance;
- With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear installation or group panel installation;
- The device can store 64 fault reports and 64 event records. Those records are not lost in case of power failure for accident analysis;
- With complete communication configuration, support Chint 104 protocol; two 100BASE-FX (Optical port) and two electrical ports can be equipped to form a self-healing fiber-optic ring Ethernet;
- With perfect self-check function, the device can be operated normally with fault indication not required and with free check for a long time;
- The device adopts a back-inserted structure to achieve strong and weak electrical separation, and the perfect built-in anti-interference components are sued, greatly improving the anti-interference performance of the device, and all high-power circuits can be directly access to the device.

保护配置

a) NZK7306(标准型) 微机风电箱变测控装置保护配置如下:

- 三段复压闭锁(负序电压闭锁、低电压闭锁)过流二时限保护
- 过负荷保护
- 二段定时限负序过流保护
- 二段零序定时限过流保护
- 过电压保护
- 零序电压保护
- 低电压保护
- TV断线
- 控回断线
- 八路非电量保护

b) NZK7306D(大机箱, 扩展32路开入) 微机风电箱变测控装置保护配置如下:

- 三段复压闭锁(负序电压闭锁、低电压闭锁)过流二时限保护
- 过负荷保护
- 二段定时限负序过流保护
- 二段零序定时限过流保护
- 过电压保护
- 零序电压保护
- 低电压保护
- TV断线
- 控回断线
- 八路非电量保护

测量功能

NZK7306系列装置除完成上述保护功能外, 还具有以下丰富的测量和计量功能:

a) 采用专业测量CT, 确保了计量精度

b) 瞬时电量测量

- 电流 IA, IB, IC
- 电压 UA, UB, UC
- 三相有功功率 3P
- 三相无功功率 3Q
- 三相功率因数 COS ϕ

c) 需量统计

- 需量电流
- 需量有功功率、无功功率
- 最大需量电流、最大需量有功功率、最大需量无功功率及出现最大需量的时间

Protection configuration

a) The protection configuration of the NZK7306 (standard type) microcomputer wind power box transformer measurement and control device is as follows:

- Three-step complex voltage lockout (negative sequence voltage lockout, low voltage lockout) overcurrent second time limit protection
- Overload protection
- Two-step time-limited negative sequence overcurrent protection
- Two-step zero-sequence time-limited overcurrent protection
- Overvoltage protection
- Zero sequence voltage protection
- Low voltage protection
- TV disconnection
- Control circuit disconnection
- 8-way non-electricity protection

b) NZK7306D (large chassis, extended 32-way input) microcomputer wind power box transformer measurement and control device protection configuration is as follows:

- Three-step complex voltage lockout (negative sequence voltage lockout, low voltage lockout) overcurrent second time limit protection
- Overload protection
- Two-step time-limited negative sequence overcurrent protection
- Two-step zero-sequence time-limited overcurrent protection
- Overvoltage protection
- Zero sequence voltage protection
- Low voltage protection
- TV disconnection
- Control circuit disconnection
- 8-way non-electricity protection

d) 最大最小值统计

- 三相最大最小电流
- 三相最大最小有功功率
- 三相最大最小无功功率

e) 电能计量

- 正、负有功电度
- 正、负无功电度

f) 谐波分析

提供A相电流的谐波含有率及总谐波畸变率, 可查看从基波到21次的谐波计算值。

g) 其他测量

- 两路PT100温度传感器输入
- 两路4~20MA直流电流输入, 如要测量0-5V的直流电压, 需另外定制

Measurement function

In addition to the above protection functions, the NZK7306 series devices have the following rich measurement and metering functions:

- a) Using professional measurement CT to ensure metering accuracy
- b) Instantaneous electrical measurement
 - Current IA, IB, IC
 - Voltage UA, UB, UC
 - Three-phase active power 3P
 - Three-phase reactive power 3Q
 - Three-phase power factor COS Φ
- c) Demand statistics
 - Demand current
 - Demand active power, reactive power

- Maximum demand current, maximum demand active power, maximum demand reactive power and the time when the maximum demand occurs
- d) Maximum and minimum statistics
 - Three-phase maximum and minimum current
 - Three-phase maximum and minimum active power
 - Three-phase maximum and minimum reactive power
- e) Electric energy metering
 - Positive and negative active energy
 - Positive and negative reactive power
- f) Harmonic analysis
Provide the harmonic ratio and total harmonic distortion rate of phase A current, and view the calculated value from the fundamental wave to the 21th harmonic wave.
- g) Other measurements
 - Two-way PT100 temperature sensor inputs
 - Two-way 4~20MA DC current inputs; to measure 0-5V DC voltage, the customization is required.

主要技术参数及性能指标

使用环境

- a) 环境温度：工作：-40°C ~ 70°C；
- b) 贮存温度：-40°C ~ +80°C，相对湿度不大于80%，周围空气中不含有酸性、碱性或其它腐蚀性及爆炸性气体的防雨、防雪的室内；在极限值下不施加激励量，装置不出现不可逆转的变化，温度恢复后，装置应能正常工作；
- c) 大气条件：(80~110)kPa；
- d) 海拔高度2km以下；

主要技术参数及性能指标

Main technical parameters and performance indicators

Main technical parameters and performance indicators

Use environment

- a) Ambient temperature: work temperature: -40°C~70°C;
- b) Storage temperature: -40°C~+80°C; the relative humidity is not more than 80%, there is no acid, alkaline or other corrosive and explosive gas in air in the rain-proof and snow-proof room; no excitation amount is applied at the limit value, there is no irreversible change on the device, and the device should work normally after the temperature is restored;
- c) Atmospheric conditions: (80~110) kPa;
- d) Altitude is 2km and below;

	试验项目	Test item	参照标准	Reference standard	等级	Grade	
抗干扰测试 Anti-interference test	静电放电干扰	Electrostatic discharge interference	GB/T 14598.26-2015		符合	OK	
	电磁场辐射干扰	Electromagnetic field radiation interference	GB/T 14598.26-2015		符合	OK	
	快速瞬变干扰	Fast transient interference	GB/T 14598.26-2015		A		
	浪涌干扰	Surge interference	GB/T 14598.26-2015		符合	OK	
	脉冲群干扰	Pulse group interference	GB/T 14598.26-2015		符合	OK	
机械性能 Mechanical behavior	振动	Vibration	响应	Response	GB/T 7261-2016	符合	OK
			持久性	Persistence	GB/T 7261-2016	符合	OK
	冲击	Shock	响应	Response	GB/T 7261-2016	符合	OK
			持久性	Persistence	GB/T 7261-2016	符合	OK
	碰撞	Collision	GB/T 7261-2016		符合	OK	
绝缘性能 Insulation performance	介质强度	Medium strength	GB/T 7261-2016		符合	OK	
	绝缘电阻	Insulation resistance	GB/T 7261-2016		符合	OK	

NZK7306

Model Description

NZK 7306/D -

Product model _____

Product options configuration _____

Model									
NZK7306									Microcomputer wind power box transformer measurement and control device (standard type)
NZK7306D									Microcomputer wind power box transformer measurement and control device (extended type, large chassis, 32-way input provided compared with the standard type)
Language									
Chinese			1						
English			2						
Frequency									
50Hz				1					
60Hz				2					
Working power									
110V DC					1				
220V AC/DC					2				
Phase CT current									
1A						1			
5A						5			
Zero sequence CT current									
No							0		
1A							1		
5A							5		
PT wiring method									
Three-phase four-wire								0	
Three-phase three-wire								1	
AC voltage									
100V									1
270V									2
315V									3
400~690V									4
Input form									
External power supply: 110V									1
External power supply: 220V									2
Two-way 100BASE-FX interfaces (i.e., optical fiber ring network)									
No									0
Yes									1
Communication method									
1 Ethernet port and 2 RS485 ports (customized development)									1
2 Ethernet ports (RJ45)									2
2 RS485 ports									3

For example:

NZK7306-1125104201

Meaning: NZK7306 microcomputer wind power box transformer measurement and control device, Chinese language, 50Hz, working power: 220V AC / DC, phase sequence CT secondary current 5A, zero sequence CT secondary current 1A; PT wiring is of the three-phase four-wire type, AC voltage is 400~690V, and the input type is external power supply 220V, two-way 100BASE-FX interface (i.e., optical fiber ring network), 2 Ethernet ports (RJ45).

Note: If you have special order requirements, please contact us.



NZK7307

微机光伏箱变测控装置 Metering and control device for substation

Overview

The NZK7307 metering and control device can achieve the collection of all information, the non-electricity protection, the remote control and the communication of the low-voltage side of the PV box to monitor, measure and protect the low-voltage side of the transformer, which meet the "unattended" operation management method of the photovoltaic project. It is applied to remote management and automatic measurement and control of all information on the low voltage side of PV box transformers.

概述

NZK7307微机光伏箱变测控装置可完成光伏箱变低压侧全部信息的采集、非电量保护、远方控制和通讯功能实现对变压器低压侧的监视、测量、保护，满足光伏工程“无人值守”的运行管理方式。应用于光伏箱式变压器低压侧全部信息的远程管理和自动化监控。

特点

- 32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有继电器实现实时计算，提高了采样精度，保证了保护的可靠性和速动性；
- 采用自适应算法，既能保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- 配备大屏幕液晶显示器，不需说明书即能完成操作；
- 配备完善的LED灯光指示，装置状态及故障信息有液晶报告和LED灯光两种指示，运行人员一目了然；
- 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；
- 装置可存储64次故障报告、64次事件记录，掉电不丢失，便于事故分析；
- 通信配置齐全，支持正泰104规约；两个RS485通信接口；
- 完善的自检功能，装置无故障指示，即可正常运行，长期免校验；
- 装置采用背插式结构，实现了强弱电分离，内置完善的抗干扰组件，大大提高了装置的抗干扰性能，所有强电回路可以直接接入装置。

Features

- 32-bit high-speed DSP guarantees high-precision fast calculation, and 48 points are sampled per cycle to achieve real-time calculations for all relays at each sampling interval, improving the sampling accuracy and ensuring the reliability and quickness of protection.
- The adaptive algorithms is used to ensure fast protection in case of serious faults occurred in the area, and to prevent misoperation during normal operation and in case of the out-of-area failure;
- Equipped with large-screen LCD display, to complete the operation without a manual;
- Equipped with complete LED lighting indicators; there are LCD report and LED lighting indicators for device status and fault information, so the operator can see at a glance;
- With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear installation or group panel installation;
- The device can store 32 fault reports and 32 event records. Those records are not lost in case of power failure for accident analysis;
- With complete communication configuration, support Chint 104 protocol; two RS485 communication interface;
- With perfect self-check function, the device can be operated normally with fault indication not required and with free check for a long time;
- The device adopts a back-inserted structure to achieve strong and weak electrical separation, and the perfect built-in anti-interference components are sued, greatly improving the anti-interference performance of the device, and all high-power circuits can be directly access to the device.

保护配置

a) NZK7307(标准型) 微机光伏箱变测控装置保护配置如下:

- 八路非电量保护

b) NZK7307E(大机箱, 扩展15路开入) 微机光伏箱变测控装置保护配置如下:

- 三段复压闭锁(负序电压闭锁、低电压闭锁)过流二时限保护
- 过负荷保护
- 二段定时限负序过流保护
- 二段零序定时限过流保护
- 过电压保护
- 零序电压保护
- 低电压保护
- TV断线
- 控回断线
- 八路非电量保护

测量功能

NZK7307系列装置除完成上述保护功能外, 还具有以下丰富的测量和计量功能:

a) 采用专业测量CT, 确保了计量精度

b) 瞬时电量测量

- 两路电流 IA1, IB1, IC1, IA2, IB2, IC2
- 两路电压 UA1, UB1, UC1, UA2, UB2, UC2
- 三相有功功率 3P
- 三相无功功率 3Q
- 三相功率因数 COS Φ

c) 需量统计

- 需量电流
- 需量有功功率、无功功率
- 最大需量电流、最大需量有功功率、最大需量无功功率及出现最大需量的时间

d) 最大最小值统计

- 三相最大最小电流
- 三相最大最小有功功率
- 三相最大最小无功功率

e) 电能计量

- 正、负有功电度
- 正、负无功电度

f) 谐波分析

提供A相电流的谐波含有率及总谐波畸变率, 可查看从基波到21次的谐波计算值。

g) 其他测量

- 两路/三路PT100温度传感器输入
- 两路/三路4~20ma直流电流输入, 如要测量0-5V的直流电压, 需另外定制

Protection configuration

a) NZK7307(standard type) microcomputer PV box transformer measurement and control device protection configuration is as follows:

- 8-way non-electricity protection

b) NZK7307E (large chassis, extended 15-way input) microcomputer PV box transformer measurement and control device protection configuration is as follows:

- Three-step complex voltage lockout (negative sequence voltage lockout, low voltage lockout) overcurrent second time limit protection
- Overload protection
- Two-step definite time negative sequence overcurrent protection
- Two-step zero-sequence time-limited overcurrent protection
- Overvoltage protection
- Zero sequence voltage protection
- Low voltage protection
- TV disconnection
- Control circuit disconnection
- 8t-way non-electricity protection

Measurement function

In addition to the above protection functions, the NZK7307 series devices have the following extensive measurement and metering functions:

a) Using professional measurement CT to ensure measurement accuracy

b) Instantaneous power measurement

- Two-way currents IA1, IB1, IC1, IA2, IB2, IC2
- Two-way voltage UA1, UB1, UC1, UA2, UB2, UC2
- Three-phase active power 3P
- Three-phase reactive power 3Q
- Three-phase power factor COS Φ

c) Demand statistics

- Demand current
- Demand active power, reactive power
- Maximum demand current, maximum demand active power, maximum demand reactive power, and time when the maximum demand occurs

d) Maximum and minimum statistics

- Three-phase maximum and minimum current
- Three-phase maximum and minimum active power
- Three-phase maximum and minimum reactive power

e) Energy metering

- Positive and negative active energy
- Positive and negative reactive power

f) Harmonic analysis

Provide the harmonic ratio and total harmonic distortion rate of phase A current, and view the calculated value from the fundamental wave to the 21th harmonic wave.

g) Other measurements

- Two-way/Three-way PT100 temperature sensor inputs
- Two-way/Three-way 4~20ma DC current inputs; to measure 0-5V DC voltage, the customization is required.

主要技术参数及性能指标

使用环境

- a) 环境温度：工作：-40°C ~ 70°C；
- b) 贮存温度：-40°C ~ +80°C，相对湿度不大于80%，周围空气中不含有酸性、碱性或其它腐蚀性及爆炸性气体的防雨、防雪的室内；在极限值下不施加激励量，装置不出现不可逆转的变化，温度恢复后，装置应能正常工作；
- c) 大气条件：(80~110)kPa；
- d) 海拔高度2km以下；

主要技术参数及性能指标

	试验项目	参照标准	等级	
抗干扰测试	静电放电干扰	GB/T 14598.26-2015	符合	
	电磁场辐射干扰	GB/T 14598.26-2015	符合	
	快速瞬变干扰	GB/T 14598.26-2015	A	
	浪涌干扰	GB/T 14598.26-2015	符合	
	脉冲群干扰	GB/T 14598.26-2015	符合	
机械性能	振动	响应	GB/T 7261-2016	符合
		持久性	GB/T 7261-2016	符合
	冲击	响应	GB/T 7261-2016	符合
		持久性	GB/T 7261-2016	符合
	碰撞	GB/T 7261-2016	符合	
绝缘性能	介质强度	GB/T 7261-2016	符合	
	绝缘电阻	GB/T 7261-2016	符合	

Main technical parameters and performance indicators

Use environment

- a) Ambient temperature: work: -40°C~70°C;
- b) Storage temperature: -40°C~+80°C; the relative humidity is not more than 80%, there is no acid, alkaline or other corrosive and explosive gas in air in the rain-proof and snow-proof room; no excitation amount is applied at the limit value, there is no irreversible change on the device, and the device should work normally after the temperature is restored;
- c) Atmospheric conditions: (80~110) kPa;
- d) Altitude is 2 km and below;

Main technical parameters and performance indicators

	Test item	Reference standard	Grade	
Anti-interference test	Electrostatic discharge interference	GB/T 14598.26-2015	OK	
	Electromagnetic field radiation interference	GB/T 14598.26-2015	OK	
	Fast transient interference	GB/T 14598.26-2015	A	
	Surge interference	GB/T 14598.26-2015	OK	
	Pulse group interference	GB/T 14598.26-2015	OK	
Mechanical behavior	Vibration	Response	GB/T 7261-2016	OK
		Persistence	GB/T 7261-2016	OK
	Shock	Response	GB/T 7261-2016	OK
		Persistence	GB/T 7261-2016	OK
	Collision	GB/T 7261-2016	OK	
Insulation performance	Medium strength	GB/T 7261-2016	OK	
	Insulation resistance	GB/T 7261-2016	OK	

NZK7307

型号说明

产品型号 NZK 7307/E -
 产品选型配置

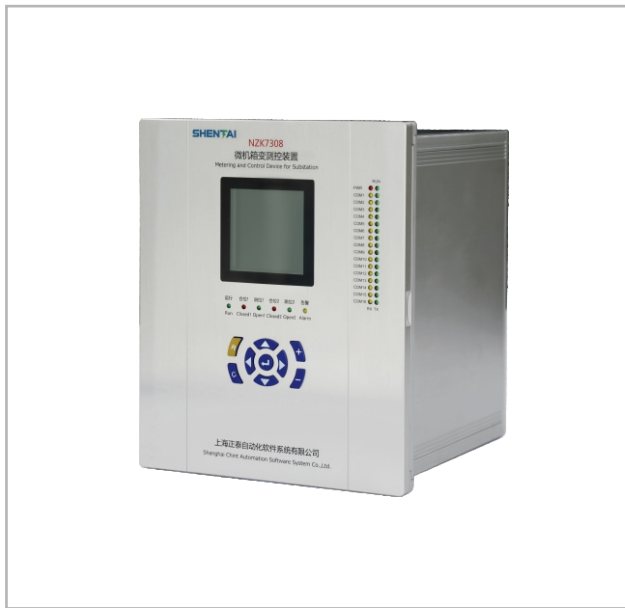
型号									
NZK7307	微机光伏箱变测控装置 (标准型)								
NZK7307E	微机光伏箱变测控装置 (增强型, 大机箱, 带保护功能, 比标准型多15路开入)								
语言									
中文	1								
英文	2								
频率									
50Hz	1								
60Hz	2								
工作电源									
110V DC	1								
220V AC/DC	2								
相CT电流									
1A				1					
5A				5					
零序CT电流 (NZK7307N直接选0, NZK7307EN根据需求选择对应零序CT)									
无						0			
1A						1			
5A						5			
PT接线方式									
三相四线							0		
三相三线							1		
交流电压									
100V								1	
270V								2	
315V								3	
400~690V								4	
开入量形式									
外部电源: 110V									1
外部电源: 220V									2
两路100BASE-FX接口 (即光纤环网)									
无									0
有									1
通讯方式									
1个以太网口和2个RS485口 (定制开发)									1
2个以太网口 (RJ45)									2
2个RS485口									3

例如:

NZK7307-1125104201

表示: NZK7307微机光伏箱变测控装置, 中文、50Hz、工作电源220V AC/DC、相序CT二次电流5A、零序CT二次电流1A、PT接线为三相四线式、交流电压为400~690V、开入量形式为外部电源220V、两路100BASE-FX接口(即光纤环网)、2个以太网口(RJ45)。

注: 如有特殊订货要求, 请与本公司联系。



NZK7308

微机箱变测控装置 Metering and control device for substation

Overview

The NZK7308 metering and control device can achieve the collection of all information, the non-electricity protection, the remote control and the communication of the low-voltage side of the PV box or wind power box to monitor, measure and protect the low-voltage side of the transformer, which meet the "unattended" operation management method of the photovoltaic project. It is applied to remote management and automatic measurement and control of all information on the low voltage side of PV box or wind power box transformers.

概述

NZK7308微机箱变测控装置适用于风电发电场或光伏发电场上35kV及以下电压等级的箱式变压器。可完成光伏/风电箱变低压侧全部信息的采集、非电量保护、远方控制和通讯功能实现对变压器低压侧的监视、测量、保护，满足“无人值守”的运行管理方式。应用于光伏/风电箱式变压器低压侧全部信息的远程管理和自动化监控。

特点

- 32位的高速DSP保证了高精度的快速计算，每周波48点采样，能在每个采样间隔对所有继电器实现实时计算，提高了采样精度，保证了保护的可靠性和速动性；
- 采用自适应算法，既能保证在区内严重故障时保护快速动作，又能保证正常运行及区外故障时保护不误动；
- 配备大屏幕液晶显示器，全汉化操作、显示，不需说明书即能完成操作；
- 配备完善的LED灯光指示，装置状态及故障信息有液晶报告和LED灯光两种指示，运行人员一目了然；
- 体积小，功耗低，强弱电分开，结构紧凑，便于开关柜安装或组屏；
- 装置可存储64次故障报告、64次事件记录，掉电不丢失，便于事故分析；
- 通信配置齐全。主板带两路RS485接口，通讯扩展板带12路RS485接口（其中4路RS485接口可以复用RS232接口），支持网络104规约；一路以太网口，两路100BASE-FX(光口)和两路电口，可组成自愈式光纤环型以太网；
- 完善的自检功能，装置无故障指示，即可正常运行，长期免校验；
- 装置采用背插式结构，实现了强弱电分离，内置完善的抗干扰组件，大大提高了装置的抗干扰性能，所有强电回路可以直接接入装置。

Features

- 32-bit high-speed DSP guarantees high-precision fast calculation, and 48 points are sampled per cycle to achieve real-time calculations for all relays at each sampling interval, improving the sampling accuracy and ensuring the reliability and quickness of protection.
- The adaptive algorithms is used to ensure fast protection in case of serious faults occurred in the area, and to prevent misoperation during normal operation and in case of the out-of-area failure;
- Equipped with large-screen LCD display, to complete the operation without a manual;
- Equipped with complete LED lighting indicators; there are LCD report and LED lighting indicators for device status and fault information, so the operator can see at a glance;
- With small size, low power consumption, strong and weak power separation, compact structure, easy to install switchgear installation or group panel installation;
- The device can store 32 fault reports and 32 event records. Those records are not lost in case of power failure for accident analysis;
- With complete communication configuration, support Chint 104 protocol; motherboard: two RS485 communication interface; communication expansion board: twelve RS485 communication interface; Two optical fiber interface, two switch interface and one ethernet interface;
- With perfect self-check function, the device can be operated normally with fault indication not required and with free check for a long time;
- The device adopts a back-inserted structure to achieve strong and weak electrical separation, and the perfect built-in anti-interference components are sued, greatly improving the anti-interference performance of the device, and all high-power circuits can be directly access to the device.

保护配置

a) NZK7308(标准型) 微机箱变测控装置保护配置如下:

- 八路非电量保护

b) NZK7308E(增强型) 微机箱变测控装置保护配置如下:

- 三段复压闭锁(负序电压闭锁、低电压闭锁)过流二时限保护
- 过负荷保护
- 二段定时限负序过流保护
- 二段零序定时限过流保护
- 过电压保护
- 零序电压保护
- 低电压保护
- TV断线
- 控回断线
- 八路非电量保护

测量功能

NZK7308系列装置除完成上述保护功能外, 还具有以下丰富的测量和计量功能:

a) 采用专业测量CT, 确保了计量精度

b) 瞬时电量测量

- 两路电流 IA1, IB1, IC1, IA2, IB2, IC2
- 两路电压 UA1, UB1, UC1, UA2, UB2, UC2
- 三相有功功率 3P
- 三相无功功率 3Q
- 三相功率因数 COS Φ

c) 需量统计

- 需量电流
- 需量有功功率、无功功率
- 最大需量电流、最大需量有功功率、最大需量无功功率及出现最大需量的时间

d) 最大最小值统计

- 三相最大最小电流
- 三相最大最小有功功率
- 三相最大最小无功功率

e) 电能计量

- 正、负有功电度
- 正、负无功电度

f) 谐波分析

提供A相电流的谐波含有率及总谐波畸变率, 可查看从基波到21次的谐波计算值。

g) 其他测量

- 两路/三路PT100温度传感器输入
- 两路/三路4~20mA直流电流输入, 如要测量0-5V的直流电压, 需另外定制

Protection configuration

a) NZK7308(standard type) microcomputer box transformer measurement and control device protection configuration is as follows:

- 8-way non-electricity protection

b) NZK7308E (Enhanced type) microcomputer transformer measurement and control device protection configuration is as follows:

- Three-step complex voltage lockout (negative sequence voltage lockout, low voltage lockout) overcurrent second time limit protection
- Overload protection
- Two-step definite time negative sequence overcurrent protection
- Two-step zero-sequence time-limited overcurrent protection
- Overvoltage protection
- Zero sequence voltage protection
- Low voltage protection
- TV disconnection
- Control circuit disconnection
- 8t-way non-electricity protection

Measurement function

In addition to the above protection functions, the NZK7308 series devices have the following extensive measurement and metering functions:

a) Using professional measurement CT to ensure measurement accuracy

b) Instantaneous power measurement

- Two-way currents IA1, IB1, IC1, IA2, IB2, IC2
- Two-way voltage UA1, UB1, UC1, UA2, UB2, UC2
- Three-phase active power 3P
- Three-phase reactive power 3Q
- Three-phase power factor COS Φ

c) Demand statistics

- Demand current
- Demand active power, reactive power
- Maximum demand current, maximum demand active power, maximum demand reactive power, and time when the maximum demand occurs

d) Maximum and minimum statistics

- Three-phase maximum and minimum current
- Three-phase maximum and minimum active power
- Three-phase maximum and minimum reactive power

e) Energy metering

- Positive and negative active energy
- Positive and negative reactive power

f) Harmonic analysis

Provide the harmonic ratio and total harmonic distortion rate of phase A current, and view the calculated value from the fundamental wave to the 21th harmonic wave.

g) Other measurements

- Two-way/Three-way PT100 temperature sensor inputs
- Two-way/Three-way 4~20ma DC current inputs; to measure 0-5V DC voltage, the customization is required.

NZK7308

主要技术参数及性能指标

使用环境

- a) 环境温度：工作：-40℃~70℃；
- b) 贮存温度：-40℃~+80℃，相对湿度不大于80%，周围空气中不含有酸性、碱性或其它腐蚀性及爆炸性气体的防雨、防雪的室内；在极限值下不施加激励量，装置不出现不可逆转的变化，温度恢复后，装置应能正常工作；
- c) 大气条件：(80~110)kPa；
- d) 海拔高度2km以下；

主要技术参数及性能指标

试验项目	参照标准	等级		
抗干扰测试	静电放电干扰	GB/T 14598.26-2015	符合	
	电磁场辐射干扰	GB/T 14598.26-2015	符合	
	快速瞬变干扰	GB/T 14598.26-2015	A	
	浪涌干扰	GB/T 14598.26-2015	符合	
	脉冲群干扰	GB/T 14598.26-2015	符合	
机械性能	振动	响应	GB/T 7261-2016	符合
		持久性	GB/T 7261-2016	符合
	冲击	响应	GB/T 7261-2016	符合
		持久性	GB/T 7261-2016	符合
	碰撞	GB/T 7261-2016	符合	
绝缘性能	介质强度	GB/T 7261-2016	符合	
	绝缘电阻	GB/T 7261-2016	符合	

Main technical parameters and performance indicators

Use environment

- a) Ambient temperature: work: -40℃~70℃;
- b) Storage temperature: -40℃~+80℃; the relative humidity is not more than 80%, there is no acid, alkaline or other corrosive and explosive gas in air in the rain-proof and snow-proof room; no excitation amount is applied at the limit value, there is no irreversible change on the device, and the device should work normally after the temperature is restored;
- c) Atmospheric conditions: (80~110) kPa;
- d) Altitude is 2 km and below;

Main technical parameters and performance indicators

Test item	Reference standard	Grade		
Anti-interference test	Electrostatic discharge interference	GB/T 14598.26-2015	OK	
	Electromagnetic field radiation interference	GB/T 14598.26-2015	OK	
	Fast transient interference	GB/T 14598.26-2015	A	
	Surge interference	GB/T 14598.26-2015	OK	
	Pulse group interference	GB/T 14598.26-2015	OK	
Mechanical behavior	Vibration	Response	GB/T 7261-2016	OK
		Persistence	GB/T 7261-2016	OK
	Shock	Response	GB/T 7261-2016	OK
		Persistence	GB/T 7261-2016	OK
	Collision	GB/T 7261-2016	OK	
Insulation performance	Medium strength	GB/T 7261-2016	OK	
	Insulation resistance	GB/T 7261-2016	OK	



概述

NZK71系列馈线终端是专为户外中压开关设计的智能开关监测设备，适于安装在10kV架空配电线路，有箱式、罩式二种结构。

当开关负荷侧线路发生相间短路故障、单相接地时，馈线终端在检测到故障电流时，及时将告警信息上传于自动化主站，同时接收主站的控制命令，实现线路故障区段的快速隔离，恢复无故障线路区域的供电。

型号：

NZK7122、NZK7130可以与分段负荷开关、分段断路器融合组成成套设备，用于配网主干线路分段/联络位置，与线路首段开关配合实现主干线故障定位和就地自动隔离；

与分段断路器融合，用于线路首段开关，实现直接故障跳闸和重合闸功能，配合后面的分段开关，实现就地馈线自动化功能。

与分段断路器融合，用于配网主干线分段或大的分支线路，在满足级差要求情况下，直接切除故障，提高故障处理效率，提高供电可靠性。

与分界断路器或分界负荷开关融合，用于配网线路末端或分支线路用户分界点处，轻松识别界内故障，直接跳闸切除故障，界外故障时不会误动作。

终端采用高档微机技术平台和最新网络通信技术，在传统配网自动化馈线终端集中式和就地型故障检测和处理方式、常规保护控制功能和通信功能基础上，扩展故障时刻暂态录波功能，针对当前国内配网供电系统主要的运行模式和接地方式，自适应识别各种情况下发生的单相接地故障和短路故障，很好的解决了配网线路单相接地故障识别和故障选线的难题，提高供电可靠性和用电安全，提高用户满意度。

NZK71

馈线终端 (FTU) Feeder Terminal Unit (FTU)

Overview

NZK71 series feeder terminal unit is a smart switch measurement and control device specially designed for outdoor medium voltage switch. It is suitable for installation in the 10kV overhead distribution line. It has two kinds of structures: box type and cover type.

When the phase-to-phase short-circuit fault occurs on the load-load side line and the single-phase grounding occurs on the line at the switch load side, the feeder terminal will send the alarm information to the main automation station timely if detected the current failure while receiving the control command from the main station to achieve the quick isolation of the faulted segment of the line and to recover the power supply to the fault-free line area.

Model:

NZK7122, NZK7130 can be combined with sectional load switch and sectional circuit breaker to form a complete set of equipment, which is used at the distribution network trunk line segment/contact position, and with the first sectional switch of the line to realize main line fault location and local automatic isolation;

Integrated with the sectional circuit breaker, it is used for the first sectional switch of the line to realize the direct fault tripping and reclosing function; integrated with the rear sectional switch, the local feeder automatic function can be achieved.

Integrated with the sectional circuit breaker, it is used for the sectional or large branch of the distribution network trunk line, which can directly eliminate the fault when the differential requirements are met, improving the fault processing efficiency and power supply reliability.

Integrated with the boundary breaker or the boundary load switch, it is used at the end of the distribution line or at the branch line user boundary point to easily identify the fault within the boundary, and to trip directly to eliminate fault without misoperation in case of failure occurred outside the boundary.

The terminal adopts high-end microcomputer technology platform and the latest network communication technology to expand the transient recording when the fault occurs on the basis of centralized and local fault detection and processing methods, conventional protection control functions and communication functions of the traditional distribution network automatic feeder terminals. Aiming at the main operating modes and grounding methods of the current domestic distribution network power supply system, it can adaptively identify

single-phase ground fault and short-circuit fault occurred under various situations to solve the problem of single-phase ground fault identification and fault line selection of distribution network lines, improve power supply reliability and power safety, and improve user satisfaction.



NZK7230

站所终端 (DTU) Station Terminal Unit (DTU)

Overview

The device adopts a plug-in box-type structure, and can be used as an intelligent terminal device of a switching station, an outdoor power distribution switch and a ring main unit, and achieves functions such as remote measurement and control, fault detection and fault isolation of the power distribution system and equipment, applicable to the automated implementation and transformation of distribution networks for various types of urban power grids, rural power grids, and enterprise power grids, achieving automation functions such as measurement and control, control, and protection of feeder switches. It can cooperate with the communication system to form a distribution network automation system with various channel-mode ring networks and non-ring networks.

Based on high-performance 32-bit microprocessor and real-time embedded operating system, with a variety of hardware and software cutting-edge technologies, it features with high performance, high precision, high reliability and high stability. Equipped with 10M/100M adaptive Ethernet, the of large-flow and high-rate data transmission requirements can be met. The device cabinet features with compact structure, good sealing, anti-interference and strong anti-vibration ability. The device is fully functional and flexible in configuration.

The device is suitable for ring main unit, switch station and other applications with no more than 24 intervals. Maximum capacity: 128-way input, 48-way output, 2 battery activation control outputs, 80-way AC analog (current and voltage can be optional), 2-way DC, 3-way Ethernet port, 5-way serial port (including one maintenance port).

The latest ultra-high performance digital signal controller with floating point computing capability and enhanced DSP processing instructions is used; the on-clip flash memory up to 1 Mbyte and the embedded SRAM up to 196 Kbytes are provided; the access cycle of the in-clip resource truly reaches a single cyclic instruction access, and 210 DMIPS processing can be achieved when running at 16 MHz speed; furthermore, there are flexible external memory interface and extensive built-in peripheral functions.

The analog input can be converted into an internal weak current signal without distortion by the high-isolation and high-precision CT/PT included in the device. After anti-aliasing filtering, it enters the A/D chip for analog-to-digital conversion. With the high-speed and high-density synchronous sampling and frequency tracking technology, the accuracy of the device is fully guaranteed. Collect the analog input of voltage and current, and calculate I, U, P, Q, COS Φ , frequency and phase.

概述

本装置采用插箱式结构，可以用作开闭所、户外的配电开关及环网柜的智能终端设备，完成对配电系统及设备的远方监控、故障检测、故障隔离等功能，适用于各类城市电网、农村电网、企业电网的配网自动化实施与改造，完成对馈线开关的监视、控制和保护等自动化功能，并可与通信系统配合组成有信道方式的各种环网及非环网的配网自动化系统。

以高性能32位微处理器和实时嵌入式操作系统为平台，综合使用了各种硬件、软件的前沿技术，具有高性能、高精度、高可靠性、高稳定性等特点。配有10M/100M自适应以太网，可满足大流量、高速率数据传输要求。装置机箱结构紧凑、密封性好、抗干扰、抗震能力强。装置功能完善、配置灵活。

装置适用于不超过24个间隔的环网柜、开闭所及其他应用场合，最大容量：128路开入、48个开出、2个蓄电池活化控制输出、80路交流模拟量（电流、电压可选配）、2路直流、3路以太网口、5路串口（含一个维护口）。

采用最新推出的超高性能数字信号控制器，具有浮点运算能力和增强的DSP处理指令；高达1M字节的片上闪存和高达196K字节的内嵌SRAM；片内资源的访问周期真正达到单周期指令访问，以168MHz速度运行时可达到210DMIPS的处理能力；此外还具有灵活的外部存储器接口和丰富的内置外设功能。

模拟输入量可通过装置内含的高隔离、高精度CT/PT将强电信号不失真地转变为内部弱电信号。经抗混迭滤波处理后进入A/D芯片进行模数变换。由于采用了高速高密度同步采样和频率跟踪技术，使装置精度得到充分保证。采集电压、电流的模拟量输入，计算出I、U、P、Q、COS Φ 、频率和相位。



概述

NZT7系列通信服务器适用于各电压等级综合自动化厂、站系统，具有使各种智能装置(保护/测控/IED)和上位系统实现实时数据交互的功能，并可为调度主站监管综合站提供数据传输服务。支持各种通信规约，能将不同厂家的智能装置接入正泰电气NRS系列后台监控管理平台或其它厂家的上位系统。接口灵活多样，包含以太网(TCP、UDP)、RS232、RS485。

特点:

采用高性能的X86处理器，主频1.66GHz，内部运行Linux实时多任务系统，保证了产品的高速、稳定和智能化要求；
具备2路DI输入及2路DO输出，可提供中央报警音响输出；
支持各种通信协议的二次开发；
采取规约自由组态的方式，满足不同项目的灵活配置。

NZT7

通信服务器 Communication Server

Overview

NZT7 series communication server is suitable for integrated automation plant and station system with various voltage level, making that various intelligent devices (protection / measurement / control / IED) and the upper system have the real-time data interaction function, and provide data transmission service to the scheduling master station supervision integrated automation substation. It supports various communication protocols, the intelligent devices of different manufacturers can be connected to the CHINT Electric NRS series background measurement and control management platform or other manufacturers' upper systems. The interface is flexible and includes Ethernet (TCP, UDP), RS232 and RS485.

Features:

High-performance X86 processor with main frequency 1.66GHz is used, with the Linux real-time multitasking system running inside to guarantee high-speed, stable and intelligent requirements;
With 2-way DI inputs and 2-way DO outputs, provide central alarm sound output;
Support secondary development of various communication protocols;
The free configuration of the protocol is adopted to meet the flexible configuration of different projects.



NZT8 通信服务器 Communication Server

Overview

NZT8 series communication server is suitable for the integrated automation plant and station system with various voltage levels, and supports various intelligent devices (protection/measurement/control/IED) in IEC61850 (MMS layer) access station, and realizes real-time data interaction with the upper system, to provide the data transmission services to the scheduling main station measurement and control integrated automation substation.

NZT8 series communication server communication interface includes various link channels such as Ethernet (TCP, UDP), RS232, and RS485.

The NZT8 series communication server supports a variety of communication protocols through secondary development to access smart devices from different manufacturers.

Product features:

Designed for industrial applications, the standard 19-inch 2U chassis is fanless, dust-proof and can be mounted in a protective screen or switchgear in an embedded manner;

The high-performance X86 processor with main frequency of 1.60GHz is used, which guarantees the operation speed, stability and intelligent requirements of the product;

Support multiple power access modes, including 110/220V AC/DC power supply, which is widely used in various power supply environments; the voltage input range is wide, and input voltage is DC 88V~370V or AC 85V~265V;

With multi-way RS232/485 serial ports configured and multi-channel Ethernet, a good port compatibility is provided.

概述

NZT8系列通信服务器适用于各电压等级综合自动化厂、站系统，支持IEC61850(MMS层)接入站内各种智能装置(保护/测控/IED)，并与上位系统实现实时数据交互，可为调度主站监管综自站提供数据传输服务。

NZT8系列通信服务器通信接口包含以太网(TCP、UDP)、RS232、RS485等多种链路通道。

NZT8系列通信服务器通过二次开发支持扩展多种通信规约，以接入不同厂家的智能装置。

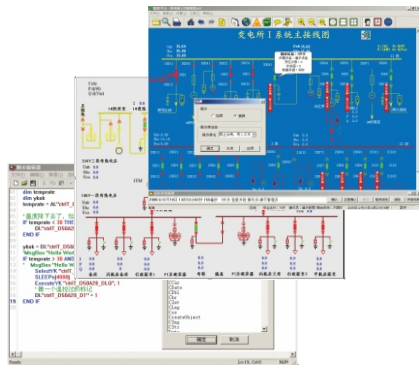
产品特点：

采用专为工业应用设计的标准19英寸2U机箱，无风扇，防尘，可以嵌入方式安装于保护屏或开关柜；

采用高性能的X86处理器，主频1.60GHz，保证了产品的运算速度、稳定性和智能化要求；

支持多种电源接入方式，包括110/220交直流供电，广泛适用于各种供电环境。宽范围的电压输入，输入电压为直流88V~370V或交流85V~265V；

配置多路RS232/485串口，多路以太网，具备良好的端口兼容性。

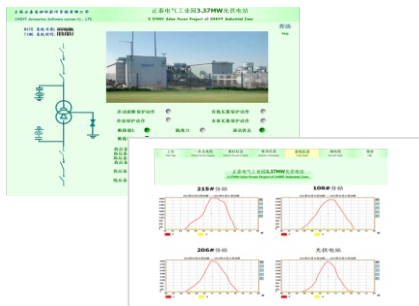


概述

NRS7000是一套以实现电力系统自动化为应用背景，采用最新的主流软件技术，集监控、管理于一体的组态系统软件，代表着高质量、创新灵活的电力自动化系统后台解决方案。

NRS7000提供了开放的、易于升级的模块化分布式体系架构。出色的灵活性、简捷性和平滑升级性，使用户能够方便、自由地按照自己的需求扩充和修改系统，与不同的软件交换数据，被广泛应用于各种电压等级的综合自动化厂站。

支持Windows、Unix等操作系统。



概述

充分吸收国内外自动化监控行业的先进思想，结合用户在光伏、风电的使用特点和实际需求开发的一套专用于对光伏区监控的综合系统软件。该产品具有稳定性、灵活性、大容量、高时效等特点，最大限度满足用户需求。

系统功能与特点：

容量大：能满足200MW及以下容量的光伏区集中监控；

标准的协议接口：采用IEC104协议实现智能测控的接入；

时效性高：内部软总线技术保证重要事件的优先传送；

模块化强：系统应用之间耦合少，便于软件的优化升级与高级应用的插入；

维护方便：历史数据、工程还原一键备份；

阵列区域建模思想，运维方便简洁；

接口灵活，预留第三方设备、系统的数据接入与转发；

稳定安全：支持最新国产linux操作系统，满足工程应用的安全需求。

NRS7000

自动化监控与管理系统软件

Automated measurement and control and management system software

Overview

NRS7000 is a set of configuration system software that integrates measurement and control and management with the latest mainstream software technology to realize the automation of power system. It represents a high-quality, innovative and flexible power automation system background solution.

The NRS7000 provides an open, easy-to-upgrade modular distributed architecture. With excellent flexibility, simplicity and smooth upgradeability, users can easily and freely expand and modify the system according to their own needs. This software can exchange data with different software, widely used in integrated automation plants with various voltage levels.

Support for various operating systems such as Windows and Unix.

NRS7100

自动化监控与管理系统软件 (V7.01)

Automated measurement and control and management system software

Overview

It is a set of integrated system software developed specially for PV area measurement and control through fully absorbing the advanced ideas of the domestic and foreign automation measurement and control industry by combining with the photovoltaics and wind power use characteristics and the actual needs of users. This product has the characteristics of stability, flexibility, large capacity, and high time efficiency to meet the needs of users to the utmost.

System features and features:

Large capacity: achieve centralized measurement and control of photovoltaic area with the capacity of 200MW and below;
Standard protocol interface: access to intelligent measurement and control using IEC104 protocol;

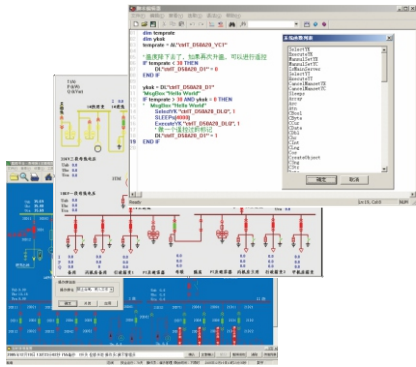
High timeliness: Internal soft bus technology ensures priority transmission of important events;

Strong modularity: less coupling between system applications, facilitating software optimization and upgrade and insertion of advanced applications;

Easy maintenance: One-key backup of historical data and engineering restore; array area modeling ideas, convenient and simple operation and maintenance;

The interface is flexible, and data access and forwarding of third-party devices and systems are reserved.

Stable and safe: Support the latest domestic Linux operating system to meet the safety needs of engineering applications.



概述

充分结合配网自动化在石油、石化等行业的实际需求开发的一套配网自动化监控软件。该产品可以实现高效的、多维度的数据管理、数据分析、系统集成、公共服务等，助力于电网自动化水平的不断提高和一体化平台建设。

系统功能与特点：

建立统一的数据管理、数据展示平台，实现资源共享；
 标准的协议接口：采用IEC101平衡传输协议实现智能终端的接入；
 时效性高：内部软总线技术保证重要事件的优先传送；
 模块化强：系统应用之间耦合少，便于软件的优化升级与高级应用的插入；
 维护、组网方便：历史数据、工程还原一键备份，依据客户实际需求灵活组网；
 功能齐全维护简洁：异常告警、检修管理、人员班组管理、报表管理、日志记录、系统管理等；
 接口灵活，预留第三方设备、系统的数据接入与转发。



概述

NRS8000智能变电站监控系统软件主要应用于220kV及以下电压等级的智能变电站的自动化监控。该系统全方位支持Windows、Linux和Unix操作系统，遵循IEC61850标准，采用分布式体系和开放的软件支撑平台，具有计算、统计、历史数据检索、历史信息检索、实时告警、遥控操作、设备检修挂牌等多种高级功能。

NRS7200

配网自动化监控与管理软件 Distribution network automation measurement & control & management software

Overview

It is a set of distribution network automation measurement and control software developed according to the actual needs of the distribution network automation in the industries such as petroleum and petrifaction. The product can achieve efficient and multi-dimensional data management, data analysis, system integration, and public services, to help the continuous improvement of the level of grid automation and the construction of integrated platforms.

System functions and features:

Establish a unified data management and data display platform to achieve resource sharing;

Standard protocol interface: access to intelligent terminals using IEC101 balanced transmission protocol;

Timeliness: Internal soft bus technology ensures priority transmission of important events;

Strong modularity: less coupling between system applications, facilitating software optimization and upgrade and insertion of advanced applications;

Maintenance and networking convenience: One-key backup of historical data and engineering restore; flexible networking is achieved according to customer actual needs;

Complete functions and simple maintenance: abnormality alarm, maintenance management, personnel team management, report management, log recording, and system management.

The interface is flexible, and data access and forwarding of third-party devices and systems are reserved.

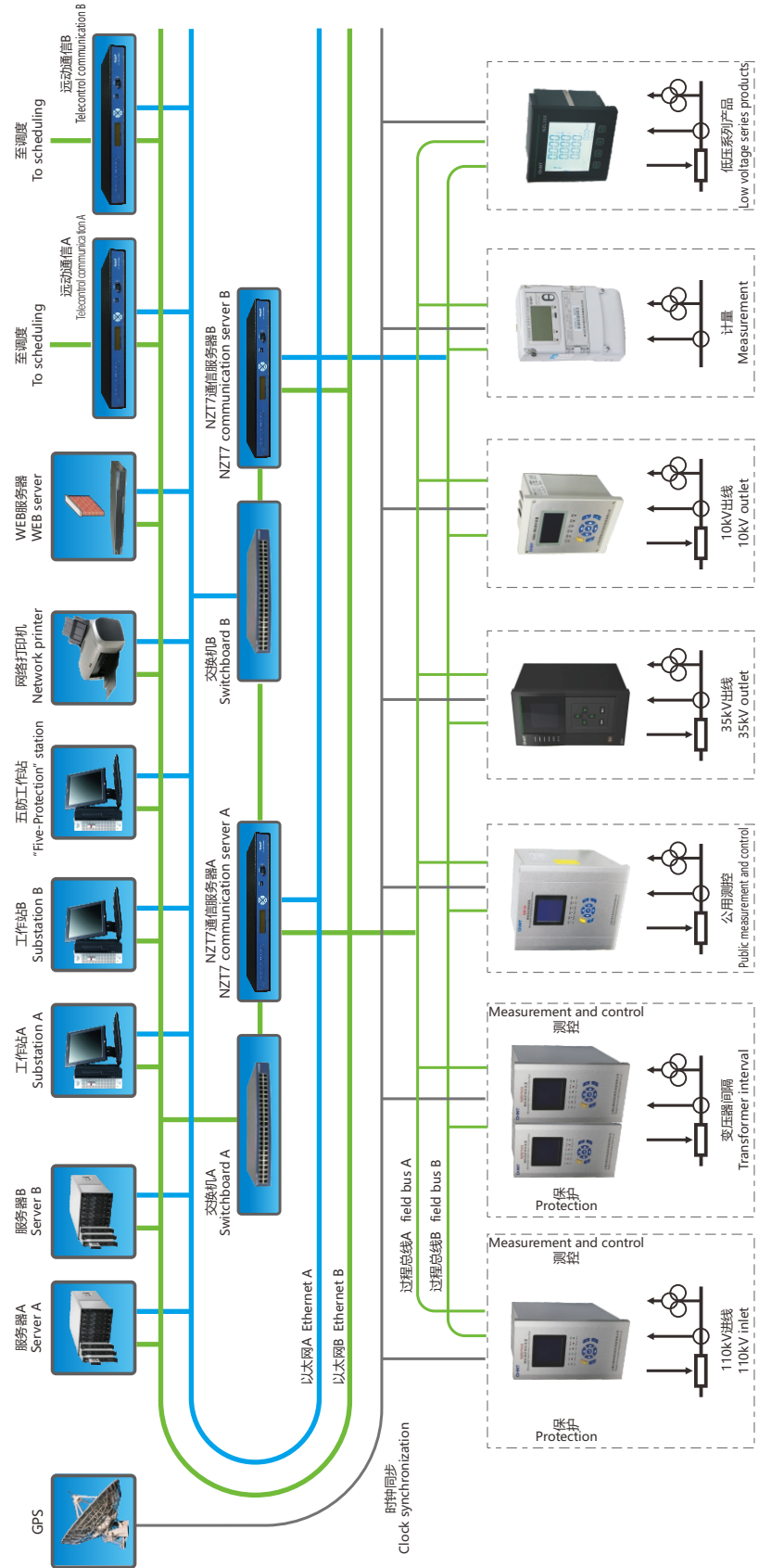
NRS8000

智能变电站监控系统软件 Automated measurement and control and management system software

Overview

The NRS8000 smart substation measurement and control system software is mainly used for the automatic measurement and control of smart substations with voltage levels of 220kV and below. The system fully supports Windows, Linux and Unix operating systems, conforms to IEC61850 standard, adopts distributed system and open software support platform, and has various advanced functions such as calculation, statistics, historical data retrieval, historical information retrieval, real-time alarm, remote control operation, and equipment maintenance hanging tag.

NJZ4.0变电站自动化监控系统 NJZ4.0 Substation automation measurement and control system



系统化的产品 全程化的服务

systematic products and coordinated service

750kV及以上

252kV

110kV

40.5kV

12kV

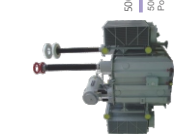
0.38-0.6kV



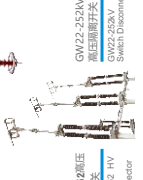
750kV电力避雷器
750kV Power Transformer



488kV瓷绝缘金属氧化物避雷器
488kV Porcelain Metal Oxide Surge Arrester used for Substation



900kV电力变压器
900kV Power Transformer



GW22-252kV高压隔离开关
GW22-252kV HV Switch Disconnecting



GW7-40.5kV高压隔离开关
GW7-40.5kV HV Switch Disconnecting



GW4-126kV户外高压交流断路器
GW4-126 AC HV Switch Disconnecting



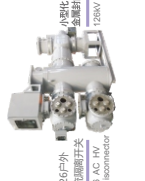
LW4-252kV断路器
LW4-252kV Circuit Breaker



220kV电力变压器
220kV Power Transformer



LW08-126kV户外高压断路器
LW08-126kV Outdoor HV Circuit Breaker



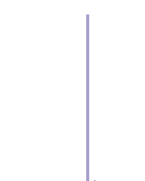
KYN1-40.5kV金属铠装式移开式开关柜
KYN1-40.5kV Metal-enclosed Switchgear



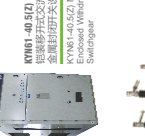
KYN1-40.5kV金属铠装式移开式开关柜
KYN1-40.5kV Metal-enclosed Switchgear



ZF9-120kV气体绝缘金属铠装移开式开关柜
ZF9-120kV GIS



110kV SF6电力变压器
110kV SF6 Power Transformer



ZN65-40.5kV真空断路器
ZN65-40.5kV Vacuum Circuit Breaker



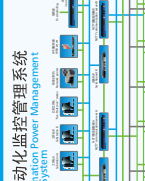
ZN65-40.5kV真空断路器
ZN65-40.5kV Vacuum Circuit Breaker



ZN65-40.5kV真空断路器
ZN65-40.5kV Vacuum Circuit Breaker



ZN65-40.5kV真空断路器
ZN65-40.5kV Vacuum Circuit Breaker



ZN65-40.5kV真空断路器
ZN65-40.5kV Vacuum Circuit Breaker



GW4-40.5kV户外高压隔离开关
GW4-40.5kV Outdoor Disconnecting



GW4-40.5kV户外高压隔离开关
GW4-40.5kV Outdoor Disconnecting



GW4-40.5kV户外高压隔离开关
GW4-40.5kV Outdoor Disconnecting



GW4-40.5kV户外高压隔离开关
GW4-40.5kV Outdoor Disconnecting



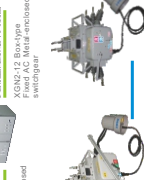
GW4-40.5kV户外高压隔离开关
GW4-40.5kV Outdoor Disconnecting



KYN28-40.5kV金属铠装式移开式开关柜
KYN28-40.5kV Metal-enclosed Switchgear



KYN28-40.5kV金属铠装式移开式开关柜
KYN28-40.5kV Metal-enclosed Switchgear



KYN28-40.5kV金属铠装式移开式开关柜
KYN28-40.5kV Metal-enclosed Switchgear



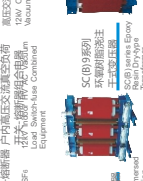
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KYN28-40.5kV Metal-enclosed Switchgear



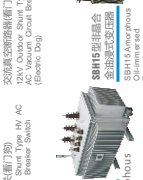
KYN28-40.5kV金属铠装式移开式开关柜
KYN28-40.5kV Metal-enclosed Switchgear



KYN28-40.5kV金属铠装式移开式开关柜
KYN28-40.5kV Metal-enclosed Switchgear



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KYN28-40.5kV Metal-enclosed Switchgear



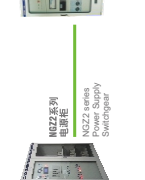
KYN28-40.5kV金属铠装式移开式开关柜
KYN28-40.5kV Metal-enclosed Switchgear



NGC80.5kV真空断路器
NGC80.5kV Vacuum Circuit Breaker



NGC80.5kV真空断路器
NGC80.5kV Vacuum Circuit Breaker



NGC80.5kV真空断路器
NGC80.5kV Vacuum Circuit Breaker



NGC80.5kV真空断路器
NGC80.5kV Vacuum Circuit Breaker



NGC80.5kV真空断路器
NGC80.5kV Vacuum Circuit Breaker



BAM1-40.5kV金属铠装式移开式开关柜
BAM1-40.5kV Metal-enclosed Switchgear



BAM1-40.5kV金属铠装式移开式开关柜
BAM1-40.5kV Metal-enclosed Switchgear



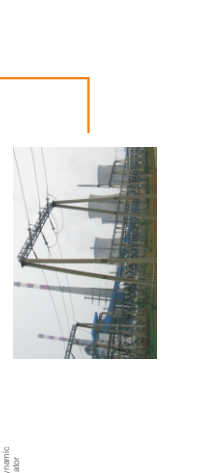
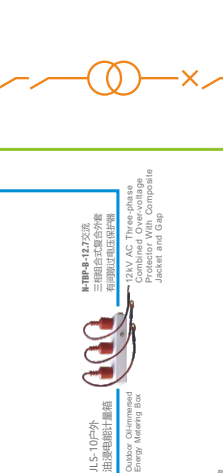
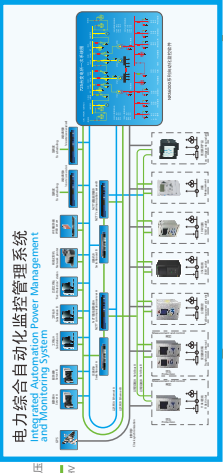
BAM1-40.5kV金属铠装式移开式开关柜
BAM1-40.5kV Metal-enclosed Switchgear



BAM1-40.5kV金属铠装式移开式开关柜
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BAM1-40.5kV金属铠装式移开式开关柜
BAM1-40.5kV Metal-enclosed Switchgear



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