

DF1725IED监控方案

概述

DF1725IED综合监控模块遵循IEC国际标准，采用先进的电力监控技术，系统具有良好的实时性、可靠性、互操作性和开放性，适合对电厂、变电站、配电网的一、二次设备电气安装单位进行全面、实时的监测和控制。

DF1725IED模块设计有多种功能插件，可适应多种交直流电源，可实现对各种信号的采集。除了遥测、遥信、遥控、遥调基本四遥功能之外，模块还具备断路器检同期或检无压、遥控防误闭锁、网络通信功能。支持可编程逻辑控制（PLC）功能，可实现单个电气单元的操作闭锁及不同电气单元之间的操作联锁方案。

模块具有先进的配电自动化处理功能，可以涵盖馈线、开闭站、开闭器、电缆分界室及配电室、低压变电站等配电自动化领域，完成配电自动化监控、故障自动识别和处理（DA）。

DF1725IED采用高性能的嵌入式32位处理器、CPLD和实时多任务操作系统，配置灵活；具有丰富的通讯规约库，支持包括101/104/103/DNP3/MODBUS/IEC61850在内的多种国际标准规约，可与各种智能设备进行连接和通信，所有通信接口均符合IEEE和IEC标准。

技术特点

- 采用工业级芯片，电气隔离和电磁屏蔽设计符合国际标准，装置的硬件系统具有极高的抗干扰能力和可靠性。
- 采用高性能的嵌入式32位处理器，系统具备强大的处理能力。
- 采用复杂可编程逻辑器件CPLD技术，简化电路板的设计，提高产品稳定性。
- 采用16bit高速A/D转换芯片，同步采样技术，补偿互感器的变差和相差，具有很高的测量精度。
- 1725IED配置有双以太网通讯接口，组网非常灵活。
- 模块组态灵活：各种I/O及模拟量采集插件，根据系统接口数量可以任意组合。
- 1725IED相互之间可以通信，支持IEC61131-3标准PLC功能，实现按电气单元的操作闭锁及不同电气单元之间的操作联锁方案。
- 全面的自检及错误报警功能，保证后台监控系统实时了解模块的状态，可自恢复。
- 先进的制造工艺：采用表面贴装技术，多层板设计，提高了抗干扰能力。
- 高精度的内部时钟。
- 掉电保持内存存储关键数据。
- 支持双处理器双电源配置。
- 精巧的结构设计，组屏美观。
- 符合IEC61000-4 IV级的抗干扰能力，可在条件恶劣的环境中使用。
- 支持IEC 61850标准通讯。
- 遵循IEC 62351的网络安全。
- 支持IEC61131-3可编程逻辑控制。
- 工作环境温度：-40℃~70℃。
- 多种LED指示灯，方便维护人员检修调试。

DF1725IED monitoring solution

System overview

DF1725IED follows the IEC international standard, adopting advanced power monitoring technology. The system has good real-time performance, reliability, interoperability and openness, suitable for the comprehensive and real-time monitoring and control for the company which works on the primary and secondary equipment electrical installation regarding to the power plants, substations, and distribution networks.

DF1725IED module has a variety of functional plug-ins, adaptation to a variety of AC and DC power supply, and can achieve the acquisition of a variety of signals. In addition to the four-remote function with telemetry, digital input, digital output, and remote adjustment, the module also has circuit breaker synchronization check, deadline check, remote control block, and Ethernet communication function. It supports the programmable logic control (PLC) function, and can realize the operation latch of a single electrical unit and the operation interlock scheme between different electrical units.

The module has the advanced distribution automation processing function, and can cover the feeder, the switch station, the open and close device, the cable dividing room and the distribution room, the low voltage substation and other distribution automation domain, realizing the distribution automation monitoring, Automatic Fault Identification and processing (DA).

DF1725IED uses high-performance embedded 32-bit processor, CPLD and real-time multitasking operating system with flexible configuration. It has rich communication library, supporting many international standard protocols, including 101/104/103/DNP3/MODBUS/IEC61850, and can connect and communicate with various intelligent devices. All communication interfaces conform to IEEE and IEC standards.

Technical features

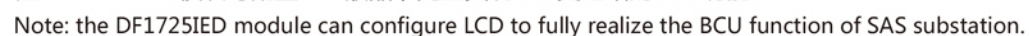
- Using industrial chip, electrical isolation and electromagnetic shielding design conforming to international standard. The hardware system of the device has extremely high anti-jamming ability and reliability.
- With a high performance embedded 32-bit processor, the system has powerful processing capability
- The complex programmable logic device (CPLD) technology is used to simplify the design of circuit board and improve the product stability.
- The 16bit high-speed A / D converter and synchronous sampling technology are used to compensate the variation and phase difference of the transformer with high precision measurement.
- DF1725IED configuration has dual Ethernet communication interface, and networking is very flexible.
- Flexible module configuration: a variety of I/O and analog acquisition plug-ins, according to the number of system interfaces the configuration can be arbitrarily combined.
- DF1725IED can communicate with each other, supporting the PLC function with IEC61131-3 standard, realizing the operation latch according to the electrical unit and the operation interlock scheme between different electrical units.
- Comprehensive self-test and error alarm function, ensuring that the background monitoring system can get real-time status of the module. The module has self-recovery function.
- Advanced manufacturing technology: adopting surface mount technology, multi-layer plate design, high anti-interference ability.
- High precision internal clock
- Key data storage function during power-off.
- Supporting dual-processor, dual-power configuration.
- Exquisite structure design, beautiful assembly screen
- IEC61000-4 IV-level anti-jamming ability, can be used in harsh conditions.
- Supporting IEC 61850 standard communication
- Network Security following IEC 62351
- Supporting IEC61131-3 programmable logic control
- operating ambient temperature: -40℃~70℃
- A variety of LED indicators to facilitate maintenance personnel to overhaul and debug

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Product Application

DF1725IED module can be used as RTU, FRTU and BCU in power transmission, distribution and power plant monitoring system.

1. SAS (Substation Automation System) 典型方案(BCU)
SAS (Substation Automation System) typical solution (BCU)



2. 普通变电站应用方案(RTU) Substation solution (RTU)



DF1725IED可作为FRTU实现对配电网络中的环网柜RMU、柱上开关等装置的监控,支持多种故障的判定、事项存储及上报主站。DF508主备冗余电源系统可充分保证设备在外部电源中断情况下持续运行。

DF1725IED can be used as a FRTU to monitor and control RMU and load breaker switch or circuit breaker on the pole in the distribution network, and it can support the determination of many kinds of faults, event storage and reporting to the master station. DF508 redundant power supply system can fully ensure that the equipment continues to operate in the case of external power interruption.

