DDS Family

Digital Distribution System Family

Integrated protection and control IEDs for electrical substations.

Features and Benefits

- Distributed protection and control per bay, through graphic display
- IRIG-B time synchronization
- Common GE-NESIS software platform

Applications

- Protection and control devices for feeders, transformers, busbars
- Substation automation
- Distributed RTUs for control automation
- Management of power distribution equipment
- NEW enerVista.com compatible (see page 275)

Protection and Control

- DMS: Bay protection and control unit
- SMOR-B: Multifunction feeder protection
- DTP-B: Digital transformer protection
- DBF: Digital breaker failure protection
- DRS: Digital reclosing system
- DTR: Digital tap changer
- DFF: Digital frequency protection
- Alarm management
- Remote device status and operations

Metering and Monitoring

- System metering
- Oscillography recording
- Remote device status and operations
- Substation RTU

User Interface

- LCD display and keypad for local access
- M-LINK and ModBus® protocols for PC communications

Description

The DDS Family of devices provides economical protection, control, metering and monitoring functionality to electrical utilities and industrial customers.

The DDS Family can virtually replace a complete set of discrete devices such as electromechanical relays, meters, annunciator panels, push buttons, transducers, auxiliary relays, and mimic drawings.

All family members share a common look and feel. The local HMI is composed of an LCD display, 20 character keypad, configurable LEDs and, in the case of the DMS and DTR, a configurable graphic display. This common look reduces the costs incurred in training personnel.

In addition to the front RS232 local communication port, there are also one or two rear ports available. The rear ports are for RS232, RS485, or glass/plastic fiber optics.

The DDS Family supports both GE M-LINK and ModBus® RTU open protocols. M-LINK is faster (115,200 bps) and preferably used in applications where only GE devices are used. ModBus® RTU is slower (19,200 bps) and widely used in combination with third-party ModBus® devices.

The units are housed in two different types of 19" racks with a modular construction (4U and 2U high). Alternatively there is a half 19" 4U high SMOR box.

Each unit may contain a wide range of protection and/or control modules, as well as I/O cards, an optional redundant power supply (DMS units only), a magnetic module, independent CPU cards for protection, control and communications (DMS and DTR models).

All the elements of the DDS Family can be combined to create a GE-NESIS-DDS integrated protection and control system. This scheme provides a complete substation HMI plus an open link to the dispatch center in several SCADA protocols (IEC 870-5/101, DNP 3.0, Indactic 20-33, Wisp + etc).

The GE-NESIS-DDS architecture is simple and highly efficient. The complete system is divided in three levels, connected via communications. Level 1 includes protection and control units at bay level. Level 2 includes the concentrator (one or several PCs), controller at substation level, and Level 3 is the dispatch or control center of the utility company or industrial plant.

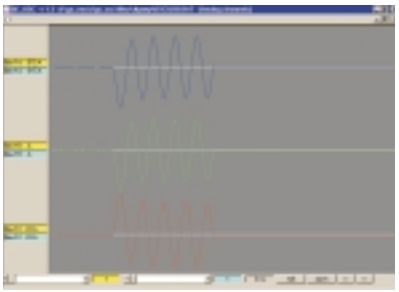
GE-NESIS (General Electric Network Substation Integration Software)

There is one unique suite of software programs for remote communication. It is composed of different applications:

GE-LOCAL is used for online connection with the device. It allows viewing of unit status, viewing and changing settings, retrieving events and oscillography and producing commands.

GE-INTRO, normally used offline, allows the user to configure the I/O logic by using And, Or and Not logic gates. In the DMS module it also permits the creation of custom screens in the graphic display and program operation interlockings. For all units the LEDs are configured with this tool.

GE-OSC is the oscillography tool. It allows visualization of the waveform (both in sine form or as phasors) and post-fault studies.



GE-POWER is the online software for HMI and Level 1 to 3 communication that allows real time communication and system operation. It allows viewing of substation online diagrams, including status, measures, and individual bays. It provides access to the settings and operations, and integrates data from the different bays in a common substation database.

GE-CONF allows offline user configuration of HMI screens, databases and Level 2 functionality, including users management, access levels and passwords.

GE-FILES is a system recording configuration and analysis tool that allows the creation of custom-made event, log, alarm and metering reports.