GE Energy

D400-S

fact sheet

GE Energy and SUBNET Solutions, Inc. have teamed up to create one of the most advanced substation communication servers available today. SUBNET's powerful SubstationSERVER.NET™ software, coupled with GE's industry proven hardware platform has created the D400-S*. This robust and flexible server is feature rich and is making substations smarter.

Product Description

The D400-S is a Unified, Intelligent, Secure and Evolvable substation communication server, and provides data concentration, protocol translation, and enterprise connectivity.

The D400-S was specifically designed to provide utilities with access to all data (operational and non-operational) generated by a modern, IED-based substation. Traditional SCADA/EMS systems only make a small percentage of data available to the enterprise. In contrast, the D400-S acts as an advanced RTU, data concentrator, communication processor, PLC and computing platform capable of distributing all available information to both SCADA and Non-SCADA systems. As a result, the enterprise business system can access live substation information independently, without burdening the existing SCADA/EMS systems. The resulting information flow to Planning, Engineering, Maintenance, and Protection departments allows the creation of a more efficient and reliable transmission or distribution system.

The D400-S utilizes a high-performance in-memory database, coupled with modular software functionality, to meet your specific requirements.

Features

- Easy Drag and Drop Configuration
- Seamless Protocol Translation
- Support for NERC® CIP compliance
- Configurable user security access
- Unprecedented SEL® Relay Connectivity
- Automated Event File Collection
- IEC®-61131 PLC Logic Support
- OPC Client and Server Interfaces
- Expandable and upgradeable
- Robust, substation hardened hardware
- Hot swappable communications cards
- Dual hot swappable power supplies
- Power supply failure alarming

Configuration

The D400-S comes with Configuration Explorer, an intuitive, Windows®-based graphical configuration tool with drag-and-drop functionality. This advanced utility enables a user to efficiently configure a D400-S solution in either online or off-line mode. Seamless integration with Microsoft® Excel and Excel based Templates further enhances the configuration process.

One Substation, Multiple Protocols, Zero Hassle

The D400-S builds on a decade of experience in protocol training and translation. Now, with a few mouse clicks, you can translate between almost any modern and legacy industry protocols on the fly. The device templates enable you to import whole configurations in a fraction of the time it would take to enter them by hand. Drag and drop master-to-slave mapping makes configuring whole substation networks a breeze. Constantly expanding protocol support means that as your substation connections become more complex and widespread, the D400-S will be there to accommodate even the most obscure protocol translation needs.

SEL Relay Connections Made Simple

The D400-S offers a comprehensive auto-configuring Master for SEL relays. Unsolicited writes, Fast Message, Fast Meter, and Fast Operate have never been so easy to manage. Additionally, The D400-S contains a Port Server module that lets you easily map physical serial or local IP ports to external IP addresses for remote IED access.

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Secure single point of access

A built-in port server allows secure pass-through connections to be initiated to any substation IED (relay, meter, RTU or other device) via serial or Ethernet connections. Once the connection has been authorized and established, the local IED functions can now be remotely accessed as if you were in the substation.

NERC CIP Security

Multiple levels of integrated security assist in facilitating NERC CIP compliance.

- Per User Account with Active Directory integration
- Single Sign On capabilities
- Integration into Third Party multifactor authentication technologies (RSA, Smart Card, etc)
- SSL/TLS data encryption
- Built-in secure file transfer service

Event File Collection whenever and wherever you need it.

Having event files on hand when you need them enables you to troubleshoot problems faster, prevent major problems by quickly addressing minor ones, and also helps you to avoid sending out repair crews unnecessarily. The D400-S can easily log into relays, communications processors, and other IEDs, download event files, name them appropriately, and place them in any directory. After that, your event files are sitting on a fully networked substation PC, allowing you to transfer files using an integrated, automated, and secure file transfer service. Event File Collection setup via the D400-S can be accomplished in minutes, saving you hours down the road.

Support for Data Historians with Auto-Configure

The D400-S features native data historian interfaces, including automated point creation and configuration for OSIsoft PI system® and Instep eDNA systems. The benefit is that enterprise applications connected to corporate historians will now have access to complete substation data. Analysis and reporting just got a lot more powerful.

Built-in Math, Logic, and Enterprise Interfaces

Using IEC 61131-3 logic with your substation IEDs usually requires slow and restrictive OPC bridges in between every device and logic controller. However, the D400-S has a fast built-in CoDeSys Gateway Client that lets you do things that are not possible with OPC.

Hardware Overview

The D400-S is built on a flexible, high performance, expandable diskless and fanless platform that is powered by a 1.0 Ghz processor. The D400-S supports various communication media types—Serial: RS-232, RS-485, Glass Fiber, and Plastic Fiber; and Ethernet: 10/100Base-T, 10Base-FL, and 100Base-FX. It has two Ethernet networks that are supported with separate multiport switches. An IRIG-B format time protocol input/distribution module is also supported. Serial port media is selected for each pair of ports.

Time Sync Support

The D400-S has extensive support for various time sync methodologies and will accept time sync signals from SNTP/NTP Servers, IRIG-B (un-modulated/modulated), and SCADA protocols. The D400-S can also distribute this time sync information through IRIG-B distribution interface, SCADA protocols, and/or through the RS232 ports directly (SEL compatibility).

Embedded Protocols

The D400-S comes with a built-in suite of protocols and security applications to facilitate communication with various substation IEDs and SCADA hosts.

Master Protocol

- DNP3 Serial and IP
- Harris® 5000/6000
- IEC 60870-5-103
- Modbus®
- SEL Fast Messaging
- SES-92
- SNMP
- System Statistics
- Telegyr®8979

Slave Protocols

- CDC Type II
- Conitel 2020
- DNP3 Serial and IP
- GETAC®
- Harris® 5000/6000
- IEC 60870-5-101/104
- Modbus
- Recon 1.1
- SES-92
- Telegyr 8979

Additional protocols supported – inquiry for complete details

For further product information please contact your GE Energy sales representative or send us an email at: energy.tdsolutions@ge.com

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