GE
Energy

# D400 Substation Data Manager

specification sheet


## Product Overview

The D400* substation data manager is a secure, substation hardened (CE Mark) gateway that polls metering, status, event, and fault report data from intelligent electronic devices (IEDs). It summarizes the data from the IEDs and makes it available through a standard secure web browser (HTTPS), or to a host connection (IEC® 60870-5-101/ IEC 60870-5-104/DNP 3/Modbus®/Telegyr®). TCP/IP network connections are supported over the built-in Ethernet and the modem interface.

### Processor, Memory, and Storage

- 650 MHz Embedded CPU with 33MHz PCI Bus
- 512 MB of PC133 SDRAM
- Industrial Grade Compact Flash Module (dual - 256 MB, expandable to dual 2 GB)

### Processor, Memory, and Storage

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|---|---|
| • RTDB | — 131,072 data points/128 IED's<br>— 20,000 SOE reports archived in an embedded SQL database<br>— 16MB NVRAM standard for persistent event storage guaranteeing no loss of events |

### Communications

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|---|---|
| • Protocols Supported | — Modbus Serial and TCP/IP, DNP3.0 Serial and UDP/TCP/IP, IEC-870-101/104/103, Spabus, Incom, GE Modem, BECO 2200, April, ASCII, SEL Fast Meter, SEL ASCII, IEC 61850 *Q2 2006<br>— DHCP, Telnet, NTP, HTTPS, SFTP, SSH, SSL, CHAP<br>— Additional protocols available |

### Communications (cont.)

| | |
|---|---|
| • Ethernet | — Two Ethernet interfaces supported (Fiber and/or Twisted Pair)<br>— 10/100BaseT (Isolated RJ-45 connector)<br>— 10/100Base SX (Fiber Optic: 62.5/125 µm duplex fiber cable-ST Connectors)<br>— Wireless IP Radio ready (via PPP serial port) |
| • Serial Communications (16 Channels of RS-232/485/Fiber optic) | — Data rate, 300 to 115.2 Kbps<br>— RS-232<br>  — Configurable for DCE/DTE operation<br>  — Galvanic Isolation<br>  — Can drive IRIG-B signal to RS-232 ports (with optional IRIG-B Input card present)<br>— RS-485<br>  — 2 Wire/4 Wire support<br>  — Galvanic Isolation<br>— Glass or Plastic Serial Fiber port on ST Connectors |

### IRIG-B

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|---|---|
| • Input Module | — TTL (Un-modulated), BNC Connector (Modulated), Fiber Optic<br>— CPU time sync for internal database time stamping |
| • Distribution Module | — Can drive IRIG-B TTL signal for 16 IED's |
| • Signal Propagation | — Propagated to all 16 RS-232 ports for devices such as SEL® relays<br>— Propagated to the distribution module |

### KVM

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|---|---|
| • KVM Module | — Three USB ports for connecting Keyboard and Mouse<br>— D-Sub 15 socket for connecting an industrial SVGA display<br>— 3.5mm Audio Jack for substation alarms |

## Power Supply

- Input options: 20–55 VDC (+/- 10%), 100-240 Vac/100-300Vdc (+/- 10%),
- 135 Watts DC Supply, 127VA AC Supply

## Physical

- Dimensions
  - 19 Inch Rack Mount (482.59mm)
  - 2U (3.47" / 88.12mm) in height
  - 11.12 " (282.55mm) in depth
  - Mounting: 4 mounting holes, 2 slotted for easy installation

## Environmental

- Operating Temperature: -20° to +65°C operating range
- Humidity: 5-95% Relative Humidity, Non Condensing
- Ingress Protection: IP30

## Firmware

- Flexible, application dependent

## Maintenance Software

- OCM-Offline Configuration Manager
- System requirements: IBM® PC or compatible computer, VT100 emulator

## Configuration Software

- OCM-Offline Configuration Manager
- LogicLinx Editor (if using LogicLinx*)
- Web browser-based online configuration

## Standards and Protection

| | | |
|---|---|---|
| • Emissions Standards | EN55011 (CISPR 11) | ISM RF Equipment - Electromagnetic Disturbance Characteristics |
| | 60255-25 | Electromagnetic emission tests for measuring relays and protection equipment |
| | 61000-3-2:2000 | EMC-Limits for harmonic current emissions (equipment input current <16A per phase) |
| | 61000-3-3:1994+2001 | EMC Limits-Limitations in voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with input current <16A per phase & not subject to conditional connection. |
| • Immunity Standards | 61000-4-2 1995-01<br>60255-22-2<br>IEEE® C37.90.3 | Electrostatic discharge (ESD) immunity test |
| | 61000-4-3 1998-11<br>60255-22-3<br>IEEE C37.90.2* *(10V/m) | Radiated, radio-frequency electromagnetic field immunity test |
| | 61000-4-4 1995-01<br>60255-22-4<br>IEEE C37.90.1 | Electrical fast transient/burst immunity test |

## Standards and Protection (cont.)

| | | |
|---|---|---|
| • Immunity Standards (cont.) | 61000-4-5 1995-02 | Surge immunity test |
| | 61000-4-6 1996-03 | Immunity to conducted disturbances, induced by radio-frequency fields |
| | 60255-22-6 | Electrical fast transient/burst immunity test |
| | 61000-4-81993-06 | Immunity to power frequency magnetic fields |
| | 61000-4-12 | Oscillatory waves immunity test |
| | 1995-05<br>60255-22-1<br>IEEE C37.90.1<br>Ontario Hydro A-28M-82 | (Damped Oscillatory and Ringwave) |
| • Safety Publications | 61010-1 | Harmonized Safety Standard |
| | 60255-5 2000-12 | Insulation coordination for mesuring relays and protecton equipment-Requirements and tests |
| • Power Supply Standards | 61000-4-11 1994-06 | AC Power supply interruptions |
| | 61000-4-16 1998-01 | Immunity to conducted, common mode disturbances in the frequency range 0Hz to 150kHz |
| | 61000-4-17 | Ripple on D.C. power supply |
| | 61000-4-29+ 2000-08 (+ HVDC only)<br>60255-11 | Voltage dips, short interruptions & voltage variations on D.C. input power port immunity test |
| • Environmental Standards | 60068-2-1 1994-05 | Environmental Testing Cold |
| | 600068-2-2 1974 | Environmental Testing Dry Heat |
| | 60068-2-6 1995-03<br>60255-21-1 | Environmental Testing Vibration Vibration tests (sinusoidal) |
| | 60068-2-27 1987 | Environmental Testing Shock |
| | 60068-2-29 1987 | Environmental Testing Bump |
| | 60068-2-30 1980 | Environmental Damp Heat cyclic (12+12 hour cycle) |
| | 60068-2-31 1969 | Environmental Testing Drop and Topple |
| | 60255-21-2 | Shock and bump tests |
| • Communication Standards | 61850-3 | Substation Comm. Standard |
| | IEEE 802.3 | CSMA/CD access method and physical layer specifications |

For more information, please visit ge.com/energy or email us at energy.tdsolutions@ge.com.



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