

D20 Substation Controllers: The Ultimate in Field-Proven Reliability

D20 Main Chassis

The D20 main chassis comes in three distinct types tailored to meet the varying size and communication requirements of different automation projects from a few hundred points to over 75,000 SCADA points.

D20 – Non-VME
(Single Slot)

- 19" wide, 5.25" high, 8.1" deep
- 1 CPU Board
- 7 RS-232/485 ports
- 1 D.20 I/O port
- Supports up to 120 D20 I/O modules
- Optional display



D20 – VME (5 Slot)

- 19" wide, 5.25" high, 8.1" deep (+ 3.6" if rear mounted serial I/O option is used)
- Up to 3 CPU boards
- 7 or 14 RS-232/485 ports
- 1 D.20 I/O ports
- Supports up to 120 D20 I/O modules
- Optional Ethernet and redundancy
- 8 MB or 16 MB global memory



D200 (8 Slot)

- 19" wide, 10.5" high, 14" deep
- Up to 7 CPU boards
- Up to 49 RS-232/485 ports (7 per CPU)
- Up to 4 D.20 I/O ports
- Supports up to 480 D20 I/O modules
- Optional Ethernet and redundancy
- 8 MB or 16 MB global memory



The D20 or D200 main chassis houses the central CPU(s) and communication ports which provide the data concentration, protocol conversion, and customizable local automation functionality.

D20ME II CPU Board

The D20ME II is the sixth generation main processor for the D20 platform. This 32-bit main processor module handles data collection and delivery to host computers, runs local automation algorithms and maintains I/O and device data in the system database.

CPU and Memory

- 32-bit microprocessor architecture
- 2 MB flash application memory
- 1.5 MB SRAM
- 512 KB NVRAM
- 1 MB BootROM
- TCXO clock, 1.0 ms resolution, accurate to ± 2 ppm

Communications

- 7 RS-232/485 serial ports
- RS-232 maintenance port
- 2 D.20 Link HDLC ports for communication to D20 I/O modules
- Wireless Ethernet Ready with PPP/TCP/IP

Self-diagnostics

- Program memory check sums
- RAM test
- Configuration verification
- Interrupt controller verification
- Serial port test
- Watchdog and power monitor
- I/O Module health checks
- Error logger



D20 Modems

The D20 main chassis has three modem slots with modems specifically designed to fit them.

WESDAC D20 Modem:

- 1200 Baud, 202 modem

Telenetics Modems:

- 2400 baud, 2-wire, dial-up modem
- Telenetics 14400 baud, 2-wire, dial-up modem
- Telenetics 14400 baud, 4-wire, leased line modem

D20 Power Supply Input Options

D20	20-60 VDC 100-300 VDC/85-264 VAC
D200	48 VDC nominal 115/230 VAC nominal

Auxiliary power supplies are available to accommodate other voltage ranges.

D20EME Ethernet/Memory Board

D20EME modular Ethernet/Memory cards can be applied at time of purchase or as an upgrade when you need them to increase your communications bandwidth.

Media Types:

- 10Base-T, 10Base2, 10Base-FL

Memory Options:

- 0 MB, 8 MB, or 16 MB battery-backed SRAM

Standards Compliance

All D20 components have been carefully designed to function reliably in demanding substation environments.

	Standard	Description
Environmental	IEC® 60068-2-1	Cold (0°C)
	IEC 60068-2-2	Dry Heat (+55°C)
	IEC 60068-2-6	Vibration
	IEC 60068-2-27	Shock
	IEC 60068-2-29	Bump
	IEC 60068-2-31	Drop and Topple
	IEC 60068-2-78	Damp Heat – Steady State (40°C / 93±3% RH / 96 hr)

	Standard	Description
EMC	EN 61000-6-2	Generic Immunity – Industrial
	EN 61000-6-4	Generic Emissions – Industrial
	EN 61326-1	EMC- Measurement, Control & Lab
	CISPR 11	Radiated and Conducted Emissions – ISM
	IEC 61000-3-2	Harmonics (230 VAC supply)
	IEC 61000-3-3	Flicker (230 VAC supply)
	IEC 61000-4-2	Electrostatic Discharge
	IEC 61000-4-3	Radiated RF Immunity
	IEC 61000-4-4	Electrical Fast Transient Burst
	IEC 61000-4-5	Surge Immunity
	IEC 61000-4-6	Immunity to RF Conducted/Induced
	IEC 61000-4-8	Magnetic Field Immunity
	IEC 61000-4-11	Voltage Dips and Interruptions (AC power supply)
	IEC 61000-4-12	High Frequency Oscillatory
	IEC 61000-4-16	Immunity to Conducted Common Mode Disturbances
Safety & Insulation	IEC 61000-4-17	Immunity to Ripple on DC Power Port
	IEC 61000-4-29	DC Supply Interruptions
	EN 61010-1	Product Safety
	IEC 60255-5	Dielectric Strength
Supplementary Information	IEC 60255-5	Impulse
	IEC 60255-5	Insulation Resistance
	IEEE®C37.90.1-2002	SWC
	IEEE C37.90.1-2002	SWC
	IEEE C37.1-1994	IEEE Standard Definition, Specification and Analysis of System used for Supervisory Control, Data Acquisition, and Automatic Control
	ISO® 9000	Quality Systems – Specification for Design, Manufacture and Installation
	IEC 60297	Dimensions of Mechanical Structures of 19 Inch Rack
	DNP 3.0	Communication Protocol
	IEC 60870-5	Communication Protocol



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