

The Orion5 Automation Platform interfaces with Intelligent Electronic Devices (IEDs) using their legacy or industry standard protocols. Information is shared between IEDs, RTUs, PLCs, DCSs, HMIs, and SCADA masters. The Orion5 enables utility engineering, operations, planning personnel, neighboring utilities, state power pools and regional transmission groups to share critical information.

The transducer mount chassis supports up to nine user serial ports, an Ethernet TCP/IP port, internal dial-up modem, and discrete inputs and outputs. Expansion communication cards add four ports and can be ordered with RS-232/485 or fiber optic connectors. Most importantly, the Orion5 contains no fans, no hard drives, and no moving parts.

Port and protocol configuration is completely flexible. The Orion5 is capable of using a different protocol for each port with any combination of master and slave protocols. Multi-dropped devices are supported when protocols and communication media allow. Each port uses hardware buffers for independent high-speed data serial communications.

Configuration is easily accomplished using NovaTech Communications Director (NCD) software, providing a simple drag and drop interface. NCD drastically reduces configuration time by pre-packaging IED protocol information, allowing the user to focus on the project, instead of learning about protocols and IEDs. Offline configuration allows the user to configure the system without connecting to the IEDs, enabling configuration outside of the substation. Separate polling groups can be configured to adjust update times on a per point basis. Unsolicited responses from IEDs are also accepted.

Using a point and click interface, over 50 math and text manipulation functions can be applied to any data point. In addition, user logic simulation software is available for offline troubleshooting.

State of the art onboard diagnostics allow the user to view port communications, data values, and communication statistics. These tools provide a clear definition of device and point status.

Orion5 Automation Platform



Orion5 Front View

Expansion Cards

Serial:

- D40:** (4) RS-232
- D31:** (3) RS-232, (1) RS-485
- D22:** (2) RS-485 (2) RS-232
- F2:** (2) ST-Fiber Optic
- F4:** (4) ST-Fiber Optic

Communication:

- ENET:** Ethernet 10BaseT
- MDM:** Internal dial-up modem

SCADA Protocols

- Betac/Getac
- CDC-1
- Conitel 300/2020
- DNP3.0 – Serial and IP
- Harris 5000/6000
- L&G 8979
- Modbus - Serial and TCP
- REDAC 70H
- TejasV

Other Protocols

- FTP
- HTTP
- PPP
- SNMP
- SNTP
- telnet
- XML

IED Protocols

- ABB DPU
- Allen Bradley DF1
- Areva KITZ
- Areva Optimho
- Basler DFPR
- DNP3.0 Serial and IP
- GE DLP
- GE Moisture Meter
- GridSense PAC
- IEC 870-5-103
- Keithley Meter
- Modbus - Serial and TCP
- PG&E 2179
- RFL
- SEL® ASCII
- SEL® Fast Meter
- SEL® Fast Operate
- SEL® Fast SER
- SPA Bus
- TransData DTO



Specifications

Surge Withstand

Designed to comply with ANSI C37.90.1

Environmental

Temperature, operating -40 to +70 degrees C
Humidity, operating 5 to 95% non-condensing

Indication LEDs

Power LED
TX / RX LED

Physical

Panel Mount
Standard 6.4W x 5.5H x 5.5D (in)
Extended 6.4W x 5.5H x 6.7D (in)

Weight 8.5 lbs

Connections

RS-232 DB9 (Female)
RS-485 DB9 (Female)
Fiber Optic ST multi-mode
Ethernet RJ45 (Female)
Modem RJ11 (Female)
I/O Terminals Phoenix type, #12-24AWG
Power Terminal 3-position barrier strip, #10 stud

Processor

CPU 586 class
Speed 100MHz
DRAM 32MB
Flash 32MB

Performance/Capabilities

IED/SCADA points 5,000; typical
Refresh Rate < 2 sec; typical

Communications

Serial 1200bps -115kbps
Ethernet 10BaseT
Protocols 1Bit or byte
Upgrades Via file transfer



The Orion5 can be used with Orion Distributed I/O. 8 in/16 out 19" rack mount model shown

Data Archiving & Storage

Standard Memory 24MB

Internal Modem

Type Dial-up; v.34
Speed 33.6 kbps

Digital Inputs

Quantity 4 Std (Expandable)
Input Range 12-150V dc
Optically Isolated

Digital Outputs

Quantity 2 Std (Expandable)
Contact Ratings 10A MOV Protected

Alarm Output

Type Form A (default)
Contact Ratings 10A MOV Protected

Power Supplies

Input Voltage 12V dc (+/- 20%)
24V dc (+/- 20%)
48V dc (+/- 20%)
125V dc -120V ac (+/- 20%)

Rating 7 Watts

Warranty 5 Year Limited

Contact: