



The OrionLX is the next generation of the Orion product family, and is designed for an expanded range of substation automation and security applications, including:

- **Secure Substation Gateway**
- **Remote Terminal Unit (RTU)**
- **Relay Communications Processor**
- **Sequence of Events Recorder**
- **Alarm Annunciator**
- **HMI Server**
- **Distribution Automation Controller**

The OrionLX shares the same 2RU box dimensions and serial communications cards as the Orion5r. Configuration of the OrionLX - including the points read from IEDs, the points presented to SCADA, Math and Logic, and special functions for Sequence of Events, Alarm Annunciation and Distribution Automation - is accomplished using NovaTech Communications Director (NCD), the same license-free tool used to configure other Orion models. NCD eliminates nearly all register entry and typing by providing pre-configured pick lists for dozens of utility protocols and over 250 utility IEDs. Configurations developed to run on the Orion5r can be run on the OrionLX with the modification of a few communications and access parameters.

New Software Features

- Comprehensive Cyber Security Package
 - Multiple Users with Levels of Access
 - Remote Authentication Support
 - Firewall Support
 - VPN and Encryption Protocol Support
 - Key Management
 - Logging
 - Provides Support for NERC CIP Compliance
- New Web-Based Online Operations for Improved Visibility and Ease of Use
- More Processing Power for up to 20,000 Points
- Support for up to 96 Ethernet Devices
- Open-Source SQL-Compliant Data Base
- "Cascaded Orion" Software to Simplify Integration of Multiple Orions
- Email Option for Alarms and SEL® Event Records
- Point Aliasing

New Hardware Features

- Wide-Range Power Supplies
- Redundant Power Supply Option with Diagnostics
- Ethernet Fiber Optic Port Option
- Expanded Memory for Data Archiving
- Diagnostic LEDs for Firewall and Communications
- USB Ports



OrionLX Front and Rear View

Communications

- Serial**
- A:** RS-232 Standard w/ IRIG-B
 - B:** RS-422/485
 - C:** ST-Fiber Optic
 - D:** Bit Card (Bit-to-byte conversion)
 - E:** RS-232 Isolated w/IRIG-B
 - G:** RS-485 w/IRIG-B
 - H:** V-Pin Fiber Optic w/ IRIG-B

- Ethernet**
- 10/100BaseT (standard)
 - Second Ethernet port: 10/100BaseT or 100BaseFX Multimode

- Modem**
- Internal Dial-Up

- IRIG-B**
- Standard Built-In

SCADA Protocols

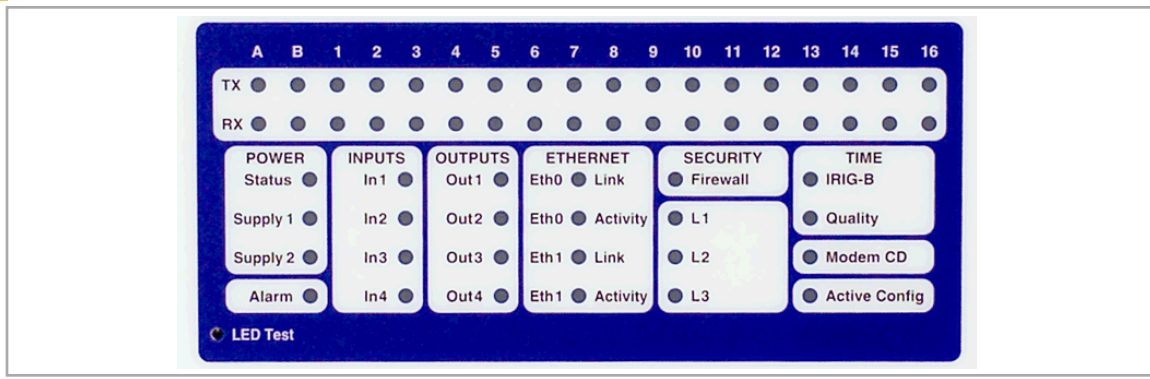
- Betac/Getac
- Conitel - 300/20x0
- CDC-1
- DNP3.0 – Serial and IP
- Harris 5000
- L&G 8979
- Modbus – Serial and TCP
- REDAC 70H
- TejasV

IED Protocols

- ABB DPU
- Allen Bradley DF1
- Areva KITZ
- Areva Optimho
- Basler DFPR
- DNP3 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

Other Protocols

- FTP and sFTP
- HTTP
- HTTPS
- NTP
- PPP
- SNMP
- SNTP
- telnet
- XML
- Plus suite of other security protocols



Front View of OrionLX Showing Expanded Diagnostic LEDs

Specifications

Environmental

Fast Transient	C37.90.1 (2002)
RFI	C37.90.2 (1995)
Electrostatic Discharge	C37.90.3 (2001)
Operating Temperature	-40° C to +70° C
Operating Humidity	5 to 95% non-condensing plus other IEEE 1613

Indication LEDs

Power Supply #1	Ethernet Link and Activity
Power Supply #2	Security (Firewall)
Alarm	IRIG-B Present and Quality
Built-In Inputs	Modem Carrier Detect
Built-In Outputs	Active Configuration
RX/TX on 18 serial ports	

Physical

Standard case (2U)	19W x 3.5H x 13D (in)
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Weight

9.5 lbs

Connections

RS-232 w/IRIG-B	DB9 (Female)
RS-422/485	Screw Terminal
RS-485 w/IRIG-B	Screw Terminal
Fiber Optic	ST Multimode
Fiber Optic w/IRIG-B	V-Pin Multimode
Bit Card	RJ11 (Female)
Ethernet	RJ45 (Female) or ST Fiber
Modem	RJ11 (Female)
I/O Terminals	Phoenix type, #12-24AWG
Power Terminal	Phoenix type, #10-30AWG #10 stud

IRIG-B

Input	Modulated or Unmodulated
Output (on serial ports)	Unmodulated

Processor

CPU	Intel w/Hardware Accelerated Cryptography
Speed	533MHz
DRAM	64MB
Flash	32MB

Performance/Capabilities

IED/SCADA Points	20,000; typical
Refresh Rate	< 2 sec; typical

Communications

Serial	1200bps -115kbps
Ethernet	
Built-In Standard	10/100BaseT
Optional Second Port	10/100BaseT or 100BaseFX
Protocols	Bit or byte
Upgrades	Via file transfer

Data Archiving & Storage

Standard Memory	64MB
Expanded Memory Option	256MB, 1GB, and 4GB
Database	PostgreSQL

Internal Modem

Type	Dial-up; v.34
Speed	33.6kbps

Digital Inputs

Quantity	4 Std (Expandable)
Input Range	12-24V dc 48 - 125V dc Optically Isolated 1ms time-stamped

Digital Outputs

Quantity	4 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%) • 48 - 125V dc / 120V ac (+/- 20%) • 125V dc / 120V ac / 240V ac (+/- 20%)
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Power Required

30 Watts (max)

Warranty

5 Year Limited

Contact:

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