ECHELON®

i.LON® 100 Internet Server
Models 72101, 72102, 72103, and 72104

- Connects LONWORKS® networks to TCP/IP Ethernet networks for commercial, industrial, and utility applications
- Built-in scheduling, data logging, and alarm management applications
- Local or remote configuration via built-in configuration web pages
- Power line (PL-20) or twisted pair (TP/FT-10) LONWORKS channel support
- 2 opto-isolated digital inputs
- 2 high voltage, high current relay outputs
- 2 inputs for electric, gas, or water impulse meters
- Auto-polarity 10/100 BaseT Ethernet interface
- Optional integral dial-in/out modem
- Built-in real-time clock
- SOAP/XML Web Services interface allows easy integration with enterprise systems
- E-mail or network variable notification of alarm conditions
- MD5 secured communications
- Compatible with NAT routers for operation behind firewalls
- Static or DHCP acquired IP address
- Built-in RNI for integration with LNS® applications

Description

The *i*.LON 100 Internet Server is a low-cost, high-performance interface that connects LONWORKS based everyday devices to the Internet, a LAN, or a WAN. Appliances, meters, load controls, lights, security systems, pumps, valves—virtually any electrical device—can be connected through the *i*.LON 100 Internet Server to an IP network or the Internet. This allows a service center to configure, monitor, and control everyday devices from across the room, or across the globe.

Applications

The *i*.LON 100's software applications provide a rich set of functions that enable it to work as a self-contained controller without the need for a PC or host processor. Standard applications include scheduling, data logging, alarm detection & dispatch, and meter reading. The scheduling application permits events and exceptions to be initiated based on time and date schedules configured by the user. The data logging application collects network activity for use by trending, reporting, and analysis applications. The alarming application provides a means to identify, annunciate, and log alarm conditions. The meter reading application supervises impulse meters and provides suitable conversion values for energy, gas, and water metering.

These applications may be used either separately or in combination with one another. The *i*.LON 100 applications are accessible from web pages, SOAP/XML, or via standard LNS plug-ins. The SOAP/XML interface to these applications allows custom integration of data into back-end databases and reporting applications using Web services. The device level LNS plug-in application is used to configure the operation of the internal applications, and customize the presentation of data and alarms that are viewed with the integrated Web interface, or accessed via the SOAP/XML interface. Used in conjunction with the built-in security features, the applications allow day-to-day operational activities such as scheduling events, reading data logs, monitoring events, and acknowledging alarms to be supervised from anywhere in the world using a web browser.

Network Interfaces

Available with either a PL-20 power line or TP/FT-10 free topology twisted pair LONWORKS interface, the *i*.LON 100 features a standard 10/100 BaseT Ethernet interface and an optional internal 56K V.90 modem for dial-in/out applications. The power line interface allows signaling to everyday devices through the power mains, and has the advantage of requiring no new wires. The free topology twisted pair interface uses inexpensive twisted pair wiring to interconnect devices without regard to wiring topology: the installer is free to route the wire in the most expeditious manner. The 10/100 BaseT interface provides connection to a local Ethernet network, while the internal modem option permits signals over telephone lines without the need for a cumbersome external modem.

Hardware I/O

The *i*.LON 100 includes two optically-isolated digital inputs, high voltage, high current SPST relay outputs, and two impulse meter inputs for supervising electric, gas, and water impulse meters. Each input or output may be configured using LNS plug-ins. For example, the pulse meter inputs can be easily configured to convert a predefined number of pulses into a kilowatt hour (kWh) value and then store the kWh reading in one of the *i*.LON 100's data logs. When convenient, the day's energy consumption log can be uploaded via the SOAP/XML interface or as a CSV file through FTP, dispatched as a daily e-mail message, or simply displayed on an *i*.LON 100 web page for viewing in a web browser.

Likewise, the *i*.LON 100's outputs can be triggered by network events. For example, instead of sending an e-mail or network variable update when an alarm condition is detected, the *i*.LON 100's built-in alarm annunciator might trigger one of the internal high voltage, high current relays, e.g., detection of a burst pipe or a conveyor failure might trigger an electrical system shutdown.

Multiple IP Connections

When connected to an LNS Server, the *i*.LON 100 functions as a high-performance remote network interface (RNI). In this mode, all network management, diagnostic, monitoring, and control functions are handled by LNS. Besides acting as a remote LONWORKS network interface, the *i*.LON 100 also offers a built-in web server and a SOAP server. The *i*.LON 100 e-mail client is used to send e-mail dispatches of alarm conditions and data log content. The combination of web and SOAP servers enables the creation of web browser-based interfaces as well as connectivity to enterprise systems such as manufacturing, accounting, and SCADA applications. All information is provided in either HTML or XML formats.

In addition, a standard WSDL file suitable for .Net integration is provided as part of the *i*.LON 100 support software. This web service interface allows programmers to seamlessly access the internal workings of the *i*.LON 100 in much the same way as OCX controls have operated in the past. The result—faster access to network data.

Standards Based Protocols for Total Interoperability

The *i*.LON 100 is designed for use in both local and wide area data networks, and is compatible with the most popular IP networking protocols including TCP, PPP, CHAP, PAP, ICMP, NAT, SMTP, DHCP, SNTP, FTP, DNS, MD5, and HTTP. HTML, XML, and SOAP application protocols are also supported. The *i*.LON 100 fully supports the ANSI 709.1 protocol as well as ANSI 709.2 or 709.3 physical layers. Application modules are exposed using standard objects that can be configured with any LNS based integration tool. Regardless of whether one is connecting to a LAN, WAN, or ANSI 709.1 protocol based system, the *i*.LON 100 offers interoperable networking based on open standards.

Specifications

Minimum PC Requirements	Pentium II @ 600MHz, 128KB RAM, 70MB of free disk space
Processor	MIPS32™
Channel Type	72101 TP/FT-10 free topology twisted pair
	72102 TP/FT-10 free topology twisted pair
	72103 PL-20N or PL-20C power line, L-N coupling
	72104 PL-20N or PL-20C power line, L-N coupling
Network Connector	Screw terminals
Operating Input Voltage	100-240VAC, 50/60 Hz
Power Consumption	<15 Watts
Controls	Service switch, Reset switch
Indicators	Power On/Wink
	Ethernet link, Activity, 10/100 Mbps
	LONWORKS Service, BIU, PKD, Tx, Rx
	(2) Digital Inputs
	(2) Relay Outputs
	(2) Metering Inputs
	Remote Network Interface connection status
Ethernet Port	10/100BaseT, auto-selecting, auto polarity
Ethernet Connector Type	RJ-45, 8 conductor

Modem	Optional V.90 internal analog modem
Modem Connector	RJ-11, 6 conductor
Console Port	EIA-232
Console Connector	DB-9
Digital Inputs	2 optically-isolated dry contact inputs, 30V AC/DC
Digital Input Connector	Screw terminals
Relay Outputs	2 SPST relays rated at 240VAC @ 10A or 24VDC @ 10A
Relay Output Connector	Screw terminals
Impulse Meter Inputs	DIN 43 864 (Open terminal voltage ≤12VDC Max; Max current ≤ 27mA)
Impulse Meter Input Connector	Screw terminals
Temperature	
Operating	0 to +50°C
Non-operating	-40 to +85°C
Humidity (non-condensing)	
Operating	10 to 90% RH @ 50°C
Non-operating	5 to 90% RH max @ 50°C
Dimensions	H: 3.51", W: 5.47", D: 2.60"
	(8TE DIN, H: 8.9 cm, W: 13.8cm, D: 6.6cm)
EMC	FCC Part 15 Class B, EN55022 Class B, EN55024, CISPR 22 Class B, VCCI Class B
Agency Listings	UL 60950, cUL C22.2 No. 60950-00, TÜV EN60950, CE, C-Tick.
Mounting	DIN, Enclosure 8TE

Documentation

The *i*.LON *100 Internet Server User's Guide* and the *i*.LON *100 Programmer's Reference Guide* are included in PDF format on the product CD, and may be downloaded from Echelon's web site.

Document	Echelon Part Number
i.LON *100 Internet Server User's Guide*	078-0196-01A
i.LON *100 Internet Server Programmer's Reference*	078-0250-01

Ordering Information

Product	Echelon Model Number
i.LON 100 Internet Server – TP/FT-10, no modem	72101
i.LON 100 Internet Server – TP/FT-10 with modem	72102
i.LON 100 Internet Server – PL-20, no modem	72103
i.LON 100 Internet Server – PL-20 with modem	72104