

700 VA to 2.1 kVA

LT Series

Uninterruptible Power Systems

Designed to be used with
linear or non-linear load applications.

Applications:

- Networking
- Healthcare I.T.
- High-Performance Workstations
- Voice Mail/Information Technology
- Communication Closets
- Transmission Repeaters
- Supervisory Control and Data Acquisition (SCADA)
- Distributed Control Systems (DCS)
- Industrial Automation and Controls
- Harsh Electrical Environments



UL / cUL 1778



TRYSTAR®

LT AND LTR SERIES

Trystar engineers and manufactures the industry's highest quality power conditioning and UPS equipment, capitalizing on many years of expertise. We have an enviable reputation for quality, which is reflected in the design, workmanship, and performance of our products.

We provide the widest range of power equipment for regulating, conditioning, isolating, purifying, and distributing incoming electrical power. All products incorporate state-of-the-art technology, optimizing performance characteristics for various applications. Our products protect sensitive electronic systems from erratic operation and failure due to power line transients, noise, brownouts, sags, surges, and total power outages.

LT and LTR Series UPS

The overall function of the LT and LTR Series UPS's is to take polluted, fluctuating, and erratic electrical power that exists in all areas today and purify or replace it (in the case of complete power outages) with well-regulated, computer grade power.

Especially valuable for I.T. and computer networking applications, as well as individual work-stations, the LT and LTR UPS's maintain electrical power to the critical load for approximately 10 minutes to several hours. The backup time is a function of the amount of battery reserve that is purchased with the system.

Features & Benefits

The LT and LTR Series products are designed to maximize backup time, protect your computer or critical load, and monitor all the key parameters of electrical power including a log of events.

Features include:

- Steady, Regulated Voltage to $\pm 3\%$ of Nominal, Extends the Life of Your Equipment
- Highest Level Performance Sine Wave Output Matches Your System's Requirements
- 100% Power Conditioning
- No-break, Continuous Power Provides Seamless Switching to Battery Backup
- Integral Status and Alarm Panel
- Remote Communications Via Alarm Signals or RS232
- Patented "Fuzzy Ranging"™ Control Extends Battery Life and Backup Time
- Optional Extended Backup Time
- Optional NetMinder UPS Communications Software and Hardware for UPS Monitoring and Network Management

LT Solves Network Dropout Problem

A manufacturer of large water circulation assemblies generated severe voltage dips and spikes throughout their building when testing their pumps. The



voltage dips and spikes caused the administrator's network to crash repeatedly.

The LT eliminated the problem because of its tight voltage regulation and inherent spike suppression properties. "We tried other UPS's, but with ineffective results," said the Plant Manager. "We needed a UPS that could keep the voltage steady, and the LT does just that."

LTR Supports Factory-Floor Automation

A manufacturer of automotive components must adhere to the most stringent tolerances of any automation process. Damaging electrical environments



and "dirty" factory power take their toll on the typical power protection systems which are intended to protect the factory's equipment.

The LTR solved this supplier's factory-floor equipment failures. Where most line-interactive standby UPS's simply pass the factory power directly to the process controllers, the LTR delivers a clean, regulated, reconstructed sine wave for trouble-free process operation.

"Where commercial grade UPS's have failed because of the harsh electrical environment in our factory, the LTR thrives," explained the factory engineer. "We have standardized our plant to include the LTR for all our distributed control systems. It's the only UPS that stands the test of time."

LTN SERIES

The LTN's standard NEMA 2, powder-coated enclosure makes this product ideal for maintaining electrical power to critical loads in harsh indoor environments such as water treatment facilities, refineries, and underground mines.

Features & Benefits

- Uninterrupted, regulated, continuous sinewave output.
- Integral constant voltage transformer isolates and regulates output voltage.
- Integral status and alarm panel.
- Remote communications via alarm signals, RS232, or Ethernet.
- Long battery runtimes contained in a single cabinet.
- Front-access design.
- Wall or floor-mounted options — consult factory.
- Standard NEMA 2 powder-coated enclosure.
- Optional output circuit breakers, remote status panel, accelerated battery charger, and automatic phone dialer.
- Generator-compatible.

LTN - Designed for Harsh Indoor Environments

A major metropolitan area in the southwest U.S. needed to remove arsenic from its potable water supply wells, however some of the pump stations were located in very remote areas. The water district personnel and the consulting engineering team were faced with mandated water quality standards that required continuous monitoring of the sampling process, and a backup time of 4 hours at half-load.

Due to the sensitivity of the telemetry and water sampling equipment, a UPS with isolation and voltage regulation was specified. For these remote, harsh indoor environments, the wall-mountable and free-standing LTN's (each configured with a single main output circuit breaker, hardwired output, and extended battery run time) were the perfect solutions.



Standard NEMA enclosure shown.

PERFORMANCE SPECIFICATIONS

LT, LTR and LTN TOTAL POWER SECURITY

Built-In Isolation

It is a common fact that isolation transformers provide electrical security for the load, eliminate electrical noise, and produce a new clean ground for digital and communication signals. All LT, LTR, and LTN products include a power purifying isolation transformer (uncommonly found in 700VA to 2.1KVA UPS's), which protects your equipment from the most damaging power disturbances. This standard isolation transformer offers the user a choice of input and output voltage selections between 120 to 240 volts.

Input Power Factor Correction With Less Than 10% Total Harmonic Distortion (THD)

The LT, LTR, and LTN go beyond the traditional UPS. Double magnetic conversion prevents damaging load-generated harmonics from backing-up into the utility lines.

Fuzzy Ranging™

Fuzzy Ranging™, a patented technology solution, uses fuzzy logic to automatically broaden the input operating range as a function of load. **This feature provides added security during deep brownout conditions without battery consumption. Fuzzy Ranging assures the batteries will be at full capacity for a real emergency... a power outage.**

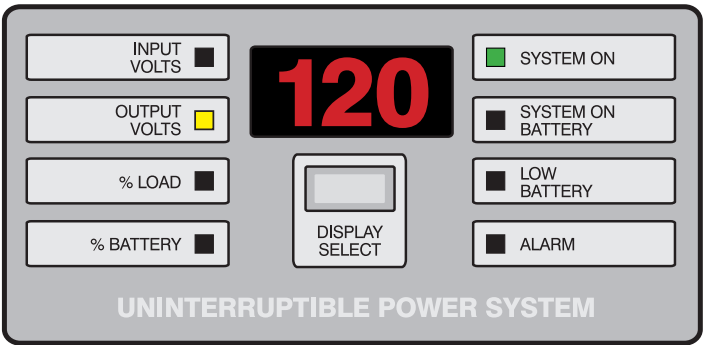
Display Monitors & Diagnostics

Bright, 3-Digit LED Provides System Parameters:

- Input Voltage
- Output Voltage
- Percent of Battery Capacity
- Percent of Load
- Percent of Battery Charged

LED Indicators Provide System Status:

- System On (Green)
- System On Battery (Yellow)
- Low Battery Warning (Red)
- General Alarm



Product Specifications:

Input

Voltage: 120, 208, or 240 VAC at 60 Hz
(Consult factory for 50 Hz voltage options.)

Operating Range: +10%, -40% typical

Frequency Range: ±2.5 Hz

Performance

Common Mode: 120 dB

Transverse Mode: 70 dB

Fuzzy Ranging Plus™: Human-like decision making to optimize usable input line voltage without using batteries. Range without battery consumption to 60% of nominal input voltage.

Output

Sine Wave Voltage: Maximum 3% harmonic distortion, any single harmonic
120 VAC; 120/208 VAC; 120/240 VAC at 60 Hz
(Consult factory for 50 Hz voltage options.)

Load Regulation: Typically better than ±3%

Isolation: Galvanic isolation

Environmental

Operating Temperature:

- 0°C – 40°C

Agencies

- IEEE 587 Category B Guide for surge suppression
- IEC 555

MTBF

Total System:

100,000 hours

Safety

- UL / cUL Listed 1778 Standard for UPS Equipment
- UL Listed 544 Standard for use in healthcare facilities
- FCC Article 15, J, Class A

The NetMinder UPS Management Suite and NetMinder CS121 Series of Ethernet Adapters inform of the status and condition of the UPS and the incoming electrical power, as well as protect the LAN / WAN from unwanted downtime and unnecessary maintenance costs.

NetMinder UPS Management Suite Programs (CD)

NetMinder UPSMAN

Performs all UPS monitoring and data logging. Executes all alarm notifications, network configurations, and server shutdown requests.

NetMinder UPSMON

Works in conjunction with UPSMAN to give a visual display of UPS status, electrical parameters, alarm conditions, and system logs.

NetMinder RCCMD

Client-side application that performs an orderly, unattended shutdown of servers. RCCMD can receive its shutdown instructions from either a UPSMAN server, a UNMSII server, or a CS121 web server.

NetMinder UNMSII (basic version)

Server-side application that centralizes monitoring and e-mail alarm reporting of up to (9) Trystar UPSs, from a single terminal. Note that the full version of UNMSII includes SNMP notification, as well as the ability to monitor up to an unlimited number of UPSs. Contact Trystar for additional details.

NetMinder CS121 Series of Ethernet Adapters

The NetMinder CS121 series of adapters provide complete integration of the UPS into an Ethernet or RS485 network, and thereby provide 24 / 7 monitoring of UPS status, electrical parameters, and notification of alarm conditions. With the ability to communicate in Ethernet TCP/IP, MODBUS TCP, and MODBUS RS485 network environments, the CS121 adapters keep system personnel informed and alerted to any critical condition. When used with NetMinder RCCMD, all CS121 adapters provide added network protection from downtime, and prevent unnecessary maintenance costs that result from data corruption and server crashes.

The NetMinder CS121 Ethernet Adapter is available in (3) unique versions:

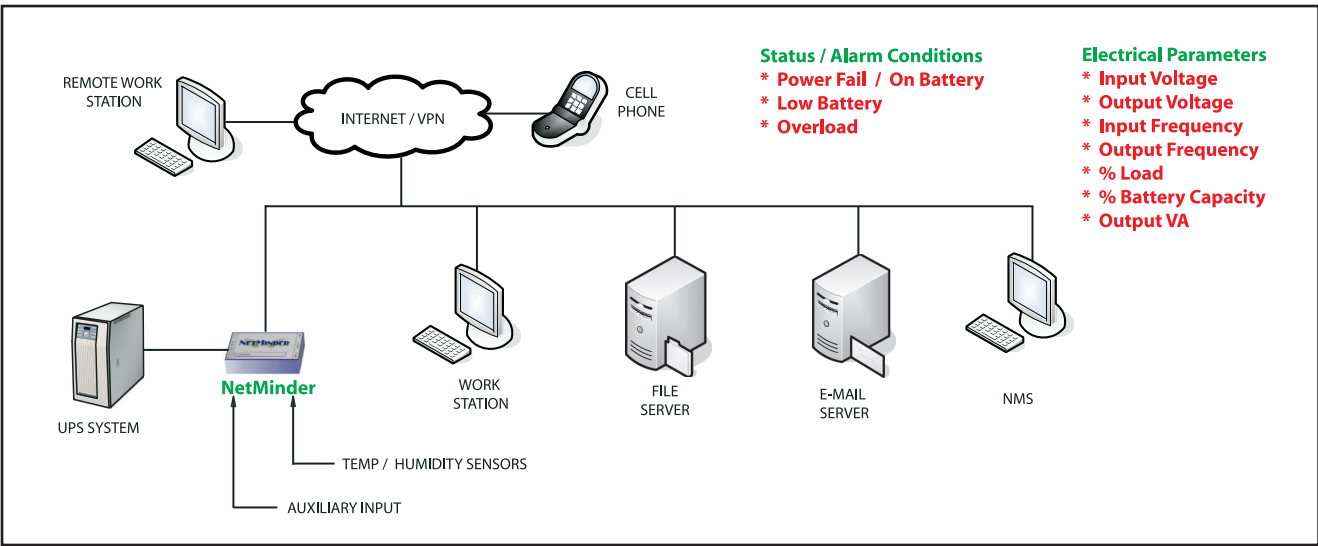
CS121B: Ethernet / SNMP / TCP/IP Adapter

CS121L: Advanced Ethernet / SNMP / TCP/IP / MODBUS TCP Adapter with facilities monitoring I/O and auxiliary contact closure inputs.

CS121L-485: Advanced Ethernet / SNMP / TCP/IP / MODBUS TCP / MODBUS RS485 Adapter with auxiliary contact closure inputs.

NetMinder CS121 Features & Benefits

- Real-time Remote UPS Monitoring
- Web Server Based
- MODBUS ASCII and RTU
- Graphic Event and Data Trending
- Exportable Data and Event Logging for Trending Analysis and Troubleshooting



Alarm and event notification via local and remote monitoring, e-mail, and cell phone text messaging.

MODEL SELECTION GUIDES

LT AND LTR SERIES - SINGLE PHASE 700 VA TO 2.1 KVA

MODEL	VA	WATTS	*FULL LOAD BATTERY RUNTIME	HALF LOAD BATTERY RUNTIME	BTU / HOUR	WEIGHT (LBS.)
LT700	700	500	11.5 min.	30 min.	256	70 lbs.
LT850	850	600	9 min.	24 min.	307	70 lbs.
LT1000	1000	700	7 min.	15 min.	359	75 lbs
LT1200	1200	850	12 min.	27 min.	435	104 lbs
LT1400	1400	1000	8 min.	23 min.	512	104 lbs
LT1600	1600	1200	7 min.	17.5 min.	561	104 lbs
LT1800	1800	1300	9.5 min.	26 min.	598	123 lbs
LT2100	2100	1500	7.5 min.	21.5 min.	670	123 lbs

* Extended runtimes available.

All LT cabinet dimensions are 8.125" W x 17.5" D x 17.5" H.

All LTR cabinet dimensions are 19" W x 20" D x 8.75" H.

Both LT and LTR come standard with (3) 5-20R2 receptacles; hardwired interface available.

NOTE: The LT700 and LT850 can be shipped via United Parcel Service.

LTN SERIES

MODEL	VA	WATTS	BATTERY RUNTIMES (FULL / HALF LOAD) MINIMUM MAXIMUM		BTU'S / HOUR	WEIGHT (LBS.)*
LT700	700	500	22.5 m / 1h	7h / 14h	256	223
LT850	850	600	18m / 48m	5hr 30m / 10h 30m	307	223
LT1000	1000	700	13m / 30m	3h 48m / 7h 55m	359	238
LT1200	1200	850	12m / 27m	3h 36m / 7h	435	257
LT1400	1400	1000	8m / 23m	2h 49m / 5h 50m	512	257
LT1600	1600	1200	7m / 17.5m	2h 26m / 5h 7m	614	257
LT1800	1800	1300	9.5m / 26m	2h 18m / 4h	665	267
LT2100	2100	1500	7.5m / 21.5m	2h 5m / 3h 47m	767	267

Notes: *Weight does not include batteries. Battery weights vary according to desired runtimes.

Battery runtimes: Dependent on battery option purchased. Battery runtimes stated above reflect standard minimum and maximum options.

Consult factory.

Product dimensions are 31" W x 16.6" D x 39" H.

Represented by:



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