LC8000 Series

Logic Controls Industrial Computer

USER MANUAL

LOGIC®
CONTROLS

NOTICE

The manufacturer of the Industrial Computer makes no representations or warranties, either expressed or implied, by or with respect to anything in this manual, and shall not be liable for any implied warranties of fitness for a particular purpose or for any indirect, special or consequential damages. Information in this document is subject to change without notice and does not represent a commitment on the part of the manufacturer.

FCC NOTICE

This device complies with Part 15 of FCC Rules. Operations are subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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IMPORTANT SAFETY INSTRUCTIONS

Read these instructions carefully. Save these instructions for future reference.

1. Follow all warnings and instructions marked on the product.
2. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3. Do not use this product near water.
4. This product should be operated from the type of power indicated on the power adaptor. If you are not sure of the type of power available, consult your dealer or local power company.
5. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
6. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.
7. Allow at least 6 inches of space from the top of the unit and 3 inches from the sides to allow proper ventilation.
8. We recommend all servicing done on this product be done by qualified service personnel. Aside from upgrades or swapping out the compact flash or hard-drive please refer all other servicing to the Logic Controls RMA Dept.
9. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
   a) When the power cord or plug is damaged or frayed
   b) If liquid has been spilled into the product
   c) If the product has been exposed to rain or water
   d) If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
   e) If the product has been dropped or the cabinet has been damaged
   f) If the product exhibits a distinct change in performance, indicating a need for service.

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FEATURES

- Fanless operation

- Intel-compatible CPU 533 MHz to 1 GHz

- Ultra compact – only 2"H x 8"W x 6"L

- Mass storage: Compact flash (no moving parts) or/and hard disk drive

- Enclosed in rugged die cast case

- 128MB to 512MB embedded RAM

- No internal connecting cables with all components mounted on single PC board for high reliability

- Large number of available I/O ports: 4 USB 2.0, 4 serial, 2 SVGA, 1 Ethernet, 1 PS/2 keyboard/mouse, 1 LPT, speaker out, microphone in, power input

- Multimedia: 1280 x 1024 resolution with 32-bit color, AGP 4X, MPEG-2 decoding and video, integrated 128-bit 2 D and 64-bit 3D graphics engine, AC97 Audio CODEC

- System boot from compact flash, hard-drive, network, or USB floppy drive/CD-ROM

- Power: Wide range of input voltages, 9 to 24VDC, suitable for mobile applications

- Custom configurations available

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OVERVIEW

The Logic Controls LC8000 provides unparalleled reliability by being a fanless unit with no moving mechanical parts. It is an ideal computer for use in harsh environments with high levels of dust or oil when fan noise is not desirable. For mass storage, compact flash memory provides true no-moving-part operation. In addition, all components and connectors reside on one PC board, thus no internal cables (sources of common loose connections) are required. The computer is housed in a rugged die cast case for extra protection. The LC8000 has a very compact form factor - only 2"H x 8"W x 6"L. Two mounting brackets enable these units to be mounted almost anywhere – on a wall, ceiling, table top or under a counter.

The LC-8000 uses Intel-compatible, Pentium-class processors, so it can run Windows and Linux-based applications. Whether your application runs on Windows XP, Windows XP embedded, Windows 2000, Windows CE or any flavor of Linux, your operating system needs are supported by the LC8000. This enables the unit to be used in a wide variety of applications – in a restaurant's kitchen system, in a POS workstation, in an auto ID workstation, etc. The LC8000 also provides a very impressive compliment of up-to-date I/O ports – Ethernet, parallel, PS/2 and multiple USB 2.0, RS232, and SVGA ports are all included.

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HARDWARE INSTALLATION
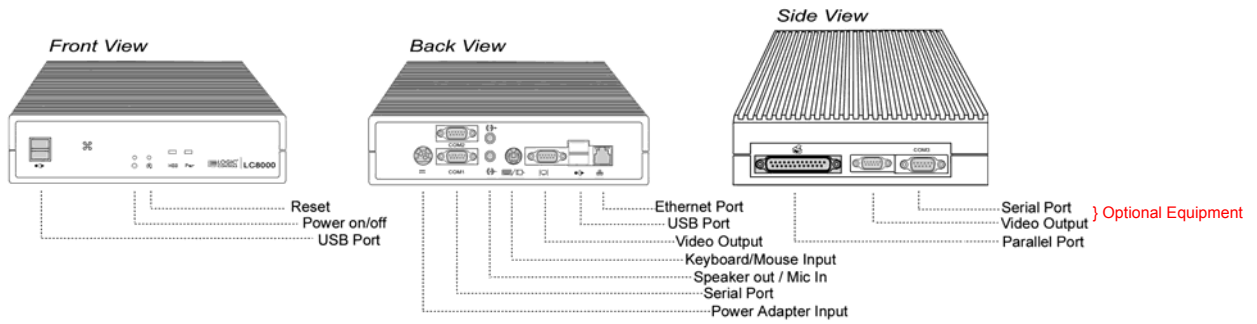
As it's a fan-less computer, adequate ventilation is required to ensure normal operation. Allow at least 6 inches of space from the top of the unit and 3 inches from the sides to allow proper ventilation.

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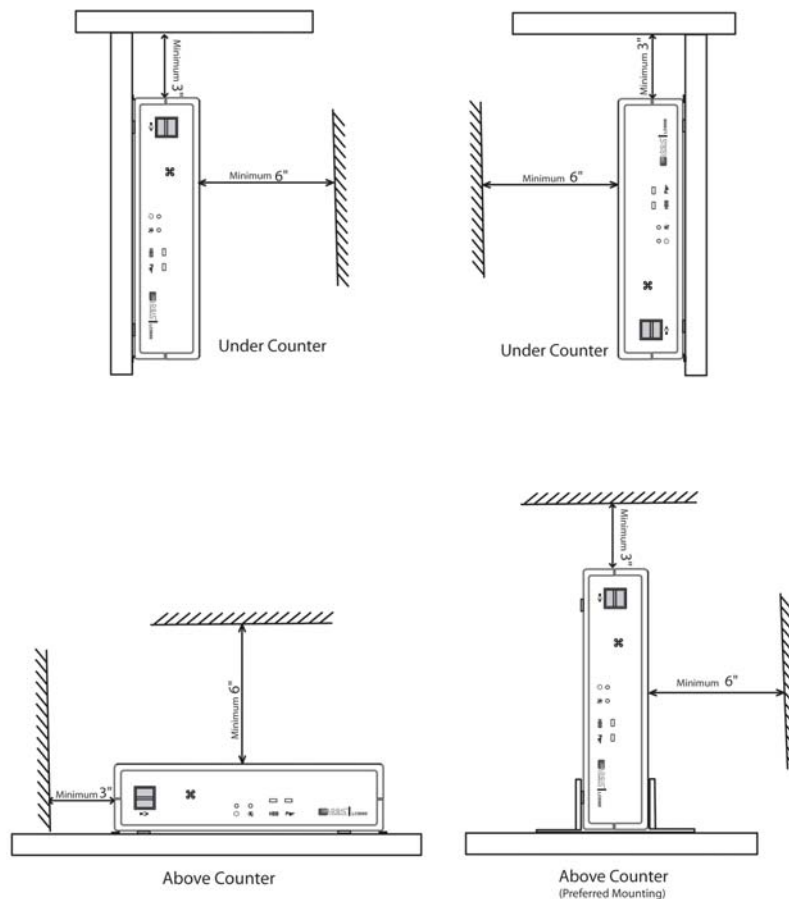
TURNING ON YOUR COMPUTER

1. Connect keyboard, mouse, or other interface device.

2. Turn on all peripherals connected to the system such as the monitor, speakers, USB devices, etc.

3. Connect power adaptor to the LC8000 and then plug power cord into wall outlet.

(If you have shut down your computer from your operating system, you may restart the computer by using a pen-tip to press the on/off switch on the front panel of the LC8000.)

TROUBLESHOOTING

If you encounter a hardware problem, we recommend that you review the following suggestions before calling for service:

General failure
- Are all cables securely plugged?
- Are all system components and peripherals turned on?
- Is the system main power switch on?
- Is the power outlet burned out? You may check this by plugging in and turning on another piece of equipment.
- Are any cables damaged? Are they properly routed and coiled? Entwined cables may cause signal interference.
- Reset the unit
  - Perform a power reset (unplug the adaptor the from power socket for 5 minutes and then plug the adaptor in again).

Keyboard is dead
- Is the keyboard cable plugged in? Turn off the system and plug in the keyboard.

Caution: Do not plug or unplug the keyboard while the power is on.

BOOTING FROM INTERNAL/EXTERNAL DEVICES

Depending on the configuration of your LC8000 whether it is equipped with either an internal hard-drive or compact flash card or both, the BIOS will be pre-programmed to boot from that particular device. If you need to boot from an external device or if you have upgraded your compact flash card or hard-drive you will need to change settings in the BIOS. The following steps show how to change the boot sequence within the BIOS.

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:
   PRESS <Del> TO RUN SETUP

2. Press the <Del> key and the BIOS setup main screen will appear as follows.

```
              AMIBIOS NEW SETUP UTILITY – VERSION 3.31a


  ►Standard CMOS Features           ►System Information
  ►Advanced BIOS Features           Set Supervisor Password
  ►Advanced Chipset Features        Load Optimal Defaults
  ►Power Management Features         Load Fail Safe Defaults
  ►PNP/PCI Configurations           Save & Exit Setup
  ►Integrated Peripherals           Exit Without Saving
  ►PC Health Status
  ►Frequency/Voltage Control




  F1: Help      ↑↓: Select Item    +/-: Change Values        F9: Setup Defaults
  Esc: Exit     ←→: Select Menu    Enter: Select ►Sub-Menu       F10: Save & Exit
```

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3. Use the arrow keys on your keyboard to select **Advanced BIOS Features**, and press
    <Enter>.

Advanced BIOS Features		[Setup Help]
Quick Boot	Enabled	
Boot Device Priority		
1st Disabled		
2nd Disabled		
3rd Disabled		
Try Other Boot Devices	Yes	
USB Controller	4 USB Ports	
USB 1.1 Device Legacy Support	Disabled	
Initial Display Mode	BIOS	
Display Mode at Add-On ROM Init	Force BIOS	
S.M.A.R.T. for Hard Disks	Disabled	
BootUp Num-Lock	On	
PS/2 Mouse Support	Enabled	
Primary Display	VGA/EGA	
Password Check	Setup	
Ask HDD Password on Every Boot	Yes	
Wait for 'F1' If Error	Enabled	
CPU MicroCode Updation	Enabled	
CPU Serial Number	Disabled	
System BIOS Cacheable	Enabled	
C000,32K Shadow	Cached	
C800,16K Shadow	Disabled	
CC00,16K Shadow	Disabled	
D000,16K Shadow	Disabled	
D400,16K Shadow	Disabled	
D800,16K Shadow	Disabled	
DC00,16K Shadow	Disabled	

F1: Help ↑↓: Select Item	+/-: Change Values	F9: Setup Defaults
Esc: Previous Menu	Enter: Select ►Sub-Menu	F10: Save & Exit

4. Use the arrow keys to set **Try Other Boot Devices** to **YES.** You may also set the 1st, 2nd
    and 3rd boot devices to the devices you wish to boot from.
    You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, "Save & Exit Setup" saves your changes and reboots the system, and
    "Exit Without Saving" ignores your changes and exits the program.

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SPECIFICATIONS

LC8000 TECHNICAL SPECIFICATIONS

Connector Assignment

Front View
- Reset
- Power on/off
- USB Port

Back View
- Ethernet Port
- USB Port
- Video Output
- Keyboard/Mouse Input
- Speaker out / Mic In
- Serial Port
- Power Adapter Input

Side View
- Serial Port
- Video Output
- Parallel Port
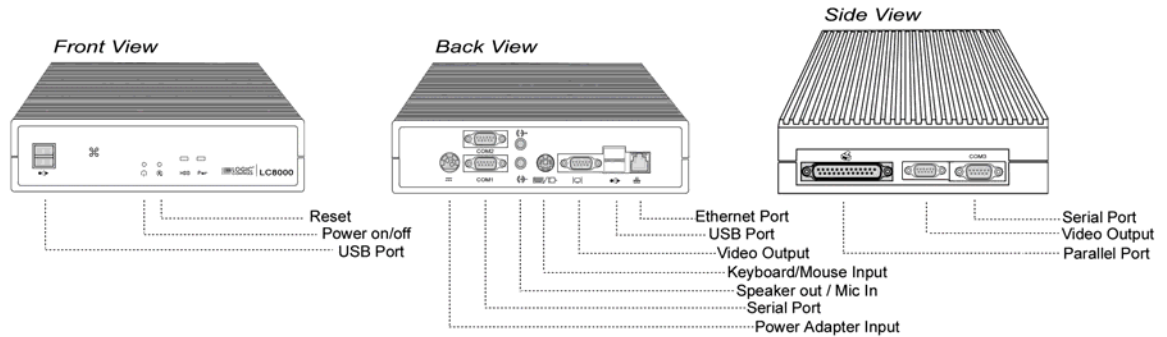
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SYSTEM

Processor	VIA 533MHz to 1GHz
Memory	128MB to 512MB DDR
Hard Drive	Internal Compact Flash, 64MB to greater than 4GB
	Optional internal IDE 2.5" hard drive (20GB up)
Primary Video	1280x1024 pixels max, 32-bit color, AGP 8X, MPEG-2, 128-bit 2D and 64-bit
	3D graphics engine, 64MB max shared video memory
Secondary Video (optional)	1024x768 pixels max, 24-bit color, 4MB video memory
Network Interface	10/100 Base-T Ethernet, Network boot capable
Keyboard/Mouse	PS/2 Compatible
USB Port	USB 2.0 (4 ports), USB boot capable
Serial Port	COM1, COM2, COM3 (optional), COM4 (optional, internal connector)
Parallel Port	LPT1
Audio	Speaker-out and Mic-in, AC97 Audio CODEC

ELECTRICAL (External Switching Power Adapter - included)

Input	100 to 240VAC
Input frequency	47 to 63 Hz
Input current	< 1.5A @ 120VAC
Output	+12VDC / 3.3A
	LC8000 can accept an input voltage range from 9 to 24VDC
Ripple voltage	< 120mVp-p

MECHANICAL

Weight	3.0lbs
Dimension (inches)	8.0W x 6.3L x 2.0H
Housing	Die cast

ENVIRONMENT

Operating temperature	5ºC to 40ºC
Relative humidity	8 to 80%, non-condensing
Storage temperature	0ºC to 60ºC
Relative humidity	5 to 80%, non-condensing

CONNECTORS

SVGA	Standard, DB15 male connector
Keyboard & Mouse	PS/2 mini-DIN6 female connector
RS232	Standard DB9 male connector
USB	Standard USB type-A connector
Ethernet	RJ45 8 pin female connector
Audio	Speaker out/Mic in phone jacks
Parallel	Standard, DB25 female connector
DC power	Shielded snap lock mini-DIN with EMI/RFI suppression, 3-pin female connector

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