

Lumex LCD-H3X1C50TR/A

Lumex LCD-H3X1C50TR/A 4x1 TN Reflective LCD Module User Manual

Model: LCD-H3X1C50TR/A | Brand: Lumex

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Lumex LCD-H3X1C50TR/A LCD Module. This module is a 4-character by 1-line, Transmissive Negative (TN) Reflective Liquid Crystal Display designed for various embedded applications requiring clear, compact visual output.

Please read this manual thoroughly before using the product to ensure proper functionality and to prevent damage.

2. PRODUCT OVERVIEW

The Lumex LCD-H3X1C50TR/A is a compact character LCD module featuring a 4-character, 1-line display format. Its TN Reflective technology allows for good visibility in ambient light conditions without requiring a backlight, making it suitable for low-power applications. The module is designed for integration into electronic systems, providing a simple interface for displaying alphanumeric characters.



Figure 1: Lumex LCD-H3X1C50TR/A LCD Module. This image shows the compact form factor of the LCD module, highlighting its display area and connection pins.

3. SETUP AND INSTALLATION

Before installation, ensure that the power supply is disconnected from your host system. Handle the LCD module by its edges to avoid touching the display area or electronic components.

1. **Power Supply Connection:** Connect the VDD pin to your system's positive power supply (typically +5V or +3.3V, refer to the datasheet for exact voltage requirements) and the VSS pin to ground.
2. **Data Line Connection:** Connect the data pins (DB0-DB3 or DB0-DB7, depending on the interface mode) to the corresponding data lines of your microcontroller or host system.
3. **Control Line Connection:** Connect the Register Select (RS), Read/Write (R/W), and Enable (E) pins to the appropriate control pins on your microcontroller.
4. **Contrast Adjustment:** If applicable, connect a potentiometer between VDD, VSS, and the V0 (contrast) pin to adjust the display contrast.
5. **Mounting:** Secure the LCD module to your enclosure or PCB using appropriate mounting hardware, ensuring it is stable and protected from physical stress.

Note: Always consult the specific datasheet for the LCD-H3X1C50TR/A module for detailed pin assignments and electrical characteristics.

4. OPERATING INSTRUCTIONS

The Lumex LCD-H3X1C50TR/A module is typically controlled via a standard parallel interface, compatible with common LCD controller ICs (e.g., HD44780 compatible). Programming involves sending specific commands and data to the module.

4.1 Initialization Sequence

After power-up, the module requires an initialization sequence to set its operating mode, display ON/OFF state, and cursor behavior. This typically involves a series of function set, display ON/OFF, and entry mode set commands.

4.2 Displaying Characters

To display characters, set the RS pin high (data mode) and send the ASCII value of the character to the data pins. The module will automatically advance the cursor to the next position. For custom characters, refer to the controller's datasheet for character generator RAM (CGRAM) programming.

4.3 Common Commands

- **Clear Display:** Clears all display data and returns the cursor to the home position.
- **Return Home:** Returns the cursor to the home position without clearing the display.
- **Cursor Shift:** Moves the cursor left or right.
- **Display Shift:** Shifts the entire display content left or right.

Detailed command sets and timing diagrams are available in the module's technical datasheet.

5. MAINTENANCE

The Lumex LCD-H3X1C50TR/A LCD module is a low-maintenance component. Adhering to the following guidelines will help ensure its longevity and optimal performance:

- **Cleaning:** Use a soft, lint-free cloth slightly dampened with isopropyl alcohol or a specialized LCD cleaner to gently wipe the display surface. Avoid abrasive materials or harsh chemicals.
- **Handling:** Always handle the module by its frame or PCB edges. Avoid applying pressure directly to the glass display area.
- **Storage:** Store the module in a dry, dust-free environment within the specified temperature and humidity

ranges.

- **Environmental Conditions:** Operate the module within its specified temperature and humidity limits to prevent damage or degradation of performance.

6. TROUBLESHOOTING

If you encounter issues with your LCD module, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No display or blank screen	<ul style="list-style-type: none">• Incorrect power supply (VDD, VSS).• Contrast (V0) not adjusted.• Display OFF command sent.• Loose connections.	<ul style="list-style-type: none">• Verify VDD and VSS connections and voltage levels.• Adjust the contrast potentiometer.• Ensure the display ON command is sent during initialization.• Check all pin connections for proper seating.
Garbled or incorrect characters	<ul style="list-style-type: none">• Incorrect data sent.• Timing issues with control signals (RS, R/W, E).• Incorrect initialization sequence.	<ul style="list-style-type: none">• Verify the ASCII values and data format being sent.• Check the timing of your control signals against the datasheet.• Review and correct the initialization code.
Display is too dim or too bright	<ul style="list-style-type: none">• Contrast adjustment.	<ul style="list-style-type: none">• Adjust the contrast potentiometer (V0 pin).

If the problem persists, consult the detailed technical datasheet for the Lumex LCD-H3X1C50TR/A or contact Lumex technical support.

7. SPECIFICATIONS

Feature	Description
Model Number	LCD-H3X1C50TR/A
Brand	Lumex
Display Format	4 Characters x 1 Line
Display Type	TN Reflective LCD Module
Manufacturer	LUMEX
ASIN	B005T993QE
First Available Date	October 31, 2014
Interface	Parallel (typically 4-bit or 8-bit, HD44780 compatible)

Feature	Description
Operating Voltage	Refer to specific datasheet (typically +3.3V or +5V)




Note: Detailed electrical characteristics, pin assignments, and mechanical dimensions are provided in the official Lumex datasheet for the LCD-H3X1C50TR/A module.

8. WARRANTY AND SUPPORT

Lumex products are manufactured to high-quality standards. For specific warranty information regarding the LCD-H3X1C50TR/A module, please refer to the warranty statement provided with your purchase or visit the official Lumex website.

For technical support, inquiries, or to report issues, please contact Lumex customer service or your authorized distributor. When contacting support, please have your product model number (LCD-H3X1C50TR/A) and any relevant purchase information ready.

Related Documents - LCD-H3X1C50TR/A

	<p>Lumex Bariatric Transfer Bench 7925A - User Manual and Safety Guide</p> <p>Comprehensive user manual and safety guidelines for the Lumex Bariatric Transfer Bench (Item 7925A), providing instructions for setup, use, maintenance, and important safety warnings. Features include a durable aluminum frame, reversible backrest, and a 600 lb weight capacity.</p>
	<p>Lumex Select AeroComfort LS900 Mattress - Support Surfaces</p> <p>Discover the Lumex Select AeroComfort LS900, an advanced alternating pressure and true low air loss mattress designed for high-risk patients. Learn about its key features like Intelligent Pressure Monitoring, multiple modes (Alternating, Static, Pulsate, Upright), and user-friendly panel controls, all aimed at preventing and treating pressure injuries.</p>
	<p>Lumex LF2020 & LF2090 Sit-to-Stand Patient Lift Owner's Manual</p> <p>This owner's manual provides essential safety, operating, maintenance, and troubleshooting instructions for the Lumex LF2020 and LF2090 Sit-to-Stand Patient Lifts manufactured by GF Health Products, Inc. Learn how to safely transfer patients and care for your lift.</p>



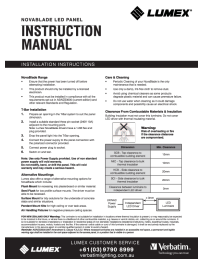
[Lumex LX9000 Gaitster Forearm Rollator User Manual](#)

Comprehensive user manual for the Lumex LX9000 Gaitster Forearm Rollator, providing detailed instructions on assembly, operation, safety guidelines, maintenance, and specifications. Learn how to safely use and care for your rollator.



[Lumex Patriot LX 4-Inch Bed Extension Kit Installation Instructions](#)

Comprehensive installation, maintenance, and warranty guide for the Lumex 690-8084-000 Patriot LX 4-Inch Bed Extension Kit, designed to extend bed sleeping surface length.



[Lumex Novablade LED Panel Instruction Manual & Warranty](#)

Comprehensive installation instructions, care guidelines, and seven-year warranty details for the Lumex Novablade LED Panel. Learn about safe installation procedures, maintenance, and warranty claim processes provided by Verbatim Australia Pty Ltd.