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› LUMEX LCM-S01602DTR/M Character LCD Display Module User Manual

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MODEL: LCM-S01602DTR/M

1. Product Overview

The LUMEX LCM-S01602DTR/M is a compact character Liquid Crystal Display (LCD) module designed for various embedded applications. It features a reflective, twisted nematic display with a 5 x 8 dot matrix character format, capable of displaying alphanumeric characters and symbols. This module operates without a backlight, making it suitable for environments with ambient light and for low-power applications.



An image showing the LUMEX LCM-S01602DTR/M Character LCD Display Module, featuring its compact form factor, the reflective display area, and the flexible flat cable (FFC) connector.

2. Setup and Connection

Before connecting the LCM-S01602DTR/M module, ensure that the power supply to your host system is disconnected. This module typically interfaces via a flexible flat cable (FFC) connector. Refer to the module's datasheet for the precise pinout configuration and electrical characteristics.

2.1. Power Supply

- Connect the VDD pin to the positive power supply (typically +5V or +3.3V, refer to datasheet).
- Connect the VSS pin to ground.
- Ensure the power supply is stable and within the specified voltage range to prevent damage to the module.

2.2. Data Interface

The module uses a standard parallel interface for data and control signals. Connect the data lines (DB0-DB7), Register Select (RS), Read/Write (R/W), and Enable (E) pins to the corresponding pins on your microcontroller or host system. A contrast adjustment pin (Vo) may also be present and requires a variable resistor for optimal display readability.

3. Operating Instructions

Operating the LCM-S01602DTR/M involves sending specific commands and data to the module via its parallel interface. The module's internal controller handles character generation and display management.

3.1. Initialization Sequence

Upon power-up, the module requires an initialization sequence to set its operating mode, display ON/OFF state, cursor settings, and character entry mode. This sequence typically involves a series of command writes with specific delays. Consult the module's detailed datasheet for the exact initialization routine.

3.2. Displaying Characters

To display characters, first set the cursor to the desired position by sending a 'Set DDRAM Address' command. Then, send the ASCII values of the characters to be displayed as data. The module will automatically increment the cursor position after each character is written.

3.3. Common Commands

- **Clear Display:** Clears all characters from the display and sets the cursor to the home position.
- **Return Home:** Sets the cursor to the home position without clearing the display.
- **Display ON/OFF Control:** Turns the display, cursor, and blinking cursor ON or OFF.
- **Entry Mode Set:** Configures cursor movement direction and display shift.

4. Maintenance

The LCM-S01602DTR/M module is a robust electronic component, but proper handling and care will ensure its longevity and optimal performance.

4.1. Cleaning

To clean the display surface, gently wipe with a soft, lint-free cloth. For stubborn smudges, a small amount of isopropyl alcohol can be applied to the cloth, but avoid direct application to the display or surrounding components. Do not use abrasive cleaners or solvents.

4.2. Handling and Storage

- Avoid applying excessive pressure to the display area.
- Handle the module by its edges to prevent damage to the FFC or display.
- Store the module in a dry, cool environment, away from direct sunlight and extreme temperatures.
- Protect the FFC from bending or creasing sharply, as this can damage the internal traces.

5. Troubleshooting

If you encounter issues with your LCM-S01602DTR/M module, refer to the following common problems and solutions:

- **No Display/Blank Screen:**
 - Check power supply connections (VDD, VSS) and ensure correct voltage.
 - Verify the contrast adjustment (Vo) is correctly set. Adjust the potentiometer if used.
 - Ensure the initialization sequence is correctly implemented and executed.
 - Check all data and control line connections for continuity and correct wiring.
- **Garbled Characters/Incorrect Display:**
 - Confirm the data lines (DB0-DB7) are connected correctly and not swapped.
 - Verify the timing of the Enable (E) signal and data/command writes.
 - Ensure the correct character codes (ASCII values) are being sent.
 - Check for noise on the data lines, especially in electrically noisy environments.
- **Display Flickering:**
 - Check for unstable power supply.
 - Ensure proper grounding.

6. Specifications

Key specifications for the LUMEX LCM-S01602DTR/M Character LCD Display Module:

Feature	Specification
Model Number	LCM-S01602DTR/M
Manufacturer	LUMEX
Display Type	Character LCD
Display Technology	Twisted Nematic (TN)
Display Mode	Reflective
Character Format	5 x 8 Dots
Backlight	No Backlight
Interface	Parallel (typically 4-bit or 8-bit)
ASIN	B076F9V6X8

7. Warranty and Support

This LUMEX product is covered by the manufacturer's standard warranty. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or visit the official LUMEX website. In case of technical issues or for further assistance, please contact LUMEX customer support or your authorized distributor.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question