

12.1-Inch TFT LCD Display Module for Industrial Control

Product Overview

The 12.1-inch TFT LCD display module is designed for industrial control and embedded systems. It offers stable performance in harsh environments with long operating lifespans, high brightness options, and multiple touch configurations. This module is suitable for Human-Machine Interface (HMI), automation panels, and other industrial display applications.

Key Features

- 12.1-inch diagonal, 4:3 aspect ratio
- Optional resolution: 800x600 (SVGA) or 1024x768 (XGA)
- High brightness up to 1000 cd/m² (customizable)
- IPS panel with wide viewing angles (≥ 160 degrees)
- Capacitive, resistive, or no touch panel options
- Interface options: LVDS, RGB, HDMI, or MIPI
- Long-life LED backlight ($\geq 50,000$ hrs)
- Industrial-grade temperature tolerance

Technical Specifications

Display Size: 12.1 inch (Diagonal)

Resolution: 800x600 / 1024x768

Display Type: TFT LCD, Normally White, Transmissive

Active Area: Approx. 246.0 (W) x 184.5 (H) mm

Viewing Angle: ≥ 160 degrees (IPS panel)

Brightness: 400-1000 cd/m² (customizable)

Contrast Ratio: $\geq 800:1$

Backlight Type: LED, Edge-light type

Backlight Lifetime: $\geq 50,000$ hours

Touchscreen Options: Capacitive / Resistive / None

Interface: LVDS / RGB / HDMI / MIPI

Operating Temperature: -20°C to +70°C (extendable)

Storage Temperature: -30°C to +80°C

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Response Time: ≤ 25 ms

Input Voltage: 3.3V / 5V (typical)

Outline Dimensions: Varies by model; customizable

Surface Treatment: Anti-glare / Clear / AG+AR Coating

Mounting Type: Customized bracket or screw holes

Available Customizations

- Custom brightness levels
- Custom touchscreen type (G+G, G+F, etc.)
- FPC cable length and interface pin assignment
- Optical bonding and protective glass
- Extended temperature range for outdoor/harsh use
- HDMI/VGA/USB driver boards integration

Application Fields

- Human-Machine Interfaces (HMI)
- Industrial automation panels
- Process monitoring systems
- Factory control terminals
- Medical diagnostic devices
- Transportation and logistics control panels
- Smart farming or energy monitoring systems

Reliability & Compliance

- 100% inspection before shipment
- RoHS, REACH compliant materials
- Vibration and thermal shock tested
- Stable supply chain for long-term projects
- Designed for 24/7 continuous operation