

LCD-Kit02
VGA Input LCD Kit of
9.4" DSTN color 640x480 Display

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Introduction

Welcome to the LCD-Kit02 9.4" DSTN color LCD. The LCD-Kit02 is made for the system manufacturers, integrators, or VARs that want to provide all the performance, quality and reliability.

The LCD-Kit02 is designed with 640 x 480 resolution color display and Low Reflection to present a High Image Quality. With its compact size (9.4"), LCD-Kit02 is also the most suitable solution for OA Equipment, Display Terminals, and Industrial portable Workstation LCD monitor.

The LCD-Kit02 comes with specifically designed mounting kit for fast installation.

1.1 Kit Specifications :

- Single Supply Voltage : +12V
- Outline Dimensions: 269.5mm x 209mm x 57.5mm
- Panel Size : 9.4" Diagonal
- Active Area : 191.99mm x 143.98mm
- Viewing Area : 196.0mm x 147.0mm
- Number of Pixels : 640 (W) x 480 (H)
- Pixel Format : 1 pixel = R + G + B dots
- Pixel Arrangement : R, G, B Vertical Strip
- Pixel Pitch : 0.30mm (H) x 0.30mm (V)
- Brightness : 60 cd/m²
- Viewing Direction : 6 o' clock (in direction of max. contrast)
- Viewing Angle : +/- 45° (H), -10° ~ +30° (V)
- Contrast Ratio : > 18
- Surface Treatment : Anti-glare and Hard Coat
- Backlight: Cold-cathode fluorescent lamps for sidelighting
- Operating Temperature : 0~50°C
- RS232 I/F Touch Panel (option)

1.2 What You Have

In addition to this *User's Manual*, the LCD-Kit02 package includes the following items:

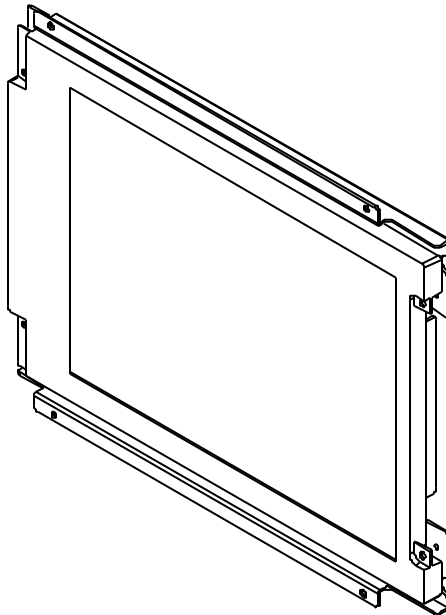
- LCD-Kit02 User's Manual

If it is missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.

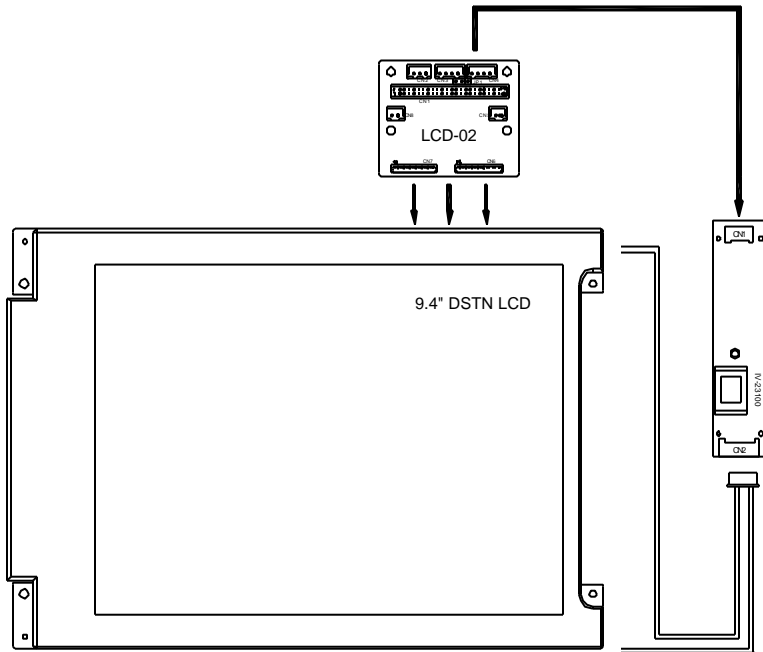
2

Installation

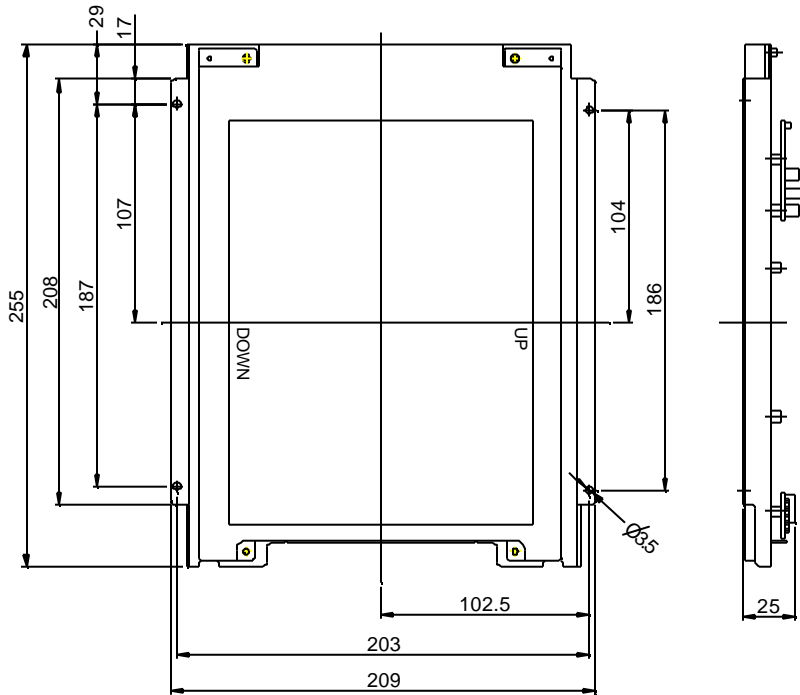
This chapter describes how to install the LCD-Kit02 and include all connections description such as jumpers, connectors and switches setting. The layout of LCD-Kit02 connectors are shown on the next chapter. Also the Unpacking Precautions are shown on appendix that you should be careful with are described on the following page.



2.1 LCD-Kit02 Connection Layout



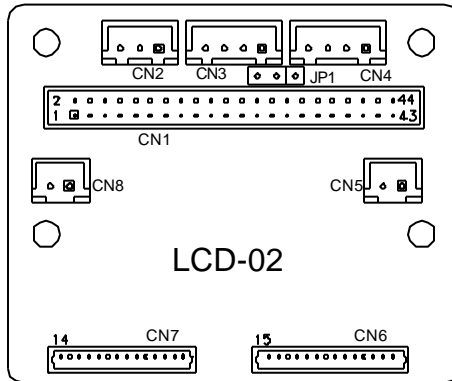
2.2 LCD-Kit02 Dimension Drawing



3

LCD-Kit02 Connectors

3.1 LCD-02 Connection Board Layout



3.1.1 LCD-02 Connector

- **JP1 : BACKLIGHT control**

	1	FPVEE
	2	CONTROL
	3	ENABKL

1-2 short : Backlight control using FPVEE

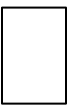
2-3 short : Backlight control using ENBKL (default)

- **CN1: Panel Signal from CPU board (reference)**

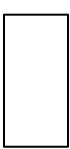
PIN NO	FUNCTION	PIN NO	FUNCTION
1	+12V	23	P14
2	+12V	24	P15
3	GND	25	P16
4	GND	26	P17
5	PLCD	27	P18
6	PLCD	28	P19
7	FPVEE	29	P20
8	GND	30	P21
9	P0	31	P22
10	P1	32	P23
11	P2	33	GND
12	P3	34	GND
13	P4	35	SHFCLK
14	P5	36	FLM
15	P6	37	M
16	P7	38	LP
17	P8	39	GND
18	P9	40	ENBKL
19	P10	41	GND
20	P11	42	N/C
21	P12	43	PLCD(+5V)
22	P13	44	PLCD(+5V)

- SHFCLK:** Shift Clock. Pixel clock for flat panel data.
- FLM:** First Line Marker.Flat Panel equivalent of VSYNC.
- LP:** Latch Pulse(may also be called CL1).
- M:** M signal for panel AC drive control (may also be called ACDCLK).
- ENABKL:** power sequencing control for enabling the backlight
- FPVEE:** Power sequencing control for panel bias voltage VEE. May also be configured as ENABKL

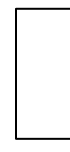
● **CN2: Panel contrast adjust**

1  3	1	+VEE
	2	Vcontrast
	3	GND


● **CN3 :Power Connector for Backlight inverter**

1  4	1	POWER
	2	CONTROL
	3	GND
	4	VR

● **CN4 : reserved for touch panel**

1  4	1	+12V
	2	GND
	3	GND
	4	VCC

● **CN5 : INVERTER POWER SWITCH**

1  2	1	+12V
	2	GND

	2	POWER
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Default : 1-2 short

● **CN6 : Panel interface channel one**


PIN	FUNCTION
1	FLM
2	M
3	FPVEE
4	LP
5	GND
6	SHFCLK
7	GND
8	P11
9	P10
10	P9
11	P8
12	P3
13	P2
14	P1
15	P0

● **CN7 : Panel interface channel two**

PIN	FUNCTION
1	P15
2	P14
3	P13
4	P12
5	P7
6	P6
7	P5
8	P4
9	VCC
10	GND
11	GND

12	+VEE
13	+VEE
14	VO

● **CN8 : Backlight Brightness control for external VR**

1		1	VR
		2	GND

Default : 1-2 short

Appendix

Unpacking Precaution

- ✓ Some components on LCD-Kit02 are very sensitive to static electric charges and can be damaged by a sudden rush of power. Ground yourself to remove any static charge before touching your LCD-Kit02. You can do it by using a grounded wrist strap at all times or by frequently touching any conducting materials that is connected to the ground.
- ✓ Do not touch the inner side of LCD panel and the connector/cable of fluorescent lamp/backlight when the power is on. The inverter supplies HIGH VOLTAGE to these parts (~ 550Vrms).
- ✓ Disconnect power supply before handling and doing connection on LCD-Kit02. Do not plug any connector or jumper while the power is on. It will cause fatal damage to your LCD panel.
- ✓ Make sure that every connector is connected in correct direction. Any incorrect connection may cause smoke or burn of electrical parts or fatal damage of your LCD panel.
- ✓ Be careful with the liquid crystal material. Do not swallow, inhale or have skin contact with this material in case that the LCD panel is broken and the liquid flow out. If you inhale the liquid material, rinse

your mouth immediately with water then go to see a doctor. If you have skin contact with the liquid, wash it immediately with alcohol. Be careful, too, with the chips of glass if the panel is broken.

- ✓ For outdoor usage, an ultra-violet ray protect-lens is recommended to apply onto LCD display. It will prevent your LCD from strong sunlight, scratches, dust and water invasion etc. which can cause damage to the LCD display.