

GD17 Installation Guide

A, Foreword

The GD17 is equipped with a quarter VGA (320Hx240V) 5.7" LCD display and Analog Resistive Touch Panel. The IP65F (NEMA 4) front panel combined with INDUSTRIAL GRADE touch screen makes the product stronger and more durable. There are 2 different display types to be able selected: High Lightness of 4 gray levels Blue Mode STN, and 16 colors STN. Users can choose what they want according to their requirements. The LPT port of GD17 allows you to print the current screen. The GD17 is a customized product and welcome the OEM/ODM customers to develop their own software combined with GD17 hardware.

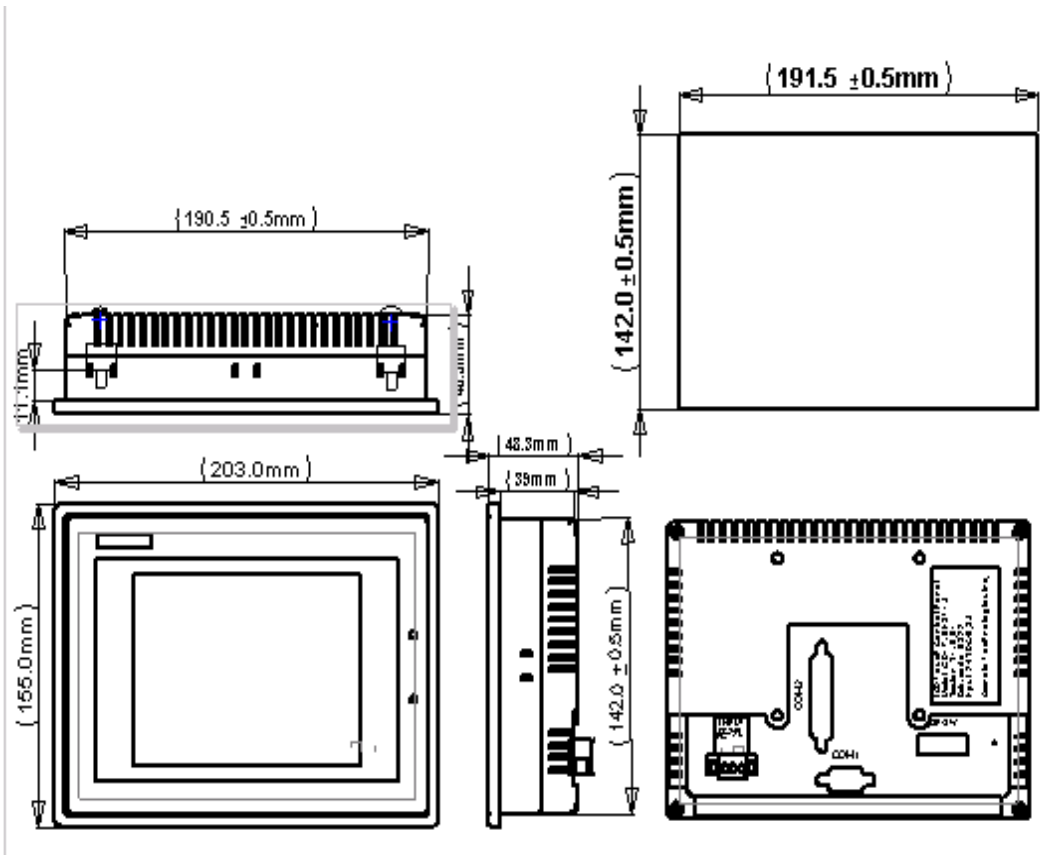
A-1, General Specification

General Specification of GD17

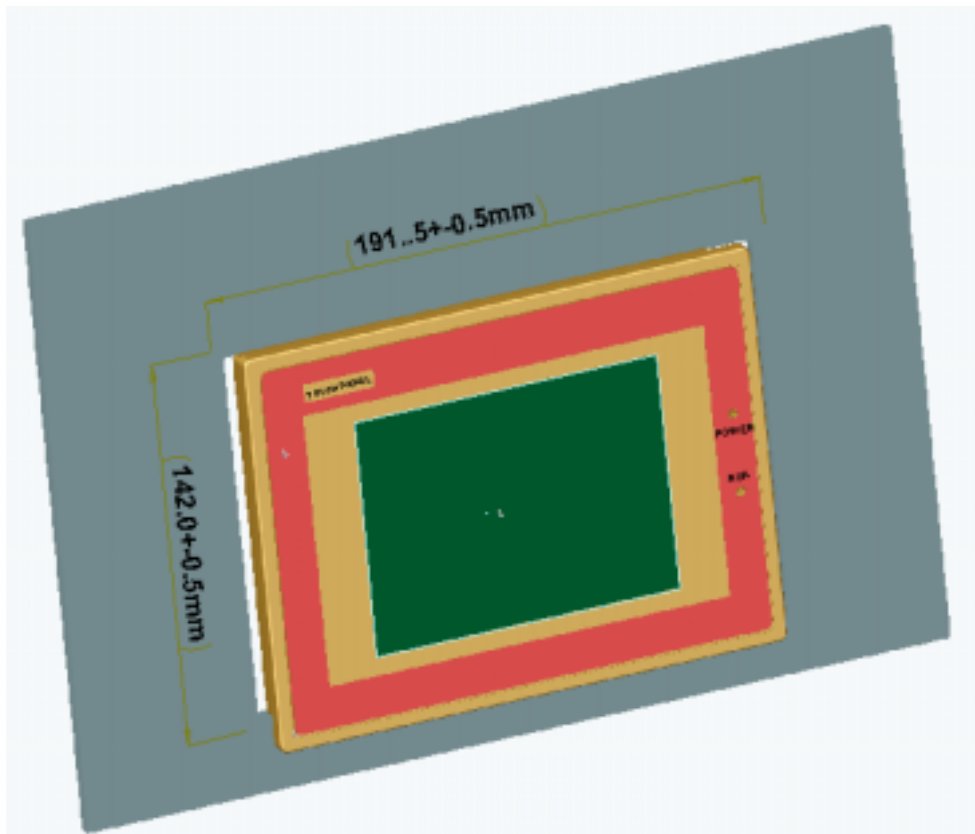
| Item | GD17-BST | GD17-CST |
|-------------------------------|--|-------------------------------|
| Display Type | Monochrome blue mode STN LCD, 4 gray levels | Color mode STN LCD, 16 colors |
| Display Size | 5.7" (diagonal) | |
| Number of Pixels | 320x240 | |
| Display Adjustment | Contrast adjustable from touch screen | |
| Back Light | CCFT; Life time is 20,000 hours under 25°C and 85%RH humidity | |
| Touch Screen | Analog resistive type; Max. Number of switches are 40x30 Chemically strengthened glass backing panel; Over 1 million point activations; Hard coat is resistant to most solvents and chemicals | |
| Input Power | 24VDC±10%; Isolation; Under 10W | |
| CPU | 80186 16Bit CPU | 80186 16Bit CPU |
| Flash Memory | 640K Bytes | 640K Bytes |
| Battery Backed Memory | X | 64K Bytes |
| Communication Ports | COM1/9pin: RS232/RS485; COM2/25pin: RS232/RS422/RS485 | |
| Printer Port | EPP printer port (Options) | |
| Front Panel Seal | IP65 / NEMA 4 | |
| Operating Temperature | 0~50°C | |
| Storage Temperature | -20~60°C | |
| Ambient Humidity | 20-90% RH (non-condensing) | |
| Vibration Endurance | 0.5mm displacement, 10-55Hz, 2hours per X, Y, and Z-axis directions | |
| Shock Endurance | 10G, 11ms three times in each direction of X, Y, and Z axes | |
| RFI testing | FCC Part15 Class A | |
| Radiated Disturbance Test | EN 55022/1998+A1:2000 | |
| Electrostatic Discharge Test | EN61000-4-2/1995+A1:1998 | |
| RF Electromagnetic Field Test | EN61000-4-3/1996+A1:1998 | |
| Surge Immunity Test | EN61000-4-5/1995 | |
| EMC Test Report | EN55022/EN55024/EN61000-3-2,3/EN61000-4-2,3,4,5,6,8,11 | |
| Weight | 1.25 Kg | |
| Cooling | Natural cooling | |

**A-2,
Dimension**

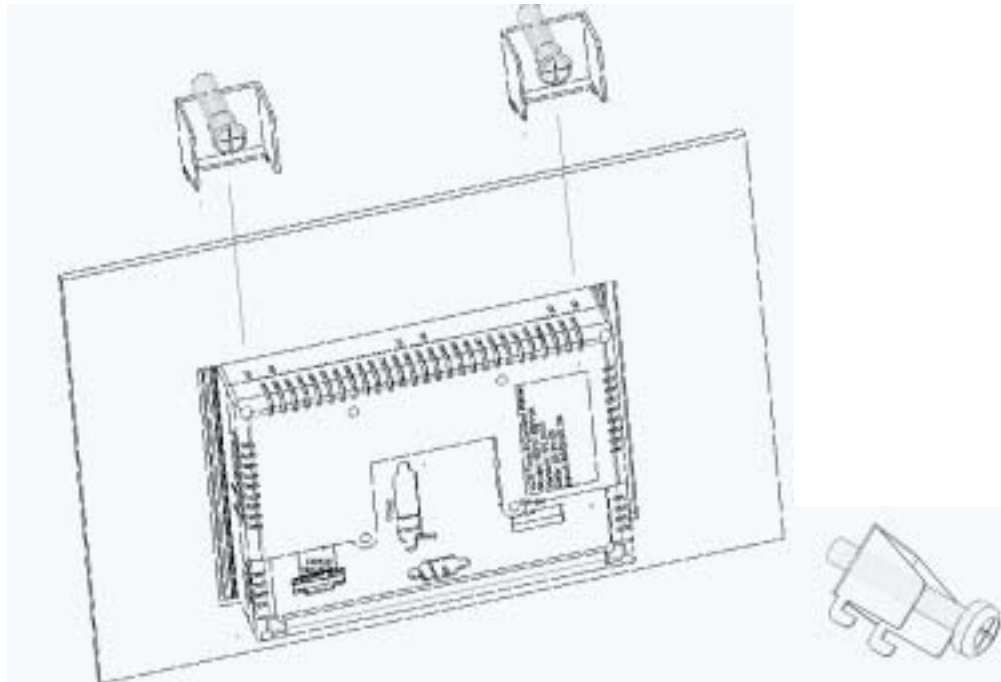
GD17-BST dimension is illustrated below:



Cutting out the mounting hole to match the dimensions is shown:



Installation procedure:



- (1) Mounting the GD17 to the installation hole from the front side.
- (2) Insert the fixtures into mounting holes on the unit.
- (3) To fasten the screw of the fixtures with a screwdriver.

P.S: Don't fasten the screws too tight or the panel will be damaged.

A-3、 Power & Grounding Specification

Only 24VDC is accepted for the three-position power connector of GD17. The following table shows the power consumption of GD17. In order to protect the GD17 hardware and avoid radio frequent noise, please make sure the GD17 is properly connected to earth ground.

| Item / Model | GD17-BST | GD17-CST |
|-------------------|---------------|----------------|
| Power Consumption | 24VDC±10%; 8W | 24VDC±10%; 10W |
| Fuse Rating | 0.5A | 1.0A |

Attention: There is fixture package including 4 screws & 4 Locks inside.
Usage:

- 1 . Disengaging the power screw.
- 2 . Removing the cover of the power cable (approx. 0.8cm), and inserting it into terminal.
- 3 . Using the screw to fasten the connector.

A-4, Touch Panel

The GD17 is equipped with a quarter VGA (320Hx240V) 5.7" LCD display and Analog Resistive Touch Panel.

You can design touch keys for each on your screen. You can configure a touch key to display another screen or control an on/off location within your PLC. The shape of the touch key must be rectangular, but the size of a touch key is configurable and can be as small as a single touch switch or as large as the entire screen. One screen can have up to 40x30 touch keys for GD17. For each changeable Object of a screen, the compile function automatically groups those touch switches that the display area of the object covers to form a touch key for the selective purpose.

When you press a touch key, the GD17 responds by setting off the buzzer for 200 milli-seconds (default) and reversing the color of that touch key for 200 milli-seconds. With the feedback, you know that your order is accepted by GD17. You can use your own software to set the parameters of the GD17.

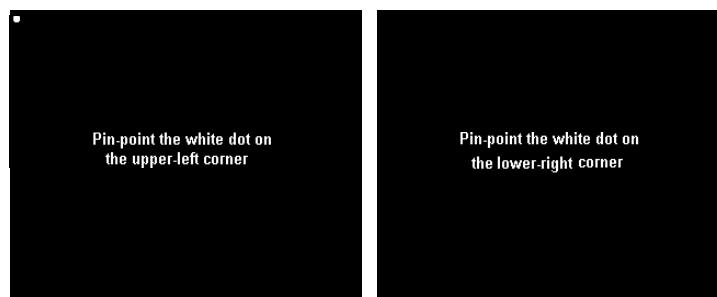
A-5, Calibrating Touch Panel

Unless the touch panel position is incorrect, please DON'T calibrate the "TOUCH KEY" function.

Be careful the following steps while calibrating the touch keys: (Adjusting DIP-SW1 at On)

1. After pressing "Testing" or "Calibrate" in "System Menu", the GD17 will appear a dialog box. Pressing the "Touch Panel" of this dialog box, a blue point will appear in upper-left corner. There is one text shown: "Pin-point the white dot of membrane on the upper-left corner" in the middle of screen.
2. Using a soft/un-acute tool (such as pencil) to press this blue point, the position will be changed to lower-right corner. The same, a text "Pin-point the white dot of membrane on the lower-right corner" will be shown in the middle of screen also.

Caution: DO NOT use the metal tool (Such as pen or screw) to calibrate the touch panel.



3. Press ok to complete the calibration, it will return back to the System Menu of GD17.

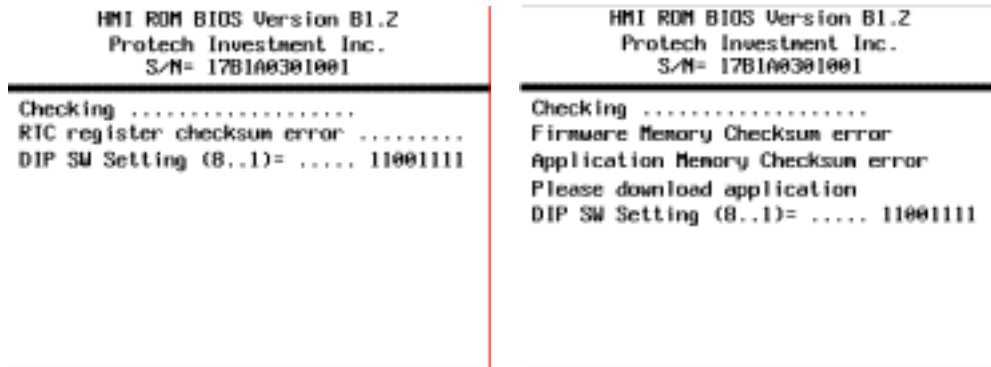
**A-6,
GD17
DIP Switches**

GD17-BST/CST Setting of the DIP-Switch

| | | |
|-------------|------------|---|
| SW1 | | GD17 BIOS download setting(DIP SW7=ON effectual) |
| ON | | Allow to download BIOS. |
| OFF | | Disallow to download BIOS |
| SW2 | | GD17 default BIOS setting(DIP SW7=ON effectual) |
| ON | | Upgrade to customize BIOS version C or others. |
| OFF | | Setting to the default BIOS version B. |
| SW3 | SW4 | Operation Mode (only for some customize version.) |
| ON | ON | Execute user application. (With PLC communication) |
| ON | OFF | Execute burn-in test program. |
| OFF | OFF | Touch panel calibrate program. |
| SW5 | | Communication Format |
| ON | | According to "Configure" of system menu to decide the PLC communication format. |
| OFF | | According to user software to decide the PLC communication format. |
| SW6 | | Password (only for some customize version.) |
| ON | | The GD17 asks the operator to key-in a password |
| OFF | | No password is required while starting the GD17. |
| SW7 | | System Menu |
| ON | | Show the System Menu. |
| OFF | | Auto Run. The GD17 doesn't display System Menu. |
| SW8 | | User Level (only for some customize version.) |
| ON | | While the power on the default user level is "1". |
| OFF | | While the power on the default user level is "3". |
| SW9 | | GD17 COM1 Port |
| ON | | RS485 |
| OFF | | 4-wires for RS422 using |
| SW10 | | GD17 COM2 Port |
| ON | | RS485 |
| OFF | | 8-wires for RS422 using (Ex: MITSUBISHI A-CPU PORT) |

**A-7,
Self Test**

After the GD17 power on, it will show the self-test on the screen. When the self-test is completed, System Menu will be show:



If there is error message shown like above, it means the RTC data failed (Low Battery Status) or application AP is not downloaded.

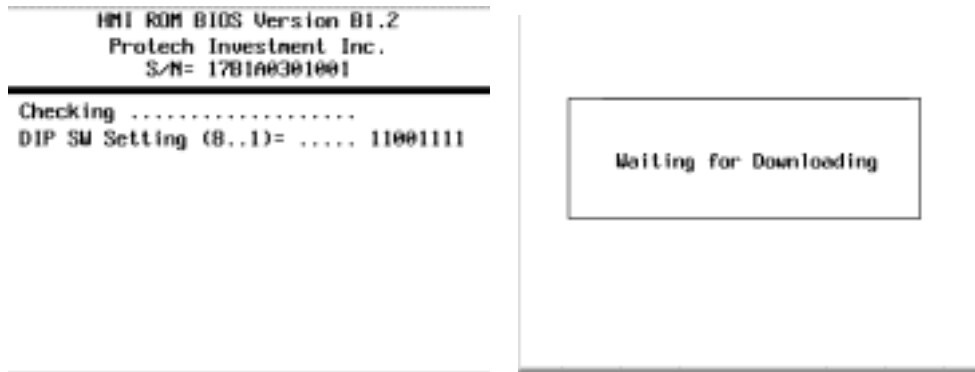


Fig.A-6 GD17 start-up screen for different BIOS's version.

**After GD17 power starting, it will check above hardware devices first : the result will be shown on the LCD display of the GD17 .(See Fig.A-6) If there is any checksum error, the GD17 will not run normally or successfully connect to PLC.

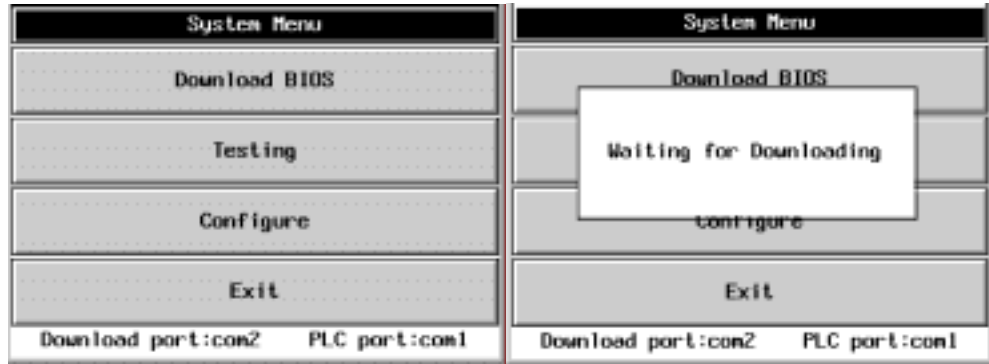
While download AP and cut off the power of GD17 by accident, the Firmware Memory Checksum & Application Memory Checksum will not work well after restarting the GD17.

While download BIOS and cut off the power of GD17 by accident, the screen will not be restarted or displayed normally. At the moment, please set SW2 as off and restart the GD17 again. After you restart the GD17, you can follow the “Download BIOS” steps to execute BIOS download steps. And then you can get a standard BIOS version in the GD17, it will start normal at the same time.

**A-8,
System Menu**

If the DIP-SW7 of the GD17 set as on position while the GD17 power on, it will display the system menu after its self-test: (see graphics below)

Status 1: If the SW2=OFF, it will show initial BIOS version (Ver-B).



Status 2: If the SW2=ON, it will show the Ver-B or customize BIOS.

SW1=ON

SW1=OFF

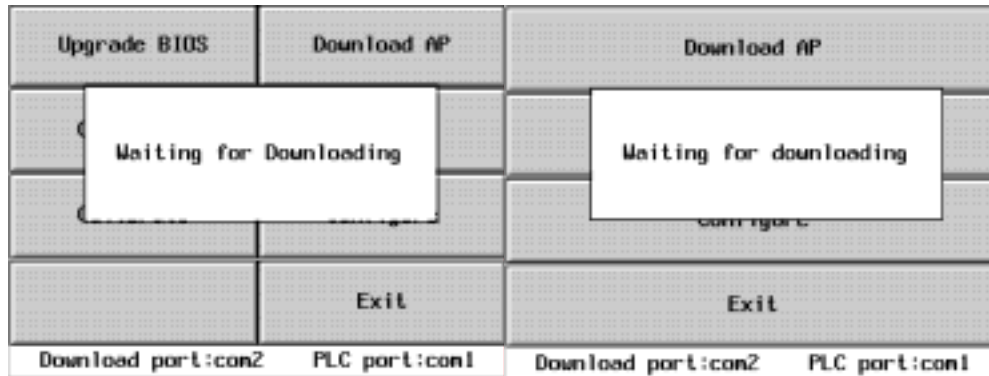


Fig. A-7 The System Menu of the customize BIOS

| System Menu | Description | User Level |
|---------------|--|------------|
| Download BIOS | Download BIOS from COM1/2 of the GD17 | 0-1 |
| Upgrade BIOS | Upgrade BIOS from COM1/2 of the GD17 | 0-1 |
| Download AP | Download AP from COM1/2 of the GD17 | 0-1 |
| Copy AP | Copy AP to another GD17 via COM1 or COM2 | 0-1 |
| Run AP | Online with the PLC | 0-3 |
| Testing | LCD contrast adjust/Function test | 0-3 |
| Calibrate | LCD contrast adjust/Touch Panel adjust | 0-3 |
| Configure | HMI parameter setting | 0-3 |
| Exit | Return to self test of the GD17 | 0-3 |

PS: Before using this unit to be download your application, it needs to download a customize BIOS version. Please contact with your local agent to get a customize BIOS version.

**A-9,
Download AP**

Before downloading the application into GD17, the user needs make sure the cable connection is finished. To press the [Download AP] key of the system menu and GD17 will be waiting for PC to send the application data.

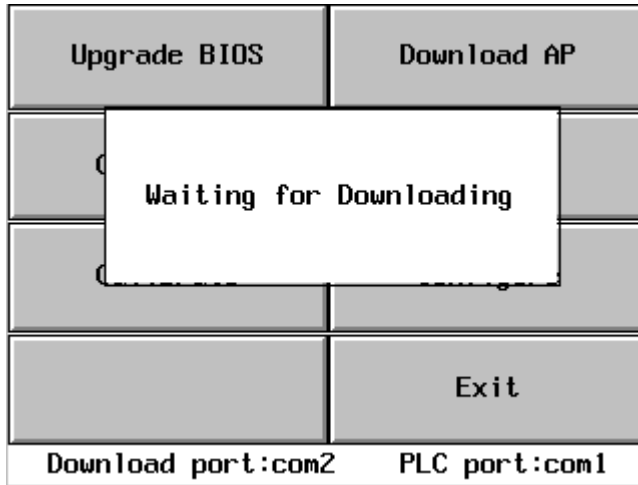
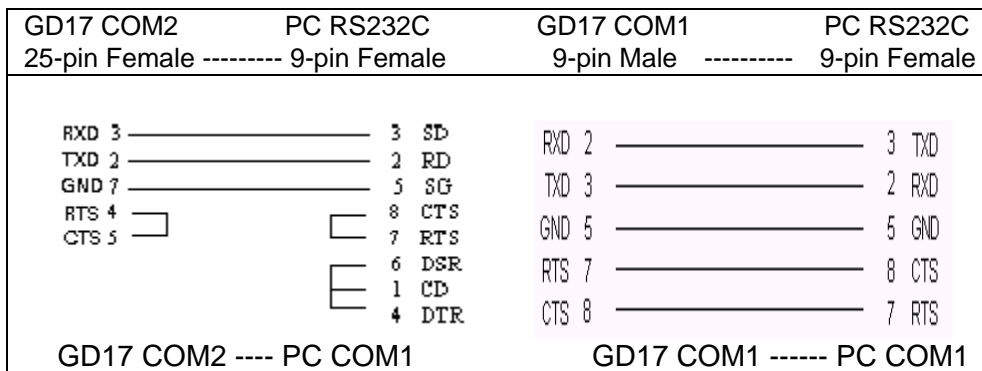


Fig.A-8 GD17 waiting for downloading screen

1. After turning the power on, the GD17 must be waiting at "Waiting for downloading" status.

Adjusting the DIP SW7=ON, the screen of the GD17 will show the system menu after while the self-test step is finished. To press [Download AP] option, the GD17 will stay in "Waiting for downloading" screen and wait for the application data transferred. If the SW7=OFF, it will bypass the GD17 system menu and run application directly

2. To prepare a download cable shown below and link with the Com2 of the GD17:



Serious Caution:

Please cut off the power while connecting the communication cable. It will prevent the electronic components damage.

**A-10,
GD17
Parameter
Setting**

If the user wants to set the system date/time and the parameter of the GD17, he/she needs to press the "CONFIGURE" bottom in the system menu screen (See Fig.A-7) after the power is on and entering the parameter setting screen of the GD17 (See Fig.A-10).

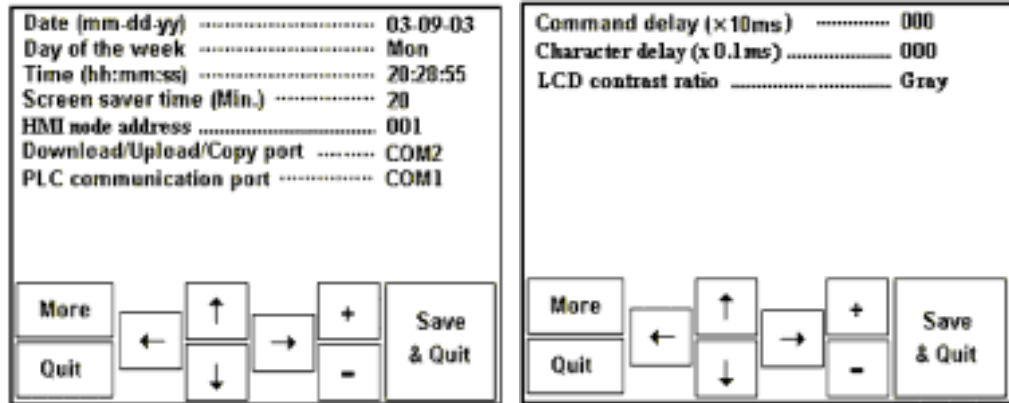


Fig. A-10 Hardware configure of the GD17

| Configuration | Table | Setting | Description |
|--|------------|---------|---|
| Date (mm/dd/yy) | = 03-09-03 | | Real date which you want to setup |
| Day of the week | = Mon | | From Mon. to Sun. |
| Time (hh:mm:ss) | = 20:28:55 | | Real time which you want to setup |
| Screen Saver Time(min) | = 20 | | Backlight turn off time (01-60 Min.) (Setting 00 means cancel this function) |
| HMI node address | = 000 | | The node address of HMI |
| Download/upload/copy port | = COM2 | | AP/BIOS download port. |
| P.L.C. Communications | = COM1 | | HMI & PLC link port Disable=Offline Screen Display |
| Command delay (x 10ms) | = 000 | | 00-255; communication delay |
| Character delay (x 0.1ms) | = 000 | | 00-255; communication delay |
| LCD contrast ratio | = Gray | | Gray; Light (default) *This item suits for BIOS V1.4 or above |
| Press [SAVE & QUIT] to save the existing configuration | | | |

**A-11,
Com Port
Pin definition**

The communication port Com2 of GD17 supports RS232/422/485 operation. According to the different PLC type, the users need to adjust the DIP-SW setting and weld the communication cable by themselves. (SW9/SW10=ON for RS485)

Regarding the PLC communication detail, please refer to the PLC Communication manual of each brand.

Pin assignment of COM2

| Pin | Function | Pin | Function |
|-----|----------------|-----|--------------------------|
| 1 | Chassis ground | 14 | RS-422 TXD+ and RS-485 + |
| 2 | RS-232 TXD | 15 | RS-422 TXD- and RS-485 - |
| 3 | RS-232 RXD | 16 | RS-422 RXD+ |
| 4 | RS-232 RTS | 17 | RS-422 RXD- |
| 5 | RS-232 CTS | 18 | (no function) |
| 6 | (no function) | 19 | (no function) |
| 7 | Signal ground | 20 | (no function) |
| 8* | (no function) | 21 | |
| 9 | (no function) | 22 | |
| 10 | (no function) | 23 | RS-422 RTS+ |
| 11 | (no function) | 24 | RS-422 RTS- |
| 12 | RS-422 CTS+ | 25* | (no function) |
| 13 | RS-422 CTS- | | |

Pin assignment of COM1 (It includes RS232C/RS422/RS485)

| Pin | Function | Pin | Function |
|-----|--------------------------|-----|--------------------------|
| 1 | RS-422 TXD+ and RS-485 + | 6 | RS-422 TXD- and RS-485 - |
| 2 | RS-232 RXD | 7 | RS-232 RTS |
| 3 | RS-232 TXD | 8 | RS-232 CTS |
| 4 | RS-422 RXD+ | 9 | RS-422 RXD- |
| 5 | Signal ground | | |

LPT is a parallel printer port that can drive a Centronics-type parallel printer. The connector is compatible with the IBM PC's parallel printer connector.

| Pin | Direction | Function | Pin | Direction | Function |
|-----|-----------|---------------|-------|---------------|------------------|
| 1 | Output | Data Strobe | 10 | Input | Acknowledge not |
| 2 | Output | D0-data bit 0 | 11 | Input | Busy |
| 3 | Output | D1-data bit 1 | 12 | Input | Paper empty |
| 4 | Output | D2-data bit 2 | 13 | Input | Printer selected |
| 5 | Output | D3-data bit 3 | 14 | Output | Auto-feed |
| 6 | Output | D4-data bit 4 | 15 | Input | Error not |
| 7 | Output | D5-data bit 5 | 16 | Output | Reset not |
| 8 | Output | D6-data bit 6 | 17 | Output | Select |
| 9 | Output | D7-data bit 7 | 18-25 | Signal ground | |

**A-12,
Adjusting
LCD Contrast**

How to adjust the contrast (Blue Mode STN) or brightness (Blue Mode STN/Color STN LCD)?

<1> Press [Calibrate] key under the [System Menu] of GD17.

<2> Press the [LCD test] key and operate the [Increase Contrast] / [Decrease Contrast] key to adjust the contrast.

<3> Completing the adjustment, press the [Save Contrast] key to save the contrast and return to [System Menu].

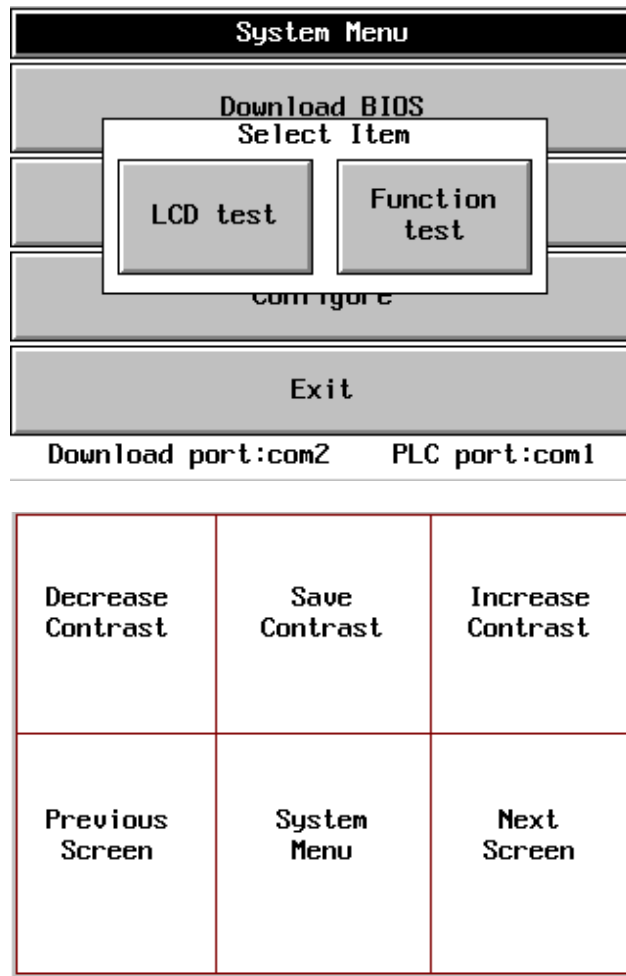


Fig A-13 GD17 LCD contrast adjust screen

Package Contents

The following items are included in the package. Before using, please ensure everything is there.

GD17 unit x 1

Installation screw nuts x 4

About GD17 x 1 (This sheet)

Cautions

If this product is used in a house, radio-wave interference might occur to other devices. In the case that it does occur, the user is requested to try a variety of remedies to solve the problem.

這是甲類資訊產品，在居住環境中使用時，可能會造成射頻干擾，在這種情況下使用者會被要求採取某些適當的對策。

Power source

- ◆ GD17 is equipped with DC24V input. If the supply power is other than DC24V, less or excess, it will severely damage the HMI. Therefore, check the switching power supply supporting the DC power regularly.
- ◆ To avoid electronic shock, be sure the Power Cable is unplugged from the power outlet when connecting the cable to the HMI.

Grounding

- ◆ From the FG terminal at the rear side of HMI, please make sure the grounding is made exclusively.
- ◆ When the FG terminal is connect, be sure the wire is grounded. Without grounding, the operation of HMI may be severely affected by excess external noise levels and vibrations.
- ◆ Use a cable at 2 mm² (AWG 14) to ground the equipment. Ground resistance must be less than 100 Ω (class3). Note that the ground cable must not be connected to the same ground point as the power circuit.

Installation

Mount the HMI from the front of a suitable preserved hole.

- ◆ Attached the brackets behind.
- ◆ Fasten the screw of the brackets with proper force. Tightening too much may cause damage to the structure of the unit.
- ◆ Input and Output signal lines must be separated from the power cables for operational circuits. Use shielded cables or it may cause unpredictable problems.
- ◆ Do not allow cut wires, filling, or shavings to fall inside a unit or block when drilling holes or connecting cables/lines.

Environment

- ◆ Do not install in areas subject to excessive dust, oily mist, conductive dust, corrosive gas, or flammable gas.
- ◆ Do not mount in areas subject to shock or vibration.
- ◆ Do not mount in areas subject to high temperature, moisture, or rain.



Indicated loss of life, severe personal injury, or substantial property damage will result if proper precautions are not taken.