

# Setup Manual

## Introduction

The HMI comes with an 800 x 480 high-resolution TFT display module and a IP65 waterproof grade. The elegance in its design coupled with the flexibility of the nHMI Developer meets user satisfaction in any application requirement.

## Warning

Please read this manual before continuing with installation or operation of the device.

### General Guide

- Installation and operation of the device must be done by professionally trained staff.
- Installation of the device must follow the instructions as printed in this manual.
- If installation of the device occurs outside the suggested storage temperature range of the device, it may cause the LCD to malfunction.
- If installation of the device occurs outside the suggested storage humidity range of the device, it may cause the touch panel to accumulate moisture which may shorten its product lifespan.
- Installation of the device must be kept away from the risk of any liquid or metal particles getting into the device. Foreign particles may cause internal components to short circuit and thus damage the device or even catch fire.
- The device must be installed on a stable and flat surface.
- Installation of the device must be kept away from the risk of corrosion, explosion, or heavy electronic and magnetic fields. It must also be kept away from high humidity and extreme shifts in temperature.
- The liquid in the LCD screen is very hazardous. If leakage is found, avoid contact with skin. At the chance of accidental contact, please immediately rinse with water. If the material comes in contact with eyes, please use water to rinse out the material and immediately seek medical assistance.
- Nearby equipment must be installed at a safe and appropriate distance with adequate protection to reduce local interference with the device.

### Power Supply

- The device is designed with an input power of DC 24V. If the supply voltage is outside of the DC 24V +/- 20% range, it may result in damage or malfunction to the device. Therefore, please confirm that the voltage is correct before powering the device on. Please also ensure that the supplied power is stable during device operation.

### Installation:

- Please avoid placing communication lines in the same conduit as the power lines and high voltage lines. Isolated lines are suggested to reduce surrounding noise interference.

### Operation

- The device should not be used as a main control trigger for any emergency override or safety-related operations.
- Please note that the touch panel on the device is made of standard glass. Please do not use forceful pressure or sharp objects to contact or hammer the screen.

### Service and Maintenance

- Please do not allow any non-trained staff members to perform the maintenance servicing.
- Please ensure that the power is switched off before performing any machine cleaning or repairing.
- When cleaning the front panel, please use a soft cloth and mild detergent to wipe gently, avoiding any forceful pressing or rubbing.
- Please do not use batteries with poor quality.

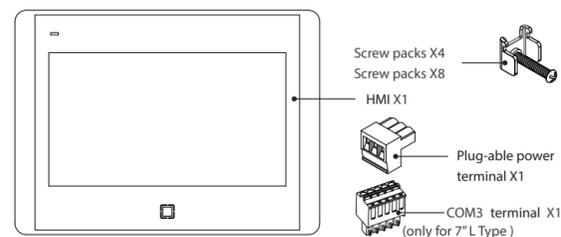
### Waste and Recycling

- Please adhere to local regulations when recycling device.
- The screen, lithium battery, and capacitors contain hazardous material to individual health and local environment, and must be disposed responsibly.

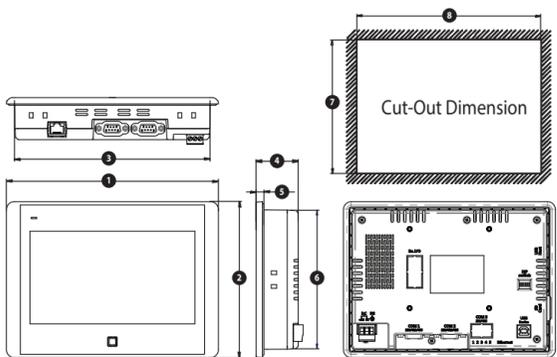
## Grounding

In order to maintain the operational condition and functioning of the HMI hardware components, please ensure proper power grounding. Please ensure that the cable connecting the FG power terminal to the ground has a cable resistance lower than 100Ω.

## Installation Parts



## Housing Type and Cut-Out Dimension

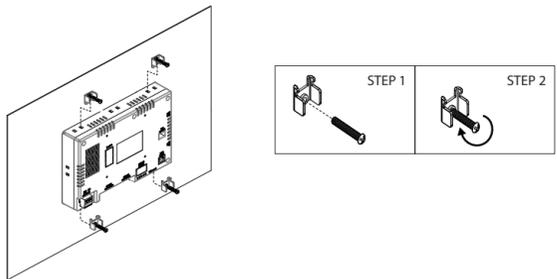


	1	2	3	4	5	6	7	8
7"	199.83	147.83	184.10	39.80	7.45	132.10	133.20	185.20

Dimension Unit : mm

## Installing Procedure

- Check the cut-out size of the device then make the proper cut-out on the setting plate. Lodge the device into the cut-out on the setting plate. (Unit = mm).
- Fasten the device to the setting plate by tightening the screws on the back of the device. Please tighten all screws evenly instead of tightening each screw one by one. If the screws are not tightened evenly, it may cause distortion damage to the device.



## Power Connection

The device requires a power voltage of DC 24V (+/-20%). For a power consumption of 8W on the N07 device, a power supply of 10W or above is recommended.

### Importance Notice

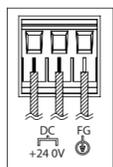
It is recommended that the power plug must be connected to the device power terminal prior to connecting to the power source.

### Power-connecting steps

- Remove the power plug from the power terminal of the device.
- Loosen the three screws on the power plug.
- Strip the cable to expose the copper wire to about 7-8mm.
- Insert the exposed copper wire into the three openings on the power plug.
- Retighten the three screws on the power plug.
- Plug the power plug back into the power terminal of the device.

### Note

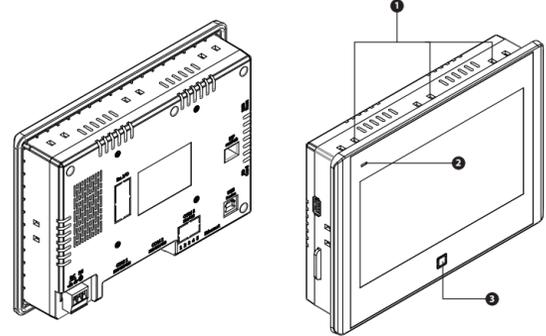
The power plug is included and already plugged into the power terminal of the device.



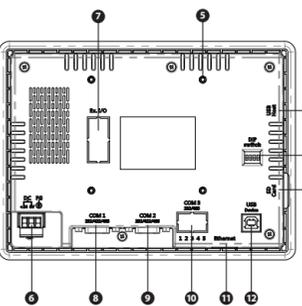
Power Line Type	Power Line (AWG)	Strip Length	Torque
Solid	28-12	About 7-8 mm	About 4.5 lb-in
Stranded	30-12	About 7-8 mm	About 4.5 lb-in

\* with copper conduction wire only.

## Instructional Diagram



- Lock's Holes
- Power Indicator
- Main Key
- Dip Switches
- VESA 75MM Mounting Holes
- Power Terminal
- Expansion Slot
- COM1 RS232/422/485
- COM2 RS232/422/485
- COM3 RS232/485
- Ethernet Port
- USB Device
- USB Host
- SD Card Slot



## Product Specification

Type	L Series
Model	07 L
Display Type	7" TFT
Resolution	800x480 pixel
Color	64K
Backlight Type	LED
Brightness	330 cd/m <sup>2</sup>
Contrast	500:1
CPU	ARM 9 (400MHz)
Flash Memory	128M Bytes
RAM	128M Bytes
FRAM (non-volatile)	8K Bytes
RTC	Built-in battery CR2032
COM1	RS232/422/485
COM2	RS232/422/485
COM3	RS232/485
Ethernet	1 x 10/100 Mbit
USB	1 x Host 1x Device
Memory Card	SD Card
Power Supply	24V ± 20% DC, Isolated Power
Power Consumption	8 W
Operation Temperature	0 ~ 50 °C
Storage Temperature	-20 ~ 60 °C
Operation Humidity	10 ~ 90RH No Condensation
Dimension	199.8(W) x 147.8(H) x 39.8(D) mm
Cut-out Dimension (Net) Weight	185.2(W) x 133.2(H) mm 0.68 kg
Net weight with Packing box	1.00 kg
Touch Panel	4-wire Resistive

## Power On Test

At power on, the device should automatically perform a system diagnostic test. The diagnostic summary at the end of the testing will display a if no issues are detected, and a if an error is detected. Press [Continue] to jump to the System Menu Screen. If there are no errors detected, the "Continue" option will not show.



## System Menu Screen

Click [Run Application] to start up any applications downloaded to the device. Click [Settings] for BIOS options such as backlight brightness, COM port settings, and etc.

Click [Download Port] for options such as communication interface and download/upload application.



## Ethernet Setting

Ethernet settings include [IP Address], [Gateway], [Port], [Retry Times] and [Time out]. In order to ensure a smooth and stable connection, communication parameters must correspond with the connecting controller. Click the IP address field to enter the IP address. The IP address should follow the format: XXX.XXX.XXX.XXX. Each XXX should be less than or equal to "255". The system will automatically jump to the next set of XXX if values are accepted (if the input value is greater than 255, the system will require users to re-enter values). Press the key to jump to the next set of XXX values and the key to edit a previous set.



## File Transfer

Applications and firmware can be downloaded or uploaded via USD or SD card. Select for the application or firmware to be transferred from the HMI to the memory card. Select for the application or firmware to be transferred from the memory card to the HMI. Click [OK] to begin file transfer. selection process.



## File Transfer

Select the file from the original location. Click [OK] to begin transfer. Click [Cancel] to abort file transfer process.



## Backlight (Brightness) Setting

Click the to adjust backlight brightness of the device. The backlight brightness setting ranges from 0 to 20, 0 being the darkest and 20 being the brightness. Click on the indicator on the meter to edit brightness level.



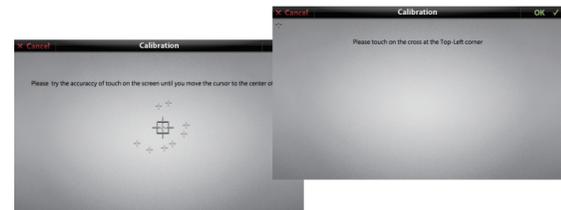
## Display Setting

Click [Screen Saver] to set how long the screen will stay lit before the screen saver function is effective. If the touch panel is not touched or if information is not updating automatically, the backlight of the screen will turn off according to the specified setting. Screen saver time ranges from 1 to 60 minutes. If the timer is set to 0, it will turn off the screen saver function. Click [Orientation] to set the HMI display orientation. Click [Language] to change the language displayed in BIOS.



## Calibration

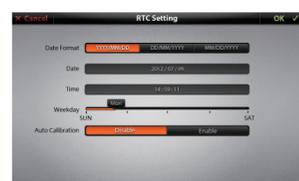
If touch points deviate from contact point or are unresponsive, click [Calibrate] to reset the device calibration and correct the touch points. A cross-arrow will appear and the system prompt will instruct the user to click on the cross-arrow as it moves across the four corners and the center of the screen. After completion of these steps, the user can verify a successful calibration by touching the screen and ensuring the cursor follows correctly. Touch the center cross-arrow to accept calibration and the [OK] to save the calibration setting. If the touch point is not corrected, click [Cancel] to restart the calibration process.



Note: The touch panel is a high precision electronic product therefore during calibration or when you press the screen, avoid sharp items that may potentially hurt the touch panel to remain lifetime of the product .

## RTC Setting

Click [Date Format] to choose the formatting of the date displayed on the HMI. Options include: [Month/Day/Year], [Day/Month/Year], and [Year/Month/Day]. After choosing a format, the user can set the date and time accordingly. [Auto Calibration] When "enabled", the system will automatically offset the difference in the previously set time and the newly set time, and adjust the rate of time-keeping accordingly. This will allow a more accurate keeping of time with every new adjustment in time.



## System Status

System status displays the current status and information of the device including applications size and capacity, BIOS, Firmware version, and etc. Click [DIP Switch] and [COM Port] to display information relating to DIP Switch and COM Port, respectively.



## COM Port

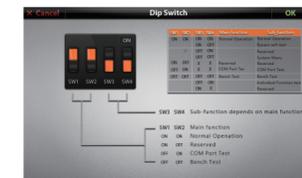


Pin	COM1	COM2	COM3
1	RS422TX+/RS485TX/RX+	RS422TX+/RS485TX/RX+	RS485TX/RX+
2	RS232RX	RS232RX	RS232RX
3	RS232TX	RS232TX	RS232TX
4	RS422RX+	RS422RX+	RS485TX/RX-
5	SG	SG	SG
6	RS422TX-/RS485TX/RX-	RS422TX-/RS485TX/RX-	-
7	Optional TTL Level TXD	NC	-
8	Optional TTL Level RXD	Optional + 5V/100mA	-
9	RS422 RX-	RS422 RX-	-

\* The assignment of each pin and COM port varies from that of a standard PC. Please refer to the above table for signal connection and pin assignment.

\* The number of COM ports varies with HMI model.

## Dip Switch



SW1	SW2	SW3	SW4	Function description
ON	ON	ON	ON	Normal operation
ON	ON	ON	OFF	Bypass self - test
ON	ON	OFF	ON	Reserved
ON	ON	OFF	OFF	System menu
ON	OFF	x	x	Reserved
OFF	ON	x	x	COM port test
OFF	OFF	OFF	OFF	Bench Test
OFF	OFF	OFF	ON	Individual Function test
OFF	OFF	ON	x	Reserved

## MISC Setting

Both BIOS and Application could set the communication parameters of each COM port. [Comm. parameter from] could be set to indicate which settings have the precedence on the device. [Buzzer] is used to enable or to disable beep upon touch. Click [OK] to confirm and save all adjustments. Click [Cancel] to cancel all adjustments.

