Setup Manual

NEXIOT — Your Partner in Smart Manufacturing

Introduction

The HMI comes with 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

Screw packs X4(7")
Screw packs X8(10")
Screw packs X9(12")
Screw packs X10(15")
HMI X1

Plug-able power terminal X1

COM3 terminal X1
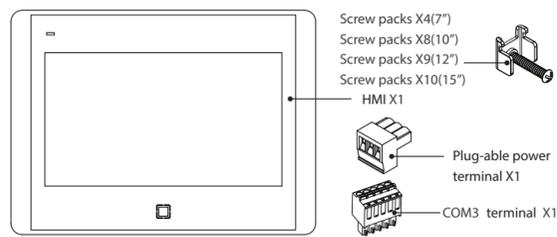
Housing Type and Cut-Out Dimension

*07M(ODM)/10M(Standard)

*12M(ODM)/15M(ODM)

Cut-Out Dimension

Dimension Unit：mm

	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
10.2"	279.48	195.48	259.17	39.50	7.45	176.15	177.20	260.20
12.1"	319.00	225.00	185.50	50.60	6.00	131.50	211.70	305.70
15.6"	408.80	260.90	185.50	50.60	6.00	131.50	246.62	394.50
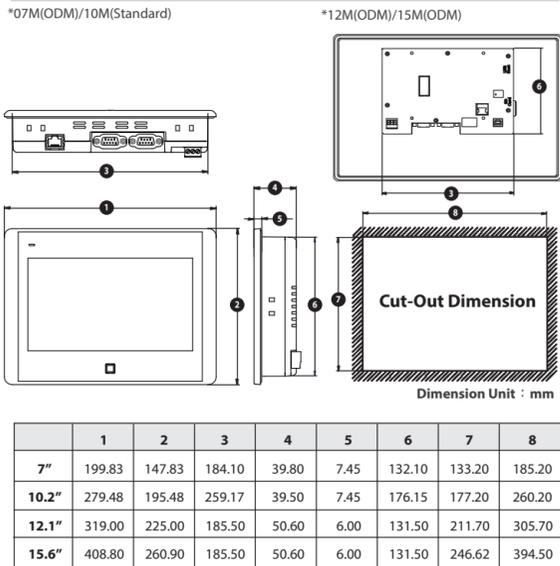
Installing Procedure

1. 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).
2. 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.

STEP 1

STEP 2
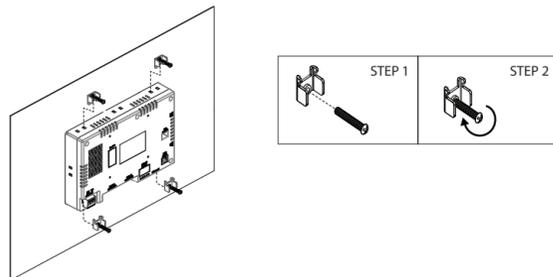
Power Connection

The device requires a power voltage of DC 24V (+/-20%). For a power consumption of 8W on the 7" device, a power supply of 10W or above is recommended. For a power consumption of 10W on the 10" device, a power supply of 12W or above is recommended. For a power consumption of 22W on the 12" device, a power supply of 24W or above is recommended. For a power consumption of 28W on the 15" device, a power supply of 30W 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
1. Remove the power plug from the power terminal of the device.
2. Loosen the three screws on the power plug.
3. Strip the cable to expose the copper wire to about 7-8mm.
4. Insert the exposed copper wire into the three openings on the power plug.
5. Retighten the three screws on the power plug.
6. 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.
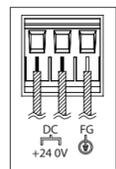
Power Line Type	Power Line (AWG)	Strip Length	Torque
Solid	28-12	About 7-8 mm	About 4.5 lb-in
Stranded	30-12	About 7-8 mm	About 4.5 lb-in

* with copper conduction wire only.

DC +24 0V FG

Instructional Diagram

*07M(ODM)/10M(Standard)

*12M(ODM) 15M(ODM)

1. Lock's Holes
2. Power Indicator
3. Main Key
4. Dip Switches
5. VESA 75MM/100MM Mounting Holes
6. Power Terminal
7. Expansion Slot
8. COM1 RS232/422/485
9. COM2 RS232/422/485
10. COM3 RS232/485
11. Ethernet Port
12. USB Device
13. USB Host
14. SD Card Slot
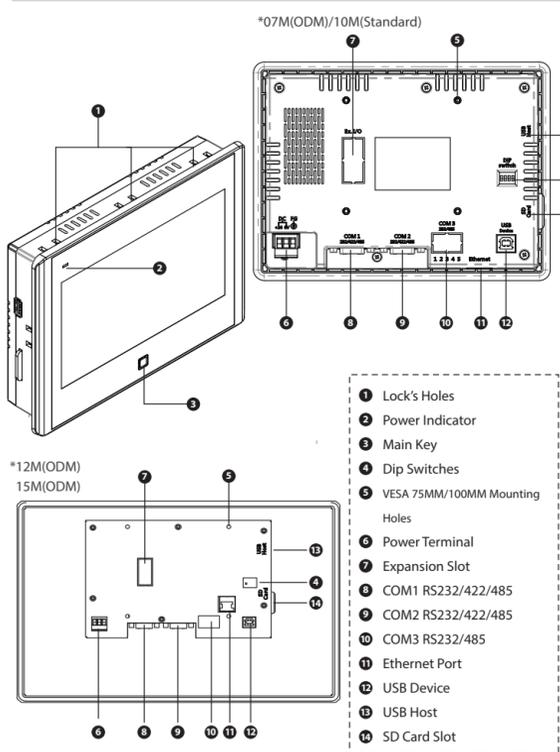
Product Specification

Type	M Series			
Model Number	07M(ODM)	10M(Standard)	12M(ODM)	15M(ODM)
Display Type	7"TFT	10.2"TFT	12.1"TFT	15.6"TFT
Resolution	800x480	800x480	1280x800	1366x768
Color	16.7M			
Backlight Type	LED			
Brightness	250 cd/m²	350 cd/m²	600 cd/m²	500 cd/m²
Contrast	500:1	300:1	1000:1	600:1
CPU	ARM Cortex-A8 (1GHz)			
Flash Memory	4GB, 8bit eMMC			
RAM	512M Bytes			
FRAM (non-volatile)	32K Bytes			
RTC	CR2032 Replaceable			
COM1	RS232/422/485			
COM2	RS232/422/485			
COM3	RS232/485 or CAN Bus (Option)			
Ethernet	1 x 10/100 Mbit (Default) ; 2 x 10/100 Mbit (Option)			
USB	1 x Type A (Host), 1 x Type B (Device)			
Memory Card	SD Card			
Power Supply	24V ± 20 % DC, Isolated Power			
Power Consumption	8 W	10 W	22 W	28 W
Operation Temperature	0 ~ 50 ℃			
Storage Temperature	-20 ~ 60 ℃			
Operation Humidity	10 ~ 90%RH　No Condensation @40℃			
Dimension(mm)	199.8 x 147.8 x 39.8	279.5 x 195.5 x 39.5	319.0 x 225.0 x 50.6	408.8 x 260.9 x 50.6
Cut-out Dimension (mm)	185.2 x 133.2	260.2 x 177.2	305.7 x 211.7	395.5 x 247.6
(Net) Weight	0.66 kg	1.12 kg	2.2kg	3.1 kg
Net weight with Packing box	0.98 kg	1.54 kg	2.8 kg	4.0 kg
Touch Panel	4-wire Resistive		5-wire Resistive	

Power On Test
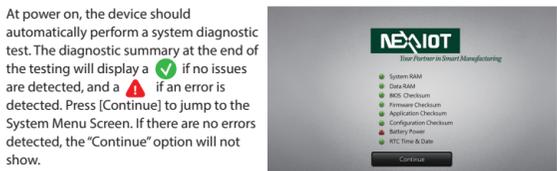
At power on, the device should automatically perform a system diagnostic test. The diagnostic summary at the end of the testing will display a ✓ if no issues are detected, and a ⚠ if an error is detected. Press [Continue] to jump to the System Menu Screen. If there are no errors detected, the "Continue" 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, Ethernet settings, and etc.
Click [Eanble USB Device Transfer] for options such as communication interface and download/upload application.

Ethernet Setting

Ethernet settings include [IP Address], [Gateway], [Netmask] , [Port] and [DHCP]. 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.
When [DHCP] is activated, the system will automatically assign IP to the HMI according to the network.
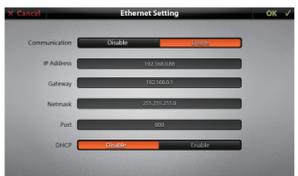
File Transfer

Applications and firmware can be downloaded or uploaded via USB ,SD card or FTP. 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 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 [Oriantation] to set the HMI display orientation.
Click [Language] to change the language displayed in BIOS.

Calibration Setting

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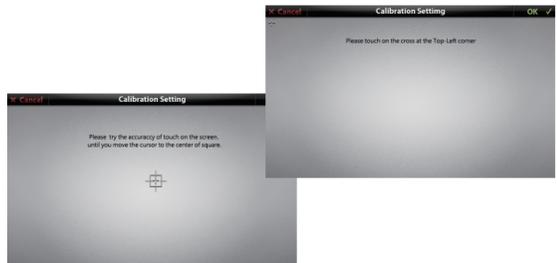
Note: The touch panel is a high precision electronic product therefore during calibration or when you press the screen, avoid sharp items that may potentially hurt the touch panel to remain lifetime of the product .

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.

Click [OK] to confirm and save all adjustments.
Click [Cancel] to cancel all adjustments.

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

Click [Buzzer] to enable or disable beep upon touch.
Click [Run application] under [Debug Mode] to activate the application under error tracking mode.
After system error occurs and reboot, click [Backup log] to save log file into USB or SD card for troubleshooting.
Click [WiFi Setting] to set HMI either as WiFi [Station] or as WiFi [AP].
Click [Watchdog] to enable system automatically reboot after system error detected.

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