MOXA®

MD-224 Series
Quick Installation Guide

First Edition, September 2014

Overview

The MD-224 is the 24 inch version of our marine display series. Designed for durably reliable service as an ECDIS display component, the MD-224 has a 16:9 aspect ratio, alongside full range dimming and optional optical bonding, making it well-suited not only for ECDIS applications, but for a variety of other bridge applications as well.

The MD-224 features both AC and DC power inputs, and may be conveniently installed on any bridge, without the need for extra hardware.

Moxa's marine displays are compliant with the most important industrial marine standards, including IEC 60945, DNV, and IACS-E10, giving strong assurance of their suitability for marine applications.
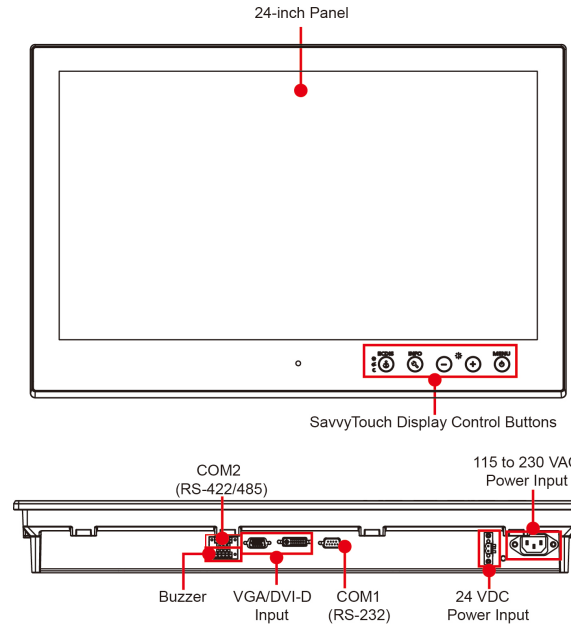
Package Checklist

Before installing the MD-224, verify that the package contains the following items:

- MD-224 display
- VGA cable
- DVI-D cable
- 2-pin terminal block x 1
- 5-pin terminal block x 2
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

NOTE: Please notify your sales representative if any of the above items are missing or damaged.

Hardware Installation

Appearance

24-inch Panel

SavvyTouch Display Control Buttons

COM2 (RS-422/485)
115 to 230 VAC Power Input
Buzzer
VGA/DVI-D Input
COM1 (RS-232)
24 VDC Power Input

SavvyTouch Display Control Buttons

The following table describes the SavvyTouch display controls on the front surface of the MD-224. These intelligent controls will light up with a simple wave of your hand over the area of the screen where they are located.
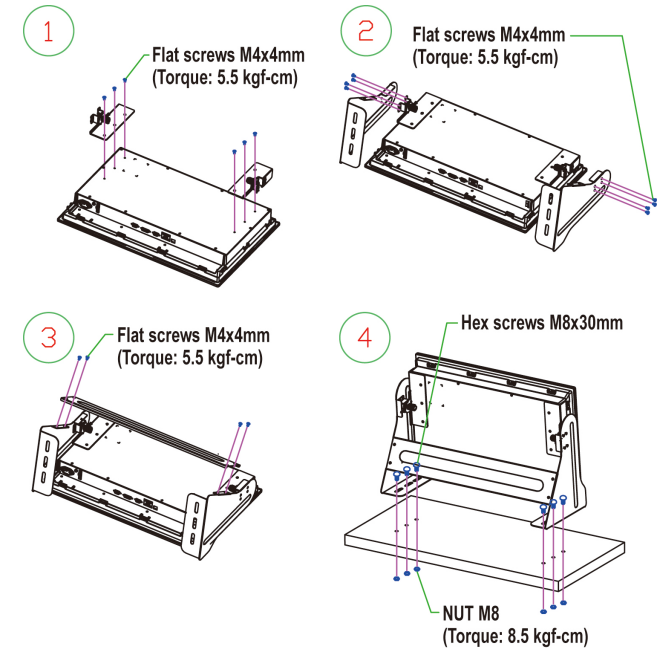
| Name	Display Color	Control Function / Color Legend
MENU ⏻ Menu/ Power	Green	Display is powered on and functioning normally. Touch the button to show the OSD settings menu
	Red	No input signal detected. Display standby
	Off	Power is down and the display is off
☀ Brightness	White	+: To increase brightness of panel
		-: To decrease brightness of panel
INFO 🔧 Info	Off	AC/DC power functioning normally
	Red	AC/DC power error
ECDIS ☀☀☾⚓ Display mode	White	Switch between DAY/DUSK/NIGHT brightness modes
	Off	Panel brightness out of default range

Installing the MD-224

Desktop

The MD-224 comes with optional brackets that allow you to install the display on a horizontal surface, such as a desktop. Three round screws are required for each bracket. See the figure for detailed screw specifications and their torque values.

Place your MD-224 display on a clean, flat, well-ventilated desktop. To protect the display from overheating, leave some ventilation space between the MD-224 and other equipment. Do not place equipment or objects on the panel, as this might damage internal components.

① Flat screws M4x4mm (Torque: 5.5 kgf-cm)

② Flat screws M4x4mm (Torque: 5.5 kgf-cm)

③ Flat screws M4x4mm (Torque: 5.5 kgf-cm)

④ Hex screws M8x30mm
NUT M8 (Torque: 8.5 kgf-cm)

P/N: 1802002240010

Panel Mounting

The MD-224 comes with 14 optional clamp mounts for installation on a wall (where space has been cut out to accommodate the rest of the hardware) or into computing stations where a flush mount is desired. **The maximum thickness of the surface to which the display can be clamped is 11 mm.** For a secure mounting, all 14 clamps must be used. The clamp arms are fastened into slots on all four sides of the MD-224. Use the short M4 SUS screws to fasten the clamp arms to the MD-224 mounting slots, as shown in the magnified inset in the diagram just below. Next, use the clamps to fasten the display to its mounting point; please note the torque value that is shown in the figure inset, below.
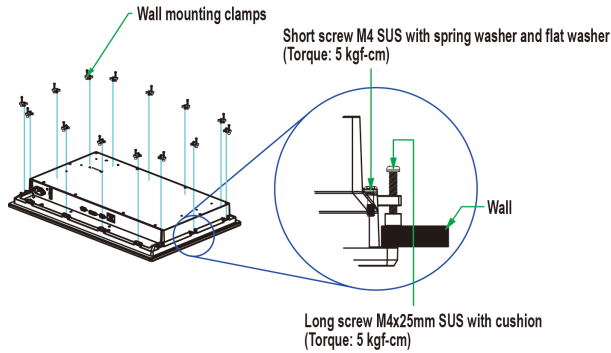
VESA Mounting

The MD-224 also comes with an optional VESA mounting kit. Six flat screws and four round screws are required to fasten the VESA mounting bracket. See the figure below for detailed screw specifications and torque values.
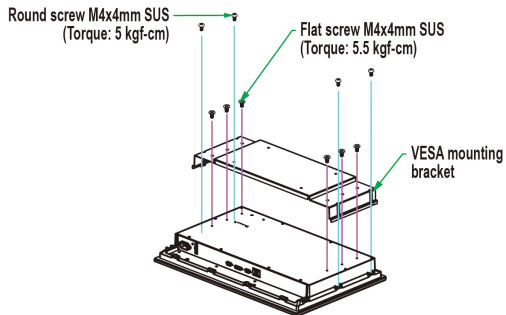
An additional four screws (not included in the kit) are required to mount the display on a VESA rack. For this purpose, use M6 screws that are between 10 and 12 mm in length.

Connector Description

Extending the Display

The MD-224 comes with both standard VGA and DVI-D interfaces on the bottom panel. It will automatically detect whether the input video source is from the VGA or DVI-D interface.

Configuring the Display via the Serial Port

The MD-224 has two serial ports. The for RS-232 port uses a DB9 connector, and the RS-422/485 port uses a terminal block connector. Either serial port can be used to modify the display parameters using UART commands. Refer to the MD-224 User's Manual for serial port configuration details. The pin assignments for the ports are shown in the following table:

Pin	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
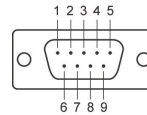
Pin	RS-422	RS-485 (2-wire)
1	RxDB(+)	TDp(+)
2	RxDA(-)	TDn(-)
3	TxDB(+)	RDp(+)
4	TxDA(-)	RDn(-)
5	GND	GND
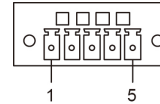
Powering on/off the MD-224

To power on the MD-224, connect to an AC power source, a DC power source, or both. Touch the MENU button for 1 second to turn on the display. Touch the MENU button for 4 seconds to turn off the display.
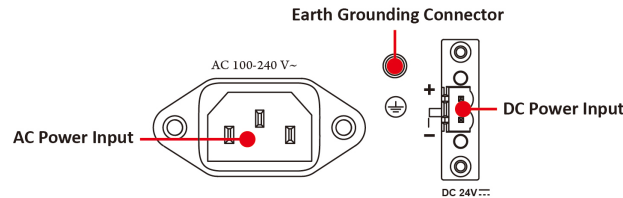
NOTE If only one power input is being connected, the INFO button will be red. This will not affect the functionality and performance of MD-224 as long as the power input is stable.

Grounding the MD-224

Proper grounding and wire routing help to limit the effects of noise from electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting the power source.

For detailed configuration of the MD-224 Series, refer to the MD-224 User's Manual.