

MD-224 Series

24-inch widescreen marine display, 16:9 aspect ratio, full HD 1920 x 1080 resolution



- > 24-inch Full-HD display, 16:9 aspect ratio
- > High quality LCD with LED backlight
- > Color calibrated for ECDIS compliance
- > Full range dimming, 0 to 100%
- > SavvyTouch™ display controls
- > Built-in RS-232/422/485 interfaces
- > Dual power supplies (AC & DC)
- > IP54 (front) / IP22 (rear) rated
- > Optically bonded and touch panel models available on request



Introduction

The MD-224 series of marine displays comes with full range dimming, wide viewing angles and optional optical bonding. These displays are built with a small-profile modular design that allows easier integration into industrial marine systems, reducing deployment costs and overall time-to-market.

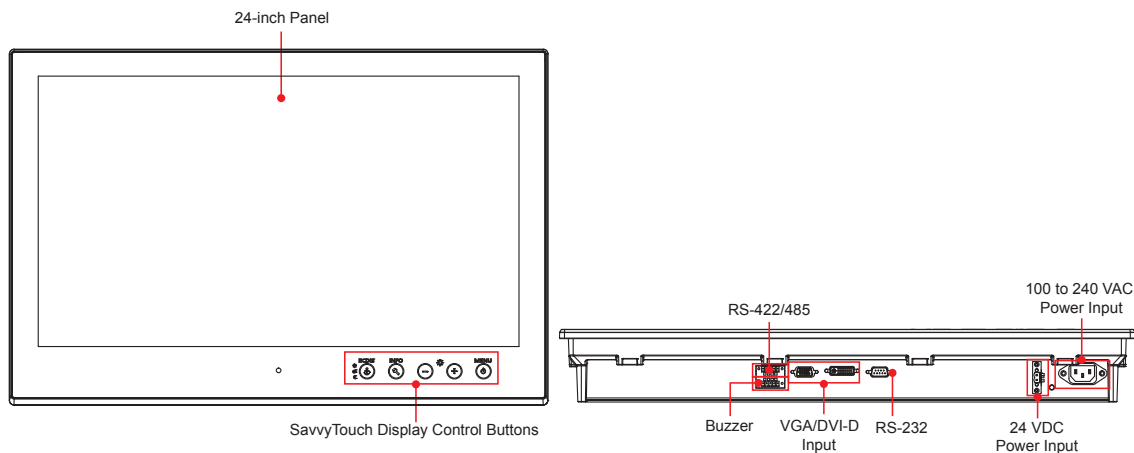
The innovative and user-friendly SavvyTouch display controls offer several unique features not found on any other marine display console: a proximity sensor for convenient adjustments in dark conditions, an info button for immediate updates on power status, and a quick-switch

to adjust between day, dusk, and night-time ECDIS modes (for color-calibrated ECDIS models only).

The MD-224 series displays are compliant with IEC 60945, DNV, and IACS-E10, verifying their resilience and durability in maritime conditions. Their IP54 rated enclosure provides additional protection against dust and moisture above and beyond the limits established by these international standards bodies.

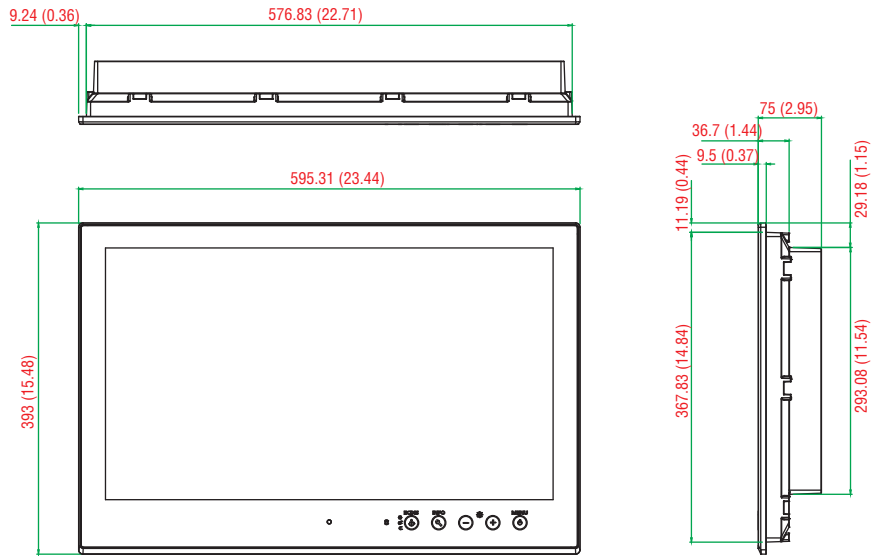
ECDIS-approved models are also available, offering an excellent HMI solution for ECDIS charting and navigation stations.

Appearance



Dimensions

Unit: mm (inch)



Specifications

Display

Panel Size: 24" viewable image size
Panel Type: MVA
Aspect Ratio: 16:9
Pixels: 1920 x 1080 (WSXGA+)
Pixel Pitch (RGB): 0.282 (H) x 0.282 (V) mm
Response Time: 25 ms (gray to gray)
Contrast Ratio: 5000:1
Light Intensity: 300 cd/m²
Viewing Angles: 178°/178°
Active Display Area: 531.36 (H) x 298.89 (V) mm
Max Colors: 16.7M / 8-bit color

Display Interface:

- 1 VGA input
- 1 DVI-D input

Resolution:

- VGA: 640 x 480
- SVGA: 800 x 600
- XGA: 1024 x 768
- SXGA: 1280 x 1024
- WSXGA+: 1920 x 1080 (optimal setting)

Serial Interface

Serial Standards: 1 RS-232 port (male DB9), 1 RS-422/485 port (Euroblock)

Optical Isolation Protection: 4 kV

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND
RS-422: TxD+, TxD-, RxD+, RxD-, GND
RS-485-2w: Data+, Data-, GND

Front Panel

LEDs: MENU, Brightness, INFO, ECDIS, Day/Dusk/Night
Smart OSD: Yes

Physical Characteristics

Housing: Aluminum sheet metal
Weight: 12 kg
Dimensions: 595 x 393 x 75 mm (23.43 x 15.47 x 2.95 in)
Mounting: VESA, panel, or desktop (temporary) mountings

Environmental Limits

Operating Temperature: -15 to 55°C (5 to 131°F)
Storage Temperature: -20 to 60°C (-4 to 140°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

IP Rating:

- Front: IP54
- Rear: IP22

Anti-Vibration:

- 0.7 g @ DNV 2.4 (Class A), sine wave, 2-100 Hz, 1 Oct./min., 1.5 hr per axis
- 1 Grms @ DNV 2.4, random wave, 3-100 Hz, 2.5 hr per axis
- 2.1 g @ DNV 2.4 (Class C), sine wave, 2-50 Hz, 1 Oct./min., 1.5 hr per axis

Power Requirements

Input Voltage:

- DC: 24 VDC (with tolerance from 18 to 30 VDC, 2-pin terminal block)
- AC: 100 to 240 VAC

Power Consumption: 40 W (Max)

Standards and Certifications

Safety: UL 60950-1, CCC

EMC: EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class A

Marine: IEC 60945 4th, DNV, IACS E10, IEC 61174

Green Product: RoHS, cRoHS, WEEE

Warranty

Warranty Period: 1 year

Details: See www.moxa.com/warranty

We recommend taking the following precautions to minimize heat build-up within the display:

- Position the display within $\pm 40^\circ$ of the vertical.
- Install an external fan to increase airflow upwards through the display if (a) the display is not positioned within $\pm 40^\circ$ of the vertical, (b) the ambient temperature exceeds 25°C , or (c) the display is used in a location with minimal ventilation.

Important Safety Precaution:

Even though the display is rated to operate within the IEC 60945 standard of -15 to 55°C , it is best to ensure that the ambient temperature does not exceed 25°C . Doing so will increase the life of your display and minimize service costs.

Ordering Information

Available Models

MD-224X: 24-inch tape bonded marine display with 16:9 aspect ratio, full HD (1920x1080), LED backlighting, dual-power supply (AC/DC)

MD-224Z: 24-inch tape bonded marine display with 16:9 aspect ratio, full HD (1920x1080), projected-capacitive touch panel, LED backlighting, dual-power supply (AC/DC)

Optional Accessories (can be purchased separately, for AC power input)

PWC-C13US-3B-183: Power cord with 3-pin connector, USA plug

PWC-C13EU-3B-183: Power cord with 3-pin connector, Euro plug

PWC-C13UK-3B-183: Power cord with 3-pin connector, British plug

PWC-C13AU-3B-183: Power cord with 3-pin connector, Australian plug

PWC-C13CN-3B-183: Power cord with 3-pin connector, Chinese plug

Optional Mounting/Bracket Kits (can be purchased separately)

MPC-MD-2-24-PMTK: Panel mounting kit

MPC-MD-2-24-VESAMTK: VESA mounting kit

MPC-MD-2-24-26-DMTK w/o hinge: Desktop mounting kit without hinge

MPC-MD-2-24-26-DMTK w/ hinge: Desktop mounting kit with hinge

Package Checklist

- 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