MD-224 Series

24-inch marine display

Features and Benefits

- 24-inch display, 16:9 aspect ratio
- 300-nit or sunlight-readable 1000-nit LED backlight
- Color calibrated for ECDIS compliance (available by CTOS)
- Full range dimming, 0 to 100%
- SavvyTouch display controls
- Built-in RS-232/422/485 interfaces
- Dual power supplies (AC & DC)
- IP54-rated front panel (IP66 available by request)
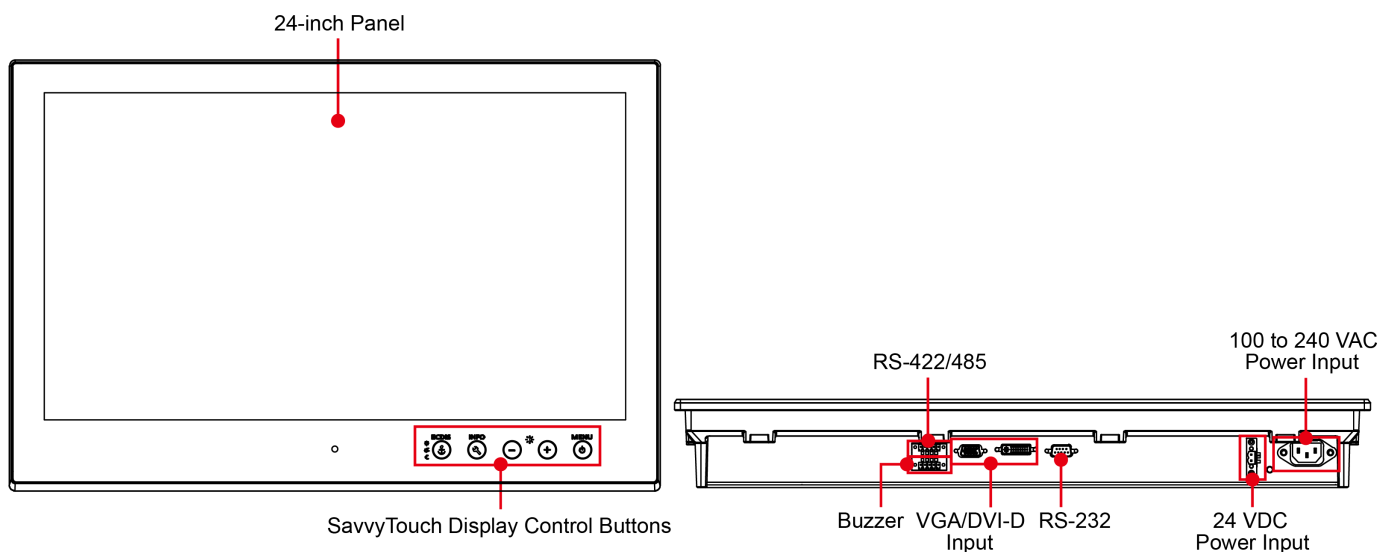
Certifications

Introduction

The MD-224 Series of marine displays come 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, thereby reducing deployment costs and overall time-to-market.

The innovative and user-friendly SavvyTouch display controls offer several unique features not found in most marine display consoles: a proximity sensor for convenient adjustments in dark conditions, an info button for immediate updates of 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, ABS, and IACS E10, making them suitable for maritime applications. Their IP54-rated (IP66-rated models available on request) 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

24-inch Panel

SavvyTouch Display Control Buttons

RS-422/485

100 to 240 VAC Power Input

Buzzer   VGA/DVI-D Input   RS-232

24 VDC Power Input

Specifications

Display

Aspect Ratio	16:9
Contrast Ratio	5,000:1
Max. No. of Colors	16.7M (8-bit/color)
Panel Size	24-inch viewable image
Panel Type	MVA
Pixels	1920 x 1080
Response Time	25 ms (gray to gray)
Viewing Angles	178°/178°
Light Intensity (Brightness)	MD-224X/224Z: 300 cd/m² MD-224Z-HB: 1000 cd/m²

Computer Interface

Serial Ports	RS-232 ports x 1 (DB9 male) RS-232/422/485 ports x 1, software selectable (terminal block)
Video Input	DVI-D x 1, 29-pin DVI-D connectors (female) VGA x 1, 15-pin D-sub connector (female)

Touch Function

Touch Type	MD-224Z/224Z-HB: Capacitive Touch (PCAP) MD-224X: None
Touch Support Points	MD-224Z/224Z-HB: 4 points

Serial Interface

Baudrate	50 bps to 115.2 kbps
Data Bits	5, 6, 7, 8
Flow Control	RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only)
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND

Power Parameters

Input Voltage	100 to 240 VAC 24 VDC (18 to 30 V)
Power Consumption	40 W (max.)

Physical Characteristics

Housing	Metal
IP Rating	MD-224X: IP54, front MD-224X: IP22, rear MD-224Z: IP54, front MD-224Z: IP22, rear MD-224Z-HB: IP66, front MD-224Z-HB: IP22, rear
Dimensions	595 x 393 x 75 mm (23.43 x 15.47 x 2.95 in)
Weight	9,570 g (21.10 lb)
Installation	Desktop Panel mounting VESA mounting

Environmental Limits

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

Standards and Certifications

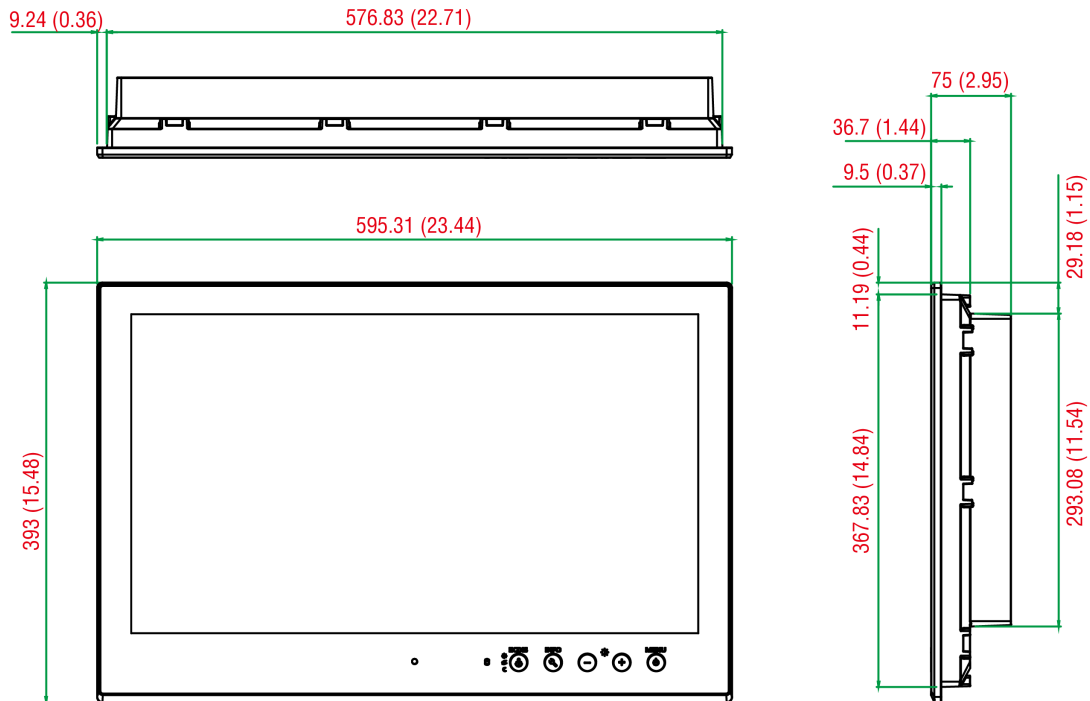|	
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 1k V
Maritime	ABS CCS IEC 60945 DNV
Safety	UL 60950-1

Warranty

Warranty Period	LCD: 1 year System: 3 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x MD-224 Series display
Cable	1 x DVI-D cable 1 x VGA
Installation Kit	1 x terminal block, 2-pin 1 x terminal block, 5-pin 1 x panel-mounting kit
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)

Ordering Information

Model Name	Panel	Video Inputs	Touchscreen	Power Input	IP Rating	Operating Temp.
MD-224X	24" (16:9) 300 nits	1 x VGA 1 x DVI-D	–	24 VDC (18-30 V) 100-240 VAC	IP54 (front), IP20 (rear)	-15 to 55°C
MD-224Z	24" (16:9) 300 nits	1 x VGA 1 x DVI-D	Multi-touch	24 VDC (18-30 V) 100-240 VAC	IP54 (front), IP20 (rear)	-15 to 55°C
MD-224Z-HB	24" (16:9) 1000 nits	1 x VGA 1 x DVI-D	Multi-touch	24 VDC (18-30 V) 100-240 VAC	IP54 (front), IP20 (rear)	-15 to 55°C

Accessories (sold separately)

Desktop Mounting Kits

MPC-MD-2-24-26-DMTK w/ hinge	Desktop-mounting kit for 24/26-inch panels
MPC-MD-2-24-26-DMTK w/o hinge	Desktop-mounting kit for 24/26-inch panels, (no hinge)

Panel Mounting Kits

MPC-MD-2-24-RMTK	Rubber gasket for 24-inch panels

VESA Mounting Kits

MPC-MD-2-24-VESAMTK	VESA kit for 24-inch panels (can be used with 200 x 100 mm or 280 x 150 mm VESA mounts)

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