

# MPC-2120 Series

Preliminary

## 12-inch industrial fanless panel computers



- > 12-inch panel computer
- > Intel® Atom™ Processor: E3845 1.91 GHz or E3826 1.46 GHz
- > -40 to 70°C wide-temperature design, no fan / no heater
- > 1000-nit sunlight-readable LCD
- > Class 1 Division 2\*, ATEX Zone 2\*, and IECEx\* certified
- > Wide range 9 to 36 VDC power input

\*Certification is underway. Please check Moxa's website for the most up-to-date certification status.

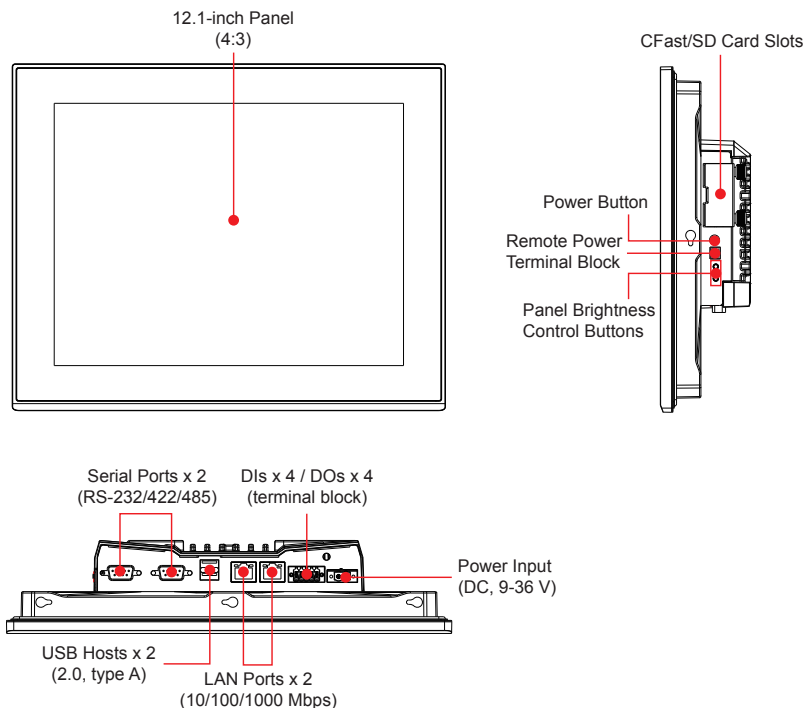


### Introduction

The MPC-2120 12-inch panel computers with E3800 series Intel® Atom™ processor deliver a reliable and durable platform of wide versatility for use in industrial environments. With two software selectable RS-232/422/485 serial ports and two gigabit Ethernet LAN ports, the MPC-2120 panel computers support a wide variety of serial interfaces as well as high-speed IT communications, all with native network redundancy.

The MPC-2120 series panel computers are designed with a wide, -40 to 70°C temperature range, and come with a fanless, streamlined enclosure designed for highly efficient heat dissipation, making this one of the most reliable industrial platforms available for harsh, hot, outdoor environments like oil and gas fields and drilling platforms. The MPC-2120 also features a 1000-nit LCD panel offering a sunlight-readable, projected-capacitive, multi-touch screen, providing an excellent user experience for outdoor applications.

### Appearance



## Specifications

### Computer

**CPU:** Intel® Atom™ Processor: E3826 Dual Core 1.46 GHz or E3845 Quad Core 1.91 GHz

**Supported OS:** Windows Embedded Standard 7 32/64-bit, Windows 7 Professional 32/64-bit (the OS is not pre-installed in some models)

**System Memory:** 4 GB pre-installed (SDRAM)

**USB:** USB 2.0 hosts x 2, type-A connectors, supporting system boot up

**Storage:** 1 CFast slot + 1 SD card slot (storage is not pre-installed in some models)

### Display

**Panel Size:** 12.1-inch viewable image size

**Touch:** Capacitive multi-touch

**Aspect Ratio:** 4:3

**Pixels:** 1024 x 768

**Pixel Pitch (RGB):** 0.240 (H) x 0.240 (V) mm

**Response Time:** 5 ms (gray to gray)

**Contrast Ratio:** 700:1

**Light Intensity:** 1000 cd/m/m

**Note:** The brightness level of the MPC-2120 is from 0 to 10. To extend the lifetime of the display, we recommend using it with a brightness level of 8 or less at ambient temperatures above 60°C.

**Viewing Angles:** 160°/140°

**Active Display Area:** 245.76 (H) x 184.32 (V) mm

**Max. No. of Colors:** 16.2M (8-bit color)

### Ethernet Interface

**LAN:** Auto-sensing 10/100/1000 Mbps ports (RJ45 port) x 2

**Magnetic Isolation Protection:** 1.5 kV, built-in

### Serial Interface

**Serial Standards:** 2 RS-232/422/485 ports, software-selectable (DB9 male)

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2

**Parity:** None, Even, Odd, Space, Mark

**Flow Control:** RTS/CTS, XON/XOFF

**Baudrate:** 50 bps to 115.2 kbps

### Serial Signals

**RS-232:** TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND

**RS-422:** TxD+, TxD-, RxD+, RxD-, GND

**RS-485-4w:** TxD+, TxD-, RxD+, RxD-, GND

**RS-485-2w:** Data+, Data-, GND

### Digital Input

**Input Channels:** DI x 4

**Input Voltage:** 0 to 30 VDC at 25 Hz

**Digital Input Levels for Dry Contacts:** Logic level 0: Close to GND

Logic level 1: Open

**Digital Input Levels for Wet Contacts:** Logic level 1: +3 V max. Logic level 0: +10 V to +30 V (Source to DI)

**Connector Type:** 10-pin terminal block

**Isolation:** 3 kV optical isolation

### Digital Output

**Output Channels:** DO x 4, sink type

**Output Current:** Max. 200 mA per channel

**On-State Voltage:** 24 VDC nominal, open collector to 30 VDC

**Connector Type:** 10-pin terminal block

**Isolation:** 3 kV optical isolation

### Physical Characteristics

**Housing:** Aluminum sheet metal

**Weight:** 2.64 kg (5.82 lb)

**Dimensions:** 306 x 245 x 64 mm (12 x 9.6 x 2.5 in)

**Mounting:** VESA mount (50 x 75 mm), and panel mount

**System Cooling:** Fanless thermal design

### Environmental Limits

**Operating Temperature:** -40 to 70°C (-40 to 158°F)

**Storage Temperature:** -40 to 70°C (-40 to 158°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Anti-Vibration:** 2 Grms, 5-500 Hz frequency, compliant with IEC 60068-2-6 standard

**Anti-Shock:** 20 Grms, half sine wave under system operating, 11 ms duration, compliant with IEC 60068-2-27 standard

### Power Requirements

**Input Voltage:** 12/24 VDC (Range 9 to 36 VDC)

**Power Consumption:** Less than 40 W

### Standards and Certifications

**Safety:** UL 60950-1, IEC 60950-1

**EMC:** EN 55032, EN 55024

**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: 10 V/m

IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV

IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV

IEC 61000-4-6 CS: 10 V

IEC 61000-4-8

**Ingress Protection Rating:** IP66 (front) / IP20 (rear)

**Green Product:** RoHS, cRoHS, WEEE

### Warranty

**Warranty Period:**

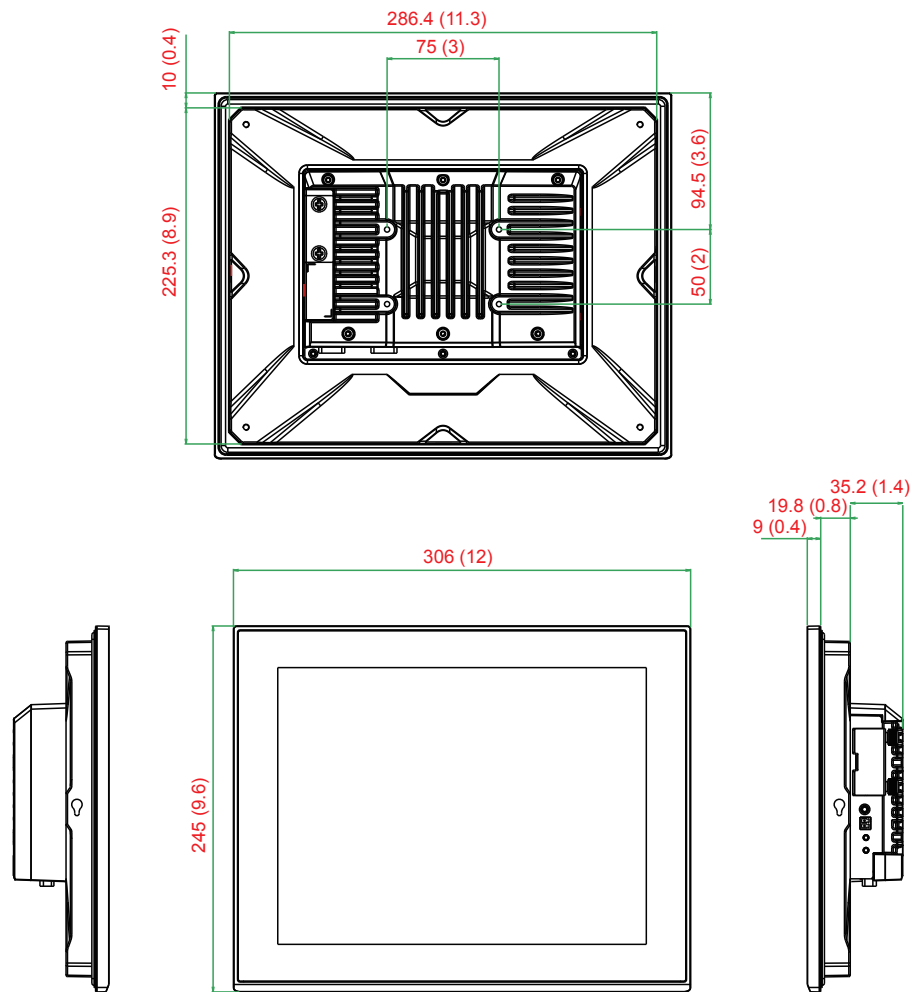
- Computer system: 3 years

- LCD panel: 1 year

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	CPU	RAM	Storage (pre-installed)	OS (pre-installed)	Brightness (cd/m <sup>2</sup> )	CFast Slots	SD Slots	LANs	Serial Ports	USB 2.0 Ports	DIOs	Power Input	Certifications	Operating Temperature
<b>Pre-Configured Models</b>														
MPC-2120-E2-T-W7E	E3826 Dual core 1.46 GHz	4 GB	32 GB CFast	Windows 7 Embedded 64-bit	1000	1	1	2	2	2	4	9 to 36 VDC non-isolated	CID2/ATEX/IECEX Zone2	-40 to 70°C
MPC-2120-E4-T-W7E	E3845 Quad core 1.91 GHz	4 GB	32 GB CFast	Windows 7 Embedded 64-bit	1000	1	1	2	2	2	4	9 to 36 VDC non-isolated	CID2/ATEX/IECEX Zone2	-40 to 70°C
<b>Models without Storage and OS</b>														
MPC-2120-E2-T	E3826 Dual core 1.46 GHz	4 GB	N/A	N/A	1000	1	1	2	2	2	4	9 to 36 VDC non-isolated	CID2/ATEX/IECEX Zone2	-40 to 70°C
MPC-2120-E4-T	E3845 Quad core 1.91 GHz	4 GB	N/A	N/A	1000	1	1	2	2	2	4	9 to 36 VDC non-isolated	CID2/ATEX/IECEX Zone2	-40 to 70°C

Note: Use the Moxa CTOS process to select RAM, storage, and OS options. Please contact your Moxa sales representative for details.

### Package Checklist

- 1 MPC-2120 panel computer
- 1 2-pin terminal block for DC power input
- 1 10-pin terminal block for DIO
- 1 2-pin terminal block for remote power switch
- 8 panel mounting screws
- Quick installation guide (printed)
- Warranty card