MPC-2120 Series

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 10 to 36 VDC power input**

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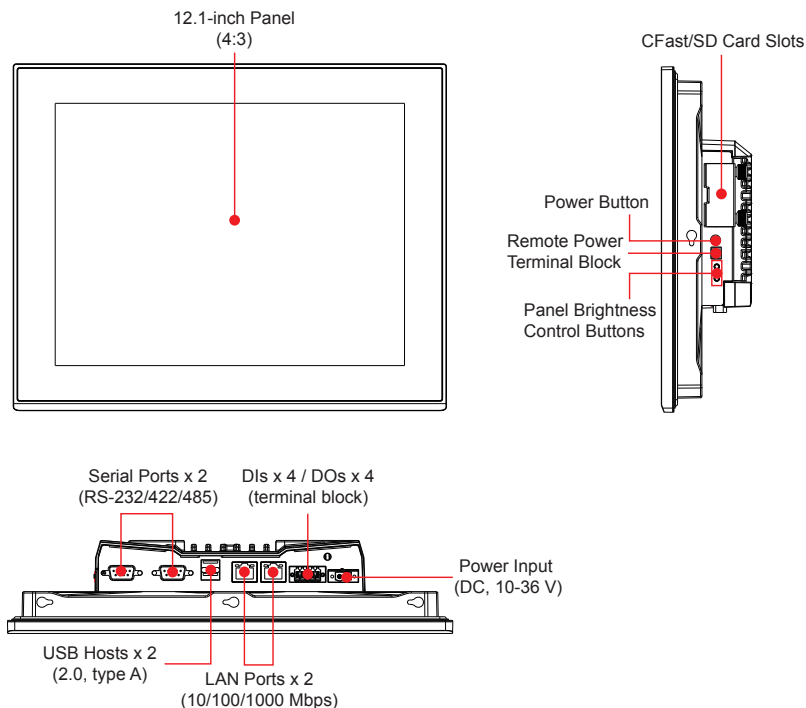
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Introduction

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

12.1-inch Panel (4:3)

CFast/SD Card Slots

Power Button

Remote Power Terminal Block

Panel Brightness Control Buttons

Serial Ports x 2 (RS-232/422/485)

DIs x 4 / DOs x 4 (terminal block)

Power Input (DC, 10-36 V)

USB Hosts x 2 (2.0, type A)

LAN Ports x 2 (10/100/1000 Mbps)

MOXA®

Specifications

Computer

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

Supported OS: Windows 7 Embedded, Windows 7 Professional, Windows 10 Embedded

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 10 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)

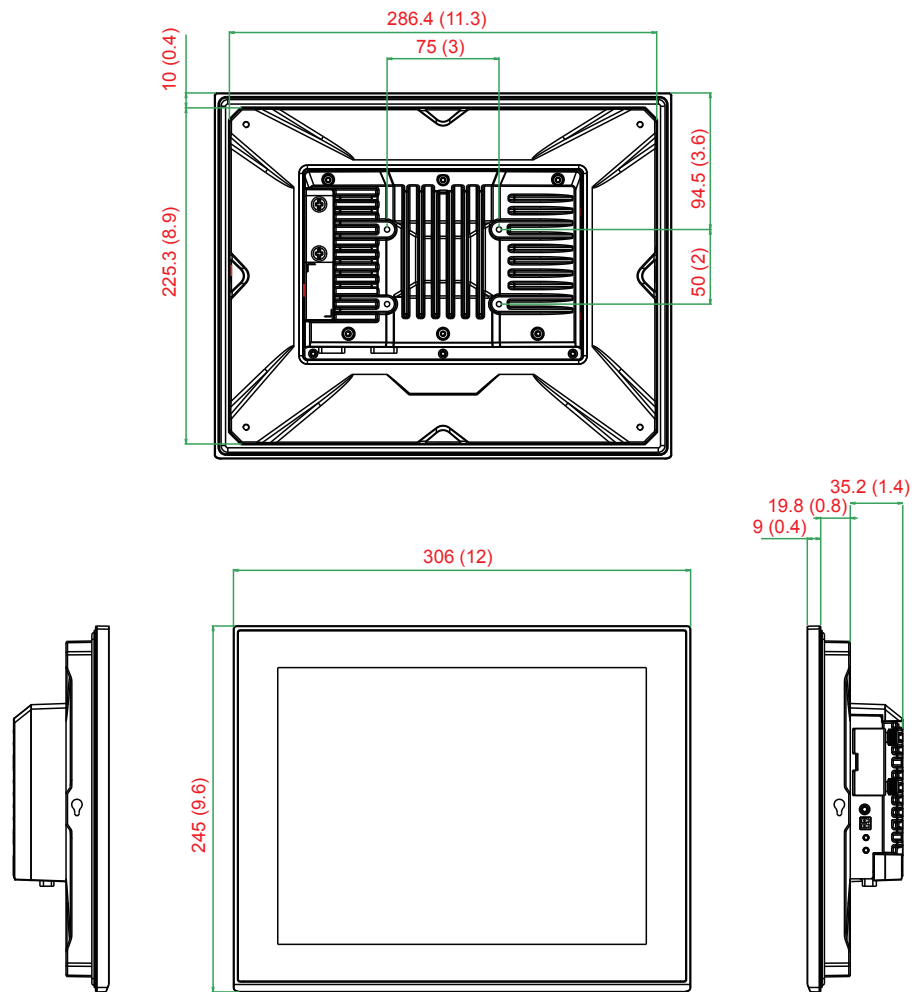**Green Product:** RoHS, cRoHS, WEEE

Warranty

Warranty Period:

• Computer system: 3 years

• LCD panel: 1 year

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)

286.4 (11.3)
75 (3)
10 (0.4)
225.3 (8.9)
94.5 (3.6)
50 (2)

306 (12)
245 (9.6)
35.2 (1.4)
19.8 (0.8)
9 (0.4)

Ordering Information

Model Name	CPU	RAM	Storage (pre-installed)	OS (pre-installed)	Brightness (cd/m²)	CFast Slots	SD Slots	LANs	Serial Ports	USB 2.0 Ports	DIOs	Power Input	Certifications	Operating Temperature
Pre-Configured Models														
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	10 to 36 VDC 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	10 to 36 VDC isolated	CID2/ATEX/IECEx Zone2	-40 to 70°C
Models without Storage and OS														
MPC-2120-E2-T	E3826 Dual core 1.46 GHz	4 GB	N/A	N/A	1000	1	1	2	2	2	4	10 to 36 VDC 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	10 to 36 VDC 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