EXPC-F2120W Series

12.1-inch fanless industrial panel PCs with Zone 2 certifications for hazardous locations



Features and Benefits

- 12.1 inch 16:10 display
- High-performance Tiger Lake Intel® Core™ i7/ Core™ i3 or Intel® Celeron® processor
- Built-in light sensor for auto brightness control
- 1200-nit sunlight-readable anti-glare display
- Optical bonding of the display for deploying in harsh environments
- Fanless thermal design for efficient heat dissipation in high-temperature environments
- UL C1D2/C2D2, ATEX, and IECEx ZONE 2/Zone 22 certified
- Front IP66 and rear IP42 certified
- -40 to 70°C operating temperature range
- Options for 5G and Wi-Fi 6 connections
- Designed for deploying in hazardous locations and for mission-critical applications

Certifications

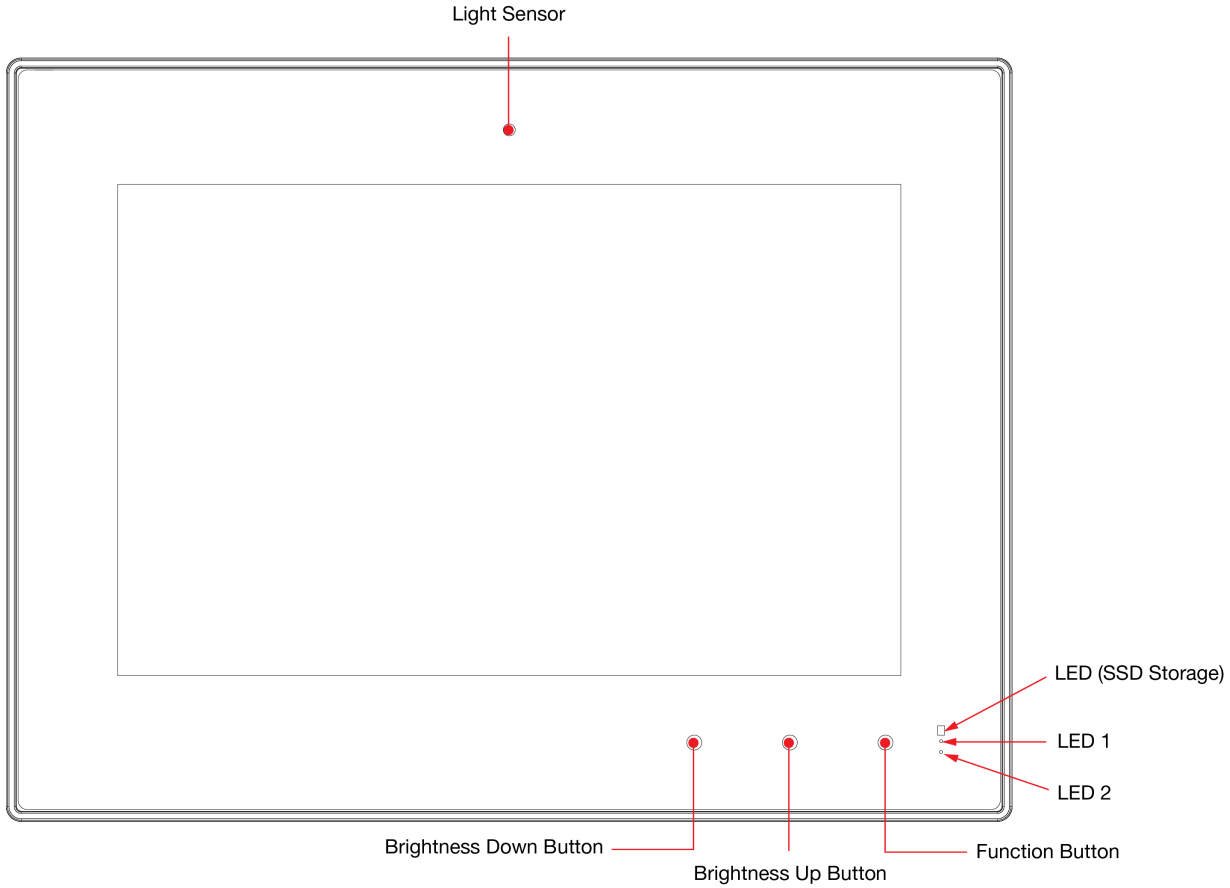
Introduction

The EXPC-F2120W Series consists of 12.1-inch panel PCs with a 11th Gen Intel Core™ i processor that deliver a reliable, durable, and versatile platform for use in industrial, hazardous, and mission-critical environments. The EXPC-F2120W panel PCs come with a rich set of communication interfaces to satisfy all your industrial-application scenarios. The panel PCs are also provided with a DisplayPort and VGA video outputs for extending the display.

The EXPC-F2120W panel PCs come in a fanless design for operations in the -40 to 70°C temperature range and a streamlined enclosure for efficient heat dissipation, making them the most reliable industrial platforms available for harsh, hot, outdoor environments such as oil and gas fields, drilling platforms, and power stations, as well as smart heater solutions. The panel PCs are also specifically designed with sunlight-readable features such as a 1200-nit LCD panel, projected-capacitive, glove-friendly, multi-touch screen, optical bonding, and anti-glare design, to provide an excellent user experience for outdoor applications.

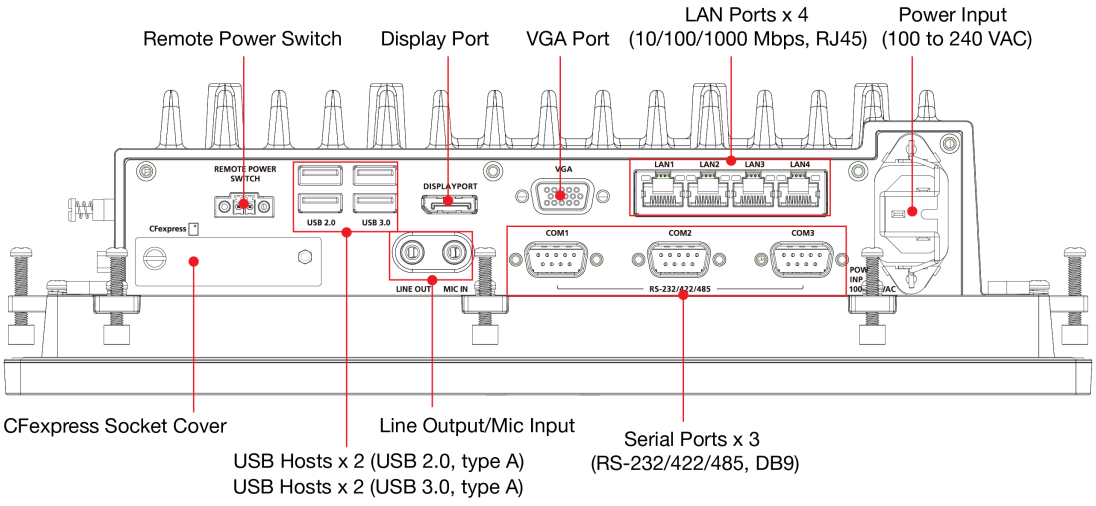
Appearance

Front View

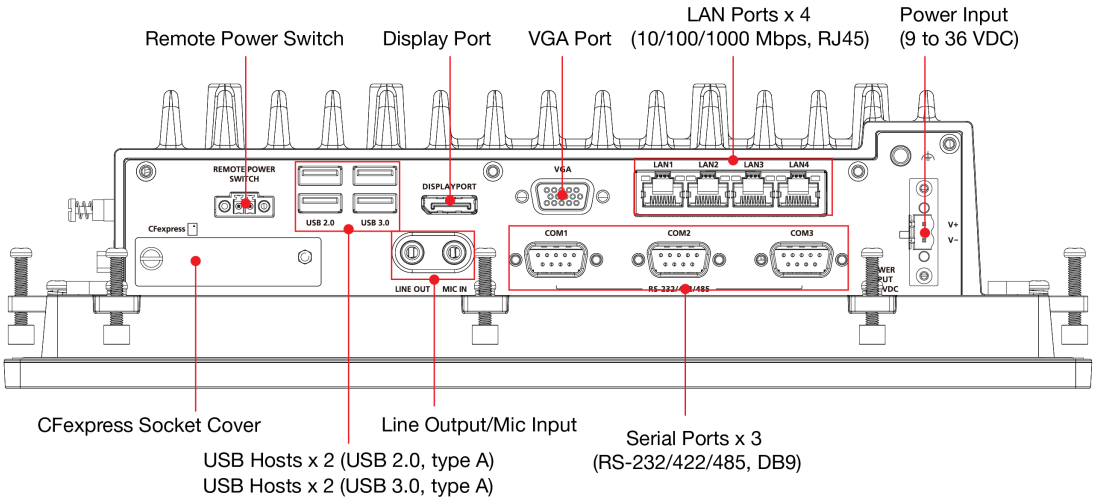


Bottom View

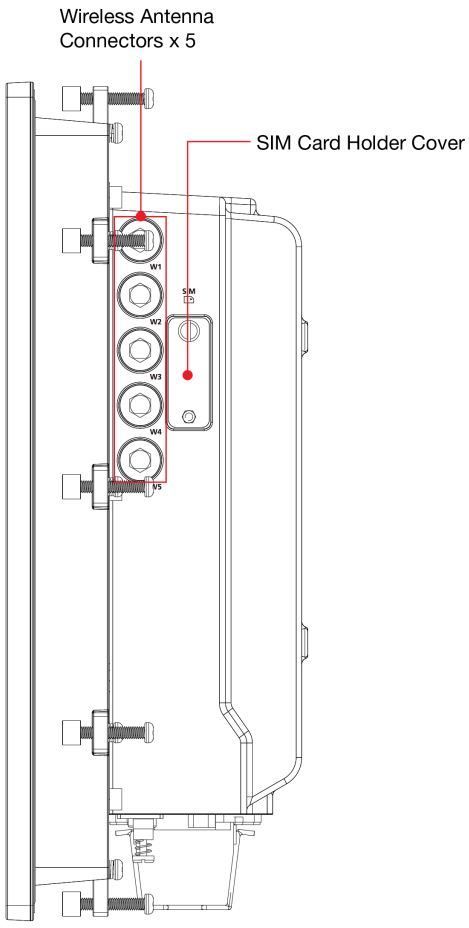
Models With AC Power Input



Models With DC Power Input


Remote Power Switch
Display Port
VGA Port
LAN Ports x 4
(10/100/1000 Mbps, RJ45)
Power Input
(9 to 36 VDC)
REMOTE POWER SWITCH
DISPLAYPORT
VGA
LAN1
LAN2
LAN3
LAN4
USB 2.0
USB 3.0
CFexpress
COM1
COM2
COM3
LINE OUT
MIC IN
V+
V-
CFexpress Socket Cover
USB Hosts x 2 (USB 2.0, type A)
USB Hosts x 2 (USB 3.0, type A)
Line Output/Mic Input
Serial Ports x 3
(RS-232/422/485, DB9)

Side View


Wireless Antenna
Connectors x 5
SIM Card Holder Cover
W1
W2
W3
W4
W5
SIM

Specifications

Computer

CPU	TL1 models: Intel® Celeron® 6305E TL3 models: Intel® Core™ i3-1115G4E TL7 models: Intel® Core™ i7-1185G7E
Graphics Controller	Intel® Core™ i7 models: Intel® Iris® Xe Graphics Intel® Celeron®, Core™ i3 models: Intel® UHD Graphics
System Memory Pre-installed	16 GB (64 GB max)
System Memory Slot	SODIMM DDR4 slots x 2, up to 64 GB
Pre-installed OS	OS is not pre-installed OS installation via CTOS
Supported OS	Windows 10 Enterprise LTSC 21H2 Windows 11 Professional 23H2 64-bit Debian 11 (driver)
Storage Slot	M.2 B key x 1 for SSD (internal, optional) CFexpress slots x 1 (external, default)

Computer Interface

Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 4
Serial Ports	RS-232/422/485 ports x 3 (software-selectable, DB9 male connector)
USB 3.0	USB 3.0 hosts x 2, type-A connectors
USB 2.0	USB 2.0 hosts x 2, type-A connectors
Audio Input/Output	Line in x 1, mic-out x 1, 3.5 mm phone jack
Video Output	DisplayPort x 1 VGA x 1, 15-pin D-sub connector (female)
Expansion Slots	M.2 B key slot x 1 for 5G module M.2 E key slot x 1 for Wi-Fi module
TPM	TPM v2.0
Remote Management	Intel® Active Management Technology (AMT) support

LED Indicators

System	Power x 1 Storage x 1, SSD
LAN	2 per port, configurable by BIOS settings or via a Moxa software utility
Serial	2 per port, configurable by BIOS settings or via a Moxa software utility

Display

Active Display Area	304.128 (H) x 228.096 (V) mm
Aspect Ratio	16:10
Contrast Ratio	750:1
Light Intensity (Brightness)	1200 nits
Max. No. of Colors	16.7M (8-bit/color)
Panel Size	12.1 in

Panel Type	AWV
Pixel Pitch (RGB)	0.294 (H) x 0.294 (V) mm
Pixels	1280 x 800
Response Time	18 ms (TR, gray to gray) 12 ms (TD, gray to gray)
Viewing Angles	Horizontal: 85°/85° Vertical: 85°/85°

Touch Function

Touch Type	Projective Capacitive touchscreen (PCAP) GGG sensor with optical bonding
Touch Support Points	4 points (max multi-touch points) 1 point (glove-friendly design)

Serial Interface

Bitrate	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	DC models: 9 to 36 VDC AC models: 100 to 240 VAC
Power Consumption	60 W (max) 100 W (with thermal heater)

Physical Characteristics

Housing	Aluminum
IP Rating	IP66 (front) IP42 (rear; with all IOs plugged in)
Dimensions	336.69 x 255.17 x 94.05 mm (13.25 x 10.05 x 3.70 in)
Weight	6,200 g (13.67 lb)

Environmental Limits

Operating Temperature	-40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-45 to 75°C (-49 to 167°F)
Altitude	3000 m

Standards and Certifications

EMC	EN 55032/35 EN 61000-6-2/-6-4
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; 1.8, 2.6, 3.5, 5 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV (AC), 1 kV (DC); Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV (AC), 0.5 kV (DC L-L), 1 kV (DC L-G); Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Hazardous Locations	EN / IEC 60079-0 EN / IEC 60079-7 EN / IEC 60079-15 C1D2/C2D2, ATEX, and IECEx ZONE 2/Zone 22
Mechanical Protection Rating	IEC 60529, IP code
Safety	UL 62368-1 EN 62368-1 IEC 62368-1
Shock	IEC 60068-2-27 compliant (with CFexpress card, 20G)
Vibration	IEC 60068-2-27 compliant (with CFexpress card, 20G)
UV Protection	IEC60068-2-5 CIE85: 300 to 3000 nm (included UV, visible, IR); 1000 hrs (procedure C; continuously for 24 hrs)

Declaration

Green Product	RoHS, CRoHS, WEEE

Warranty

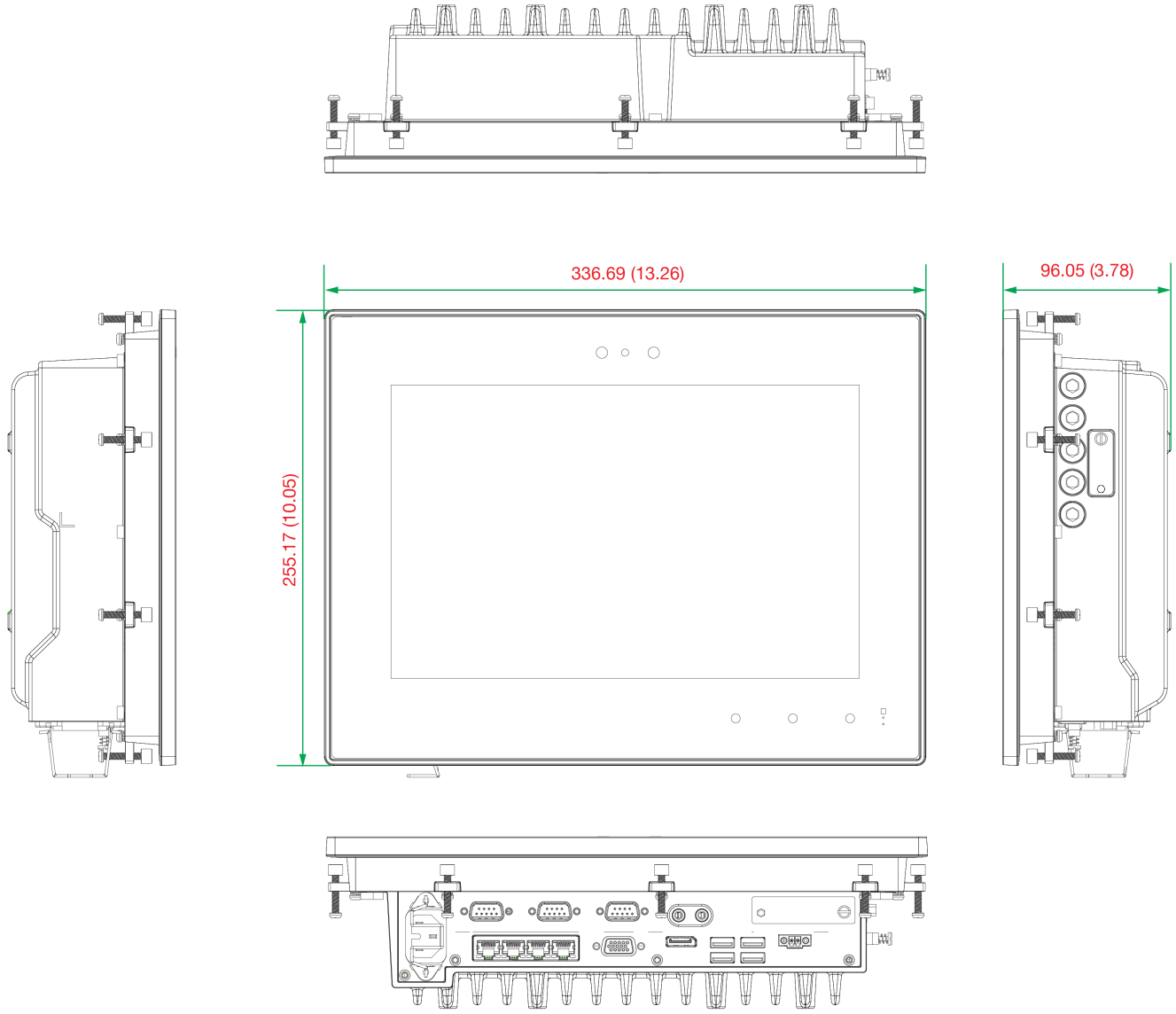
Warranty Period	LCD: 1 year System: 3 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EXPC-F2120W Series panel computer
Installation Kit	1 x panel-mounting kit DC models: 1 x 2-pin terminal block for DC power connector AC models: 1 x AC adapter cable with C14 male to C15 female connectors
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	Panel	CPU	RAM	OS Preinstalled	Touchscreen	LAN	Serial	Video Outputs	Power Input	IP Rating	Operating Temp.
EXPC-F2120W-TL1-DC	12.1" (16:10) 1,200 nits	Intel® Celeron® 6305E	16 GB (64 GB max)	–	PCAP	4	3	1 x VGA 1 x DisplayPort	9 to 36 VDC	IP66 (front), IP42 (rear)	-40 to 70° C
EXPC-F2120W-TL3-DC	12.1" (16:10) 1,200 nits	Intel® Core™ i3-1115G4E	16 GB (64 GB max)	–	PCAP	4	3	1 x VGA 1 x DisplayPort	9 to 36 VDC	IP66 (front), IP42 (rear)	-40 to 70° C
EXPC-F2120W-TL7-DC	12.1" (16:10) 1,200 nits	Intel® Core™ i7-1185G7E	16 GB (64 GB max)	–	PCAP	4	3	1 x VGA 1 x DisplayPort	9 to 36 VDC	IP66 (front), IP42 (rear)	-40 to 70° C
EXPC-F2120W-TL1-AC	12.1" (16:10) 1,200 nits	Intel® Celeron® 6305E	16 GB (64 GB max)	–	PCAP	4	3	1 x VGA 1 x DisplayPort	100 to 240 VAC	IP66 (front), IP42 (rear)	-40 to 70° C

Model Name	Panel	CPU	RAM	OS Preinstalled	Touchscreen	LAN	Serial	Video Outputs	Power Input	IP Rating	Operating Temp.
EXPC-F2120W-TL3-AC	12.1" (16:10) 1,200 nits	'Intel® Core™ i3-1115G4E	16 GB (64 GB max)	–	PCAP	4	3	1 x VGA 1 x DisplayPort	100 to 240 VAC	IP66 (front), IP42 (rear)	-40 to 70° C
EXPC-F2120W-TL7-AC	12.1" (16:10) 1,200 nits	Intel® Core™ i7-1185G7E	16 GB (64 GB max)	–	PCAP	4	3	1 x VGA 1 x DisplayPort	100 to 240 VAC	IP66 (front), IP42 (rear)	-40 to 70° C

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