BXP-A101 Series
Quick Installation Guide

Embedded Computers

Version 1.1, June 2025

Technical Support Contact Information
www.moxa.com/support

P/N: 1802001018011

Overview

The BXP-A101 Series computers are powered by an Intel Atom® quad-core or dual-core processor. The computers come with a rich set of interface options including two software-selectable RS-232/422/485 serial ports, two gigabit Ethernet ports, four digital inputs, and four digital outputs. The communication interfaces are located on the front side of the product, enabling easy access and expansion for industrial applications. A dual-storage design that includes CFast and SD slots and an internal M.2 socket enable easy storage expansion. The unique battery fastener cover design for the battery slot secures the battery in place and ensures stability in all operating environments. Wall-mount and DIN-rail mount models are available, making it easy to build data-communication systems at field sites.

Package Checklist

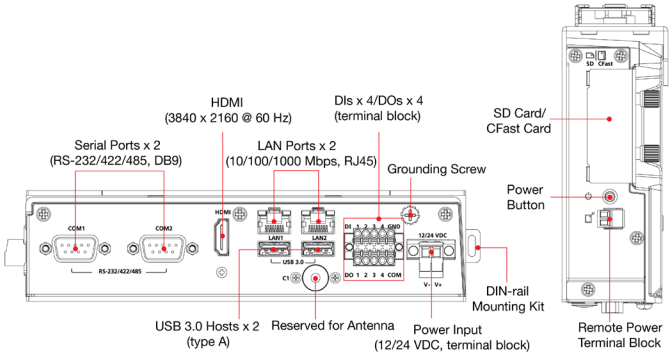
Each basic system model package is shipped with the following items:

- BXP-A101 Series embedded computer
- 2-pin terminal block for DC power
- 2-pin terminal block for remote power switch
- 10-pin terminal block for DIs/DOs
- M.2 screw (models with M.2 sockets)
- Quick installation guide (printed)
- Warranty card

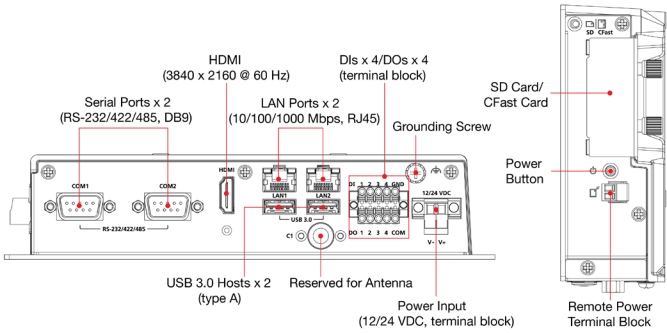
NOTE Notify your sales representative if any of the above items are missing or damaged.

Panel Layouts

DIN-rail Models



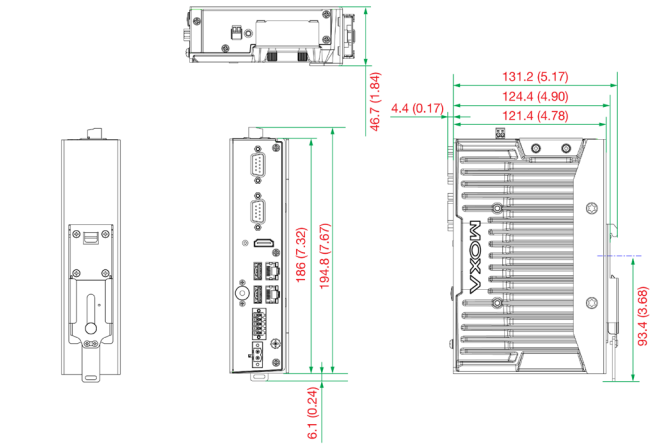
Wall-mount Models



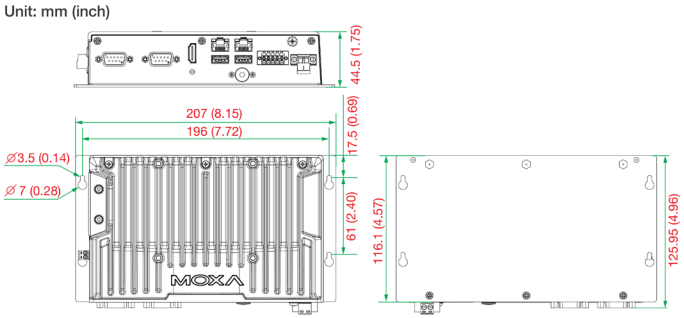
Dimensions

DIN-rail Models

Unit: mm (inch)



Wall-mount Models



LED Indicators

The LED indicators are located on the front panel of BXP-A101 computers. For details of the LED functions, see the following table:

LED Name	Status	Description
Power	Green	Power is on (S5 state)
	OFF	Power is off and the device is in S5 state
Ethernet (10/100 Mbps) (1000 Mbps)	Green	Steady on: 10/100 Mbps Ethernet link Blinking: Data is being transmitted or received
	Yellow	Steady on: 1000 Mbps Ethernet link Blinking: Data is being transmitted or received
	OFF	No Ethernet connection

Mounting the BXP Computer

DIN-rail Mounting

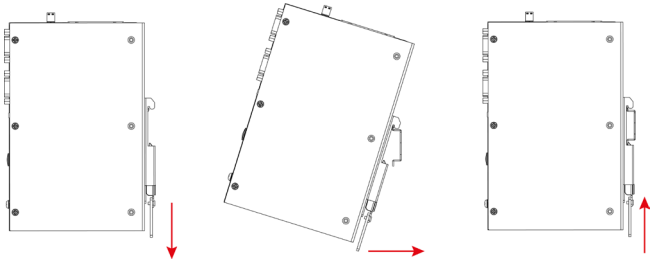
The DIN-rail model comes with a DIN-rail mounting bracket attached to the rear side by default.

To mount the computer to a DIN rail, do the following:

1. Pull down the slider of the DIN-rail mounting bracket.

2. Insert the top of the DIN rail into the gap just below the upper hook of the DIN-rail bracket.

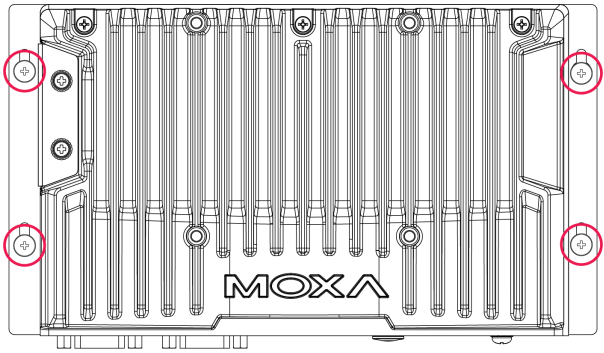
3. Push the computer towards the DIN rail so that the unit firmly latches onto the DIN rail.
Once the computer is mounted properly, you will hear a click and the slider will rebound back into place automatically.



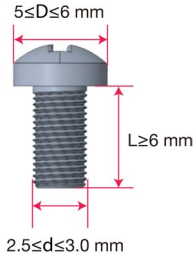
Wall Mounting

The wall-mount model comes with a wall-mounting plate attached to the rear side by default.

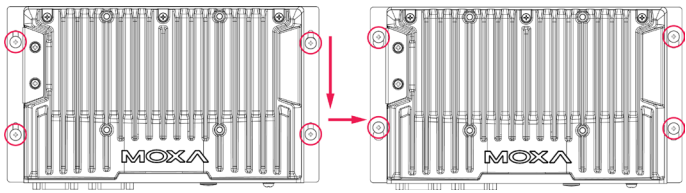
To mount a BXP computer to a wall or cabinet, use two screws on each side for the mounting plate as shown in the following illustration:



The four screws to mount the BXP computer to a wall are not included in the product package. You need to purchase them separately. Refer to the illustration for the screw dimensions here.



After fastening the screws, push the computer downwards to ensure that the device is securely fixed to the mounting surface.

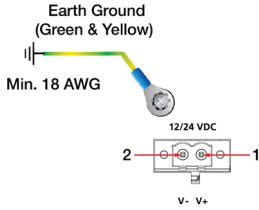


NOTE This computer is intended to be installed only in an area with restricted access. In addition, for safety reasons, the computer should be installed and handled only by qualified and experienced professionals.

Connecting the Power

The BXP-A101 computer is provided with 2-pin power input connectors in a terminal block on the front panel. Insert the power-cord wires into the connectors and tighten them to secure the wires in place. Push the power button. The power LED will light up to indicate that power is being supplied to the computer. It should take about 30 to 60 seconds for the operating system to complete the boot-up process.

Pin	Definition
1	V+
2	V-



The power input specification is as follows:

- The DC power source rating is 12 VDC @ 3.4 A or 24 VDC @ 1.7 A
- The wire used should be a minimum of 18 AWG

For surge protection, connect the grounding connector located below the power connector with the earth (ground) or a metal surface.

NOTE This computer is intended to be supplied by a UL Listed Power Unit "LPS" (or "Limited Power Source") rated 12 V @ 3.4 A min. or 24 V @ 1.7 A min., and minimum Tma = 70°C. If you need assistance with purchasing a power adapter, contact the Moxa technical support team.

NOTE If using Class I adapter, the power cord adapter should be connected to a socket outlet with an earthing connection or the power cord and adapter must comply with Class II construction.

ATTENTION

Before connecting the BXP-A101 computer to the DC power inputs, make sure the DC power source voltage is stable.

- The wiring for the input terminal block shall be installed by a skilled person.
- Wire type: Cu
- Only use 18-12 AWG wire size and a torque value of 0.5 N-m.
- Use only one conductor in a clamping point between the DC power source and the power input.

WARNING

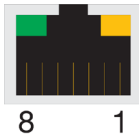
為避免電磁干擾，本產品不應安裝或使用於住宅環境。

Communications Connections

Ethernet Ports

The BXP-A101 computer has two 10/100/1000 Mbps Ethernet ports with RJ45 connectors on the front panel. Refer to the following table for the pin assignments:

Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	–	TRD(2)+
5	–	TRD(2)-
6	ERx-	TRD(1)-
7	–	TRD(3)+
8	–	TRD(3)-

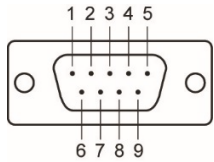


NOTE For reliable Ethernet connections, we recommend enabling the ports in standard temperatures and keeping them enabled in high/low temperature environment.

Serial Ports

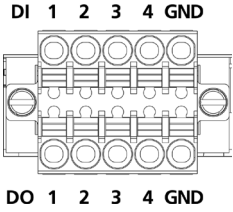
The BXP-A101 computer comes with 2 software-selectable RS-232/422/485 serial ports on the front panel. The ports use DB9 male connectors. Refer to the following table for pin assignments:

Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–



Digital Inputs/Digital Outputs

The BXP-A101 computer comes with four digital inputs and four digital outputs in a terminal block. The pin definitions and current ratings are listed in the following table:



Digital Inputs

Dry Contact:
Logic 0: Short to GND
Logic 1: Open

Wet Contact:
Logic 0: +10 V to +30 V (Source to DI)

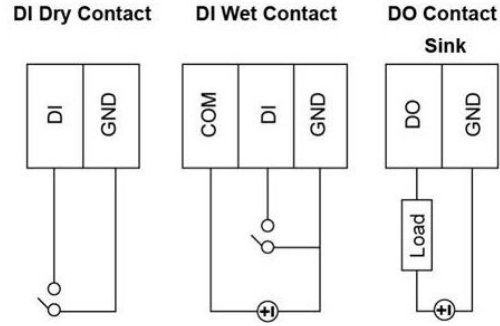
Logic 1: +3 V Max. Logic (Source to DI)

Digital Outputs

Current Rating: 200 mA per channel

Voltage:
0 to 24 VDC, Typ. 30 V Max.

The wiring method is illustrated in the following diagram:



For additional details, refer to *BXP-A101 Series Hardware User Manual*.

Connecting Displays

The BXP-A101 computer comes with an HDMI display output located on the front panel.

NOTE Use HDMI-certified cables for a reliable audio or video connection.

Connecting USB Devices

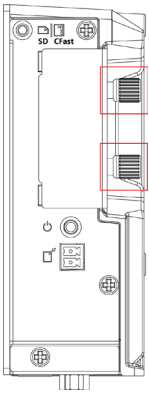
The BXP-A101 Series computer comes with 2 USB 3.0 ports on the front panel. The USB ports can be used to connect to peripherals, such as keyboard, mouse, or flash drives for expanding the system's storage capacity.

Installing an SD/CFast Card

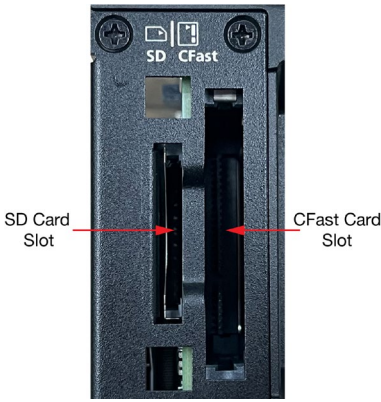
The BXP-A101 computer comes with two slots for plugging in an SD card and a CFast card.

To plug in the cards, do the following:

1. Remove the two screws that secure the slot cover.



2. Remove the cover and locate the SD and CFast card slots.



3. Insert the SD and CFast cards in the designated slots. Refer to the image printed beside the slots for the correct direction to insert the cards. When the cards are successfully inserted, you will hear a click.
4. To remove the cards, simply push them in to release them and take them out.
5. Replace the cover and fasten the two screws.

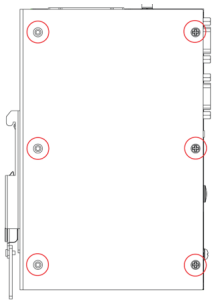
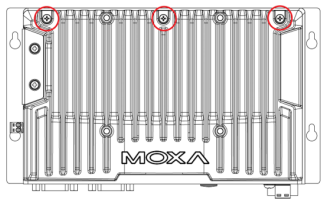
Installing the Mini PCIe Module

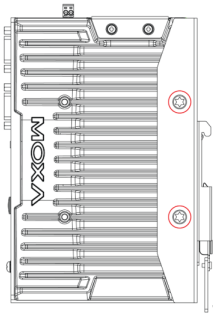
The BXP-A101 computers come with one Mini PCIe socket.

NOTE The Mini PCIe module is not included in the product package, you need to purchase separately.

To install a module in the socket, do the following:

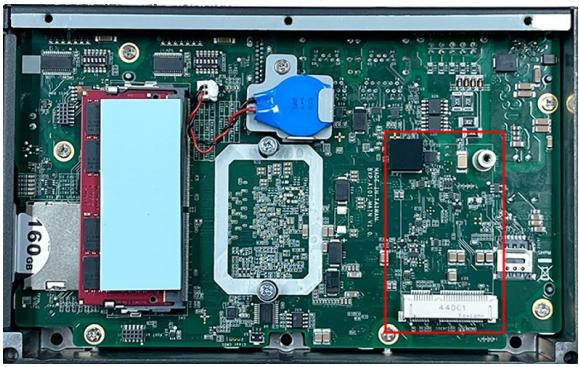
1. Remove the cover to access the Mini PCIe socket.

DIN-rail Model	Wall-mount Model
Unfasten two screws on the top cover and six screws on the side panel.	Unfasten three screws on the top panel and three screws on the rear panel.
	



A T15 torx high-torque screwdriver is recommended to remove these screws.

2. The Mini PCIe socket is at the location indicated in the following figure:



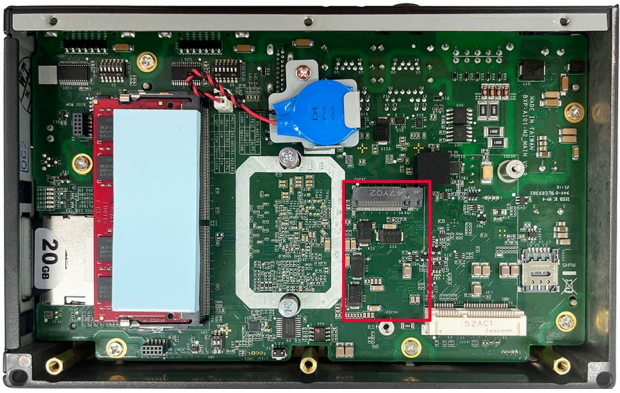
3. Install the Mini PCIe module in the socket.
4. Replace the cover and secure it by fastening the external screws.

Installing/replacing the M.2 Module

BXP-A101 has models with an M.2 socket for storage expansion and some of them come with an M.2 module installed by default.

To install or replace the M.2 module, do the following:

1. Remove the cover to access the M.2 socket.
   (The number of screws to be unfastened on the cover for the DIN-rail and wall-mount models and their position are different. Refer to the *Installing the Mini PCIe Module* section for details.)
2. The M.2 socket is at the location indicated in the following figure:



3. Install the M.2 module in the socket.
   We recommend using the heat-sink pad included with the M.2 module. For models that come pre-installed M.2 module, remove the module and install a replacement module.

4. Fasten the screw to secure the module to the socket.

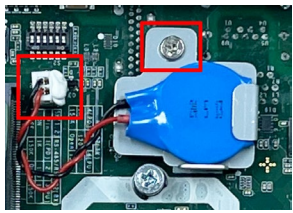
5. Replace the cover and secure it by fastening the external screws.

Replacing the RTC Battery

The BXP-A101 computer comes with one slot for a battery inside the computer. A lithium battery (3 V / 200 mAh) is preinstalled in the slot.

To replace the battery, do the following:

1. Unfasten the screw and remove the connector of the battery.
2. Replace the new battery, attach the connector and fasten the screw.



WARNING

You must purchase the battery from Moxa. Contact the Moxa Technical Support Team before replacing the battery.

To reduce the risk of fire or burns, do not disassemble, crush, or puncture the battery; do not dispose of it in fire or water and do not short external contacts. Dispose of used batteries according to the instructions on the battery.

警告

警告更換不正確之電池形式會有爆炸的風險，請依製造商說明書處理用過之電池。

BSMI

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱: 嵌入式電腦　　型號 (型式)　　: BXP-A101 系列

Equipment name　　Type designation (Type)

單元 Unit	限用物質及其化學符號 Restricted substances and their chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
外殼	○	○	○	○	○	○
印刷電路板及其電子組件	-	○	○	○	○	○
電纜/電線/連接器	-	○	○	○	○	○
機械部件-金屬	-	○	○	○	○	○
機械部件-非金屬	○	○	○	○	○	○
電池	-	○	○	○	○	○

備考 1. "超出 0.1 wt %"及 "超出 0.01 wt %"係指限用物質之百分比含量超出百分比含量基準值。

Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考 2. "○"係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2: "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考 3. " - " 係指該項限用物質為排除項目。

Note 3: The "−" indicates that the restricted substance corresponds to the exemption.

製造商資訊

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產品型號

BXP-A101 系列