ioPAC 6500 (65M) CPU, CPU Backplane Modules Quick Installation Guide

Version 2.0, September 2026

Technical Support Contact Information
www.moxa.com/support

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P/N: 1802065000102

Package Checklist

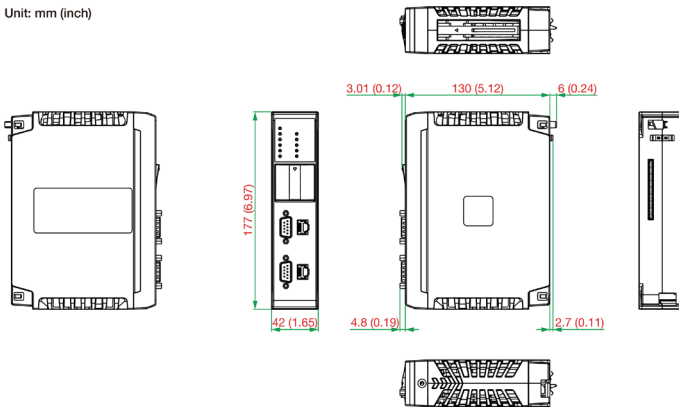
- 1 x 65M module
- 1 x Quick installation guide (printed)
- 1 x Warranty card

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

Dimensions

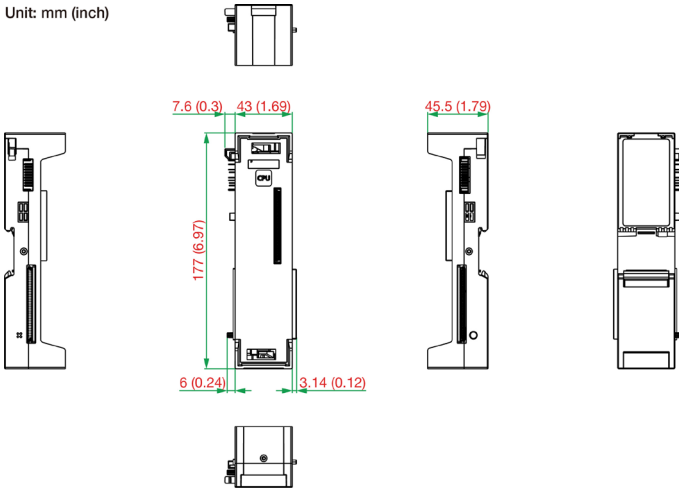
65M-CPU14-IEC-CT-T

Unit: mm (inch)



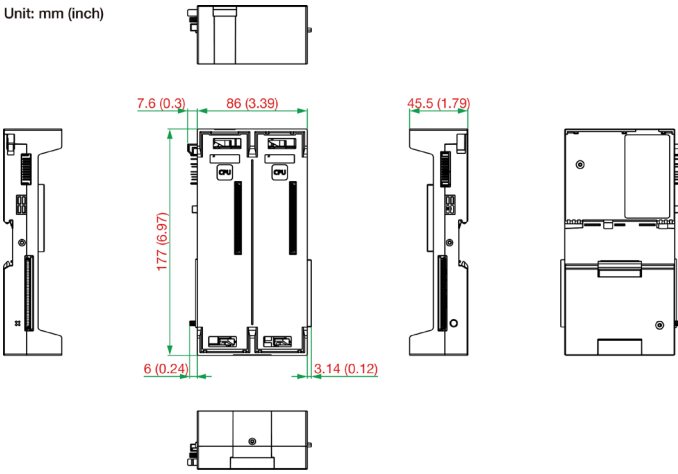
65M-BMCPU01-CT-T

Unit: mm (inch)



65M-BMCPU02-CT-T

Unit: mm (inch)



LED Descriptions

LED	Color	Status	Description
STATUS (module status)	Green	Solid	Module running normally
		Blinking (5 Hz)	Firmware upgrade in progress
		Blinking (0.5 Hz)	Module booting up
		Double blink (1.11 Hz)	Module located
	Red	Solid	Module failed to initialize
		Blinking (0.5 Hz)	Service failed to initialize
		Double blink (1.11 Hz)	Module reset in progress
ACT (active)	N/A	N/A	Reserved
PROG (program status)	Green	Solid	Program running
	Red	Solid	Program runtime failure
	Off		Program stopped
SD	Green	Blinking (0.5 Hz)	SD card read
P1/P2 (serial)	Green	Blinking (0.5 Hz)	Serial port transmitting data (Tx)
	Amber	Blinking (0.5 Hz)	Serial port receiving data (Rx)
	Off		Serial port inactive
LAN1/ LAN2	Green	Solid	Port active and linking at 1 Gbps
		Blinking	Port transmitting data at 1 Gbps
	Amber	Solid	Port active and linking at 10/100 Mbps
		Blinking	Port transmitting data at 10/100 Mbps
	Off		Port inactive or link down

Mounting Requirements

Mounting requires an earth-grounded DIN rail and sufficient clearance for heat dissipation.

CAUTION

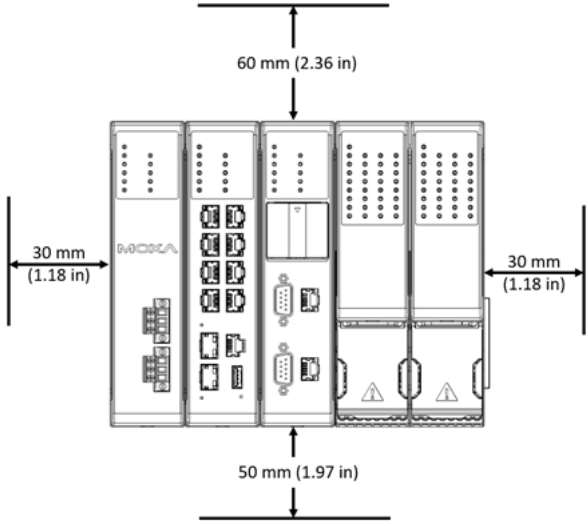
Risk of device malfunction. Install units with release latch facing up. Fanless heat dissipation requires exhaust vents on the top of each module to face up.

CAUTION

Risk of electrical hazard if ungrounded. DIN rails must be connected to earth ground.

The minimum clearance for heat dissipation is:

Direction	Clearance
Top	60 mm (2.36 in)
Sides	30 mm (1.18 in)
Bottom	50 mm (1.97 in)



Unit Installation Requirements and Limitations

Modules must be arranged in the following order from left to right:

1. Power Module(s)
2. Communication Module(s) (optional)
3. CPU Module(s) (Control units only)
4. Expansion Module (optional)
5. IO Module(s) (optional)

Determine the correct backplane and module sequence before mounting to avoid unmounting. Modules are hot-swappable. However, once mounted, module backplanes are difficult to rearrange without unmounting.

Unit/Module Limitations

Each unit may have the following:

Module Type	Maximum Backplanes	Multislot
Power	1	1-slot or 2-slot
Communication	1	1-slot or 2-slot
CPU	1	1-slot or 2-slot
Expansion	1	1-slot or 2-slot
IO	2	2-slot or 4-slot

CAUTION

Risk of device malfunction. Ensure total unit power draw does not exceed 75 W.

Assembling and Mounting Backplane Modules

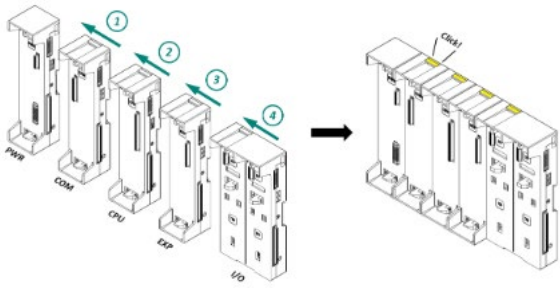
Backplanes link modules together and anchor them on the DIN rail. The backplane modules for each unit must follow a specific order. Refer to the *ioPAC 6500 Series Manual* for more information on the exact order and module compatibility.

CAUTION

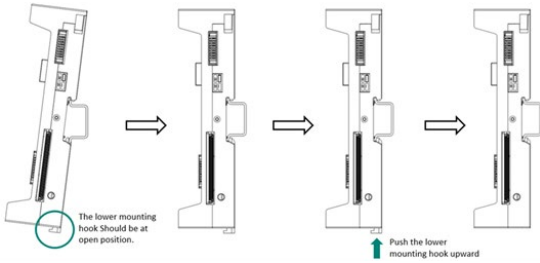
Install in a suitable tool-accessible enclosure. Devices are open-type. Open-type equipment is for indoor use. IP rating is not safety-certified.

NOTE Assembled units may be heavy. Mounting backplanes first is recommended before installing modules into slots.

1. To attach one backplane to another, align the two backplanes and gently push.



   The top clip should snap downward when connected. If the clip does not snap, gently push it down. Do not force. If it still doesn't lock, make sure the backplanes are in the correct order and flush, then try again.
2. Repeat until all necessary backplanes are connected and all top clips are flush.
3. On the back of the assembled backplanes, make sure that the lower mounting hooks of all backplane modules are extended.
4. Hang the upper mounting hook of the assembled backplanes on the upper lip of the DIN rail.
5. Allow the bottom mounting hook of the assembled backplanes to rest flush against the DIN rail.
6. Secure the backplanes by pushing the lower mounting hook clasps up.
   The backplane modules are now secure.



Installing Modules Into Slots

CAUTION

Do not force. Valid module combinations should snap easily into place. Consult the *ioPAC 6500 Series Manual* for valid combinations.

1. Hold the module with both hands, and insert it horizontally into the corresponding slot on the backplane assembly.



Repeat until all modules are installed.

NOTE The tab on the top of the module should be flush with the top of the module. Some modules have special installation instructions. See the *ioPAC 6500 Series Manual* and the corresponding QIG for details.

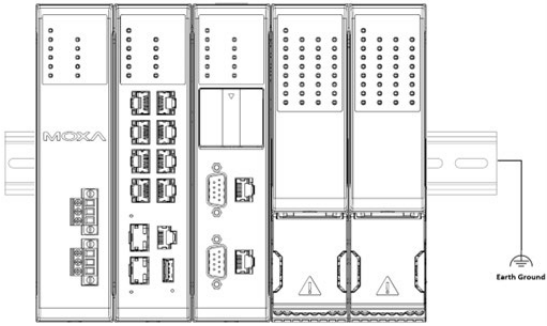
Module Power

Backplane modules distribute power to each module in the unit. Modules are powered automatically once power is supplied to the unit. After the power supply is turned on, boot-up takes approximately 90 seconds. Consult the *ioPAC 6500 Series Manual* and *ioPAC 6500 (65M) Power and Power Backplane Modules Quick Installation Guide* for more information.

Module Grounding

Modules must be grounded through the following mechanisms:

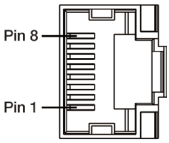
- Each backplane module has a grounding spring that directly connects to the grounded DIN rail. DIN rails must be connected to earth ground.



- Each backplane module connects to the other backplane modules, with their own grounds.

Ethernet Ports

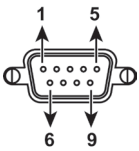
The ioPAC 6500 Series (65M) CPU module comes with two 10/100/1000 Ethernet ports. The maximum cable length is 100 m (350 feet), but the actual limit for your application could be longer or shorter depending on the amount of electrical noise in the environment. To minimize the amount of noise, Ethernet cables should not run parallel to power cables or other types of cables that generate electrical noise. The following diagram and table show the pin assignments for the RJ45 connectors on the Ethernet ports:



Pin	Media Direct Interface Signal
1	TRD(0)+
2	TRD(0)-
3	TRD(1)+
4	TRD(2)+
5	TRD(1)-
6	TRD(2)-
7	TRD(3)+
8	TRD(3)-

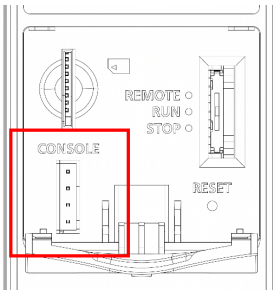
Serial Ports

The module is equipped with two 3-in-1 serial ports that support RS-232/422/485, making it more convenient to connect field serial devices.



Pin	RS-232	RS-422	RS-485 2-wire
1	DCD	TxD-(A)	–
2	RXD	TxD+(B)	–
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	–	–
7	RTS	–	–
8	CTS	–	–
9	RI	–	–

Loging in by Console Port

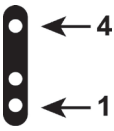


The module offers a serial console port, allowing you to reboot and reset it to the default.

1. Open the cover on the CPU module and find the console port inside.
2. Connect the 4-pin serial console cable to the console port.

The following diagram shows the 4-pin serial connector pin assignments.

Pin Assignment for the Serial Console Port

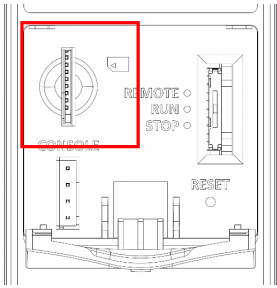


Pin	Definition
1	TxD
2	RxD
3	NC
4	GND

Serial Console Default Settings

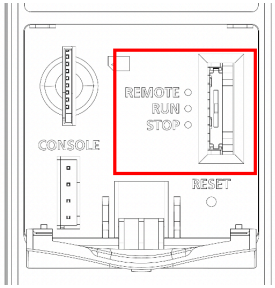
Parameter	Value
Baudrate	115200 bps
Parity	None
Data bits	8
Stop bits	1
Flow Control	None

microSD Slot



This function is currently reserved. The physical slot is located inside the main cover.

Mode Switch

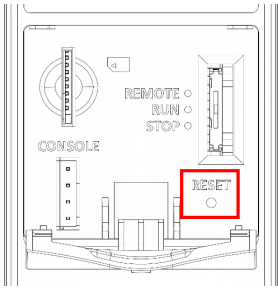


Located under the CPU Module cover, the switch supports the following modes:

- **Remote:** The device is allowed to download programs and change device settings remotely. Requires authorized user.
- **Run:** The device is actively running the program. It rejects any attempt to interrupt the device running, either locally or over the network. Device storage is set to read only.
- **Stop:** The device will not execute the program in any condition. Authorized users are allowed to download programs and change device settings.

Consult the *ioPAC 6500 Series Manual* for additional information.

Performing a Factory Reset



A factory reset clears all data and settings from the system except for log files.

To reset the device to factory settings:

1. Open the CPU module front cover.
2. Press and hold the reset button for 15 seconds
   The STATUS LED blinks double red.
3. When the STATUS LED blinks double red, release the reset button.
   The device will begin resetting to factory default settings.

Connecting to the Web Interface

The Web Console is already embedded in the ioPAC 6500 system. Use the web console to check the device status, configure network settings, or update the firmware of the device. Follow the steps below to connect to the web interface.

1. Connect the system to your PC through an Ethernet cable.
2. Power on the unit.
3. Open a web browser (Chrome is recommended) on your PC and type the default IP address shown on the model label of the unit.
   Default IP LAN1: 192.168.126.1 to 2
   Default IP LAN2: 192.168.127.1 to 2
   The last octet is 1 or 2, depending on which slot is plugged. (Only applicable when 2-slot CPU backplane module is used)
4. Log in to the web interface.
   Default Account Name: moxa
   Default Password: moxa

NOTE Be sure to configure PC's IP address to the same subnet. For security reasons, select Logout when no longer accessing this device. DO NOT leave the web interface unattended.

Specifications

Controller	
CPU	Arm Cortex-A53 quad-core 1.6 GHz
DDR SDRAM	4 GB
Storage (eMMC)	8 GB (4 GB reserved for users)
NVRAM	512 kB MRAM for data logger
OS	Moxa Industrial Linux
Automation Language	IEC 61131-3
Interfaces	
Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 2
Serial Ports	RS-232/422/485 ports x 2, software selectable (DB9)
Console Port	3-pin console connector
microSD Slot	Reserved
Mode Switch States	Remote, Run, Stop
Button	Reset
Power Parameters	
Input Current	0.8 A @ 12VDC
Physical Characteristics	
Weight	65M-CPU14-IEC-CT-T: 625 g (1.38 lb) 65M-BMCPU01-CT-T: 170 g (0.37 lb) 65M-BMCPU02-CT-T: 325 g (0.72 lb)
DIN-rail Mounting	Default
Wall Mounting	Supported (with optional kit)
Environmental Limits	
Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature	Package included: -40 to 85°C (-40 to 185°F)
Relative Humidity	5 to 95% (non-condensing)
IP Protection	IP20
Operating Altitude	Up to 2000 meters
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 IEC 61000-4-4 EFT: DC Power: 1 kV; Signal: 1 kV IEC 61000-4-5 Surge: DC Power: 0.5 kV L-N, 1 kV L/N-PE Signal: 1 kV; IO: 0.5 kV IEC 61000-4-6 CS: DC Power: 10 Vrms; Signal: 10 Vrms IEC 61000-4-8 PFMF: 30 A/m
Safety	UL 61010-1, UL 61010-2-201
Shock	IEC 60068-2-27 Half Sine Wave: Acceleration: 15 g Duration Time: 11 ms
Vibration	IEC 60068-2-6 DIN-rail Mounted: 7 mm peak-peak (p-p) (2 to 8.42 Hz), 1 g (8.42 to 150 Hz) Rack Mounted (with optional kit): 7 mm peak-peak (p-p) (2 to 8.42 Hz), 0.5 g (8.42 to 150 Hz)
Package Vibration / Drop Test	ISTA-1A
Warranty	
Warranty period	5 years
Details	See www.moxa.com/tw/warranty



CAUTION

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference
- This device must accept any received, including interference that may cause undesired operation.

Hazardous Location Specifications

Trade Mark	MOXA®	
Model/ Rating	Model	Rating
	65M-CPU14-IEC-CT-T	System power: 12 VDC, 0.8 A
ATEX information	CE Ex II 3G Ex ec IIC T4 Gc UL 26 ATEX 3542X Ambient Range for "-T" models: -40 °C ≤ Tamb ≤ +75 °C Ambient Range for non "-T" models: -10 °C ≤ Tamb ≤ +60 °C	
IECEx Cert. No.	IECEx UL 26.0030X	

CAUTION

These devices are suitable for use in Class I, Division 2, Groups A, B, C, and D, or for use in non-hazardous locations only.

Specific Conditions of Use

- The equipment shall be installed in an enclosure that provides a minimum ingress protection of IP 54 in accordance with EN IEC/IEC 60079-0.
- The equipment shall only be used in an area of at least pollution degree 2, as defined in EN IEC/IEC 60664-1.