

Installation Instructions

Original Instructions



ASEM 6300B Box PCs and 6300T Thin Clients

Catalog Numbers 6300B-BMA, 6300B-BMB, 6300B-BMF, 6300B-BMN, 6300B-DRA, 6300B-DRF, 6300B-DRN, 6300T-BA, 6300T-BB



The following catalog numbers are ASEM™ 6300B Edge Box PCs intended for use with FactoryTalk® Edge™ Manager:

- 6300B-BMBDNE-3DBAE01FNNBNN-NN1S
- 6300B-BMBDNE-7EDAE01FNNBNN-NN1S
- 6300B-BMBDNE-3DBAE01NNNBNN-NN1S
- 6300B-BMBDNE-7EDAE01NNNBNN-NN1S

These catalog numbers have a unique Edge Virtualization Engine operating system (EVE-OS) orchestrated from FactoryTalk Edge Manager.

If you have sent the product to be returned or repaired, the device software and data has been erased and the EVE-OS has been reinstalled.

For more information on FactoryTalk Edge Manager, see publication [95055-UM007-EN-P](#) and publication [95055-OS003-EN-P](#).

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Added information regarding ASEM 6300B Edge Box PCs intended for use with FactoryTalk Edge Manager	1

Environment and Enclosure Information



ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6561 ft) without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/EN 61326-1. Without appropriate precautions, there can be potential difficulties with electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is considered open equipment, which means it must be mounted in an enclosure where the equipment can be operated from the front panel.

The enclosure in which this equipment is installed must be accessed only with a key or tool, and only by trained and authorized personnel.

In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for more installation requirements.
- UL 50, CSA C22.2 No. 94.1, and IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.

UL/cUL Mark Compliance

Equipment with the UL/cUL mark complies with the requirements of UL 61010-1, UL 61010-2-201, CSA C22.2 No. 61010-1, and CSA C22.2 No. 61010-2-201.

A copy of the certificate of compliance is available at [rok.auto/certifications](#).

European Union Directive Compliance

This equipment meets the European Union Directive requirements when installed within the European Union or EEA regions and have the CE marking.

A copy of the declaration of the conformity is available at [rok.auto/certifications](#).



ATTENTION: This equipment is intended to operate in an industrial or control room environment, which uses some form of power isolation from the public low-voltage mains. Some computer configurations cannot comply with the EN 61000-3-2 Harmonic Emissions standard as specified by the EMC Directive of the European Union.

All I/O cables must be used only indoors.

Required Tools and Hardware

You need the following tools to install and connect your box PC or thin client.

- Drill and 4 mm drill bit
- #2 Phillips screwdriver
- M4x20 stainless steel screws (quantity of 4)
- Adjustable torque screwdriver with bits
- DIN rail (for DIN rail installation only)
- Adjustable torque screwdriver with bits
- Wire stripper/crimper/cutter tool
- Various I/O shielded cables
- DC power supply
- Safety glasses

Installation Guidelines

Follow these guidelines to make sure that your 6300B box PC or 6300T thin client provides service with excellent reliability.

- Your installation site:
 - must have sufficient power,
 - must be indoors and non-hazardous,
 - must not expose your box PC or thin client to direct sunlight, and
 - must be placed in an industrial or control room environment, which uses some form of power isolation from the public, low voltage mains.
- The surrounding air temperature must not exceed the maximum temperature for your box PC or thin client, especially when mounted in an enclosure. The surrounding air temperature ranges are:
 - 0...55 °C (32...131 °F) with the Intel Atom® x5 processor
 - 0...50 °C (32...122 °F) with the Intel Atom x7 processor and Intel® Core™ i3, Core i5, and Core i7 processors
- Your box PC or thin client can be stored in a surrounding air temperature range of -10...+60 °C (14...140 °F).
- Operating and storage: 20%...90% relative humidity (RH) noncondensing

Mounting Requirements

Follow these requirements to mount your 6300B box PC or 6300T thin client.

- Choose a suitable, ergonomic mounting height.
- Only mount your box PC or thin client in a vertical (upright) position, where the ground screw is at the bottom.
- Mount your box PC or thin client so there is at least 20 mm (0.79 in.) of clearance on each side for the circulation necessary for cooling.

DC Power Supply Guidelines

Follow these guidelines to select the DC power supply for your box PC or thin client.

- Your box PC or thin client must be powered with a voltage of 24V DC (18...32V DC).
- The DC supply should be able to provide momentary current of at least 10 A for up to 400 µs for box PC and thin client inrush current.
- The nominal output power must be 25% larger than the drained power.
- The output voltage rise time has to be less than 100 ms.
- Consider the working temperature and thermal derating of the power supply.

Approximate Dimensions

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Figure 1 - 6300B-BMA, 6300T-BAB, 6300B-DRA, and 6300T-BAD [mm (in.)]

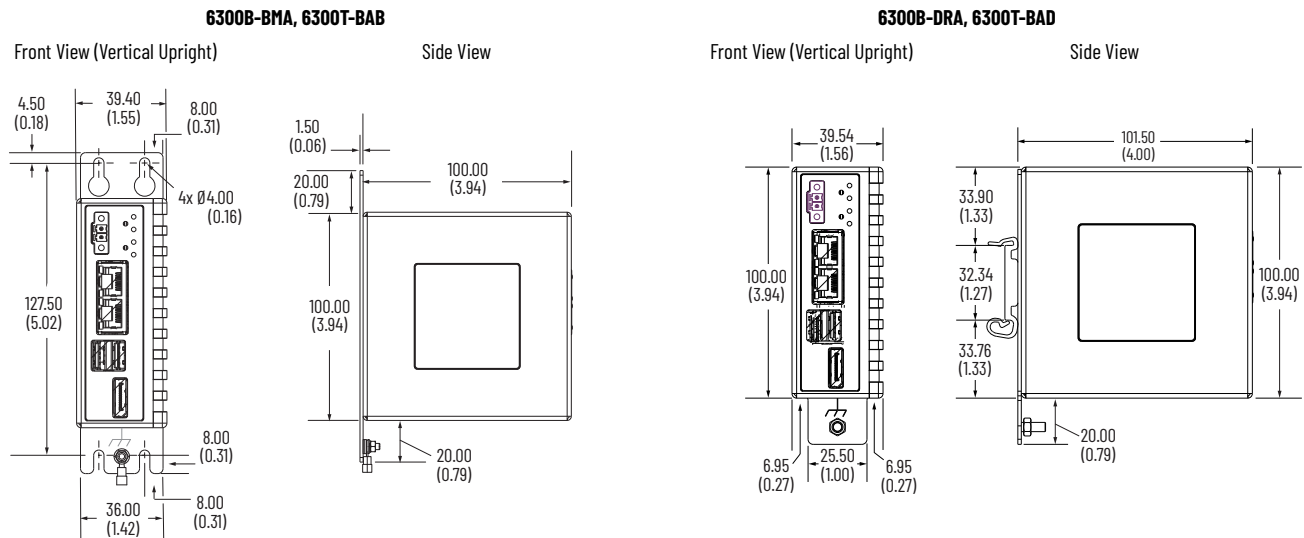


Figure 2 - 6300B-BMBE...J Box PC [mm (in.)]

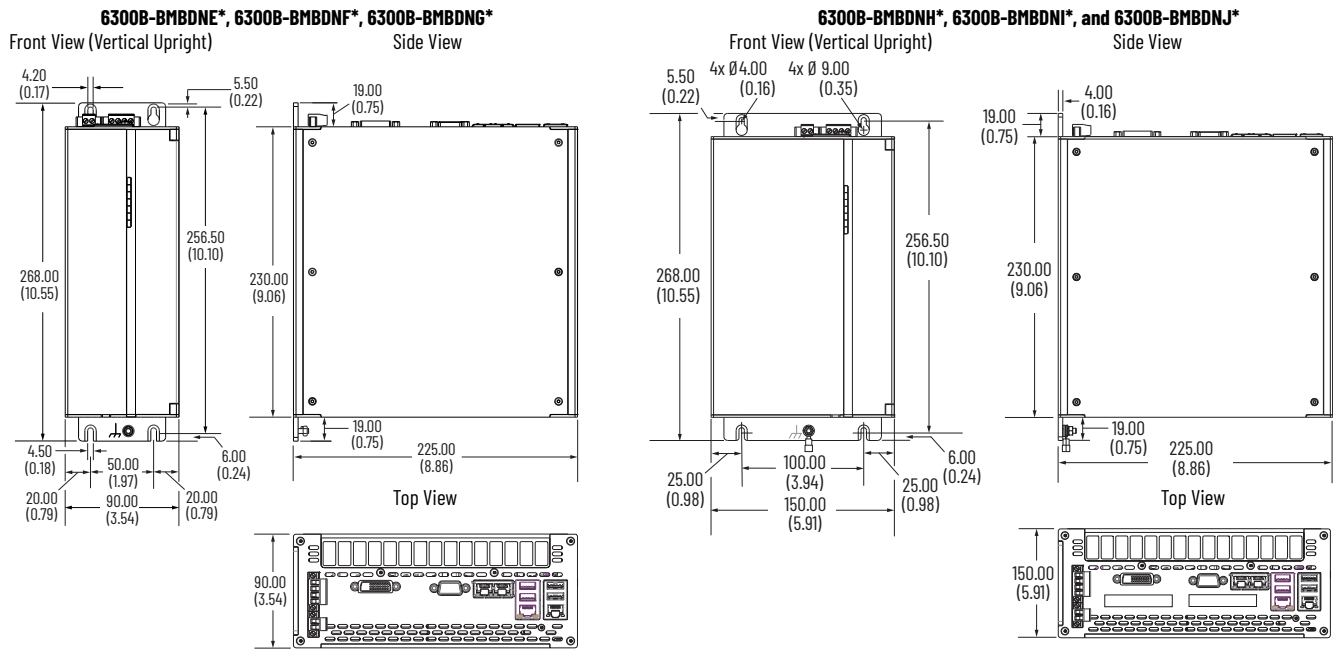


Figure 3 - 6300B-BMF, 6300B-BMN, and 6300T-BBB [mm (in.)]

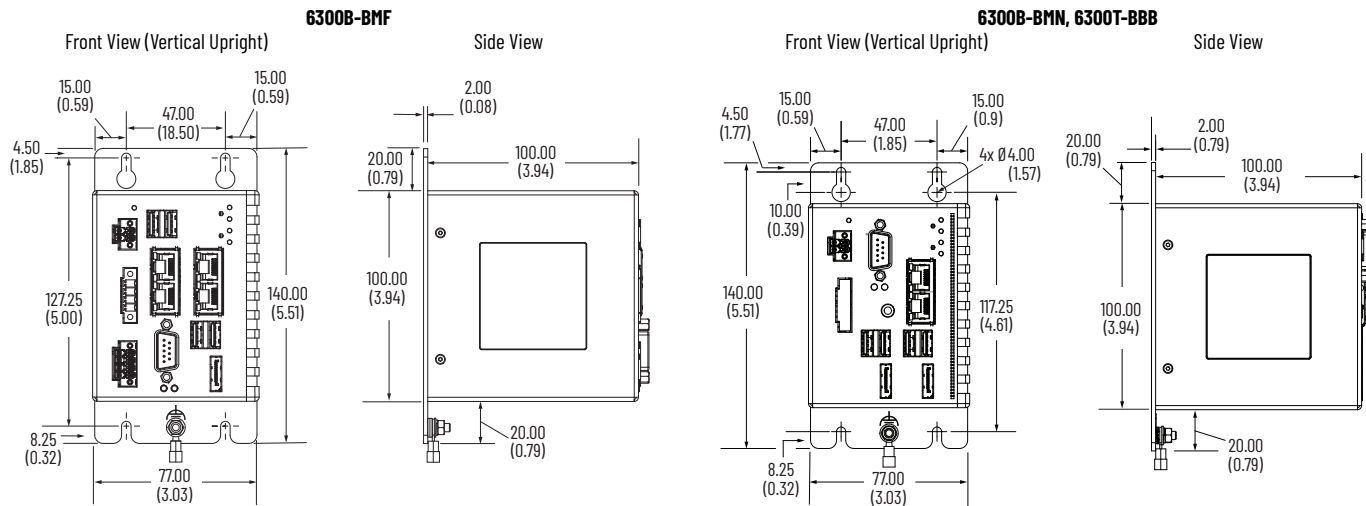
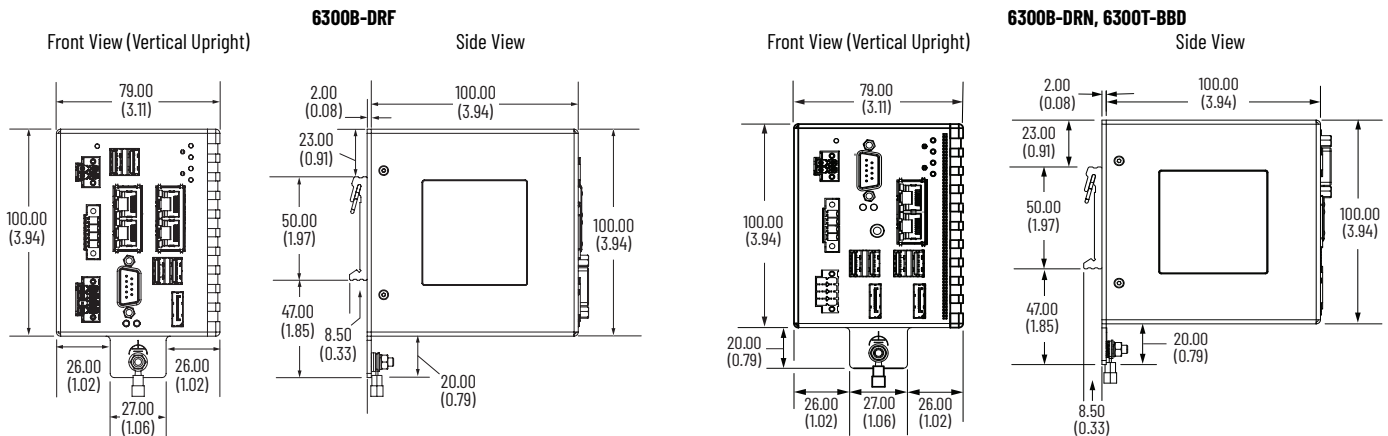


Figure 4 - 6300B-DRF, 6300B-DRN, and 6300T-BBD [mm (in.)]

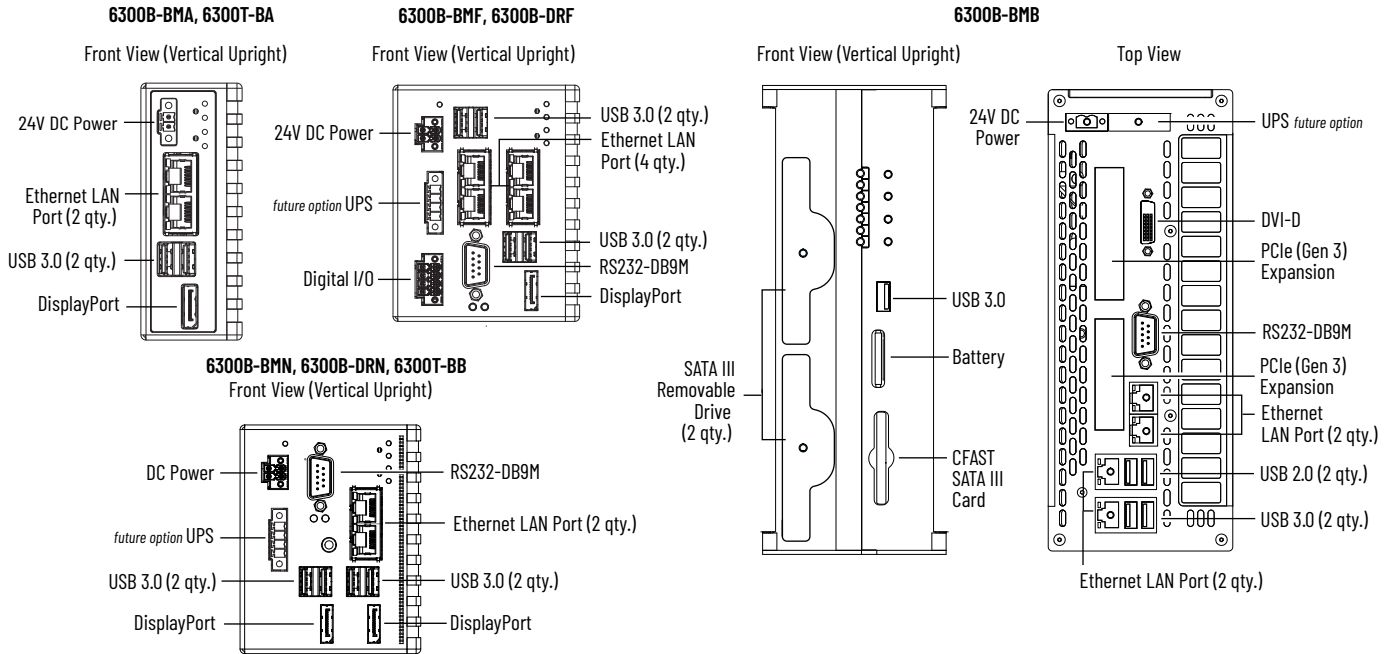


I/O Port and Peripheral Connections



The I/O port and slot locations of your shipped product may vary from the drawings that are shown in [Figure 5](#).

Figure 5 - I/O Port and Peripheral Slot Locations



Mount your Box PC or Thin Client



Select models feature optional PCIe slots, removable drive slots, an internal USB port, and/or CFAST slot. Before mounting, add peripherals to your box PC or thin client. See [Figure 5](#) for peripheral locations and the User Manual for your respective model (see [Additional Resources on page 8](#)) to properly add peripherals.

Use Supplied Brackets

To mount your 6300B box PC or 6300T thin client with supplied brackets:

1. Locate and drill holes for four M4x20 stainless steel screws against your mounting surface. See [Approximate Dimensions on page 2](#).
2. Partially tighten the four M4x20 stainless steel screws (not supplied) into your mounting surface. Leave enough space to hang the brackets.
3. Align the keyhole slots on the top bracket with the top two screws.
4. Align the slots on the bottom bracket with the bottom two screws.
5. Slide your box PC or thin client downward until all four screws are at the top of each bracket slot.
6. Tighten the four screws flush against your mounting surface.

Use a DIN Rail Bracket – 6300B-DRF

IMPORTANT A DIN Rail is not supplied with the book mount bracket. An installed DIN Rail is the responsibility of the customer.

1. Plan your DIN rail installation according to the 6300B-DRF box PC approximate dimensions shown in [Figure 4 on page 3](#).
2. Install your box PC onto the installed DIN Rail according to the DIN rail installation instructions, publication [6300V-IN002](#).

Connect DC Power Wiring

Follow these steps to connect your box PC or thin client to a DC power source.



ATTENTION: Your box PC or thin client must have its own supply disconnect. On models with an available UPS connection, use a UPS to help protect against unexpected power failure or power surges.

Install the Ground Wire

1. Turn off the main power switch or breaker.
2. Remove the supplied nut, eyelet terminal, and washers from the ground screw.
3. For earth ground, fasten a 2.5 mm² (14 AWG) or larger external wire to the eyelet terminal.
4. Use a ground wire with an insulation color approved by local inspection authority.
5. Install the ground wire to the ground screw in the sequence shown at the right.
6. Tighten the nut to the ground screw.
7. Proceed to [Attach the Power Connector Assembly](#).



Sequence No.	Description
1	Toothed washer
2	Eyelet terminal
3	Washer

Sequence No.	Description
4	Lock washer
5	Nut

Attach the Power Connector Assembly

The factory-supplied connector assembly provides strain relief for the DC power wires by reducing their movement.

For 6300B-BMA, 6300B-BMB, 6300B-DRA, and 6300T-BA

See [Figure 6](#) and [Table 1](#) when performing the following steps to successfully install the DC power connector assembly steps.

IMPORTANT The DC terminal block that is shown is for illustrative purposes only. Your DC terminal block can differ in size, shape, and color.

Figure 6 - DC Power Connector Assembly Steps

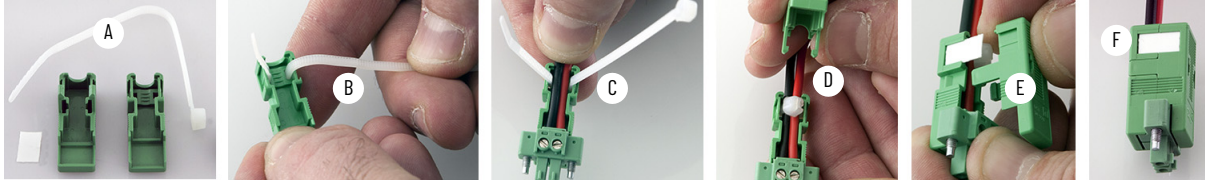
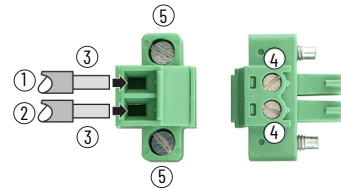
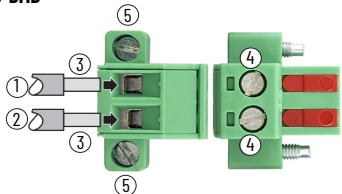


Table 1 - DC Power Connection Assembly: 6300B-BMA, 6300T-BA, 6300B-BMB

6300B-BMA, 6300B-DRA, 6300T-BA



6300B-BMB



Note No.	Description	6300B-BMA, 6300T-BA	6300B-BMB
1	DC+ (24V DC nominal) recommended power wire size	1.5 mm ² (16 AWG)	2.5 mm ² (14 AWG)
2	DC- (0V DC) recommended power wire size		
3	Stripped wire length	7 mm (0.275)	7 mm (0.275)
4	Torque range to secure DC power wires	0.22...0.25 N•m (0.16...0.18 lb•ft)	0.5...0.6 N•m (0.37...0.4 lb•ft)
5	Torque value to reinstall DC terminal block to the chassis.	0.3 N•m (0.22 lb•ft)	0.3 N•m (0.22 lb•ft)

To assemble and attach the DC power connector assembly:

1. Remove the DC terminal block from the chassis of your box PC.
2. Open the power connector assembly kit that ships with your box PC or thin client (A of [Figure 6](#)).
3. Insert the cable tie through the slots of the appropriate connector half (B of [Figure 6](#)).
4. Strip the end of each DC power wire to the length specified in [Table 1](#).

IMPORTANT DC power wires must be of stranded copper and certified for at least 85 °C (185 °F) operation.

5. Insert each stripped end into the DC terminal block as shown in the figure at right.
6. Tighten the screws on top of the terminal block to secure the DC power wires to the torque value in [Table 1 on page 5](#).
7. Slide the connector half with the attached tie onto the end of the DC terminal block (C of [Figure 6](#)).
8. Tighten the cable tie so it is snug against the terminal wires.
9. Use cutting pliers to cut the excess part of the cable tie (D of [Figure 6](#)).
10. Install the white label supplied with the kit (E of [Figure 6](#)).

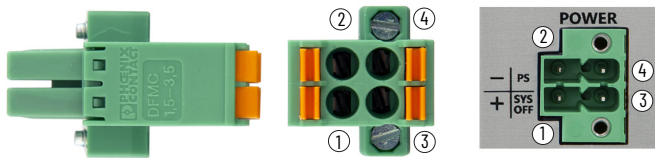


Use the white label for identification or other information.

11. Align and install the other connector clamp half to complete the assembly (F of [Figure 6](#)).
When it is installed correctly, both tabs of the clamp half lock into place.
12. Reconnect the DC terminal block with the connector assembly to the chassis of your box PC or thin client.
13. Torque the DC terminal block flange screws to the values in [Table 1 on page 5](#).
14. Proceed to [Connect the I/O Cables and DC Power on page 6](#).

For 6300B-BMF, 6300B-BMN, 6300B-DRF, 6300B-DRN, and 6300T-BB

Table 2 - DC Power Connection Assembly



Note No.	Abbreviation	Function
1	+	+ Input voltage (fused)
2	-	- Input voltage
3	SYS OFF	System OFF input
4	PS	Power status output (0.5 A limited)

To assemble and attach the DC power connector assembly, perform the following steps.

1. Remove the DC terminal block from the chassis of your box PC.
2. Strip 10 mm (0.4 in.) from the end of four different-colored wires.

IMPORTANT Use stranded copper wire sized 1.5 mm² (16 AWG) and certified for at least 85 °C (185 °F) operation.

3. Press the spring connection tabs on the DC terminal block, and insert each stripped end of wire according to [Table 2](#).
4. Release the spring connection tabs after the stripped end of each wire has been fully inserted in the appropriate terminal connection.
5. Reconnect the DC terminal block to the chassis of your box PC or thin client.
6. Torque the DC terminal block flange screws to 0.3 N•m (0.22 lb•ft).
7. Proceed to [Connect the I/O Cables and DC Power](#).

Connect the I/O Cables and DC Power

IMPORTANT To comply with EN 61326-1, the following cable types must be shielded: Digital I/O, DisplayPort, DVI-D, LAN, RS-232 DB9M, USB 2.0, and USB 3.0. All I/O cables must be used only indoors, and USB cables must be less than 3 m (9.84 ft) in length. Whenever two connected pieces of equipment are far apart, it is possible that their ground connections could be at another potential level. To overcome these possible grounding problems, the following bonding methods are recommended:

Method 1: Connect the data cable shields to the equipotential bonding rail on both sides before connecting the cable to the interfaces.

Method 2: Use an equipotential bonding cable (16 mm² or #6 AWG) to connect the grounds between the 6300B Box PC/6300T Thin Client and a connected monitor.

- IMPORTANT**
- All DC powered models require a safety extra low voltage (SELV) power supply. The internal power supply is protected against reverse polarity.
 - To minimize ground loop currents and noise, we recommend that DC powered models use only one grounded connection. See [Install the Ground Wire on page 5](#) for the ground connection on these models.
 - Follow all guidelines as stated in [DC Power Supply Guidelines on page 2](#).

1. Connect shielded I/O cables to your 6300B box PC or 6300T thin client. See [Figure 5 on page 4](#) for I/O port locations of your particular model.
2. Connect the DC power to your 6300B box PC or 6300T thin client.
Light-emitting diode (LED) status indicators illuminate on your 6300B box PC or 6300T thin client. For a description of these LED status indicators, see [LED Status Indicators and Buttons on page 7](#).

LED Status Indicators and Buttons



ATTENTION: When you connect power to your box PC or thin client for the first time, these actions occur:

- The default UEFI setting automatically starts your box PC or thin client after it is plugged into a power source.
- For 6300B box PCs with a Microsoft Windows® operating system (OS), you must read and accept an End-User Setup procedure.

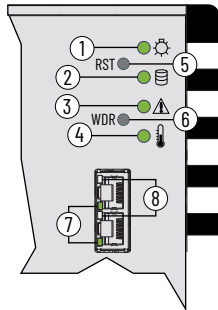
Do not disconnect power from the system until after the Microsoft Windows Setup procedure is completed.

If power is disconnected during this procedure, it can result in a corrupted system image.

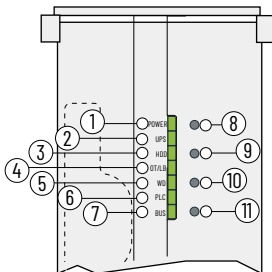
Table 3 - Description of LED Status Indicators and Buttons

Cat. No.	Note No.	Description	Color	Status/Function
6300B (-BMA, -BMF, -BMN, -DMN, -DRF, -DRN) Box PCs and 6300T Thin Clients	1	Standby / Power On	No color	The box PC or thin client is powered off.
			Green	The box PC or thin client is powered on.
			Yellow	The box PC or thin client is safe to power off; the OS has been shut down successfully.
			Flashing Green	The box PC or thin client is in a low-power state; the current session information is being stored in RAM.
	2	Mass Storage	Yellow	When lit, access to a mass storage device (SSD or CF) is happening through a SATA channel.
	3		—	Not implemented.
	4	Thermal Alarm/ Low Battery	Red	A thermal sensor on the motherboard near the CPU has exceeded the thermal limit of 85 °C (185 °F).
			Flashing Red	The clock battery power is below 2.5V; consider replacing. IMPORTANT: At 2V, data and time loss is possible.
	5	Power / System Reset	—	For the main reset of the system. Press this button once to restart and reset the system state.
	6	WDR	—	Not implemented.
	7	Datalink	No color	No Datalink is present.
			Green	Datalink is established.
			Flashing Green	Datalink is established and there is data transfer.
	8	Data Speed	No color	10 Mbps
			Green	100 Mbps
			Yellow	1000 Mbps (1 Gbps)
6300B-BMB Box PCs	1	Power On	No Color	The box PC or thin client is powered off.
			Green	The box PC or thin client is powered on.
			Yellow	The box PC or thin client is safe to power off; the OS has been shut down successfully.
	2	UPS (optional)	No Color	No UPS battery pack is installed.
			Green	The box PC or thin client is powered by an external 24V DC source.
			Yellow	The UPS battery pack is disconnected.
			Flashing Green	The external 24V DC source is lost, and the box PC or thin client is powered by the UPS.
	3	Mass Storage	Yellow	When lit, access to a mass storage device (SSD or CFast) is happening through a SATA channel.
	4	Thermal Alarm / Low Battery	Red	A thermal sensor on the motherboard near the CPU has exceeded the thermal limit of 85 °C (185 °F).
			Flashing Red	The real-time clock (RTC) battery is lower than 2.5V. Replace before the battery goes lower and risks loss of date and time.
	5	Watchdog	Green	The watchdog is working.
			Red	The watchdog timer has expired.
	6	PLC	—	Not applicable.
	7	BUS		
	8	Power On Button	—	Turns the box PC on or off.
	9	System Reset	—	Forces an internal reset, as if power was lost temporarily and then returned. IMPORTANT: Use system reset only if there are no better options, like keyboard or mouse commands. System reset can cause data loss and corruption to the OS.
	10	Watchdog Reset	—	Turns off the watchdog LED (Item 5).
	11	PLC Run / Stop / Reset	—	Not implemented.
	12	Datalink	No Color	No Datalink is present.
			Green	Datalink is established.
			Flashing Green	Datalink is established and there is data transfer.
	13	Data Speed	No Color	10 Mbps
			Green	100 Mbps
			Yellow	1000 Mbps (1 Gbps)

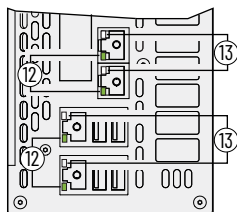
Front View
(Vertical Upright)



Front View
(Vertical Upright)



Top View



Additional Resources

This publication provides basic installation instructions. For more information, see the following Rockwell Automation publications at <https://rok.auto/literature>.

Resource	Description
6300B Book Mount Box PCs and 6300T Book Mount Thin Clients User Manual, publication 6300B-UM001 .	Provides details on how to install, configure, operate, and troubleshoot the 6300B book mount box PCs and 6300T book mount thin clients (Cat. Nos. 6300B-BMA, 6300B-BMB, and 6300T-BAX1).
6300B Wall Mount Box PCs User Manual, publication 6300B-UM002 .	Provides details on how to install, configure, operate, and troubleshoot the 6300B wall mount PCs (Cat. Nos. 6300B-PBCx and 6300B-PBDx).
6300B Machine Mount Box PC, publication 6300B-UM003 .	Provides details on how to install, configure, operate, and troubleshoot the 6300B machine mount box PCs (Cat. No. 6300B-MM).
6300 Industrial Computer and Monitor Specifications Technical Data, publication 6300-TD001 .	Provides technical specifications for 6300 industrial computers and monitors.
Wall-mount and DIN Rail Brackets for 6300B Box PCs and 6300T Thin Clients, publication 6300V-IN002 .	Provides installation instructions to secure 6300V-BWALLA wall-mount brackets or 6300V-BDINA DIN rail bracket to a 6300B box PC or 6300T thin client.
FactoryTalk Edge Manager User Manual, publication 95055-UM007-EN-P .	Provides instructions on operating the FactoryTalk Edge Manager, applicable to applicable to these catalog numbers with EVE-OS installed: 6300B-BMBDNE-3DBAE01FNNBNN-NN1S 6300B-BMBDNE-7EDAE01FNNDDNN-NN1S 6300B-BMBDNE-3DBAE01NNNBNN-NN1S 6300B-BMBDNE-7EDAE01NNNDNN-NN1S
FactoryTalk Edge Manager Quick Start Guide, publication 95055-QS003-EN-P .	Provides quick start instructions for FactoryTalk Edge Manager, applicable to these catalog numbers with EVE-OS installed: 6300B-BMBDNE-3DBAE01FNNBNN-NN1S 6300B-BMBDNE-7EDAE01FNNDDNN-NN1S 6300B-BMBDNE-3DBAE01NNNBNN-NN1S 6300B-BMBDNE-7EDAE01NNNDNN-NN1S
Industrial Automation Wiring and Grounding Guidelines, publication I770-4.1	Provides general guidelines to install a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications .	Provides declarations of conformity, certificates, and other certification details.

Waste Electrical and Electronic Equipment (WEEE)



At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

Your comments help us serve your documentation needs better. If you have any suggestions on how to improve our content, complete the form at rok.auto/docfeedback.
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Publication 6300B-IN001F-EN-P - February 2023 | Supersedes Publication 6300B-IN001E-EN-P - November 2022

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PN-592308

Vendor Code 80460002.05
DIR 10005614692 (Version 05)