



6300B Wall Mount PCs

Catalog Numbers 6300B-PBC, 6300B-SW0 and 6300B-PBD,
6300B-TW0



Allen-Bradley

by **ROCKWELL AUTOMATION**

User Manual

Original Instructions

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT Identifies information that is critical for successful application and understanding of the product.

These labels may also be on or inside the equipment to provide specific precautions.



SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.



BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.



Identifies information that is useful and can help to make a process easier to do or easier to understand.

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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
Removed "VersaView" branded term	Throughout
Renamed Chapter 1 to "Overview"	7
Renamed Chapter 4 to "System Settings"	23
Added new chapter, Chapter 5, Change Settings in BIOS Firmware	25
Added Chapter 6, Maintenance and Service, to include the contents of Chapter 5, Clean the Wall Mount PC and Chapter 7, Replace Components	29
Added 6300B-SWO and 6300B-TWO catalog numbers	Throughout

About This Publication

This manual is a user guide for your 6300B wall mount box PC.

A general knowledge of automation technology is needed to understand and follow the instructions in this publication.

Knowledge of personal computers and Microsoft Windows® operating systems (OS) is required to understand and follow the instructions in this publication.

Download Firmware

Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes from the Product Compatibility and Download Center at rok.auto/pcdc.

Catalog Numbers

This publication is applicable to these 6300B wall mount box PCs. For your catalog number, see the product label on the side of your computer.

6300B wall mount box PC with one expansion slot	6300B-PBC, 6300B-SWO
6300B wall mount box PC with up to three expansion slots	6300B-PBD, 6300B-TWO

Notes:

Overview

6300B-PBC, 6300B-SWO
Front View



6300B-PBD, 6300B-TWO
Front View



The 6300B wall mount box PCs with Intel Core i3 and i7 processors are available in designs with or without fans. Fan-cooled units perform well in challenging environments with elevated temperatures. All wall mount PCs can be paired with FactoryTalk® View SE software to provide the optimal human machine interface (HMI) experience within the Rockwell Automation® Connected Enterprise.

Features

The following features are available for your wall mount box PC.

Table 1 - Wall Mount Box PC Features

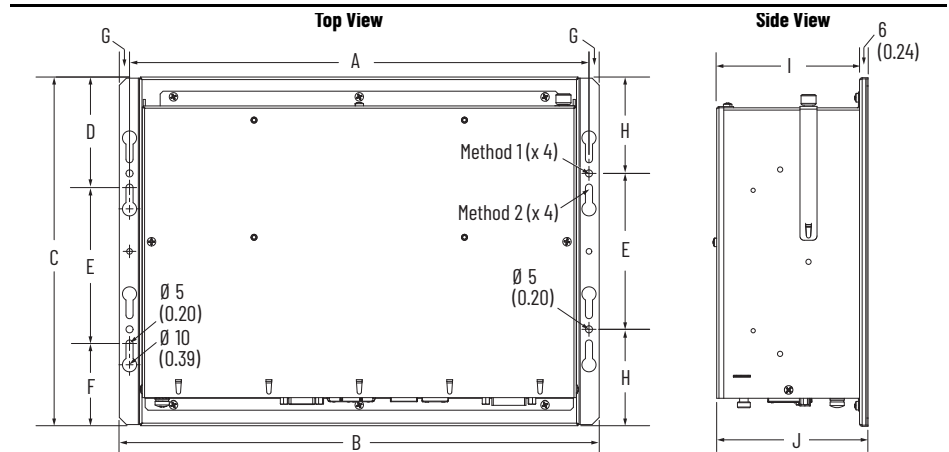
Features	Cat. No. 6300B-PBC, 6300B-SWO	Cat. No. 6300B-PBD, 6300B-TWO
Operating System (OS)	Microsoft Windows 10 IoT Enterprise 2019 LTSC OS	
Storage	up to 1 TB 2.5-in. SSD SATA III (mSATA interface) ⁽¹⁾	up to 1 TB 2.5-in. SSD SATA III (M.2 2280 interface)
Peripheral Connections	<ul style="list-style-type: none"> • 4 x Ethernet (RJ45), 3 x USB 3.0 (Type A) • 2 x USB 2.0 (Type A), 1 x RS-232 (DB9M) • 1 x DVI-D (full HD) ports 	<ul style="list-style-type: none"> • 4 x Ethernet (RJ45) • 4 x USB 3.0 (Type A) • 1 x RS-232 (DB9M) • 1 x DVI-D (full HD) ports
Expansion Slots	One PCIe x4 expansion slot	Up to three PCIe expansion slots (1 x PCIe x16 + 1 x PCIe x4 + 1 x PCIe x1)
Fan Design	Fanless design for 24V DC SELV input power	Fan cooled design for 100/230V AC input power

(1) Two wall mount box PCs, Cat. Nos. 6300B-PBCDNB-7BNBNNNNNNNNN-NN1S, 6300B-PBDAFK-7BNENNNNNNNNN-NN1S, 6300B-SWOABBCANNNNNNNNN, 6300B-TWOBCBDANNNNNNNNN, are available with no storage drive and no Windows operating system.

Approximate Dimensions

The following figure shows the dimensions of your 6300B wall mount box PC.

Table 2 - Approximate Dimensions [mm (in.)]



Dimension	Cat. No. 6300B-PBC, 6300B-SW0	Cat. No. 6300B-PBD, 6300B-TW0
A	324 (12.75)	362 (14.25)
B	338.4 (13.32)	377 (14.84)
C	246 (9.69)	232 (9.13)
D	78 (3.07)	51 (2.00)
E	110 (4.33)	150 (5.90)
F	58 (2.28)	31 (1.22)
G	7.2 (0.28)	7.5 (0.30)
H	68 (2.68)	41 (1.61)
I	69.8 (2.75)	122 (4.80)
J	75.8 (2.98)	128 (5.04)

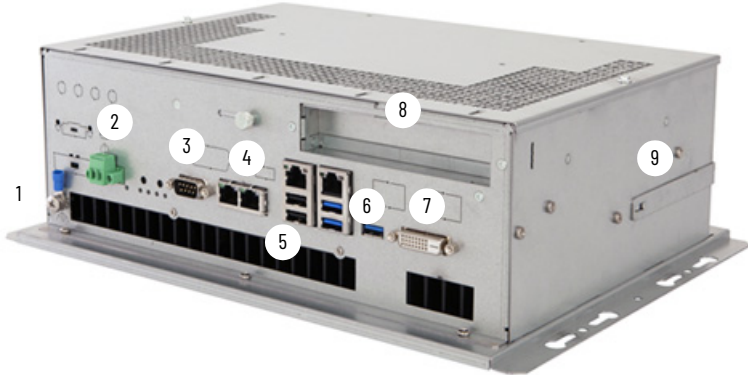
Peripheral Connections

[Table 3](#) and [Table 4](#) show the I/O ports and slots for peripheral connections to your 6300B wall mount box PC.



The I/O ports shown are possible configurations and may vary from the configuration of your actual product.

Table 3 - I/O Ports and Slots: Cat. No. 6300B-PBC, 6300B-SWO



Note No.	Description
1	Ground screw
2	DC input power connection
3	Serial port, RS-232 (DB9M)
4	4 x Ethernet LAN port, RJ45
5	2 x USB 2.0 port, Type A

Note No.	Description
6	3 x USB 3.0 port, Type A
7	DVI-D port, full HD
8	PCIe x4 expansion slot
9	CFAST card slot

Table 4 - I/O Ports and Slots: Cat. No. 6300B-PBD, 6300B-TWO



Note No.	Description
1	Ground screw
2	AC input power connection
3	DVI-D port, full HD
4	4 x Ethernet LAN port, RJ45
5	4 x USB 3.0 port, Type A

Note No.	Description
6	Serial port, RS-232 (DB9M)
7	CFAST card slot
8	2 x SSD drive slot (optional)
9	3 x PCIe expansion slot

Notes:

Installation

Follow these guidelines and procedures to help you plan, mount, and power your 6300B wall mount box PC.

Unpack the Computer

Before you unpack your 6300B wall mount box PC, inspect the shipping carton for damage. If damage is visible, immediately contact the shipper and request assistance. Otherwise, proceed with unpacking.

Keep the original packing material in case you must return or transport your 6300B wall mount box PC to another location.

Your 6300B wall mount box PC ships with the following items.

Item	Description
Hardware	<ul style="list-style-type: none"> 6300B-PBC and 6300B-SWO models: DC power connector assembly kit 6300B-PBD and 6300B-TWO models: A grounded, 3-prong IEC60320-C13 power cord
Document	6300B Wall Mount Box PC Installation Instructions, publication 6300B-IN002

Prepare for Installation

Read and follow these precautions before you install your 6300B wall mount box PC.

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 computer 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. Obtain permission from the local power authority before you connect any computer configuration that draws more than 75 W of AC power directly from the public mains.
All I/O cables must be used only indoors.

Connect peripheral cables to the appropriate I/O ports on the computer. To comply with EN 61326-1, see [Peripheral Connections on page 9](#) for the required cable types.

Installation Requirements

Follow these requirements to make sure that your computer provides service with excellent reliability.

Site Requirements

When choosing the installation site, consider the following:

- The site must have sufficient power.
- The site must be an industrial or control room environment which uses some form of power isolation from the public, low-voltage mains.
- The site must be indoors.
- The site must not expose your 6300B wall mount box PC to direct sunlight.
- The surrounding air temperature range 6300B wall mount box PC can operate in is:
 - 0...50 °C (32...122 °F) for 6300B-PBC and 6300B-SWO wall mount box PCs with the Intel Core i3 processor
 - 0...45 °C (32...113 °F) for 6300B-PBC and 6300B-SWO wall mount box PCs with the Intel Core i7 processor
 - 0...50 °C (32...122 °F) for 6300B-PBD and 6300B-TWO wall mount box PCs with the Intel Core i3 and Intel Core i7 processors
- The surrounding air temperature must not exceed the maximum temperature for your 6300B wall mount box PC, especially when mounted in an enclosure.
- The 6300B wall mount box PC can be stored in a surrounding air temperature range of -10...+60 °C (14...140 °F).
- The humidity of the ambient air must not exceed 80% noncondensing.

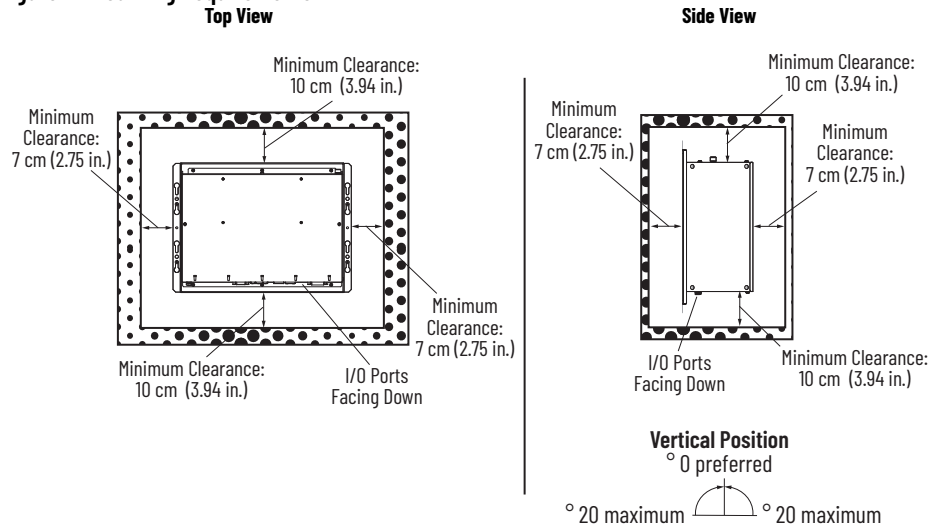
Mounting Requirements

Follow these requirements to mount your 6300B wall mount box PC.

- Choose a suitable mounting height.
- To help prevent overheating and to provide access to the I/O ports for cable connections, mount with the I/O ports facing down.
- You must provide a minimum clearance around the perimeter of your 6300B wall mount box PC (see [Approximate Dimensions on page 8](#)). This clearance accommodates for air circulation necessary for cooling.

IMPORTANT The vertical position can be tilted up to 20° forward or backward from the upright position. However, any tilt angle reduces the maximum operating temperature by 5 °C (41 °F).

Figure 1 - Mounting Requirements

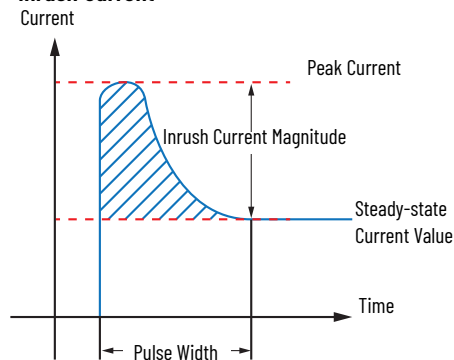


DC Power Supply Guidelines: Cat. No. 6300B-PBC and 6300B-SWO Only

Follow these guidelines to select a DC power supply for your 6300B-PCB and 6300B-SWO.

- Your wall mount box PC must be powered with a voltage of 24V DC (18...32V DC SELV input voltage range).
- 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 the thermal derating of the power supply.
- The inrush current can be represented by the figure at right, where the peak current is 10 A and the pulse width time is 400 μ s.

Figure 2 - Inrush Current



Power Consumption

The following table shows the power consumption in watts of various components in your 6300B wall mount box PC.



WARNING: Do not exceed 120 W for the total system configuration. Power consumption greater than 120 W can overpower the external and internal power supplies, which can lead to component damage or, in extreme cases, electrical fires.

Table 5 - Power Consumption (W)

Component	Description	Power (W)	Component	Description	Power (W)
Motherboard	—	10.5	USB ports	2.0 Type A, each port	2.5
Processor	Intel Core i3-7100E	45.8		3.0 Type A, each port	4.5
	Intel Core i7-7820EQ	58.8	Memory card	CFast SATA	1.3
SSD	mSATA2	2.0	Ethernet	10/100/1000 Mbps	1.3
	2.5-in. SATA MLC	5.2	RAM	4 GB	3.9
Serial port	RS-232 DB9M	1.3		8 GB	4.6
Expansion slot	PCI half-size or PCIe x4	6.5 ⁽¹⁾		16 GB	5.9
				32 GB	8

(1) 5W is the maximum that the card can use.

Required Tools

The following tools and hardware are needed for wall mount installations.

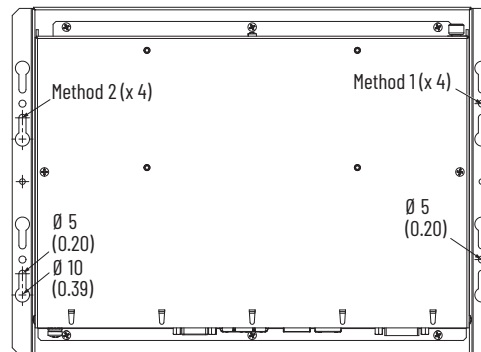
Table 6 - Required Tools

For Mounting	For Connecting Power	For Maintenance
<ul style="list-style-type: none"> • Drill and drill bit • Level • Ruler • Pencil • Small screwdriver • Cutting pliers • #2 Phillips screwdriver • Stainless steel screws — 4 quantity • Safety glasses 	<ul style="list-style-type: none"> • Multi-purpose electricians tool (wire stripper, cutter, and crimper) • DC Power Supply (for Cat. No. 6300B-PBC, 6300B-SWO only) 	<ul style="list-style-type: none"> • 2.5 mm Phillips screwdriver • Lithium CR2032 3v RTC battery

Mount

Follow the instructions below to mount your 6300B wall mount PC to a mounting surface.

1. Determine the placement of your 6300B wall mount box PC.
See [Approximate Dimensions on page 8](#) and [Mounting Requirements on page 12](#) to assist you.
2. Level, measure, then mark the top of the selected holes (method 1) or keyhole slots (method 2) of the attached brackets.



3. Set your 6300B wall mount box PC aside.
4. Drill holes in your mounting surface to accommodate for the four M4x20 stainless steel screws (not supplied).
5. Partially tighten the four M4x20 stainless steel screws into the mounting surface, leaving a gap equivalent to the bracket thickness.
6. Lift and align the top set of mounting holes of the brackets on your 6300B wall mount box PC with the top two screws.

7. Align the bottom two screws.
8. Slide your 6300B wall mount box PC downward until all four M4x20 stainless steel screws are at the top of each bracket slot.
9. Fully tighten the four M4x20 stainless steel screws against the mounting surface.

Grounding and Bonding

Whenever two connected pieces of equipment are far apart, it is possible that their ground connections could be at different potential levels.

To overcome 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 you connect the cable to the interfaces.

Method 2: Use an equipotential bonding cable (16 mm² or 6 AWG) to connect the grounds between this 6300B wall mount box PC and a connected monitor.

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 that is approved by local inspection authority.
5. Install the ground wire to the ground screw in the following sequence.



Sequence No.	Description
1	Toothed washer
2	Eyelet terminal
3	Washer
4	Lock washer
5	Nut

6. Tighten the nut to the ground screw.

Connect Power



ATTENTION: When you connect power to the computer for the first time, these actions occur:

- The default UEFI setting automatically starts the computer after it is plugged into a power source.
- For 6300B wall mount 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 Windows Setup procedure is completed. If power is disconnected during this procedure, it can result in a corrupted system image.



ATTENTION: For 6300B wall mount box PCs with Windows OS:

- Supply the computer with its own disconnect. Use an uninterruptible power source (UPS) to help protect against unexpected power failure or power surges.
- Always shut down the Windows OS before you disconnect power to the computer to minimize performance degradation and operating system failures.

Connect DC Power (6300B-PBC/SW0)

All DC powered models require a safety extra low voltage (SELV)^(a) power supply per UL. The power supply is internally protected against reverse polarity.

To minimize ground loop currents and noise, Allen-Bradley® recommends that DC powered models use only one grounded connection. For the ground connection on these model, see [Table 3 on page 9](#).

Follow these steps to connect the computer to a DC power source.

Install the Factory-supplied DC Power Connector Assembly

Figure 3 - DC Power Connector Assembly Kit

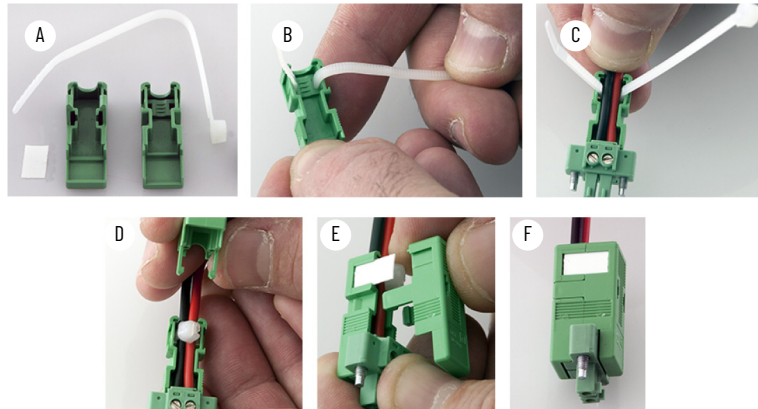
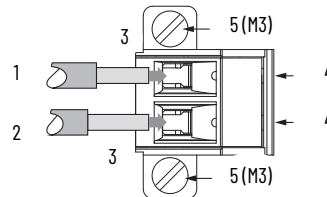


Table 7 - DC Power Connector Assembly



Note No.	Description	6300P-PBC/SW0
1	DC+ (24V DC nominal) recommended power wire size	2.5 mm ² (14 AWG)
2	DC- (0V DC) recommended power wire size	
3	Stripped wire length	7 mm (0.275)
4	Torque range to secure DC power wires	0.5...0.6 N•m (0.37...0.4 ft•lb)
5	Torque value to reinstall DC terminal block to computer	0.3 N•m (0.22 ft•lb)

The DC power connector assembly kit provides strain relief for the DC power wires by reducing their movement. To assemble and attach the connector assembly, refer to [Figure 3](#) and [Table 7](#) to perform the following steps.

1. Remove the DC terminal block from the computer chassis. For the terminal block location, see [Table 3 on page 9](#).
2. Open the power connector assembly kit that ships with the computer (A of [Figure 3](#)).
3. Insert the cable tie through the slots of the appropriate connector half (B of [Figure 3](#)).
4. Strip the end of each DC power wire to the length in [Table 7](#).

IMPORTANT DC power wires must be of stranded copper and sized according to [Table 7](#).

(a) Where SELV is as defined in IEC 61010-2-201.

5. Insert each stripped end into the DC terminal block as shown in [Table 7 on page 16](#).
6. Tighten the screws on top of the terminal block to secure the DC power wires to the torque value in [Table 7 on page 16](#).
7. Slide the connector half with the attached tie onto the end of the DC terminal block (C of [Figure 3 on page 16](#)).

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

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 3 on page 16](#)).
10. Install the white label supplied with the kit (E of [Figure 3 on page 16](#)).



The white label can be used for identification or other information.

11. Align and install the other connector clamp half to complete the assembly (F of [Figure 3 on page 16](#)).



When installed correctly, both clamp tabs snap into place.

12. Reconnect the DC terminal block with the connector assembly to the computer chassis.
13. Torque the DC terminal block flange screws to the values in [Table 7 on page 16](#).
14. Turn on the main power switch or breaker.
The power on self test (POST) initiates.

Connect AC Power (6300B-PBD/TWO)

Operate the computer in an industrial or control room environment, which uses some form of power isolation from the public, low voltage mains.

To connect AC power, perform the following steps.

1. Connect the appropriate end of the power cord to the AC power input port.
2. Connect the other end of the power cord to an AC power source with an input voltage of 110...230V AC, 50/60 Hz.
3. Flip the power switch for the power input port.
The power on self test (POST) initiates.



AC Power Input Port

Notes:

Operate



An external display, keyboard, and mouse are required to perform the steps within this chapter.

Operating Guidelines

Follow these operating guidelines for your 6300B wall mount box PC.

- When mounted in an enclosure, keep the enclosure door closed during operation so dust and other airborne contamination do not infiltrate your 6300B wall mount box PC. Open the enclosure door only for routine maintenance.
- For Microsoft Windows® operating systems (OS): always use the proper power down procedures as required, such as the Shut Down command in the Windows OS.
- Do not apply power again until shutdown is complete.

Manual Start

Follow these steps to manually start your 6300B wall mount box PC.

IMPORTANT

The following steps apply when power has already been connected. See [Connect Power on page 15](#) for instructions on applying power for the first time.

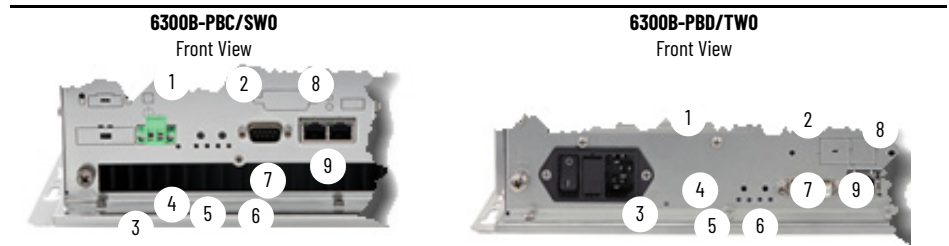
1. Make sure that all necessary peripheral devices are connected to the corresponding I/O ports.
2. Make sure any connected components with separate power supplies (such as an external display) are powered on first.
3. Apply power to your 6300B wall mount box PC depending upon your model:
 - For AC powered models: Flip the power switch located on the bottom of the chassis.
 - DC powered models: Apply power to the main power switch or breaker.

Once power is applied, various light-emitting diode (LED) status indicators illuminate to display the state of your 6300B wall mount box PC. See [Table 8 on page 20](#) for details of these LED status indicators.

Reset Buttons and LED Status Indicators

Your 6300B wall mount box PC features reset buttons and LED status indicators located on the front of the chassis. [Table 8](#) details the function of each.

Table 8 - Reset Buttons and LED Status Indicators



Note No.	Description	Color	Function
Reset Buttons			
1	System Reset	—	Forces an internal reset, as if power was lost temporarily then returned. IMPORTANT: A system reset can cause data loss and possible corruption to the OS. Use this button only if there are no better options (like keyboard or mouse commands) or if the resumed DC power does not restart the computer.
2	Watchdog Reset	—	Turns off the watchdog LED (item 3).
LED Status Indicators			
3	Power Supply	No color	The computer is not powered.
		Green	The computer is on and powered by the main power supply.
		Flashing Green	The computer is on and powered by a UPS.
		Yellow	If a UPS is connected, verify that the UPS connection is secure or that the UPS battery is not faulty.
4	Thermal Alarm / Battery Fault	Red	The computer has exceeded its operating temperature. For more information, see Thermal Alarms on page 35 .
		Flashing red	The real-time clock (RTC) battery is lower than 2.5V. Replace the RTC battery before it goes lower and risks loss of date and time.
5	Watchdog	Red	The watchdog timer has expired.
6	Mass Storage	Yellow	When lit, access to a mass storage device (SSD or CFast) is occurring through a SATA channel.
7	On/Off/ Standby/UPS	No color	Your 6300B wall mount box PC is powered off or the CPU is not initiating.
		Green	<ul style="list-style-type: none"> Your 6300B wall mount box PC is powered on. The system is in a low-power state, and current session information is being stored in the RAM.
		Yellow	Your 6300B wall mount box PC is safe to power off; the OS has been shut down successfully.
		Flashing green	Your 6300B wall mount box PC is powered on, but a UPS is powering the system while main power is not present.
8	Data Speed	No color	10 Mbps
		Green	100 Mbps
		Yellow	1000 Mbps (1 Gbps)
9	Data Link	No color	No data link is present.
		Green	Data link is established.
		Flashing green	Data link is established and there is data transfer.

Restart (preferred method)

IMPORTANT A system restart is always the preferred method over a system reset, as a system reset can cause data loss and possible corruption to the Microsoft Windows OS.

1. Choose one of the following two methods to restart:
 - Method 1: From the Start menu, select 'Power', then select 'Restart' **or**
 - Method 2: Press Ctrl+Alt+Delete, then select 'Restart'.

Once the restart initiates, your 6300B machine mount box PC will:

- a. clear the RAM,
- b. start the POST,
- c. initialize peripheral devices, then
- d. load the Microsoft Windows OS.

System Reset

IMPORTANT Performing a system reset can cause data loss and possible corruption to the Microsoft Windows OS. Only perform a system reset of your 6300B machine mount box PC if:

- (a.) there is no other means to restart (such as an unresponsive keyboard and mouse command) or
- (b.) power has been temporarily interrupted and remains unresponsive when power returns.

1. Press the system reset button ([Table 8 on page 20](#), Note No. 1) of your 6300B machine mount box PC.
2. Monitor the following activities on your external display after the reset:
 - a. RAM clears,
 - b. POST initiates,
 - c. peripheral devices (such as printers or drives) initialize, and
 - d. the operating system loads.

Shut Down

1. Choose one of the following two methods to shut down your 6300B wall mount box PC:
 - Method 1: From the Start menu, select or choose Shut Down **or**
 - Method 2: Press Ctrl+Alt+Delete, and then select or choose Shut Down.

Notes:

System Settings



An external display, keyboard, and mouse are required to perform the steps in this chapter. A keyboard with numeric keypad is preferred to easily navigate within the setup utility.

Use the Setup Utility

About the Setup Utility

Your 6300B wall mount box PC features a setup utility. This setup utility is a hardware configuration program that is built into the unified extensible firmware interface (UEFI). The UEFI replaces the Basic Input/Output System (BIOS) to describe the system firmware except where BIOS is used. The setup utility lets you change the system configuration to include the following modifications:

Table 9 - Modifications Through the Setup Utility

Pull-down Menu	Modification
Main (default menu)	change the system date and time as part of a commissioning step ^{(1) (2)}
	view the UEFI version (within System Information) and system memory ⁽³⁾
Advanced	redefine communication ports to help prevent conflicts and modify network configuration when a LAN with a pre-boot execution environment (PXE) is needed
Chipset	review the chipset of the motherboard on your box PC
Security	add/change passwords or modify security settings when system security is required
Boot	change the boot device order to prioritize storage devices
Save and Exit	save and exit the setup utility

(1) A commissioning step occurs when: (a) your 6300B wall mount box PC is initially powered on, (b) a Windows OS image is restored, or (c) the UEFI is upgraded.

(2) You can also modify this setting in the Windows OS through Control Panel > Date and Time.

(3) You can also view this setting in the Windows OS. Enter "info" in the Search field of the Windows task bar, then select "System Information".

View and Modify Settings

The setup utility is accessible through the POST (power on self test). Follow these steps to access and modify options within the setup utility:

1. Manually start or restart your box PC. See [Manual Start on page 19](#) or [Restart \(preferred method\) on page 21](#).

The POST initiates.

2. Press 'F2' to access the setup utility from the POST.



To temporarily change the boot order, press F10 to directly access the Boot menu.

3. Use the numeric keypad on your connected keyboard to modify the setup utility. See [Table 9](#) to navigate to the applicable menu.

Notes:

Change Settings in BIOS Firmware

This section provides instruction on changing your Secure Boot Default Settings in the AMI (Aptio®) BIOS.



An external display, keyboard, and mouse are required to perform the steps in this chapter. A keyboard with numeric keypad is preferred to easily navigate within the setup utility.

About Secure Boot

Secure Boot is a security feature that is implemented into the universal extensible firmware interface (UEFI) basic input/output system (BIOS). This security feature verifies the integrity of the operating system (OS) and helps prevent unauthorized programs (such as boot kits) from infecting your machine mount box PC.

Secure Boot uses a public key infrastructure to make sure that your machine mount box PC boots using only software that is trusted by the manufacturer. In addition, with Secure Boot enabled, Windows® 10 requires drivers that are digitally signed by Microsoft®.

Disable Secure Boot

IMPORTANT

The 'Secure Boot Option' **must** be set to 'Disabled' if your machine mount box PC is:

- running Windows Operating System (OS) 7, non-Windows OS (such as Linux, ThinManager®), or real-time environment (such as Codesys).
 - these are considered an untrusted source where you may receive a secure boot violation.
 - using additional hardware with boot ROM (such as graphic cards or RAID controllers).
-

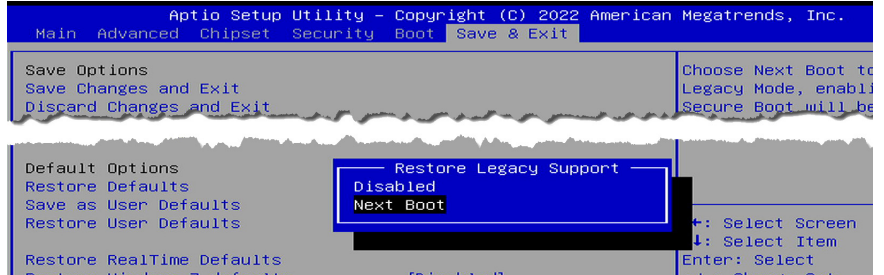
To disable Secure Boot in your BIOS, follow the instructions for your BIOS version.



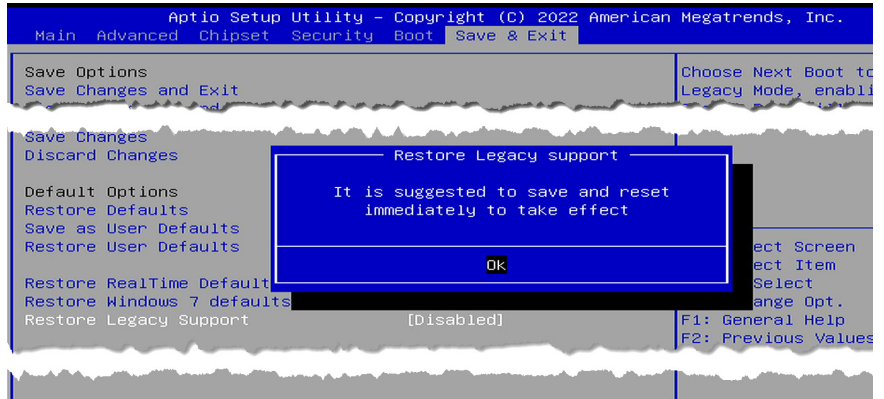
See the navigation key at far right of the setup screen to properly navigate with your keyboard.

1. Restart your machine mount box PC using one of the following methods:
 - a. from the Start menu, select 'Restart' **or**
 - b. press Ctrl+Alt+Delete on an attached keyboard and select 'Restart.'
2. Press the 'F2' key. An initial setup screen appears.
3. Navigate over to the 'Save and Exit' menu.

- Navigate down to 'Restore Legacy Support'. A 'Restore Legacy Support' popup menu appears.



- Select 'Next Boot'. A warning appears within the 'Restore Legacy Support' popup menu.



- Select 'OK', then press the 'F10' key to save and exit the BIOS.



If Windows 7 support is needed on Skylake systems, the 'Restore Windows 7 Defaults' could be used. This restore performs the following actions: (1) disables Secure Boot, (2) restores legacy support, (3) disables the trusted platform module (TPM) (which is not supported by Windows 7), and (4) sets a timer to a legacy timer that is supported by Windows 7.

Enable ThinManager



The minimum versions of ThinManager® software required are:

- ThinManager v11.0.0
- TermCap 9.13.1.0 or TermCap2 13.1.0
- Firmware 13.0.x

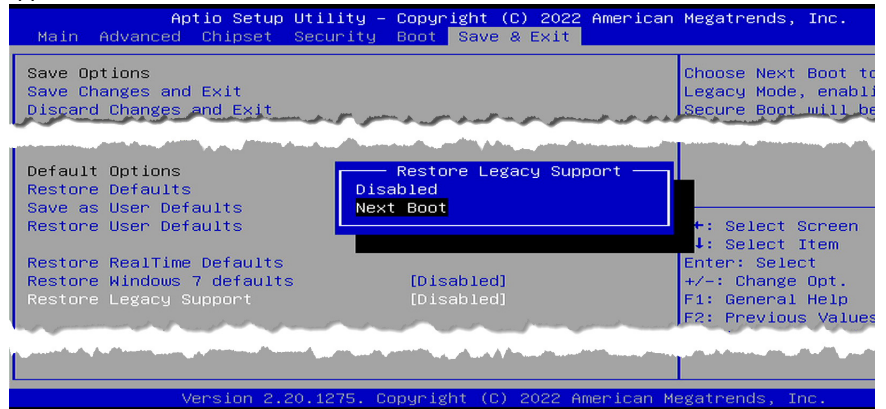
To enable ThinManager in your BIOS, follow the instructions for your BIOS version.



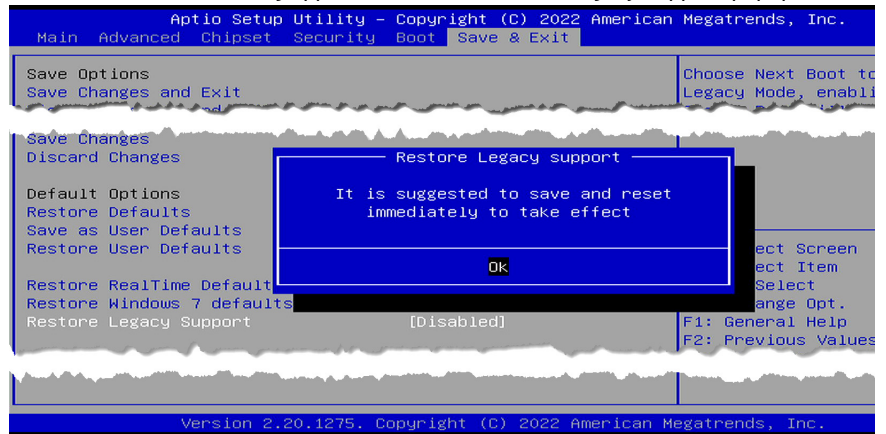
See the navigation key at far right of the setup screen to properly navigate with your keyboard.

- Restart your machine mount box PC using one of the following methods:
 - from the Start menu, select 'Restart' **or**
 - press Ctrl+Alt+Delete on an attached keyboard and select 'Restart.'
- Press the 'F2' key. The initial setup screen appears.
- Navigate over to the 'Boot' menu.
- Select 'ThinManager' as 'Boot Option #1' for the boot option priority.
- Navigate over to the 'Advanced' menu.
- Navigate down to 'Network Stack Configuration'.
- Select 'Network Stack'.
- Navigate over to the 'Save and Exit' menu.

- Navigate down to 'Restore Legacy Support'. A 'Restore Legacy Support' popup menu appears.



- Select 'Next Boot'. A warning appears within the 'Restore Legacy Support' popup menu.



- Select 'OK', then press the 'F10' key to save and exit the BIOS.

Notes:

Maintenance and Service

Use the procedures in this chapter to help you maintain and service your 6300B wall mount box PC.



We recommend that you use only Allen-Bradley® approved replacement parts.

IMPORTANT Review the specifications of a new component before you install it to verify that it is compatible with the computer. Record the model, serial number, and any other pertinent information of new components for future reference.

IMPORTANT Before performing any maintenance or service, you must follow the [Maintenance Precautions on page 29](#) and complete the [Prepare for Maintenance and Service on page 30](#) instructions.

Maintenance Precautions

Voltage Precautions



SHOCK HAZARD: Disconnect all power to your 6300B wall mount box PC before you install or remove components. Failure to disconnect power can result in damage to the your 6300B wall mount box PC.

Electrostatic Discharge Precautions



ATTENTION: Electrostatic discharge (ESD) can damage static-sensitive devices or microcircuitry. Be sure to:
 Disconnect all power before you maintain your 6300B wall mount box PC as detailed in [Voltage Precautions](#).
 Observe proper packaging and grounding techniques to help prevent damage.

Follow these ESD precautions:

- Transport your 6300B wall mount box PC and replacement parts in static-safe containers, such as conductive tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at the designated static-free work area.
- Cover the designated work area with approved static-dissipating material:
 - Use an anti-static wrist strap that is connected to the work surface.
 - Use properly grounded tools and equipment.
- Keep the designated work area free of nonconductive materials, such as ordinary plastic assembly aids and foam packing.
- Avoid contact with pins, leads, or circuitry.
- Always hold components with a printed circuit board (PCB) by its edges and place it with the assembly side down.

Prepare for Maintenance and Service



To avoid loss of data: Before you install hardware or perform maintenance procedures that require access to internal components, we recommend that you back up all data.

IMPORTANT Read and understand all installation and removal procedures before you configure the computer hardware.

1. Properly shut down your 6300B wall mount box PC. See [Shut Down on page 21](#) for instruction.
2. Disconnect all peripheral cables, including the power supply. This avoids exposure to high energy levels.



Label each cable to expedite reassembly.

3. Loosen the four M4x20 stainless steel mounting screws within the keyholes of the wall mount bracket from the mounting surface.
4. Lift your 6300B wall mount box PC off of the four M4x20 stainless steel mounting screws.
5. Place your 6300B wall mount box PC on its side.
Be sure that the surface is clean and static-free.

Clean

Clean Exterior Surfaces

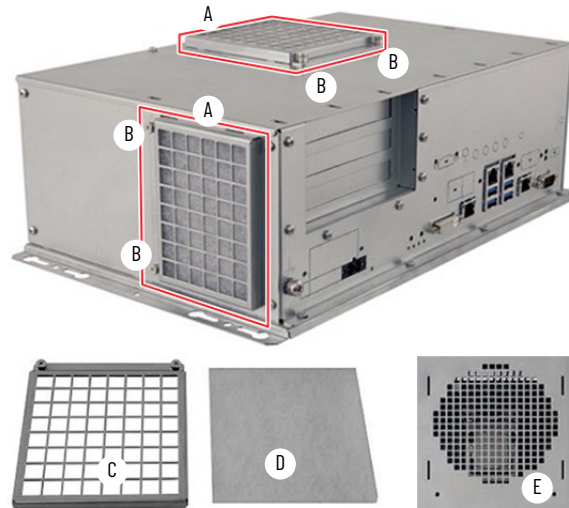
IMPORTANT Do not use detergents or solvents that could damage or scratch the external surfaces.

1. Spray a basic cleaning solution onto a damp cleaning cloth.
2. Gently wipe all exterior surfaces, vents, heatsink, and disconnected peripheral cords with a damp cleaning cloth.
3. Complete all steps within [Post-configuration on page 33](#).

Clean External Filters (6300B-PBD/TWO only)

6300B-PBD/TWO wall mount box PCs have two filters on the chassis. These filters should be inspected every three months or more frequently if environmental conditions require it.

Figure 4 - External Filters



To access the filters, perform the following steps.

1. Locate the two filter plates (A of [Figure 4](#)) on the chassis.
2. Loosen the two screws (B of [Figure 4](#)) that secure each filter plate to the chassis.
3. Remove each filter plate (C of [Figure 4](#)) and filter.
4. Remove the filter (D of [Figure 4](#)) from each filter plate.
The vent holes (E of [Figure 4](#)) on the chassis are exposed.
5. If necessary, vacuum the dirt and debris from the vent holes (E of [Figure 4](#)).
6. Inspect each filter (D of [Figure 4](#)) for dirt and debris.
7. If necessary, install new filters in each filter plate.



We recommend that you use only Allen-Bradley® approved replacement parts. For a list of replacement parts, select [here](#).

IMPORTANT

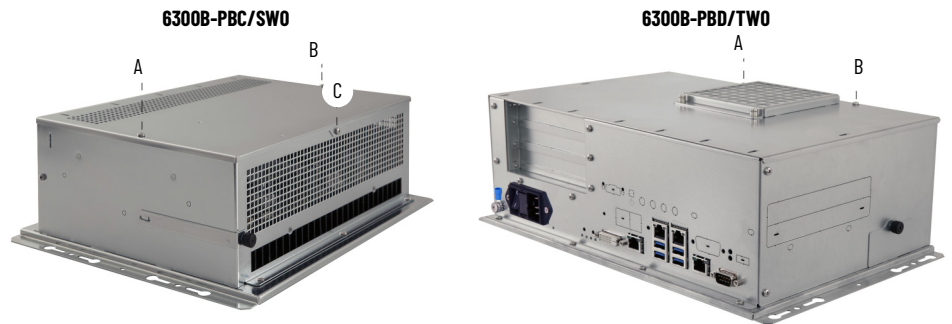
If new replacement filters are not immediately available, the filters can be cleaned. However, cleaning the filters in this manner decreases their efficiency.

To clean the filters: Use a vacuum to remove the dirt and debris, then wash them with warm water and mild detergent (such as dishwashing liquid). Allow the filters to air dry before reinstalling them.

8. Reinstall both filter plates.
9. Tighten the two screws on each filter plate.

Remove/Reinstall the Cover

Figure 5 - Cover Screw Locations



Remove the Cover

10. Use a 2.5 mm Phillips screwdriver to remove the cover screws from the top cover of your 6300B wall mount box PC. See [Figure 5](#) for cover screw locations for your particular model.
11. Set the cover screws aside.
12. Lift the cover off of the chassis and set the cover aside.
13. Perform the maintenance step (such as [Replace the Battery on page 33](#)) or add an accessory.
14. Proceed to [Reinstall the Cover](#).

Reinstall the Cover

1. Place and properly seat the cover back onto the chassis.
2. Use a 2.5 mm Phillips screwdriver to reinstall and tighten the cover screws. See [Figure 5](#) for cover screw locations for your particular model.
3. Proceed to [Post-configuration on page 33](#).

Replace the Battery

Your 6300B wall mount box PC use nonvolatile memory that requires a real-time clock (RTC) lithium battery to retain system information when power is removed. This RTC battery must be replaced during the life of your 6300B wall mount box PC.

The RTC battery life depends on the amount of time your 6300B wall mount box PC is powered on, known as on-time. The light-emitting diode (LED) status indicator located on the front of your 6300B wall mount box PC (Note No. 4 within [Table 8 on page 20](#)) flashes red when the RTC battery is lower than 2.5V.

IMPORTANT Once the RTC battery is replaced, all unified extensible firmware interface (UEFI) settings return to their default values. If UEFI settings were set to a value other than the default, the UEFI must be reconfigured.

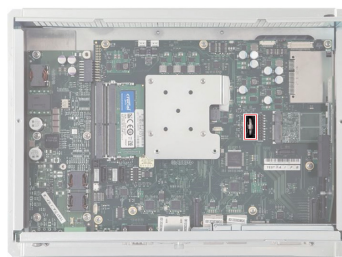


Before you begin these steps, be sure you have a new replacement Lithium CR2032 3v RTC battery.

Follow these steps to replace the RTC battery.

1. Remove the cover from your 6300B wall mount box PC. See [Remove the Cover on page 32](#) for guidance.
2. Locate the battery on the motherboard.

6300B-PBC, 6300B-SWO



6300B-PBD, 6300B-TWO

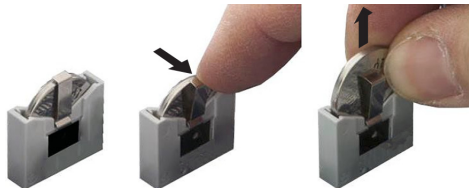


3. Remove the existing RTC battery.



Before you remove the RTC battery, take note of the polarity for orientation of the new RTC battery.

4. Properly dispose of the RTC battery. See [Waste Electrical and Electronic Equipment \(WEEE\)](#).
5. Install a new Lithium CR2032 3v RTC battery.



The UEFI resets to default values.

6. If needed, see [View and Modify Settings on page 23](#) to modify settings.

Post-configuration

Follow these instructions after maintenance is complete.

1. If removed, reinstall the cover. See [Reinstall the Cover on page 32](#).
2. Place the keyholes of the bracket onto the four M4x20 mounting screws.
3. Tighten the four M4x20 stainless steel mounting screws.
4. Reconnect the peripheral cables and power cord.
5. Power on your 6300B wall mount box PC. See [Manual Start on page 19](#).
6. If necessary, reconfigure the UEFI settings if the default values are not suitable for your application. See [View and Modify Settings on page 23](#) to reconfigure the UEFI.

Notes:

Troubleshoot

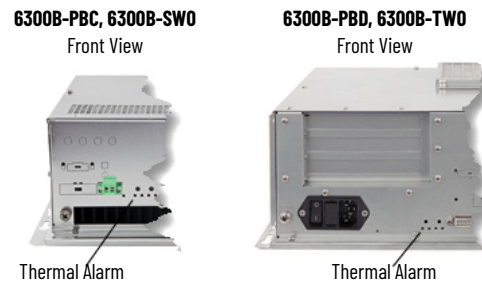


An external display, keyboard, and mouse are required to perform the steps in this chapter. A keyboard with numeric keypad is preferred to easily navigate within the setup utility.

Thermal Alarms

A thermal alarm, a light-emitting diode (LEDs) status indicator that illuminates red when the operating temperature of your 6300B wall mount box PC has reached its limit.

Figure 6 - Thermal Alarm LED Status Indicator



The operating temperature is measured at two points on the motherboard, near the CPU and near the fan. [Table 10](#) lists the thermal limits for both points.

Table 10 - Thermal Limits

Measuring Point	Thermal Limit
CPU	85 °C (185 °F)
Fan	70 °C (158 °F)

Follow these steps to determine where the operating temperature threshold has been reached.

1. Shut down your 6300B wall mount box PC. See [Shut Down on page 21](#).
2. Restart your 6300B wall mount box PC. See [Restart \(preferred method\) on page 21](#).
3. During POST, press the F2 key to access the UEFI set-up utility.
4. On the Main screen, toggle over to the 'Advanced' menu.
5. Toggle down to 'Thermal Configuration'.

Use this menu to determine if there is an issue with internal voltages or component temperatures.

Isolate Issue

Follow these steps to identify and isolate an issue with computer operation.

1. Shut down your 6300B wall mount box PC. See [Shut Down on page 21](#).
2. Disconnect power to your 6300B wall mount box PC.
3. Disconnect all peripheral devices.
4. If a keyboard and mouse are used, verify that they are properly connected.
5. If an external display is used, verify that it is properly connected.
6. Reconnect power.

7. Manually start your 6300B box PC or 6300T thin client. See [Manual Start on page 19](#). The POST initiates.
8. Monitor the outcome of the POST. One of three events will occur:
 - the startup process is completed **or**
 - a nonfatal error occurs and the related error message is displayed **or**
 - a fatal error occurs and the startup process terminates.
9. Perform one of the following activities depending upon the outcome of the POST:

If	Then
the startup processes are completed:	Reconnect all peripheral devices one at a time until the issue occurs.
there is an issue with specific software or a specific driver:	Reinstall the software or driver.
the issue cannot be identified or a fatal error occurs:	Contact Rockwell Automation Support .

Reset to System Defaults

If changes were made within the setup menus of your UEFI that resulted in an error, you can revert to the default settings. These default settings were chosen to optimize performance.

Follow these steps to reset the UEFI to its default settings.

1. Restart your 6300B box PC or 6300T thin client. See [Restart \(preferred method\) on page 21](#). The POST initiates.
2. During POST, press the 'F2' key to access the UEFI setup utility.
3. From the Main menu, press F9 to select the Optimized Default settings, which are the system defaults.
4. Press the 'Enter' key to select the system default, 'Load Optimized Defaults'.
5. Press the 'F10' key to save your changes and exit.

Ship/Transport



ATTENTION: To avoid physical damage to your 6300B wall mount box PC, do not ship or transport it until it is removed from the machine, panel, or rack. Before shipping or transporting your 6300B wall mount box PC to another location, you must

- (1) perform the proper shut down procedure,
- (2) remove any peripheral cables,
- (3) remove it from the installation site, then
- (4) place it in its original packing material.

Rockwell Automation is not responsible for damage when it is shipped or transported while installed in a machine, panel, or rack and if it is not placed in its original packing material.

Disposal



At the end of its life, collect the computer separately from any unsorted municipal waste.

You cannot dispose of computer equipment like other waste material. Most computers and monitors contain heavy metals that can contaminate the earth. Therefore, check with local health and sanitation agencies for ways to dispose monitor equipment safely.

When a storage drive is part of what you plan to dispose, then erase any data on it permanently or destroy the drive before it is disposed.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Resource	Description
ASEM 6300B Wall Mount Box PC Installation Instructions, publication 6300B-INQ02	Provides installation and connection instructions.
ASEM 6300P, 6300P-SWO Panel PCs and 6300B-PBD, 6300B-PBC, 6300B-TWO Wall Mount Box PCs Technical Data, publication 6300-TD005	Provides technical specifications about ASEM 6300P, 6300P-SWO Panel PCs and 6300B-PBD, 6300B-PBC, 6300B-TWO Wall Mount Box PCs.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

Documentation Feedback

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.

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.

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