



# ASEM 6300B Compact Box PCs and 6300T Thin Clients

Bulletins 6300B, 6300T, Family JB1



**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.

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**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.

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

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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.

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**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.

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**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).

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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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## About this Publication

This user manual provides procedures to install, operate, configure, maintain and troubleshoot 6300B-JB1 Compact Box PCs and 6300T-JB1 Thin Clients.

A general knowledge of automation technology is required 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.

## Catalog numbers

This publication applies to these systems. For your catalog number, see the product label on the side of your system.

**Table 1 - Catalog Number List**

Cat. No.	Description
6300B-JB1xAA-xxxx-xxxx	Compact Box PC with 2 DisplayPorts
6300B-JB1xAB-xxxx-xxxx	Compact Box PC with serial port , 4 DisplayPort
6300T-JB1xAA-xx	Thin Client with 2 DisplayPorts
6300T-JB1xAB-xx	Thin Client with serial port , 4 DisplayPorts

## 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 6300T-JB1 Thin Client	throughout

## Download Associated Files

Download UEFI, BIOS firmware, operating system (OS), and access product release notes from the Product Compatibility and Download Center at [rok.auto/pcdc](http://rok.auto/pcdc).

## Terminology

Throughout this manual various acronyms are used. See [Table 2](#) to identify the full term and definition.

**Table 2 - Acronyms**

Acronym	Full Term	Definition
DIP	Dual in-line package	Arrangement of switches used to select the operating mode of a device
EMI	Electromagnetic Interference	Also known as radio frequency interference, unwanted noise, or interference in an electrical path or circuit that is caused by an outside source; EMI can cause electronics to operate poorly, malfunction or stop performing completely
HID	Human Interface Device	Hardware that enables a user to interact with a computer or mobile device
HMI	Human Machine Interface	Software and hardware that allows human operators to monitor the state of a process under control, modify control settings to change the control objective, and manually override automatic control operations
LCD	Liquid-crystal display	A type of flat-panel screen
LED	Light-emitting diode	A semiconductor light source that emits light when current flows through it
OS	Operating System	Software that controls the operation of a PC and directs the processing of programs
PC	Product Component	Key part of a system
PCAP	Projective Captive	(versus Resistive) type of touch screen
POST	Power on self test	Set of routines that are performed by firmware or software immediately after a PC is powered on, to determine if the hardware is working as expected
PXE	Pre-boot Execution Environment	A set of standards that enables a PC to load an operating system (OS) over a network connection

**Table 2 - Acronyms (Continued)**

Acronym	Full Term	Definition
RTC	Real-time clock	A computer clock, usually in the form of an integrated circuit that is solely built for keeping time
SSD	Solid-state Drive	System data storage option that functions without any moving parts
UEFI	Unified Extensible Firmware Interface	An interface used for the OS to automatically load from the pre-boot operating environment to an OS that simplifies the boot process and saves time
UPS	Uninterruptible Power Supply	Electrical device that provides emergency power to a load when the input power source or mains power fails

## 6300B-JB1 Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations generate a valid catalog number. Use ProposalWorks software to configure the system. ProposalWorks software is available from [rok.auto/systemtools](http://rok.auto/systemtools).

**6300B - JB1 A A A - A A N A A - A N N N**  
a b c d e f g h i j k l

a	
Mount Type	
Cod.	Description
A	Book Mounting
B	DIN Rail

b	
Power	
Cod.	Description
A	24V DC

c	
System Configuration	
Cod.	Description
A	2 DisplayPort
B	Serial Port, 4 DisplayPort

d	
Processor class	
Cod.	Description
A	Celeron 6305E
B	Core i3-1115G4E
C	Core i5-1145G7E
D	Core i7- 1185G7E
E	Core i3-1115GRE
F	Core i5-1145GRE
G	Core i7- 1185GRE

e	
RAM	
Cod.	Description
A	4 GB
B	8 GB
C	16 GB
D	32 GB

f	
Storage (M.2 SSD NVMe)	
Cod.	Description
N	No
A	128GB
B	256GB
C	512GB
D	1TB
E	2TB

g	
TPM	
Cod.	Description
N	No
A	fTPM (BIOS)
B	dTPM (Module)

h	
NOVRAM	
Cod.	Description
N	No
A	512 kB (MRAM)

i	
Operating System	
Cod.	Description
N	No
A	Windows 10 IoT Enterprise LTSC 2021

j	
Remote ASS SW	
Cod.	Description
N	No

k	
APP Software	
Cod.	Description
N	No

l	
Optix License	
Cod.	Description
N	No

## 6300T-JB1 Catalog Number Explanation

Examples that are given in this section are not intended to be used for product selection. Not all combinations generate a valid catalog number. Use ProposalWorks software to configure the PC. ProposalWorks software is available from [rok.auto/systemtools](http://rok.auto/systemtools).

**6300B - JB1 A A A - A A**  
a b c d e

a	
Mount Type	
Cod.	Description
A	Book Mounting
B	DIN Rail

b	
Power	
Cod.	Description
A	24V DC

c	
System Configuration	
Cod.	Description
A	2 DisplayPort
B	Serial Port, 4 DisplayPort

d	
Processor class	
Cod.	Description
A	Celeron
B	Core i3
C	Core i5
D	Core i7

e	
RAM	
Cod.	Description
A	4 GB
B	8 GB



## Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at [rok.auto/literature](https://rok.auto/literature).

Resource	Description
Installation Instructions, publication <a href="#">6300b-in004</a>	Provides basic installation guidelines and instructions for 6300B-JB1 Box PCs and 6300T-JB1 Thin Clients.
ASEM 6300 Industrial PCs, Thin Clients, and Monitors Specifications <a href="#">6300-TD001</a>	Provides technical specifications about the 6300B-JB1 Box PCs.
Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770-4.1</a>	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, <a href="https://rok.auto/certifications">https://rok.auto/certifications</a>	Provides declarations of conformity, certificates, and other certification details.
ThinManager® User Guide, publication <a href="#">TM-UM001</a>	Provides instructions to define sources, deploy content, configure devices, and user access between a server and Thin Clients.
EtherNet/IP™ Network Devices User Manual, <a href="#">ENET-UM006</a>	Describes how to configure and use EtherNet/IP™ devices to communicate on the EtherNet/IP network.
Ethernet Reference Manual, <a href="#">ENET-RM002</a>	Describes basic Ethernet concepts, infrastructure components, and infrastructure features.
System Security Design Guidelines Reference Manual, <a href="#">SECURE-RM001</a>	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
UL Standards Listing for Industrial Control Products, publication <a href="#">CMPNTS-SR002</a>	Assists original equipment manufacturers (OEMs) with construction of panels to help confirm that they conform to the requirements of Underwriters Laboratories.
American Standards, Configurations, and Ratings: Introduction to Motor Circuit Design, publication <a href="#">IC-AT001</a>	Provides an overview of American motor circuit design that is based on methods that are outlined in the NEC.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication <a href="#">IC-TD002</a>	Provides a quick reference tool for Allen-Bradley® industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication <a href="#">SGI-1.1</a>	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Product Certifications website, <a href="https://rok.auto/certifications">rok.auto/certifications</a> .	Provides declarations of conformity, certificates, and other certification details.
EtherNet/IP Network Devices User Manual, <a href="#">ENET-UM006</a>	Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network.

## Notes:

## Product Description

6300B-JB1 is a fanless Book/DIN Rail mounting IPC with Intel® Tiger Lake platform.

6300T-JB1 is the Thin Client version of the same system.

**6300B-JB1xAA**  
**6300T-JB1xAA**



**6300B-JB1xAB**  
**6300T-JB1xAB**



Compact and ergonomic design with anodized aluminum chassis:

- Intel® Celeron® and Core™ 11th generation SoC Tiger Lake UP3 processors.
- RAM memory configurable up to 32GB.
- Storage from OGB to 2TB with M.2 PCIe NVMe SSDs for maximum read and write speeds.
- Up to four DisplayPort++ ports to meet every display need.
- Connectivity ensured by the four 2.5 Gigabit Ethernet ports.
- Available in two versions to ensure maximum ergonomics.
- ThinManager-ready BIOS preinstalled.
- FactoryTalk® Remote Access™ remote support software included.
- Optional FactoryTalk® Optix™ visualization software.
- Complies with Rockwell Automation's Design for Security (DfS) process.

Every ASEM 6300B-JB1 box PC and ASEM 6300T-JB1 thin client is ThinManager® software ready and includes a FactoryTalk® Remote Access™ Basic runtime license.

Depending on your selected catalog number, your ASEM product features various I/O ports, storage and various mounting options.

All 6300B box PCs are available with the Microsoft Windows® 10 Internet of Things (IoT) Enterprise 2021 Long Term Servicing Channel (LTSC) operating system (OS).

6300T-JB1 ThinManager software allows unprecedented control and security in a sustainable and scalable platform regardless of the size of your industrial environment or the number of facilities.

FactoryTalk Remote Access Basic delivers secure communications over the internet to enable performance and security for on-demand remote assistance, software installation,

programming, troubleshooting, and maintenance of your ASEM 6300 industrial PC. When upgraded to FactoryTalk Remote Access Pro it can be used to support any remote automation system and application.

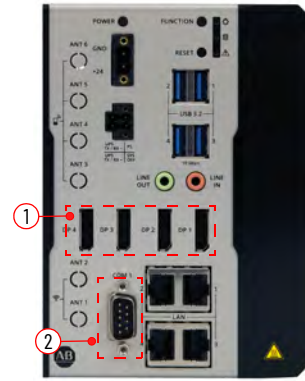
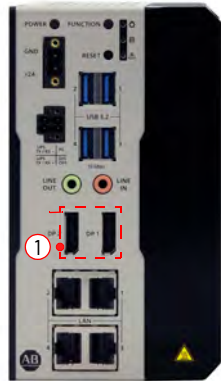
## Width

The system is available in two different widths according to different I/O. See [Approximate Dimensions on page 16](#) :

Cat. No.	DisplayPort	COM
6300B-JB1xxA 6300T-JB1xxA	2 ports	-
6300B-JB1xxB 6300T-JB1xxB	4 ports	Yes

6300B-JB1xxA  
6300T-JB1xxA

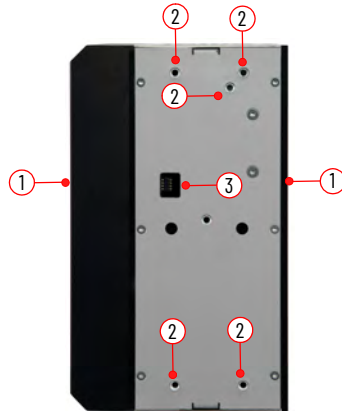
6300B-JB1xxAA  
6300T-JB1xxAA



No.	Description
1	DisplayPort ++
2	COM

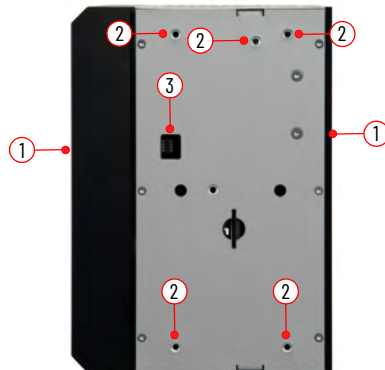
## Back view

The back side of the system varies by model type.



6300B-JB1xxA / 6300T-JB1xxA back view

No.	Description
1	Heat-sink
2	Book/DIN Rail bracket fixing points
3	DIP switch access

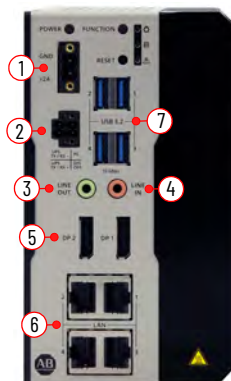


6300B-JB1xxB / 6300T-JB1xxB back view

No.	Description
1	Heat-sink
2	Book/DIN Rail bracket fixing points
3	DIP switch access

# Peripheral connections

**6300B-JB1xxA  
6300T-JB1xxA**



**6300B-JB1xxB  
6300T-JB1xxB**



No.	Description	6300B-JB1xAA 6300T-JB1xAA	6300B-JB1xAB 6300T-JB1xAB
1	DC power input connector		X
2	UPS TX / RX - PS / Sys Off connector		X
3	Line-Out connector		X
4	Mic-In connector		X
5	Display port connector	2	4
6	LAN connector		4
7	USB connector		4
8	COM	-	1
9	DIP Switch		X

## Technical specifications

Table 3 - 6300B-JB1 System Features

		6300B-JB1xxA	6300B-JB1xxB
Protection Grade	IP rating	IP20	
Case	Installation	Book / DIN Rail mount	
	Material	Anodized aluminum alloy	
Processor (soldered on-board)	Embedded	Intel® Celeron® 6305E 1.8 GHz • 2 cores / 2 threads • 4 MB Smart cache • 10 nm Intel® Core™ i3-1115G4E 2.20 GHz (3.90 GHz Burst) • 2 cores / 4 threads • 6 MB Smart cache • 10 nm Intel® Core™ i5-1145G7E 1.50 GHz (4.10 GHz Burst) • 4 cores / 8 threads • 8 MB Smart cache • 10 nm Intel® Core™ i7-1185G7E 1.80 GHz (4.40 GHz Burst) • 4 cores / 8 threads • 12 MB Smart cache • 10 nm	
Chipset		Intel® Tiger Lake PCH (Platform Controller Hub) • Included into processor chip (SoC)	
Video controller		Intel® UHD Graphics integrated in Intel® Celeron®, Intel® Core™ i3 Intel® Iris® X• Graphics integrated in Intel® Core™ i5 and i7	
TPM		Intel® PTT (TPM integrated) - Discrete TPM (optional)	
System memory RAM	Intel® Celeron®	4 GB (LPDDR4X) 8 GB (LPDDR4X)	
	Intel® Core™ i3	8 GB (LPDDR4X) 16 GB (LPDDR4X)	
	Intel® Core™ i5		
	Intel® Core™ i7	16 GB (LPDDR4X) 32 GB (LPDDR4X)	
Mass storage	SSD M.2	1 x onboard connector for direct insertion of M.2 NVMe PCIe SSD (up to 2TB)	
Interfaces	LAN	4 x 2.5 Gigabit Ethernet (RJ45)	
	USB	4 x USB 3.2 Gen 2 (Type-A) 10 Gbps	
	Serial	-	1 x RS232/422/485 isolated (DB9M)
	Video	2 x DisplayPort++ V1.4a	4 x DisplayPort++ V1.4a
	Audio	1 x Line-Out Audio Stereo 1 x Mic.-In	
	NOVRAM (optional)		512 kB MRAM module for retentive variables
Power supply input		24V DC (18...32V DC) isolated	
Battery		1x CR2032 Internal access	
O.S.Certified		Microsoft Windows 10 IoT Enterprise LTSC 2021 64 bit	

Table 4 - 6300T-JB1 System Features

		6300T-JB1xxA	6300T-JB1xxB
Protection Grade	IP rating	IP20	
Case	Installation	Book / DIN Rail mount	
	Material	Anodized aluminum alloy	
Processor (soldered on-board)	Embedded	Intel® Celeron® 6305E 1.8 GHz • 2 cores / 2 threads • 4 MB Smart cache • 10 nm	
Chipset		Intel® Tiger Lake PCH (Platform Controller Hub) • Included into processor chip (SoC)	
Video controller		Intel® UHD Graphics integrated in Intel® Celeron®, Intel® Core™ i3	
System memory RAM	Intel® Celeron®	4 GB (LPDDR4X) 8 GB (LPDDR4X)	
Interfaces	LAN	4 x 2.5 Gigabit Ethernet (RJ45)	
	USB	4 x USB 3.2 Gen 2 (Type-A) 10 Gbps	
	Serial	-	1 x RS232/422/485 isolated (DB9M)
	Video	2 x DisplayPort++ V1.4a	4 x DisplayPort++ V1.4a
	Audio	1 x Line-Out Audio Stereo 1 x Mic.-In	
Power supply input		24V DC (18...32V DC) isolated	
Battery		1x CR2032 Internal access	

**Table 5 - 6300B-JB1 and 6300B-JB1 Environmental Specifications**

Attribute		Values
Ambient Temperature	operating	0...50 °C (32...122 °F)
	storage	-20...+65 °C (-4...+149 °F)
	non operating	-25...+70 °C (-13...+158 °F)
Operation/Storage relative humidity		20%...90% RH @ 25 °C (77 °F) non-condensing
Max. Altitude, operating		2000 m (6562 ft)
Vibration (EN 60068-2-6:2008-02 Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal))	Frequency range	10,00 Hz to 500,00 Hz
	Sweep rate	1 octave / min
	Number of sweep cycles	5 / axis (56°27")
	Displacement	0,3048 mm p-p (10,00 Hz to 57 Hz)
	Acceleration	0-p: 2,0 g (57 Hz to 500,00 Hz)
Shock (En 60068-2-27:2009-05, Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock) Shape of rated mechanical stress: Half-Sine	operating	15 g (acceleration) at 11 ms (duration)
	non operating	30 g (acceleration) at 11 ms (duration)

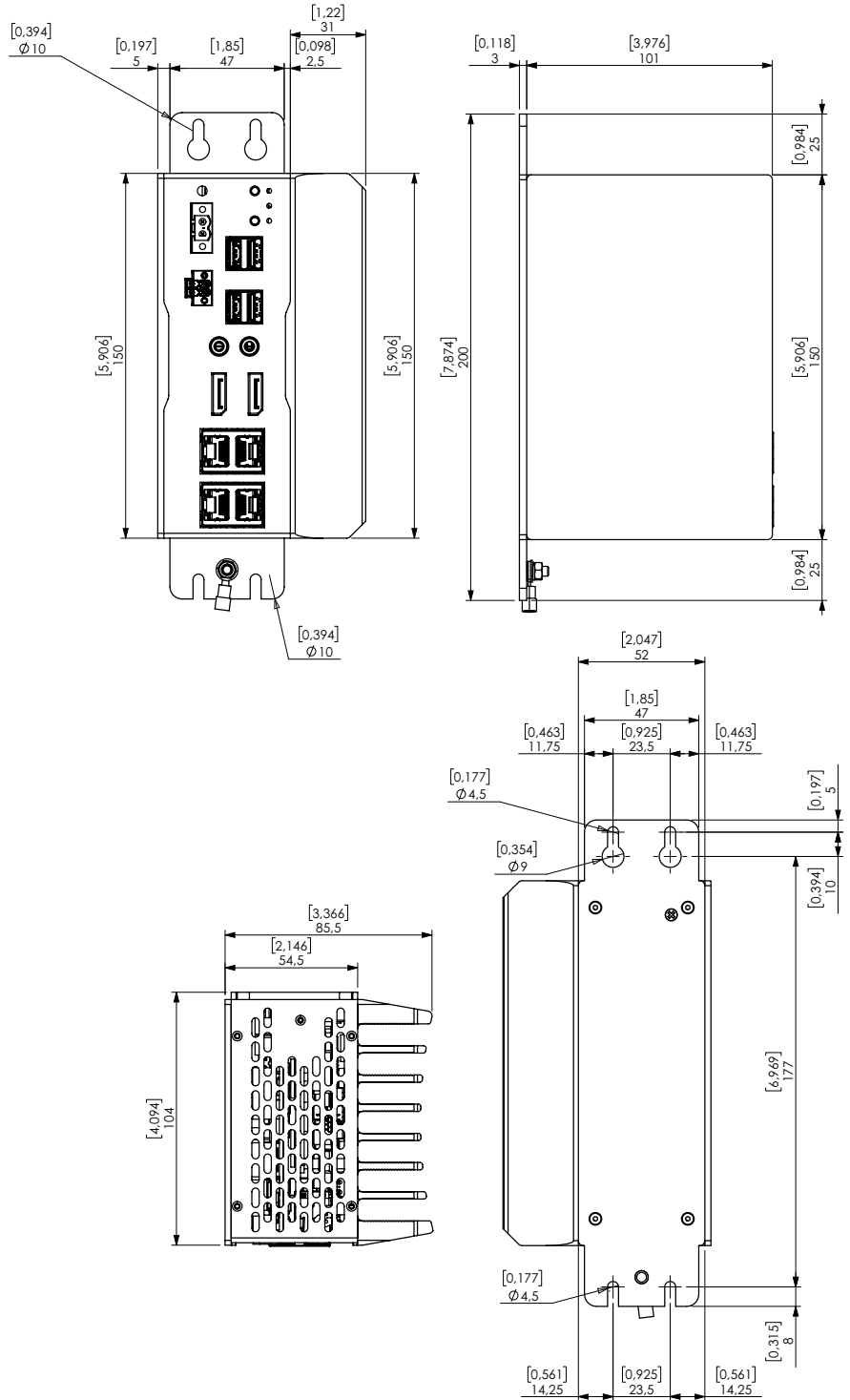
**Table 6 - 6300B-JB1 and 6300B-JB1 Standards Compliance and Certifications**

Certification	Value
CE (EMC)	European Union 2014/30/EU EMC Directive, compliant with: EN 61326-1; Electrical equipment for measurement, control and laboratory use.
UKCA	2016 No. 1091 Electromagnetic Compatibility Regulations (EMC). 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations (RoHS). EN 61326-1:2021 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements.
cULus	cULus Listed Industrial Control Equipment for use in Ordinary Location per standards ANSI/UL 61010-1 and ANSI/UL 61010-2-201 for USA and CSA C22.2 NO. 61010-1, CSA C22.2 No. 61010-2-201 for Canada.
Cmin - Morocco	Arrêté ministériel n° 6404-15 NM EN 61326-1
KCC - Korea	Registered under the Clause 3, Article 58-2 of Radio Waves Act. R-R-RAA-JB1.
RCM - Australia and New Zealand	Australian Radio Communications Act, compliant with: EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements.
REACH	EU REACH regulation (EC) No 1907/2006
RoHS	China RoHS, Turkey RoHS, European RoHS, UKCA RoHS

# Approximate Dimensions

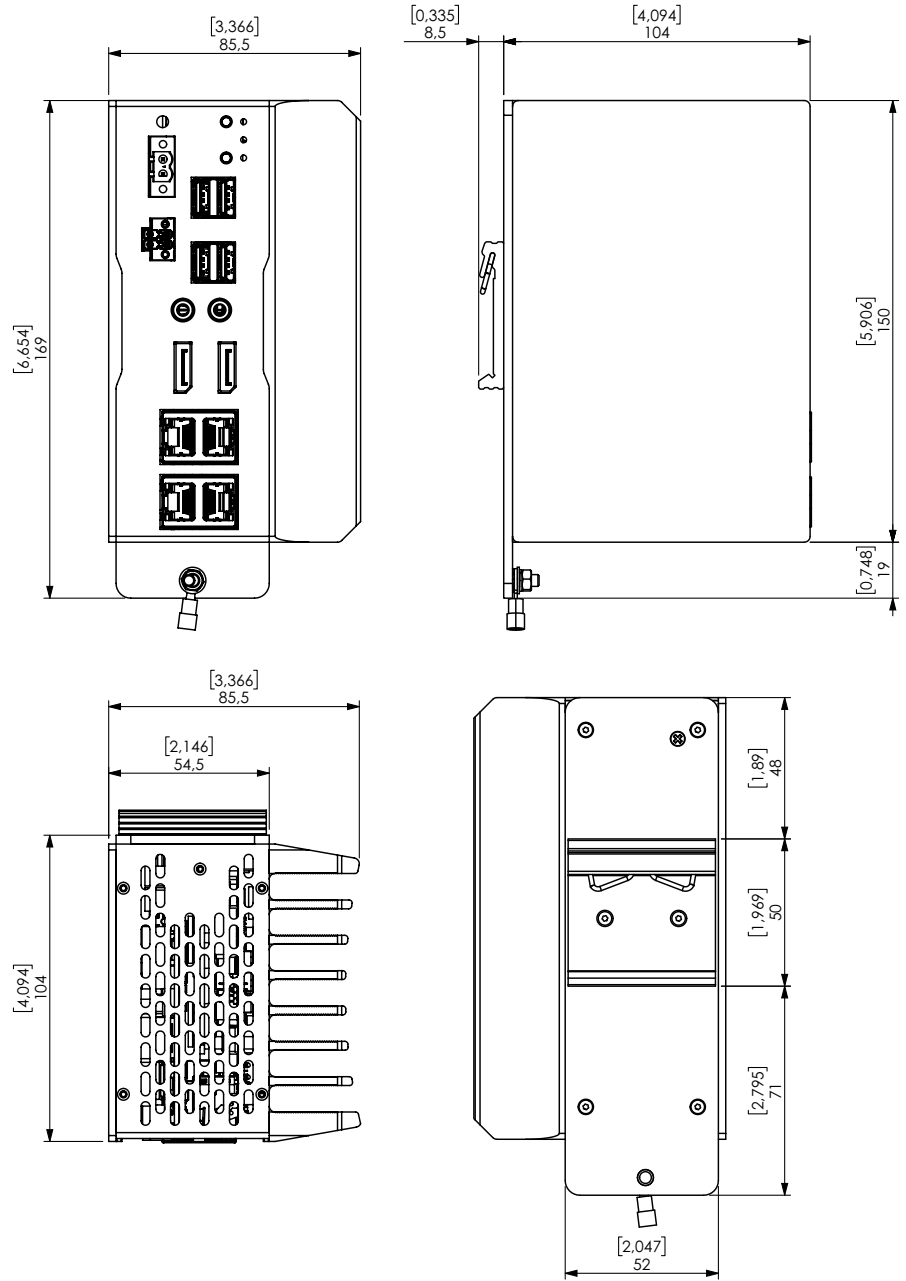
Dimensions are in mm (inches). Dimensions are not intended to be used for manufacturing purposes

## 6300B-JB1AAA / 6300T-JB1AAA dimensions (Book installation)

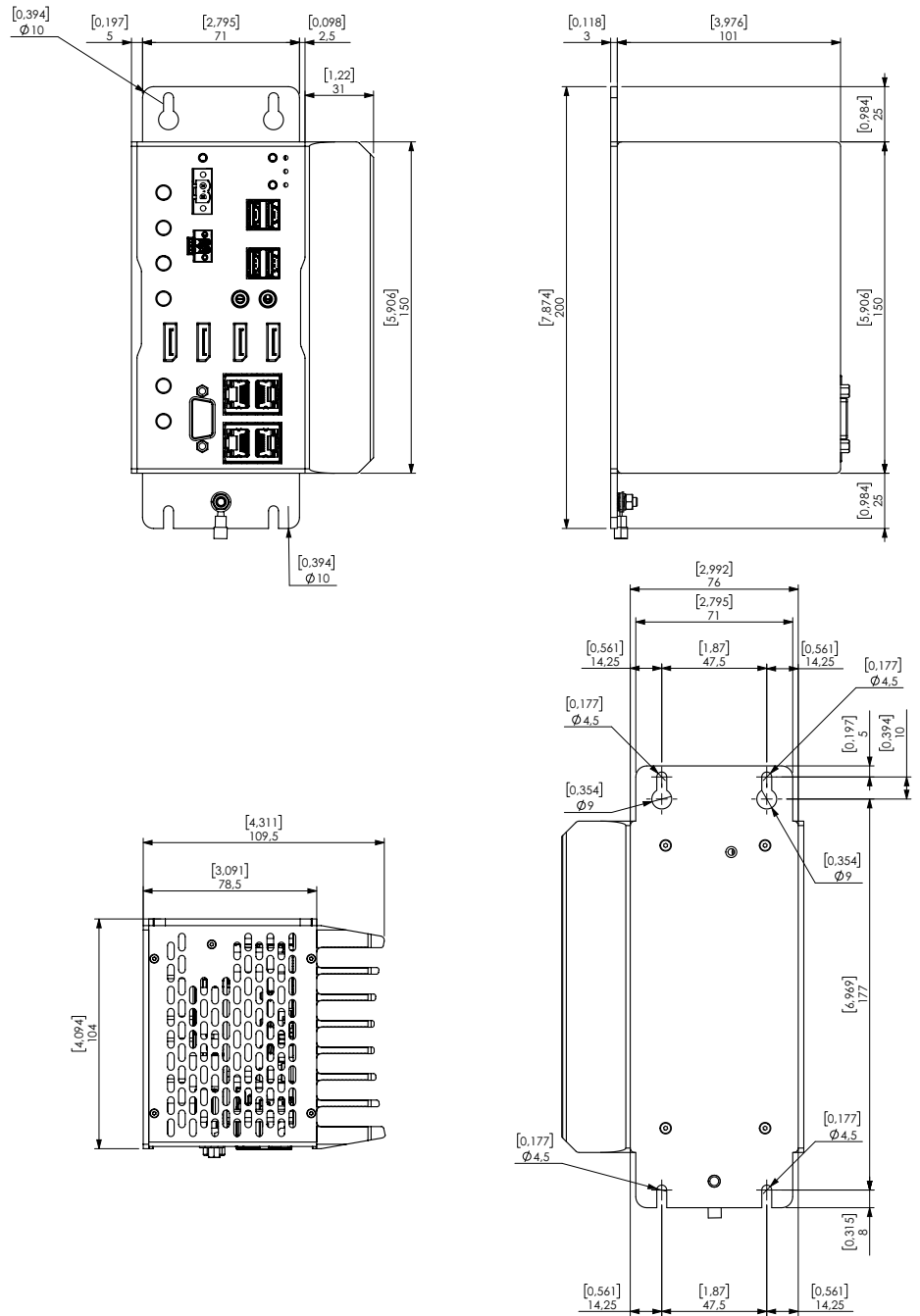




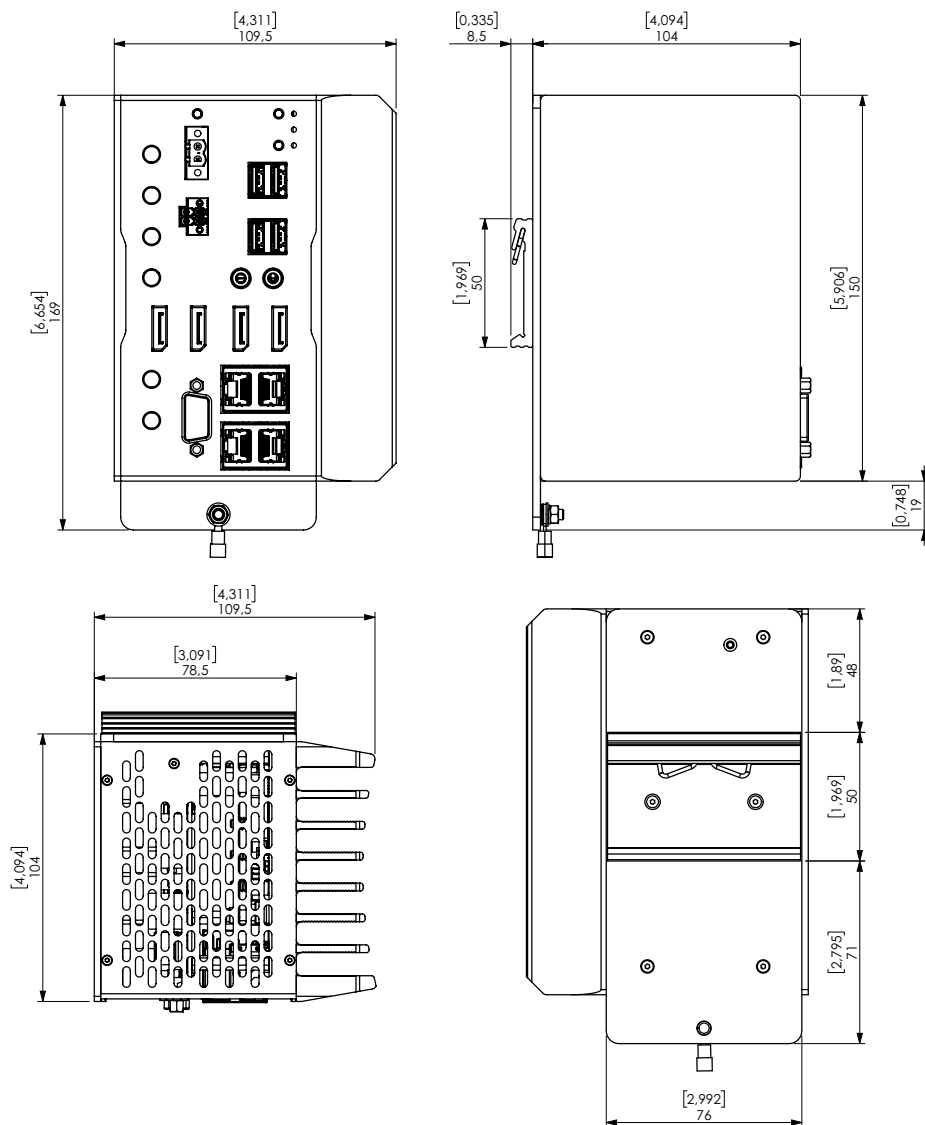
### 6300B-JB1BAA / 6300T-JB1BAA dimensions (DIN Rail installation)



### 6300B-JB1AAB / 6300T-JB1AAB dimensions (Book installation)



### 6300B-JB1BAB / 6300T-JB1BAB dimensions (DIN Rail installation)



## Notes:

## Installation

Follow these guidelines and procedures to help you plan your installation, mount and power up your system.

### Unpack the system

---

**IMPORTANT** Before you unpack your system, inspect the shipping carton for damage. If damage is visible, contact the shipper immediately to request assistance. Keep the original packing material in case you must return the system for repair or transport it to another location.

---

Your system ships with the following parts.

Item	Description
Hardware	<ul style="list-style-type: none"> <li>• DC power connector assembly kit.</li> <li>• Removable power terminal block pre-installed.</li> <li>• Removable UPS TX/RX - ATX/PS/Sys Off connector pre-installed.</li> <li>• Eyelet terminal pre-installed.</li> </ul>
Document	Installation Instructions, publication <a href="#">6300B-IN004A</a>

### Installation Precautions

Read and follow these precautions **before** you install your equipment.



**ATTENTION:** This system 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 and radiated disturbance.

This equipment is UL Listed. However, to meet some regulatory requirements, the system must be mounted in an enclosure that is suitably designed for environmental conditions that can be present.

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.

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### 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](http://rok.auto/certifications).

## European Union Directive Compliance

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

A copy of the certificate of compliance is available at [rok.auto/certifications](http://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. This equipment is not suitable for use in locations where children are likely to be present. Some configurations cannot comply with the EN 61000-3-2 Harmonic Emissions standard as specified by the EMC Directive of the European Union. Obtain permission from the local power authority before you connect any system configuration that draws more than 75 W of AC power directly from the public mains.

Connect peripheral cables to the appropriate I/O ports on the system. To comply with EN 61326-1, see [Connectors / LED Status indicators / Buttons on page 31](#) for the required cable types.

## Safety

### Installation according to the instructions

Commissioning the system device is prohibited until it has been absolutely ensured that the system in which the system is to be installed complies with all the applicable EU and international regulation.

### Qualified personnel

- The system may be operated only by personnel qualified for the specific task in accordance with the relevant documentation for the specific task, in particular its warning notices and safety instructions.
- Qualified personnel are those who, based on their training and experience, are able to identify risks and avoid potential hazards when working with these systems.

### Environment and Enclosure Information

- The enclosure must allow sufficient space around air inlets and outlets to provide the circulation necessary for cooling. Never allow air passages to become obstructed.
- Hot air rises. The temperature at the top of the enclosure is often higher than the temperature in other parts of the enclosure, especially if air is not circulating.
- Consider a user-supplied fan, heat exchanger, or air conditioner for heat generated by other devices in the enclosure.
- For installation in control cabinets and, in particular, in closed containers, make sure the ambient temperature complies with the requirements.
- The indicated environmental conditions must be observed.
- Verify the operating temperature of the equipment to ensure that the specified temperature range is not exceeded once installed in the end user application.

### Working on the control cabinet

- The system is open equipment. The cabinet in which the system is installed should only be accessed with a key or tool and only by trained and authorized personnel.
- Dangerous voltage Opening the cabinet may expose high voltage parts. Before opening the cabinet always disconnect the power.

## Installation Requirements

Follow these guidelines to make sure that your system 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 indoors and non-hazardous.
  - The site must not expose the system to direct sunlight.
- The system can operate in the following environmental conditions:
  - Operation temperature: 0...50 °C (32...122 °F).
  - Storage temperature : -20...+60 °C (-4° ...+140 °F).
  - Operation / storage relative humidity (RH) non condensing: 20...90%.

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**IMPORTANT** Because of self-heating, do not operate the system in an enclosure by using the minimum clearances unless adequate ventilation or other methods are used to lower the temperature within the enclosure.

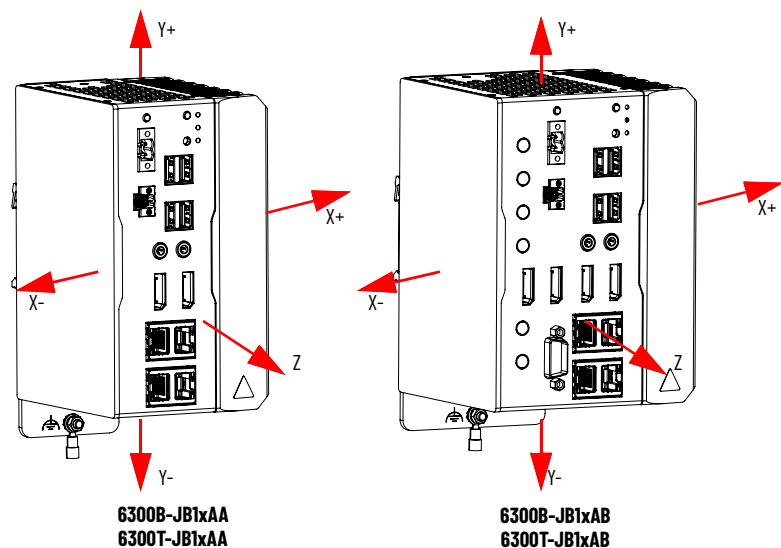
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Follow these requirements to mount the system.

- I/O ports must face forward; ground screw must be located on bottom mounting bracket tab.
- To help prevent overheating and to provide access to the I/O ports for cable connections, mount the system with the following minimum clearances from all four sides of the outer frame and back of the system chassis:

Item	Description	Value [mm. (in.)]
X+	Right	50 (2)
X-	Left	50 (2)
Y+	Top	102 (4)
Y-	Bottom	102 (4)
Z	Front (for I/O port access and ventilation)	127 (5)



**Book / DIN Rail mount Installation min. clearance**

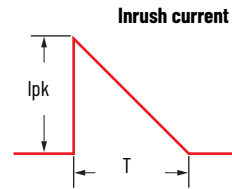


I/O ports must face forward, ground screw must be located on bottom mounting bracket tab.

## DC Power Supply Guidelines

Follow these guidelines to select the DC power supply for the system.

- The system must only be connected to a 24V DC SELV (  ) [maximum admissible operating voltage range 18...32V DC (  )].
- The nominal output power should be 25% larger than the drained power.
- The output voltage rise time has to be less than 100 ms.
- 6300B-JB1xAA and 6300T-JB1xAA have a max. power consumption of 70 W.
- 6300B-JB1xAB and 6300T-JB1xAB have a max. power consumption of 75.
  - $I_{in}$  = 3.1A max. @24V (nominal voltage).
  - $I_{in}$  = 3.9A max. @18V (min. voltage).
  - $I_{in}$  = 2.3A max. @32V (max. voltage).



Symbol	Definition	6300B-JB1xAA 6300T-JB1xAA	6300B-JB1xAB 6300T-JB1xAB
$I_{pk}$	Peak current	15A	15A
T	Pulse width time	2 ms	2 ms

## Power Consumption

The following table shows the maximum power consumption in Watts of various components in the system.

**Table 7 - Typ. Power Consumption in Watts (W)**

Component	Description	Power (W)
Motherboard and Processor	Intel® Celeron® 6305E	44.1
	Intel® Core™ i3-1115G4E	44.1
	Intel® Core™ i5-1145G7E	74.2
	Intel® Core™ i7-1185G7E	74.2
Storage	M.2 NVMe PCIe SSD	2.4
RAM	4 GB	2.1
	8 GB	3.5
	16 GB	4.2
	32 GB	4.8
USB	4 x USB 3.2 Gen2 x1 (Type A)	20
Ethernet	4 x 2.5Gb (RJ45)	7.0
Serial Port	RS232/422/485 (DB9M)	0.2
Video	DisplayPort++ V1.4, each port	<0.1
Audio	1 x Line-Out Audio Stereo, 1 x Mic.-In	<0.1
NOVRAM	512 kB MRAM module for retentive variables	<0.1





**WARNING:** 6300B-JB1xAA and 6300T-JB1xAA - Do not exceed 110 W for the total system configuration. Power consumption greater than 110 W can overpower the external and internal power supplies that can lead to component damage, or in extreme cases, electrical fires.

**WARNING:** 6300B-JB1xAB and 6300T-JB1xAB - Do not exceed 115 W for the total system configuration. Power consumption greater than 115 W can overpower the external and internal power supplies that can lead to component damage, or in extreme cases, electrical fires.

## Installation

The system can have two different kinds of installation:

- Book mount installation.
- DIN Rail installation.

## Book mount installation

### Required Tools

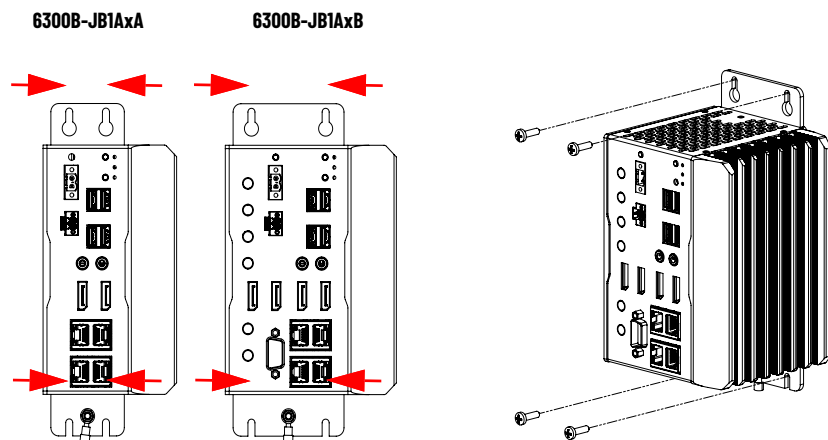
- Drill and drill bit.
- Level.
- Ruler.
- Pencil.
- Philips screwdriver.
- N4. Stainless steel screws (not provided).
- Safety glasses.

### Installation

To execute the Book mount installation perform the following steps.

**IMPORTANT** I/O ports must face forward.  
Ground screw must be located on bottom mounting bracket tab.

- Place your system against the mounting surface with the ground screw facing downward. See Approximate Dimensions [on page 14](#).



- Level, measure, then mark the top of the two keyhole slots on the top and the two slots on the bottom of the book mount bracket.
- Set your system aside.
- Drill holes in your mounting surface to accommodate for the four M4x20 stainless steel screws (not supplied).
- Partially tighten the four M4x20 stainless steel screws into the mounting surface, leaving a gap equivalent to the bracket thickness.

- Lift and align the top set of mounting holes of the brackets on your system with the top two screws.
- Align the slots on the bottom bracket with the bottom two screws.
- Slide your system downward until all four M4x20 stainless steel screws are at the top of each bracket slot.
- Fully tighten the four M4x20 stainless steel screws against the mounting surface.

## DIN Rail installation

Install the DIN Rail (not supplied) in your desired location. See the installation instructions packed with your DIN Rail, [Installation Requirements on page 23](#), and [on page 14](#) for proper planning and installation.

### Installation

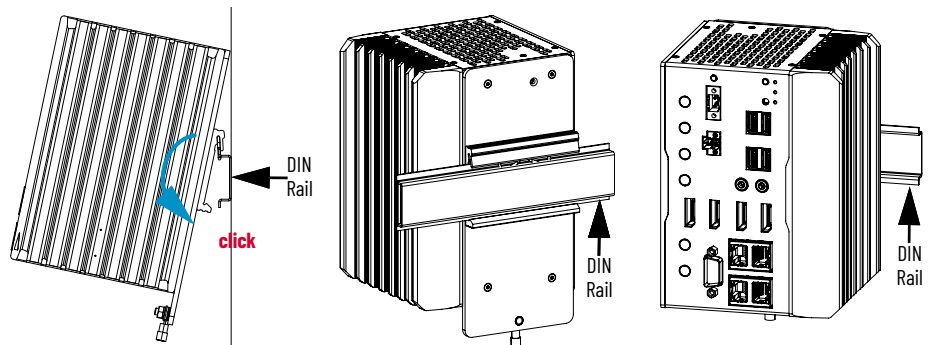
Install your system onto the installed DIN rail according to the DIN rail installation instructions.

---

**IMPORTANT** I/O ports must face forward.  
Ground screw must be located on bottom mounting bracket tab.

---

- Hang the system to the DIN Rail.



## Connect Peripheral cables

Connect peripheral cables to the appropriate I/O ports on your system. For available connections, [Peripheral connections on page 13](#) for I/O port locations.

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**IMPORTANT** To comply with EN 61326-1, the following cable types must be shielded: , DisplayPort, Ethernet LAN, RS-232 DB9M, USB. All I/O cables must be used only indoors, and USB cables must be less than 3 m (9.84 ft) in length.

---

## Grounding and bonding

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

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 connecting the cable to the interfaces.
- Method 2: Use an Equipotential bonding cable (16mm<sup>2</sup>) to connect the grounds between the monitor and the system.

For further information, see Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

### Required Tools

- Wire (not included).

- Philips screwdriver.
- Crimp lug tool.
- Wire stripper.
- Safety glasses.

### Installation

- Turn off the main power switch or breaker.
- Remove the supplied nut, eyelet terminal, and washers from the ground screw.



- For earth ground, fasten a 2.5 mm<sup>2</sup> (14 AWG) external wire with copper conductor, certified for operation at least 75°C to the eyelet terminal.
- Use a ground wire with an insulation color that is approved by local inspection authority.
- Strip 5 mm the covering from the end of the grounding wire.

**Table 8 - Ground Wire Assembly**

No.	Description	Photo
1	Wire (not provided)	
2	5 mm stripped covering	
3	Lug	

- Insert the stripped end (2) of the grounding wire (1) into the open end of the Eyelet terminal (3) and crimp it securely to the wire.
- Install the ground wire to the ground screw in the following sequence.



Sequence No.	Description
1	Nut
2	Lock washer
3	Washer
4	Eyelet terminal with cable crimped
5	Toothed washer
6	Chassis' ground screw

- Tighten the nut to the system.



## Connect DC Power



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

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

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



**ATTENTION:** Supply the system 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 system to minimize performance degradation and operating system failures.

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

To minimize ground loop currents and noise, Allen-Bradley recommends that DC powered system models use only one grounded connection.

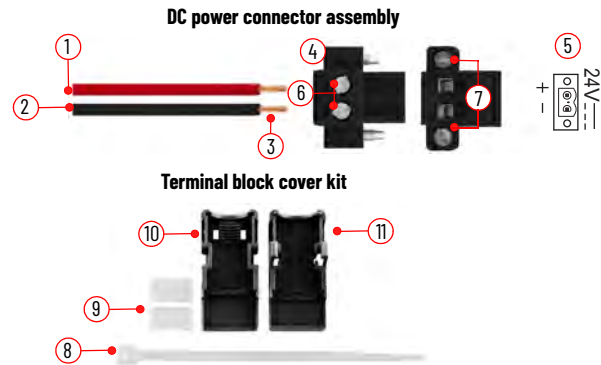
Follow these steps to connect the system to a DC power source.

This connector assembly provides strain relief for the DC power wires by reducing their movement. To assemble and attach the connector assembly, perform the following steps.

**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.

## Required Tools

- Adjustable torque screwdriver with M2.5 flat-blade screw bits.
- Wire stripper, cutter, and crimper tool.
- Cutting pliers.



Item No.	Description	Note
1	DC+ (24V DC nominal) wire	1.5 mm <sup>2</sup> (16 AWG) wire (not included) with a cross-section of 1.5 mm <sup>2</sup> (AWG16) with copper conductor, certified for operation at least 75°C.
2	DC- (0V DC nominal) wire	
3	Stripped wire length	7mm (0.275 in)
4	Terminal block	-
5	Polarity symbol	-
6	Torque range to secure DC power wires	0.22...0.25 N•m (0.16...0.18 ft•lb)
7	Torque value to reinstall DC terminal block to system	0.3 N•m (0.22 lb•in)
8	n1 cable tie	-
9	n2 labels	-
10	Half cover with cable tie slot	-
11	Half closing cover	-

1. Remove the DC terminal block (4) from the system.
1. Use wires not included, (1) (2) with 1.5mm<sup>2</sup> (16 AWG) with copper conductor, certified for operation at least 75°C.
2. Strip 7 mm (0.275 in.) the end of each power wire (3).
3. Insert each stripped end into the DC terminal block and fix it with the corresponding screws (6) with 0.22...0.25 N•m (0.16...0.18 ft•lb) torque.
4. Insert the cable tie (8) through the slots of the terminal block (10) connector clamp [step (A)].
5. Slide the connector half with the attached tie onto the end of the DC terminal block [step (B)].
6. Tighten the tie and remove the excess part [step (C)].
7. Install the white labels (9) supplied with the terminal block cover kit [steps (D) (E)].



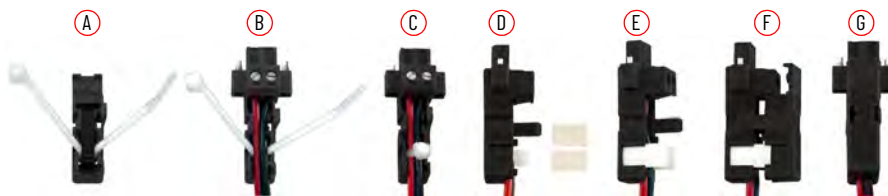
The white labels (9) can be used for identification or other information.

8. Align and install the other connector (11) clamp half [step (F)] to complete the assembly [step (G)]



When installed correctly, both tabs of the clamp half lock into place.

## Terminal block cover assembly



9. Connect the DC terminal block (complete with cables and cover) to the system chassis and fix it with the corresponding screws (8) with 0.3 N•m (0.22 ft•lb) torque.
10. Turn on the main power switch or breaker. The power on self test (POST) initiates.




**ATTENTION:** The earth ground connection to ground is mandatory. This connection is required for noise immunity, reliability, and Electromagnetic Compliance (EMC) with the European Union (EU) EMC Directive for CE marking conformance. This connection is required for safety by Underwriters Laboratory (UL).

# Operation

## Operating Guidelines

Follow these operating guidelines for your system.

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

When your system is mounted in an enclosure:

- operator access is limited to the front of your system.


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**IMPORTANT** Access to components behind the panel where your system is installed is restricted to authorized and properly trained personnel.

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- keep the enclosure door closed during operation to minimize dust and other airborne contamination entering your system. Open the door only for maintenance.

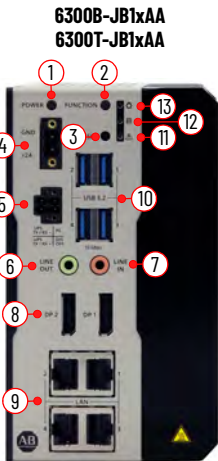
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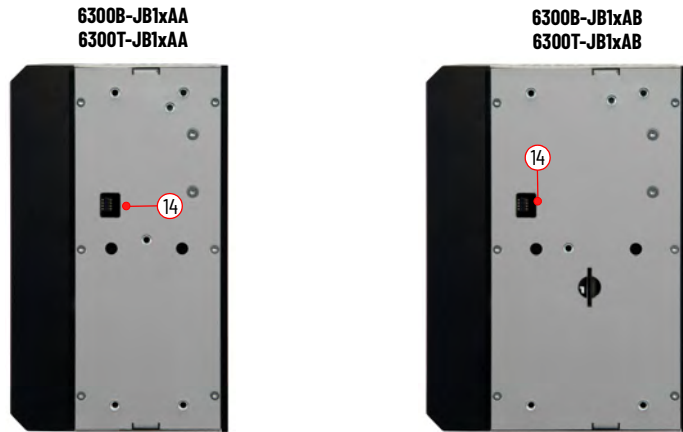
 **ATTENTION:** Do **not** operate your system with the covers removed. All covers are required to maintain its electromagnetic interference (EMI) shield.

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- Always use the proper shut-down procedures as required by your OS, such as the Shut Down command in the Microsoft Windows® OS.
- After you shut down your system, do not remove power until shutdown is complete.

## Connectors / LED Status indicators / Buttons



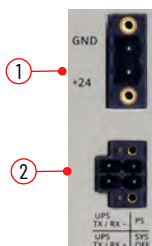


No.	Description	Required Cable	Sys. Power State	LED color	Status /Function	Catalog numbers	
1	Power ON button (ATX function)				Power Button turns the system on or off without fully disconnecting power supply. This button acts as the common power button available on all ATX systems. It invokes the operating system to do a previously specified action, like power down or sleep. If the operating system has been put in shut down mode and the main power has not been removed, then this button can be used to power up again the device.	All	
2	Function button				User defined. To program the function button and associated LED, please refer to the dedicated user guide.		
3	Reset				Reset button. Forces an internal reset, as if power was lost temporarily and then returned. <b>IMPORTANT:</b> 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 system. System reset can cause data loss and possible corruption to the operating system.		
4	DC power	Unshielded			Power connector		
5	UPS TX/RX- UPS TX/RX+ PS SYS OFF	Unshielded Length: max 15 m (49.21 ft)			UPS TX/RX-, UPS TX/Rx+, PS, SYS OFF connector (for UPS connection see ASEM 6300V-UPS-PB240 Smart UPS for Industrial PCs User Manual, <a href="#">6300V-UM002A</a> )		
6	1 x Line-Out	Unshielded			1 x Line-Out Audio Stereo connector		
7	1 x Line-In	Length: max 3 m (9.84 ft)			1 x Mic-In connector		
8	Display port	Shielded Length: max 5 m (16.40 ft)			2 x Display port++ V1.4		6300B-JB1xAA 6300T-JB1xAA
					4 x Display port++ V1.4		6300B-JB1xAB 6300T-JB1xAB
9	4 x LAN	Shielded			2.5 Gigabit Ethernet, RJ45 connector		All
10	4 x USB	Shielded, Length: max 3 m (9.84 ft)			USB 3.2 connectors		
11	LED Thermal alarm / Low Battery	-	-	Red flashing	If the LED is blinking red, then the CR2032 battery voltage is below 2.5V and the battery should be replaced with a new one. In such case replace the RTC battery before going down to 2V because at such voltage there could be loss of date and time.		
		-	-	Red	If the LED is turned on solid red, please shut off the system and check its cooling and power consumption. The measuring point is close to CPU and the Thermal limit is set to 100 °C (212 °F)		
		-	-	Blue	User defined. For programming the function button and associated LED, please refer to the dedicated user guide.		
12	LED Mass Storage	-	-	No color	No access to mass storage		
		-	-	Green flashing	Access to mass storage is taking place		
13	LED Power On	-	OFF	No color	The system is not powered		
		-	Power supply only ON	Green fading slow	Soft Off. Power supply can be turned off. Operating system shutdown procedure is terminated.		
		-	Full ON	Green	Power is drawing from the input power supply. System core is full-on		
		-	-	Green blinking fast	The system is running with UPS		
14	DIP switch access				Allow to set DIP switch. See ASEM 6300B-JB1 Compact system User Manual, <a href="#">6300B-UM004A</a>		



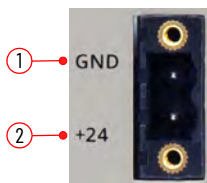
No.	Description	Required Cable	Sys. Power State	LED color	Status /Function	Catalog numbers
15	1 x COM	Shielded Length: max 30 m (98.42 ft)			RS232/422/485 isolated (DB9M)	6300B-JB1xAB 6300T-JB1xAB
16	Datalink (all LAN ports LED)	-	-	No color	No Datalink is present	All
		-	-	Green	Datalink is established	
		-	-	Flashing Green	Datalink is established and there is data transfer	
17	Data speed (all LAN ports LED)	-	-	No color	10/100 Mbps	
		-	-	Yellow	1 Gbps	
		-	-	Green	2.5 Gbps	

## Power supply area



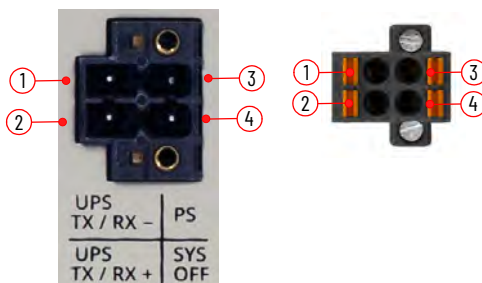
No.	Description
1	Power DC connector
2	UPS Tx/Rx -, UPS Tx/Rx +, PS, SYS OFF connector

### Power Connector



PIN	Function	Connect to
1	- (0V)	- Input voltage
2	+ (24V)	+ Input voltage

### UPS TX/RX - ATX/PS/Sys Off connector



PIN	Function
1	UPS TX/RX -
2	UPS TX/RX +
3*	PS ATX-
4*	SYS OFF ATX+

\* This connector has multiple functions selectable through the BIOS setup.

## ATX configuration

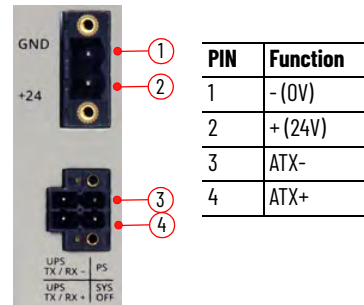
To set ATX option:

- Access the **UEFI BIOS** setup at power-up with **F2** key.
- Select menu **BOOT**.
- Select **ATX / System OFF**.
  - Chose **ATX initially ON** to set ATX mode initially ON.
  - Chose **ATX initially OFF** to set ATX mode initially OFF.

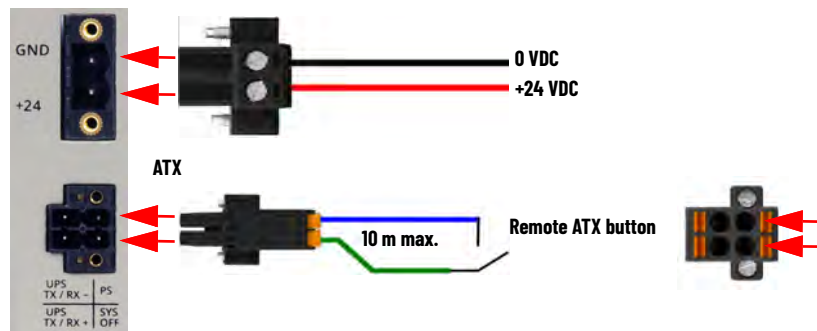
The system can be turned on by the 24V power supply input (default), by the power button on the front panel or by the ATX mode push button, according to the BIOS setup.

The ATX mode push button command, according to the operating system settings, allows the system the following operations:

- soft off;
- suspend;
- restart;



The following picture shows a simplified representation of the electrical circuit:



The remote power button has to be normally open type, and the cable used for the connection has to be unshielded twisted pair type with a maximum length of 10 m. The remote power button works as described in APC specification 5.0. This push button switches the system

from the sleeping/soft off state to the working state, and signals the OS to transition to a sleeping/soft off state from the working state.

The **soft off state** is what you get when you click the menu start > Shut down. The system is still powered but all functions are shut down. From this point the user can turn off power, or use the power button to start up again.

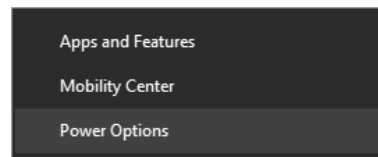
The **sleeping state** is what you get when you click the menu start > sleep. The system appears to be off but you can resume with the power button and other enabled resume devices like mouse or keyboard. Since the context is not saved on disk during sleep, this mode can lead to data loss if power is lost during sleep. Please note that the Power button send a request to the system. What the system does with this request depends on BIOS setup and windows configuration.

To Change what happens when you press the power button (refer also to the OS instructions):

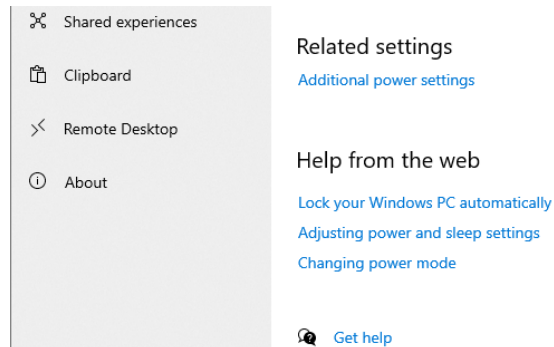
- Right click the Start button picture of the desktop.



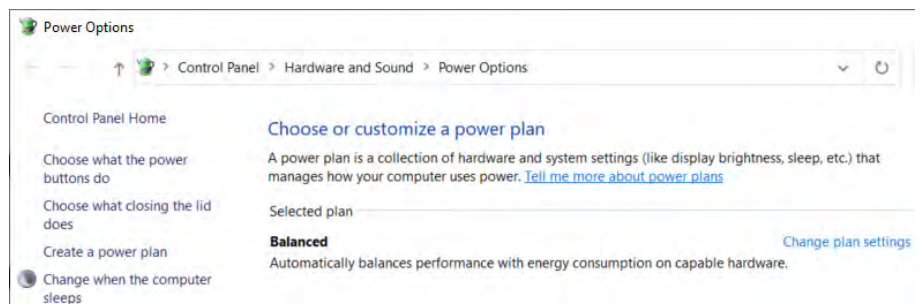
- Select Power Options.



- The following window will appear.



- Click on Additional Power Settings.
- The following window will appear.



- Expand the desired field and choose what you want your system to do when you press the power button.
- Click OK to confirm.

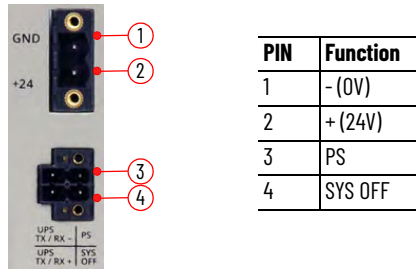
Please note that if the user presses the power button for more than four seconds while the system is in the working state, a hardware event is generated and the system will transition to the soft-off state. This hardware event is called a power button override and it is an extreme way to shut down the system, because it can lead to data loss or windows malfunction at the next power-on.

## PS / SYS OFF configuration

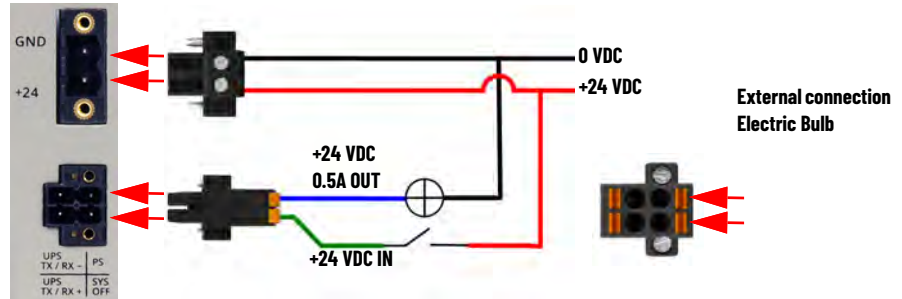
To set PS / SYS OFF option:

- Access the **UEFI BIOS setup** at power-up pressing **F2** key.
- Select menu **BOOT**.
- Select **ATX / System OFF**.
  - Chose **System OFF**.

**PS** (Power Status) is an output with maximum load of 0.5A which is used to monitor the system status and is controlled by CPU. For example: it Indicates the operator that the process of shutdown is completed. As shown below, with this solution the electric bulb turns off once the shutdown process is completed, so that the user can turn off the mains securely without interrupting the shutdown phase. In place of electric bulb, the user can connect any other devices with a maximum load of 0.5A.



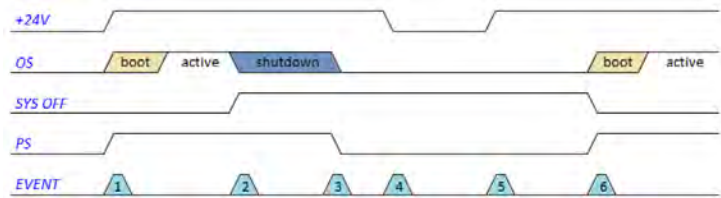
The following picture shows a simplified representation of the electrical circuit:



SYSOFF and PS signals are used to command and monitor the system status. The following table describes their behavior:

SYS OFF (IN)	PS (OUT)	Power supply input	System status
Either 0V or unconnected	+24V	+24V	ON
+24V	0V	+24V	OFF

### How to use correctly the PS and SYS OFF signals in a typical PLC application

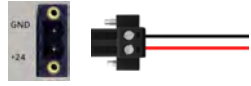
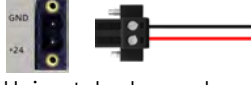
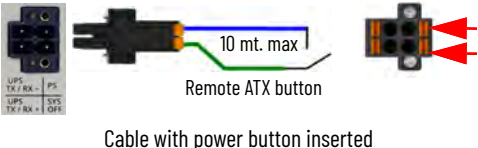
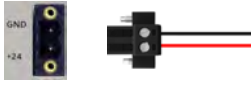

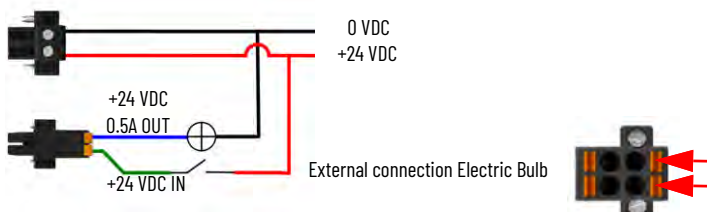
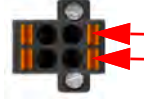


- **Event 1:**
  - The PLC provides power to the system.
  - The system starts bootstrapping and the PS signal goes to +24V.
- **Event 2:**
  - The PLC drives SYS OFF to +24V.
  - The system starts the shutdown routine.
- **Event 3:**
  - When the system shuts off the PS signal goes to GND.
- **Event 4:**
  - The PLC removes power to the system.
- **Event 5:**
  - The PLC provides power to the system.
  - The bootstrapping doesn't start because the SYS OFF is high.
- **Event 6:**
  - The PLC drives SYS OFF to GND.
  - The system starts bootstrapping and PS signal goes high.

## Power ON modalities

The system allows to set different power ON options:

Table 9 - Power ON modalities

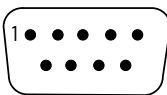
*ATX/System OFF BIOS item	ATX / PS/SYS OFF connector	Power connector	System Behavior
[ATX initially ON] selected	/	 Power cable inserted and powered	The system turns ON.
[ATX initially OFF] selected	/	 Power cable inserted and powered	In this case the motherboard is powered but the system does not turn ON (NO bootstrap). To turn on the system it is necessary to press the power button.
[ATX initially OFF] selected	 Cable with power button inserted	 Power cable inserted and powered	In this case the motherboard is powered but the system does not turn ON (NO bootstrap). To turn on the system it is necessary to press the remote power button.
[SYSTEM OFF] selected	/	 Power cable inserted and powered	The system turns ON
[SYSTEM OFF] selected	 ** Power cable inserted and powered External connection electric bulb and switch		The system turns ON if the contact is open.

\*: see paragraph [PS / SYS OFF configuration on page 35](#).

\*\*\*: see paragraph [How to use correctly the PS and SYS OFF signals in a typical PLC application on page 36](#).

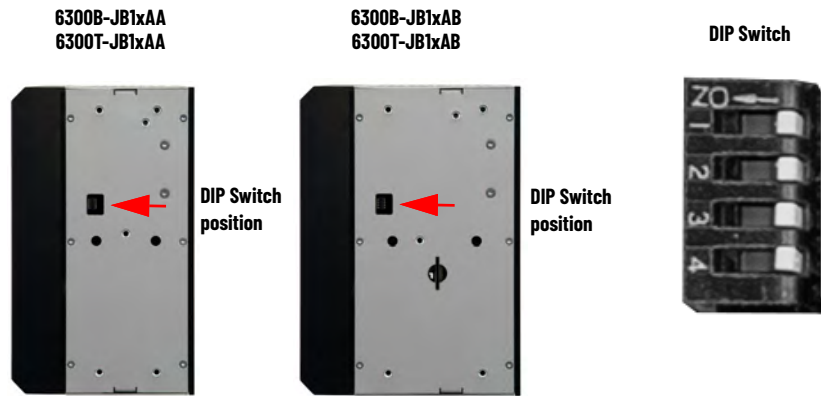
## COM Pinout

### COM Pinouts

PIN	RS232	RS422	RS485	Connector layout
1	+5V DC (OUT)	+5V DC (OUT)	+5V DC (OUT)	
2	RX	RX+	N.C.	
3	TX	TX-	RTX-	
4	N.C.	N.C.	N.C.	
5	GND	GND	GND	
6	N.C.	N.C.	N.C.	
7	RTS	RTX+	TX+	
8	CTS	RX-	N.C.	
9	N.C.	N.C.	N.C.	

## DIP Switch

To access the DIP Switch see [Remove the installation bracket on page 63](#).



**DIP Switch**

No.	Name	Function	Normal Operation
1	RTC_RST# (SW1-1)	Reset CMOS	Up (OFF)
2	SRTC_RST# (SW1-2)	Reset ME	Up (OFF)
3	BIOS_RESET_DEFAULT (SW1-3)	Restore BIOS Default	Up (OFF)
4	TEST_MODE (SW1-4)	Reserved	Up (OFF)

## Manual Start

Follow these steps to manually start your system

**IMPORTANT** The following steps apply when your system must be started manually, and DC power has been previously connected.  
See [Connect DC Power on page 28](#) if power has never been connected.

1. Make sure that all necessary peripheral devices are connected to the corresponding I/O ports on your system.
2. Make sure any connected components with separate power supplies (such as an external display) are turned on first.
3. Apply power to the main power switch or breaker.
4. Once power is applied, various light-emitting diode (LED) status indicators illuminate to display the state of your system. [Connectors / LED Status Indicators / Buttons on page 31](#) for details of these LED status indicators.

## Restart



A keyboard and mouse must be connected to perform the following steps.

Use either of the following methods to restart your system.

- **Method 1:** From the Start menu, click or select Restart.
- **Method 2:** Press Ctrl+Alt+Del, then click or select Restart.

During a restart, the following occurs:

- RAM is cleared.
- Power on self test (POST) starts.
- Peripheral devices are initiated.
- Microsoft Windows® OS loads.

Use the display to view the progress of the POST, initialize any peripheral devices, and the startup dialogs for any installed Windows® OS.

## System Reset

### For 6300B-JB1 compact Box PCs

---

**IMPORTANT** Performing a system reset can cause data loss and possible corruption to the Microsoft Windows OS. Only perform a system reset of your system if:

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

---

If methods to restart your system are unsuccessful, then:

1. Press the system reset button of your system.
2. Monitor the following activities on your external display after the reset:
  - RAM clears.
  - POST initiates.
  - Peripheral devices (such as printers or drives) initialize.
  - The operating system loads.

### For 6300T-JB1 Thin Client systems

For system reset instructions see the ThinManager® User Guide, publication User Guide, publication [TM-UM001](#).

## Shut Down

### For 6300B-JB1 compact Box PCs

Perform one of the following methods to properly shut down your system.



A keyboard and mouse must be connected to perform the following steps.

- **Method 1:** From the Start menu, click or select Shut Down.
- **Method 2:** Press Ctrl+Alt+Delete, then click or select Shut Down.

### For 6300T-JB1 Thin Client systems

For system reset instructions see the ThinManager® User Guide, publication User Guide, publication [TM-UM001](#).

## Notes:



## Configuration of System Settings



An external display, keyboard, mouse, and two USB drives (2GB FAT32 and 16GB minimum NTFS) are required to perform the steps in this chapter.

---

**IMPORTANT** Do not insert your USB drive until instructed to do so.

---

### Use the Setup Utility

#### About the Setup Utility

Your system features a setup utility. This setup utility is a hardware configuration program that is built into the unified extensible firmware interface (UEFI) and accessible through the power on self test (POST). The setup utility lets you change the system configuration to include the following modifications:

**Table 10 - Modifications Through the Setup Utility**

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

(1) A commissioning step occurs when: (a) your system 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. Type "info" in the Search field of the Windows task bar, then click "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 system. See [Manual Start on page 38](#) or [Restart on page 38](#). 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.

- Use the numeric keypad on your connected keyboard to modify the setup utility. See [Table 10](#) to navigate to the applicable menu.

Movement	Numeric Keypad Key	Function within Current Menu
Up	8	toggle between fields in current menu
Down	2	
Page Up	9	toggle between fields
Page Down	3	
Home	7	move from top or bottom of items
End	1	
Left	4	select menus on the menu bar
Right	6	
Next lower value	- or F5 function key	select lower or higher value within a field
Next higher value	+ or F6 function key	

## In-Band Error Correction Code (IBECC)

The In-Band Error Correction Code (IBECC) can be used to improve RAM reliability by providing error detection and correction.

This feature is disabled by default. After enabling this feature, 1/32 of the RAM will be used by ECC and will not be available for the OS and the applications.

To enable IBECC, enter Setup. From ChipSet tab, choose: System Agent (SA) Configuration, Memory Configuration and set In-Band ECC = Enabled.

## Back Up/Restore OS Image

**IMPORTANT** The procedures in this section apply to 6300B-JB1 Box PCs only, not 6300T-JB1 Thin Clients.

### Installation Steps

Before you can back up or restore the Windows® OS image, you must perform the following steps:

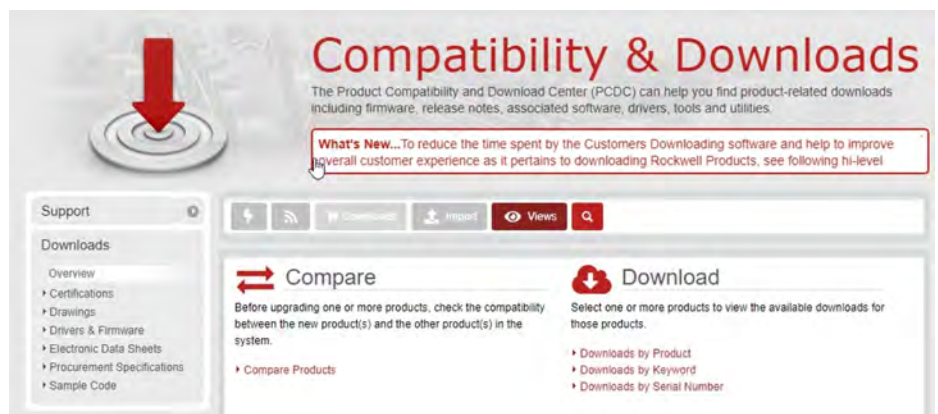
- Step 1: Download the Accessory Files.
- Step 2: Install the USB Drive Utility.
- Step 3: Create a Bootable USB drive.

#### Step 1 – Download the Accessory Files

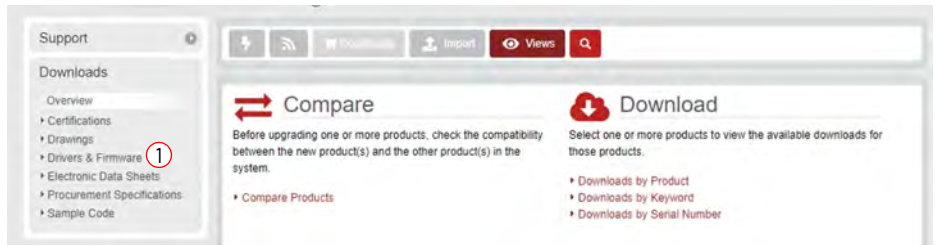


You must be registered with the Rockwell Automation PCDC website and accept the User Agreement before you can download files.

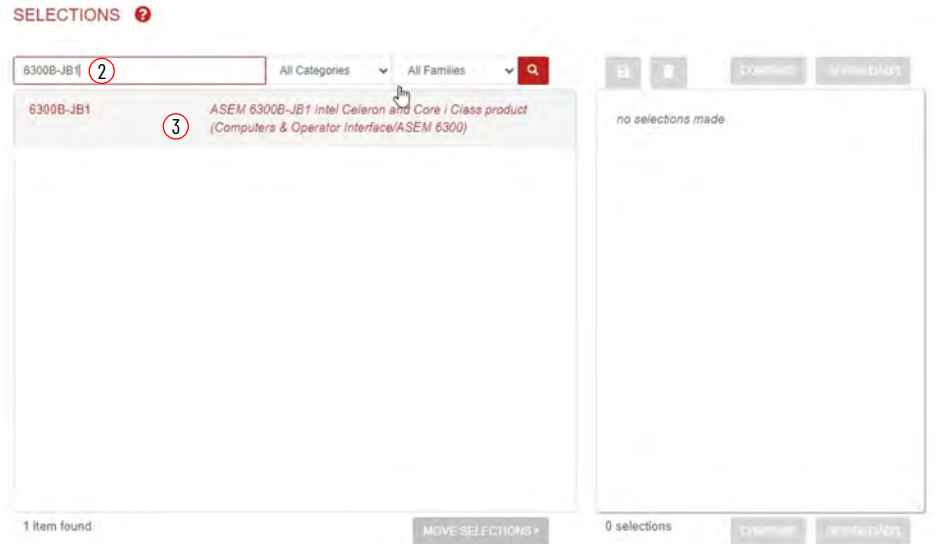
- Navigate to [rok.auto/pcdc](http://rok.auto/pcdc).



2. Click **Drivers and Firmware** (1) from Downloads section at the far left of the page.



3. Type **"6300B-JB1"** in the search field (2).



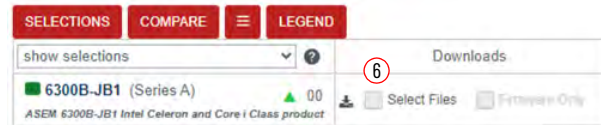
4. Select your product (3).

5. Click the result within the result area (4), then click the **Downloads** button (5).



6. Click **Select Files** (6).

**IMPORTANT** Do not change the file name of the downloaded batch (EXE) file.



7. The **Available Downloads** popup window appears.

Available Downloads ✕

▲ 6300B-JB1 A 00 Downloads

Description	Size	Note
Accessory Files		
<input type="checkbox"/> Backup and Restore	460 MB	
<input type="checkbox"/> OS SHA256 JB1	106 B	
<input type="checkbox"/> SYSTEM_IMAGE_JB1-W1021-00-01.wim	6.98 GB	
BIOS		
<input type="checkbox"/> UEFI SHA256 JB1	99 B	
<input type="checkbox"/> UEFI-EFI-Shell-Files-JB1	383 KB	
<input type="checkbox"/> UEFI_8922108A04	32 MB	

Items: 6 ▼

8. Select and download the accessory files **SYSTEM\_IMAGE\_JB1-** and **Backup and Restore**.

▲ 6300B-JB1 A 00 7 Downloads

Description	Size	Note
Accessory Files		
<input checked="" type="checkbox"/> Backup and Restore <span style="color: red;">←</span>	460 MB	
<input type="checkbox"/> OS SHA256 JB1	106 B	
<input checked="" type="checkbox"/> SYSTEM_IMAGE_JB1-W1021-00-01.wim <span style="color: red;">←</span>	6.98 GB	

9. Click on the **Downloads** Icon (7), the Download Cart (8) will appear

Download Cart 8

Download Item	Version	Release Note	Size
<input checked="" type="checkbox"/> Backup and Restore <small>Comments: BackupImage.bat, RestoreImageUEFI.bat, WinPE_amd64.iso</small>	v5		460 MB
<input checked="" type="checkbox"/> SYSTEM_IMAGE_JB1-W1021-00-01.wim	00		6.98 GB

10. Click on **Download Now** to confirm.

2 items ready for downloading Total: 7.43 GB

Clear
9
Download Now
Close

- Software End-User License Agreement pop up will appear, select the preferred language (10) and press Accept and Download button (11).



- An **exe** file (less than 5MB) will be downloaded. DO NOT RENAME THE EXE FILE.
- Execute the downloaded exe file and the download will automatically start.
- Wait for the downloads to end
- Locate the download directory (default: C:\RA) and unzip the file **Backup\_and\_Restore.zip**, inside you will find an **iso** and two **bat** files to be used in the next chapters:
  - BackupImage.bat
  - RestoreImageUEFI.bat
  - WinPE\_amd64.iso

### Step 2 – Install a USB Drive Utility



Rufus, a commonly used, no-cost USB drive utility, is referenced in the upcoming sections of this chapter. Download Rufus from <https://rufus.ie/en/>. Other utilities can offer slightly different methods to create a bootable USB drive. In those cases, follow their instructions.

- Install a USB drive utility of your choice to your system.
- Follow the USB drive utility manufacturer's on-screen instructions for proper installation.

### Step 3 – Create a Bootable USB Drive



These items are required to perform the following steps:

- 2 USB drive (one 16 GB minimum and another 2GB minimum for the installation of the installation utility), and
- installation of a bootable USB utility (such as [Rufus](#)).

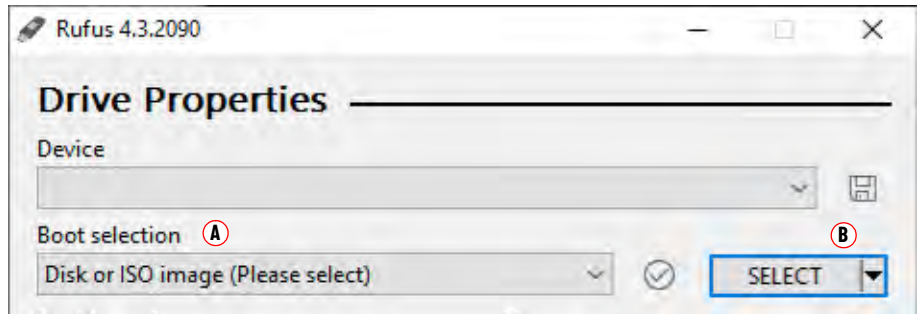
---

**IMPORTANT** The steps and graphics below are specific to the Rufus USB utility.

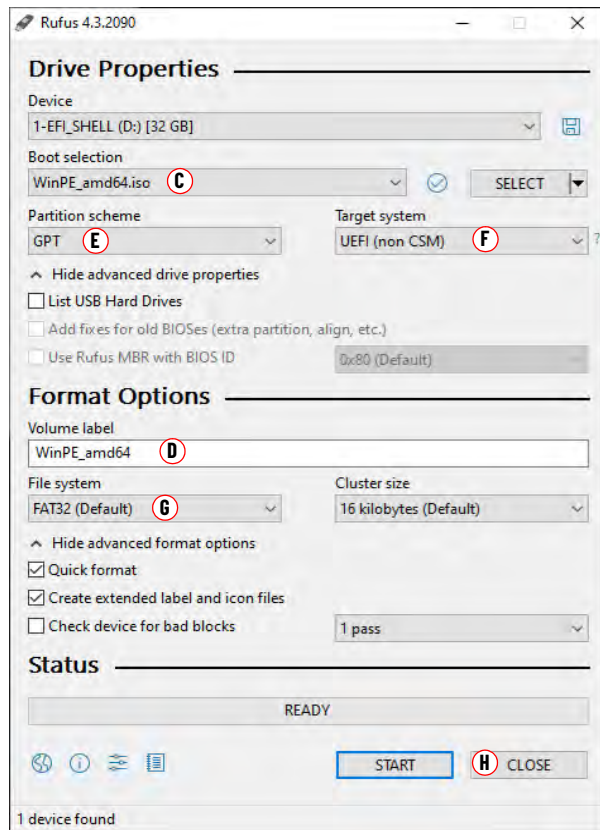
---

- Connect the first USB drive (2GB minimum) to your system.

19. Open the bootable USB utility. The Drive Properties menu appears.



20. Select 'Disk or ISO image (please select)' [A] from the 'Boot selection' pull-down menu.
21. Click the 'SELECT' button [B]. An Open window appears displaying downloaded files.
22. Select the ISO file **WinPE\_amd64.iso** that you downloaded from the Rockwell Automation PCDC site. The 'Boot selection' field updates to the selected ISO file [C] and the 'Volume label' field populates to the ISO file name [D].



The 'Volume label' field (D) automatically populates with the ISO file name selected. You can rename the file if necessary.

23. Select the following from other pull-down menus:

Pull-down Menu	Selection	Graphic Notation
Partition scheme	GPT	E
Target system	UEFI (non CSM)	F
File system	FAT32 default	G

24. Click the Start button [H]. A popup dialogue appears to state any data on the USB drive will be erased.
25. Click the OK button within the Warning dialogue box.

- 26. Use the Status portion of the dialog box to monitor the boot progress.
- 27. Click the Close button once the boot process is complete.

## Back Up the OS Image

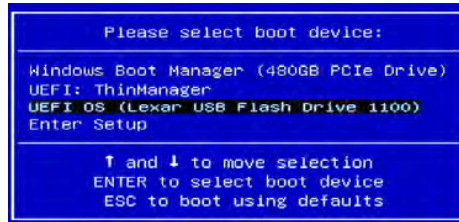
To back up the OS image, perform the following steps.

---

**IMPORTANT** Before proceeding, you must first [Step 1 – Download the Accessory Files on page 42](#) and [Step 3 – Create a Bootable USB Drive on page 45](#). When you backup the OS image, only the main partition (C) is captured, any other file in any additional partition must be copied manually.

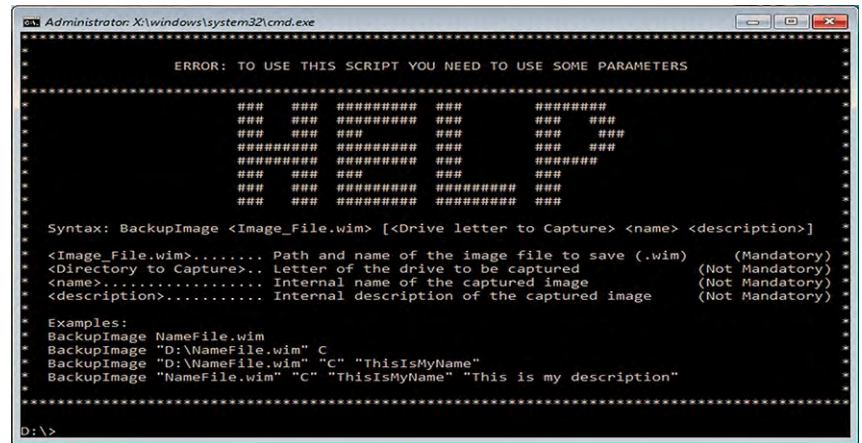
---

1. Copy the previously downloaded **BackupImage.bat** file on your system to the non-bootable USB NTFS drive 16 GB minimum.
2. Insert the 2GB minimum USB drive previously created.
3. Restart your system.
4. During the POST, press **F10** to access the Boot Menu.
5. Use the **down arrow (2)** to toggle down to the bootable USB drive you created, then press the **Enter** key..



The Microsoft Windows Preinstallation Environment (WinPE) then boots from the USB drive.

6. Navigate to the directory where the BAT file is located. For example: if you know the BAT file in on the 'D:' drive, type 'D:', then press the Enter key.
7. Type '**BackupImage.bat**', then press the **Enter** key. The following batch file script appears:

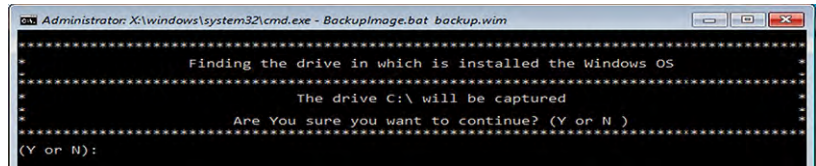


---

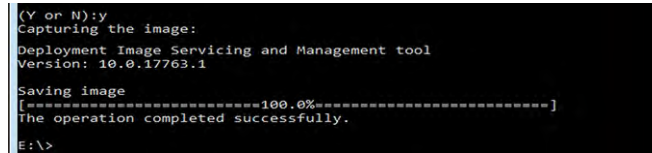
**IMPORTANT** The .wim file name **cannot** have any space characters. Use the underscore character instead.

---

8. In the directory, type '**BackupImage NameFile.wim**', where '**NameFile**' is the name of the file you want to back up.
9. Press the **Enter** key. A confirmation screen appears.



10. Confirm that the targeted drive is correct.
11. Press the **'Y'** key, then press the **Enter** key. The following script appears after the back-up process has completed.



12. Once the backup image is saved, perform one of the following actions:
  - Restart your system, type **'exit'**, then press the **Enter** key **or**
  - Shut down your system, type **'wpeutil shutdown'**, then press the **Enter** key.

---

**IMPORTANT** If you encounter any error during the backup process please be sure to have enough space on the 16GB minimum USB Drive, try to use another USB driver or use a USB HUB between the machine and your USB Drive.

---

## Restore the OS Image

To restore the OS image on your system, perform the following steps.

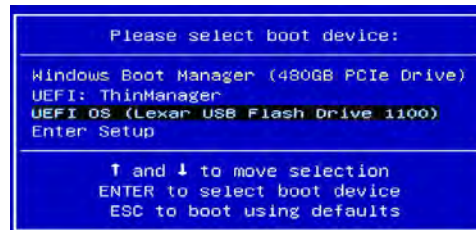
---

**IMPORTANT** Before you can restore the OS image, you must first [Step 1 – Download the Accessory Files on page 42](#) and [Create/Verify a FAT32-formatted USB Drive on page 49](#).

When you restore the OS image, all files on your system storage drive are erased.

---

1. Copy the WIM and BAT files on your system to the non-bootable USB drive (1GB minimum).
2. Insert the 2GB minimum USB drive previously created.
3. Restart your system.
4. During the POST, press **F10** to access the Boot Menu.
5. Use the **down arrow (2)** to toggle down to the bootable USB drive you created, then press the **Enter** key.



The Microsoft Windows Preinstallation Environment (WinPE) then boots from the USB drive.

6. Navigate to the directory where the BAT file is located. For example: if you know the BAT file is on the 'D:' drive, type 'D:', then press the **Enter** key. .

---

**IMPORTANT** The wim file name **cannot** have any space characters. Use the underscore character instead.

---



- In the directory, type '**RestoreImageUEFI.bat NameFile.wim**' where **NameFile** is the name of the file that you wish to restore.

**EXAMPLE** Correct character structure example of a wim file:  
D:\RestoreImageUEFI.bat System\_Image-  
PanelPC\_6300\_windows\_10\_2020\_LTSC.wim

A confirmation screen appears.



The device name and capacity can differ from what is shown in the example.

```
*****
* This script is going to delete all the data in the following device: *
* Name of Device: 240GB SATA Flash Drive *
* Capacity: 240 GB (1GB = 1000MB) *
* Are You sure you want to continue? (Y or N) *
* (Y or N): *
*****
```

- Press "Y" to confirm that the targeted drive is correct, then press 'Enter'.  
The following script appears after the restoration process is completed.

```
Applying image
[-----100.0%-----]
The operation completed successfully.
Boot files successfully created.
D:\>
```

- Perform one of the following activities:
  - Type "exit", then press 'Enter' to restart your 6300B-JB1 system or
  - Type "wpeutil shutdown", then press 'Enter' to shut down your 6300B system.
 The OS image has been restored successfully to your system storage drive.

## Update the UEFI BIOS

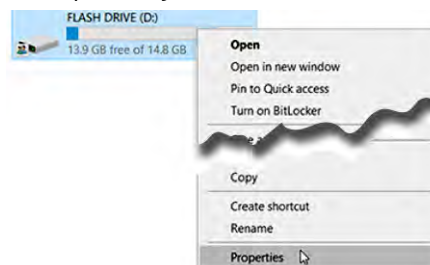
**IMPORTANT** The following example refers to the UEFI version 8922108A.04

Occasionally, an UEFI update is released to enhance the performance or to correct an anomaly of your system. In such instances, a UEFI update can be downloaded from [rok.auto/pcdc](http://rok.auto/pcdc).

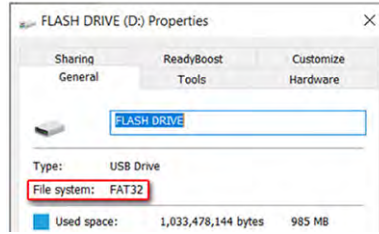
**IMPORTANT** The USB drive **must** be formatted as a FAT32 file system type before proceeding to later steps.

### Create/Verify a FAT32-formatted USB Drive

- Connect the USB drive to your system.
- In File Explorer, right-click on the USB drive icon then select Properties.



- In Properties, verify that the file system type is FAT32.



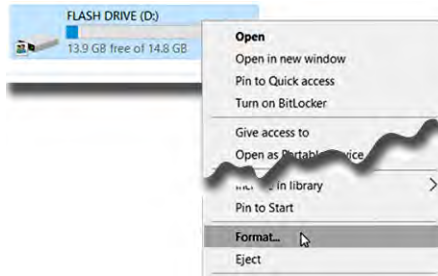
4. Click the Cancel button to close the Properties popup window.
5. If the drive is FAT32-formatted: proceed to [Download the Updated UEFI files on page 50](#). If the drive is not FAT32-formatted: proceed to next step.

---

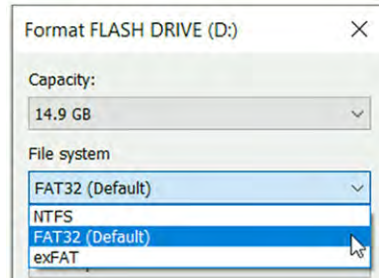
**IMPORTANT** If the USB drive must be FAT32-formatted, all files on the USB drive will be erased permanently. Before you proceed, transfer any required files to another location.

---

6. Right-click on the USB drive icon, then select **Format**.



7. Select 'FAT32 (Default)' from the File system pull-down menu.



8. Click the Start button to format the USB drive to FAT32. A confirmation box appears once the format is complete.
9. Click the OK button.

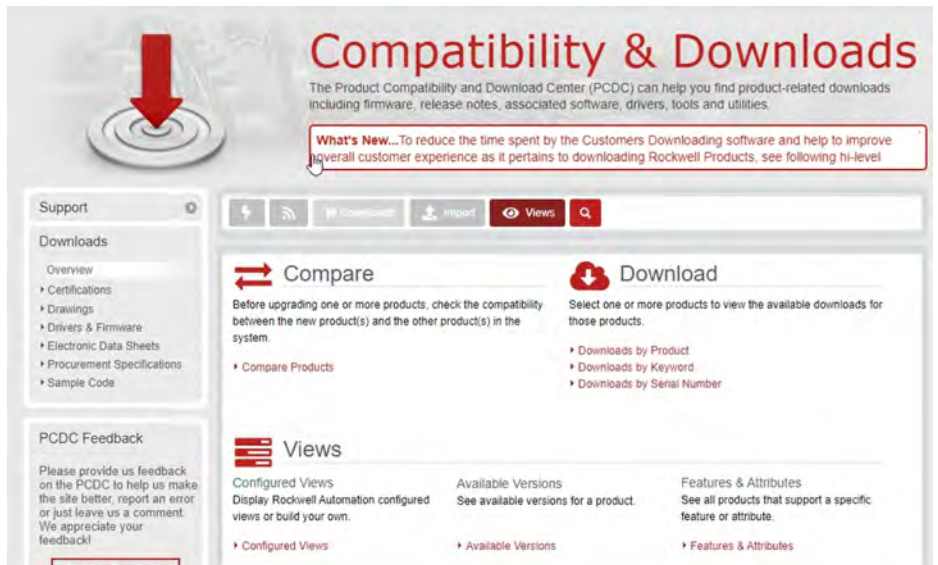
### Download the Updated UEFI files



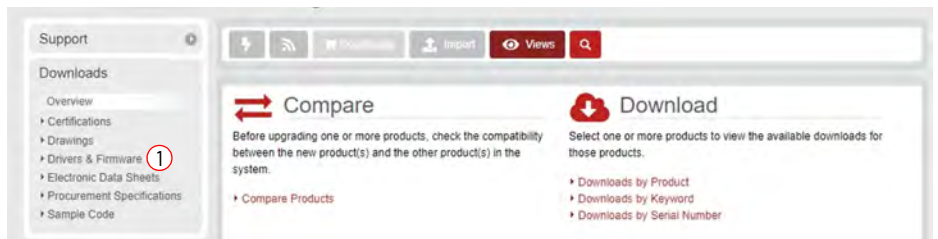
You must be registered with the Rockwell Automation PCDC website and accept a User Agreement before you can download the files.

To download the updated UEFI files, perform the following steps.

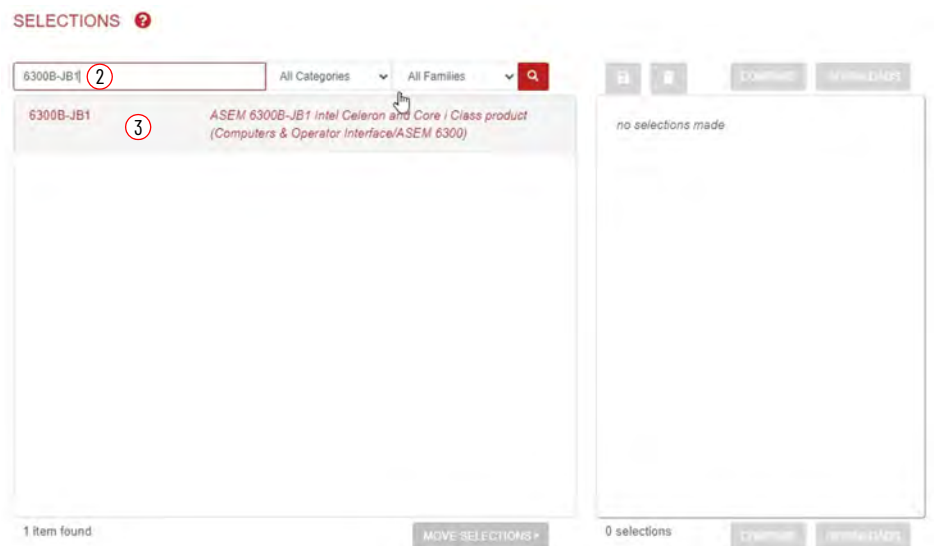
1. Navigate to [rok.auto/pcdc](http://rok.auto/pcdc).



2. Click **Drivers and Firmware** from Downloads section at the far left of the website.



3. Type **"6300B-JB1"** in the search field (2).



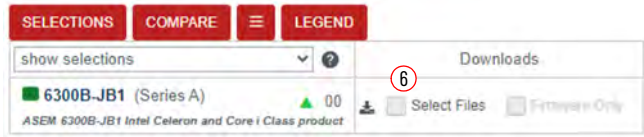
4. Select your product (3).

5. Click the result within the result area (4), then click the **Downloads** button (5).

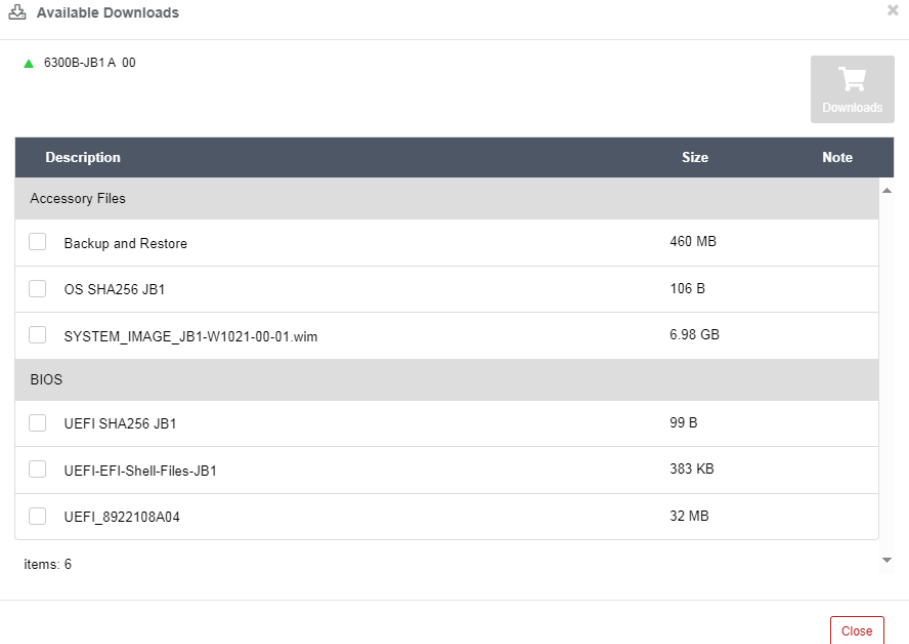


6. Click **Select Files** (6) under **Downloads**. An **Available Downloads** popup window appears.

**IMPORTANT** Do not change the file name of the downloaded batch (EXE) file.

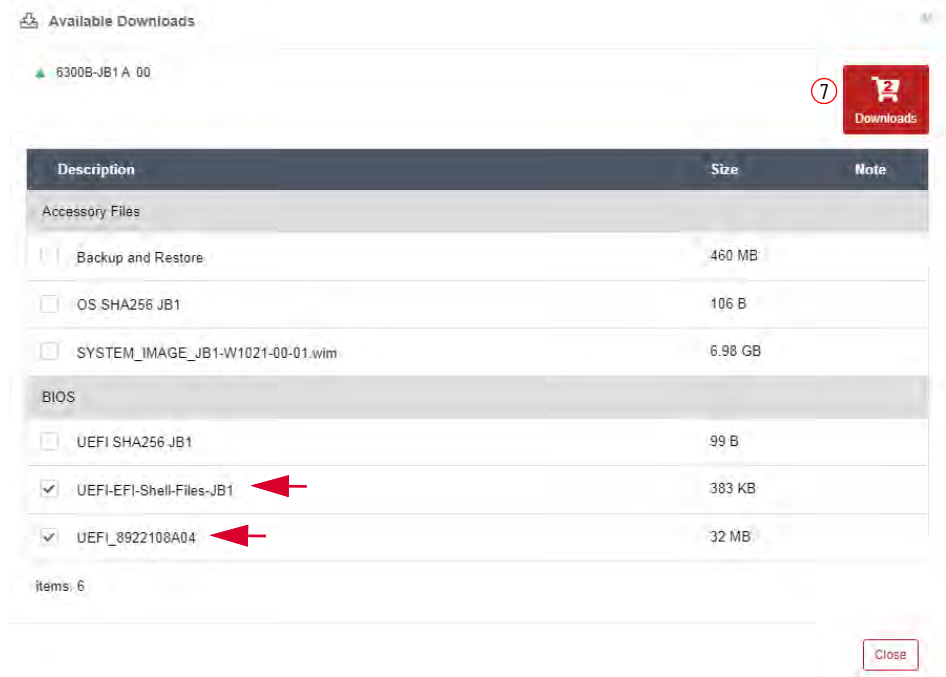


7. The **Available Downloads** popup window appears.

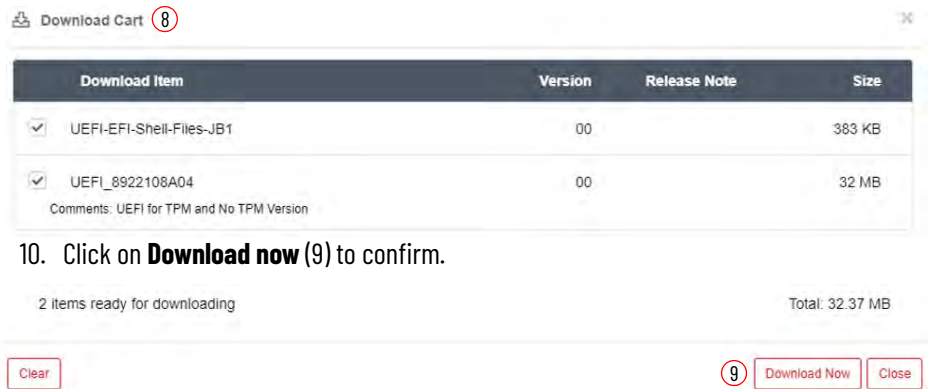


8. Select and download the accessory files:

- **UEFI-EFI-Shell-Files-JB1**
- **UEFI\_8922109A0x**



9. Click on **Downloads** icon, the Download Cart will appear.



Download Cart 8

Download Item	Version	Release Note	Size
<input checked="" type="checkbox"/> UEFI-EFI-Shell-Files-JB1	00		383 KB
<input checked="" type="checkbox"/> UEFI_8922108A04 Comments: UEFI for TPM and No TPM Version	00		32 MB

2 items ready for downloading Total: 32.37 MB

Clear 9 Download Now Close

10. Click on **Download now (9)** to confirm.



REV: 10-Oct-2022

**SOFTWARE AND CLOUD SERVICES AGREEMENT**

IMPORTANT - READ THIS AGREEMENT CAREFULLY

To assist You in better understanding this Software and Cloud Services Agreement, we provide this overview. Capitalized terms are defined below. The Agreement comprises:

- Article 1: Structure; Common Terms; Specific Software Legal Terms and General Commercial/Legal Terms common to all Rockwell Automation Software and Cloud Services offerings.
- Article 2: Cloud Services: Specific terms applicable only to Rockwell Automation Cloud Services offerings.
- Article 3: On-Premise Software: Specific terms applicable only to Rockwell Automation Software offerings installed at Your facilities.

**ARTICLE 1 - STRUCTURE**

1.1 **Structure of the Agreement.** This Agreement is a legal contract between You (either an individual or a single entity) and Rockwell Automation. This Agreement gives You the right to use the Software.

The Order Form identifies the Software this Agreement applies to, including any specific terms agreed to by You and Rockwell Automation. Each

10 English

11 Accept and Download Reject

12. An **exe** file (less than 5MB) will be downloaded. **DO NOT RENAME THE EXE FILE.**
13. Execute the downloaded exe file and the download will automatically start.
14. Wait for the downloads to end.
15. Locate the download directory (default: C:\RA) and unzip the file **UEFI\_EFI\_Shell\_Files\_JB1.zip**, inside you will find the following files to be used in the next chapters:
  - AfuEfix64.efi
  - EFI/Boot/BOOTX64.EFI

## Update UEFI files

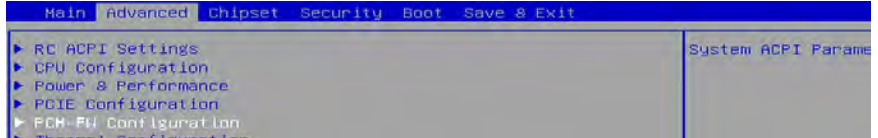
---

**IMPORTANT** This info refers to the UEFI version 8922108A.04

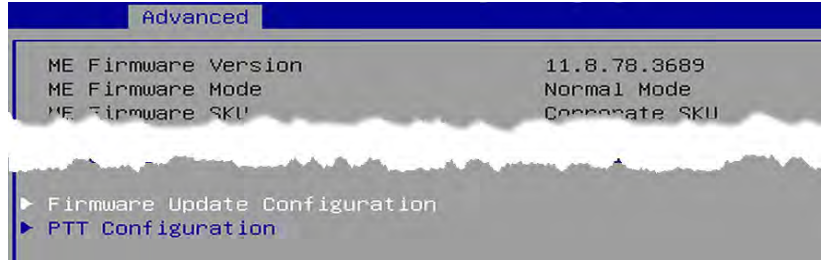
---

1. Verify that the following files are on your FAT32 formatted USB drive:
  - EFI/Boot/BOOTX64.EFI
  - AfuEfix64.efi
  - UEFI upgrade (bin) file
2. Start or restart your system.
3. During POST, press the F2 key to access the set-up utility.
4. Use the right (6) arrow to toggle over to the 'Advanced' menu.

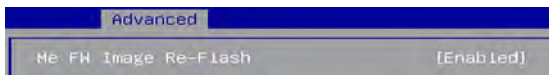
- Use the down (2) arrow to toggle down to 'PCH-FW Configuration', then press the Enter key.



- Use the down (2) arrow to toggle down to 'Firmware Update Configuration', then press the Enter key.



- Enable 'Me FW Image Re-Flash', then press the Enter key.



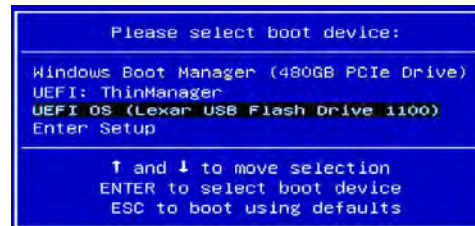
**IMPORTANT** The 'Me FW Image Re-Flash' option is valid only after the next restart of your system. It resets automatically with the following system restart.

Perform a Save and Exit from SETUP menu or press F10.

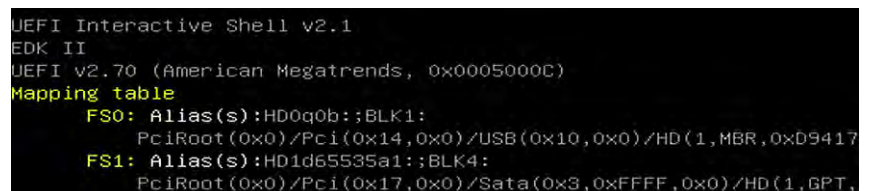
A Save and Exit Setup popup window appears.



- Select 'Yes' then press the Enter key.
- Restart your system. It could take between 1 and 2 minutes before the system to boot up.
- During the POST, press F10 to access the Boot Menu.
- Use the right (6) arrow to toggle over to the 'Save and Exit' menu.
- Use the down arrow (2) to toggle down to the bootable USB drive you created, then press the Enter key.



- The UEFI shell appears.



- Type "FSx:" (where 'x' is the number that is shown for your mapped USB drive).
- Press the Enter key.



To verify you moved to the USB drive, use the command 'dir' to confirm that the downloaded files are there.

16. To update the UEFI, type "AfuEfix64.efi "NAME\_OF\_THE\_BIN\_FILE.bin" /x /me /p /b /n".

```
Shell> fs0:
FS0:\> AfuEfix64.efi "F:\BIOS\UEFI\AfuEfix64.bin" /x /me /p /b /n
```

17. Press the Enter key.



**ATTENTION:** Do not disconnect power from your system until after the UEFI update procedure is complete. Power loss during this procedure can cause your system to be inoperable.

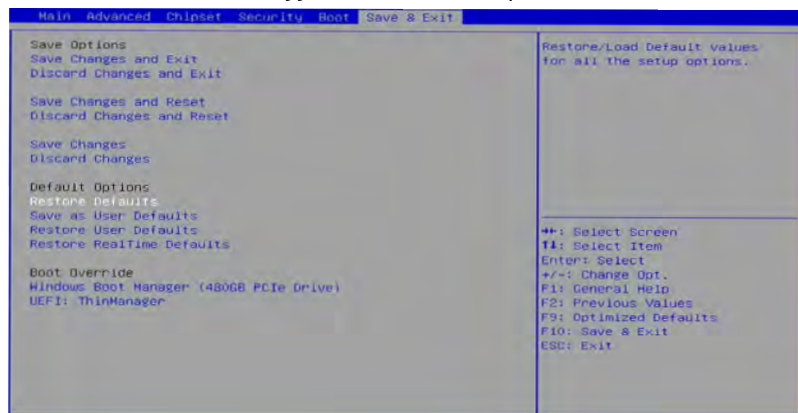
18. Once the UEFI update procedure is complete, restart your system. See [Restart on page 38](#) to properly restart your system.



In some instances, your system may restart more than once before POST.

The POST initiates.

19. During POST, press the F2 key to enter the set-up utility.  
20. Use the right (6) arrow to toggle over to the 'Save & Exit' menu.  
21. Use the down (2) arrow to toggle down to 'Default Options'.



The following options are available:

UEFI Setting	Function
Restore Defaults	Restores the default values for all set-up options.
Save as User Defaults	Save the changes that are already done as user defaults.
Restore User Defaults	Restores the user defaults to all set-up options.
Restore RealTime Defaults	Restores the real-time default settings.

22. Select a preferred UEFI setting.  
23. (Optional) Press the F9 key to select optimized defaults.  
24. Press the F10 key to save and exit the set-up utility.

## Restore Factory Defaults Through a DIP Switch



If you cannot access the BIOS UEFI (lost password or errors during configuration) you can perform a **UEFI factory default reset** via **DIP switch**.

To access and reset the DIP switch, perform the following steps.



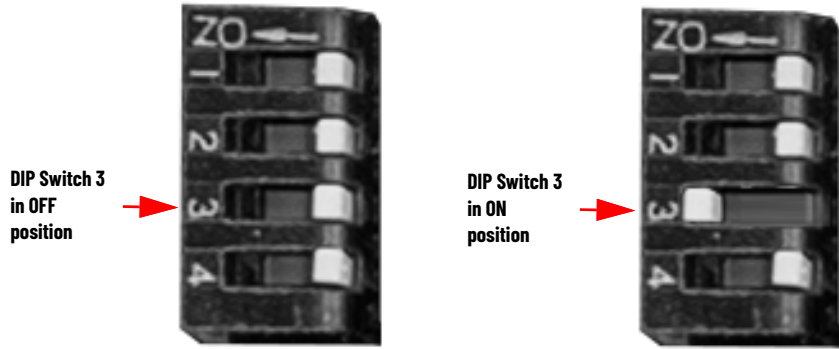
You will be removing and reinstalling the cover from your system several times in the upcoming steps.

See [Remove/Reinstall the Cover on page 63](#).

To access and reset the DIP switch, perform the following steps.

1. Properly shut down your system. See [Shut Down on page 39](#).
2. Remove the installation bracket see [Remove the installation bracket on page 63](#).
3. Locate the DIP switch bank see [DIP Switch on page 37](#).

- Move switch 3 of bank to the **ON** (factory reset) position.

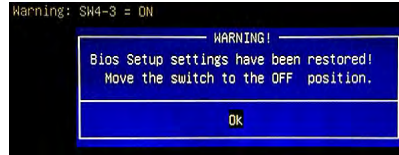


- Reinstall the installation bracket.
- Manually start your system. See [Manual Start on page 38](#).

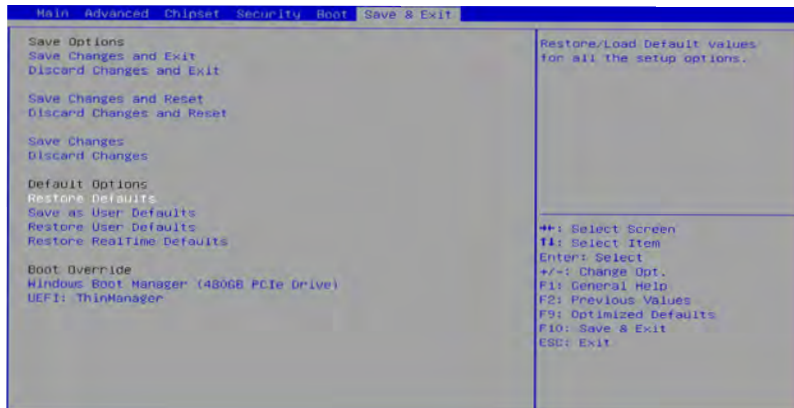
A warning appears (instead of POST).



The blue 'Warning!' box disappears after you click 'Ok', but the 'Warning: SW4-3 = ON' message remains until you shut down your system.



- Press the Enter key.
- Turn the system off.
- Move switch 3 of bank SW4 to the **OFF** position.
- Reinstall the installation bracket.
- Manually start your system. See [Manual Start on page 38](#).  
The POST initiates.
- During the POST, press the F2 key to enter the UEFI set-up utility.
- Toggle over to the Save and Exit menu.
- Toggle down or press the F9 key to select 'Optimized Defaults'.



- Press the F10 key to save and exit.



## Change Settings in BIOS UEFI Firmware

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



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.

### Restore System Defaults

If your system fails to initiate or an error occurs after changes were made in the setup menus, defaults must be loaded to correct the error. 'Optimized Defaults' are system default settings to optimize system performance.

Follow these steps to load the system defaults.

- Properly restart your system. See [Restart on page 38](#).

The POST begins.

- During POST, press the F2 key to access the UEFI setup utility.

The UEFI Main menu appears.

- Using the arrow keys move to **Save & Exit** tab.
- Select **Restore Defaults**.
- Press the **Enter** key to select **Restore Defaults**.
- Press the **F10** key to save your changes and exit.

The machine will reboot.

### 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 system.

Secure Boot uses a public key infrastructure to make sure that your machine mount system 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

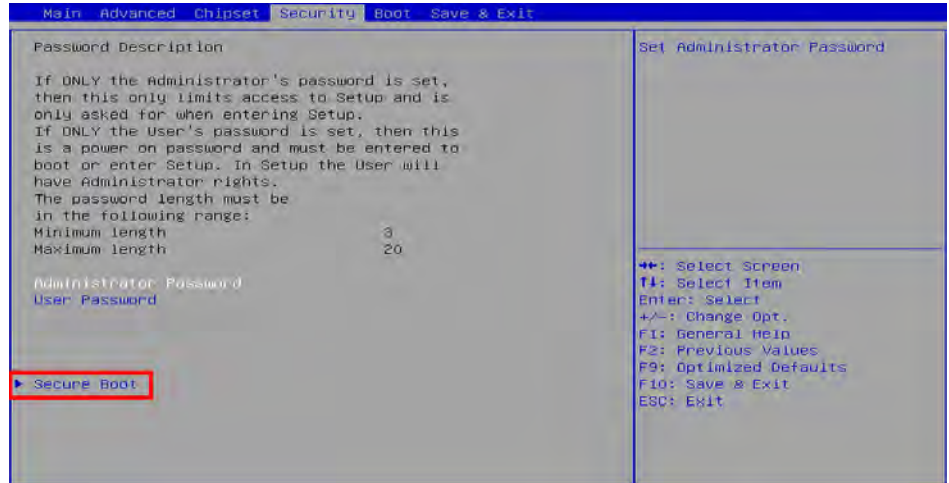
- 
- IMPORTANT** The 'Secure Boot Option' sometimes **must** be set to 'Disabled' if your system is:
- running non-Windows OS (such as Linux), or real-time environment (such as Codesys).
    - these are considered an untrusted source where you may receive a secure boot violation.
  - using additional hardware with boot ROM (such as graphic cards or RAID controllers).
-

To disable Secure Boot in your BIOS, follow these instructions.

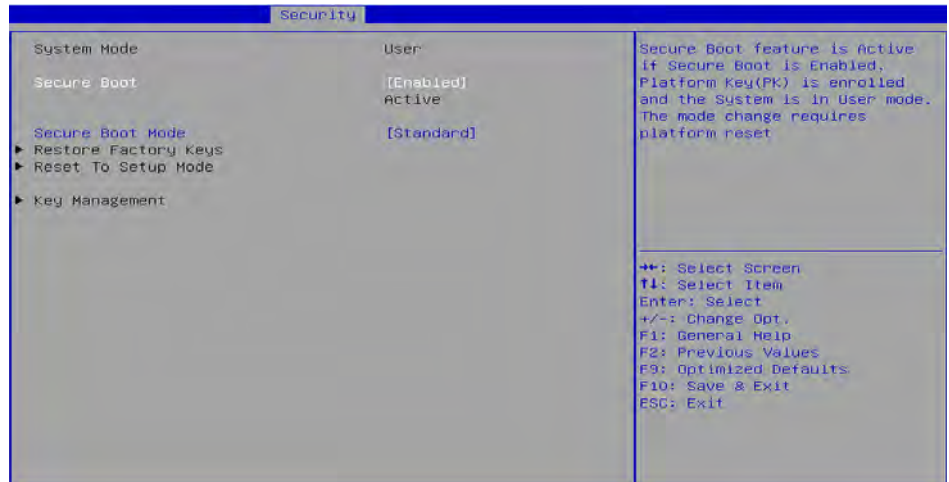


See the navigation key at the top of the setup screen to properly navigate with your keyboard.

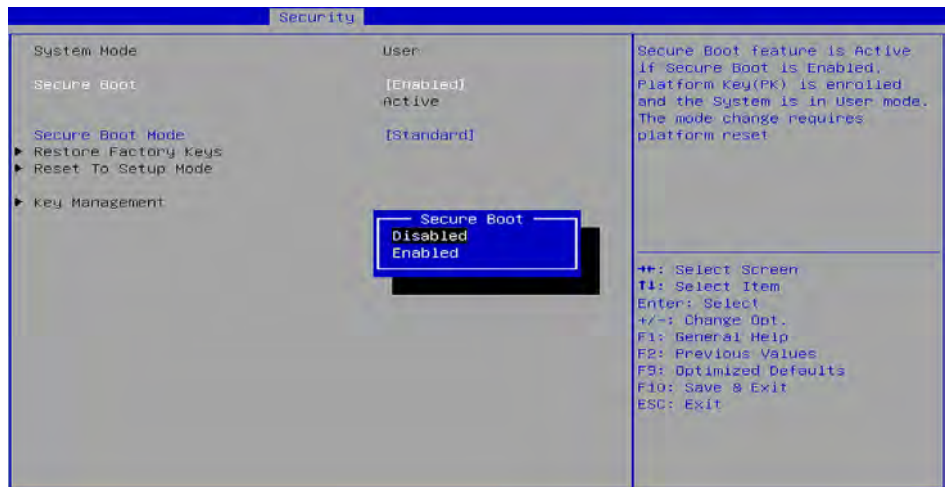
1. Restart or power up your system using one of the following methods:
  - a. from the Start menu, select 'Restart' **or**
  - b. press Ctrl+Alt+Delete on an attached keyboard and select 'Restart.'
2. Press the 'F2' key. An initial setup screen appears.
3. Navigate over to the 'Security' menu.



4. Select "Secure Boot" and press Enter.



## 5. Select "Disabled".



## 6. Press the 'F10' key to save and exit the BIOS.

## Enable ThinManager



The minimum versions of ThinManager® software required are:

- ThinManager 11.0.0
- TermCap 9.13.1.89 or TermCap2 13.1.89
- Firmware Package 13.0.3

Recommended for best experience:

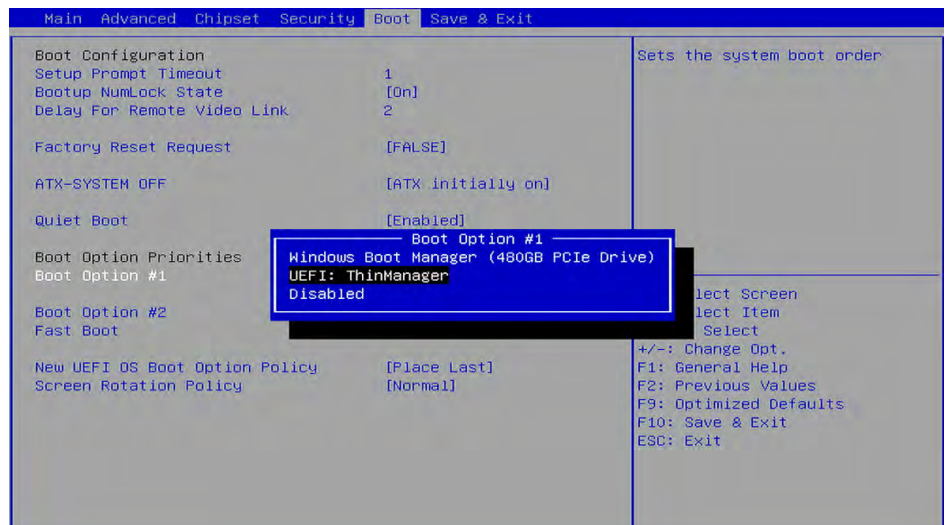
- ThinManager 13.1.0
- TermCap2 13.2.100
- Firmware Package 13.1.2

To enable ThinManager in your BIOS, follow these instructions.



To use ThinManager you need to change the boot order to set the system to start with ThinManager instead of disk.

1. Restart your system 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. The initial setup screen appears.
3. Navigate over to the 'Boot' menu.
4. Select 'ThinManager' as 'Boot Option #1' for the boot option priority.



5. Navigate over to the 'Save and Exit' menu.
6. Select 'OK', then press the 'F10' key to save and exit the BIOS.

## Maintenance and Service

Your system is designed for lower maintenance cost. However, maintenance or service can occur in the following instances:

- Clean external surfaces.
- Replace the RTC battery..



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

---

**IMPORTANT** Access to internal components of your system is restricted to qualified and properly trained personnel. Review the specifications of a new component before you install it to verify that it is compatible with your system.

---



Record the model number, serial number, and any other pertinent information of your new components for future reference.

Use the procedures in this chapter to help you maintain and service your system.

---

**IMPORTANT** Before performing any maintenance or service to your system, you must follow the [Maintenance Precautions](#) and complete the [Prepare for Maintenance and Service](#) instructions.

---

## Maintenance Precautions

### Voltage Precautions



**SHOCK HAZARD:** This system contains line voltages. Disconnect all power to your system before you install or remove components. Failure to disconnect power can result in damage to your system.

---

### Electrostatic Discharge Precautions



**ATTENTION:** Electrostatic discharge (ESD) can damage static-sensitive devices or micro circuitry. Be sure to:  
 Disconnect all power before you work on your system as detailed in [Voltage Precautions](#).  
 Observe proper packaging and grounding techniques to help prevent damage.

---

Follow these ESD precautions:

- Transport your system 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 wriststrap that is connected to the work surface.
  - Use properly grounded tools and equipment.

- Keep the designated work area free of nonconducting 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.

### Hot surface



**WARNING:** Hot surface. When the system is turned on the surface can be hot. Be careful before handling the system for maintenance.

## 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 system hardware.

1. Properly shut down your system. See [Shut Down on page 39](#) for instruction.
2. Be sure the system is cold, see [Hot surface on page 62](#).
3. Disconnect all peripheral cables, including the power supply. This avoids exposure to high energy levels.



Label each cable to expedite reassembly.

4. Loosen the mounting screws within the keyholes of the bracket from the mounting surface.
5. Lift your system off of the mounting screws.
6. Use a screwdriver to remove the bracket from your system.
7. Place your system on a clean, static-free surface.

## Clean Exterior Surfaces

For optimal performance, it is important to periodically clean the exterior surfaces of your system. Perform the following steps.

1. Perform all steps in [Prepare for Maintenance and Service on page 62](#).



**ATTENTION:** Do not use abrasive cleaners, solvents, brushes, or high-pressure washes as this can cause damage the system.

2. Use a clean sponge or a soft cloth dampened with water to wipe the surfaces of your system.

## Remove/Reinstall the Cover

Depending on the different model of the system, there are different brackets and covers:

Figure 1 - Brackets



Brackets

No.	Description
1	Book mount bracket
2	DIN rail bracket

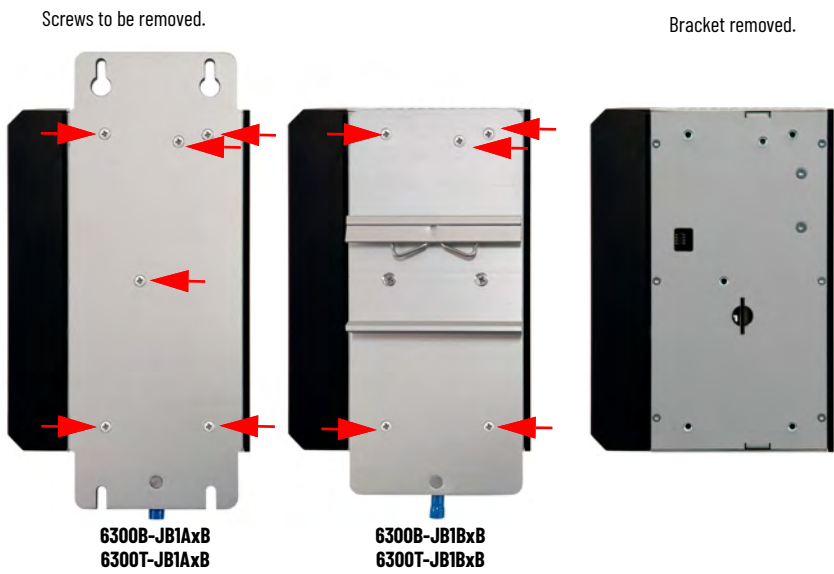
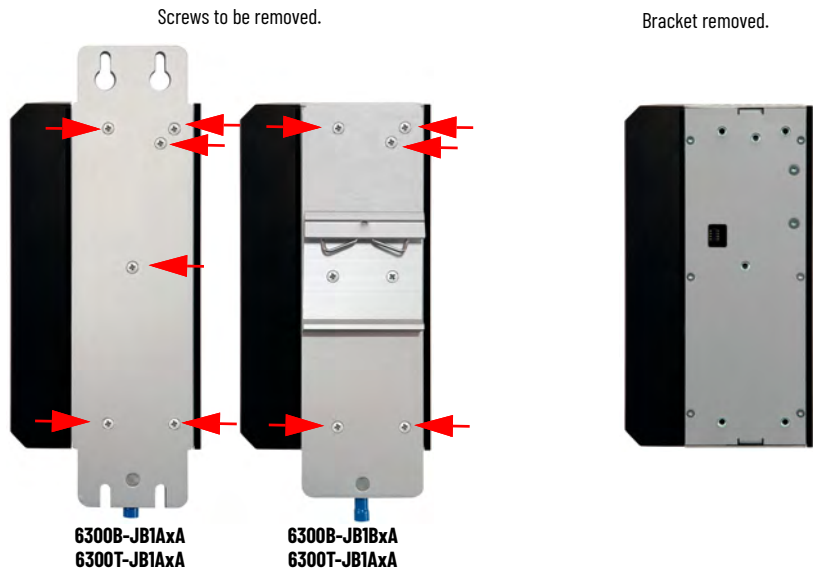
## Required Tools

- Philips screwdriver.
- Torx screwdriver T07.
- Adjustable torque driver with T07 Torx and Philips key bits.
- Safety glasses.

## Remove the installation bracket

To access the internal components, you must first remove the bracket.

1. Follow the steps for [Prepare for Maintenance and Service on page 62](#).
2. Remove the indicated screws to remove the bracket.



### Remove the cover

Depending on the different model of the system, there are different covers. To install, replace, or upgrade internal components, you must remove the cover.



#### Brackets

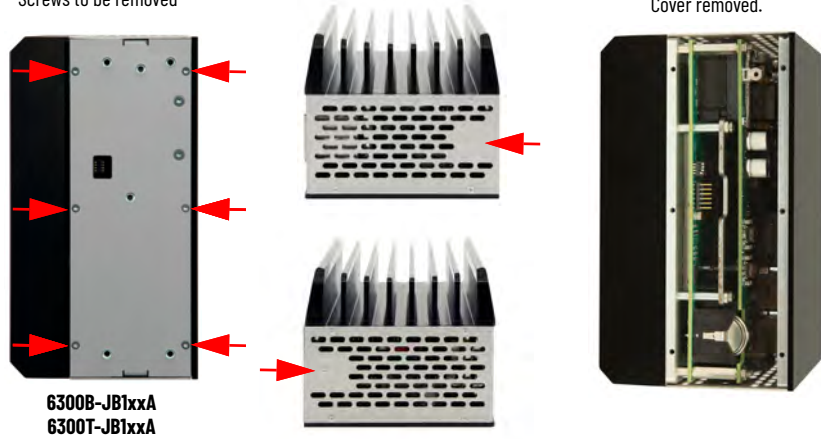
No.	Description
1	6300B-JB1xA and 6300T-JB1xA rear cover
2	6300B-JB1xB and 6300T-JB1xB rear cover

- Follow the steps for [Remove the installation bracket on page 63](#).

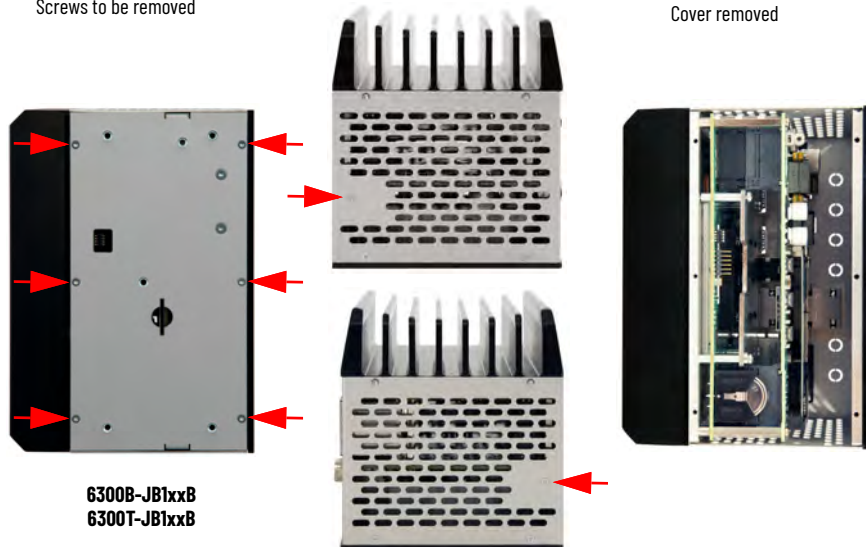


## 4. Remove the indicated screws to remove the cover.

Screws to be removed



Screws to be removed

**Reinstall the cover and the bracket**

To reinstall the bracket and the cover, perform the following steps.

1. Properly seat the cover on the chassis of your system.
2. Tighten the screws to secure it.
3. Properly seat the bracket on the cover of your system.
4. Tighten the screws to secure it.
5. Follow the steps in [Post-configuration on page 65](#).

**Post-configuration**

Follow these steps after you install or replace a hardware component.

6. Remount your system see [Installation on page 25](#).
7. Reconnect the peripheral cables and power cord see [Connect Peripheral cables on page 26](#).
8. Turn on the main power switch or breaker.
9. Manually start your system. See [Manual Start on page 38](#).

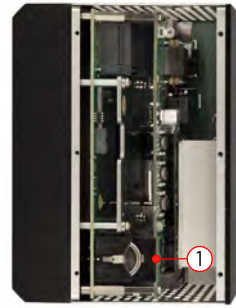
- If necessary, reconfigure the UEFI settings if the default values are not suitable for your application. See [Update the UEFI BIOS on page 49](#).

## Battery slot

All kind of models have an internal battery slot.



6300B-JB1xxA  
6300T-JB1xxA



6300B-JB1xxB  
6300T-JB1xxB

### Battery Slot position

No.	Description
1	Battery Slot position

Through this slot it is possible to have access at the CMOS Battery.

## Battery Removal / Installation

All systems 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 system.

The RTC battery life depends on the amount of time your system is powered on, known as on-time. The thermal light-emitting diode (LED) status indicator located on the front of your system flashes red when the RTC battery is lower than 2.5V.



6300B-JB1xxA  
6300T-JB1xxA



6300B-JB1xxB  
6300T-JB1xxB

### Low battery LED

No.	Description
1	Low Battery LED position

## Procedure

Follow these steps to replace the RTC battery.



**WARNING:** A Lithium CR2032 3V RTC battery must be used. If an incorrect RTC battery is used, there is a risk of explosion.

### IMPORTANT

Battery replacement requires work near static-sensitive equipment. Therefore, only service personnel must replace the battery.

---

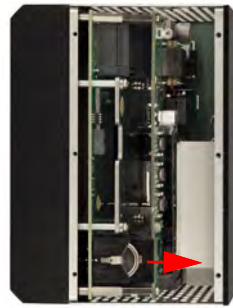
**IMPORTANT** Once the RTC battery is replaced, all unified extensible firmware interface (UEFI) settings return to their default values. If UEFI settings were set to a value other than the default, the UEFI must be reconfigured.

---

- Perform all steps in [Prepare for Maintenance and Service on page 62](#).
- Perform all the steps in [Remove/Reinstall the Cover on page 63](#).
- Carefully extract the battery and replace it with a new Lithium CR2032 3V battery with positive polarity facing the inside.



6300B-JB1xxA  
6300T-JB1xxA



6300B-JB1xxB  
6300T-JB1xxB

- Perform all the steps in [Reinstall the cover and the bracket on page 65](#).
- Follow the steps in [Post-configuration on page 65](#).

## Notes:

## Troubleshooting

### Thermal Alarm

Your system has a dedicated light-emitting diode (LED) status indicator that illuminates when your system reaches its operating temperature. See [Connectors / LED Status indicators / Buttons on page 31](#) for the LED locations and their functions.

The internal temperature is measured near the CPU. The over-temperature LED illuminates when a thermal limit of 85 °C (185 °F) is reached. Follow these steps to determine where an operating threshold has been reached.



Use the toggle buttons on your numeric keypad to navigate within the set-up utility for the following steps.

1. Properly shut down your system. See [Shut Down on page 39](#).
2. Apply power to your system.
3. During POST, press F2 to access the UEFI set-up utility:
4. In the Main menu, use the right (6) arrow to toggle over to the Advanced menu.
5. In the Advanced menu, use the down (2) arrow to toggle down to select 'Hardware Monitor', then press the Enter key.
6. Use the information provided in the 'Hardware Monitor' 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 your system operation.

1. Properly shut down your system. See [Shut Down on page 39](#).
2. Disconnect power and all peripheral devices from your system.
3. Verify the following are properly connected (if present):
  - keyboard
  - mouse
4. Reconnect power to your system. The POST initiates and one of three events occurs:
  - the startup process completes,
  - a non-fatal error occurs and the related error message is displayed, or
  - a fatal error occurs and the startup process ends.

If	Then
the system powers on	reconnect all peripheral devices one at a time until the issue occurs
the issue is with a specific software or driver	reinstall the software or driver

If an issue cannot be identified by these steps or a fatal error occurs, see [Rockwell Automation Support](#) on the back page for technical support.

## Ship/Transport



**ATTENTION:** To avoid physical damage to your system, do not ship or transport your system until it is removed from the machine, panel, or rack. Before shipping or transporting your system 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 system separately from any unsorted municipal waste.

---

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

When a storage drive is part of your disposal, permanently erase any data on it or destroy the drive before disposing of it.



# Rockwell Automation Support

Use these resources to access support information.

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

## 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](http://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](http://rok.auto/pec).

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Publication 6300B-UM004B-EN-P - September 2024

Supersedes Publication 6300B-UM004A-EN-P April 2024

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