Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

ASEM 6300B-SW2 and 6300P-SW2 High End Industrial Computers

Bulletins 6300B - 6300P, Family SW2

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. Copies of the certificate of compliance are available at rok.auto/certifications.

Safety instructions

ATTENTION: This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6561 ft) without derating.
This equipment is considered Group 1, Class A industrial equipment according to EN 61326-1. Without appropriate precautions, there can be potential difficulties with electromagnetic compatibility in other environments caused by conducted as well as radiated disturbance.
In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1, for more installation requirements.
- UL 50, UL 50E, CSA C22.2, No. 94.1, and CSA C22.2, No. 94.2, as applicable, for explanations of the degrees of protection provided by enclosures.

European Union Directive and UKCA Compliance

This equipment meets the European Union Directive and UK requirements when installed within the European Union, UK, or EEA regions and have the CE or UKCA marking. A copy of the declaration of the conformity is available at rok.auto/certifications.

ATTENTION: This computer is intended to operate in an industrial or control room environment, which uses some form of power isolation from the public low-voltage mains. All I/O circuits are rated for use with indoor cables only.

Installation Requirements

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

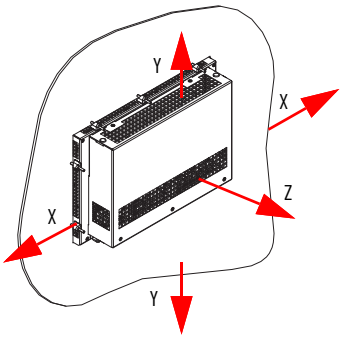
- When choosing the installation site, consider the following:
  - The site must have sufficient power.
  - The site must be indoors and non-hazardous.
  - The site must not expose the computer to direct sunlight.
- The computer can operate in the following environmental conditions:
  - Operating temperature: 0...50 °C (32...122 °F).
  - Storage temperature: -20...+65 °C (-4...+140 °F).

Operation/storage relative humidity (RH) non condensing: 20...90%.

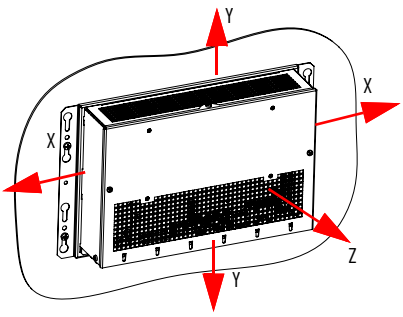
Follow these requirements to mount the computer.

- Choose a suitable mounting height.
- To help prevent overheating and to provide access to the I/O ports for cable connections, mount the computer with the following minimum clearances from all four sides of the outer frame and back of the computer chassis:
  - X direction ≥ 50 mm (1.97 in.)
  - Y direction ≥ 100 mm (3.94 in.)
  - Z direction ≥ 50 mm (1.97 in.)
- For optimal performance, mount the computer in the horizontal orientation and vertical (upright) position, so the I/O ports face down.

Panel Installation min. clearance



Wall mount Installation min. clearance



Rockwell Automation

Panel PC installation: prepare the Cutout

Observe these guidelines to install the computer in a panel.

WARNING: Failure to follow these guidelines can result in personal injury or damage to the panel components. Take precautions so any metal fragments during the panel cutout do not enter components that are installed already in the panel.
AVERTISSEMENT: Le non-respect de ces directives peut entraîner des blessures ou des dommages aux composants du panneau. Prendre des précautions pour que les fragments métalliques pendant la découpe du panneau n'entrent pas dans les composants déjà installés dans le panneau.

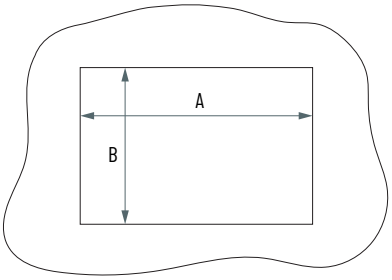
- Plan the panel cutout area that is needed for your computer, consider minimum clearance provided, see Installation Requirements.
- To ensure installation with the proper IP protection grade, the following conditions must be satisfied:
  - The mounting panel material must be 2...6 mm (0.08...0.24 in.) thick with a max deformation limit on the plane of 0.5 mm (0.02 in.).
  - For a uniform gasket seal, the roughness of the panel surface must be ≤ 120 microns (Rz 120).
  - Verify that the area around the panel is clear of obstructions.

Table 1 - Cutout Dimensions

Display Size, in.	Cat. No.	Panel Cutout Dimensions[1] [mm (in.)]	
		A	B
12.1	6300P-SW212E	315.0 (12.40)	250.0 (9.84)
12.1W	6300P-SW212F	301.0 (11.85)	203.0 (7.99)
15.0	6300P-SW215E	370.0 (14.56)	295.0 (11.61)
15.6W	6300P-SW215L	388.0 (15.27)	238.0 (9.37)
17.0	6300P-SW217G	435.0 (17.12)	335.0 (13.18)
18.5W	6300P-SW218L	453.0 (17.83)	274.0 (10.78)
19.0	6300P-SW219G	470.0 (18.50)	368.0 (14.48)
21.5W	6300P-SW221L	520.0 (20.86)	312.0 (12.28)
24.0W	6300P-SW224L	577.0 (22.71)	344.0 (13.54)

(1) Tolerance ±1 mm (0.04 in.).

Panel Cutout Areas



Panel installation: required tools

Tools required:

- Panel cutout tools.
- Hexagonal key 1.5 mm (0.06 in.) (supplied) and torque limiting screwdriver (not supplied) with a 1.5 mm (0.06 in.) hex key bit.
- Mounting clips (supplied), for the needed quantity, see Figure 1.
- Safety glasses for operator to wear during installation.

Supplied tools

Sequence No.	Description
1	Clip
2	Hexagonal key 1.5 mm (0.06 in.)

Installation

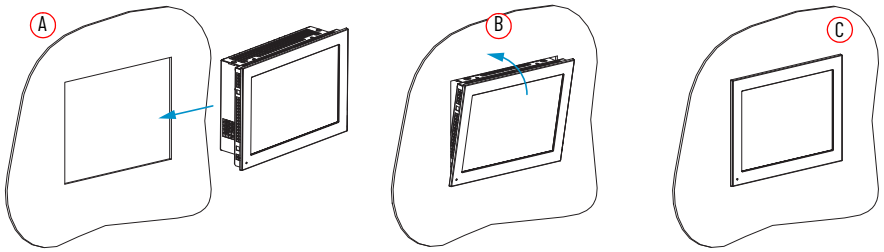
To install the computer in the panel cutout, perform the following steps.

IMPORTANT You need two people to install the computer; one person holds the computer in place while the second person installs the mounting clips.

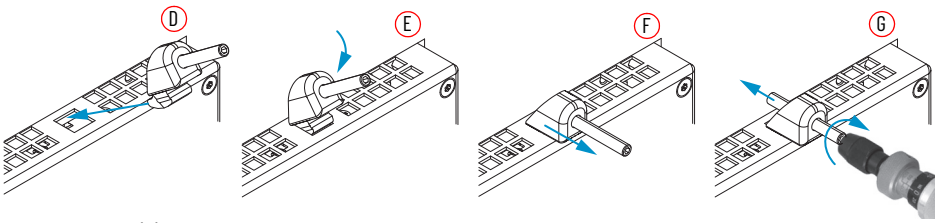
- Remove all electrical power from the panel before you make the cutout.
- Cut an opening in the panel area to the dimensions needed for your computer.
- After the cutout is completed, clean the panel area of all debris and metal fragments.
- Make sure that the sealing gasket is positioned properly on the computer.

IMPORTANT The gasket is a part of the display and forms a compression-type seal. Do not use sealing compounds.

1. From the front of the panel insert the computer into the cutout (A) and rotate it (B) until it is completely against the panel (C).



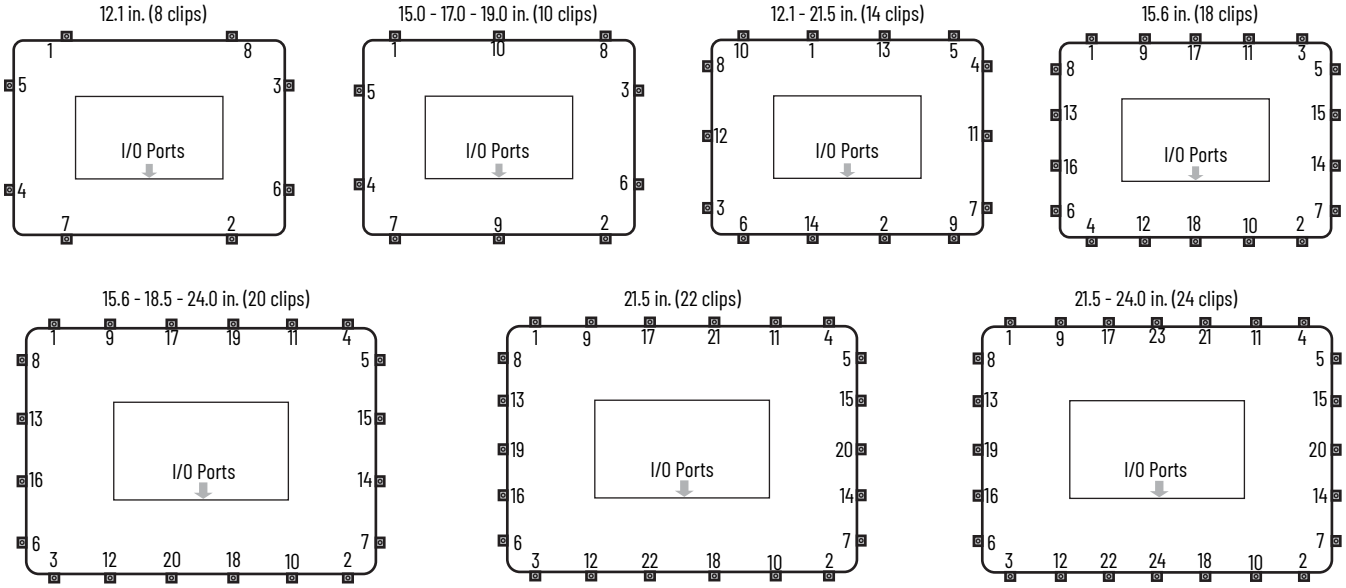
2. Insert the mounting clips into the holes (D) on all four sides of the computer and repeat the procedure in step 3 through step 4 for all the clips.



3. Rotate it down (E) and pull it outward (F).
4. According to the tighten sequence in Figure 1, tighten the mounting clips (G) with the supplied hexagonal key and verify the torque of 0.2 N•m (1.8 lb•in) with a limiting screwdriver [requires a 1.5 mm (0.06 in.) hex key bit].

Figure 1 - Mounting clips tighten and torque sequence by display size

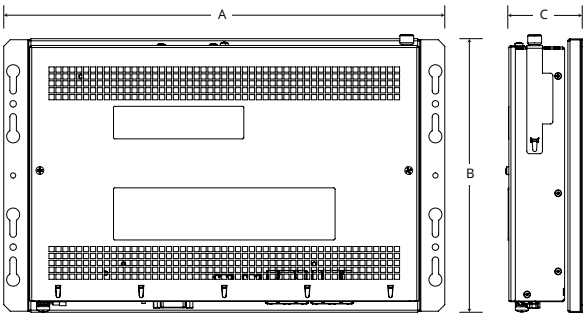
ATTENTION: Tighten the mounting clips to the specified torque to provide a proper seal and to help prevent product damage. Rockwell Automation assumes no responsibility for water or chemical damage to the computer or other equipment within the enclosure because of improper installation.



Box PC Wall mount installation:

Approximate dimensions

Cat. No.	Dimensions [mm (In.)]		
	A	B	C
6300B-SW2-AAxxA	338.4 (13.32)	210.0 (8.26)	56.3 [2.22]
6300B-SW2-ABxxA			71.1 [2.80]
6300B-SW2-ABxxB			71.1 [2.80]
6300B-SW2-ABxxC			86.1 [3.39]
6300B-SW2-ABxxB			100.3 [3.95]
6300B-SW2-ACxxC			115.3 [4.54]



Wall mount installation: required tools

- Drill, 4.5 mm drill bit and M4 screw tap
- Qty 4 M4x20 Stainless steel screws, nuts, washers (customer supplied)
- Level
- 2.5 mm Philips screwdriver
- Safety glasses
- Ruler
- Pencil

For some wall materials you may need alternate tools and hardware.

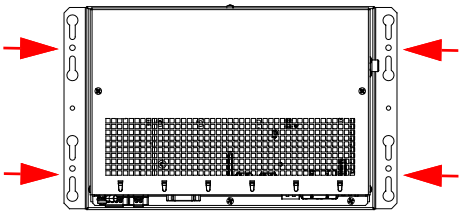
Installation

To execute the wall mount installation perform the following steps.

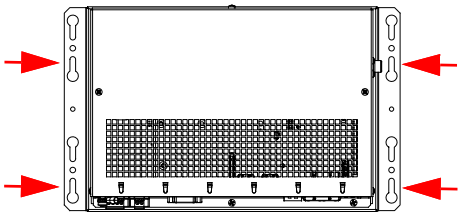
IMPORTANT You need two people to install the box PC; one person holds the box PC in place while the second person installs the mounting screws.

- Determinate the placement of your Box PC. See Approximate dimensions.
- Level, measure, then mark the top of the selected holes (method 1) or keyhole slots (method 2) of the attached brackets.

Method 1 (x4)

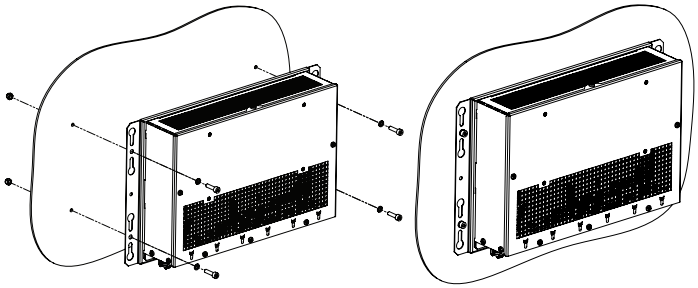


Method 2 (x4)

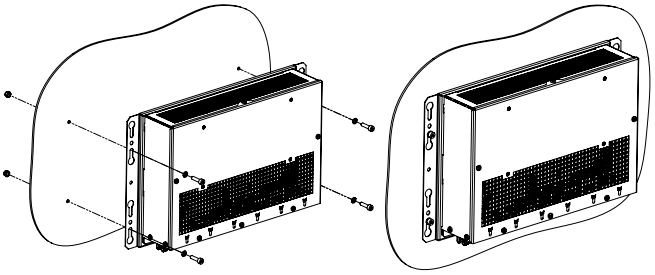


- Drill holes in your mounting surface to accommodate for the four M4x20 stainless steel screws (not supplied).
- Insert the washers into the four M4x20 stainless steel screws.

Method 1 (x4)



Method 2 (x4)



- Hold the Box PC aligning the 4 holes in the bracket with the 4 holes in the mounting surface.
- Insert and partially tighten the four M4x20 stainless steel screws to the nuts as in the picture above.

- Insert and partially tighten the four M4x20 stainless steel screws into the nuts as in the picture above, leaving a gap equivalent to the bracket thickness.
- Lift and align the top set of mounting holes of the brackets on your Box PC with the top two screws.
- Align the bottom two screws.
- Slide your Box PC 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 nuts with a torque that is appropriate for the screw and mounting surface.

If you are attaching your Box PC to steel material, the recommended torque of the M4x20 stainless steel screws is 0.8...0.9 N•m (7.0...7.9 lb•in)

Connectors/LEDs/Buttons

Connect peripheral cables to the appropriate I/O ports on the computer. To comply with EN 61326-1, use the following for cable types. All I/O cables must be used only indoors, and USB cables must be less than 3 m (9.84 ft) long.

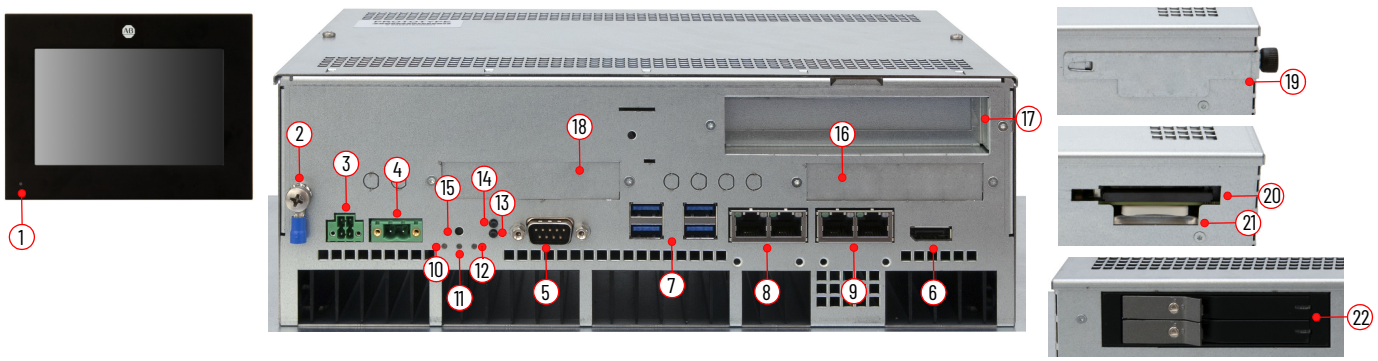


Table 2 - Connectors/LEDs/Buttons

Item No.	Description	Required cable	Sys. Power State	LED Color	Function	Cat. Nos.
1	Front Power On LED				See 12 LED Power On explanation.	6300P-SW2***A 6300P-SW2***B 6300P-SW2***C
2	Ground screw				Ground the system	All catalog numbers
3	UPS Tx/Rx - PS/Sys Off				UPS Tx/Rx - PS/Sys Off connector	
4	DC power	Unshielded			Power connector	
5	1 x COM	Shielded, Lenght: max. max 30m (98.42 ft)			1 x RS232/422/485 isolated serial port connector (DB9M).	
6	1 x Display Port	Shielded, Lenght: max. max 5m (16.40 ft)			1 x DisplayPort++ V1.2 connector.	
7	USB	Shielded, Lenght: <3m (9.84 ft)			4 x USB 3.2 Gen. 2 (Type A) connectors.	
8	LAN	Shielded	–		2 x 2.5 Gigabit Ethernet (RJ45).	
9	LAN	Shielded	–		2 x 2.5 Gigabit Ethernet (RJ45).	
10	LED Thermal alarm / Low Battery / Function			Red flashing	If the LED is blinking red, the CR2032 battery voltage is below 2.5V and the battery should be replaced with a new one. In this 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 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).	
				Off	No system error or warning.	
11	LED Mass Storage			Green flashing	Access to a mass storage device (SSD or CFast) is happening through a SATA or a PCIe interface.	
				Off	No access to a mass storage device (SSD or CFast) is happening and O.S. is running.	
12	LED Power On		OFF	–	The system is not powered.	
			Power supply only ON	Green fading	It is safe to turn off power supply. Operating system shutdown procedure is terminated.	
			Full ON	Green	Power is drawing from the input power supply. System core is full-on.	
			Full ON	Green flashing	The system is running with UPS.	
13	Power Button				Used to wake the processor from power button press. This Power Button will cause an internal CPU message to indicate a system request to go to a sleep or power down state. If the system is already in a sleep or power down state, this signal will cause a wake or power up event. If this button is pressed for more than 4 seconds this will cause an unconditional transition (power button override) to power down status.	
14	Function Button				Available for applications, push button state is readable by software.	
15	Reset Button				Reset button. Forces an internal reset, as if power was lost temporarily and then returned. **IMPORTANT:** Use this button only if there are no better options, like keyboard or mouse commands, or if the resumed DC power does not restart the computer. System reset can cause data loss and possible corruption to the operating system	
16	Add-On area position B (COMM2) (Optional Add-on modules configurable alternatively when ordering)				1 x Ethernet Port 1 x RVL 2 x RVL 2 x DisplayPort 2 x USB (Type-C) 1 x Netcorex ETHERNET (Adapter/Scanner) 1 x NETcoreX PROFINET DEVICE 1 x NETcoreX PROFINET CONTROLLER 1 x NETcoreX ETHERNET/IP ADAPTER 1 x NETcoreX ETHERNET/IP SCANNER 1 x NETcoreX PROFIBUS SLAVE 1 x NETcoreX PROFIBUS MASTER 1 x NETcoreX MPI 1 x NETcoreX CANOPEN SLAVE 1 x NETcoreX CANOPEN MASTER	6300P-SW2**C 6300B-SW2*C 6300P-SW2**D 6300B-SW2*D
17	Expansion Slot (Card opening for optional riser cards)				1 x PCIe x4 half-length, on riser card	6300P-SW2**C 6300B-SW2*C
18	Add-On area position A (COMM1) (Optional Add-on modules configurable alternatively when ordering)				1 x Gigabit Ethernet (RJ45) + 1x USB 2.0 (Type-A) 2 x RS232/422/485 isolated (DB9M) 2 x USB 2.0 (Type-A) 1 x NETcoreX PROFINET DEVICE 1 x NETcoreX PROFINET CONTROLLER 1 x NETcoreX ETHERNET/IP ADAPTER 1 x NETcoreX ETHERNET/IP SCANNER 1 x NETcoreX PROFIBUS SLAVE 1 x NETcoreX PROFIBUS MASTER 1 x NETcoreX MPI 1 x NETcoreX CANOPEN SLAVE 1 x NETcoreX CANOPEN MASTER	6300P-SW2**C 6300B-SW2*C 6300P-SW2**D 6300B-SW2*D

Table 2 - Connectors/LEDs/Buttons

Item No.	Description	Required cable	Sys. Power State	LED Color	Function	Cat. Nos.
19	CFast & Battery Slot cover				CFast & Battery Slot cover. See publication 6300-UM004 on how to remove the cover.	All catalog numbers
20	Battery tray Slot				Battery tray Slot. See publication 6300-UM004 on how to replace the RTC battery.	
21	CFast Slot				CFast Slot. See publication 6300-UM004 on how to replace the CFast.	
22	Ext. SSD/HDD				External acces SSD / HDD drawers	6300P-SW2**D 6300B-SW2*D

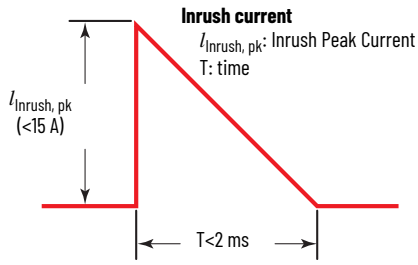
DC Power Supply Guidelines

All computers have the following features:

- The internal power supply of the computer has a galvanically isolated DC-DC converter board for increased electrical noise immunity.
- Reverse polarity circuitry, temporary overvoltage, and a 20 A soldered fuse provide input power protection.

Follow these guidelines to select the DC power to supply the computer.

- The system must be powered with a voltage of 24V DC (19...32V DC SELV input voltage range).
- The nominal output power should be 25% larger than the drained power.
- The output voltage raise time has to be less than 100ms.



Connect DC Power

ATTENTION: The system must be powered with a 24V DC (19...32V) power supply which satisfies the requirements of safe extra low voltage (SELV) in accordance with IEC/EN/DIN EN/UL61010-1 and UL61010-2-201. The power supply has to fulfill the requirements NEC Class2 or LPS in accordance with IEC/EN/DIN EN/UL61010-1 and UL61010-2-201.

To minimize ground loop currents and noise, we recommend that DC powered models use only one grounded connection.

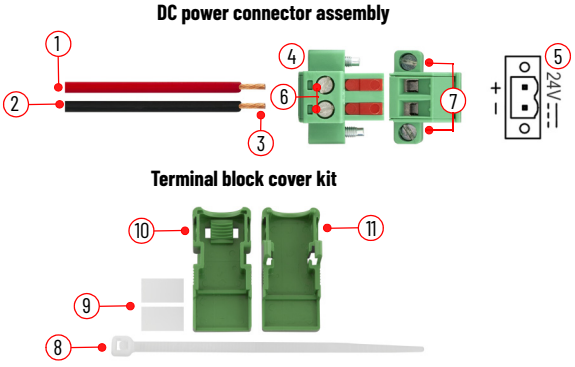
Install the Factory-supplied DC Power Connector Assembly

Tools required: • Adjustable torque screwdriver with M2 and M3 flat-blade screw bits. • Wire stripper, cutter, and crimper tool. • Cutting pliers.

Terminal block cabling procedure

Table 3 - Terminal Block Connection Specifications

Item No.	Description	Value
1	DC+ (24V DC nominal)	A wire (not included) with a cross-section of 1.5 mm² [16 AWG] with copper conductor, certified for operation at least 75 °C (167 °F).
2	DC- (0V DC nominal)	
3	Stripped wire length	
4	Terminal block	–
5	Polarity symbol	–
6	Torque range to secure DC power wires	0.22...0.25 N•m (1.95...2.21 lb•in)
7	Torque value to reinstall DC terminal block to computer	0.3 N•m (2.65 lb•in)
8	Cable tie (qty: 1)	–
9	Labels (qty: 2)	–
10	Half cover with cable tie slot	–
11	Half closing cover	–

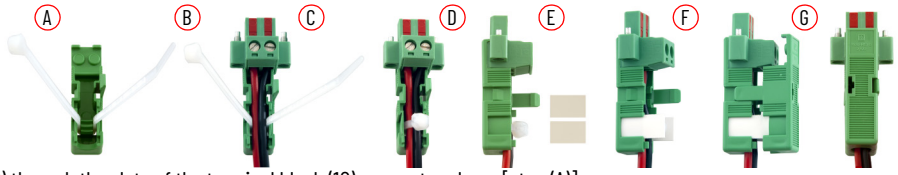


- Remove the DC terminal block (4) from the computer.
- Use wires (not included), (1) (2) with 1.5 mm² (16 AWG) cross section with copper conductor certified for operation at least 75 °C (167°F).

The colors of wires should follow regulations applicable where the system will be used.

- Strip 7 mm (0.276 in.) from the end of each power wire (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 (1.94...2.21 lb•in) torque.

Terminal block cover assembly



- Insert the cable tie (8) through the slots of the terminal block (10) connector clamp [step (A)].
- Slide the connector half with the attached tie onto the end of the DC terminal block (4) [step (B)].
- Tighten cable tie (8) and remove the excess part [step (C)] and install the white labels (9) supplied with the terminal block cover kit [steps (D) (E)].

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

- Align and install half closing cover (11) [step (F)] to complete the assembly [step (G)].

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

- Connect the DC terminal block (with cables and cover) to the computer chassis and fix it with the corresponding screws (7) with 0.3 N•m (2.66 lb•in) torque.

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 16 mm^2 (5 AWG) to connect the grounds between pieces of equipment (for example ASEM 6300B/6300P computer and 6300M monitor).

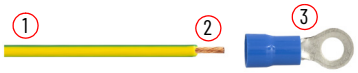
For further information, see Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Tools required: • Wire (not included) • Philips screwdriver • Crimp lug tool • Wire stripper • Safety glasses

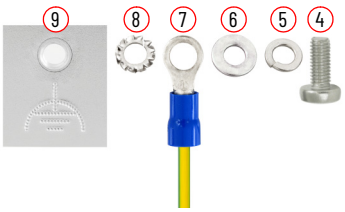
Installation

- Turn off the main power switch or breaker and remove the supplied nut, eyelet terminal, and washers from the ground screw.
- For earth ground, fasten a 2.5 mm^2 (14 AWG) external wire with copper conductor, certified for operation at least 75 °C (167 °F) 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.
- 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.
- Tighten the screw to the system.

Ground wire assembly



Ground screw installation sequence



Sequence No.	Dscription
1	Wire (not provided)
2	5 mm (0.20 in.) stripped covering
3	Lug

Sequence No.	Dscription
4	Ground screw
5	Lock washer
6	Washer
7	Eyelet terminal with cable crimped
8	Toothed washer
9	Chassis' ground hole

Start the Computer

- Make sure that all necessary peripheral devices are connected to the corresponding I/O ports on the computer.
- Make sure any connected components with separate power supplies (such as an external display) are turned on first (all ASEM I/O are isolated, be sure third part I/O are isolated before to be turned on).
- Apply power to the main power switch or breaker. Once power is applied, various light-emitting diode (LED) status indicators illuminate to display the state of your PC. See Table 2 for details of these LED status indicators.

Install the factory-supplied metal retention plates to connect Ethernet cables

The system is provided with metal retention plates, screws and zip ties provided in the box. Their purpose is to support Ethernet cables after you plug in the ports in Shock & Vibe environments. For further details on installation please see 6300P-SW2 Panel PC / 6300P-SW2 Box PC User Manual, 6300-UM004.

Additional Resources

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

Resource	Description
6300P-SW2 Panel PC / 6300P-SW2 Box PC User Manual, 6300-UM004	Provides details on how to install, configure, operate, and troubleshoot.
ASEM 6300 Industrial PCs, Thin Clients, and Monitors Specifications 6300-TD007	Provides technical specifications.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines to install a Rockwell Automation industrial system.
Product Certifications Website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Rockwell Automation Support

Use these resources to access support information.

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

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Waste Electrical and Electronic Equipment (WEEE)

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

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

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