



Installation Instructions

SLC 500™ Modular Chassis

Catalog Numbers 1746-A4, 1746-A7, 1746-A10, and 1746-A13 Series B

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FR

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What's in this Publication

Use this publication as a guide when installing an SLC 500 modular chassis.

Installation

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ground your chassis	9
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install your I/O modules and attach your power supply	12

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For additional installation information, see the *SLC 500 Modular Style User Manual*, publication 1747-UM011.

Important User Information



Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Rockwell Automation be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Rockwell Automation office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard, avoid a potential hazard, and recognize the consequences of a potential hazard:

WARNING 	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.

Prepare for Installation

Make sure you have these items.

M4 or M5 (#10 or #12) Hardware

- phillips screw and star washer (or SEM screw — phillips screw with attached star washer) for chassis mounting tabs

This chassis:	Has:
1746-A4	4 mounting tabs
1746-A7	4 mounting tabs
1746-A10	6 mounting tabs
1746-A13	8 mounting tabs

- phillips screwdriver
- drill

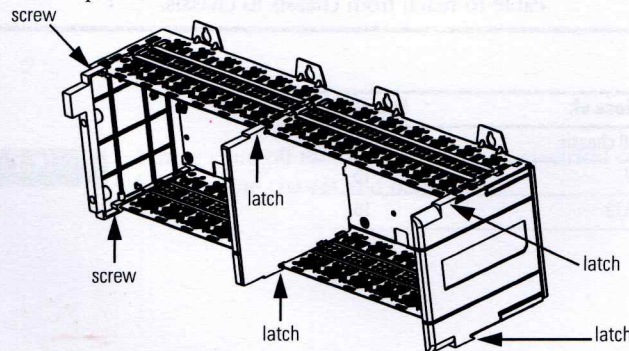
Documentation

For your:

- processor or I/O adapter module
- power supply
- communication modules and/or I/O modules

Installation Note

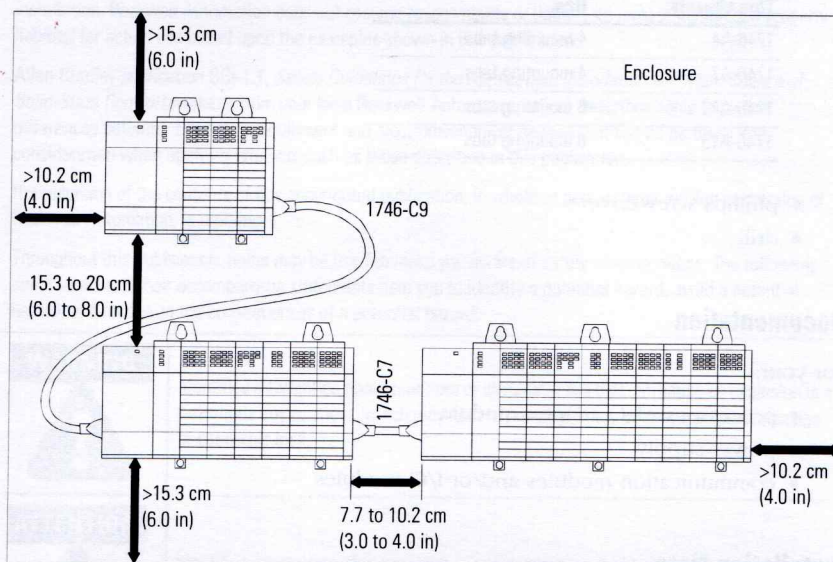
The power supply support panel (left end panel) has screws as indicated in the illustration below. The center and right end panels are held in position by a molded latch and do not require screws.



Allow Sufficient Mounting Space

IMPORTANT

Make sure you meet these minimum spacing requirements. Up to three SLC chassis can be connected (for a maximum of 30 I/O slots).


IMPORTANT

When vertically connecting two 1746-A13 chassis with a 1746-C9 cable, the space cannot be greater than 15.3 cm (6.0 in) for the cable to reach from chassis to chassis.

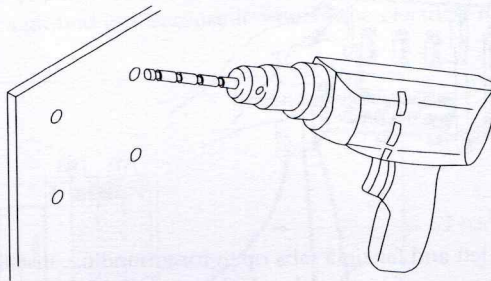
For dimensions of:	See page:
left side of all chassis	15
1746-A4, -A7	15
1746-A10, -A13	16

Install Your Chassis

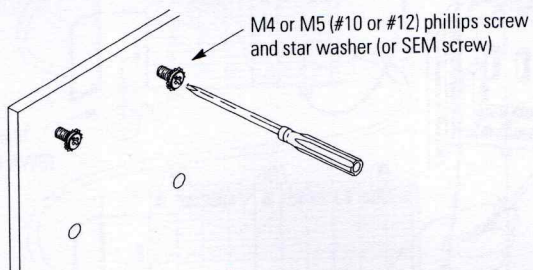
1. Drill holes in the back panel of the enclosure for chassis mounting tabs.

ATTENTION

Be careful of metal chips when drilling mounting holes for the SLC chassis. Do not drill holes above an SLC chassis if a processor and I/O modules are installed.



2. Install the hardware for the top mounting tabs.

**TIP**

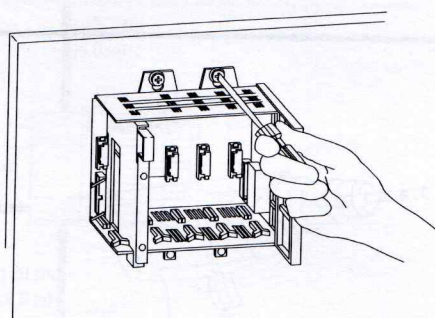
Scrape paint off the back panel for an electrical connection between the chassis and back panel.

3. Slide the chassis over the installed hardware and tighten the screws.

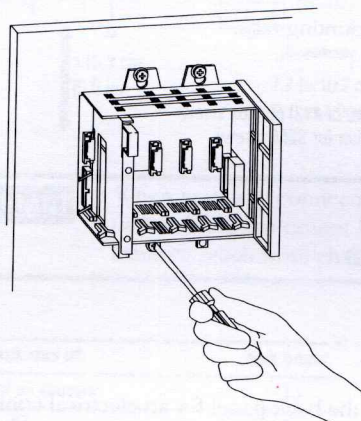
ATTENTION



If the chassis mounting tabs do not lay flat before the screws are tightened, use additional washers as shims so that the chassis will not be warped by tightening the screws. Warping a chassis could damage the backplane and cause poor connections.



4. Leaving far-left and far-right tabs open for grounding, install the remaining tab hardware (for a four-slot chassis, leave both tabs open).

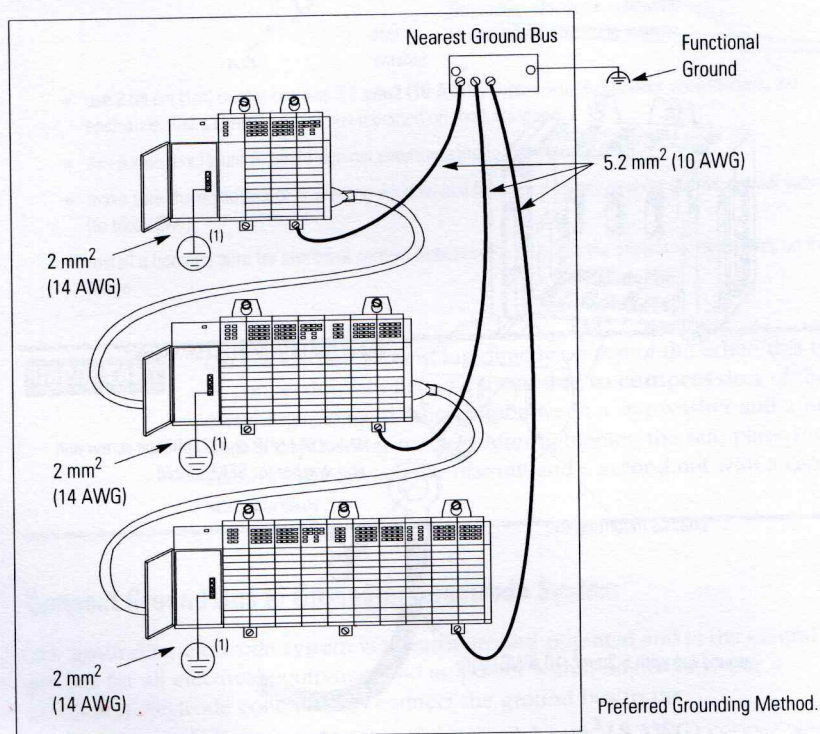


Ground Your Chassis

To properly ground your I/O chassis:	See page:
verify grounding configuration	9
install a central ground bus	10
connect equipment grounding conductor	10
connect equipment grounding conductor to ground bus	11
connect ground bus to grounding-electrode system	11

Verify Grounding Configuration

This figure shows you how to run ground connections from the chassis to the ground bus. Use a ground bus because it reduces the electrical resistance at the connection.


TIP

(1) Keep wire length as short as possible.

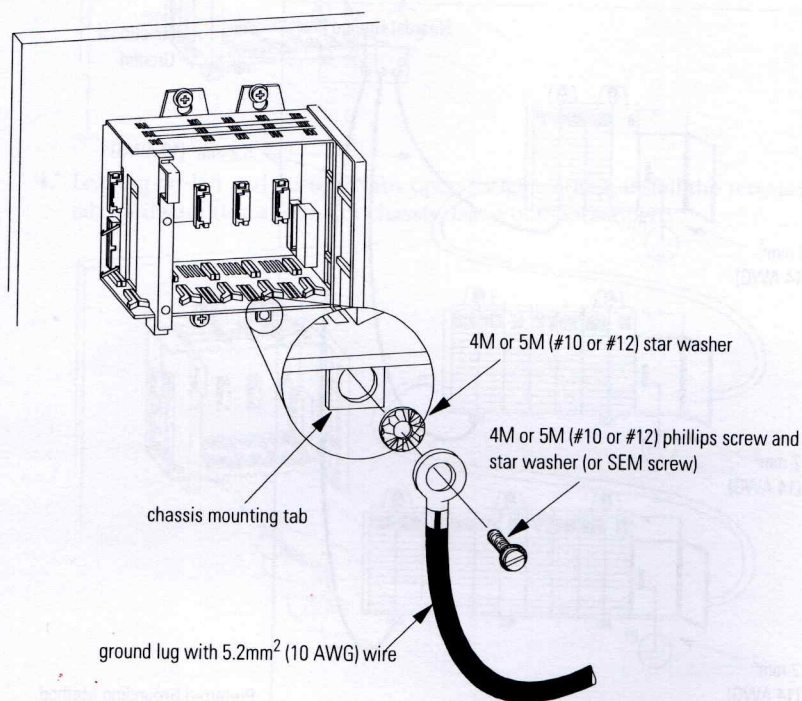
Install a Central Ground Bus

Each enclosure must contain a central ground bus. The ground bus is the common connection for each chassis within the enclosure and the enclosure itself. If you have not already installed a central ground bus, see the *Industrial Automation Wiring and Grounding Guidelines*, publication 1770-4.1.

Connect Equipment Grounding Conductor

IMPORTANT

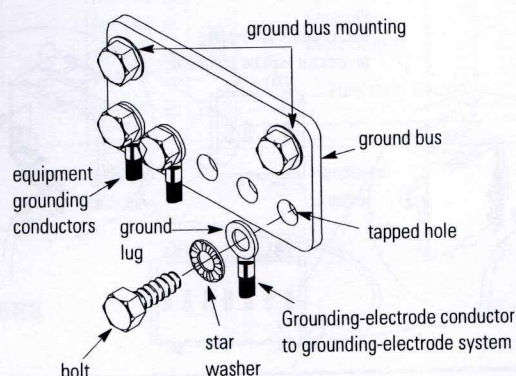
Use the following information, along with the installation manual for your programmable controller, to functionally ground the chassis.

**TIP**

Keep wire length as short as possible.

Connect Equipment Grounding Conductor to Ground Bus

Connect an equipment grounding conductor directly from each chassis to an individual bolt on the ground bus.



- use 2.54 cm (1in) copper braid or **5.2 mm² (10 AWG)** copper wire to connect each chassis, the enclosure, and a central ground bus mounted on the back-panel
- use a steel enclosure to guard against electromagnetic interference (EMI)
- make sure the enclosure door viewing window is a laminated screen or a conductive optical substrate (to block EMI)
- install a bonding wire for electrical contact between the door and the enclosure; do not rely on the hinge

IMPORTANT

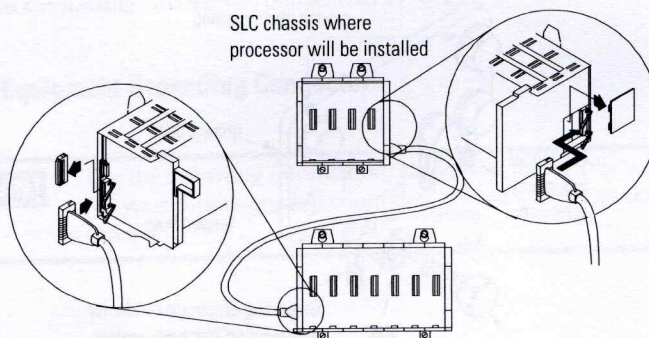
Do not lay one ground lug directly on top of the other; this type of connection can become loose **due to compression** of the metal lugs. Place the first lug between a star washer and a nut with a captive star washer. After tightening the nut, place the second lug between the first nut and a second nut with a captive star washer.

Connect Ground Bus to Grounding-Electrode System

The grounding-electrode system is at earth-ground potential and is the central ground for all electrical equipment and ac power within any facility. Use a grounding-electrode conductor to connect the ground bus to the grounding-electrode system. Use at **minimum 8.3 mm² (8 AWG)** copper wire for the grounding-electrode conductor to guard against EMI. The National Electrical Code specifies safety requirements for the grounding-electrode conductor.

Install the Chassis Interconnect Cable (optional)

To connect up to three chassis together (for a maximum of 30 I/O slots), install the chassis interconnect cable before attaching your power supply.



Install Your I/O Modules and Attach Your Power Supply

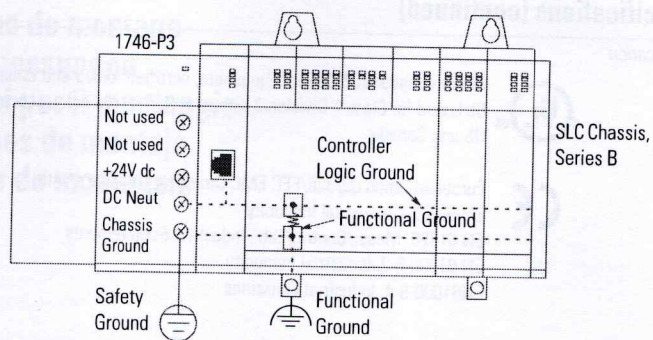
Use the installation instructions/user manuals for your modules to install them into the chassis. Use the installation instructions for your power supply to attach it to your chassis.

ATTENTION

- Keep the connector plug on the left side-connector of the chassis if you are not connecting chassis together.
 - Remove the protective label from the top of the power supply before applying power.
-

IMPORTANT

Series B chassis have a 1M Ω resistor between logic ground and chassis ground. When using a 1746-P3 power supply, follow the grounding instructions provided with the power supply to avoid unwanted potentials across the logic ground of the SLC processor.



Specifications

SLC Chassis, Series B

1746-A4	1746-A7	1746-A10	1746-A13
<i>dimensions (with tabs) -W x H x D</i>			
17.7 x 17.1 x 14.5 cm (7.1 x 6.8 x 5.8 in)	28.2 x 17.1 x 14.5 cm (11.3 x 6.8 x 5.8 in)	39.7 x 17.1 x 14.5 cm (15.9 x 6.8 x 5.8 in)	50.2 x 17.1 x 14.5 cm (20.1 x 6.8 x 5.8 in)
<i>approximate weight (without modules)</i>			
0.75 kg (1.7 lbs)	1.1 kg (2.4 lbs)	1.45 kg (3.2 lbs)	1.9 kg (4.2 lbs)
<i>maximum backplane current</i>			
5.1V dc @ 10A; 24V dc @ 2.88A	5.1V dc @ 10A; 24V dc @ 2.88A	5.1V dc @ 10A; 24V dc @ 2.88A	5.1V dc @ 10A; 24V dc @ 2.88A
<i>module slots</i>			
4	7	10	13
<i>type of mount</i>			
panel mount	panel mount	panel mount	panel mount
<i>operating conditions</i>			
operating temperature: 0°C to +60°C (+32°F to +140°F)			
storage temperature: -40°C to +85°C (-40°F to +185°F)			
relative humidity: 5 to 95% (without condensation)			

Specifications (continued)

certification



UL Listed Industrial Control Equipment, certified for US and Canada
UL Listed for Class 1 Division 2, Group A, B, C, D Hazardous Locations, certified for US and Canada



European Union 89/336/EEC EMC Directive, compliant with
EN 50082-2 Industrial Immunity
EN 61326, Meas./Control/Lab., Industrial Requirements
EN 61000-6-2, Industrial Immunity
EN 61000-6-4, Industrial Emissions



Australian Radiocommunications Act, compliant with :
AS/NZS 2064, Industrial Emissions

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or non-hazardous locations only. The following WARNING statement applies to use in hazardous locations.

WARNING

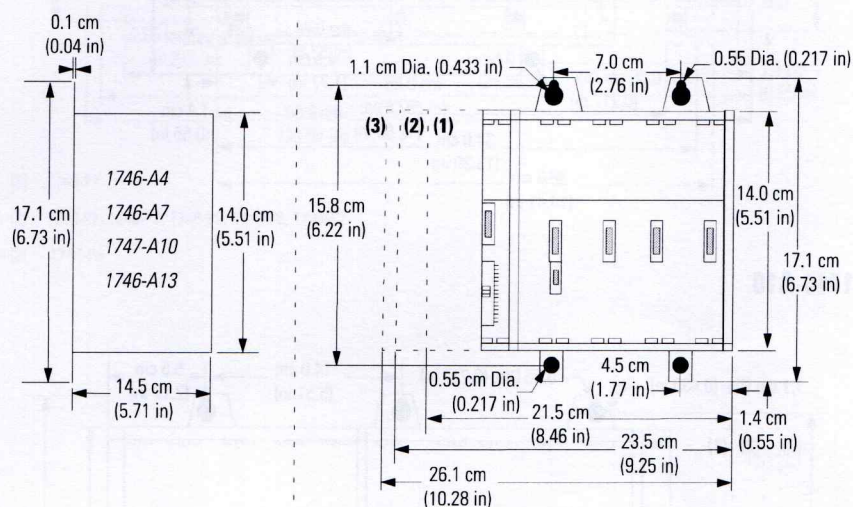


EXPLOSION HAZARD

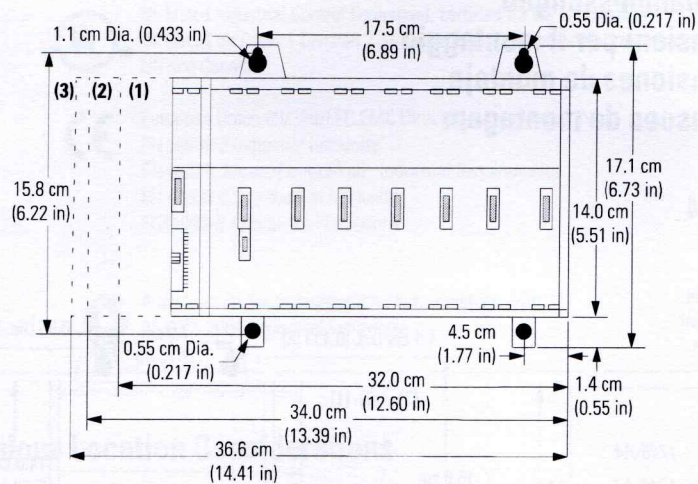
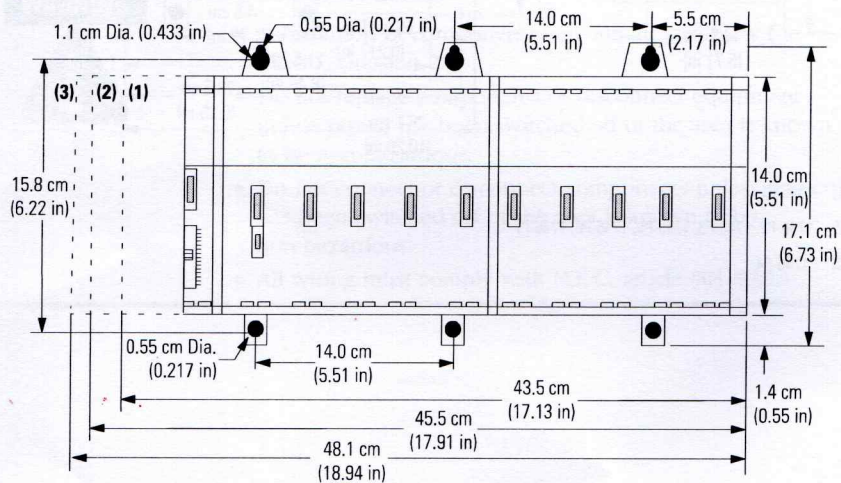
- Substitution of components may impair suitability for Class I, Division 2.
 - Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
 - Do not connect or disconnect components unless power has been switched off or the area is known to be non-hazardous.
 - All wiring must comply with N.E.C. article 501-4(b).
-

Mounting Dimensions
Dimensions de montage
Einbauabmessungen
Dimensioni per il montaggio
Dimensiones de montaje
Dimensoes de montagem

1746-A4

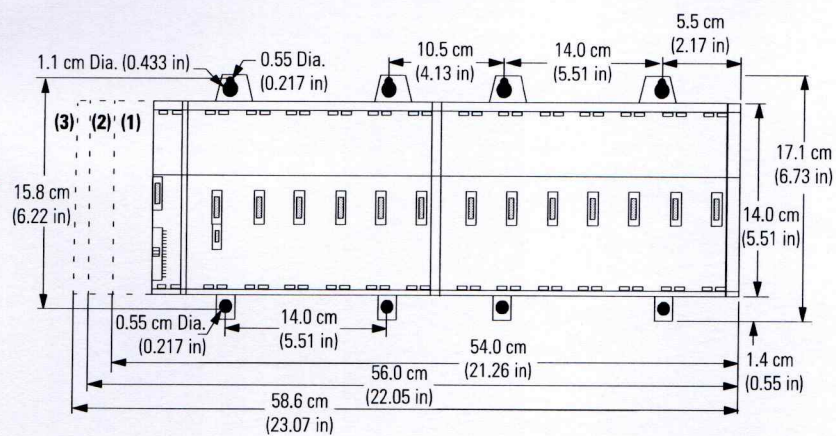


- (1) 1746-P1
 (2) 1746-P2, 1746-P3, 1746-P5, 1746-P6, 1746-P7
 (3) 1746-P4

1746-A7**1746-A10**

- (1) 1746-P1
- (2) 1746-P2, 1746-P3, 1746-P5, 1746-P6, 1746-P7
- (3) 1746-P4

1746-A13



- (1) 1746-P1
- (2) 1746-P2, 1746-P3, 1746-P5, 1746-P6, 1746-P7
- (3) 1746-P4

Rockwell Automation Support

Rockwell Automation provides technical information on the web to assist you in using our products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3434 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of our products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for return procedure.

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