Installation Instructions

ControlLogix Chassis–Series B

(Catalog Numbers 1756-A4, -A7, -A10, -A13, -A17)

Use this publication as a guide when installing a Control**Logix**™ chassis.

Prepare for Installation

Make sure you have these items.

- M4 or M5 (#10 or #12) mounting tab screws and washers
- drill
- documentation for Control**Logix** modules that will be placed in the chassis
- phillips screwdriver

For each:	You need:
top mounting tab	1 phillips screw, 1 flat washer, 1 split lock-washer
bottom mounting tab	1 phillips screw and 1 star washer or 1 SEM screw[1]

[1] Phillips screw with attached star washer

This chassis	Uses this number of mounting tabs	
1756-A4, -A7	2 top	2 bottom
1756-A10	3 top	3 bottom
1756-A13	4 top	4 bottom
1756-A17	5 top	5 bottom

Prevent Electrostatic Discharge

ATTENTION

Electrostatic discharge can damage integrated circuits or semiconductors if you touch backplane connector pins. Follow these guidelines when you handle the module:

- Touch a grounded object to discharge static potential.
- Wear an approved wrist-strap grounding device.
- Do not touch the backplane connector or connector pins.
- Do not touch circuit components inside the module.
- If available, use a static-safe work station.
- When not in use, keep the module in its static-shield box.

Understand European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 50082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

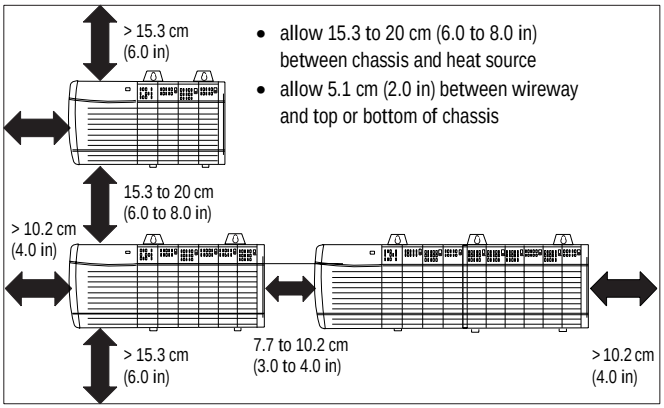
Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Open style devices must be provided with environmental and safety protection by proper mounting in enclosures designed for specific application conditions. See NEMA Standards publication 250 and IEC publication 529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

Allow Sufficient Mounting Space

IMPORTANT Make sure you meet these **minimum** spacing requirements.



Minimum Cabinet Size

IMPORTANT To meet the UL/CSA standards, do not exceed these **minimum** cabinet size requirements.

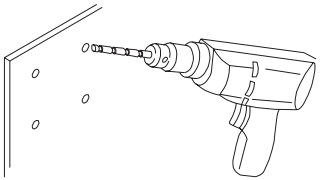
Chassis	Minimum Cabinet Size (W x H x D)
1756-A4	50.7 x 50.7 x 20.3 cm 20 x 20 x 8 in
1756-A7	50.7 x 70 x 20.3 cm 20 x 24 x 8 in
1756-A10	76.2 x 50.7 x 20.3 cm 30 x 20 x 8 in
1756-A13	76.2 x 70 x 20.3 cm 30 x 24 x 8 in
1756-A17	82.2 x 76.2 x 20.3 cm 36 x 30 x 8 in

Install Your Chassis

ATTENTION

Do not drill holes for a chassis above an installed chassis. Metal chips from drilling can damage the backplane and cause intermittent operation.

1. Drill holes in the back panel of the enclosure for chassis mounting tabs. Refer to Use Mounting Dimensions on page 10, for assistance in hole placement.



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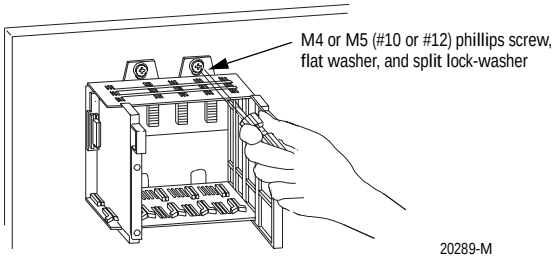
2. Scrape paint off the back panel for an electrical connection between the chassis and back panel.

3. Hold the chassis in place against the holes.

4. Install the hardware for the top mounting tabs and tighten.



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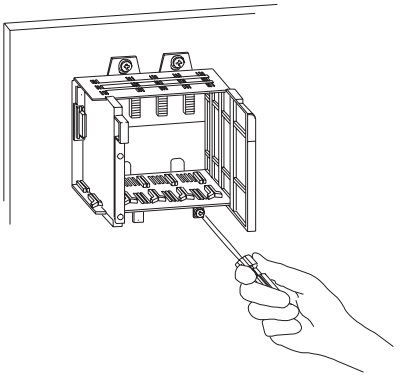
ATTENTION

If the chassis mounting tabs do not lay flat before the screws are tightened, use additional washers as shims so the chassis is not warped by tightening the screws.

Warping a chassis could damage the backplane and cause intermittent operation.

5. Leaving the far-left bottom tab open for functional ground, install the remaining tab screw(s).

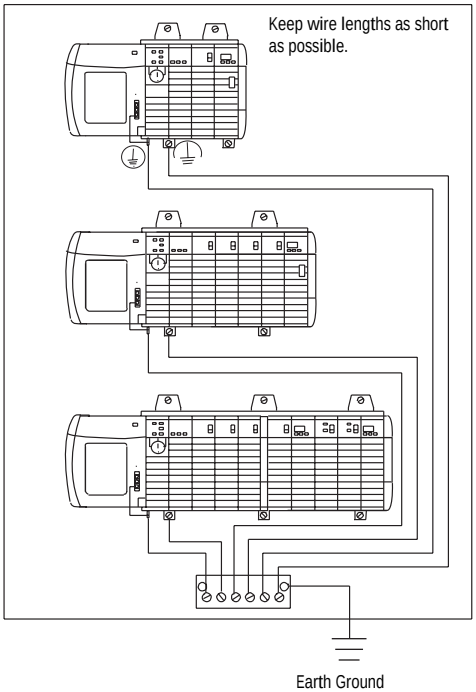


Ground Your Chassis

To properly ground your I/O chassis:	See page:
Verify Grounding Configuration	6
Install a Central Ground Bus	7
Connect Functional Ground	7
Connect Equipment Protective Earth Ground	8
Connect the Equipment Grounding Conductors to the Ground Bus	8
Connect Ground Bus to Grounding-Electrode System	9

Verify Grounding Configuration

This figure shows you how to run functional and equipment protective earth ground connections from the chassis and power supply to the ground bus. Using a ground bus is recommended because it reduces the electrical resistance at the connection.



For more information on installing and connecting protective earth ground to the ControlLogix power supply, refer to the ControlLogix Power Supplies Installation Instructions, publications 1756-5.78.

Install a Central Ground Bus

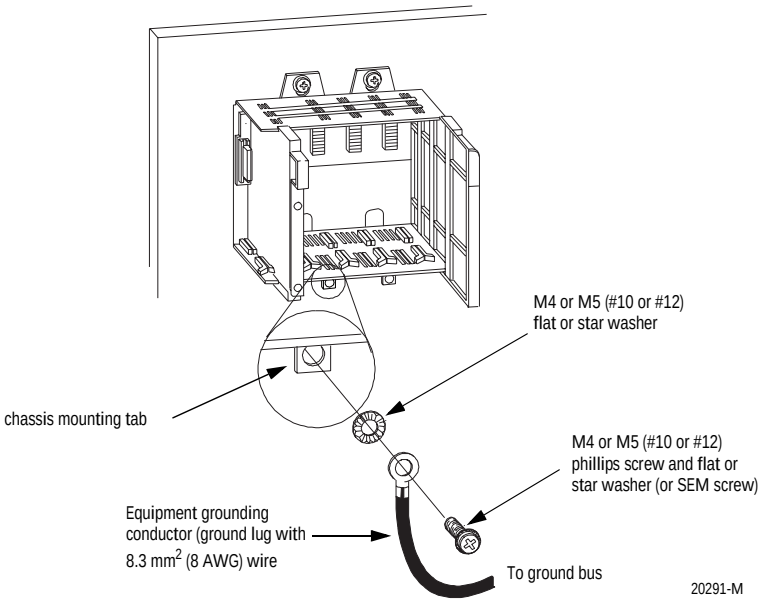
Each enclosure must contain a central ground bus. The ground bus is the common connection for each chassis within the enclosure and the enclosure itself.

For more information on installing a central ground bus, refer to the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1

Connect Functional Ground

Keep wire lengths as short as possible, and use the following figure to connect functional ground to the chassis.

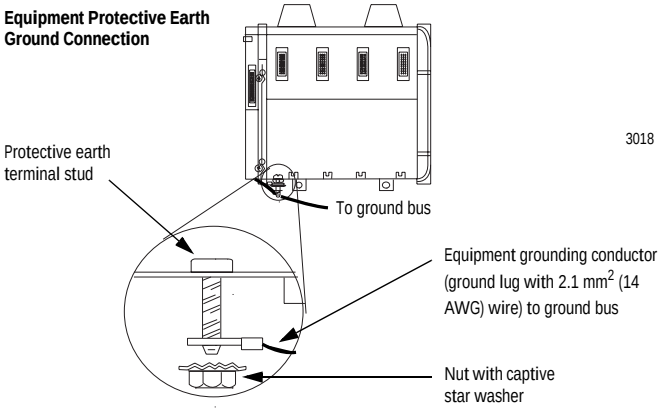
Functional Ground Connection



Connect Equipment Protective Earth Ground

Use the figure below to connect equipment protective earth ground to the chassis.

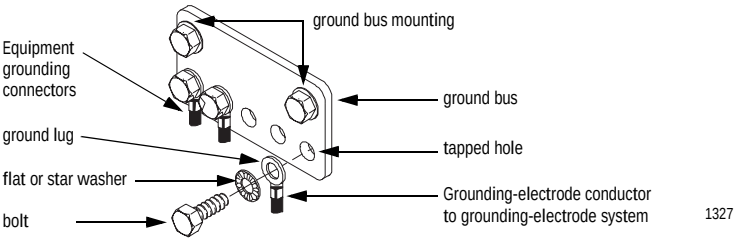
IMPORTANT Tighten the nut on the equipment protective earth ground terminal stud to a torque of 12 inch- pounds.



Connect the Equipment Grounding Conductors to the Ground Bus

Connect the equipment grounding conductors (functional and equipment protective earth ground) directly from each chassis to an individual bolt on the ground bus.

IMPORTANT Do not lay one ground lug directly on top of the other; this 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.



Functional Ground

- use 2.54 cm (1 in) thick copper braid or 8.3 mm^2 (8 AWG) copper wire to connect equipment grounding conductor for 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)

Equipment Protective Earth Ground

- use a 2.1 mm^2 (14 AWG) copper wire for the equipment grounding conductors
- install a bonding wire for electrical contact between the door and the enclosure; do not rely on the hinge.

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 mm^2 (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.

Attach Your Power Supply and Install Your Modules

Use the installation instructions/user manuals for your modules to install them in the chassis.

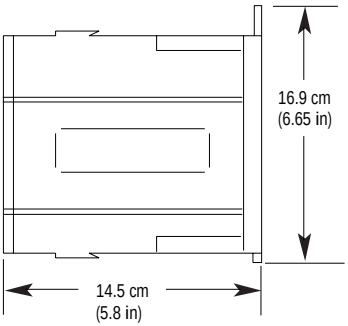
Use the installation instructions for your power supply (document #1756-5.78) to attach it to your chassis.

Use Mounting Dimensions

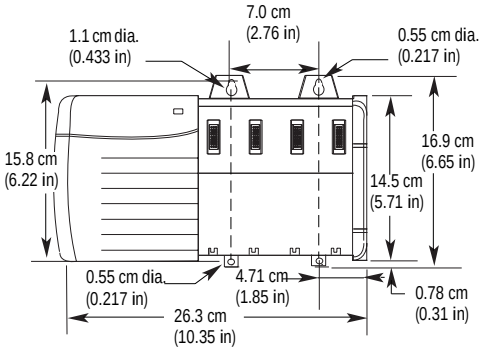
Use the dimension shown below to mount your chassis.

IMPORTANT The Series B Chassis is compatible with the 1756-PA72, -PB72, -PA75, and -PB75 power supplies.

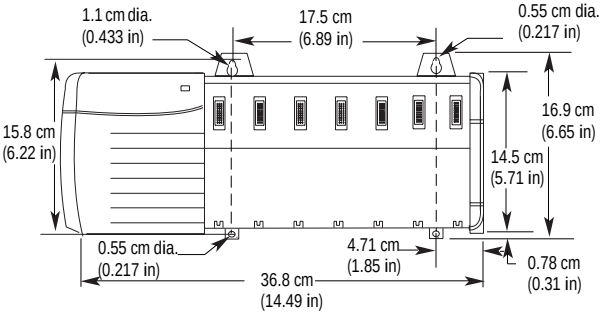
Right-side view of all chassis



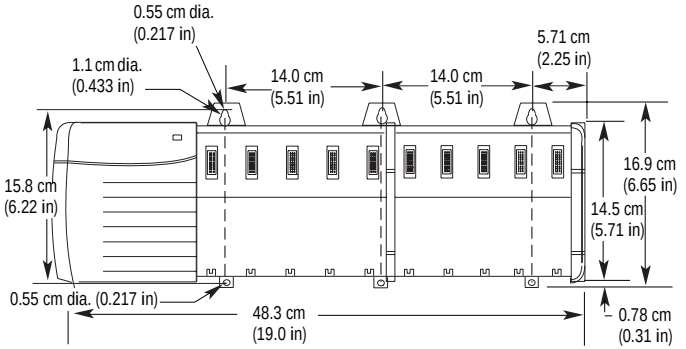
1756-A4 with power supply installed



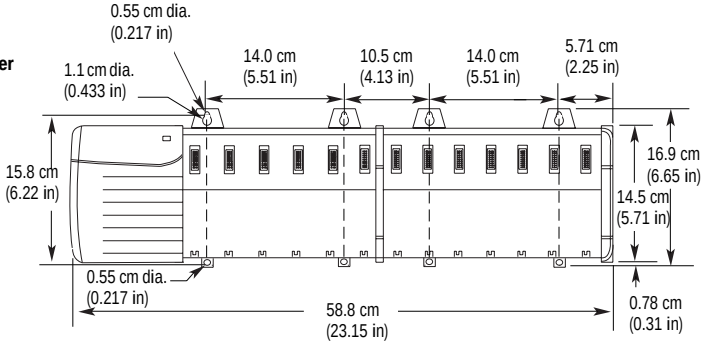
1756-A7 with power supply installed



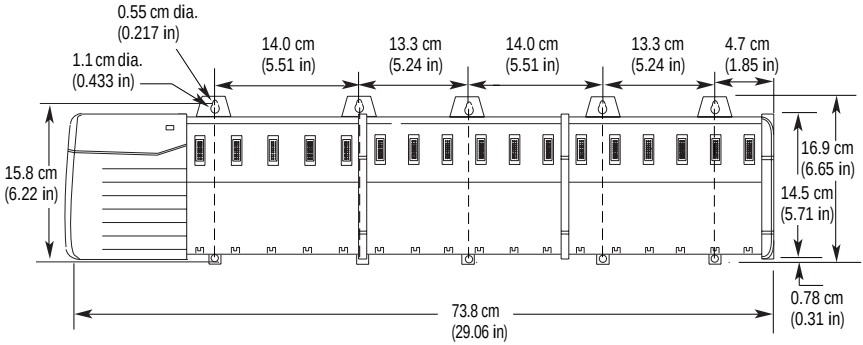
1756-A10 with power supply installed



1756-A13 with power supply installed



1756-A17 with power supply installed



Specifications

	1756-A4	**1756-A7**	**1756-A10**
dimensions (with tabs) W x H x D	26.3 x 16.9 x 14.5 cm (10.35 x 6.65 x 5.71 in)	36.8 x 16.9 x 14.5 cm (14.49 x 6.65 x 5.71 in)	48.3 x 16.9 x 14.5 cm (19.0 x 6.65 x 5.71 in)
	1756-A13	**1756-A17**	
	58.8 x 16.9 x 14.5 cm (23.15 x 6.65 x 5.71 in)	73.8 x 16.9 x 14.5 cm (29.06 x 6.65 x 5.71 in)	
	1756-A4	**1756-A7**	**1756-A10**
minimum cabinet size W x H x D	50.7 x 50.7 x 20.3 cm (20 x 20 x 8 in)	50.7 x 70 x 20.3 cm (20 x 24 x 8 in)	76.2 x 50.7 x 20.3 cm (30 x 20 x 8 in)
	1756-A13	**1756-A17**	
	76.2 x 70 x 20.3 cm (30 x 24 x 8 in)	82.2 x 76.2 x 20.3 cm (36 x 30 x 8 in)	
	1756-A4	**1756-A7**	**1756-A10**
approximate weight (without modules)	0.75 kg (1.7 lbs)	1.1 kg (2.4 lbs)	1.45 kg (3.2 lbs)
	1756-A13	**1756-A17**	
	1.9 kg (4.2 lbs)	2.2 kg (4.8 lbs)	
module slots	**1756-A4**	**1756-A7**	**1756-A10**
	4	7	10
	1756-A13	**1756-A17**	
	13	17	
maximum backplane current (All chassis)		chassis/slot	
	5.1V dc	15 A/6 A	
	24V dc	2.8 A/2.8 A	
	3.3V dc	4 A/4 A	
type of mount (All chassis)	panel mount		
operating conditions (All chassis)	operating temperature: 0° to 60° C (32° to 140° F) storage temperature: -40° to 85° C (-40° to 185° F) relative humidity: 5 to 95% (without condensation)		
agency certification (when product or packaging is marked)	Listed Industrial Control Equipment Certified Process Control Equipment Certified Class I, Division 2, Group A, B, C, D Approved Marked for all applicable directives Marked for all applicable acts N223		

Additional Notes

The ControlLogix system must be mounted within a suitable enclosure to prevent personal injury resulting from accessibility to live parts. The interior of this enclosure must be accessible only by the use of a tool.

This industrial control equipment is intended to operate in a Pollution Degree 2 environment, in overvoltage category II applications, as defined in IEC publication 664A, at altitudes up to 2000 meters without derating.

Hazardous Location information

The following information applies when operating this equipment in hazardous locations:

Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.

WARNING

EXPLOSION HAZARD

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Substitution of components may impair suitability for Class I, Division 2.
- If this product contains batteries, they must only be changed in an area known to be nonhazardous.

Informations sur l'utilisation de cet équipement en environnements dangereux :

Les produits marqués « CL I, DIV 2, GP A, B, C, D » ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.

AVERTISSEMENT

RISQUE D'EXPLOSION

- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.
- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.
- La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe 1, Division 2.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.

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