



Installation Instructions

ControlLogix Redundant Power Supply Chassis Adapter Module

Catalog Number 1756-PSCA2

Use this publication as a guide when installing the ControlLogix™ 1756-PSCA2 chassis adapter module.

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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.ab.com/manuals/gi>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.





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 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.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you: <ul style="list-style-type: none">• identify a hazard• avoid a hazard• recognize the consequence
SHOCK HAZARD 	Labels may be located on or inside the drive to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be located on or inside the drive to alert people that surfaces may be dangerous temperatures.

Removal and Insertion Under Power

WARNING

When you insert or remove the module while backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding. Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

Environment and Enclosure

ATTENTION

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as "open type" equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

NOTE: See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 ("Industrial Automation Wiring and Grounding Guidelines"), for additional installation requirements pertaining to this equipment.

Prevent Electrostatic Discharge

ATTENTION

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
 - Wear an approved grounding wriststrap.
 - Do not touch connectors or pins on component boards.
 - Do not touch circuit components inside the equipment.
 - If available, use a static-safe workstation.
 - When not in use, store the equipment in appropriate static-safe packaging.
-

European Hazardous Location Approval

European Zone 2 Certification - The following applies when the product bears the EEx marking:

This equipment is intended for use in potentially explosive atmospheres as defined by European Union Directive 94/9/EC.

The LCIE (Laboratoire Central des Industries Electriques) certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment intended for use in potentially explosive atmospheres, given in Annex II to this Directive. The examination and test results are recorded in confidential report No. 28 682 010.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 50021.

IMPORTANT

When using this product, also consider the following:

- This equipment is not resistant to sunlight or other sources of UV radiation.
- The secondary of a current transformer shall not be open-circuited when applied in Class I, Zone 2 environments.
- Equipment of lesser Enclosure Type Rating must be installed in an enclosure providing at least IP54 protection when applied in Class I, Zone 2 environments.
- This equipment shall be used within its specified ratings defined by Allen-Bradley.
- Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40% when applied in Class I, Zone 2 environments.

North American Hazardous Location Approval



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.

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.

6 ControlLogix Redundant Power Supply Chassis Adapter Module

The following information applies when operating this equipment in hazardous locations:	Informations sur l'utilisation de cet équipement en environnements dangereux:		
<p>WARNING</p> 	<p>EXPLOSION HAZARD</p> <ul style="list-style-type: none">• 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.	<p>AVERTISSEMENT</p> 	<p>RISQUE D'EXPLOSION</p> <ul style="list-style-type: none">• 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 I, Division 2.• S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Description of the Redundant Power Supply

The 1756-PSCA2 chassis adapter module is a passive device designed to funnel power from one or two ControlLogix redundant power supplies to the single power connector on the ControlLogix chassis (Series B only) backplane.

The redundant power supply system provides additional uptime protection for chassis used in critical applications. The two remotely-mounted supplies are designed to share the current required by the chassis and are available in AC and DC versions that can be mixed or matched when used in tandem.

In the event of a failure by one power supply, the remaining supply will accommodate the entire load of the chassis without disruption to chassis activity. For more information on the 1756-PA75R/A or 1756-PB75R/A redundant power supplies, see publication 1756-IN573.

Overview of the Installation Process

Follow these steps when installing and powering your chassis adapter module.

1. Install the Chassis Adapter Module
2. Connect the Chassis Adapter Module to the Redundant Power Supplies

The steps are described in detail, along with other important information, throughout this installation instructions.

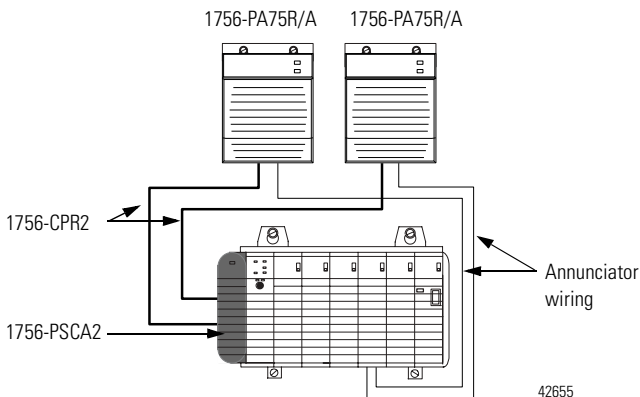
Identify the Components of a Redundant Power Supply System

Catalog Number	Description	Quantity
1756-PA75R and/or 1756-PB75R	Redundant power supply	2
1756-CPR2	Redundant power supply cables (Length = 0.91m [3ft])	2
1756-PSCA2	Chassis adapter module	1
User-supplied ¹	Annunciator wiring (Maximum length = 10m [32.8ft])	2

¹ Optional user-provided annunciator wiring can be connected to the solid state relay on the supplies for status and troubleshooting purposes. For more information, see the Redundant Power Supply installation instructions, publication 1756-IN573.

The components are shown in Figure 1 are a typical system configuration:

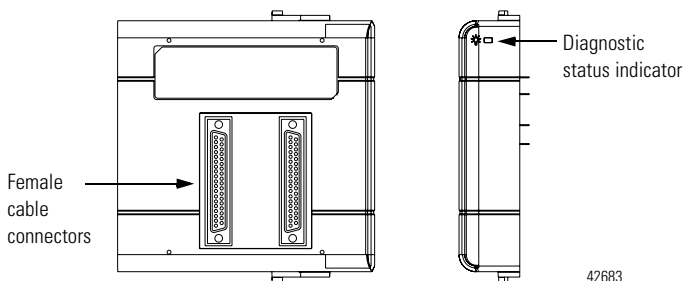
Figure 1



Recognize Chassis Adapter Module Physical Features

Your chassis adapter module has multiple physical features as shown in Figure 2.

Figure 2



Physical Feature	Description
Diagnostic status indicators	There is a power indicator. For more information on the status indicators, see page 14.
Female cable connector	The cable connectors accommodates the male end of the 1756-CPR2 cable. For more information, see page 13.

Determine the Chassis Widths

The graphics in Figure 3 and Figure 4 list the width of each ControlLogix chassis type with a chassis adapter module installed. For more mounting information, see the ControlLogix Chassis installation instructions, publication 1756-IN080

Figure 3

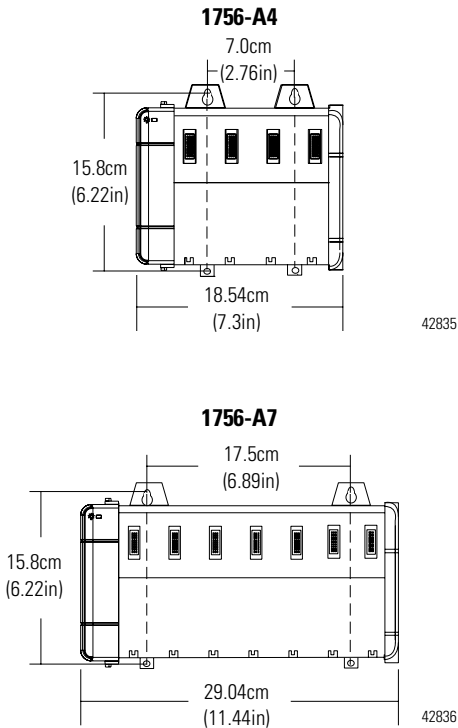
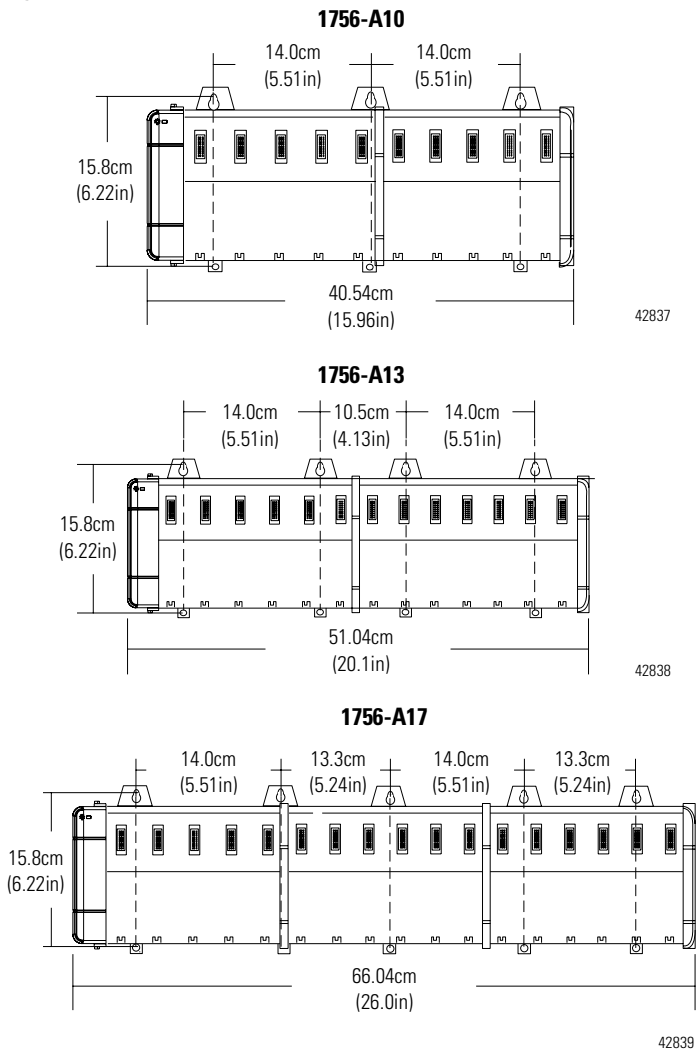


Figure 4

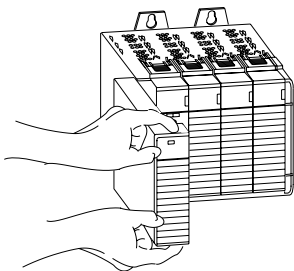


Install the Chassis Adapter Module

You must insert the chassis adapter module on the leftmost side of a ControlLogix chassis. Follow the steps below to install the module.

1. Align the right side of the chassis adapter module with the left edge of the chassis.

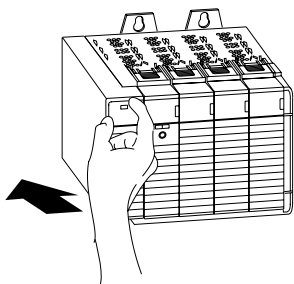
Figure 5



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2. Push the module on to the chassis until the locking tabs click.

Figure 6



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Connect the Chassis Adapter Module to the Redundant Power Supplies

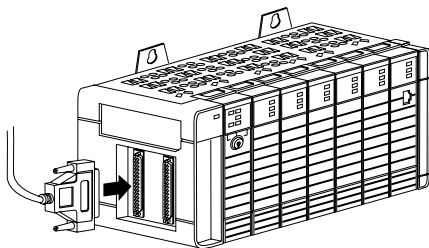
Use the 1756-CPR2 cables to connect your chassis adapter module to your redundant power supplies.

IMPORTANT

Although we recommend making all cable connections with both redundant power supplies turned off, you can make a connection to the 1756-PSCA2 chassis adapter module when the chassis adapter module is receiving power from another redundant power supply.

1. Leave a minimum of 4 in (10.2 cm) space between the left side of the chassis adapter module and the cabinet housing your control system. The 1756-CPR2 cable will not connect to the module in less than 4 in (10.2 cm) of space.
2. Connect the cable to the chassis adapter module.

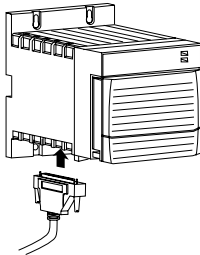
Figure 7



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3. Connect the cable to the redundant power supply.

Figure 8



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4. Tighten the screws to hold the cables in place. Make sure you completely tighten the cable screws to hold the cable in place for the life of the product.

WARNING



EXPLOSION HAZARD

When used in hazardous area, do not attempt to connect or disconnect cables unless power has been removed, or the area is known to be nonhazardous.

Troubleshoot the Chassis Adapter Module

Your chassis uses a green status indicator (LED) to display when power is applied to the chassis.

- If the indicator is lit up, the chassis is receiving power from one or both of the redundant power supplies.
- If the indicator is OFF, the chassis is not receiving power from the redundant power supplies. In this case, check the power supplies for a reason.

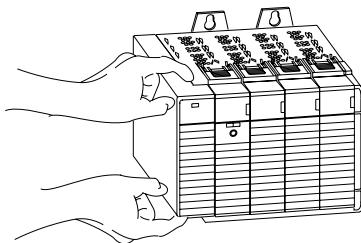
For troubleshooting information on the Redundant Power Supply, see the Redundant Power Supply installation instructions, publication 1756-IN573.

Replace the Chassis Adapter Module

If you must replace a chassis adapter module, follow the steps below.

1. Turn power off at the redundant power supplies.
2. Disconnect the redundant power supply cables from the chassis adapter module.
3. Push the top and bottom locking tabs on the chassis adapter module to the side.

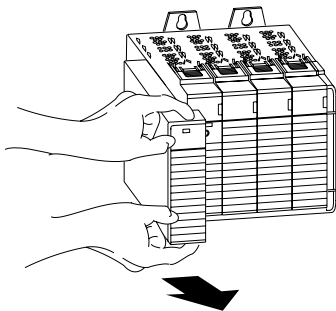
Figure 9



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4. Pull the module off the chassis.

Figure 10



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5. Install a new chassis adapter module. For more information, return to page 12 of this document and follow the directions.

1756-PSCA2 Specifications

Location	ControlLogix chassis
Maximum Electrical Ratings	1.5A @ 1.2 V 4A @ 3.3 V 15A @ 5.1 V 2.8A @ 24 V
Cable Assembly	1756-CPR2 (Length = 0.91m [3ft])
Power Port Wiring Category	3 ⁽¹⁾
Dimensions (W x H x D)	3.4 x 15.1 x 14.4cm (1.34 x 5.95 x 5.67in)
Weight - approximate	0.45 kg (16 oz)
Environmental Conditions	
Operational Temperature	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): 0 to 60°C (32 to 140°F)
Storage Temperature	IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): -40 to 85°C (-40 to 185°F)
Relative Humidity	IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5 to 95% non-condensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 2g @ 10-500Hz
Operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30g
Non-operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50g
Emissions	CISPR 11: Group 1, Class A

ESD Immunity	IEC 61000-4-2: 6kV contact discharges 8kV air discharges
Radiated RF Immunity	IEC 61000-4-3: 10V/m with 1kHz sine-wave 80%AM from 30MHz to 1000MHz 10V/m with 200Hz 50% Pulse 100%AM at 900Mhz
Enclosure Type Rating	None (open-style)
Certifications: (when product is marked)	<p>UL UL Listed Industrial Control Equipment c-UL-us UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada</p> <p>CSA CSA Certified Process Control Equipment CSA CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations</p> <p>FM FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations</p> <p>CE⁽²⁾ 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</p> <p>C-Tick⁽²⁾ Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions</p> <p>EEx⁽²⁾ European Union 94/9/EC ATEX Directive, compliant with: EN 50021; Potentially Explosive Atmospheres, Protection "n" (Zone 2)</p>

(1) Use this Conductor Category information for planning conductor routing. Refer to Publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines".

(2) See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Notes:

Notes:

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	1.440.646.3223 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.

www.rockwellautomation.com

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