

Installation Instructions

Micro800 Programmable Controller External AC Power Supply

Catalog Number(s) 2080-PS120-240VAC

http://literature.rockwellautomation.com/idc/groups/literature/documents/in/2080-in001_-mu-p.pdf

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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://literature.rockwellautomation.com>) 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, 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.
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 identify a hazard, avoid a hazard and recognize the consequences.
SHOCK HAZARD 	Labels may be on or inside the equipment (for example, drive or motor) to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be on or inside the equipment (for example, drive or motor) to alert people that surfaces may reach dangerous temperatures.

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 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

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 enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5V A, V2, V1, V0 (or equivalent) if non-metallic. The interior of the enclosure must be accessible only by the use of a tool. The enclosure must have provision for supply connections to Class I, Division 2 wiring system in accordance with the National Electric Code. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see:

- Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication [1770-4.1](#), for additional installation requirements.
 - NEMA Standard 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.
-

Preventing 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.
 - Use a static-safe workstation, if available.
 - Store the equipment in appropriate static-safe packaging when not in use.
-

North American Hazardous Location Approval

The following modules are North American Hazardous Location approved:
2080-PS120-240VAC

The following information applies when operating this equipment in hazardous locations:	Informations sur l'utilisation de cet équipement en environnements dangereux:
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.	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.
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 any component 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.	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 tout composant 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.

WARNING

- When used in a Class I, Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring method that complies with the governing electrical codes.
 - Any fluctuation in voltage source must be within 85V...264V. Do not connect the adapter to a power source that has fluctuations outside of this range.
-

ATTENTION

- Be careful when stripping wires. Wire fragments that fall into the controller could cause damage. Once wiring is complete, be sure the module is free of all metal fragments before removing the protective debris strip. Failure to remove the strip before operating can cause overheating.
 - Be careful of metal chips when drilling mounting holes for your controller or other equipment within the enclosure or panel. Drilled fragments that fall into the controller could cause damage. Do not drill holes above a mounted controller if the protective debris strips have been removed.
 - Electrostatic discharge can damage semiconductor devices inside the adapter. Do not touch the connector pins or other sensitive areas.
 - Mount the power supply vertically. Allow 50 mm (2 in.) of space on all but the right side for adequate ventilation.
 - Do not wire more than 2 conductors on any single terminal.
-

Additional Resources

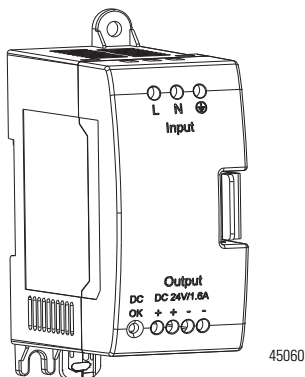
Resource	Description
Micro810 LC10 Programmable Controllers User Manual, publication 2080-UM001	A more detailed description of how to install and use your Micro810 LC10 programmable controller and expansion I/O system.
Micro830 LC30 Programmable Controllers User Manual, publication 2080-UM002	A more detailed description of how to install and use your Micro830 LC30 programmable controller and expansion I/O system.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	More information on proper wiring and grounding techniques.

If you would like a manual, you can:

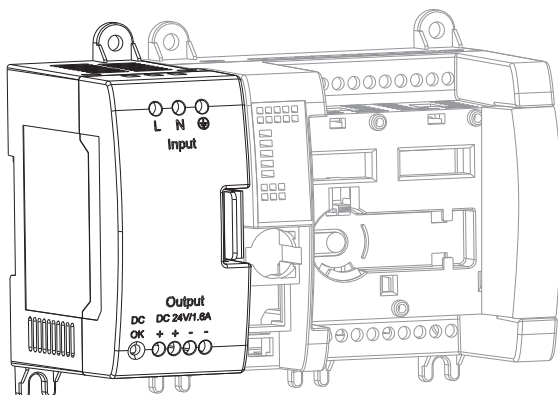
- download a free electronic version from the internet:
<http://literature.rockwellautomation.com>
- purchase a printed manual by contacting your local Allen-Bradley distributor or Rockwell Automation representative

Overview

The 2080-PS120-240VAC adapter can be used by controllers from the Micro800 family as an optional AC power source.



Connect the Power Supply



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General Considerations

Most applications require installation in an industrial enclosure to reduce the effects of electrical interference and environmental exposure. Locate your module as far as possible from power lines, load lines, and other sources of electrical noise such as hard-contact switches, relays, and AC motor drives. For more information on proper grounding guidelines, see the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Module Spacing

Maintain spacing from objects such as enclosure walls, wireways and adjacent equipment. Allow 50.8 mm (2 in.) of space on all sides for adequate ventilation. An exception to this spacing guideline is allowed for the side at which you are connecting a Micro800 controller.

DIN Rail Mounting

Use a flat-blade screwdriver to mount the power supply on EN50022-35x7.5 DIN rails.

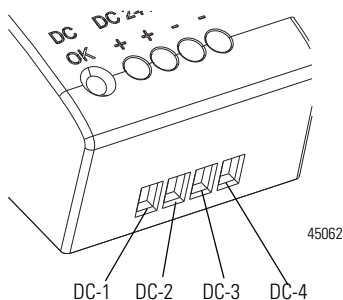
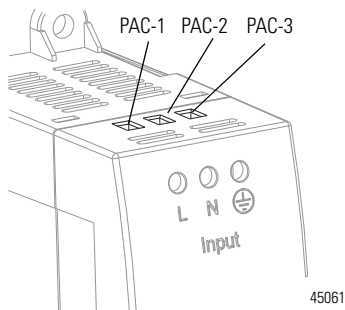
Panel Mounting

The preferred mounting method is to use four M4 (#8) screws per module. Hole spacing tolerance: ± 0.4 mm (0.016 in.).

Follow these steps to install the power supply using mounting screws.

1. Place the power supply against the panel where you are mounting it. Make sure the power supply is spaced properly.
2. Mark drilling holes through the mounting screw holes and mounting feet then remove the power supply.
3. Drill the holes at the markings, then replace the power supply and mount it.
Leave the protective debris strip in place until you are finished wiring the power supply and any other devices.

Wire the Module



AC Input Connectors			DC Output Connectors (DC 24V/ 1.6 A)		
PAC-1	AC hot	100...240V AC	DC-1	+	
PAC-2	AC neutral	100...240V AC	DC-2	+	
PAC-3	Safety ground		DC-3	-	
			DC-4	-	

Specifications

General

Attribute	Value
Dimensions, HxWxD	90 x 45 x 80 mm (3.55 x 1.78 x 3.15 in)
Shipping weight	0.34 kg (0.75 lb)
Supply voltage range ⁽¹⁾	100V...120V AC, 1A 200...240V AC, 0.5A
Supply frequency	47...63 Hz
Supply power	24V DC, 1.6 A
Inrush current, max	24A @ 132V for 10 ms 40A @ 263V for 10 ms

General

Attribute	Value
Power consumption (Output power)	38.4W @ 100V AC, 38.4W @ 240V AC
Power dissipation (Input power)	45.1W @ 100V AC, 44.0W @ 240V AC
Isolation voltage	250V (continuous), Primary to Secondary: Reinforced Insulation Type Type tested for 60s at 2300V AC primary to secondary and 1480V AC primary to earth ground.
Output ratings	24V DC, 1.6A, 38.4W max.
Enclosure type rating	None (open-type)
Wire size	0.32... 2.1 mm ² (22...14 AWG) solid copper wire or 0.32... 1.3 mm ² (22...16 AWG) stranded copper wire rated at 90 °C (194 °F) insulation max
Terminal screw torque	0.5...0.6 Nm (4.4...5.3 lb-in) (using a Phillips-head or 2.5 mm (0.10in.) flat-blade screwdriver)
Wiring category ⁽²⁾	2 - on power ports
Insulation stripping length	7 mm (0.28 in)
North American temp code	T4A

⁽¹⁾ Any fluctuation in voltage source must be within 85V...264V. Do not connect the adapter to a power source that has fluctuations outside of this range.

⁽²⁾ Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

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Environmental

Attribute	Value
Temperature, operating	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): -20...65 °C (-4...149 °F)
Temperature, surrounding air, max	65 °C (149 °F)
Temperature, storage	IEC 60068-2-1 (Test Ab, Unpackaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Non-operating Thermal Shock): -40...85 °C (-40...185 °F)
Relative humidity	IEC 60068-2-30 (Test Db, Unpackaged Damp Heat): 5...95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 2 g @ 12... 500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50 g
Emissions	CISPR 11 Group 1, Class A
ESD immunity	IEC 61000-4-2: 6 kV contact discharges 8 kV air discharges
Radiated RF immunity	IEC 61000-4-3: 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity	IEC 61000-4-4: ±2 kV at 5 kHz on power ports
Surge transient immunity	IEC 61000-4-5: ±1 kV line-line(DM) and ±2 kV line-earth(CM) on power ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Voltage variation	IEC 61000-4-11: 30% dips for 1 period at 0° and 180° on AC supply ports 60% dips for 5 and 50 periods on AC supply ports ±10% fluctuations for 15 min on AC supply ports >95% interruptions for 250 periods on AC supply ports

Certifications

Certification (when product is marked)⁽¹⁾	Value
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E322657. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E340515.
CE	European Union 2004/108/EC EMC Directive, compliant with: EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2006/95/EC LVD, compliant with: EN 61131-2; Programmable Controllers (Clause 11)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

⁽¹⁾ See the Product Certification link at <http://www.ab.com> for Declaration 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 its 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 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 product up and running.

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

New Product Satisfaction Return

Rockwell Automation tests all of its 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, follow these procedures.

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 the return procedure.

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www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846