Installation Instructions

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

Micro800 Programmable Controller External AC Power Supply

Catalog Number 2080-PSAC-12W

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

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Rockwell Automation

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 EN/IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.
This equipment is not intended for use in residential environments and may not provide adequate protection to radio communication services in such environments.
This equipment is supplied as open-type equipment for indoor use. 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 5VA or be approved for the application if nonmetallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain more information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.
In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1, for more installation requirements.
- NEMA Standard 250 and EN/IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures.

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.
- 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 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 components may impair suitability for Class I Division 2.

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 I Division 2.

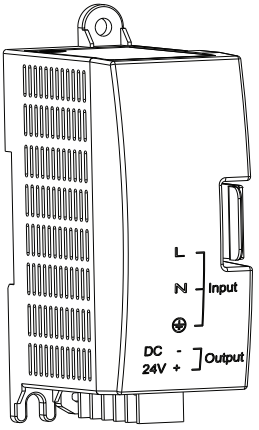
WARNING:
- When used in a Class I Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring method that complies with the governing electrical codes.
- Any fluctuation in voltage source must be within 88...264V AC. Do not connect the adapter to a power 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.

WARNING: Risk of electrical shock, fire, personal injury, or death.
- Do not use the power supply without proper grounding (Protective Earth).
- Turn power off before working on the device.
- Protect against inadvertent repowering.
- Make sure that the wiring is correct by following all local and national codes.
- Do not modify or repair the unit.
- Do not open the unit as high voltages are present inside.
- Use caution to prevent any foreign objects from entering into the housing.

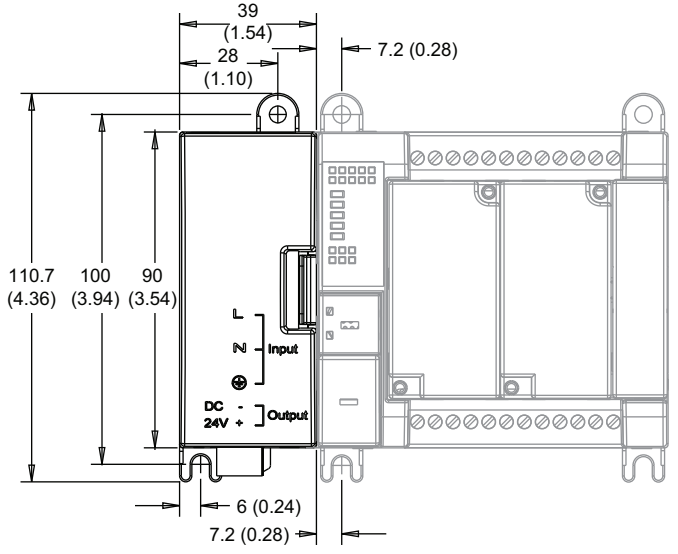
Overview

The 2080-PSAC-12W power supply can be used by controllers from the Micro800™ family as an optional AC power source.



Connect the Power Supply

Measurements in millimeters (inches)



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 screwdriver to mount the power supply on EN 50022 - 35 x 7.5 DIN rails.

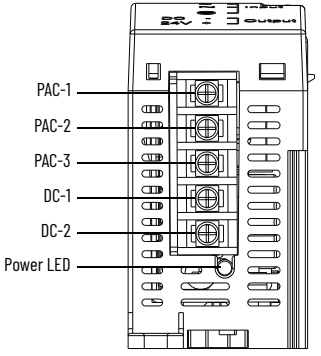
Panel Mounting

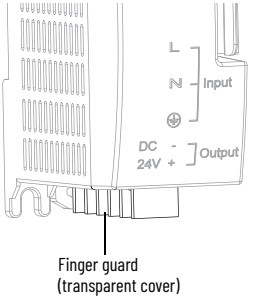
The preferred mounting method is to use four M4 (#8) screws per module. Hole spacing tolerance: ±0.4 mm (0.016 in.).

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 that 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.

Wire the Power Supply





AC Input Connectors				DC Output Connectors (DC 24V / 0.5 A)		
PAC-1	AC hot	100...240V AC		DC-1	-	
PAC-2	AC neutral	100...240V AC		DC-2	+	
PAC-3	Safety ground					

ATTENTION: Replace the finger guard after wiring the power supply.

Specifications

General Specifications

Attribute	Value
Dimensions, HxWxD	90 x 39 x 75 mm (3.54 x 1.54 x 2.95 in)
Shipping weight	0.2 kg (0.44 lb)
Supply voltage range(1)	100V...120V AC, 0.7 A 200...240V AC, 0.4 A
Supply frequency	47...63 Hz
Supply power	24V DC, 0.9 A @ 50 °C (122 °F) 24V DC, 0.5 A @ 65 °C (149 °F)
Inrush current, max	25 A @ 132V for 10 ms 40 A @ 265V for 10 ms
Line loss ride-through	10...3000 ms @ 88V AC
Power consumption (Output power)	21.6 W @ 50 °C (122 °F) 12 W @ 65 °C (149 °F)
Power dissipation (Input power)	27 W (115V AC), 26.7 W (230V AC) @ 50 °C (122 °F) 15.4 W (115V AC), 15.2 W (230V AC) @ 65 °C (149 °F)
Isolation voltage	250V (continuous), Primary to Secondary: Reinforced Insulation Type Type tested for 60 s at 2300V AC primary to secondary and 1350V AC primary to earth ground.
Output ratings	24V, 0.9 A, 21.6 W @ 50 °C (122 °F) 24V, 0.5 A, 12 W @ 65 °C (149 °F)
Enclosure type rating	Meets IP20
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	0.49...0.59 N•m (4.3...5.2 lb•in) (use a Phillips-head or 2.5 mm (0.10 in.) screwdriver)
Wiring category(2)	2 - on power ports
Insulation-stripping length	5 mm (0.197 in.)
North American temp code	T4

(1) Any fluctuation in voltage source must be within 88...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. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications

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 Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating 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 @ 10… 500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 25 g
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 25 g – DIN rail mount 45 g – Panel mount
Emissions	IEC 61000-6-4
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…6000 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 25 cycles 60% dips for 10 cycles 100% dips for 0.5 and 1 cycles >95% interruptions for 250 cycles

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 E334470.
CE	European Union 2014/30/EU 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 2014/35/EU LVD, compliant with: EN 61131-2; Programmable Controllers (Clause 11) European Union 2011/65/EU RoHS, compliant with: EN/IEC 63000; Technical documentation
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
Morocco	Arrêté ministériel n° 6404-15 du 1 er muharram 1437 Arrêté ministériel n° 6404-15 du 29 ramadan 1436
UKCA	2016 No. 1091 – Electromagnetic Compatibility Regulations 2016 No. 1101 – Electrical Equipment (Safety) Regulations 2012 No. 3032 – Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations

(1) See the Product Certification link at rok.auto/certifications for Declaration of Conformity, Certificates, and other certification details.

Additional Resources

For more information on the products that are described in this publication, use these resources.

Resource	Description
Micro810 Programmable Controllers User Manual, publication 2080-UM001	A more detailed description of how to install and use your Micro810® programmable controller and expansion I/O system.
Micro820 Programmable Controllers User Manual, publication 2080-UM005	A more detailed description of how to install and use your Micro820® programmable controller and expansion I/O system.
Micro830, Micro850, and Micro870 Programmable Controllers User Manual, publication 2080-UM002	A more detailed description of how to install and use your Micro830®, Micro850®, and Micro870® programmable controller and expansion I/O system.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rok.auto/literature.

Notes:

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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