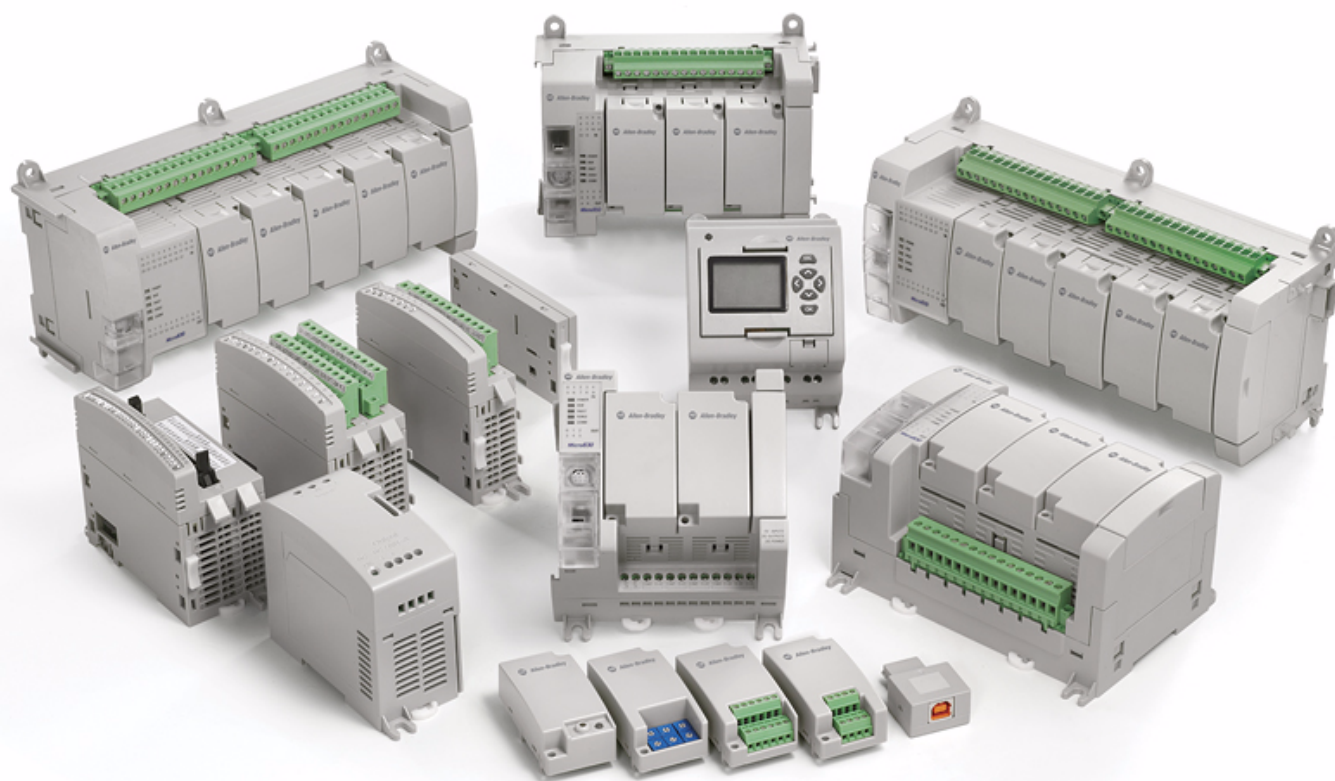


Micro800 Programmable Controllers

Bulletin 2080
Selection Guide



Allen-Bradley



LISTEN.
THINK.
SOLVE.®



Allen-Bradley • Rockwell Software

**Rockwell
Automation**

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](http://literature.rockwellautomation.com) 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.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc., is prohibited.

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 consequence.
SHOCK HAZARD 	Labels may be on or inside the equipment, such as a drive or motor, to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be on or inside the equipment, such as a drive or motor, to alert people that surfaces may reach dangerous temperatures.

Allen-Bradley, Rockwell Automation, Micro800, Connected Components Workbench, and TechConnect are trademarks of Rockwell Automation, Inc.

Trademarks not belonging to Rockwell Automation are property of their respective companies.

Micro800 Controller Comparison

Feature

Attribute	Micro810, 12-point	Micro830, 10/16-point	Micro830, 24-point	Micro830, 48 -point
Communications ports, embedded	USB (with USB adapter)	USB 2.0 (non-isolated) RS232/RS485 non-isolated combo serial		
Base digital I/O points (see Micro800 Input/Outputs on page 3)	12	10/16	24	48
Base analog I/O channels	Four 24V DC digital inputs can be configured as 0...10V analog inputs (DC input models only)	None		
Base number of plug-in modules	0	2	3	5
Types of accessories or plug-ins supported	<ul style="list-style-type: none"> • LCD display with backup memory module • USB adapter 	All plug-in modules (Isolated serial port, 2/4-channel analog, RTD/TC, trimpot, backup memory module with RTC)		
AXIS/HSC, max (100 kHz pulse)	No motion support	1 axis /2 HSC	2/4	3/6
		NOTE: number of HSC is half of stated value if Preset and Enable signals are used (4 wire)		
Power supply	AC and DC Power supply embedded	Base unit has embedded 24V DC power supply, optional external 120/240V AC power supply available		
Basic instruction speed	2.5 µs per basic instruction	0.25 µs per basic instruction		

Micro800 Controller Programming Comparison (with Connected Components Workbench)

Attribute	Micro810, 12-point	Micro830, 10/16-point	Micro830, 24-point	Micro830, 48 -point
Program steps ⁽¹⁾	2 KB	4 KB	10 KB	10 KB
Data bytes	4 KB	8 KB	20 KB	20 KB
IEC 61131-3 languages	Ladder diagram, function block, structured text			
User defined function blocks	Yes			
Emulator	Yes (optional - only with Developer edition)			
Motion instructions (planned)	n.a.	PLCopen motion instruction set Positioning only - Home, Move, etc.		
Floating point	Yes, 32-bit & 64-bit			
PID	None	Yes		
Run-time download	n.a.	Yes – individual routines downloadable while in RUN mode		
Embedded serial port protocols	None	Modbus Master/Slave, ASCII/Binary		

(1) Estimated Program and Data size are “typical” — program steps and variables are created dynamically. 1 Program Step = 12 data bytes.

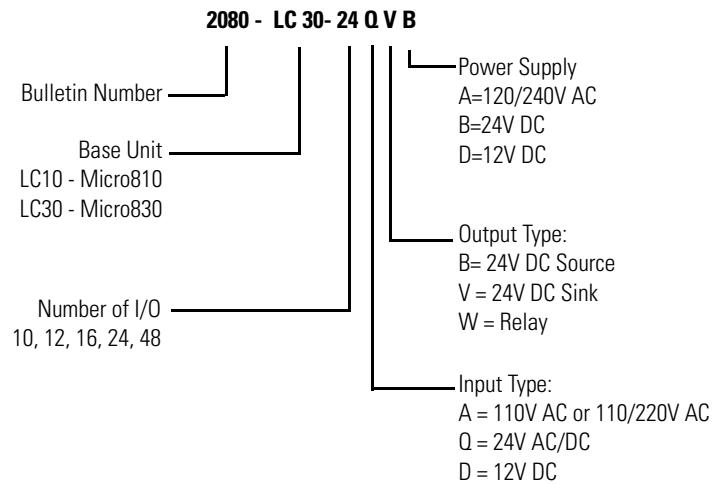
Micro800 Power Requirements

Controller/Module	Power Requirement
Micro810 12 point (with or without LCD)	3W (5V A for AC module)
Micro830 (without plug-in) 10/16 point 24 point 48 point	3.6W 5.28W 10.56W
Plug-in modules, each	1.44W

Micro800 Controller Analog I/O comparison

Analog Accuracy Level Required	Component Recommended
Low	Micro810 - 4-channel embedded analog - 10-bit non-isolated 0...10V inputs - 2% Accuracy with user calibration - limited filtering - each channel shared with digital input
Medium	Micro830 (with plug-ins) - 12-bit non-isolated 0...10V, 0...20 mA - 1% Accuracy, inputs and outputs - 14-bit non-isolated RTD/TC (1 °C accuracy) - 200 ms/ch, 50/60 Hz Ffiltering

Micro800 Catalog Number Details



Micro800 Input/Outputs

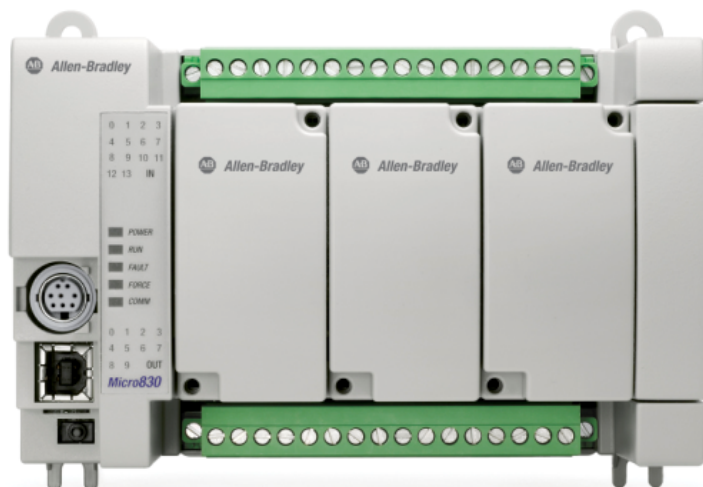


1.5" LCD and Keypad not included with the controller

Micro810 Controllers - Number and Type of Inputs/Outputs ⁽¹⁾

Catalog Number	Power	Inputs			Outputs		Analog In 0...10V (shared with DC In)
		120V AC	240V AC	12...24V DC / V AC	Relay	24 V DC SRC	
2080-LC10-12QWB	24V DC			8	4		4
2080-LC10-12AWA	120...240V AC	8			4		
2080-LC10-12QBB	12...24V DC			8		4	4
2080-LC10-12DWD	12V DC			8	4		4

(1) Micro810 controllers have high current relay outputs. Two are 8A relays and two are 4A relays.



Micro830 Controllers - Number and Type of Inputs/Outputs ⁽¹⁾

Catalog Number	Inputs		Outputs		
	110V AC	24V DC/V AC	Relay	24V Sink	24V Source
2080-LC30-10QWB		6	4		
2080-LC30-10QVB		6		4	
2080-LC30-16AWB	10		6		
2080-LC30-16QWB		10	6		
2080-LC30-16QVB		10		6	
2080-LC30-24QBB		14			10
2080-LC30-24QVB		14		10	
2080-LC30-24QWB		14	10		
2080-LC30-48AWB	28		20		
2080-LC30-48QBB		28			20
2080-LC30-48QVB		28		20	
2080-LC30-48QWB		28	20		

(1) All power is 24V DC

Micro800 Communications

Micro800 Communication Options

Controller	USB programming port	Embedded Serial Port, Serial Port Plug-In		
		CIP Serial	Modbus RTU	ASCII/Binary
Micro810 12-point	Yes (with adapter)	No		
Micro830	Yes	No	Master/Slave	Yes

Connected Components Workbench

Connected Components Workbench (CCW) is the programming and configuration software environment for the Micro800 controllers and our Connected Components products offering. It simplifies setup and usage, enabling applications ranging from simple Smart Relay up to Standalone Machine control with EtherNet/IP (planned).

Visit the website for the most up-to-date product information, downloads and tools:
<http://www.ab.com/programmable-controllers/micro800>.

Connected Components Workbench versions

Attribute	Basic	Developer
Delivery	Download for FREE from the Connected Components Workbench web page at http://www.ab.com/programmable-controllers/micro800 .	DVD available for order 9328-CCWDEVENE
Packaging options	Available on DVD, orderable from Connected Components Workbench web page at http://www.ab.com/programmable-controllers/micro800 .	Available as part of our software toolkit program
Features	<ul style="list-style-type: none">- LD, FBD and ST editors- creatable user-defined function blocks- No activation needed- Optional registration during installation (for product updates and notices)	<p>Adds these features to the Basic edition:</p> <ul style="list-style-type: none">- run-time download (program swap)- controller simulator/emulator

Micro800 Plug-in Modules and Accessories



Plug-in / Accessory	Supported by Micro810	Supported by Micro830	Feature
1.5" LCD and Keypad	Yes	No	<ul style="list-style-type: none"> • backup module for Micro810 controllers • configure Smart Relay Function Blocks
Micro810 USB Adapter 2080-USBADAPTER	Yes	N.A.	USB programming access
External Power Supply 2080-PS120-240VAC	Yes	Yes	expansion power supply
RS232/485 Isolated Serial Port 2080-SERIALISOL	No	Yes	<ul style="list-style-type: none"> • adds additional serial communications with Modbus RTU and ASCII protocols • isolated for increased noise immunity
Non-isolated Unipolar Analog Input/Output 2080-IF2, 2080-IF4, 2080-OF2	No	Yes	<ul style="list-style-type: none"> • adds up to 20 embedded analog I/O with 12-bit resolution (with 48-point controllers) • 2 channels for -IF2, OF2 • 4 channels for -IF4
Non-isolated Thermocouple 2080-TC2	No	Yes	<ul style="list-style-type: none"> • for temperature control, when used with PID with autotuning • 2 channels for -TC2 and -RTD2
Non-isolated RTD 2080-RTD2	No	Yes	
Memory Module with RTC 2080-MEMBAK-RTC	No	Yes	<ul style="list-style-type: none"> • backup project data and application code • high accuracy real-time clock
6-Channel Trim Potentiometer Analog Input 2080-TRIMPOT6	No	Yes	adds six analog presets for speed, position and temperature control

For More Information

Visit the Micro800 website at <http://www.ab.com/programmable-controllers/micro800> to learn more about Micro800 products and download Connected Component Workbench software and Micro800 firmware updates.

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.

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support/>, 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://www.rockwellautomation.com/support/>.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/support/americas/phone_en.html , or contact your local Rockwell Automation representative.

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 (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

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 NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, 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

Publication 2080-SG001A-EN-P - December 2010

Copyright © 2010 Rockwell Automation, Inc. All rights reserved. Printed in the U.S.A.