

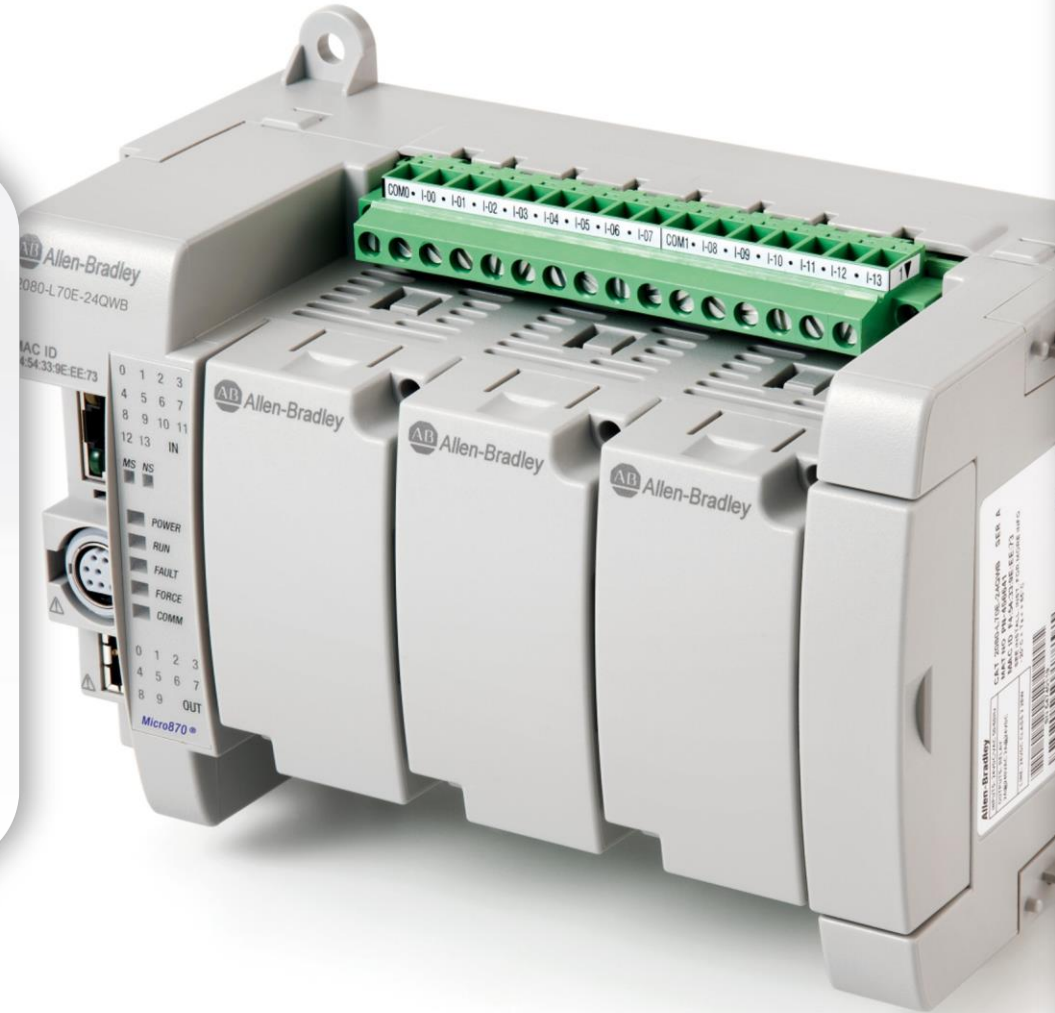


# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

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expanding **human possibility**<sup>®</sup>



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Micro870<sup>®</sup>  
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New Micro850<sup>®</sup> and  
Micro870<sup>®</sup> controller  
catalogs

# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

Improved performance and new capability in the Micro800™ controller family

## Change of catalog string

- Realignment of catalog numbers to indicate Ethernet connectivity
- Controller is not backward compatible with previous firmware revisions

## Enhancements for new catalogs 2080-L50E and 2080-L70E

- Increase legacy protocol connectivity on Serial and/or Ethernet ports
  - DF1 supports all modes: Full-duplex, half-duplex and radio modem
  - DNP3 support on Micro870<sup>®</sup> controller catalogs 2080-L70E-24QBBN and 2080-L70E-24QWBN
- Increase security protection
- Improve controller performance





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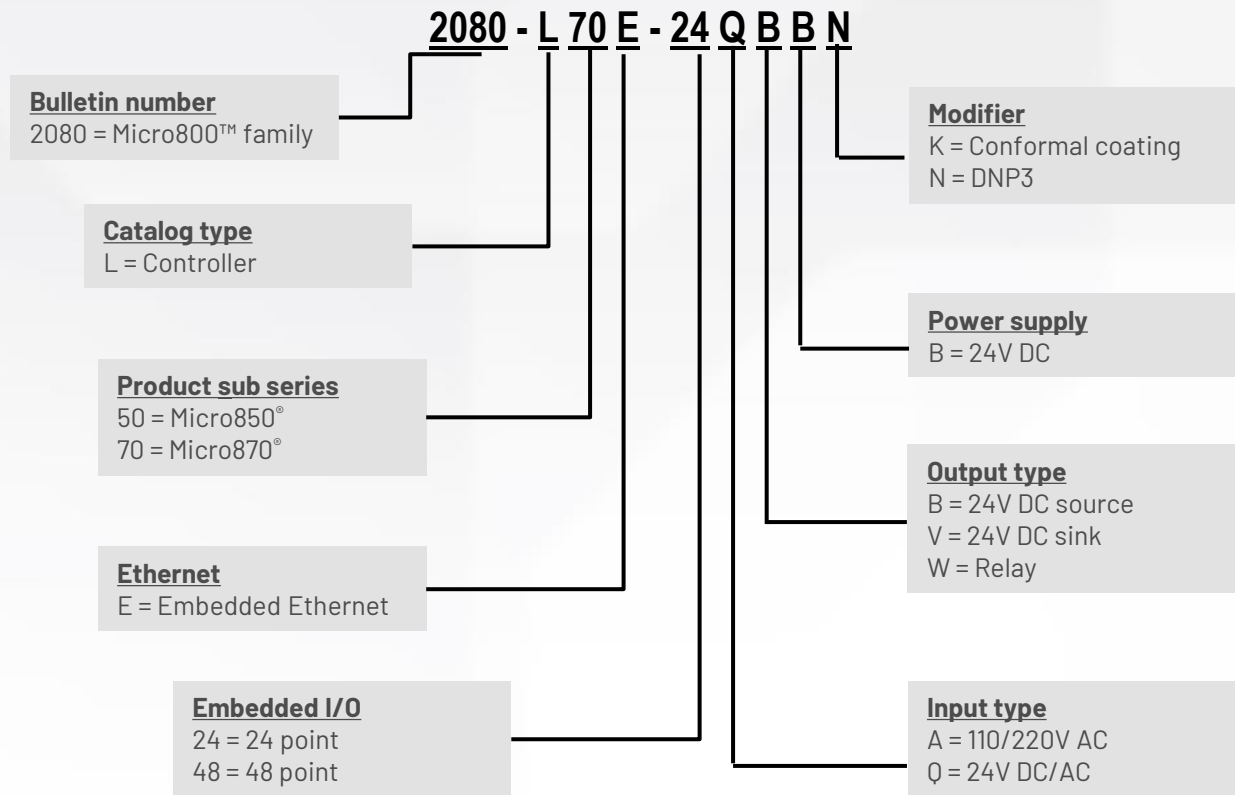
Catalog relabeling

# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

Catalog relabeling to identify Ethernet options

## How are the new catalogs labeled?

The LCx0 in the existing catalog string is relabeled to Lx0E.



Family	Existing Catalog	New Catalog
Micro850 <sup>®</sup>	2080-LC50-24AWB	2080-L50E-24AWB
	2080-LC50-24QBB	2080-L50E-24QBB
	2080-LC50-24QVB	2080-L50E-24QVB
	2080-LC50-24QWB	2080-L50E-24QWB
	2080-LC50-48AWB	2080-L50E-48AWB
	2080-LC50-48QBB	2080-L50E-48QBB
	2080-LC50-48QVB	2080-L50E-48QVB
	2080-LC50-48QWB	2080-L50E-48QWB
	2080-LC50-48QWBK	2080-L50E-48QWBK
Micro870 <sup>®</sup>	2080-LC70-24AWB	2080-L70E-24AWB
	2080-LC70-24QBB	2080-L70E-24QBB
	2080-LC70-24QWB	2080-L70E-24QWB
	2080-LC70-24QWBK	2080-L70E-24QWBK
	2080-LC70-24QBBK	2080-L70E-24QBBK
		2080-L70E-24QBBN
		2080-L70E-24QWBN

DNP3 catalogs



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Availability





## Availability

### Micro850® controllers, catalog 2080-L50E-xxxxx

- Target release schedule: End September 2022

### Micro870® controllers, catalog 2080-L70E-xxxxx

- Available

### Connected Components Workbench™ software support

- Version 20.01.00 is the required minimum for the new controllers
- Available





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Enhancements and new  
capabilities

# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

No change to the technical specifications

Attributes		Micro850 <sup>®</sup> controllers		Micro870 <sup>®</sup> controllers	
		Catalog 2080-LC50-xxxx	Catalog 2080-L50E-xxxx	Catalog 2080-LC70-xxxx	Catalog 2080-L70E-xxxx
Number of I/O	24pts	14 IN/10 OUT	14 IN/10 OUT	24 (14 IN/10 OUT)	24 (14 IN/10 OUT)
	48pts	28 IN/20 OUT	28 IN/20 OUT		
Dimension	24pts	90 x 158 x 80 mm (3.54 x 6.22 x 3.15 in.)		90 x 158 x 80 mm (3.54 x 6.22 x 3.15 in.)	
	48pts	90 x 238 x 80 mm (3.54 x 9.37 x 3.15 in.)			
Power consumption	24pts	8W – without plug-in modules and expansion I/O modules 28W – with plug-in modules and expansion I/O modules		8W – without plug-in modules and expansion I/O modules 28W – with plug-in modules and expansion I/O modules	
	48pts	11W – without plug-in modules and expansion I/O modules 33 W – with plug-in modules and expansion I/O modules			

**Form factor, I/O density and connection, and electrical characteristics remain the same**

# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

Increase legacy protocol connectivity on Serial and Ethernet ports

## Expanded DF1 communications support

- Included in all new controller catalogs 2080-Lx0E
- Additional modes, including DF1 half-duplex master, DF1 half-duplex slave and DF1 radio modem
- Supported via Serial port (embedded and plug-in)

## Application layer protocols are supported in the new DF1 capability

- Includes CIP Serial, which is the same as the existing Micro800<sup>™</sup> controllers
- CIP Serial is the native Serial application layer protocol for ControlLogix<sup>®</sup>, CompactLogix<sup>™</sup> and Micro800<sup>™</sup> controllers. For more information, see Logix 5000<sup>®</sup> Controllers Data Access Programming Manual ([publication 1756-PM020](#)).
- Programmable Controller Communication Commands (PCCC) are not supported in the new Micro850<sup>®</sup> and Micro870<sup>®</sup> controllers

## Broadcast function is not supported

# Micro870<sup>®</sup> controller catalogs 2080-L70E

Increase legacy protocol connectivity on Serial and Ethernet ports

## DNP3 capability

- Now included in the new Micro870<sup>®</sup> controllers\*. The DNP3 capability was available only in MicroLogix™ 1400 controllers previously.
- Programmed with Connected Components Workbench™ software version 20.01.00 or later
- Offer capabilities that are unavailable in most RTU protocols, including Modbus and DF1. These capabilities are:
  - Time-stamping of message packets
  - Event reporting capability – only transmitting bit changes and analog value changes, which are outside of a deadband
  - Automatic logging of events during communication outages, which are not uncommon in telemetry networks
- Micro800™ controller is a DNP3 slave. There are three standard levels of DNP3 slave implementations from the simplest Level 1 to the feature-rich Level 3. The Micro870<sup>®</sup> controller is a Level 2 implementation.

*\* Available in catalogs 2080-L70E-24QBBN and 2080-L70E-24QWBN only*

# Micro870<sup>®</sup> controller catalogs 2080-L70E

Increase legacy protocol connectivity on Serial and Ethernet ports

## DNP3 capability

- Micro870<sup>®</sup> controllers with DNP3 support Secure Authentication version 2 and 5. MicroLogix<sup>™</sup> 1400 controllers support only Secure Authentication version 2 (SAv2).
- Supported via Serial (embedded and plug-in) and Ethernet ports
- Provide the same capabilities as MicroLogix<sup>™</sup> 1400 controllers, including:
  - All three endpoint type support, which include Listening, Dual and Datagram only
  - Master Address validation and Access Control
  - Time Synchronization and Timestamping
  - Unsolicited Response support
  - Event driven messages
- Provide a more user-friendly configuration method compared to file number mapping

The screenshot shows the configuration interface for a DNP3 Slave. On the left is a tree view with categories: Controller, General, Memory, Startup/Faults, Serial Port, USB Port, Ethernet, DNP3 Slave (selected), DNP3 Mapping, DNP3 Data Set Descriptor, DNP3 Data Set Prototype, Interrupts, Modbus Mapping, Real Time Clock, Embedded I/O, Data Log, Recipe, Motion, Plug-in Modules, and Expansion Modules. The main panel is titled 'Controller - DNP3 Slave' and contains the following sections:

- Application Layer**:
  - Enable Confirmation
  - Max Response Size: 2048 byte
  - Confirmation Timeout: 10000 ms
  - Select Timeout: 10 sec
  - Time Synchronization Interval: 0 min
  - Enable Time Synchronization on Start Up Only
- Unsolicited Responses**:
  - Channel for Unsolicited Responses: Ethernet Port
  - Restore Events After Power Cycle
  - Send Initial Unsolicited Null Response on Restart
  - Enable Unsolicited On Start Up
  - Number of Retries: 0
  - Unsolicited Responses for Class 1: Disabled, Number of Events: 10
  - Unsolicited Responses for Class 2: Disabled, Number of Events: 10
  - Unsolicited Responses for Class 3: Disabled, Number of Events: 10
- Default Variation**:
  - Default Variation Table
- Secure Authentication**:
  - Enable Secure Authentication

# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

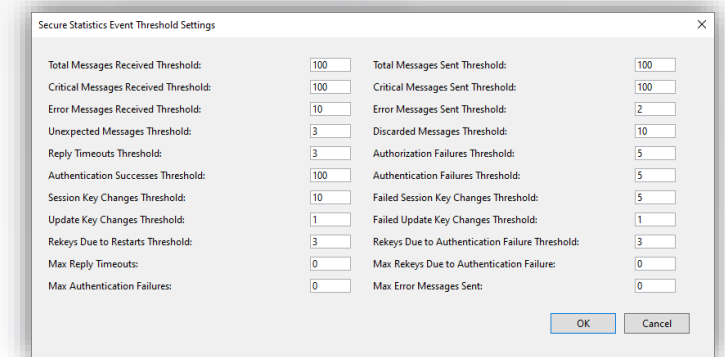
Increase security protection

## Enhanced password encryption for the Micro800™ controllers

- The code is encrypted whenever the user creates the password in Connected Components Workbench™ software.
- The encrypted code is always different even if the password is the same. This capability helps to prevent unauthorized access of the code and a malicious decryption through a fixed pattern.
- The backup program **MUST** always be updated in the Micro800™ memory module, catalog 2080-MEMBAK-RTC2. This step helps to ensure that the restore function will not fail even if the password is deleted and recreated.

## Secure Authentication version 5 (SAv5) support in DNP3

- Enhanced cryptographic algorithms
- Uses HMAC-SHA-256 instead of HMAC-SHA-1 in the authenticating process
- Uses AES-256 instead of AES-128
- Supports managing of Update Keys remotely
- Reduces the cost to be physically present at all remote stations to update the compromised Update Key
- Provides users with better diagnostic information on the DNP3 network through security statistics



# Micro850<sup>®</sup> and Micro870<sup>®</sup> controller catalogs 2080-Lx0E

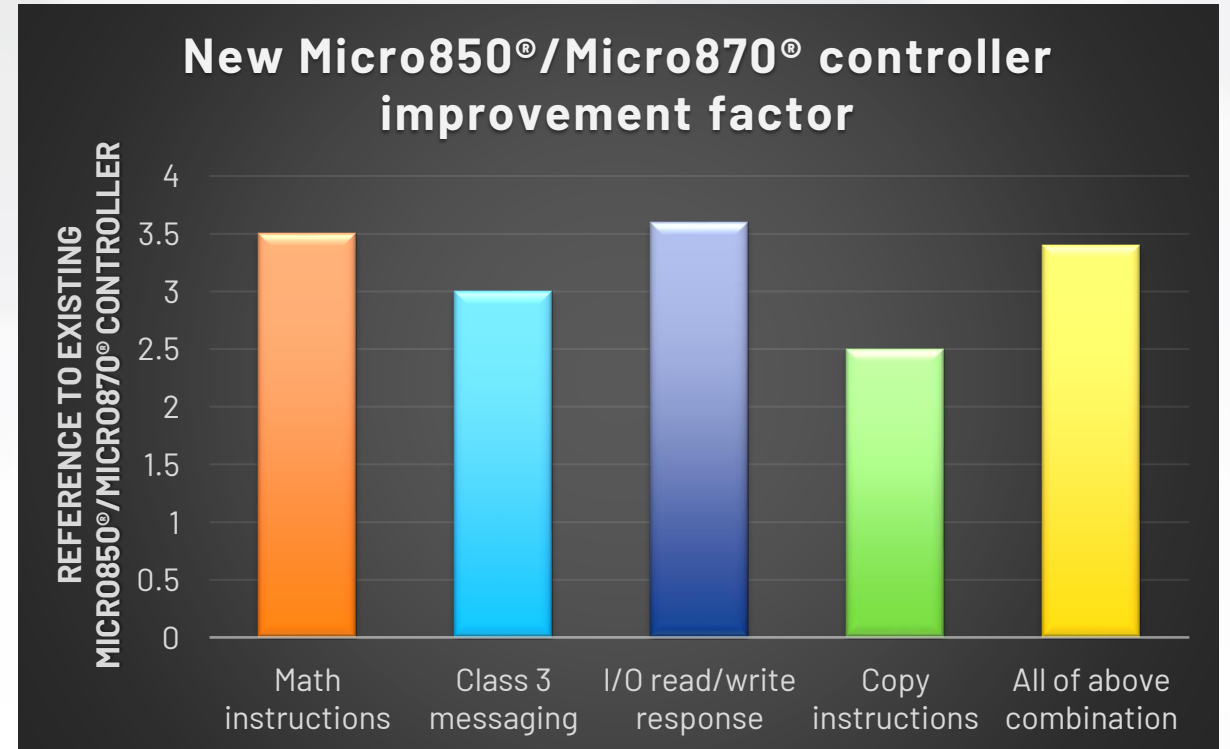
Improve controller performance

## Improved download and upload time for the new catalogs 2080-Lx0E

- Download time improved by 40% and upload time improved by 23%, as compared to catalogs 2080-LC50x or 2080-LC70x
- Reduce customer development time

## Improved customer throughput

- 2-3x improvement in the following areas:
  - Code execution
  - Embedded I/O response
  - Math instruction processing
  - Communication processing







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Resources

# Resources

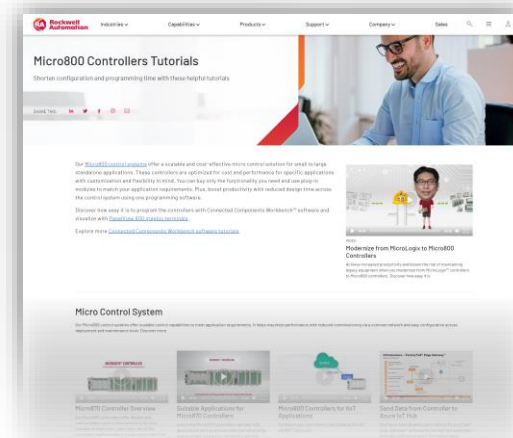
## Literature

- [Micro800™ controller eBook](#)
- More on [Literature Library](#)



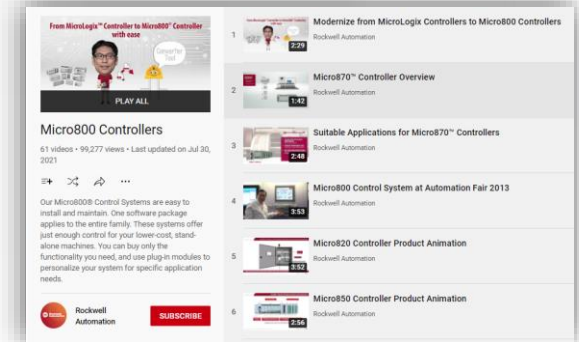
## Rockwellautomation.com

- [Micro850® controllers product page](#)
- [Micro870® controllers product page](#)
- [Micro800™ controllers tutorials playlist](#)
- [Micro Control Systems](#)
- [Micro800™ Sample Code Library](#)



## Videos

- [Micro800™ controllers videos on YouTube](#)





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