

# MicroLogix

**MicroLogix™**

One Family of Small Logic Controllers for  
Every Application and Budget.

Allen-Bradley Parts



**Rockwell  
Automation**

Bringing Together Leading Brands in Industrial Automation

MicroLogix

# Programmable Controllers



## Power. Performance. Peace of mind. The MicroLogix™ Controller Family.

Today's marketplace is more competitive than ever. Thriving in such an environment means using the best tools and technologies the world has to offer. All over the globe, companies requiring compact controllers look to the Allen-Bradley MicroLogix™ family from Rockwell Automation.

The MicroLogix family offers a breadth of controllers that satisfies the widest variety of applications. This ensures you'll find a world-class micro-controller that fits your application as easily as one that fits your budget.

## Your designs stay lean, with just enough control.

You've heard talk about lean enterprise – eliminating waste, cutting fat, trimming machines down. And by designing machines using efficient automation components like MicroLogix controllers, you'll build "lean" right into the machine. With no over-engineering, no unnecessary costs, and no waste. No kidding.

All members of the MicroLogix and SLC 500™ families share a host of commonalities – from the same architecture, instruction set and industry-leading RSLogix 500™ programming software to compatible network and HMI devices. So they will always work together seamlessly – within a single machine or across your entire factory. And you won't have to completely reprogram or learn a new system as you move from level to level. Finally, all MicroLogix controllers are DIN-rail and panel mountable, as well as UL listed, C-UL Certified, and Class 1, Division 2 and CE compliant for conformity to necessary global standards.





**Communicate like never before.**

No micro-programmable controllers on the market offer better communication performance than the MicroLogix family. All models provide:

- At least one built-in, enhanced RS-232C port supporting DF1™ Full-Duplex, DF1 Half-Duplex, and DH-485 protocols
- Communication with personal computers, operator interfaces, other PLCs, and more, through DeviceNet™ and Ethernet®, as well as through open point-to-point and SCADA protocols
- In addition, the MicroLogix 1200 and 1500 provide:
  - Embedded Modbus RTU slave protocol
  - Full ASCII (read/write) capability

**Expand your I/O horizons.**

When you're looking for the flexibility to satisfy various I/O requirements, look to the MicroLogix family. With a wide range of I/O capabilities – from embedded to modular – MicroLogix controllers combine high-speed embedded I/O with the flexibility and expandability of expansion I/O for just the right amount of points for any application.



**We sell world-class products.**

**We give you peace of mind.**

**Relax. You're with Rockwell Automation.**

Don't forget, these controllers bear the Allen-Bradley name – the most trusted brand name in industrial automation for almost a century. With Rockwell Automation, you're guaranteed:

- Strict quality standards
- Latest technological advances
- Global capability, local supply
- Unmatched customer service
- Peace of mind

**Get world-class service and support.**

Customer satisfaction is built into every product that Rockwell Automation offers. In addition to worldwide sales and field personnel, thousands of in-house automation experts ensure customer support. You're not locked into one supplier either. Our referencing program seamlessly integrates several third-party products and technologies that complement our own. This enables you to tap the resources of an even larger selection of global products and services.

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MicroLogix

# 1000



**MicroLogix 1000 Series.**  
**Small on cost. Big on capabilities.**

**A small PLC that packs a lot of punch.**

Whatever your packaged control needs are, you'll find a feature-rich solution here.

- Choose from 17 different models, with multiple embedded I/O and power combinations
- Input options include AC, DC, and analog (current or voltage)
- Output options include relay, triac, MOSFET, and analog (current and voltage)
- Choice of AC- or DC-powered controllers
- Can handle applications with up to 32 I/O
- Superior high-speed counter (up to 6.6 kHz)
- Complete family compatibility, so you can easily move up to the next MicroLogix level or even to the SLC 500™ platform. Buy only what you need today, knowing your options are still open in the future.

**Complete control is right at your fingertips.**

Just enough control – it's built in.

- Models with 10, 16, and 32 digital points
- Analog controllers with 20 digital I/O points and 5 analog I/O points offer cost-effective process and discrete control
- 16-bit analog resolution allows precise measurement and control of process variables

The MicroLogix 1000 is the perfect controller for companies with a micro budget. This little powerhouse is both inexpensive and compact, with footprints as small as 120mm x 80mm x 40mm (4.72" x 3.15" x 1.57"). However, it's big on performance – providing high-speed, advanced networking capabilities and a full suite of control solutions.





### Program with your eyes closed – almost.

Customers worldwide find MicroLogix 1000 controllers easy to program using the familiar ladder diagram format.

- Multilingual RSLogix 500™ software and documentation
- Hand-Held Programmer (HHP) for programming and troubleshooting
- Built-in EEPROM memory retains all ladder logic and data – no need for additional battery backup or a separate memory module – in the event of an unexpected power loss

### Enjoy even more benefits of the MicroLogix 1000.

- High-capacity programming with a large 1K user memory
- Fast throughput. Execution for a typical 500-instruction program is only about 1.5 ms.
- Bi-directional high-speed input at up to 6.6 kHz that offers a real-time output response, independent of the program scan
- RS-232 communication channel for simple connectivity to a personal computer, operator interface, modem, other controller, or for networking to all of these

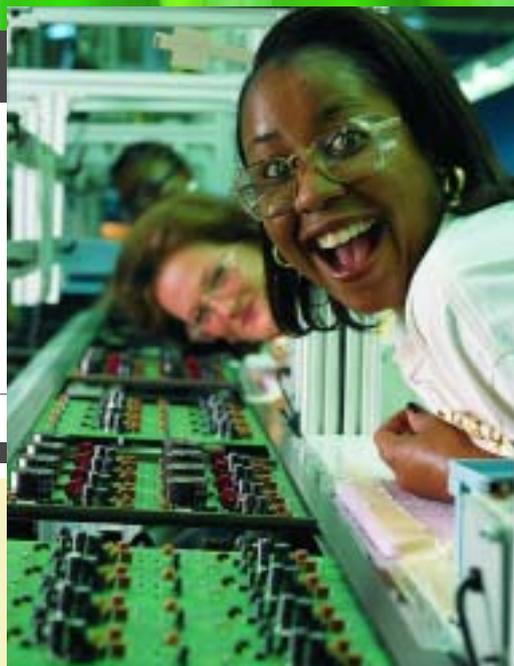
For more information to help you select the right MicroLogix 1000 controller for your application, please see the MicroLogix 1000 Technical Data, Publication 1761-TD001A-EN-P.

### CASE-IN-POINT

**Because of compatible operating platforms, bottlenecks are a thing of the past.**

#### Challenge

Poor communication capabilities between factory floor controllers and non-production computers at a major bottling company caused a series of problems, including filling/labeling errors and production slow-downs.



#### Solution

Rockwell Automation implemented a MicroLogix 1000 control system to provide factory floor networking – and simple bridging to their existing Ethernet network – that was perfectly compatible with the company's material flow system.

#### Results

Production problems diminished. Packaging errors were all but eliminated. And it's not uncommon for companies like this one to see long-term production numbers increase by double digits. Our customer raised a toast to that.

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# 1200



## MicroLogix 1200 Series. Increased functionality and options.

### Start small. Stay flexible.

Grow as your applications do.

- Small footprint of only 90mm x 110mm (3.54" x 4.33") for 24 I/O points
- High-powered embedded I/O, PLUS the ability to add expansion I/O when your application grows or changes
- Field-upgradeable flash operating system allows your controller to be upgraded as new functionality is developed

### Keep your I/O options open.

Application flexibility is built into the MicroLogix 1200 expansion I/O modules.

- Powerful, 24- and 40-point controllers with 120V ac or 24V dc inputs, relay and high-speed MOSFET outputs, and 120-240V ac or 24V dc power
- Up to six digital and analog expansion modules
- Rackless design eliminates added system cost and inventory issues
- Small footprint is perfect for applications that appreciate panel space cost
- Software keying prevents incorrect positioning of I/O modules within the system
- Feature-rich I/O functionality addresses a wide range of applications

The MicroLogix 1200 is filled with features and options designed to handle an extensive range of applications. Features include expansion I/O, compatible instruction set and programming software, and large non-volatile memory – just to name a few. Best of all, you get all this functionality and Allen-Bradley brand quality at a really attractive price.





**Packing programming power into a dynamite package.**

Once again, Rockwell Automation delivers what applications require.

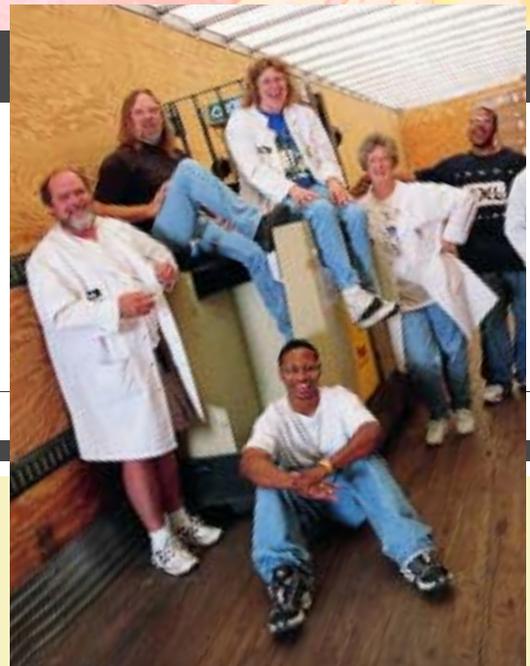
- Huge 6K memory, with 4K words available for user programs and configurable 2K words for user data, allowing data elements to be selected according to specific application requirements

**Add these MicroLogix 1200 benefits to your workplace, too.**

- Optional real time clock for time-based control applications
- Optional memory modules for program transport and back-up
- High-speed counter with eight modes of operation
- Two built-in analog trim potentiometers
- Built-in PID
- High-speed Pulse Train Outputs (PTO) or Pulse Width Modulated (PWM) Outputs
- Floating Point data file support

For more information to help you select the right MicroLogix 1200 controller and expansion I/O for your application, please see the MicroLogix 1200 Technical Data, Publication 1762-TD001A-EN-P.

**CASE-IN-POINT**



**When space is at a premium, our controllers are food for thought.**

**Challenge**

A food manufacturer needed to increase production. However, space requirements allotted very little room for a control solution.

**Solution**

Based on the functionality and space needs of this company, their local Rockwell Automation distributor installed a MicroLogix 1200 controller solution. It perfectly met their needs, while taking up less space than their existing relay and "home-baked" control solution.

**Results**

The customer's immediate expansion needs were met, and long-term efficiencies should allow production to increase by as much as 30 percent. Space restrictions were easily accommodated. This company found one sweet solution.

**Allen-Bradley Parts**

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# 1500



**MicroLogix 1500 Series.  
More powerful. More expandable.**

**Unmatched performance, power,  
and flexibility.**

MicroLogix 1500 users find it surprising how many robust features it offers, especially for a controller this size.

- Supports up to 14K of onboard non-volatile user memory, for complex application programs
- Typical scan time is less than 1 millisecond per 1K of user program
- Expandable to over 256 I/O points
- Innovative, rackless, tongue-and-groove design reduces system cost and inventory
- Two 20 kHz high-speed counters, each with eight modes of operation, and two high-speed outputs that can be configured as either 20 kHz Pulse Train Outputs (PTO) or Pulse Width Modulated (PWM) Outputs
- Broad application coverage through embedded I/O and up to 16 Compact™ I/O modules
- Terminal blocks are finger-safe, removable NEMA-style blocks
- Takes up a fraction of the space of larger controllers
- Features a field-upgradeable flash operating system

The MicroLogix 1500 is the most powerful member of the MicroLogix family. In fact, it can handle many applications that traditionally called for larger, more expensive controllers. With its removable processor, base units with embedded I/O and power supply – and expansion through 1769 Compact™ I/O – the MicroLogix 1500 packs all of the best features of a modular system into a low-cost, small footprint.





### Expand your options.

The MicroLogix 1500 gives you a host of optional features to suit your needs.

- Data Access Tool (DAT) plug-in device allows an operator to monitor and easily change data without the need for a computer or the added expense of an HMI device
- Optional memory modules for program transport and back-up
- Optional real time clock for time-based control applications such as lighting and HVAC

### With a MicroLogix 1500 and our 1769 DeviceNet™ scanner, you get enhanced network control.

The 1769-SDN DeviceNet™ scanner allows a MicroLogix 1500 controller to become a DeviceNet master, slave, or peer device. It combines standard DeviceNet master functionality with enhanced performance features.

- Message between devices and perform program upload, download and monitoring
- Own up to 180 input and 180 output words of data, from up to 63 network slave devices
- Up to 32 input and 32 output words of data within the 1769-SDN may be owned by another master
- Easy configuration with RSNetWorx™



### CASE-IN-POINT

**To increase production speed, a paper company had to think outside the envelope.**

#### Challenge

A paper manufacturer couldn't produce product fast enough to keep up with orders.

#### Solution

Rockwell Automation provided a solution using DeviceNet networked MicroLogix 1500 controllers, which allowed high-speed distributed control. So now, even if a machine goes down, all "downstream" operations will continue, and the trucks will still roll.

#### Results

The company is getting orders out on time, and now aims to seal the deal with a 98% customer-satisfaction rating.

# Allen-Bradley Parts



**MicroLogix 1500: More capabilities. More versatility. More solutions.**

- Three base options, including a choice of electrical configurations featuring:
  - 120V ac or 24V dc inputs
  - Relay and high-speed MOSFET outputs
  - 120-240V ac or 24V dc power
- Two built-in analog trim potentiometers
- Built-in PID capabilities
- Data file download protection, which saves critical user data from being overwritten during logic transfers
- Using the 1764-LRP processor, the controller supports two communication ports, data logging for storing up to 48K bytes of data records, and a recipe instruction, which allows multiple large recipes, up to 48K bytes, to be stored within the controller

For more information to help you select the right MicroLogix 1500 controller and 1769 Compact I/O for your application, please see the MicroLogix 1500 Technical Data, Publication 1764-TD001A-EN-P.

**Value-based I/O brings unique features to the MicroLogix 1500.**

1769 Compact I/O is a PLC-style I/O platform which is optimized for use with Allen-Bradley MicroLogix and CompactLogix™ controllers. It can also function as distributed I/O with a network adapter. With its industry-leading features and competitive price, Compact I/O makes the MicroLogix 1500 a platform tailor-made for the cost-conscious automation consumer.

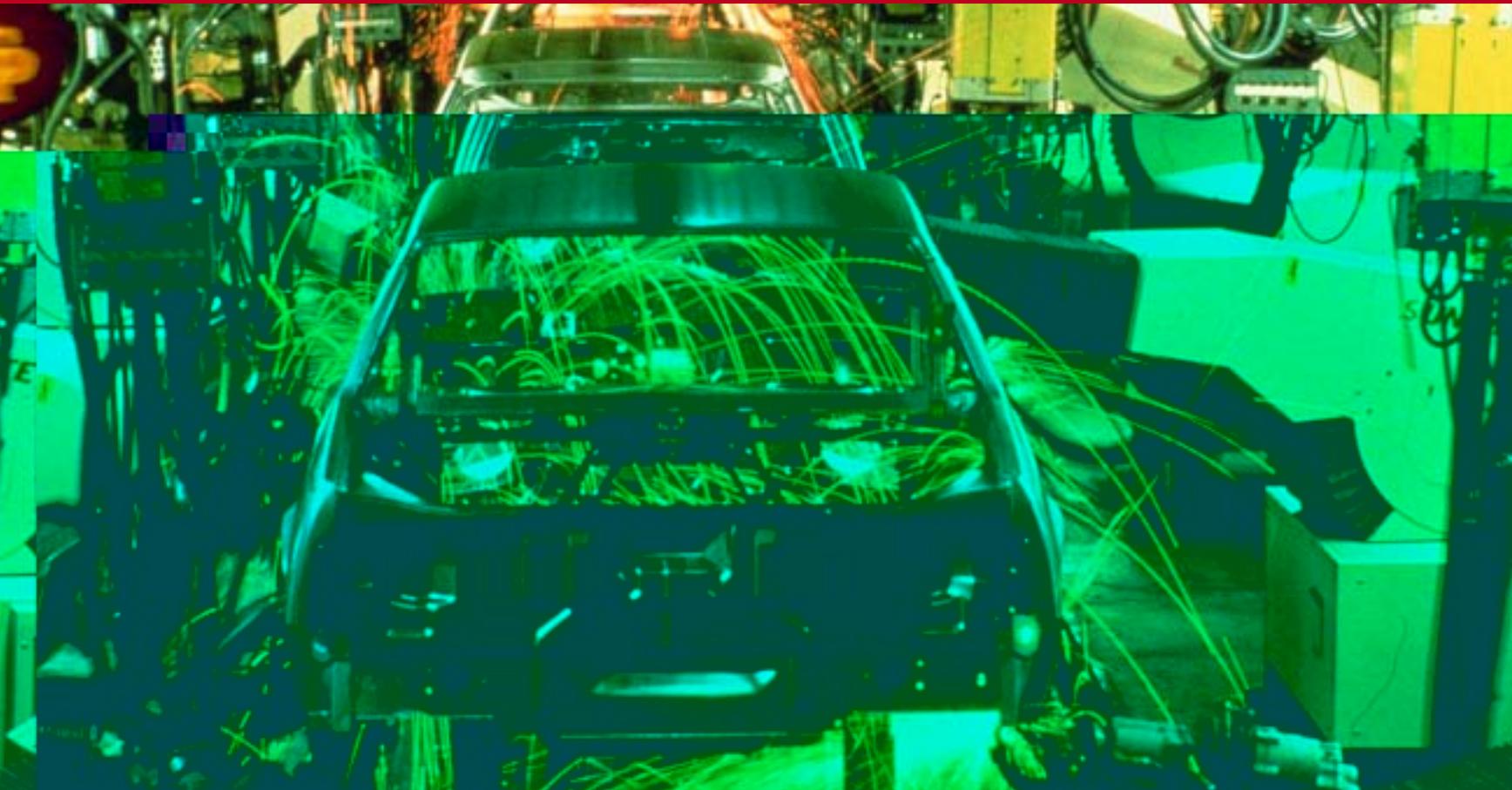
**Rack type features in a rackless design.**

**Technology so unique, it's patented.**

Compact I/O has a unique modular, rackless design, which both contributes to system cost savings and reduces parts inventory. And its communication bus, typically found in the I/O rack, is instead integrated into each Compact I/O module.

- Patented, slide-and-lock bus connector provides superior performance in vibration-sensitive applications
- Front access insertion and removal speeds module replacement
- Removable terminal blocks allow for module replacement without rewiring
- Finger-safe terminals meet worldwide market needs





**There's a 1769 Compact I/O module for every application.**

**From Digital Inputs...**

- 1769-IA16      16-point 120V ac Input
- 1769-IA8I      8-point 120V ac Individually Isolated Input
- 1769-IM12      12-point 240V ac Input
- 1769-IQ16      16-point 24V dc Sink/Source Input

**...and Digital Outputs**

- 1769-OA8      8-point 120/240V ac Output
- 1769-OA16      16-point 120/240V ac Output
- 1769-OB16      16-point 24V dc Sourcing Output
- 1769-OB16P      16-point 24V dc Sourcing Output with Electronic Protection
- 1769-OV16      16-point 24V dc Sinking Output
- 1769-OW8      8-point V ac/V dc Relay Output
- 1769-OW16      16-point V ac/V dc Relay Output
- 1769-OW8I      8-point V ac/V dc Individually Isolated Relay Output

**to Combination Digital,**

- 1769-IQ6XOW4      Combination Module, 6-point 24V dc Sink/Source Input, 4-point V ac/V dc Relay Output

**Analog,**

- 1769-IF4      4-Channel Analog Current/Voltage Input
- 1769-OF2      2-Channel Analog Current/Voltage Output
- 1769-IF4XOF2      Low Resolution (8 bit), Combination 4-Channel Input, 2-Channel Output

**and even Specialty Modules!**

- 1769-SDN      DeviceNet Scanner Module
- 1769-ADN      DeviceNet Adapter/Slave Module
- 1769-HSC      High-Speed Counter Module
- 1769-IT6      6-Channel Thermocouple/mV Input
- 1769-IR6      6-Channel RTD/Resistance Input

# Allen-Bradley Parts

# Network Interface Devices



The MicroLogix family's list of impressive hardware, memory, and processing choices makes it easy to select an ideal solution for small- to mid-sized applications. And when it comes to communication options, our network interface devices provide the flexibility you need to tackle just about any communication challenge.

With the 1761-NET-ENI Ethernet Interface, the 1761-NET-DNI DeviceNet Interface, and the 1761-NET-AIC Advanced Interface Converter (AIC+), you can connect MicroLogix controllers to Ethernet, DeviceNet, or DH-485 multi-drop networks. Just like the MicroLogix processors, all of these network interface devices can be DIN-rail or panel mounted, and all are industrially hardened to meet virtually any installation requirement.



### 1761-NET-ENI Ethernet Interface

- Provides EtherNet/IP connectivity for all MicroLogix controllers and other DF1 Full-Duplex devices
- 10 Base-T port compatible with any standard RJ Ethernet cable
- Isolated mini-DIN RS-232 port for connection to your controller
- Can be powered via RS-232 communications cable when attached to a MicroLogix controller or externally with 24V dc when connected to other devices
- Small and compact

#### 1761-NET-ENI advantages

- Allows user to easily connect MicroLogix to new or existing Ethernet networks and upload/download programs, communicate between controllers and generate e-mail messages via SMTP
- Program upload/download and easily monitor your controller over Ethernet from remote locations
- Peer-to-peer communication allows the attached controller to initiate or receive messages with other controllers
- E-mail communication enables a controller to send an ASCII string to an e-mail address (an alarm condition can now send you an e-mail)
- EtherNet/IP compatibility
- Easy to configure via messages from the attached controller, or via the ENI utility
- An electrically isolated connection to protect your controller
- Auto baud on power-up to detect the communications port settings for a quick installation



### 1761-NET-DNI DeviceNet Interface

- Peer-to-peer messaging between MicroLogix controllers and other devices using the DF1 Full-Duplex protocol (real time communications – no polling required)
- Programming and on-line monitoring over the DeviceNet network
- Through a DNI connected to a modem, you can dial in to any other DNI-controller combination on DeviceNet

#### 1761-NET-DNI advantages

- Utilizes producer/consumer technology that significantly reduces the amount of traffic on the network, which improves efficiency and data throughput. This results in information getting across the network more quickly to a single controller – or to any combination of devices looking for the information
- Offers up to 64 words of data (32 inputs, 32 outputs, configurable)
- The DNI will keep its mapped I/O data up-to-date by polling the controller connected to it. The controller may also send updated data to the DNI. The DNI then handles all of the network communications
- Allows peer-to-peer messaging between devices that use the DF1 Full-Duplex protocol
- Allows you to take advantage of the latest advances in communications



### 1761-NET-AIC Advanced Interface Converter

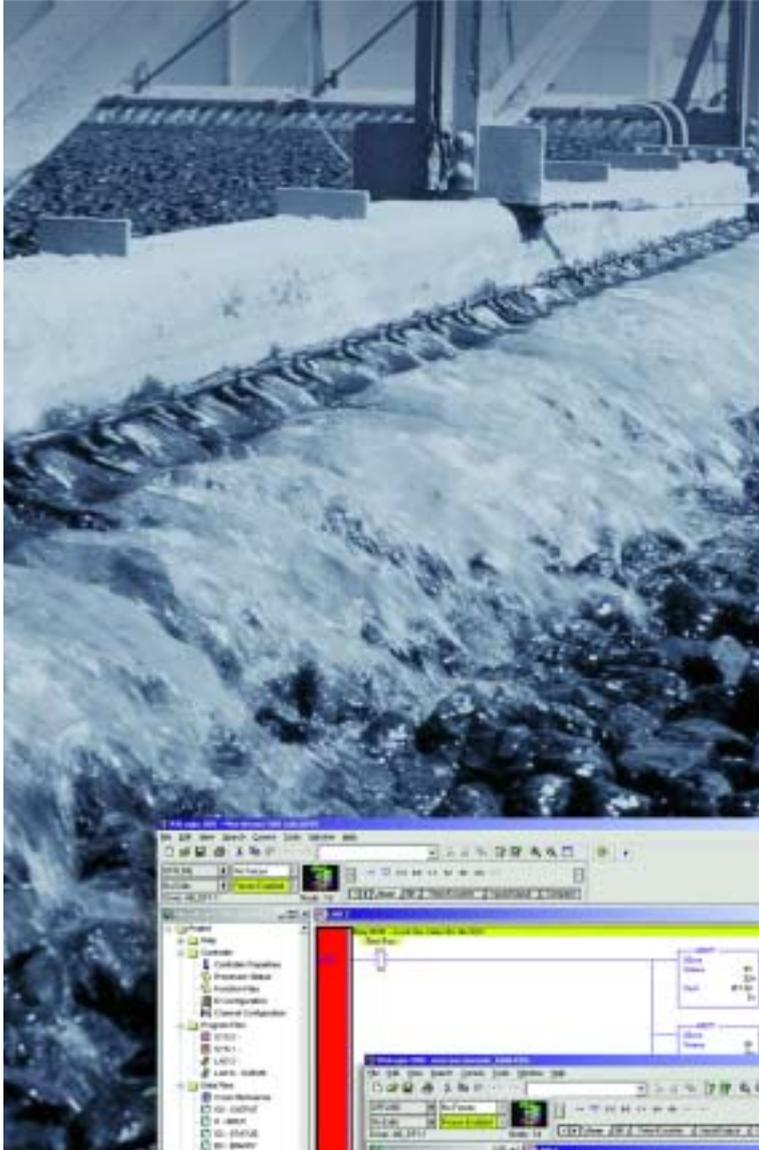
- Provides DH-485 network access from any DH-485 protocol compatible device that has an RS-232 port, including all MicroLogix controllers, SLC 5/03, 5/04, and 5/05 processors, and Allen-Bradley PanelView™ HMI devices
- Provides isolation between all ports for a more stable network and protection for connected devices
- Auto baud rate capability for ease of system setup
- Offers two isolated RS-232 connections – one 9-pin D-shell and one 8-pin mini DIN – to protect connected devices that may be on different power sources, and an RS-485 6-pin Phoenix connection for multi-drop connections
- Allows linking of any MicroLogix controller with other A-B controllers using DF1 Half-Duplex “master/slave” protocol
- Accepts power via the 8-pin mini DIN from a MicroLogix controller or an external power connection

#### 1761-NET-AIC advantages

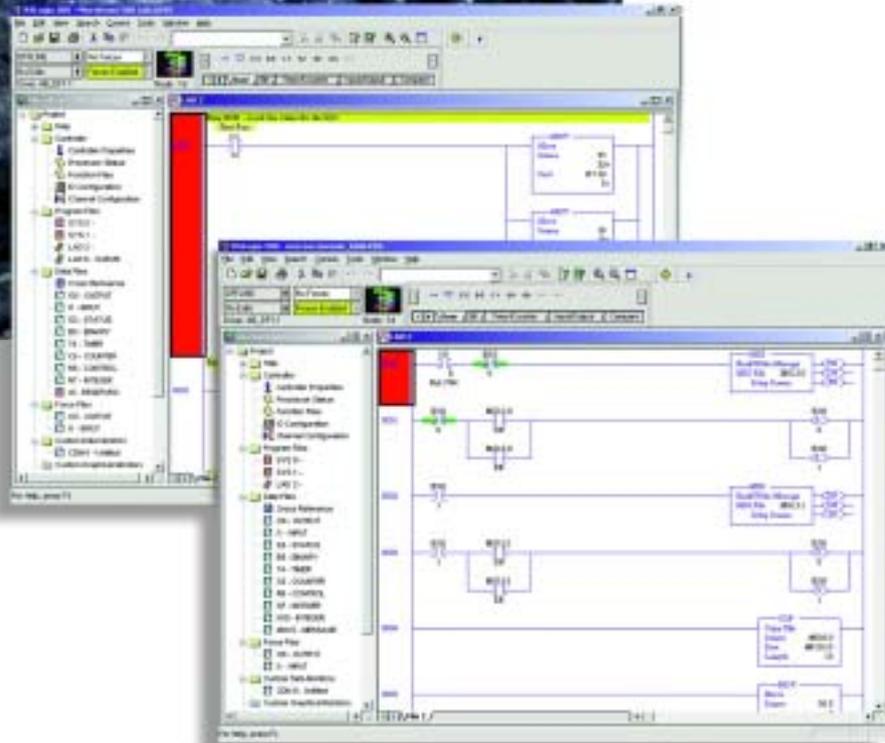
- Provides a simple, cost-effective solution for connecting RS-232 devices to a DH-485 network

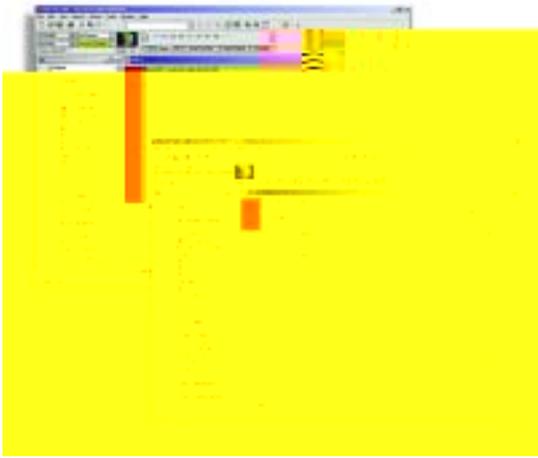
Allen-Bradley Parts

# Programming Software



RSLogix 500 programming software lets you create, modify and monitor application programs used by the MicroLogix 1000, 1200, 1500 and SLC 500 programmable controller families. It is a powerful, easy-to-use tool that allows you to tailor the control program to your specific application needs.





## RSLogix 500 programming software

- Offers 32-bit flexibility, reliability and increased productivity to the industrial controls programming world
- Operating in the Microsoft® Windows® environment, RSLogix 500 incorporates the latest technologies to help you maximize performance and save development time
- Superior diagnostics, reliable communications and industry-leading, intuitive user interface make RSLogix 500 the programming solution for developers at any level of expertise
- Completely compatible with programs that have been previously created with any Rockwell Software MS-DOS®-based programming package, making program maintenance across platforms convenient and easy

## Flexible, easy-to-use editors

- Flexible program editors let you create simple to highly complex application programs, and a *Project Verifier* builds a list of errors that you can use to navigate and make corrections at your convenience
- Context menus for common software tools are quickly accessible by clicking the right mouse button on addresses, symbols, instructions, rungs, or other application objects. This convenience provides you with all the necessary functionality to accomplish a task within a single menu
- Drag-and-drop editing lets you quickly copy or move instructions from rung to rung within a project, rungs from one subroutine or project to another, or data table elements from one data file to another

## Point-and-click I/O configuration

- Convenient forms speed entry of configuration data, including an I/O auto configuration feature
- Easy-to-use *I/O Configurator* lets you click or drag-and-drop a module from an all-inclusive list to assign it a slot in your configuration
- Advanced configuration, required for specialty and analog modules, is easily accessible

## Powerful database editor

- Use the *Symbol Picker* list to easily address instructions in your ladder logic by clicking addresses or symbols to assign them to your ladder instructions
- Use the *Symbol Group Editor* to build and classify groups of symbols so that you can easily select portions of your recorded documentation to be used from project to project

## Diagnostics and troubleshooting tools

- Simultaneously examine the status of bits, timers, counters, inputs, and outputs all in one window with the *Custom Data Monitor*
- Easily review status bit settings specific to your application programming including scan time information, math register information, interrupt settings and more with the tabbed status displays

# Allen-Bradley Parts

# Human Machine Interface



Electronic operator interface devices provide you with powerful plant floor control and data monitoring capabilities for improved productivity. And the Allen-Bradley PanelView™ Standard terminals are extraordinary performers in the real world of control system automation. All PanelView terminals are engineered for scalability, reliability, and compatibility.

- Easy-to-use, rugged and reliable
- Save valuable panel space
- Designed for easy modification as your process expands or changes
- NEMA 4X (IP54, IP65) rated

The PanelView products listed at right are only a partial offering of the entire PanelView Standard family of Human Machine Interface (HMI) products. For more information, refer to The VIEW magazine, publication VIEW-BR003A-EN-P.





### PanelView™ 300 Micro

The PanelView™ 300 Micro operator interface terminal is the newest addition to the PanelView Standard family, and the recommended device with your MicroLogix control system. Just 5.2" x 4.4" and only 1.4" installed depth, this compact

terminal is ideal for customers who need a space-saving and low-cost, yet feature-rich, solution.



### PanelView 300 Keypad

The PanelView 300 Keypad operator interface terminal is designed for low-end graphical or text-only applications, while still remaining faithful to the features found on PanelView Standard terminals. The LCD monochrome graphic display and feature-rich design allows for high performance in applications that demand a compact, less expensive interface.

Both PanelView 300 Micro and PanelView 300 Keypad offer:

- 3" diagonal transfective LCD (LED back-lit) monochrome graphic display, ideal for high ambient light applications
- 100,000 hour LED backlight life
- 128x64 pixel resolution



### PanelView 550

The PanelView 550 Keypad, Keypad/Touch, and Touch-only pixel-graphic display terminals are cost-effective ways for end-users and OEMs to incorporate high-performance operator interface devices into applications or machines where panel space is limited. These terminals have a

minimum installed depth and flat panel monochrome display designed to lower the cost of ownership without losing PanelView family functionality.

- 5.5" diagonal LCD monochrome display
- 256x128 pixel resolution



### PanelView 600

The PanelView 600 Keypad, Keypad/Touch, and Touch-only terminals are high-performance color terminals for applications where color graphic displays are required and panel space is limited.

- 6.0" diagonal TFT active matrix color display
- 320x324 pixel resolution
- 10 re-legendable function keys, numeric keypad, cursor control keys

# Allen-Bradley Parts



# MicroLogix

All trademarks, company names and product names referred to throughout this publication are for identification only and remain the property of their respective companies.

Rockwell Automation brings together leading brands in industry automation, including Allen-Bradley controls, Reliance Electric power transmission products, Dodge mechanical power transmission components, and Rockwell Software. Rockwell Automation's unique, flexible approach to helping customers achieve a competitive advantage is supported by thousands of authorized partners, distributors and system integrators around the world.

## Allen-Bradley Parts

Product Family	MicroLogix 1000	MicroLogix 1200	MicroLogix 1500		SLC 5/03, 5/04, 5/05
Bulletin Number	1761	1762	1764-LSP	1764-LRP	1747
<b>Memory</b>					
User Program / User Data Space	1K	4K / 2K (max) configurable	3.6K / 4K (max) configurable	10K / 4K (max) configurable	from 8K to 64K fully configurable
Data Logging / Recipe Storage			Recipe only (using User Program)	48K bytes	
EEPROM Back-up	•	•			
Battery Back-up			•	•	•
Back-up Memory Module	Only through hand-held programmer	•	•	•	•
<b>I/O</b>					
Up to 32	Embedded	Embedded	Embedded w/ Local Expansion	Embedded w/ Local Expansion	Local Expansion
Up to 128		Embedded w/ Local Expansion	Embedded w/ Local Expansion	Embedded w/ Local Expansion	Local Expansion
Up to 256			Embedded w/ Local Expansion	Embedded w/ Local Expansion	Local Expansion
Thousands of Inputs and Outputs			Local & Networked Expansion using 1769-SDN	Local & Networked Expansion using 1769-SDN	Local & Networked Expansion
<b>Additional Functionality</b>					
Analog	Embedded	Expansion	Expansion	Expansion	Expansion
Trim Potentiometers		2	2	2	
PID		•	•	•	•
High-Speed Counters (embedded)	1 @ 6.6 kHz	1 @ 20 kHz	2 @ 20 kHz	2 @ 20 kHz	
High-Speed Counters (expansion)			w/ 1769-HSC @ 1MHz	w/ 1769-HSC @ 1MHz	w/ 1746-HSCE @ 50 kHz or 1746-HSCE2 @ 1 MHz
Real Time Clock		•	•	•	•
Simple Motion: Pulse Width Modulated Outputs		1 @ 20 kHz	2 @ 20 kHz	2 @ 20 kHz	w/1746-HSTP1
Simple Motion: Pulse Train Outputs		1 @ 20 kHz	2 @ 20 kHz	2 @ 20 kHz	w/1746-HSTP1
Single Axis Servo Control		Through embedded PTO	Through embedded PTO	Through embedded PTO	1746-QV
Synchronized Axis Servo Control					1746-QS
Data Access Tool			•	•	
Data Logging				Up to 48K bytes	
Recipe Storage			Uses User Program Memory	Program Memory or 48K Data Logging Memory	
Floating Point Math		•	•	•	•
On-line Programming					•
<b>Programming Software</b>					
Windows® - RSLogix 500 & RSLogix 500 Starter	•	•	•	•	No On-line Editing Support with RSLogix 500 Starter
<b>Communications</b>					
RS-232 Ports	(1) - 8 pin DIN	(1) - 8 pin DIN	(1) - 8 pin DIN	(1) - 8 pin DIN & (1) - isolated 9 pin D-shell	(1) - isolated 9 pin D-shell
DeviceNet Peer to Peer / Slave	w/ 1761-NET-DNI	w/ 1761-NET-DNI	w/ 1761-NET-DNI or 1769-SDN	w/ 1761-NET-DNI or 1769-SDN	w/ 1761-NET-DNI or 1747-SDN
DeviceNet Scanner			w/ 1769-SDN	w/ 1769-SDN	w/ 1747-SDN
ControlNet Scanner & Adapter					w/ 1747-SCNR 1747-ACN15, or 1747-ACNR15
Ethernet	w/ 1761-NET-ENI	w/ 1761-NET-ENI	w/ 1761-NET-ENI	w/ 1761-NET-ENI	w/ 1761-NET-ENI or SLC 5/05
DH-485	w/ 1761-NET-AIC	w/ 1761-NET-AIC	w/ 1761-NET-AIC	w/ 1761-NET-AIC	w/ 1761-NET-AIC or SLC 5/03
DH+					SLC 5/04
Remote I/O					w/ 1747-SN or 1747-ASB
SCADA RTU - DF1 Half-Duplex Master					•
SCADA RTU - DF1 Half-Duplex Slave	•	•	•	•	•
SCADA RTU - Modbus RTU		Slave only	Slave only	Slave only	w/ third-party module
ASCII		•	•	•	•
<b>Operating Power</b>					
120/240V ac	•	•	•	•	•
12V dc					•
24V dc	•	•	•	•	•
48V dc					•
125V dc					•
UL, CSA or C-UL, CE, Class I Div. 2	•	•	•	•	•

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