PLC-5® CONTROLLERS
PROVEN SOLUTIONS YOU CAN BUILD ON
At the center of thousands of Allen-Bradley® control solutions around the globe you’ll find a PLC-5 controller. One reason is the flexibility you have in terms of programming, networking, I/O and choice of controllers to suit your requirements. Another reason is the reliability you gain. With an MTBF (Mean Time Between Failure) rating that exceeds 400,000 hours, the PLC-5 controller provides dependable performance. One more reason is Rockwell Automation’s commitment and assurance that the PLC-5 controller you buy today will be compatible to new products continually being introduced by us. With a modular architecture that allows automated systems to grow with your needs without your having to sacrifice capital or training investments, the PLC-5 will continue to maintain its value in the years ahead.

The Foundation of Control Architecture

PROVEN
• Controls hundreds of thousands of processes today
• Over 70% of Dow Jones Industrial use PLC-5 controllers
• Offers a Mean Time Between Failure (MTBF) rating higher than any comparable programmable controller
• Qualifies for certification from key standards organizations

SOLUTIONS
• Allows multiple I/O platform choices
• Provides a choice of languages: Ladder Logic, Sequential Function Charts (SFC), Structured Text, Function Block
• Enables a choice of backup solutions
• Comes in a range of memory sizes to fit your application

YOU CAN BUILD ON
• Connects the latest open networks as well as existing networks
• Provides state-of-the-art diagnostic services and control networking via ControlNet
• Enables you to integrate control and information systems: - EtherNet/IP to network PLC-5 systems directly with information systems
• Improves integration of serial devices with access through front panel serial port
• Increases communications speeds up to 100 MB over the previous design to allow faster throughput of data into your Ethernet networks. The processor auto-negotiates with the network to optimize network performance.
• Eliminates the need for external transceivers required on the previous PLC-5 Ethernet processors through a new RJ45 connector. All of the protection provided by the transceiver has now been designed into the PLC-5 processor.
YOU’LL FIND A PLC-5 CONTROLLER IN AN APPLICATION LIKE YOURS

The many features of PLC-5 controllers make them well-suited for diverse applications. They provide:

- Integration with operator interfaces, I/O and power monitors in the brew house, yeast/fermentation and finishing areas of breweries.
- Direct network connections for powertrain, paint shop and other automotive manufacturing applications.
- Affordable remote communication and control to enable SCADA (Supervisory Control and Data Acquisition) solutions for water/waste water treatment facilities.
- Integration of control with information systems to facilitate the databases needed for documentation of your production process.
- Real-time control for a quick response to diverse customer demands in metals production.
- Standardization of control throughout a facility in material handling and routing, from baggage, cargo, parcel and container handling to warehousing and distribution of bulk materials.
- Integration of motion, vision, logic and barcode scanners in semiconductor and electronics production to simplify and standardize such critical processes as fabrication.
- Hydraulic positioning or force control on the wet and dry ends of paper machines by means of a PLC-5 system that includes 1771 hydraulic control modules to reduce leaks, extend fluid life and reduce power consumption.
- Industrially hardened control platforms for batch and continuous processes in diverse applications such as petroleum, chemical processing, cement, municipal and military to simplify maintenance.

CONTROL YOUR FUTURE TODAY

You’re concerned with more than the purchase of a controller. You need to solve manufacturing challenges – lower cost, improve throughput, improve quality and increase flexibility.

Our PLC-5 controller is part of a highly integrated control solution that assures your control system will be up-and-running and available to solve those challenges. We provide a great deal more than an off-the-shelf solution.

- Our sales, distribution and system integration network can provide consultation at the start, middle or maintenance phase of your project.
- Our programming and other software tools offer a common look-and-feel that saves you retraining costs and time.
- We continue to invest in product enhancements so the investment you make today continues to provide value tomorrow.
- We provide networking connections that bring you forward to today’s open networks.
- Our hardware platforms offer unmatched breadth in terms of application-specific solutions available from us and from other vendors participating in the Encompass program.
Allen-Bradley PLC-5 controllers protect your existing automation investment and provide you with the ability to deploy new technologies at your own pace. This is evidenced by the unmatched choices we offer in the number and types of networks that can simultaneously connect to and from a PLC-5 controller.

Compatibility

The DeviceNet™ network connects low-level devices directly to PLC-5 controllers, replacing wiring to I/O modules. Rockwell Automation is a member of the Open DeviceNet Vendor Association (ODVA) and is one of more than 300 companies actively developing products that are compatible with the DeviceNet network.

The ControlNet™ network combines the functionality of an I/O network and a peer-to-peer messaging network. This open network provides the deterministic and repeatable performance required for mission-critical control data such as I/O updates and controller-to-controller interlocking. It also supports transfers of data such as program uploads, downloads, and messaging.

The EtherNet/IP™ network provides Manufacturing Execution Systems (MES) with seamless access to plant-floor data. For example, we build TCP/IP software into our EtherNet/IP PLC-5 controllers. At the same time, we offer a separate Ethernet interface module for those who want to add this capability to their system at a later date. In both cases, using EtherNet/IP enables a large quantity of nodes to be connected and takes advantage of the economies of scale available when Internet-related technologies are used for network configuration and management.
INTEGRATED AND DISTRIBUTED I/O PLATFORMS

Allen-Bradley 1771 Series I/O provides the industry’s largest selection of I/O modules for a broad range of manufacturing and process control applications – including yours. More than 150 digital, analog and specialty modules are available to meet your exact needs.

Because 1771 I/O can mount in the same chassis as the PLC-5 controller, it offers the highest possible I/O update performance. Using the Remote I/O or ControlNet network, you can connect additional 1771 I/O chassis to PLC-5 controllers mounted as far as 10,000 feet apart. For high-speed applications, extended-local I/O connects additional 1771 I/O chassis directly to PLC-5 controllers.

OTHER I/O CHOICES

- **1794 FLEX™ I/O** offers you a compact, modular assembly comprised of I/O modules, terminal bases, and an adapter/power-supply for In-Cabinet™ applications.
- **1732 ArmorBlock™ I/O** is On-Machine rated for IP 67 and has automatic, self-configuring ability to be either an input or output.
- **1734 POINT™ I/O** is available on the NetLinx architecture and other open networks and allows you to add I/O in increments of 1, 2, or 4 points to reduce system cost and size.
- **1738 ArmorPoint I/O™** is On-Machine and based on the POINT I/O system, reusing the circuitry of the adapter and I/O designs and configuration methodology to save you additional training costs.
- **1746 SLC™ 500 I/O**, a chassis-based I/O, provides a cost-effective remote choice with more than 25 different modules to meet your application needs.
- **1791D CompactBlock™ I/O** is a cost-effective In-Cabinet, alternative for applications that require I/O to be distributed close to sensors and actuators.
- **1792D ArmorBlock® MaXum I/O™** blocks are On-Machine™ rated for IP67 and NEMA 4X and 6P and allow I/O to be distributed in some of the most demanding environments.
- Other I/O systems may be integrated with the PLC-5, dependent on their network connectivity.
For a common means of viewing Allen-Bradley processors, including PLC-5 controllers, you can use our RSLogix family of programming software.

RSLogix 5 programming software for current Windows® products offers you an easy-to-use programming tool that increases your efficiency and productivity through free-form editing, drag-and-drop editing, and point-and-click I/O configuration. Because structured text and sequential function chart editors are IEC1131-3 based, they also offer a familiarity that shortens your development time.

Reliability

More than 30 years ago, people around the world gaped in awe as the first rocket took off to explore the galaxy. Although space travel seems commonplace today, for each launch scheduled, engineers test and re-test every scenario and detail. Such was the case when Boeing Expendable Launch Systems (ELS) set out to design a new launch pad at Cape Canaveral Air Force Station for its Delta IV rockets. One of the launch pad’s structures, known as the “fixed umbilical tower,” required controllers that could reliably retract three “swing arms” of the tower, attached to the rocket, within eight to ten seconds after main engine ignition.

SYSTEM DESIGN

Specified to support approximately 500 lift-offs over 20 years — an average of 25 launches per year — the components used on the pad need to withstand a variety of unique environmental factors including humidity and salt corrosion from the ocean, as well as noise and vibration in excess of 162 decibels from the rocket.

Boeing ELS asked Oilgear to design the hydraulic and electronic control system that controls the launch pad’s umbilical swing arms. Each swing arm is used to support the delivery of cryogenics, electronics, power, communications and air conditioning for the rocket and its payload prior to ignition. Oilgear selected Allen-Bradley PLC-5 controllers with a modified chassis and specially-designed cabinet to withstand the environmental challenges. The PLCs share one power unit and are programmed using RSLogix 5™ software. Boeing ELS operators can make manual movements using PanelView™ 1000 terminals.
PROTECT YOUR INVESTMENT
Your investment in programs developed with A.I. Series™ PLC-5 software and 6200™ software can be re-used in RSLogix 5. RSLogix 5 offers:
• Flexible, easy-to-use editors
• Diagnostics and troubleshooting tools
• Powerful, time-saving features and functionality

WELL-INTEGRATED SOFTWARE TOOLS
Beyond the programming software, you may choose other Rockwell Software products:
• RSLogix 5 Emulate to find programming errors before you run it.
• RSTestStand to virtually verify control system designs from your desktop.
• RSAutomation Desktop to simplify your automation design by reusing common code and reducing redundant data entry.
• RSView Machine Edition or RSView Supervisory Edition to monitor and control your PLC5 system.
• RSSql to bridge the gap between the control system and the rest of the enterprise.
• RSBizWare™ Batch to create an object-oriented batch automation solution.
• RSMACC to protect the intellectual property of your manufacturing enterprise.

RSView 32 (top left) provides the features you need to effectively monitor and control your machines and processes, including the ability to embed ActiveX technology. RSLogix programming (bottom left) packages for Microsoft’s 32-bit, Windows 95, NT and XP operating systems provide a choice of programming languages, including: ladder logic, sequential function chart, and structured text (top right).
MEETING STANDARDS

Because our PLC-5 controllers are used in many diverse applications around the world, they need to meet various standards.

We make every attempt to register and pursue applicable certifications for our products.

Certifications Standards

ISO9000 Registration
Rockwell Automation has registered business groups and facilities—including its primary manufacturing facilities—to ISO 9001 standards.

Marine and Off-Shore Certification
Many Rockwell Automation products, such as selected PLC-5 controllers, have been certified for use in marine and off-shore applications around the world. Certification for Marine and Off-Shore Applications* by Lloyd’s Register, American Bureau of Shipping, Det Norske Veritas, Bureau Veritas, Registro Italiano Navale, Germanischer Lloyd, the Korean Registry and other societies.

UL Certification*
Meets requirements of Underwriters Laboratories.

CSA Certification*
Meets the requirements of Canadian Standards Association (CSA).

European Union Directives*
Conforms with the requirements for use and within European market.

* For actual certifications of a specific controller, always refer to the label on the product.
SUPPORT FROM GLOBAL MANUFACTURING

Rockwell Automation Services and Support provides trained technicians and the advanced technology resources of Rockwell Automation, when and where they are needed, helping you achieve a global competitive advantage with these services:

- Asset management for repair and remanufacturing services to help assure top performance of your equipment.
- Engineering services from the most basic product set-up to sophisticated, comprehensive consulting and project management.
- Training from standard training classes and on-site delivery options to training needs analysis, tailored training classes, and fully customized performance solutions.
- Technical support for fast, accurate answers to your day-to-day or emergency product questions.
- Packaged services such as Automated Tool Monitoring System for maximized tool usage and machine uptime; Automation Passport for immediate parts and service availability; Computer Configuration Services for one-stop, out-of-the-box computer solutions; and Enhanced Information Processors for faster, more powerful and more affordable processing.

COMPLETE CONFIDENCE

You are never alone. Our support network offers complete system integration and support services including sales and order support, application engineering, installation supervision, system start-up, training, field services, and ongoing product support. Our technical support helpline utilizes the most advanced phone system available today. You can easily access a Rockwell Automation sales representative, appointed distributor, or authorized system integrator almost anywhere around the world.

PLC-5 certifications for Marine, Off-Shore, UL and CSA.
WE’RE GLOBAL BECAUSE WE’RE LOCAL TO YOU

Rockwell Automation’s helping customers achieve a competitive advantage is supported by thousands of authorized partners, distributors, and system integrators around the world. We strive to understand your complete automation needs, both technical and commercial, and to respond to those needs by bringing together the best the industry has to offer.
<table>
<thead>
<tr>
<th>Category</th>
<th>Catalog Number</th>
<th>Max. User Memory Words</th>
<th>Total I/O Max.</th>
<th>Number of Communication Ports (Mode)</th>
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*ControlNet provides additional I/O capacity.

**Controller Specifications**

**Environmental Conditions**

- **Operating Temperature**: 0°C to 60°C (32°F to 140°F)
- **Storage Temperature**: -40°C to 85°C (-40°F to 185°F)
- **Relative Humidity**: 5% to 95% noncondensing
- **Shock**: Operating 30 g peak acceleration for 11 ms duration
- **Vibration**: Operating 1 g @ 10 to 500 Hz, 0.012 inches peak-to-peak displacement

**IEC Tests**

- CISPR 11: Group 1, Class A, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6

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For support information: http://support.rockwellautomation.com
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