

Integrated Architecture

Logix-based solutions for modern plant-wide control needs



The Power of Integrated Architecture®

Increase productivity, enhance decision-making and strengthen cybersecurity.

Staying ahead in industrial operations requires greater agility, consistency and insight than ever. Integrated Architecture® provides a unified approach to information and control that makes this possible.

With Integrated Architecture® from Rockwell Automation®, we've helped hundreds of manufacturers and industrial operators maintain their edge by unifying control and information across disciplines. And we're leading the charge in data orchestration with powerful capabilities that unlock machine and equipment data for a seamless flow of information. The result? A smarter, more efficient and more secure system.

Integrated Architecture® provides integrated control, a standard design framework, secure data and information and system-wide intelligence at the line level and across plants. This holistic approach enables your industrial processes to operate as one well-integrated system, with components that are designed to work together.

Standardized design and control plus cloud collaboration opportunities boost productivity, streamlining workflows and creating fewer points of risk. At the same time, secure network connectivity, standardized network design and industrial network products built with CIP Security boost operational resilience and enables real-time data flow across your industrial operations. Edge-to-cloud capabilities break down data silos by aggregating machine, production line, facility and enterprise system data into a single view. This system-wide intelligence offers contextualized, actionable insights so you have the information you need to drive better business outcomes.

And the value of Integrated Architecture® goes beyond the technology itself. Our comprehensive services and solutions

help you reduce risk and create value throughout your production lifecycle. This includes global and local support, now and into the future.

With Integrated Architecture® from Rockwell Automation, you have a unified foundation, enabling you to boost productivity, execute with greater insight and help protect your people and operations.

This results in better business outcomes, such as:

- **Faster time to market:** Design productivity, faster commissioning times with intelligent devices, quicker startup of greenfields, proven technology around risk mitigation for operations and IT and the agility to respond to customer trends more quickly.
- **Lower total cost of ownership:** Better lifecycle management, enabling more effective operations, improved energy management and easier technology migration.
- **Improved asset utilization and optimization:** Improved reliability, quality and predictive maintenance driven by operational intelligence tools.
- **Enhanced enterprise risk management:** Protection of intellectual property and brand image with a safe and secure operating environment; reduced exposure due to poor product quality and internal and external threats.

In this guide, we'll explore Integrated Architecture® in greater depth and give an overview of the products and capabilities that bring the value of Integrated Architecture® to life.

Boost Productivity

Standardized control, consistent user experience and advanced design software help to streamline workflows and improve overall business performance.

Execute with Greater Insight

Real-time data is contextualized and made available for actionable insights and recommendations across the organization.

Help Protect Your People & Operations

Cybersecurity and safety solutions help organizations mitigate risks by defending against security threats and help protect personnel from hazards.

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Integrated Architecture®

Unified control and information across disciplines

Smart Machines and Equipment

Our Integrated Architecture® control and information portfolio helps breakdown barriers, securely providing access to data that has traditionally been trapped and contextualizing it to provide the right intelligence to the right people at the right time. This actionable information impacts key performance indicators such as production throughput, process quality, asset health and energy efficiency, delivering real business value.

Smart Manufacturing

Integrated Architecture® helps original equipment manufacturers (OEMs) create smart manufacturing equipment that easily integrates into a facility, provides access to information and enables agile reaction to changing market demands. Rockwell Automation can help OEMs and their customers become connected, compliant and competitive.

With Integrated Architecture®, you can transition from islands of automation to a unified approach

From components and islands of automation

To a unified, system-wide approach

Process

Power

Cybersecurity

Safety

Motion

Batch

An integrated approach
across plant-wide systems
(PLC, DCS, etc.)

Different
Tools

Siloed
Data

Fragmented
Workflows

Consistent
Tools

Connected
Data

Unified
Workflows



Common Components That Are Integrated by Design

Simplify configuration and integration with components that are designed to work together for a true plug and play experience.

Hardware solutions from a given automation vendor may appear to be plug and play. In reality, they often use different networks and programming, making both integration and configuration time-consuming and complex.

Integrated Architecture® components are designed to work together, enabling a Premier Integration experience. This means that you don't have to program them separately. All controller programming, device configuration and machine operation/maintenance is consolidated into a single software environment.

Accelerate time to value

A true plug and play experience allows you to accelerate time to value and improve efficiency.

Improve user experience

Tight integration also makes Integrated Architecture® components easier to monitor, allowing plant operators to look in one place for a consolidated view of device information.

Boost flexibility

By using common components and tools, you can scale your hardware and software to the needs of your application.

“Rather than one-off solutions that you can make work, Integrated Architecture® toolsets are meant to integrate with each other to deliver a comprehensive solution.”

**— Electrical Engineering Lead
at a consumer goods company**



Case Study



Challenge

A lack of equipment compatibility often results in poor user experience and system visibility.



Solution

Components that are well-integrated and interoperable with third-party products can improve system visibility, usability and troubleshooting.

Customer Spotlight: KHS



KHS is a global manufacturer of filling and packaging systems for the beverage and liquid food industries and is part of the Rockwell Automation PartnerNetwork™ program. Since our control and information solution is integrated by design, KHS was able to complete installation and commissioning for their brewery client's new bottling line in under two weeks.

Their client now has real-time visibility into equipment operation, enabling adjustments at the individual valve level for increased performance. And with one software and control platform, they anticipate troubleshooting and maintenance will be easier.

Under 2 weeks

completion time for a
new bottling line



Standardized Control Across Disciplines

Harness the power of multiple disciplines within the Integrated Architecture® system.

By integrating process, batch, discrete, safety, motion and drive-based systems into a single connected plant-wide infrastructure, you increase efficiency and productivity across all layers of operations. This removes the need for multiple, disparate control systems, replacing them with one common framework that's easier to install, operate and maintain.

Faster installation

Components that work together automatically (and even autonomously) accelerate the installation process, freeing up time and resources for

higher-value tasks.

Accelerated design

Digital engineering using a standard, collaboration-friendly framework speeds up design time and slashes implementation costs.

Simplified operation and maintenance

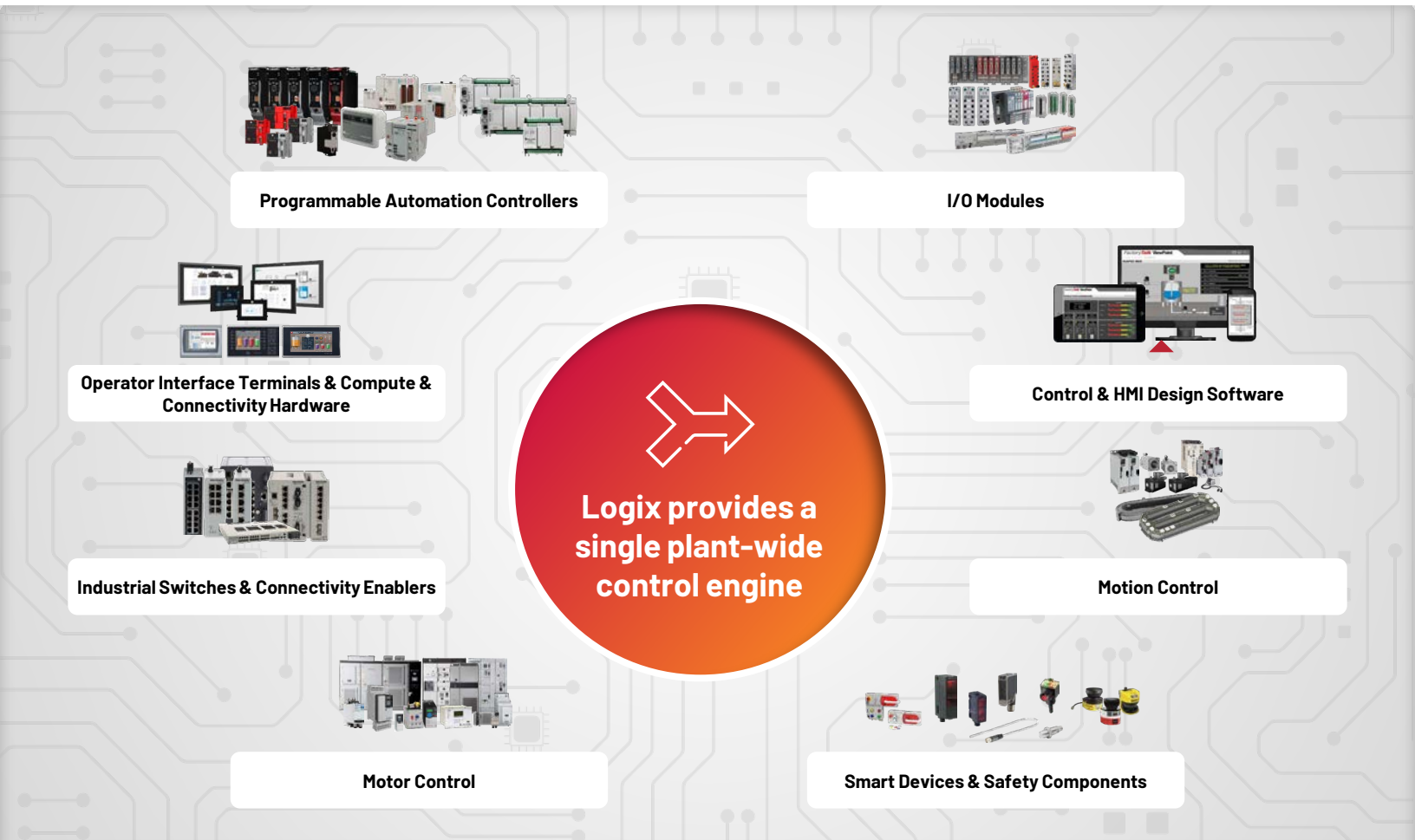
Common components, tools and code enable workers to be quickly cross-trained to operate and maintain different machines and equipment.

"Rockwell Automation technologies are user-friendly, drive system connectivity and communication, and provide scalability for line expansion."

— Maura Minardi
TEC Engineering

Integrated Architecture®

One infrastructure across applications and environments



The Power of One

Logix technology integrates process, batch, discrete, drives, safety and motion control functions into one infrastructure across applications and environments. Whether applied in process and power or motion and safety applications, Logix creates the foundation for Integrated Architecture® deployments.

Integrated Power and Energy Management

By integrating power and energy management, you can leverage existing investments to visualize and actively manage energy consumption without having to invest in or configure a standalone energy management solution.

Integrated Safety

Focused on overall machine performance, integrated safety solutions use efficiency and design productivity to help machine builders deliver flexible, high-performance equipment at a more competitive price. Safety-rated controllers and safely monitored speed and direction can help to reduce expensive shutdowns.

Integrated Architecture® for all Control Applications



Discrete Control

Logix provides exceptional reliability and performance for discrete applications. Tight integration between the programming software, controller and I/O modules reduces development time and cost at commissioning and during normal operation.



Continuous Process Control

The PlantPax® Distributed Control System combines plant-wide control and unmatched scalability of the Integrated Architecture® system with the core capabilities of a modern DCS to help you gain a competitive advantage.



Batch Process Control

Logix provides the flexibility that you need to deliver your product to market faster with efficient, predictable batch processing, consistency between batches and event information during batch runs, along with the ability to reuse code, recipes, phases and logic.



Motor Control

Configuring motor control devices in the Logix environment lets you consolidate controller programming and drive system configuration, operation and maintenance, reducing programming time, easing startup and commissioning and streamlining access to diagnostics.



Motion Control

Logix provides complete support for motion control, from configuration, programming and commissioning to diagnostics and maintenance. True integration simplifies commissioning and data collection, accelerating time to market and maximizing uptime.



Case Study



Challenge

Designing, connecting and controlling industrial systems is complex.



Solution

Standardizing programming through a single control system helps improve safety, consistency and reliability.

Customer Spotlight: Kupper Engineering

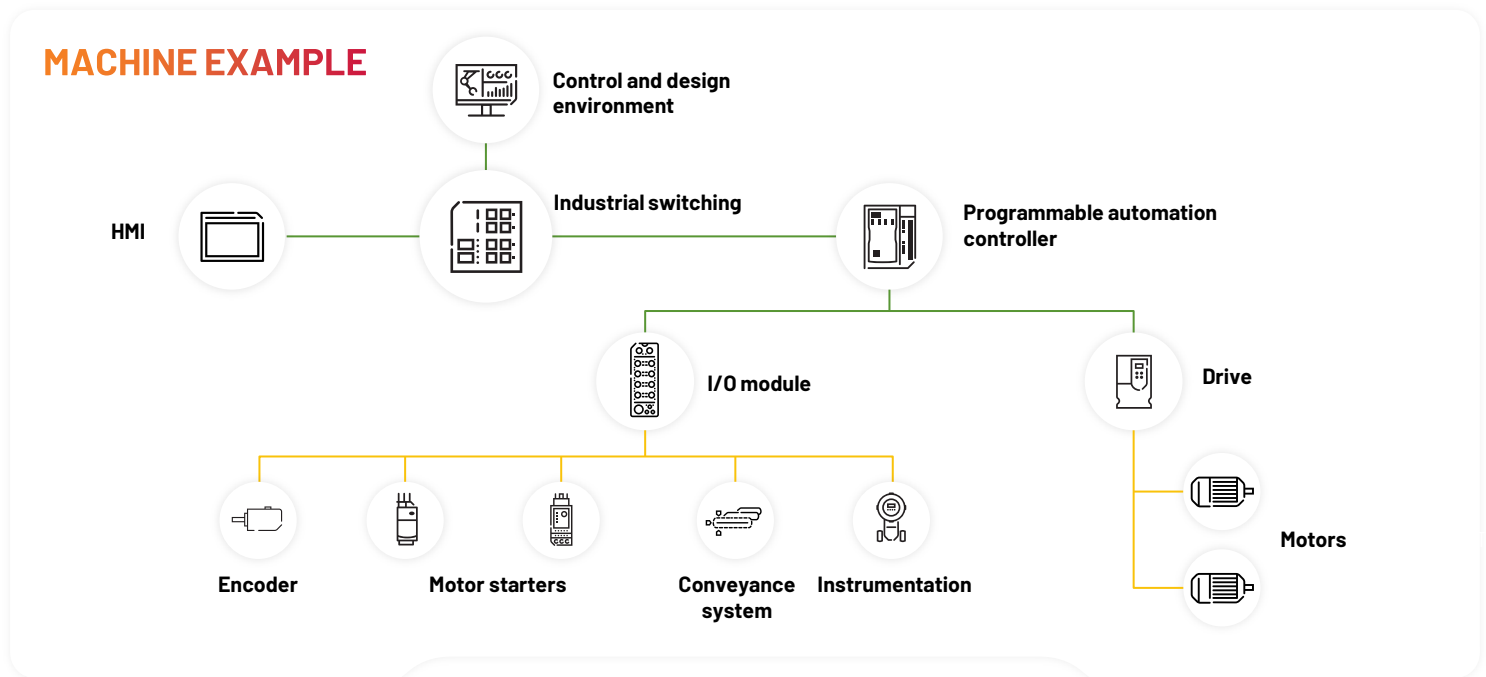


Kupper Engineering is a provider of engineering, controls and procurement services that helps companies convert waste and related byproducts into renewable natural gas (RNG). With the Rockwell Automation Integrated Architecture® system, they're able to install, configure and integrate components faster by standardizing and modularizing programming. This allows them to build RNG plants in various sizes quickly—with a plan to build 20 new plants over the next 3 years.

20
new plants
planned over the next 3 years

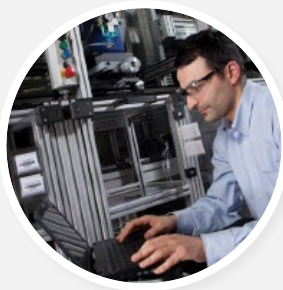
Scalable Architecture: Machine Level

Unified Architecture makes it easy to optimize machines, whether that means upgrading servo drives or I/O solutions.



Manufacturing Production Intelligence

Our visualization products provide windows into critical production and process information and operational data. Across every type of industry, application and manufacturing environment, these products help enhance decision-making and operational efficiency.



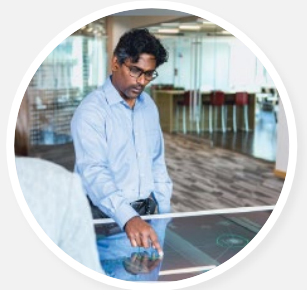
Increased I/O Flexibility

Whether chassis-based or distributed, in-cabinet, on-machine or embedded, our I/O solutions help increase flexibility and reduce wiring and costs. For safety solutions, our safety-rated I/O products are TÜV-certified up to SIL 3, PLe, Cat. 4.



Motor and Motion Control

Our portfolio extends from fixed-speed starters through variable frequency drives for a wide range of applications to high-performance, multi-axis servo drives for the most demanding applications.



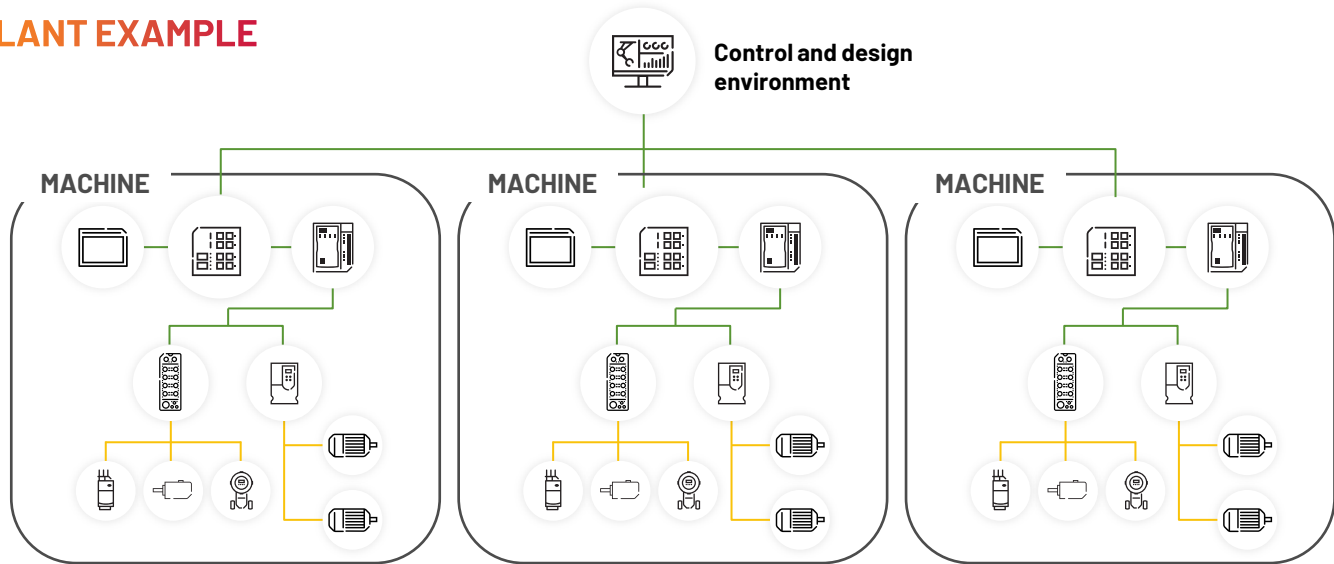
Integrated Architecture® Tools

We can help you plan and configure an Integrated Architecture® system, from the ability to create a simple bill of materials to get started to more advanced accelerator toolkits that minimize the time spent to create machine differentiation.

Scalable Architecture: Plant Level

A standard design framework and a single, scalable network also make it easier to scale operations plant-wide, boosting agility.

PLANT EXAMPLE



Right-sized Control and Intelligence

From small control systems to large, we've developed a unique range of controller types and sizes to suit specific application needs—all with the same Logix control engine—to deliver world-class performance and flexibility, leaner production and greater return on investment.



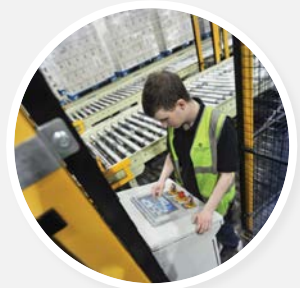
A Standard Design Framework

This simple approach can accommodate every application, from small machines to an entire plant. It can be specified with "just enough" functionality for applications, while offering flexibility and scalability as required.



Single, Scalable Network

Our network solutions connect your automation control systems together via a standard Ethernet network that scales from the simplest applications through to a plant-wide deployment. In addition, formal network design and network products manage the critical flow of information traffic for control operations.



Industrial Safety Solutions

Our expertise, experience and technologies have established us as the world leader in industrial safety. Our functional solutions for machine, process and electrical safety applications can be tailored to the required safety Performance Level (PL) and help reduce injuries and costs, while they improve productivity.



An Intuitive Design Experience

We combine design and engineering elements into a standard framework with workflows that make it easy to use.

We offer a unique approach to automation by using a common control engine and a standard design framework to deliver world-class capabilities for all automation disciplines and industries. This holistic approach helps you respond quickly to changes in market and business needs and reduces total costs of ownership. A standard design framework simplifies the design process and reduces commissioning time, extending beyond a single controller to provide a system-wide development and design environment.

Key Benefits

- **Flexible tools** – on-premise and cloud options
- **Scalable** – use modular code to simplify your application
- **Efficient application design** – write code, organize it, test it and duplicate it
- **Effective content management** – create content, store it, share it and reuse it
- **Quicker downtime recovery** – logically find what you need to troubleshoot code
- **Collaborative engineering** – enable multiple people to code, then compare and merge
- **Faster coding** – accelerate the process with generative AI tools

Rockwell Automation Design Solutions

An end-to-end design portfolio

Software solutions for every design stage, from concept design to development, testing and deployment.

Control Design



Studio 5000 Logix Designer®



Consistent engineering environment

Reuse content and share data between engineering tools

HMI Design



Studio 5000 View Designer®



Flexible design options

Use on-premises or cloud-based design tools to meet your needs

Digital Design



FT Logix Echo



Streamlined migration

Our global support network is here to help you transition to new technologies

Management



Studio 5000® Application Code Manager



Virtual Design and Engineering

Achieve savings and maintain a competitive edge with digital design, simulation and emulation. Simulation helps protect your business by analyzing the impact of new business ideas, rules and strategies – before implementation. This helps shorten development cycles, reduce risk and optimize system designs.



Collaborative Engineering

Speed development time by sharing data between systems. This allows multiple people to work on the same project simultaneously anywhere in the world.



System Security

Help reduce risk and protect critical assets with a focus on infrastructure security, user access control, change detection and response and intellectual property management.

Rockwell Automation Design Capabilities



System Organization

Organize your system in the way that's best for you to design, operate and maintain your application. Control and HMI design software offers a central point for design workflows and is the primary means to deliver contextual information across the plant floor.



Library Management

Simplifies the organization, accessibility and reuse of code, which helps establish best practices and standards. Efficiently managing reusable content speeds design time, especially when combined with the bulk engineering capabilities of code management software.



Modular Automation

Enables design engineers to break complex processes into manageable tasks and logical groupings of functionality. This makes code easier to reuse and helps with troubleshooting.



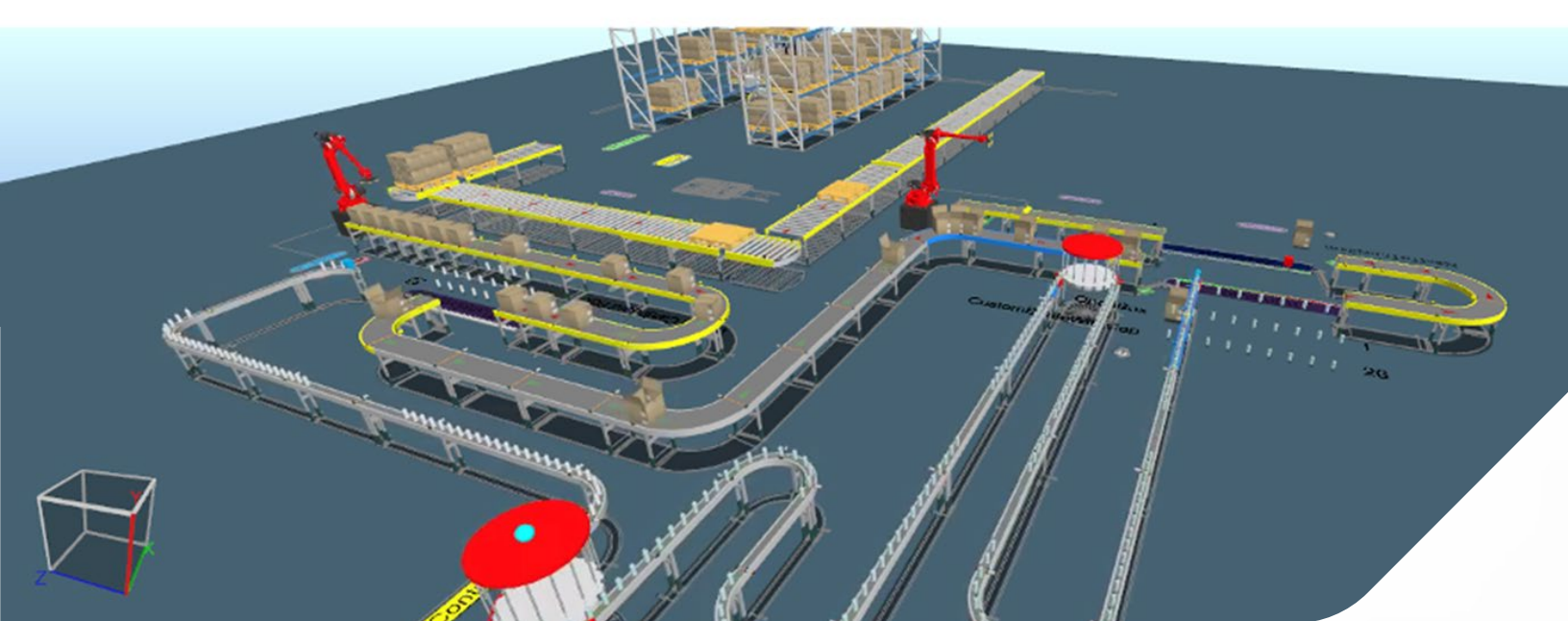
Information-enabled

Device and system data structures make it easy to collect data across the plant, transform it into actionable information and make it available to the right person at the right time. This supports better decision-making and improved overall performance.



Device Management

Providing named data structures and a common user experience for all device types makes it simpler to design applications, reuse code and replace faulty or aging devices quickly. This improves productivity and reduces design cycles for faster time to market.



Virtual Commissioning for Reduced Design Risk

Validate, test and optimize as you go for faster time to market and lower development costs.

For many industrial organizations, software design and deployment are still highly manual. New releases are periodic rather than continuous, limiting agility.

By contrast, in higher-level computer software development, it's common to use DevOps techniques like automated testing and system simulation to speed time to market, lower development costs and improve quality.

At Rockwell Automation, we understand this. In fact, we've been using these practices for decades in the development of our own software offerings. And we're bringing these benefits to the automation space with simulation and emulation technology.

Reduce development costs

Run tests against virtual representations of entire lines, so issues can be addressed in a digital environment before a single dollar is spent.

Optimize with ease

With high-fidelity models of the actual production system, you can make adjustments and test their impacts on things like quality, throughput and downstream bottlenecks, all in the digital world, with zero disruption to production in the physical world. Once fully tested and verified, those changes can be deployed to production systems.

"With emulation, we can check our full program – input mapping, output mapping and all logic within it [...] before the go live date."

– **Cameron McGugan**
Bastian Solutions



Case Study



Challenge

When designing a system, it can be difficult to predict how it will respond to real-world conditions.



Solution

Emulation software allows you to fine-tune system programming and resolve issues pre-installation, reducing risk and accelerating commissioning.

Customer Spotlight: Bastian Solutions



Bastian Solutions is a system integrator that was approached by a high-end global fashion brand to implement a new warehouse picking system. They used Integrated Architecture® components and digital twin software to test the system before it was installed.

Through this process, they uncovered a mechanical tolerance problem that they were able to resolve in advance, reducing risk. Overall, this emulation step compressed total project time by 18%, lowering installation costs and reducing time to market.

18%

Reduction in overall project time



Contextualized Data, System-wide

With an open approach and the right tools, you can gain contextualized data from production systems and processes across the plant.

Smart machines and equipment can help you increase throughput, improve yield, boost manufacturing agility and better manage maintenance. And it all starts with data.

At Rockwell Automation, our goal is to simplify the experience of accessing and using data to gain insights. We do this by connecting smart machines and equipment using an open approach.

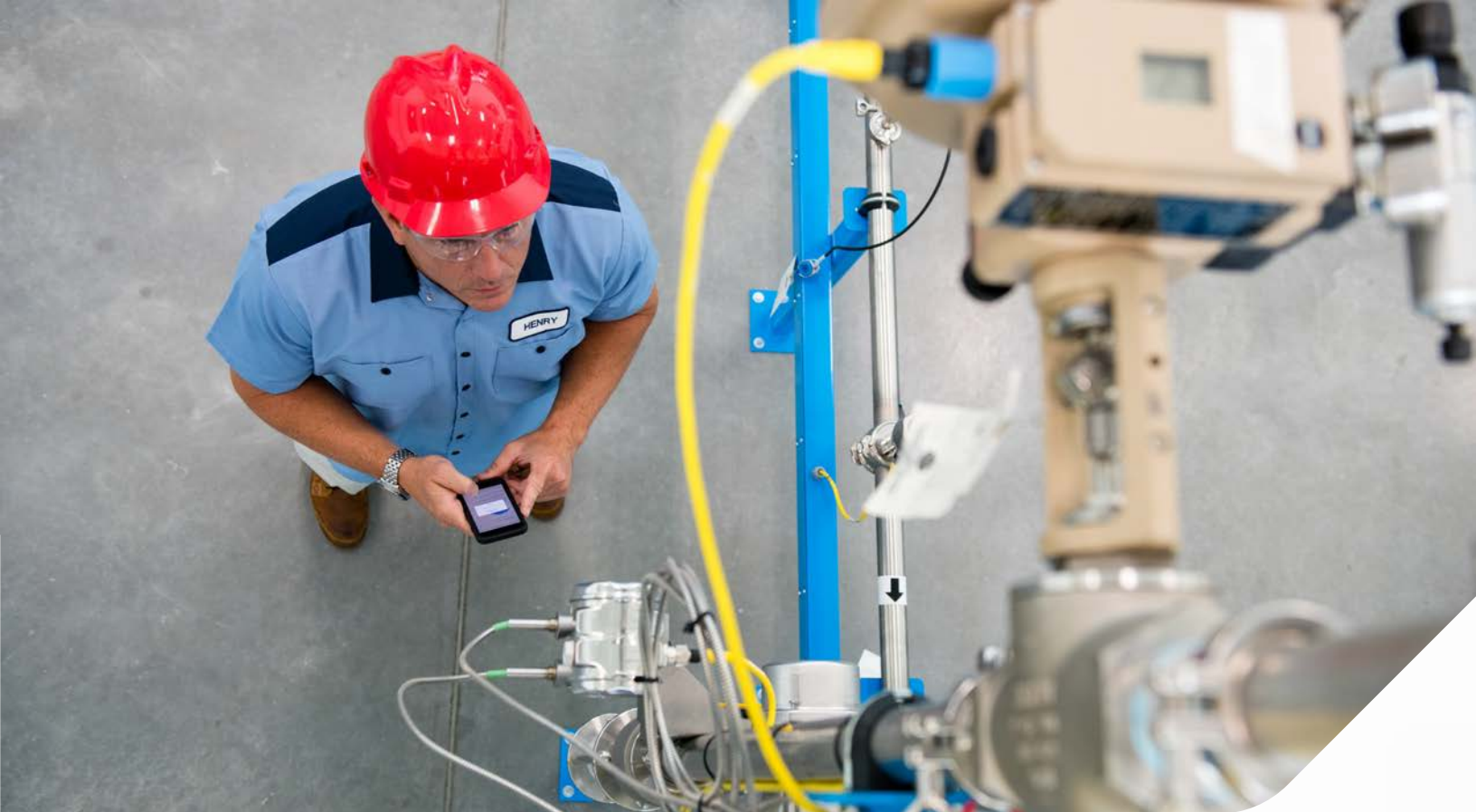
This enables contextualized data to be egressed from industrial assets, so you can connect machine data to virtually any system for a seamless, integrated flow of production data. This provides the following benefits:

Synchronized Data Collection

Data points are organized into an information model with mapped relationships and attributes such as location, energy consumption and OEE (overall equipment effectiveness) information.

Seamless, secure connectivity

Standard Ethernet and communication protocols—including OPC UA and CIP™—enable secure data flow and interoperability between all solutions, regardless of vendor.



Manufacturing Analytics and Intelligence

By using reporting and analytics tools to gain actionable insights, you can unlock new business value.

When you combine the foundation of smart devices with modern visualization, reporting and analytics tools, the path to insight becomes even simpler.

Our solutions help you monitor key factors affecting performance, efficiency, quality and energy management throughout the enterprise on easy-to-read dashboards. For example, you can track key production metrics to identify bottlenecks and optimize plant operations.

We've also added AI capabilities at the device and control level to enable real-time optimization. For example, our AI-enabled vision solution uses rich image data and applied AI

to simplify the process of getting full visibility into production quality. Another application provides predictive maintenance insights, warning of potential failures.

With open connectivity, our visualization software easily integrates with MES, ERP and cloud infrastructures so you can optimize at a line and plant level to achieve plant-wide business objectives.



Manufacturing Intelligence and Operations Management



Visibility is Everything

With the right information software in place, you can increase visibility into your operations. Our software helps you measure and see what is happening. From panels to desktop to big screens to small mobile screens, having the right information infrastructure is vital to help you see your data the way you want it.



Put Your Information to Work

Our systems make it easier to gather, analyze, contextualize and share intelligence. Using flexible software tools that support open standards, you can connect and organize your data into actionable information, allowing you to gain wisdom and insight from your manufacturing data.



Collaborate

The information and insights from your operations become even more valuable when you share them across your facility and enterprise. Our solutions allow you to tailor the data from your control systems to meet your needs, and to use today's most prevalent technologies to share that information with others.

Manufacturing Intelligence and Operations Management (cont.)



Choose an Architecture That Provides Integrated Control

Having a solid foundation is the key to building great solutions. Powering FactoryTalk® information software with Logix controllers connected with Stratix® switches helps build more productive, more secure and more intelligent systems.



Performance Management with Enterprise Manufacturing Intelligence

Our solutions intuitively connect to your plant automation systems and present information on how your equipment is performing. Find key performance indicators (KPIs) such as OEE, MTTR (mean time to restoration) and many more.



Predictive Maintenance

Optimize maintenance activities and reduce unplanned downtime with continuous condition-based monitoring that alerts the maintenance team when an asset begins to show signs of degradation and provides insights into the most probable cause of failure.



Manufacturing Execution Systems

Our MES solutions enable you to better provide standardized workflows and manage procedures and execution to optimize production operations.



Real-time Quality Control

Our machine and vision inspection solution allows plant operators to detect subtle and rare anomalies in production so they can achieve and even exceed their quality performance targets.



Case Study



Challenge

There are numerous information systems available that gather production data, but is it actionable information that drives an increase in business value?



Solution

Enable real-time access to critical production information for better and faster decision-making, business agility and improved performance and productivity.

Customer Spotlight: IMDHER Bühler



IMDHER Bühler is an OEM that designs, commissions and services automation systems for the Mexican and Latin American animal nutrition markets.

With an Integrated Architecture® system and components, they were able to add energy monitoring capabilities to their solution, so clients can more easily monitor energy use and access historical data. With access to these insights, their clients have saved energy and successfully accelerated production.

“With this technology, operators can monitor information in real time and add value to the decision-making process.”

**– César Arriaga
IMDHER Bühler**



World-class Cybersecurity

Control systems, networks, hardware and software can all help defend against security threats and risks. It's time to manage your risks and build the secure industrial control system that meets your needs.

Rockwell Automation recommends deploying a defense in depth approach to help protect against both internal and external security threats. This approach suggests the utilization of multiple layers of defense—physical, procedural and electronic—at separate levels of the architecture and plant.

The objectives of defense in depth include reducing the risk of an attack, identifying a potential attack as it tries to penetrate your assets, delaying the attack to increase the time you have to react and taking action through appropriate countermeasures.

Rockwell Automation® offers products and services to help build a defense in depth strategy, including:

Standards-based hardware and software

Improve cybersecurity with products designed to meet global cybersecurity standards including IEC62443.

CIP Security™-enabled products

CIP Security™ helps prevent unauthorized OT network and data access by using digital certificates and optional data encryption to improve device security posture.

Secure connectivity

Resist outside attacks with a control system network that uses secure Ethernet and communication protocols including OPC UA and CIP Security™. These two protocols add a layer of data authenticity, integrity and confidentiality.

Network and cybersecurity services

Rockwell Automation Industrial Network and Cybersecurity Services can help you assess, design, implement and audit your security program and architectures to align with global security standards.

Securing Operational Infrastructure

Industrial Automation Security

Help protect assets from security threats at every level

Policies, Procedures and Awareness

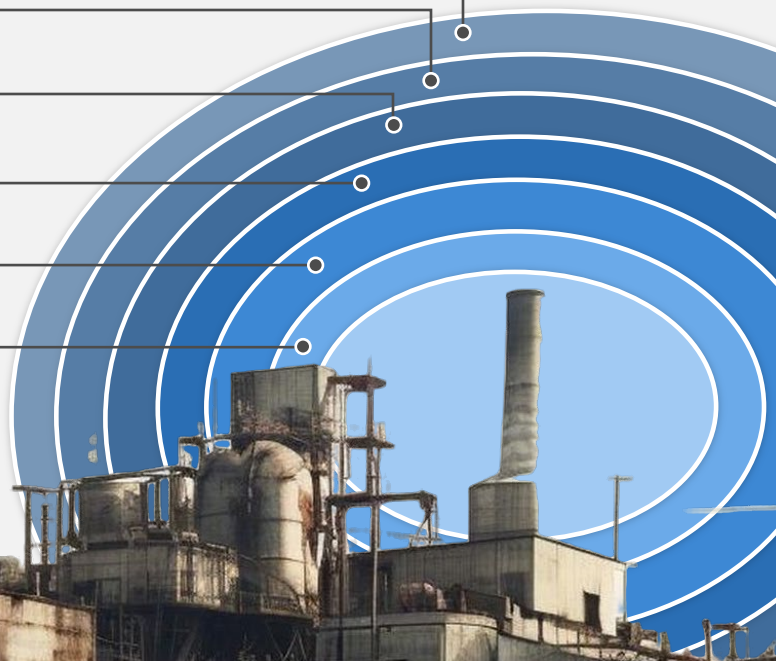
Physical

Network

Computer

Application

Device



We use the **defense in depth strategy**, a multi-layer approach to help protect industrial assets, at different levels, from security threats by applying the appropriate controls to address different types of risks.



Content Protection

Help protect valuable intellectual property such as production data, recipes and code from unwanted user access by using Logix code protection capabilities.



Device Security

Provide device-level security by hardening valuable plant floor devices using CIP Security™ and OPC UA.



Tamper Detection

Detect changes using digitally signed firmware, Logix controller change detection and FactoryTalk® AssetCentre event and audit logging features.



Role-based Access Control

Consistent, role-based access configurations set across multiple products that provide authentication and authorization for specific user roles.



Safety Solutions That Improve Efficiency

Help protect personnel from hazards and boost productivity at the same time.

Organizations are increasingly turning to smart machines to meet challenges like skills shortages and higher demand. Safety solutions are an important part of these smart machines, enhancing safety while also serving as a valuable source of diagnostic data to increase productivity and reduce downtime.

Rockwell Automation is the world leader in machine safety solutions. Our smart safety products deliver information, diagnostics, advanced functionality and flexibility, while enhancing safety and increasing efficiency machine- and plant-wide.

Unify motion and safety

Safety-rated controllers and safely

monitored speed and direction help operators protect people and equipment from hazards and improve productivity at the same time.

Boost productivity

Data from our safety solutions—including safety laser scanners, safety encoders and safety light curtains—can help you track down the cause of reoccurring shutdowns and even warn you if a machine that is trending toward a potential safety hazard.

Reduce risk

Meet machine safety standards and extend production lines with functional safety solutions for machine, process and electrical applications.

“After implementing [Integrated Architecture® safety solutions] our client is not only able to keep the facility running, but also run longer at higher efficiency, producing additional product.”

**– Steve Strong
Concept Systems**



Case Study



Challenge

Keeping your facility running smoothly means addressing safety concerns – but how do you do that and maintain efficiency?



Solution

Integrating safety and motion with a single control architecture allows you to improve safety and efficiency at the same time.

Customer Spotlight: Concept Systems



Concept Systems develops automation systems, and their client came to them looking to update their palletizing equipment and improve safety to boost employee retention.

With the new palletizing system built on Integrated Architecture®, the integrated safety system achieved its goal of helping the company make the manufacturing process less dangerous for their employees. Plus, they are now able to run seven lines instead of three using the same number of personnel, resulting in improved operations overall.

2x

increase in line capacity, with the same number of personnel

Why Rockwell Automation: Doing Business Globally

Rockwell Automation® is your global, single-source partner for repair services, with more than 100 sales, service and support locations around the world.



Rockwell
Automation world
headquarters



Rockwell
Automation®
remanufacturing
centers



Repair
parts/exchange
hubs



Lektronix® repair
centers



Support and sales
centers



To find your nearest sales office, visit:

<https://www.rockwellautomation.com/en-us/sales/partner-locator.html?sort=dist&type=Sales+Office>

Why Rockwell Automation: Expertise and Support



Design



Operate



Maintain



100+ Countries



24x7x365 Service



Single-Site or Multi-site Delivery



10 ISO-certified Equipment Remanufacturing Facilities



21 Languages



8 Global Parts and Exchange Hubs



16 Remote Support Centers



Optimize Your Operation

Across industries and processes, Rockwell Automation understands that a profitable, safe and sustainable operation is your goal. We offer you industry- and technology-specific expertise to meet these goals and your unique challenges.



Help Protect Your Investment

Beyond our solution delivery capabilities, our global infrastructure of support centers and subject matter experts all help protect your automation investment, optimize plant assets, increase productivity and improve your overall financial performance.



Scalable Solutions

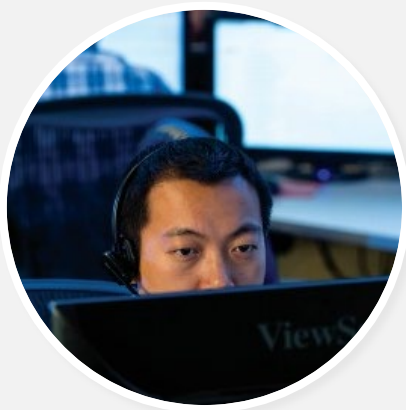
While we develop solutions to meet your needs today, we constantly have an eye on tomorrow. We take a collaborative approach to understanding your current state and how to design a solution that weighs scalability as a major factor.



Modernization Support

As systems age, we provide options to help you extend their life as long as possible, extend operations and transition to new technologies.

Why Rockwell Automation: Partnerships



Your Trusted Advisor

We partner with you as a trusted advisor, simplifying the way your products are brought to life and transforming how work is done to boost productivity. Through co-innovation, we help solve your most difficult challenges and speed your time to value.



Strategic Alliances

Our alliance partners are global leaders in their fields. Each of them has made a strong global commitment to work with us and you to apply capabilities and deliver seamless solutions, giving you strong technological, competitive and strategic advantages.



PartnerNetwork™

Our PartnerNetwork™ program framework is composed of an integrated team of engineering specialists and best-in-class suppliers who work collaboratively to solve your manufacturing challenges by streamlining your supply chain, simplifying project implementation and providing ongoing service and support.

Why Rockwell Automation: The Right Expertise, at the Right Time

Professional, managed and support services to help you automate, connect, protect and optimize your value chain



Production Automation

Automate and modernize manufacturing and production operations.

- Industrial automation control systems
- Distributed control systems (DCS)
- Power systems
- Drive systems
- Safety systems and solutions
- Panel solutions



Digital Operations

Connect processes, systems, assets and products with data.

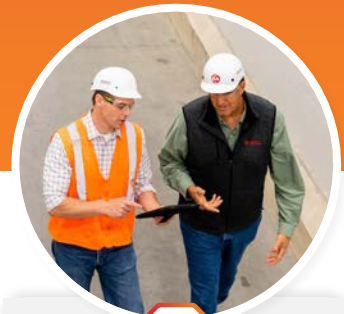
- Data science and artificial intelligence (AI)
- Manufacturing operations management (MOM/MES)
- Product lifecycle management (PLM)
- Extended reality (AR/VR/MR)
- Supply chain management (SCM)



Industrial Cybersecurity

Enable and help protect industrial connectivity.

- Industrial compute and network infrastructure
- Vulnerability and risk management
- Threat detection
- Endpoint protection
- Incident response and recovery



Production Optimization

Optimize the performance of assets, systems, applications and people.

- Repair and maintenance
- Inventory management
- Energy management and sustainability
- Workforce development and training

For more information about how we can help you solve your unique business challenges, contact your authorized Allen-Bradley distributor or Rockwell Automation sales office, or visit: [LifecycleIQ Services | Rockwell Automation | US](#)

Why Rockwell Automation: Repeatable Industry Solutions

Customized for your unique needs



Automotive

- Electric vehicle production
- Tire manufacturing automation
- EV battery production



Chemical

- Batch processing
- Mixing & blending
- Material tracking
- Tank farm control



Tire & Rubber

- Safety wind-up & Let-off (WULO)
- Calenders
- Mixing/TSR systems & curing
- Extruders



Household & Personal Care

- Material tracking/genealogy
- Historian & dashboards
- Mixing, blending, routing & CIP
- Production & order management



Life Sciences

- Full MES & compliance
- Formulation & filling
- Track & trace
- Modular process build



Food & Beverage

- Product safety & compliance
- Line performance
- Batch, blending, routing & CIP
- Production & order management



Mining & Cement

- Ventilation on demand
- Ore beneficiation/processing
- Loadout systems
- Crushers & conveyers
- Autonomous robotic inspection



Energy

- Integrated control & safety systems
- Production & pipeline SCADA
- Rotating equipment control
- System design & scale
- Combustion controls/burner management
- Fuel handling/energy conversion
- Electrical protection & control
- Balance of plant automation/integration
- Energy management
- Emissions monitoring



Metals

- Melt shop & continuous casting
- Strip processing & finishing
- Rod & bar mills
- Material tracking



Pulp & Paper

- Burner management & digesters
- Stock prep/on-machine DCS
- Paper & tissue machine systems
- Winder & sheeter safety

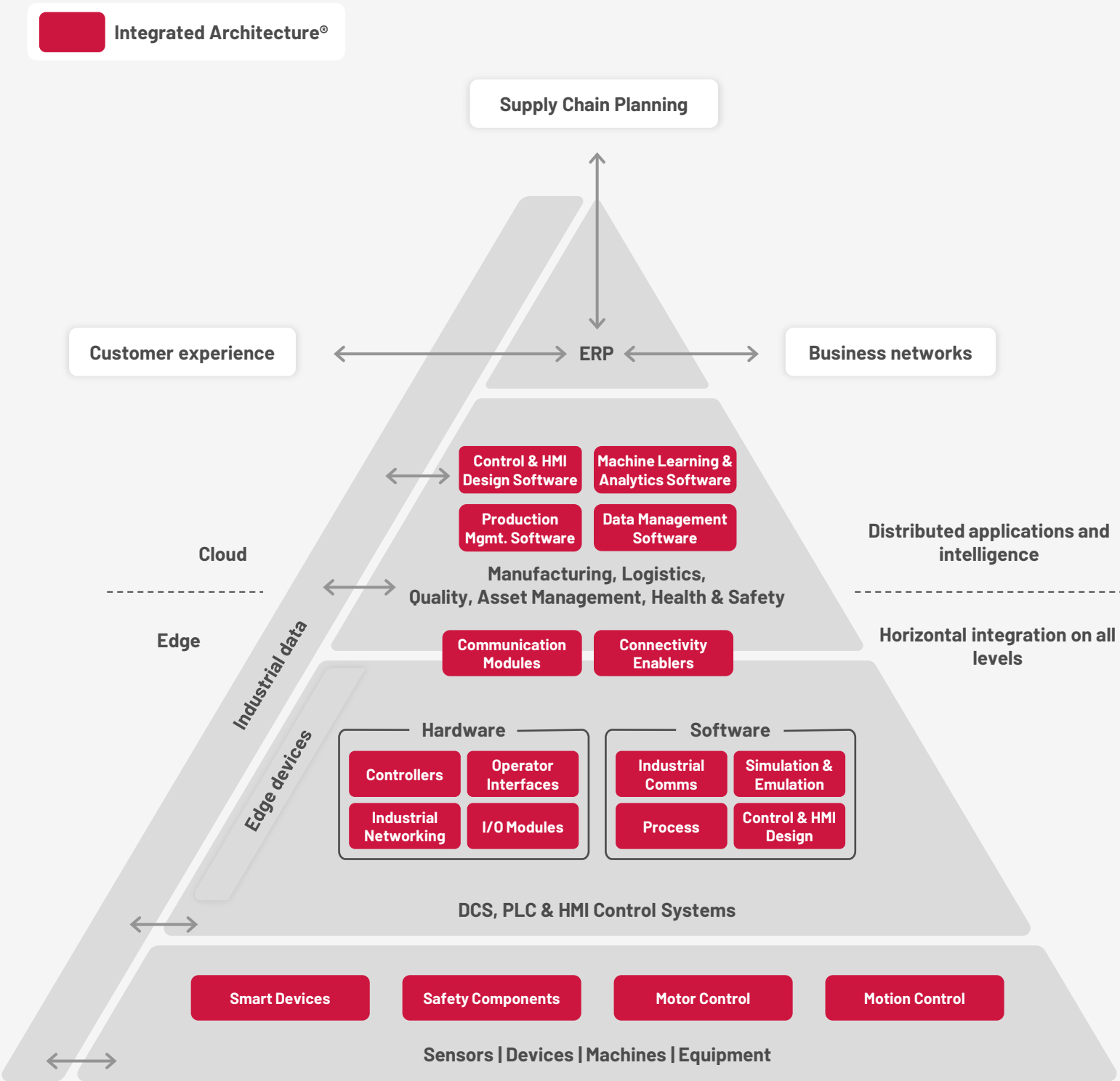


Water/Wastewater

- Leak detection
- Process control
- Power control
- SCADA - data collection
- Remote terminal units

Integrated Architecture® Technologies

Integrated Architecture® enables consistent control and information across your industrial operations



Hardware Portfolio



As one of the world's largest companies dedicated to industrial automation, our extensive product portfolio, services and support help improve your manufacturing cycle.

Control

Programmable Automation Controllers

Programmable automation controllers provide the basis from which Integrated Architecture® is possible. Allen-Bradley controllers are built to serve plant-wide control needs ranging from analog through high-speed discrete control needs found in any application across all industries.

- Modular and scalable systems
- Process, batch, discrete, drives, safety and motion control
- High availability
- SIL 2 and SIL 3 safety certified
- Embedded and Distributed I/O
- Extreme Environment (XT) and Conformal Coating



Input/Output Modules

I/O platforms allow the smart information derived from all plant-wide assets to connect with the controller portfolio to drive all control and monitoring needs of the facility.

- Chassis-based, local, family-specific, distributable via communication networks
- Distributed, in-cabinet modular – flexible, customizable
- Distributed, in-cabinet block – includes network adapter, analog, digital and specialty
- On-Machine™ modular – direct-mount, reduced wiring costs, easy maintenance
- On-Machine™ direct mount, block – reduced wiring costs, easy maintenance
- Safety—FLEX 5000® I/O, POINT Guard I/O™, ArmorBlock® I/O, CompactBlock™ Guard I/O™—reduced wiring costs and startup time, available for in-cabinet and On-Machine™ applications
- Distributed/embedded – built-in EtherNet/IP™ and DeviceNet® support, IO-Link technology, optional DeviceLogix™ Smart Component Technology



Condition and Energy Monitoring

Our condition monitoring products provide you with the essential data needed to help prevent unplanned downtime before it costs you money. Energy monitoring products keep you well-informed of how much power you use, what your major loads are, when you use electric power the most, how much you pay for it, and the quality of the power you use.

Condition Monitoring

- Integrated condition monitoring on the EtherNet/IP™ network
- High-performance portable data collectors
- Proven, comprehensive predictive maintenance software
- Sensors and accessories for a complete solution

Energy Monitoring

- Energy monitoring on the EtherNet/IP™ network
- Capture comprehensive information:
 - How much power you use
 - What your major loads are
 - When you use electric power the most
 - How much you pay for it
 - Quality of the power you use



Compute Modules

Our compute modules enable high-speed PC computing by allowing you to communicate directly to a controller via the backplane. This secure, efficient method drives faster and more productive decision-making.

- Gain high-speed access to controllers so you can perform tasks without external workstations
- Create custom applications with embedded OS
- Deploy across a multitude of industries, including robotics, Internet of Things (IoT), industrial automation, AI (Artificial Intelligence), edge computing and more



Motor Control

We offer a complete line of motor control products for your applications with an integrated, data-driven approach. With a comprehensive range of power options and innovative features, our portfolios can bring performance and capability to a wide variety of industries and applications.

Low- and Medium-Voltage AC Drives

- Premier Integration with design software for seamless control system integration
- Save time and costs with Automatic Device Configuration when a device needs to be replaced within your system
- Help reduce unplanned downtime with built-in predictive maintenance features for advanced notice of upcoming asset failures
- Help reduce safety and cybersecurity risks to safeguard critical processes
- Help reduce energy costs, component count, maintenance and motor wear

Motor Control Centers

- High-performance packaging solutions for all your motor control needs
- Design and build your system to address application functionality, production intelligence, safety and security standards
- Low voltage and medium voltage solutions designed to meet regional requirements

Smart Motor Controllers

- Motor controllers, overload relays and soft starters can be easily integrated into your intelligent motor control solution to offer higher productivity and shorter downtimes
- A full line of versatile and robust starters and relays for both low and medium voltage applications



Motion Control

The motion control portfolio is uniquely positioned to help you create the capable, scalable and connected machines that drive your business forward. Each technology is optimized to work together and can be easily configured and controlled via the Logix platform so that your systems can reach operation faster and deliver more production value.

Servo Drives

- Comprehensive range of power options and axis configurations to meet your needs
- Safety solutions minimize downtime and reduce energy and production waste

Servo Motors

- Rotary and linear servo motors designed and tested to work with Kinetix® servo drives and cables

Actuators and Independent Cart Technology

- Add flexible, high-precision movement to your critical motion processes

Encoders

- Absolute and incremental encoders for accurate motion feedback



Safety Components

In addition to safety available in the control and motor control portfolios, we offer one of the broadest safety portfolios in the industry to help you achieve functional operation of your machinery while helping to increase personnel safety, efficiency and productivity.

- Safety switches include interlock, limit and cable pull switches
- Presence-sensing safety devices such as safety light curtains and laser scanners detect the location of objects or personnel near hazardous areas
- CIP Safety™ connected devices include light curtains, area

scanners, locking guard doors and encoders

- GuardLink® technology safety-based communication protocol that helps enhance safety and provide valuable data for operation efficiency
- Software-configurable and single-function safety relays



Smart Devices

Rockwell Automation offers a wide range of smart sensing and industrial control products that deliver information, advanced functionality and flexibility while increasing efficiency machine- and plant-wide. These Allen-Bradley® sensors and industrial control products use IO-Link technology for visibility of field devices throughout your Integrated Architecture®, including RFID systems, sensors, tower lights and electronic circuit protection.

Sensors

- RFID systems for tracking and documenting products
- Smart sensors with IO-Link technology to deliver data from the sensor directly into a control system

Industrial Components

- Select from a broad range of devices designed to meet your application specifications. From panels to motor control centers, select the components you need to build the foundation of your machine.



Networks

Industrial Switches

Our portfolio of industrial switches is designed to meet your needs, from smaller applications to IT-ready integration with plant-wide infrastructure.

- Gigabit speeds for greater productivity
- User-friendly web UI with support of customizable dashboards and enhanced troubleshooting tools
- Provides common software alignment with Cisco enterprise switching for increased efficiency



Network Protection

Device security is an important component of the defense in depth strategy. Securing communications leveraging CIP Security between devices adds another barrier to overcome for anyone with harmful intentions.

- The CIP Security™ Proxy (shown at right) helps you provide security to your control system by working with an EtherNet/IP™ compliant device
- The proxy provides CIP Security™ for a single device that does not have built-in support for CIP Security™



Communication Modules

Chassis-based communication modules help establish communication links between devices and implement network-based access control for users, devices and networks.

- Choose from a variety of modules that support EtherNet/IP™ and other network protocols
- Remote I/O communication modules connect to remote I/O chassis and other intelligent devices
- EtherNet/IP™ Communication Modules provide real-time I/O messaging and message exchange and support up to 256 Logix connections



Connectivity Enablers

Connectivity enablers such as routers and EtherNet/IP™ taps (ETAPS) help connect assets to existing networks and help protect them from external threats.

Stratix® Remote Access Router

- A dedicated platform for FactoryTalk® Remote Access™ Manager software
- Designed to allow machine builders and OEMs to operate on remote systems and their subnetworks
- Offered in both wired and wireless with two and five 10/100/1000 Mbps Gigabit Ethernet copper port variants and options for Wi-Fi and LTE Cellular

Stratix® 4100 EtherNet/IP™ Tap (ETAP)

- Connects devices that do not support Embedded Switch Technology to a linear or DLR network

NAT Router

- A network device with Embedded Switch Technology capable of doing Network Address Translation (NAT) for applications using Device Level Ring (DLR) or linear topologies



Visualization

Operator Interface Terminals

Our Graphic Terminals and Tethered Operator Terminals help increase operator productivity and provide a safe production environment.

- Graphic terminals with dual Ethernet ports for Device Level Ring (DLR) topologies
- Industrial flat-panel, LCD monitors—Class I, Division 2 locations



Compute and Connectivity

Visualization and computing products provide windows into critical production and process information and operational data. Across every type of industry, application and manufacturing environment, these products accelerate development and enhance operation.

Extreme Environment Computers:

- ATEX and UL-rated for hazardous locations

Industrial PCs, Thin Clients and Monitors:

- Industrial environment, non-display and integrated display computers

Compute Modules:

- Gain high-speed access to controllers so you can perform tasks without external workstations
- Create custom applications with embedded OS
- Deploy across a multitude of industries, including robotics, Internet of Things (IoT), industrial automation, AI (Artificial Intelligence), edge computing and more.

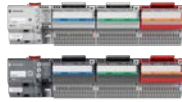




	ControlLogix® 5580 Controllers	ControlLogix® 5570 Controllers
Overview	Logix programmable automation controllers use a common control engine with a common development environment to provide high performance in an easy-to-use environment. ControlLogix® controllers are ideal for more demanding applications and can perform standard and safety control in the same chassis for a truly integrated system and leverage the high availability and extreme environment capabilities to meet your application needs.	
Key Features	• Suitable for high-performance, discrete and motion applications • Integrated Motion on EtherNet/IP™ • Multiple controllers in the same chassis, with each one operating independently • Built-in 1 Gb Ethernet port • Designed for high performance with Compact 5000® I/O • Conformal coating offers added protection in harsh environments	• Suitable for process, motion, discrete, safety and high availability applications • GuardLogix® controllers have TÜV certification for functional safety • Integrated motion and safety on EtherNet/IP™ • Multiple controllers in the same chassis, with each one operating independently • Conformal coating offers added protection in harsh environments • Redundancy supports high availability requirements • ControlLogix-XT™ rated for -20...+70 °C (-4...+185 °F) operating environment
Built-in Memory	Up to 40 MB GuardLogix 5580 up to 5 MB safety memory	ControlLogix® controllers: Up to 32 MB GuardLogix® controllers: 8 MB standard/ 3.75 MB safety
Motion Control	Up to 256 axes of Integrated Motion on EtherNet/IP Typical controller performance 32 axes/ms	Up to 100 axes of Integrated Motion on EtherNet/IP™ Typical controller performance 6 axes / ms
Safety Level	GuardLogix® 5580: SIL 2, PLd, Cat. 3 GuardLogix® 5580: SIL 3, PLe, Cat. 4 (Safety Partner required)	ControlLogix® controllers: SIL 2 when following ControlLogix® SIL 2 Safety Reference Manual GuardLogix 5570: SIL 3, PLe, Cat. 4 (Safety Partner required)
On-Machine	N/A	Armor™ ControlLogix® controllers: IP67 rated Armor™ GuardLogix® controllers: IP67 rated
Language Support	Ladder Logic, Structured Text, Function Block, Sequential Function Chart	
Communications	Embedded USB and 1 Gb Ethernet port	Embedded USB
Standards	cULus, CE, IECEx, KC, EtherNet/IP, FM, CSA, RCM, Ex, EAC, Marine Pending	cULus, CE, KC, FM, RCM, IECEx, EAC, Marine In addition, GuardLogix® controllers: FM, TÜV
Environmental	0...60 °C (32...140 °F)	0...60 °C (32...140 °F) XT versions rated -25...+70 °C (-13...+158 °F)
More Information	For the most up-to-date information, visit: PLC Programmable Controllers Allen-Bradley US	



	CompactLogix® 5380 Controllers	CompactLogix® 5370 Controllers	Micro800™ Controllers
Overview	Logix programmable automation controllers use a common control engine with a common development environment to provide high performance in an easy-to-use environment. CompactLogix® controllers are ideal for small to mid-size machines and provide the benefits of Integrated Architecture® for lower-cost machines in both standard and safety options.	Logix programmable automation controllers use a common control engine with a common development environment to provide high performance in an easy-to-use environment. CompactLogix® controllers are ideal for small to mid-size machines and provide the benefits of Integrated Architecture® for lower-cost machines	Micro800™ controllers provide a customized solution with basic control for standalone machines. Available in different form factors, these micro controllers are optimized to deliver a smart, productive, secure solution throughout all phases of the machine lifecycle. They can be programmed easily using the Connected Components Workbench™ software, and they share common accessories and plug-in and expansion I/O modules that allow machine builders to personalize the controller for specific capabilities.
Key Features	• Suitable for high-performance, discrete and motion applications • Integrated Motion on EtherNet/IP™ • Two Ethernet ports each with individually configurable IP addresses and adjustable speed up to 1 Gb • Designed for high performance with Compact 5000® I/O, either local or distributed on EtherNet/IP™ • Conformal coating optional for added protection in harsh environments	• Suitable for process, motion, discrete and safety applications • Integrated Motion on EtherNet/IP™ • Distributed I/O via EtherNet/IP™ • Robot kinematics • Open socket capability for devices such as printers and barcode readers • Internal energy storage solution removes the need for battery • Conformal coating optional for added protection in harsh environments	• Suitable for low-cost, standalone, discrete, process and Pulse Train Outputs (PTO) motion applications • Customize and expand the functionality of Micro800™ controller to meet specific application needs with plug-in and expansion I/O modules • Built-in 100 kHz high-speed counter • EtherNet/IP™ and DeviceNet® • Supports Modbus TCP, Modbus RTU, ASCII and Open socket capability for communication with third-party devices • Micro820® controllers: microSD™ slot for data logging and recipe management • Conformal coating optional for added protection in harsh environments
Built-in Memory	Up to 10 MB Compact GuardLogix 5380 up to 5 MB safety memory	CompactLogix® L1: Up to 1 MB, L2: Up to 1 MB, L3: Up to 5 MB	Up to 280 KB
Motion Control	Up to 32 axes of Integrated Motion on EtherNet/IP™ Typical performance 32 axes/ms	Up to 16 axes of Integrated Motion on EtherNet/IP™	Up to 3 axes of 100 kHz PTO for motion control
Safety Level	Compact GuardLogix® 5380: SIL 3, PLe, Cat. 4	Compact GuardLogix® 5370: SIL 3, PLe,bvCat. 4	N/A
On-Machine	N/A	Armor™ CompactLogix®: IP67 rated Armor™ Compact GuardLogix®: IP67 rated	N/A
Language Support	Ladder Logic, Structured Text, Function Block, Sequential Function Chart		Ladder Logic, Structured Text, Function Block
Communications	• Embedded USB and Ethernet with DLR/Dual IP (selectable) • 1 Gb Ethernet port	Embedded USB and Ethernet with DLR	Micro810® - USB programming port (with adapter) Micro820® - USB programming port (with 2080-REMLCD) • USB Type C port1 - CIP™ Serial, DF1, Modbus RTU, ASCII, EtherNet/IP™, Modbus TCP Micro850® - Embedded USB programming port • USB programming port (with 2080-REMLCD)2 • CIP Serial, DF1, Modbus RTU, ASCII • EtherNet/IP, Modbus TCP Micro870® - Embedded USB programming port • USB programming port (with 2080-REMLCD) 2 • CIP Serial, DF1, Modbus RTU, ASCII • EtherNet/IP, Modbus TCP, DNP33
Standards	cULus, CE, RCM, ATEX, IECEx, EtherNet/IP, KC, EAC, Marine	cULus, CE, RCM, ATEX, EtherNet/IP™, KC, EAC, Marine	cULus, CE, RCM, KC, Morocco, UKCA, EtherNet/IP
Environmental	0...60 °C (32...140 °F)	L1: -20...+60 °C (-4...+140 °F) L2/L3: 0...60 °C (32...140 °F) Armor™: 0...60 °C (32...140 °F)	Micro810®: 0...55 °C (32...131 °F) Micro820®, Micro850®, Micro870®: -20...+65 °C (-4...+149 °F)
More Information	For the most up-to-date information, visit: PLC Programmable Controllers Allen-Bradley US		



	FLEX 5000® I/O	FLEX™ I/O	FLEXHA 5000™ I/O
Overview	FLEX 5000® I/O is a flexible and reliable I/O solution that is modular and easy to install. It is also designed for use in extreme or hazardous environments and includes fail-safe SIL 3 rated safety modules. FLEX 5000 EtherNet/IP™ adapters are enhanced with concurrent communications support. Through concurrent communications, different safety controllers can maintain separate network paths to the same safety I/O module, enabling flexibility and seamless failover. This latest capability supports the new Logix SIS solution with GuardLogix® 5580 controllers, providing a high availability safety solution up to SIL 3 for process applications.	FLEX™ I/O offers the functionality of larger rack-based I/O without the space requirements. It can help eliminate multiple long wiring runs, reduce terminations, decrease engineering and installation costs and time, and substantially reduce downtime. FLEX™ I/O offers cost-effectiveness, flexibility, modularity, and reliability.	Bulletin 5015 FLEXHA 5000™ I/O modules are part of a cutting-edge platform that can help you reduce hardware complexity and cost by using a more convenient integrated design. FLEXHA 5000™ I/O modules enhance communication with 1 Gb EtherNet/IP™ network connectivity, offering higher speed and increased bandwidth. Reducing both downtime and engineering time while limiting costs, this platform is designed to be a smarter, more efficient I/O solution.
Key Features	- Reduces system costs and complexity with the flexibility to mix and match standard and safety I/O modules in one platform - Built for extreme and hazardous environments, with the ability to operate at -40...+70 °C (-40...+158 °F) - Enhances communication with 1 Gb EtherNet/IP™ connectivity through copper or fiber, with SFP adapters - Supports a wide range of network topologies: Device Level Ring (DLR), Star, Linear, and Parallel Redundancy Protocol (PRP) - Reduce downtime with Removal and Insertion Under Power (RIUP) by replacing modules while system is in operation - Flexible and modular with capability to support up to 32 channel digital input/output and 8 channel analog input/output - True integrated safety with discrete and analog fail-safe I/O modules, TÜV certified up to SIL 3, PLe, Cat. 4, with up to 10 ms safety reaction time - Common wiring configuration for standard and safety inputs - Operates in -40...+70 °C (-40...+158 °F) temperatures and in hazardous areas: Class I, Division 2, Zone 2, Groups A, B, C, D - Allows for use in extreme environments with XT version up to G3 with conformal coating, which helps protect against environmental stresses - Mounts horizontally or vertically - Distributed I/O for CompactLogix® 5380, CompactLogix® 5480 or ControlLogix® 5580 controllers	- Modular design lets you independently select the I/O, termination style and network interface - Assembles without tools – all components snap into DIN rail and plug together to form the I/O system - Mounts horizontally or vertically - Reduce downtime with Removal and Insertion Under Power (RIUP) by replacing modules while system is in operation - Available with conformal coating to help protect in harsh environments	- Optimize footprint by mounting up to 24 I/O modules on a single node, vertically or horizontally, and in any module sequence - Operate at -40...+70 °C (-40...+158 °F) temperatures and in extreme environments up to GX rating with conformal coating - Use in hazardous areas under Class I, Division 2, Zone 2, and Groups A, B, C, D - Reduce downtime with simplified Removal and Insertion Under Power (RIUP) and easy online changes - Gain support for ControlLogix® 5580 controller redundancy in high availability applications from Studio 5000 Logix Designer® application (version 35 or later) and deliver more consistent operations with increased reliability - Reduce downtime with easy access to additional process diagnostics via HART Premier Integration in Studio 5000 Logix Designer® application - Save engineering time through tight integration with instruction set in the PlantPAx® system - Features a universal card option that allows for flexibility in I/O choice – configurable per channel within Studio 5000® environment (version 35 or later) as analog (HART capable) or discrete, input or output - Available in simplex or duplex module configurations
I/O Types Offered	Digital 8/16/32 point input and output modules - High current output module 8-channel relay output module Analog 8-channel input or output modules - Highly Integrated HART (HIH) - Voltage, Current, RTD, Thermocouple input Safety 16-point digital input and output modules 8-point isolated relay output module - Analog input and output with HART support Specialty - High-speed counter - Frequency input	Digital 8...32 points per module - Isolated inputs or outputs - Protected outputs, electronic fusing or diagnostics available on some modules Analog - Individually configurable channels, selectable input filters on many modules - Single-ended or differential inputs - Thermocouple, RTD and HART modules available Specialty - Frequency - High-speed Counter - Pulse Counter FLEX I/O-XT™ Extreme Environment - Rated for -20...+70 °C (-4...+185 °F) and are compatible with ControlLogix-XT™ extreme environment system - Analog input with HART support - Thermocouple, RTD and Combination I/O modules	- Provides eight isolated channels that can individually be configured to function as digital inputs, digital outputs, analog inputs or analog outputs - For channels that are configured as analog input or analog output, HART functionality is also available
Communications	EtherNet/IP™, HART	EtherNet/IP™, ControlNet, DeviceNet, Remote I/O, Profibus-DP	EtherNet/IP™
More Information	For the most up-to-date information, visit: Input/Output (I/O) Modules Allen-Bradley US		



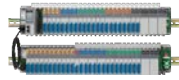
	POINT I/O™	ArmorBlock® I/O
Overview	The POINT I/O™ portfolio is ideal for applications requiring flexibility and low cost of ownership. Granularity of 1 to 8 points lets you buy only the I/O you need. The compact design makes installation easier in limited panel space. POINT I/O™ architecture allows 63 modules on one EtherNet/IP™ node and supports Star, Tree, Daisy-chain/Linear, and Ring topologies.	ArmorBlock® I/O modules are low-cost, hardened I/O that can be mounted on machines to help reduce wiring cost and enable easier maintenance. ArmorBlock® I/O can be used for automotive or material handling and packaging applications, or for machinery applications where diagnostics and local control are not needed.
Key Features	- Independently select the I/O, termination style and network interface - Install easily by sliding together; pull apart easily for maintenance - Removable wiring system saves time and money during installation and troubleshooting - Comprehensive diagnostics and configurable features - Reduce downtime with Removal and Insertion Under Power (RIUP) by replacing modules while system is in operation - Mount horizontally or vertically, with no derating required - Available with conformal coating to help protect in harsh environments	- IP67/69K-rated water- and corrosion-resistant housing reduces enclosure costs - Industry-standard connectors simplify wiring and improve mean time to restoration - Embedded switch with Device Level Ring (DLR) - High-speed time-stamping inputs and scheduled output modules for demanding and high-speed applications - Rotary switch to set IP address - Self-configuring blocks with both input and output functionality
I/O Types Offered	Digital - Input, output and relay output modules - Wide variety of voltages Analog - Up to eight single-ended inputs or outputs per module 4-channel input or output modules - Thermocouple and RTD modules Specialty - Counter and encoder modules - Serial synchronous interface Absolute Encoder module - Serial interface modules - Address Reserve Module (ARM) - IO-Link main module POINT Guard I/O™ Safety - Digital input, digital output and analog input modules and bipolar output modules - TÜV-certified for functional safety up to and including SIL 3, Cat. 4, PL e - Can be used side by side in a standard POINT I/O™ system	ArmorBlock® I/O - Input, output and combination modules, up to 16 points per block - Available with CIP Sync on some blocks 4-point analog, thermocouple and RTD I/O blocks - Supports connection to IO-Link enabled devices with the IO-Link main module - Available with QuickConnect on some blocks - IP69K and NEMA 4X (when marked) Armor™ WeldBlock 16 points - Resists the effects of weld slag and magnetic fields found in close proximity to weld heads - Lightweight, nickel-plated aluminum metal housing ArmorBlock® Guard I/O™ Safety 16-point combined I/O blocks - TÜV-certified for functional safety up to and including SIL 3, Cat. 4, PL e - Dual IP65 and IP67 ratings
Communications	EtherNet/IP™, ControlNet, DeviceNet, Profibus-DP	DeviceNet or EtherNet/IP™
More Information	For the most up-to-date information, visit: Input/Output (I/O) Modules Allen-Bradley US	



	ArmorBlock 5000® I/O
Overview	Designed for On-Machine™ use in harsh environments, our ArmorBlock 5000® I/O solution offers the scalability that will help reduce total installation time and cost and unplanned downtime. The industrially-hardened blocks offer rating up to IP69K, three power variants, flexible mounting options and IO-Link Class A and Class B ports. Also, the distributed I/O blocks are integrated with Studio 5000® design software to provide exceptional performance and ease in manufacturing.
Key Features	• Meets a wide range of regional and industry needs with Mini 4-pin, Mini 5-pin, and L-coded power variants • Provides better visibility with well-positioned light-emitting diode (LED) for block and/or channel level diagnostics, which can help reduce machine downtime • Offers rating up to IP69K for On-Machine™ use • Eases setup and commissioning in an intuitive Logix environment • Provides a highly integrated On-Machine™ distributed I/O solution for ControlLogix® 5580, CompactLogix™ 5380 and CompactLogix 5480 controllers • Works with Studio 5000 Logix Designer® application version 35 or later • Provides efficient installation and replacement via plug and play • Offers flexible mounting installation • Allows module configuration via a browser through secure web server
I/O Types Offered	ArmorBlock 5000® I/O 8-channel IO-Link Main Module • Improves engineering efficiency using EDS file import/export functionality and automatic download of IODD files via the IO-Link device registration tool • Allows greater flexibility through the ability to work with a wider variety of IO-Link devices using generic IO-Link profile support • Simplifies the IO-Link integration experience through Process Data only mode support • Provides change-type functionality that allows the user to change the IO-Link main block to a different power variant while maintaining the same device and software configurations • Eases configuration with common tag structure and configuration workflow • Reduces installation footprint with up to 8 IO-Link channels, 12 digital inputs and 16 outputs • Offers four IO-Link Class A and four IO-Link Class B ports, with one IO-Link channel per port • Drives Class B output device up to 2 A with an isolated high current output channel • Supports IO-Link protocol 1.1.3 ArmorBlock 5000® 16-channel Configurable Digital I/O Module • Provides more flexibility to meet diverse application requirements with 8 fast and eight standard configurable digital channels, up to 0.5 A sensor power per port and up to 2 A output current • Enhances network security with the ability to customize private subnet for the module IP address • Improves machine precision and accuracy through input time stamp, Sequence of Events (SOE), and schedule output capabilities
Communications	EtherNet/IP™, IO-Link
More Information	For the most up-to-date information, visit: Input/Output (I/O) Modules Allen-Bradley US



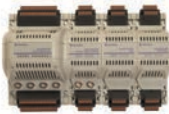
	Micro800™ Expansion I/O Modules	MicroLogix™ Expansion I/O Modules
Overview	Our Micro800™ Expansion I/O modules extend the capabilities of the Micro850® and Micro870® controllers by maximizing flexibility of the I/O count and type. The I/O module snaps firmly to the right side of Micro850® and Micro870® controllers, supporting both DIN rail and panel mount.	Our MicroLogix™ Expansion I/O Modules extend the capabilities of the MicroLogix™ 1100, 1200 and 1400 controllers by maximizing flexibility of the I/O count and type. The modular, rackless design enhances cost savings and reduces replacement parts inventory. Modules can be either DIN rail- or panel-mounted.
Key Features	• Provides additional analog I/O, digital I/O and specialty capabilities • Offers removable terminal blocks for ease of installation, maintenance and wiring	• Feature-rich functionality addresses a wide range of applications • Network support includes EtherNet/IP™, DeviceNet® and DH-485 (local only) • Software keying helps prevent incorrect positioning within the system • Fingersafe terminal blocks for I/O wiring • Small footprint reduces panel space • Integrated high-performance I/O bus • Label to record I/O terminal designations • Digital, analog and specialty I/O modules available
I/O Types Offered	Analog • Analog input and output modules available: 4-channel, 8-channel, isolated • High resolution • High accuracy Digital • Variety of DC and AC discrete modules available to suit different applications • Solid-state output modules available for applications that require more than relays • High-density digital I/O module available to reduce space consumption Specialty • Resistance temperature detector (RTD) available (4-channel, isolated) • Thermocouple (TC) modules available (4-channel, isolated) • High accuracy Bus Terminator • End cap terminator	Digital • 8, 16 or 32 inputs or outputs • AC and DC voltages • Combination module with eight inputs and six contact outputs • AC/DC relay output modules Analog • Input module with four differential inputs • Output module with four single-ended outputs • Combination module with two differential inputs and two single-ended outputs Specialty • RTD module with four input channels • Thermocouple module with four input channels plus a CJC sensor
Communications	CIP™ Serial, DF1, Modbus RTU, ASCII, EtherNet/IP™, Modbus TCP, DNP3	EtherNet/IP™ or DeviceNet®
More Information	For the most up-to-date information, visit: Input/Output (I/O) Modules Allen-Bradley US	



	1719 Ex I/O	1715 Redundant I/O	1718 Ex I/O
Overview	Intrinsically safe distributed 1719 Ex I/O solution that is mounted in Zone 2 or Division 2 and helps enable customers to integrate devices in hazardous (Zones 0, 1 or Division 1) areas via EtherNet/IP™.	Redundant I/O provides fault tolerance and redundancy for critical processes by using a pair of redundant Ethernet adapters and multiple I/O modules. I/O modules provide diagnostics and are interchangeable with no interruption to the control system. Plus, it requires no user programming code or additional hardware to operate.	Our Bulletin 1718 Ex I/O modules are an intrinsically safe distributed I/O platform designed for Zone 1 hazardous areas, when placed in certified enclosures. This platform integrates field devices via EtherNet/IP™ in a compact, chassis-based I/O design. The form factor provides maximum efficiency and reduces the need for additional hardware and wiring.
Key Features	- I/O modules for intrinsic safety field connections, rated for Zone 2 or Class I, Division 2 mounting - EtherNet/IP™ DLR adapter - Optional N+1 power supply redundancy - Removal and Insertion Under Power (RIUP) lets you replace modules and make connections while the system is in operation (in absence of hazardous atmosphere) - Modularity and several chassis' options provide scalability for larger applications - HART 7 support standard on all analog modules	- Supports several network topologies, including Device Level Ring (DLR) for enhanced resiliency - Flexible, modular construction for user-configurable I/O applications - I/O redundancy for systems requiring high availability - Suitable for simplex and duplex connections and fault-tolerant applications - Supports online module removal and replacement with no interruption of the signal inputs	- Provides intrinsically safe I/O to satisfy application requirements for Zone 1 mounting (in certified enclosures) - Integrates with the Integrated Architecture® system for easy configuration - Connects on EtherNet/IP™ in Zone 0 and Zone 1 - Supports Studio 5000 Logix Designer® v24 and above with Add-on Profile - Offers compact, chassis-based I/O design where power supply is contained in the chassis - Includes DLR adapter and optional power supply redundancy - Offers HART 7 support that is standard on all analog modules
I/O Types Offered	Digital 8-channel NAMUR input module 2-channel output modules to support nearly any solenoid requirement Analog - Configurable 4-channel input/output module 4-channel Input, Thermocouple and RTD modules Specialty - Single-channel frequency counter module	Digital 16-channel input 8-channel output Analog 16-channel input 8-channel output	Digital 1-channel, 8-channel input modules 2-channel output modules to support nearly any solenoid requirement Analog 4-channel input modules - Configurable 4-channel input/output HART modules
Communications	EtherNet/IP™, HART	EtherNet/IP™: Supports several network topologies, including Device Level Ring (DLR) for enhanced network resiliency	EtherNet/IP™, HART
More Information	For the most up-to-date information, visit: Input/Output (I/O) Modules Allen-Bradley US		



	PowerMonitor™ 1000 Metering Product	PowerMonitor™ 5000 Metering Product
Overview	This is a compact power monitor for load profiling, cost allocation or energy control. It integrates with existing energy monitoring systems to provide submetering and communicates easily with Logix controllers to use energy data in automation systems.	This is a next-generation, high-end, power-quality metering product. Building on core power and energy metering capabilities, the PowerMonitor™ 5000 takes energy monitoring to the next level.
Key Features	• Compact size • Integrated LCD display • Panel or DIN rail mounting • Provides wiring diagnostics • Time of use (On-Peak, Off-Peak) • Energy, min/max, status and load factor logs • Ability to view data and configure through the integrated webpage	• Monitors four voltage and four current channels for every electrical cycle—1024 data points across eight channels every 12...17 ms • Calculates over 6000 parameters every cycle • Includes four digital inputs for WAGES data collection • Includes four outputs for connection to SCADA or control systems • Offers configurable alarms for up to 20 events • Provides virtual wiring correction capability
Options	1408-BC3A-ENT • Basic consumption meter 1408-TS3A-ENT • Consumption + Volt/Current 1408-EM3A-ENT • Energy management meter	M5 - base model M6 - includes base model features, plus: • Harmonics • Oscillography • Event Sync M8 - includes base model features, plus: • Harmonics • Oscillography • Event Sync • Flicker • Interharmonics • Transient Detect
Accuracy levels(per standard EN62053-22)	Class 1, 1% energy accuracy	Class 0.2, 0.2% energy accuracy
Outputs	• Modbus RTU • EtherNet/IP™ • KYZ signal	• Digital signal • EtherNet/IP™ • DeviceNet® • ControlNet • KYZ signal
Communications	Available with EtherNet/IP™, Serial DFI, Modbus RTU, Modbus TCP communications	Includes fundamental EtherNet/IP™ port Provides a second communication port
More Information	For the most up-to-date information, visit: Energy Monitoring Allen-Bradley US	



	Dynamix™ Series Integrated Machinery Monitoring System
Overview	This provides rotating and reciprocating machinery protection within your standard control system. It's configured with Studio 5000® and connected on EtherNet/IP™ providing a single architecture to control and help protect.
Key Features	• Configured from Studio 5000® for CompactLogix® or ControlLogix® controllers with revision 24+ or revision 20 firmware • Allows machinery protection to API-670 5th Edition • Power using single or redundant 18...32V DC SELV supplies • Temperature rated for -25...+70 °C (-13...+158 °F) • Hazardous area certifications – IECEx Conformity; ATEX Zone 2; UL Class 1 Div 2; Groups A, B, C, D • Spring or screw-style removable plug connectors • Circuit cards are conformal coated • Certified to Marine standards for shock and vibration
Option Modules	Tachometer Signal Conditioner Expansion Module • 2-channel monitor that converts the signal from common speed sensing transducers into a once-per-rev TTL class signal suitable for use by up to six dynamic measurement modules Relay Expansion Module • 4-relay expansion module – up to three relay expansion modules may be used with each dynamic measurement module Analog Output Expansion Module • 4-channel module that outputs 4...20 mA analog signals that are proportional to measured values provided by the dynamic measurement module
Main Module Inputs	Four channels dynamic, two tachometer (TTL)
Frequency Range	11.5 Hz to 40 kHz
Tracking Filters	4 per channel
Alarms	23 measurement alarms, 13 voted alarms
Communications	EtherNet/IP™, dual-port or Device Level Ring
More Information	For the most up-to-date information, visit: Condition Monitoring Allen-Bradley US



	Embedded Edge Compute Module	ControlLogix® Compute Module
Overview	The Embedded Edge Compute module is a chassis-based module that can communicate directly with Logix controllers and has read and write access to all controller tags through the backplane and front Ethernet port.	ControlLogix® Compute modules are chassis-based modules that let you communicate directly with a ControlLogix® 5570 or ControlLogix® 5580 controller via the system backplane and over a network.
Key Features	- Enables FactoryTalk® Optix Studio™, a development platform for creating human machine interface (HMI) and Internet of Things (IoT) applications - Contains a FactoryTalk® Optix™ XS runtime license with five tokens, and a FactoryTalk® Remote Access™ Runtime Pro license - Supports Docker® software, a container platform for creating and deploying applications (with module firmware revision 6.192 and later)	- Provides high-speed access to the ControlLogix® controller over the backplane - Integrated DisplayPort for direct connection to a high-definition VersaView® industrial monitor - Provides computing capability in a ControlLogix® chassis
Product Details	- ARM based NXP iMX8m Plus CPU, 4 Gb RAM, 20 Gb eMMC 32 Gb of USD storage capability - Linux Embedded OS Software included: - FactoryTalk® Remote Access™ Pro - FactoryTalk® Optix™ Runtime Lite (XS, upgradable to S)	- Intel Atom Dual Core CPU, 4 Gb RAM 32 Gb of solid-state storage ControlLogix® Compute modules come with an instance of one of the following: - Windows® 10 IoT Enterprise 64 bit - Linux 32 bit (Debian) - Linux 64 bit (Debian) - Linux 64 bit (Red Hat Enterprise Linux)
More Information	For the most up-to-date information, visit: Embedded Edge Compute Module Allen-Bradley US	For the most up-to-date information, visit: 1756 Compute Module Product Page



AC Drives



	PowerFlex® 755TS, TL, TR and TM AC Drives	PowerFlex® 753 and 755 AC Drives
Overview	These drives are designed for flexibility, connectivity and productivity. They provide an exceptional user experience, from initial programming through operation and maintenance. They have precise motor control along with solutions for six-pulse (PowerFlex® 755TS), regeneration (PowerFlex® 755TR), harmonic mitigation (PowerFlex® 755TL) and flexible common DC bus configurations (PowerFlex® 755TM). Patented TotalFORCE® technology (field-oriented control) for accurate torque control delivers fast, precise, responsive control of position, velocity and torque.	Offering more selection for control, communications, safety and supporting hardware options than any other drives in their class, PowerFlex® 750-Series AC drives provide the features you need to help maximize your productivity.
Key Features	• Premier Integration with Studio 5000® environment for seamless control system integration • Save time and costs with Automatic Device Configuration when a device needs to be replaced within your system • Reduce unplanned downtime with built-in predictive maintenance features for advanced notice of upcoming asset failures • Reduce safety and cybersecurity risks to safeguard critical processes • Small power density reduces panel space w/wall mount options up to 500 Hp • Reduce energy costs with regeneration • Designed to meet the IEEE 519 standard • Reduce commissioning time and mechanical wear with Load Observer and Adaptive Tuning • Flexible slot-based hardware architecture allows you to select option modules for safety, feedback, communications and I/O • Available with XT corrosive gas protection to help protect in corrosive environments	• Premier Integration with Studio 5000® environment for seamless control system integration • Save time and costs with Automatic Device Configuration when a device needs to be replaced within your system • Multiple motor control modes and support for induction and permanent magnet motors • Predictive diagnostics help to extend the life of the drive • Flexible slot-based hardware architecture allows you to select option modules for safety, feedback, communications and I/O • PowerFlex® 755 drives have the option to be programmed using motion instructions in the Studio 5000 Logix Designer® application
Ratings	PowerFlex® 755TS • 400...480V: 0.75...355 kW/1...500 Hp PowerFlex® 755TL, TR, TM • 400...480V: 160...2000 kW/250...3000 Hp • 600...690V: 250...2500 Hp/200...2300 kW	• 200...240V: 0.37...132 kW/0.5...200 Hp/2.2...477 A • 380...480V: 0.75...400 kW/1.0...2000 Hp/2.1...2330 A • 600V: 1.0...1500 Hp/1.7...1530 A • 690V: 0.75...1500 kW/12...485 A
Safety	• Safe Speed Monitor option • Safe Torque Off - hardwired or network options	• PowerFlex® 753: Safe Speed Monitor and Safe Torque Off options • PowerFlex® 755: Safe Speed Monitor and hardwired or networked Safe Torque Off options
Logix Integration	• Premier Integration into Logix control environment	• Premier Integration into Logix control environment
Communications	Built-in dual ports for EtherNet/IP™ and support for additional industrial networks	• PowerFlex® 753: Optional single or dual-port EtherNet/IP™ and additional industrial networks • PowerFlex® 755: Built-in port for EtherNet/IP; optional dual-port EtherNet/IP™; support for additional industrial networks
More Information	For the most up-to-date information, visit: Standard and High Power VFD Allen-Bradley US	



AC Drives



	PowerFlex® 520-Series AC Drives	PowerFlex® 6000 Medium Voltage Drives	Armor™ PowerFlex® 350 On-Machine™ Drives
Overview	These compact variable frequency drives combine innovation and ease of use to provide motor control solutions designed to maximize your system performance and reduce your time to design and deliver better machines. The PowerFlex® 523, PowerFlex® 525 and PowerFlex® 527 drives each offer a unique set of features to distinctively match the needs of your application.	These drives are ideal for general-purpose applications such as fans, pumps and compressors. They're suitable for new and retrofitted, variable torque and constant torque applications. They deliver an easy-to-use, simplified user experience. They support high-efficiency PM motor applications with up to 120 Hz output frequency to help reach energy-efficiency goals, and predictive maintenance capabilities help reduce downtime. CIP Security™-enabled drives boost security for your smart machines, networks and equipment.	Looking for a drive that meets your most demanding applications? Our Armor™ PowerFlex® 35-series On-Machine™ drives can help you do just that. These drives provide an integrated, near-motor, pre-engineered solution designed for harsh environments where reducing installation time and cost are most critical. Armor™ PowerFlex® drives combine an innovative design that will reduce installation cost, installation time and unplanned downtime. It replaces multiple components with one integrated motor control solution.
Key Features	- PowerFlex® 520-Series drives offer multiple motor control modes; induction, permanent magnet motor control and synchronous reluctance - Compact footprint saves panel space and provides flexible installation - Operating temperatures from -20...+50 °C (-4...+122 °F). Up to 70 °C (158 °F) with current derating and optional control module fan kit - Drives can be installed vertically or horizontally - Automatic Device Configuration (ADC) allows Logix controllers to detect a replaced drive and download all configuration parameters automatically	- Create runtime alerts for critical components with predictive maintenance - Add FactoryTalk® Analytics™ GuardianAI™ for advanced notice of upcoming asset failures 100% starting torque without the requirement of an encoder - High-efficiency ECO main cooling fans are internally powered to reduce operating costs and reduce external control power requirements - Designed to meet the IEEE 519 standard - Near-sinusoidal output waveforms allow use of standard motors and motor cable lengths to 400 m (1321 ft) (without an output filter) - Automatic Power Cell Bypass minimizes downtime (optional) - Extended ride-through control keeps your drive running through most power-quality disturbances - Intuitive, easy-to-use color touch screen HMI - Certified to meet IEC 62443-4-2 Security Level	- Supports 3-phase asynchronous motors, permanent magnet motors and high-efficiency synchronous reluctance motors - Equipped with IP66, Type 4/12 enclosure with hygienic design - Offers a wide motor power range and wide environmental range - Uses a resilient, fault-tolerant, dual-port Gigabit EtherNet/IP™ network using built-in Device Level Ring capability - Available in two frames: 3 Hp and 10 Hp - Offers flexible mounting installation - Easy to install, set up and commission with integrated wizards and workflows - Uses comprehensive local and network status and diagnostics with predictive functions - Equipped with quick disconnect connection
Rating	100...115V: 0.2...1.1 kW/0.25...1.5 Hp/1.6...6 A 200...240V: 0.2...15 kW/0.25...20 Hp/1.6...62.1 A 400...480V: 0.4...22 kW/0.5...30 Hp/1.4...43 A 600...600V: 0.4...22 kW/0.5...30 Hp/0.9...32 A	2.3 kV: 140...2238 kW/200...3000 Hp 3.3 kV: 160...3280 kW/215...4400 Hp 4.16 kV: 225...3954 kW/300...5300 Hp 6.6 kV: 300...6565 kW/400...8200 Hp 6.9 kV: 315...6565 kW/415...8200 Hp 10 kV: 200...9950 kW/270...13,350 Hp 11 kV: 220...10,950 kW/300...14,680 Hp	380...480V: 1...10 Hp, 0.75...7.5kW
Safety	- PowerFlex® 525: built-in hardwired Safe Torque Off - PowerFlex® 527: built-in Safe Torque Off - hardwired or networked	- Electromechanical interlocking (standard), trapped key interlocking (optional) - Fiber-optic device firing and mechanical barriers provide isolation and separation between medium voltage and low voltage control	- Support advance safety functions such as STO, SS1, SLS, SLP, SDI and SBC - Offer hardwired and integrated (CIP™) safety in one product - Are equipped with user safety I/O
Logix Integration	- Premier Integration into Logix control environment - PowerFlex® 527 uses Studio 5000® motion instructions exclusively	Integration into Logix environment via PlantPax® Faceplates and Add-On Instructions	Premier Integration into Logix control environment
Communications	- PowerFlex® 523: Optional dual-port EtherNet/IP™ - PowerFlex® 525: Built-in port for EtherNet/IP™; optional dual-port EtherNet/IP™ - PowerFlex® 527: Built-in dual ports for EtherNet/IP™ - PowerFlex® 520-Series: Additional industrial network - PROFINET, BACnet	Options for EtherNet/IP™ and additional industrial networks	Uses a resilient, fault-tolerant, dual-port Gigabit EtherNet/IP™ network using built-in Device Level Ring capability
More Information	For the most up-to-date information, visit: Compact Low-voltage AC Drives Allen-Bradley US	For the most up-to-date information, visit: Medium Voltage Variable Frequency Drive, VFD Allen-Bradley US	For the most up-to-date information, visit: Armor PowerFlex Drives Allen-Bradley US



Motor Control Devices

			
	CENTERLINE® 2100 NEMA Motor Control Centers (MCCs)	FLEXLINE™ 3500 Motor Control Center (MCCs)	CENTERLINE® 1500 Medium Voltage Motor Control Centers (MCCs)
Overview	Our industry-leading MCC meets UL and NEMA standards and offers solutions for networking, communications and safety.	This low voltage MCC solution designed for IEC markets integrates motor control into a centralized package. A FLEXLINE™ 3500 low voltage MCC can help you increase productivity, improve plant safety, reduce downtime, save energy and more.	This MCC is available in various control formats that include arc-resistant product designs. Controller options include full-voltage, reversing, reduced-voltage, solid-state reduced-voltage, multi-speed and synchronous control.
Key Features	- Offers proven technology for high quality and years of dependable service - Provides consistent design to allow for backward compatibility - Includes center-mounted bus design to improve heat dissipation - Provides solid grounding system to help reduce shock hazards	- Compact footprint conserves floor space - Many options for unit configurations, and line and load wiring - Change motor control technology, such as from direct-on-line to variable frequency drive, with minimal impact	- Includes isolation switch with visible indication that the power cell is not energized - Includes CENTERLINE® horizontal power bus with removable cover plates for accessibility - Offers Type 2B accessibility - Provides remote access to data to minimize the need to approach the MCC
Rating	Up to 600V, 600...3200 A	Up to 690V, 485...6000 A	2400V-690V, 400...800 A
Safety	- CENTERLINE® 2100 with SecureConnect™ units help reduce electrical shock and exposure to electrical hazards - CENTERLINE® 2100 with ArcShield™ Technology helps to reduce arc flash hazards and increases protection against internal electrical arcing faults	FLEXLINE™ 3500 with ArcShield™ Technology helps reduce arc flash hazards and increases protection against internal electrical arcing faults	- CENTERLINE® 1500 with ArcShield™ Technology helps reduce arc flash hazards: - Provides increased protection against internal electrical arcing faults - Provides arc-resistance to 40 kA or 50 kA per C37.20.7
Logix Integration	- Integration into Logix environment via FactoryTalk® Design Studio™ software - Support for PlantPAx® Process Object Library Faceplates and Add-On Instructions	Integration into Logix environment via FactoryTalk® Design Studio™ software	Integration into Logix environment via FactoryTalk® Design Studio™ software
Standards	- ABS Type Certified (Marine & Coast Guard) - International Building Code - IBC (Seismic) - UL/cUL - NMXS-353-ANCE - CE Conformance - ISO 9001 Certification	- IEC Standards 61439-1&2 - International Building Code - IBC (Seismic) - CE Conformance - UKCA - DEKRA - ISO 9001 Certification	- UL 347 and CSA, Industrial Control Equipment C22.2 No. 253 (harmonized with UL 347, fifth edition) - NEMA, Medium Voltage Controllers Rated 1501 ...7200 VAC ICS 3-2 (formerly ICS 2-324) - IEEE C37.20.7, Type 2B for arc resistance - National Electrical Code (NEC) - Occupational Safety & Health Act (OSHA) - European Directives for EMC
Communications	- Options for EtherNet/IP™ and additional industrial networks - Options to include IntelliCENTER® software, which provides access to operating data and troubleshooting to help reduce downtime and lower total cost of ownership	Devices in FLEXLINE™ 3500 motor control centers are seamlessly connected via the EtherNet/IP™ network	- CENTERLINE® 1500 with IntelliCENTER® Technology provides remote access to data to minimize the need to approach the MCC - Options for the EtherNet/IP™ network and additional industrial networks
More Information	For the most up-to-date information, visit: Motor Control Allen-Bradley US		



Motor Control Devices

					
	E1 Plus™ Electronic Overload Relay	E300™ Electronic Overload Relay	857 Motor/Feeder Protection Relay	SMC™ Flex	SMC™ TH-50
Rating	0.1...800 A	0.5...65,000 A	10...20,000 A	1...1250 A	108...480A (internal bypass) 90...520 A (solid-state)
Motor Control	• Solid-state • Standard starter	• Microprocessor-based • Standard starter • Reversing starter • Wye/Delta (Star/Delta) starter • 2-speed starter	• Motor and feeder protection • Low voltage and medium voltage control • 12-channel digital recorder • Remote RTD Sensing • Analog input/output capabilities	• Nine starting/stopping modes available • Three control module versions available – Standard – Pump control – Braking control • Power structure has built-in SCR bypass/run contactor • Built-in electronic motor overload protection	• 17 starting / stopping modes available • All-in-one control module • Power structure available with either built-in SCR bypass or solid-state configuration • Built-in electronic motor overload protection • Three expansion ports to install I/O option modules • Programmable faults and alarms • Built-in power monitor • DeviceLogix™ software
I/O	• Two inputs • One output	4/3 (AC), 6/3 (DC), 2/2 (AC with protection), 4/2 (DC with protection)	Minimum 9 configurable output contacts, 18 digital inputs and various virtual I/O capabilities – additional I/O capabilities available	Four functionally programmable onboard output contacts (N.O. or N.C.)	• Two fully programmable contacts as: Normal, UTS, fault, alarm, external brake, DeviceLogix™, auxiliary control, fan control, network or external bypass • I/O option modules available for expansion
Communications	EtherNet/IP™ Communication Module	EtherNet/IP™ network (DRL)	EtherNet/IP™, IEC 61850, Modbus TCP, Modbus, PROFIBUS, DNP 3, IEC 101-10	Options for EtherNet/IP™ network and additional industrial networks	
Technical Documentation	EC-CA001	193-SG010	857-SR001	150-TD009	
More Information	For the most up-to-date information, visit: Circuit & Load Protection Allen-Bradley US			For the most up-to-date information, visit: Motor Control Allen-Bradley US	



Servo Drives



	Kinetix® 5700 Servo Drives	Kinetix® 5500 Servo Drives
Overview	Kinetix® 5700 servo drives help expand the value of Integrated Motion on EtherNet/IP™ to large machine-builder applications. The Kinetix® 5700 servo drive can help reduce commissioning time and improve machine performance. It offers the simplicity, power and space savings you need to help get your machine up and running faster.	Kinetix® 5500 servo drives connect to and operate with Logix controllers, supporting Integrated Motion on EtherNet/IP™. With its innovative, compact design, the Kinetix 5500 drive helps minimize machine footprint and simplifies system wiring.
Key Features	• Features dual-axis modules • Controls servo and induction motors • Reduces wiring with single-cable technology • Allows for tuning-less commissioning for most axes • Delivers 40...70% cabinet space savings • Supports optional encoder output module • Regenerative power supply option with energy management and low harmonic operation • Available with conformal coating to help protect in harsh environments	• Innovative common AC/DC bus helps reduce hardware, installation time and cost • Fewer terminations and simpler wiring – 60% less wiring with single-cable feedback • Compact with optimized power density • Drive power ratings optimized to match VP • Low-inertia motor family • Supports servo and induction motors • Supports optional encoder output module • Available with conformal coating to help protect in harsh environments
Safety Level	Standard Kinetix® 5700 Servo Drive • Integrated Safe Torque Off: PLe, Cat 3 • Hardwired Safe Torque Off: PLe, Cat 3, SIL CL 3 Drive Safety Kinetix® 5700 Servo Drive • Network-based drive safety • Certified PLe, SIL 3 • Ability to monitor speed, direction and position • Ability to perform controlled and monitored stops and perform zero-speed monitoring	Integrated Safety – Safe Torque Off • PLe, Cat. 3 • SIL CL 3 Hardwired Safety – Safe Torque Off • PLd, Cat. 3 • SIL CL 2
Continuous Power	1.6...112 kW	0.5...15 kW
Supply Voltage	325...528V AC	• 195...528V AC single-phase (H003-H015) • 195...528V AC 3-phase all models
Communications	• Integrated Motion on EtherNet/IP™ • Dual-port Ethernet connector allows for both line and Device Level Ring (DLR) topologies	• Integrated Motion on EtherNet/IP™ • Dual-port Ethernet connector allows for both line and Device Level Ring (DLR) topologies
More Information	For the most up-to-date information, visit: Servo Drives Allen-Bradley US	



Servo Drives



	Kinetix® 5100 Servo Drives	Kinetix® 5300 Servo Drives	ArmorKinetix® Distributed Servo Drives
Overview	Our Kinetix® 5100 Servo Drives provide a scalable option for servo solutions in a single product. These drives offer an extended power range solution up to 15 kW and support standalone, Micro800™ or Logix-controlled applications. Kinetix® 5100 Servo Drives come with standard inputs and outputs and different modes of control, plus Safe Torque Off and dual-port EtherNet/IP™ for various network topologies.	Well-suited for small- to medium-sized machines, our Kinetix® 5300 Servo Drives provide single-axis control and use the open EtherNet/IP™ communication protocol to enable the design flexibility that you need to meet market demands. Designed with a comprehensive power range, dual Ethernet ports and hardwired Safe Torque Off, Kinetix® 5300 Servo Drives are an excellent choice to right-size your motion solutions in a variety of applications.	This drive platform offers the high performance of the Kinetix® 5700 Servo Drive in a compact, On-Machine™ form factor that enables your production machines to become more efficient, flexible and cost-effective than ever before. By mounting the drives outside of the electrical cabinet, you can drastically reduce system complexity, lower total system costs and enable your workforce to be more productive.
Key Features	• Offers select standalone, Micro800™ or Logix control for a range of performance needs • Delivers safety features without additional parts or wiring with standard hardwired Safe Torque Off (STO) • Features 10 freely assignable digital inputs (two can be used as fast input functions) and five freely assignable digital outputs • Provides indexing function (with 99 segments), which allows more motion commands than comparable solutions without the need for a control system • Autotuning features help control system resonance • Allows for control mode changes (i.e. speed to torque) while in motion • Integrates easily into Logix applications with specially designed Add-On Instruction	• Wide power range (0.05...2 kW at 120...230V, 3...7.5 kW at 230V and 0.4...7.5 kW at 460V) • Delivers safety features without additional parts or wiring with standard hardwired Safe Torque Off (STO) • Size your solution easily with rated power that is referenced to the output power at the motor – sizing efforts reduced when Kinetix® 5300 Servo Drives are paired with Kinetix® TLP • Includes four digital inputs; two of which can be used as fast digital input functions • Supports Device Level Ring (DLR) to reduce the need for network accessories like e-Taps • Includes tuning-less technology with Load Observer and a tracking notch filter so you can get up and running faster • Uses standard motion instructions in the Studio 5000® design environment	• 200/400V class product • CIP Security™ • IP66/67 rated • Device Level Ring capable • Connect any combination of 24 Distributed Servo Drives and Distributed Servo and Motors in each ring • Supports the following motors: • Kinetix® VP motors 63...130 mm (2.48...5.19 in.) frame sizes • Kinetix® MP motors with Hiperface SIN/COS feedback and in 100...130 mm (3.94...5.19 in.) frame sizes • Linear motors • Induction motors with open-loop or closed-loop control
Continuous Power	0.2...15 kW	0.22...14.7 kW	Reference the ArmorKinetix® System User Manual for specifics
Safety Level	• Safe Torque Off – hardwired	• Safe Torque Off – hardwired	• Safe Torque Off – networked
Communications	• Integrated Motion on EtherNet/IP™ • Dual-port Ethernet connector allows for both line and Device Level Ring (DLR) topologies	• Integrated Motion on EtherNet/IP™ • Dual-port Ethernet connector allows for both line and Device Level Ring (DLR) topologies	• Integrated Motion on EtherNet/IP™
More Information	For the most up-to-date information, visit: Servo Drives Allen-Bradley US		



Servo Motors



	Kinetix® VP Rotary Motor	Kinetix® MP Rotary Motor
Overview	These are optimized to operate with the Kinetix 5500 family of servo drives, supporting Integrated Motion on EtherNet/IP™. Based on proven MP technology for dynamic performance, these motors offer the many benefits of a single cable for feedback, brake and power.	These are low-inertia, high-output brushless servo motors. These compact and highly dynamic brushless servo motors are designed to meet the demanding requirements of high-performance motion systems. Typically used with the Kinetix® 5700, Kinetix® 6000, Kinetix® 6200, Kinetix® 6500, Kinetix® 300 and Kinetix® 350 servo drive families.
Key Features	- Based on proven magnetic core MP technology - Provides real-time motor performance information to the control system via digital feedback device - Provides feedback, motor brake and motor power through a single cable - Optimized to match drive ratings, allowing for efficient system sizing - Integrated 24-volt holding brake option Model variants - VPL – Standard low-inertia - VPF – Food-grade - Stainless-steel shaft and fasteners - Food-grade and REACH-compliant shaft seal grease - Offers improved food-grade white paint - Food-grade shaft seal - IP66- and IP67-rated connectors can be rotated without the use of tools - VPC – Continuous torque - High continuous power applications up to 30 kW - Field replaceable fan kit	- High-energy rare-earth magnets for quicker acceleration - Standard IEC 72-1 mounting dimensions - SpeedTEC DIN connectors allow flexible orientation of connectors - Integrated 24-volt holding brake option Model variants - MPL – low-inertia - MPM – medium-inertia - MPF – Food-grade - Stainless-steel shaft and fasteners - Food-grade grease on shaft seal - Durable two-part food-grade epoxy coating - Hardened shaft wear sleeve for long-lasting shaft seal and shaft - IP66- and IP67-rated connectors can be rotated without the use of tools - MPS – stainless-steel - Tightly sealed for maximum protection and corrosion resistance - Hardened shaft wear sleeve for long-lasting shaft seal and shaft meets requirements for IP66, IP67 and IP69K for 1200 psi wash-down
Torque/Force Rating	- VPL continuous 0.46...32 Nm (4...283 lb•in) - VPF continuous 0.93...19 Nm (8...172 lb•in) - VPC continuous up to 191 Nm (1,593 lb•in)	- MPL continuous 0.26...163 Nm (2...1440 lb•in) - MPM continuous 2...62 Nm (19...556 lb•in) - MPF continuous 2...19 Nm (14...172 lb•in) - MPS continuous 4...21 Nm (32...190 lb•in)
Feedback Options	- Single-turn, digital, absolute encoder - Multi-turn, digital, absolute encoder - Heidenhain encoder (option on VPC only)	- Single-turn, 1024 SIN/COS, absolute encoder - Multi-turn, 1024 SIN/COS, absolute encoder
Winding Voltage	400V Class Windings	200V and 400V Class Windings
More Information	For the most up-to-date information, visit: Rotary Servo Motors Allen-Bradley US	



Servo Motors



	Kinetix® TL Compact Rotary Servo Motor	Kinetix® LDC and LDL Linear Motor
Overview	These are low-inertia, high-performance servo motors for lighter industrial applications. They offer substantial power in a small footprint, with a high-torque density, and are available with absolute encoder or a 2000-line incremental encoder.	Linear motors provide you with the ability to increase your throughput and reliability as a result of their high speed and acceleration capabilities, as well as the reduction in mechanical transmission parts commonly found in applications that convert rotary to linear motion.
Key Features	- Multi-turn feedback with battery backup available - Controls high load-to-motor rotor inertia ratios while maintaining a stable system - Onboard memory retains motor identity - Serial communication automatically reports identity to the drive 46, 70, 90, 100 mm (1.81, 2.76, 3.54, 3.94 in.) frame sizes - Integral 24V brake option Model Variants - TL – equipped with rectangular plastic connectors, intended for use only with Kinetix® 3 servo drives - TLY – equipped with circular plastic connectors, intended for use with Kinetix® 2000/6000 servo drives	- Velocities up to 10 m/s and accelerations as high as 10 m/s - Precise linear positioning - No-wear parts such as bearings, gears and belts - Full setup and programming support through Studio 5000® environments
Torque/Force Rating	Continuous 0.086...5.42 Nm (0.85...48 lb•in)	- LDL Continuous 63...596 N or 14...134 lb•f Peak 209...1977 N or 47...444 lb•f - LDC Continuous 74...1922 N or 17...432 lb•f Peak 188...5246 N or 42...1179 lb•f
Feedback Options	N/A	User-supplied
Winding Voltage	200V Class Windings	User-supplied
More Information	For the most up-to-date information, visit: Rotary Servo Motors Allen-Bradley US	For the most up-to-date information, visit: Linear Solutions Allen-Bradley US



Actuators and Independent Cart Technology



	MP-Series/T-Series Electric Cylinders	LDAT-Series Linear Thruster	iTRAK® Intelligent Mover System
Overview	Electric cylinders are compact, lightweight, high-force actuators that serve as an alternative to pneumatic and hydraulic solutions. Our ready-to-install electric cylinders are energy-efficient and help provide machine flexibility, including precise, multi-point positioning. Industry-standard mountings and end-effector attachments help simplify your assembly and reduce mechanical design engineering, wiring and commissioning time.	LDAT-integrated linear thrusters provide high-speed, load-bearing linear motion out-of-the-box and can push, pull or carry a load. They use direct-drive technology to help maximize performance and reliability.	The iTRAK® independent cart system is a modular, scalable linear motor system that allows for independent control of multiple movers on straight or curvilinear paths. The iTRAK® system frees the machine designer from the constraints of mechanical cam design so that they can focus on the process, the programming and transforming innovation.
Key Features	- Flexible, efficient servo-controlled rod actuation - Extend and retract with precise positioning, velocity or force - Fully assembled, ready to install - Clean, energy-efficient alternative to fluid power - Flexible positioning for parts, tools, set works, etc. - Dynamic, precise response for a wide range of linear motion applications - Available in multiple frame sizes	- Linear actuator with an integrated linear bearing capable of pushing, pulling or carrying a load - Direct-drive technology for dynamic performance, combining high velocity, acceleration and peak thrust forces - Standard rotating SpeedTEC DIN Connectors - Multiple mounting surfaces and methods - Ability to have a moving slider or moving stator - Availability as a modified standard product with an integral brake or with a boot that provides IP66 protection	iTRAK® Series Assembled Systems - Minimize maintenance - Change between products at the push of a button - Simplify mechanical designs - Upgrade easily by reducing complex tooling - Operate faster with less downtime - Reduce energy consumption through direct drive iTRAK® Series System Components - Straight and 90° curvilinear motor sections available in standard 400 mm (15.75 in.) lengths - Different force ratings available with various coil sizes, including 50, 100, and 150 mm (1.97, 3.94, and 5.91 in.) - Combine for racetrack, square or rectangle configurations to any length - Each motor section contains a multiphase drive and absolute encoder
Force Rating	- Continuous force 240...7,784 N (54...1,750 lb•s) - Peak force to 14,500 N (3,300 lb•s)	Peak force to 5,469 N (1,229 lb•s)	50 mm (1.97 in.): 264 N 100 mm (3.94 in.): 529 N 150 mm (5.91 in.): 793 N
Speed Rating	Up to 1 m/s	Up to 5 m/s	50 mm (1.97 in.): >5 m/s (16.4 ft/s) 100 mm (3.94 in.): 4 m/s (13.12 ft/s) 150 mm (5.91 in.): 2.75 m/s (9.02 ft/s)
Feedback Options	Absolute high-resolution multi-turn feedback	Incremental TTL or Absolute Hiperface	- Absolute feedback - Feedback Resolution <10 µm
Winding Voltage	200V and 400V Class Windings	200V and 400V Class Windings	400V Class Windings
More Information	For the most up-to-date information, visit: Linear Solutions Allen-Bradley US		For the most up-to-date information, visit: Independent Cart Technology Rockwell Automation US



Actuators and Independent Cart Technology



	MagneMover® LITE™ Intelligent Conveyor System	QuickStick® and QuickStick® HT™ Intelligent Conveyor System
Overview	MagneMover® LITE™ is an intelligent and highly cost-effective conveyor system designed to move light loads quickly and efficiently. MagneMover® LITE™ outperforms conventional belt-and-chain conveyors for OEM/in-machine applications and for demanding motion requirements, delivering new levels of process optimization and throughput.	QuickStick® is the Intelligent Conveyor System that offers increased throughput and a lower cost of ownership, providing a faster, cleaner and more efficient alternative to pallet conveyor systems. Linear motor technology enables modules to be configured end to end, creating an electromagnetic force to propel carriers up to 10 times faster than traditional systems. HT provides transport for loads up to 1000 s of kg.
Key Features	• Intelligent motion • Process optimization tools simplify system design • Complete traceability at all times • Flexible layouts • Easy to clean and maintain up to IP65 washdown	• Intelligent motion • Flexibility with simultaneous tracking and easy addition and removal of modules • Innovative design allows various configurations • Easy-to-use modular design and control system • Less maintenance with fewer moving parts
Force Rating	6 N/10 N	15.9 N per magnet array Over 2500 N single-wide (HT) Over 5000 N Double Wide (HT)
Speed Rating	2 m/s	100 m/s
Feedback Options	Absolute	Absolute
Winding Voltage	36V	48V
More Information	For the most up-to-date information, visit: Independent Cart Technology Rockwell Automation US	



Safety Sensors and Switches

				
	Interlock Switches	Cable Pull Switches	Guardmaster® 442G Multifunctional Access Box	Absolute Encoders on EtherNet/IP™
Overview	Our Safety Interlock Switches are a means of safeguarding that monitors the position of a guard or gate. You can use them to shut off power, control personnel access and help prevent a machine from starting when the guard is open.	Our Cable Pull Switches are cable (rope) operated emergency stop devices designed to meet the stringent requirements of ISO 13850 (Safety of Machinery – Emergency Stop Equipment). They have a steel wire rope connected to latching pull switches. When you pull on the rope in any direction at any point along its length, you will trip the switch to stop the machine power.	Our Guardmaster® 442G Multifunctional Access Box is a unique combination of guard locking and access control. This integrated safeguarding solution is ideal for full-body applications where guard doors require a higher holding force, a greater tolerance to guard door misalignment and a means for exiting the safeguarded area in an emergency. A choice of operator controls and other options offers flexibility to meet a variety of applications.	Our EtherNet/IP™ Absolute Encoders are designed with an embedded EtherNet/IP™ switch and dual Ethernet ports to support linear networks and Device Level Ring topologies. Our 843ES Safety Encoders are designed for safety applications that require speed, direction or position monitoring safety functions. By providing auxiliary feedback directly through an EtherNet/IP™ network on CIP Safety™, it makes it easier to achieve the desired safety integrity or Performance Level by reducing the number of components needed and using the already available advanced-drive safety instructions.
Key Features	• Guard Locking Switches like the Bulletin 440G-MZ help protect hazardous areas where a danger is not immediately removed after a stop request • Trapped Key Interlock Switches can be configured to confirm that a predetermined sequence of events takes place or that hazards have been reduced before operators become exposed to them • Tongue Interlock Switches allow the head of the switch to rotate, offering different options on how you can operate the switch and mount it on the guard • Non-contact Interlock Switches like the SensaGuard™ noncontact Guard Interlock Switch help you protect personnel and equipment where no physical contact (under normal conditions) takes place between the switch and the actuator • Hinge Interlock Switches, when triggered, will close specific normally open (accessible) doors or guards	• Lifeline™ 3 Cable Pull Switches offer a slim profile for easy machine mounting • Lifeline™ 4 Cable Pull Switches can be installed along or around awkward machinery such as conveyors and provide constant emergency stop access • Lifeline™ 5 Cable Pull Switches are microprocessor-based solutions that bring advanced features and diagnostics that help enhance safety and improve productivity	• Includes a high coded RFID bolt actuator to achieve the highest level of tamper resistance in accordance with ISO 14119 • Offers both Power to Release and Power to Lock models for personnel safety or the protection of machine production • Offers the ability to be wired in a series and maintain a PLe Cat 4 rating for interlocking, guard lock monitoring and control of guard locking • Includes a CIP Safety™ over EtherNet/IP™ version, which enables easy integration into GuardLogix®	842E-CM Integrated Motion • 18-bit single-turn resolution • 30-bit multi-turn resolution • Solid and blind hollow shaft options • 4 ms and greater RPI • Can be configured as a feedback-only axis in Studio 5000 Logix Designer® application • Supports CIP Sync™ and CIP Motion™ technologies 843E EtherNet/IP™ • 18-bit x 12-bit resolution • Supports endless shaft functionality • Solid and hollow shaft options • 1 ms RPI and IP67 rated enclosure • Automatic diagnostics • Configurable resolution per revolution: 1...262,144 • Compatible with star, linear and Device Level Ring topology 843ES with CIP Safety™ • 18-bit x 12-bit resolution for standard connection; 15-bit x 12-bit for safety connection • Supports endless shaft functionality for standard connection, not for safety connection • Solid and hollow shaft options • 6 ms and greater RPI for safety • Automatic diagnostics • Provides safety ratings up to and including SIL 3 and PLe, Cat. 3, according to the latest safety standards Many other standard incremental and absolute encoders are also part of the Rockwell Automation® encoder portfolio
More Information	For the most up-to-date information, visit: Safety Switches Allen-Bradley US		For the most up-to-date information, visit: Guard Locking Switches Allen-Bradley US	For the most up-to-date information, visit: Safety Switches Allen-Bradley US



Presence-Sensing Safety Devices and E-stops



	Light Curtains	Safety Laser Scanners	Push Buttons and Signaling Devices
Overview	Safety light curtains are photoelectric presence sensors designed to help protect personnel from injuries related to hazardous machine motion. Light curtains offer optimal safety, yet they allow for greater productivity and are the more ergonomically sound solution when compared to mechanical guards.	Our SafeZone™ Safety Laser Scanners are compact devices that have switchable, configurable fields and field sets (warning and safety). The Safety Configuration and Diagnostic (SCD) Windows®-based software, which is used to configure the SafeZone™ Singlezone, Multizone and Mini simplifies the programming of the SafeZone™ safety laser scanners. The SafeZone™ 3 can be configured from Studio 5000 Logix Designer®, using the 442L AOP.	Push buttons and signaling devices include a broad spectrum of operators. We offer push buttons, toggle switches, pendant stations, indicator lights, assembled operator stations and operator station enclosures. Our audible and visual signaling devices include horns, loudspeakers, beacons, strobes, panel light bars and tower stack lights. They help reduce downtime by signaling breakdowns and material shortages as well as alerting operators of hazards
Key Features	450L GuardShield™ POC • Transmitter or receiver via innovative plug-in modules • CIP Safety™ EtherNet/IP™ connectivity via plug-in module 440L GuardShield™ POC Type 4 Standard • Integrated laser alignment options • CIP Safety™ EtherNet/IP™ connectivity via plug-in module 445L GuardShield™ POC Type 4 Micro 400 • Slim 15 x 20 mm (0.59 x 0.78 in.) profile • Cascadable 440L GuardShield™ Type 4 PAC • 2-beam with 500 mm (19.68 in.) and 3-beam with 400 mm (15.74 in.) spacing • Integrated laser alignment and DeviceNet safe connectivity options 445L Safe 4 GuardShield™ PAC • 2-beam, 3-beam and 4-beam options • Integrated laser alignment system 450L GuardShield™ PAC • Features a compact design, 30 x 30 mm (1.18 x 1.18 in.) • Integrated laser alignment system	• Offers 190° or 270° scan angles • Provides 2, 3, 4 or 5 m (6.56, 9.84, 13.12, or 16.4 ft) safety field ranges • Includes configurable resolutions 30...150 mm (1.18...5.9 in.) • Provides configurable restart delay • Offers horizontal or vertical mounting • Includes seven segment display for diagnostic information • Offers multiple sampling (2...16 units) Typical applications for our SafeZone™ safety laser scanners include: • Personnel detection in front of a machine or equipment hazards • Safety replacement when irregular-shaped safety mats are required • AGV applications – 2 warning fields can gradually slow the AGV, thus reducing brake wear	30 mm Operators • 800T/H Operators • 800T/H 30 mm Back-of-Panel Components • NEMA 30 mm Assembled Stations 22 mm Operators • 800F 22 mm Round Operators • 800FC Pendant Stations • 800FD Monolithic Operators • 800 MB/800MR IEC Oiltight Operators • 22 mm Assembled Stations • 800F Back-of-Panel Components Hazardous Location Operators • 800R Hazardous Location Operators • 800H Type 7 and 9 Hazardous Location Operators • 800G Hazardous Location Operators Specialty Operators • 800B IEC 16 mm Operators • 800K Piezoelectric Push Buttons • 800L Indicator Lights • 800P Touch/Palm Operators • 800T 18 mm Pilot Lights • 800Z Zero-Force Touch Buttons™
More Information	For the most up-to-date information, visit: Presence Sensing Safety Devices Allen-Bradley US		For the most up-to-date information, visit: Push Buttons & Signaling Devices Allen-Bradley US



Sensors and RFID



	RFID	Smart Sensors with IO-Link
Overview	Our Radio Frequency Identification (RFID) Systems are ideal for tracking and documenting products as they move through the manufacturing process and beyond in light-duty industrial applications. The HF RFID system tags, transceivers and interfaces are designed to the ISO 15693 open standard. The UHF RFID transceivers are designed to the Global Gen2 standard. This solution easily integrates into The Connected Enterprise®, delivering data directly into a control system to help minimize downtime and increase productivity.	IO-Link Technology is a worldwide open-standard protocol that integrates sensors into our Connected Enterprise® by connecting the IO-Link enabled device into an IO-Link primary module. You can deliver data from the sensor directly into a control system in an efficient manner. The flexibility of IO-Link capable sensors allows machines to operate more effectively by providing the controller with diagnostics. In addition to product detection, sensors provide detailed and accurate machine health status to improve uptime.
Key Features	• Rugged transceiver styles for industrial locations • 13.56 MHz high-frequency technology for light industrial applications • ISO 15693 / ISO 18000-3 M1 • Tag memory options: 64 B, 128 B, 256 B and 2 KB • Read/write speeds up to 625 B/s • Different tag styles with sensing distances of up to 185 mm (7.3 in.) • Reusable Rislant® tags • Premier integration into Logix Studio 5000® software • The 59RF family of HF read/write transceivers are IO-Link enabled • The 58UHF family of EtherNet/IP™ long-range read/write transceivers are available in US and EU versions	• IO-Link technology provides seamless integration of sensors through the Integrated Architecture® • Enabled sensors offer advanced features and diagnostics • In addition to product detection, sensors provide detailed and accurate machine health status to improve uptime • POINT and ArmorBlock® IO-Link primary modules and a wide range of IO-Link enabled smart sensors available
Options	Transceivers • 56RF HF RFID • HF RFID up to 168 mm (6.61 in.) read range • EtherNet/IP™ interface with one or two channels and two DIO ports • 59RF HF RFID • HF RFID up to 85 mm (3.35 in.) read range • Connectivity to IO-Link primary with four or eight channels • 58UHF RFID • 1.5 and 5 m (4.92 and 16.40 in.) Compact Transceivers • EtherNet/IP™ with DLR Tags • Disc – 128-byte SLI 8...50 mm (0.31...1.97 in.) diameter) • Disc – High-Impact Resistant (Extreme Durability) • Disc – Mount on metal • Disc – Large memory FRAM (2 Kb or 8 Kb) • Disc – High temperature	IO-Link is available on the following sensors • 42AF RightSight™ M30 • 42EF RightSight™ • 42JS and 42JT VisiSight™ • 45CRM Color Registration Mark • 45DMS Distance Measurement • 45LMS Laser Measurement • 45PLA Polarized Light Arrays • 46CLR ColorSight™ True Color Sensors • 46DFA DIN Rail fiber-optic Amplifiers • 59RF High-frequency RFID • 836P Solid-state Pressure • 837T Solid-state Temperature • 871C Mini Tubular • 871FM Mini Flat Pack • 871TM Tubular stainless-steel • 873P Analog or Discrete Ultrasonic
Communications	1 and 2 channel EtherNet/IP™ interface available embedded switch, with Device Level Ring (DLR)	Devices connect to POINT and ArmorBlock® IO-Link primary modules
More Information	For the most up-to-date information, visit: Radio Frequency Identification Systems Allen-Bradley US	For the most up-to-date information, visit: Smart Devices with IO-Link Technology Allen-Bradley US



Signaling and Circuit Protection



	856T Control Tower™ Stack Lights with IO-Link	Bulletin 1694 Electronic Circuit Protectors
Overview	Control Tower™ Stack Lights with IO-Link functionality enable integration with The Connected Enterprise®, delivering status information (operating hours, circuit counters) and diagnostics (open/short circuit detection, vibration indication) from the 856T directly into a control system to help minimize downtime and increase productivity.	Bulletin 1694 Modular Electronic Circuit Protection products are designed to help protect 24V DC control circuits. The option to add IO-Link communications can add extensive data and diagnostics on the status of your control circuits to enable early detection of developing faults. For example, 1694 electronic circuit protectors featuring IO-Link allow you to monitor current and voltage levels on any circuit protected by the system. You can trigger a threshold warning at any level you choose and reset a tripped module remotely through your control system.
Key Features	- Reliable performance in tough environmental conditions with IP66/67 ingress rating - Simplified selection thanks to a reduced number of components - Multi-function and multi-channel light modules and sounders minimize installation and set-up time - Internal DIP switches to select module output or function - Multiple audible options to complement the visual indication - Available as separate components or as pre-configured, factory-assembled stack lights for optimal flexibility - Control up to seven circuits in the stack light - Performs Discrete Control of 856T light and sound modules - IO-Link adapter compatible with all 856T base mounting adapters	- A modular system—configure protection to match your application needs - Power feed modules - Take power in (up to 40 A) from the 24V DC power supply and distribute it to attached protection modules - Left-feed (standard)/ center- and right-feed option - Protection modules 1 channel or 2 channels in the same compact 12.5 mm (0.49 in.) width housing - Current rating from 1 ...10 A fix current - Available in Class 2 (1A...4 A) - Distribution modules - Plus and GND distribution for connecting multiple loads per channel - Optional AUX contact for signaling any of the attached modules has tripped - Input feed from power supply, up to 40 A
More Information	For the most up-to-date information, visit: Visual Signaling Devices Allen-Bradley US	For the most up-to-date information, visit: Electronic Circuit Protection Modules Allen-Bradley US



Safety

			
	Guardmaster® 440C-CR30 Software Configurable Safety Relay	Guardmaster® Safety Relays	432ES GuardLink® EtherNet/IP™ On-Machine™ Interface
Overview	This is flexible, cost-effective and easy to use. This relay is ideal for applications requiring as many as 10 dual-channel safety circuits and controlling as many as 5 output zones. You can configure this relay by selecting certified safety function blocks to rapidly build your applications. This relay is integrated with Logix controllers and can be configured using the Studio 5000 Logix Designer® application.	Monitor a broad range of safety devices in a variety of applications. These single-function relays can achieve most of the functions safety systems require to help simplify purchasing and parts management. These relays offer key functions to simplify installation and system complexity. In addition, information gathered from the GSR intelligent safety relays via the optional EtherNet/IP™ Interface help minimize unplanned downtime and increase efficiencies.	The GuardLink® EtherNet/IP™ module monitors 3 independent GuardLink channels and communicates the status of those channels to a safety-rated controller over a CIP Safety™ EtherNet/IP™ network. This interface integrates with Allen-Bradley® GuardLogix® controllers and can be configured using Studio 5000 Logix Designer® software.
Key Features	• Suitable for applications up to PLe, Cat. 4 and SIL CL3 • Offers 22-point embedded safety I/O • Supports as many as 2 Micro800 plug-in modules • Includes 2 single-wire safety input/output points for interlocking between Guardmaster® safety relays • Can communicate diagnostic data to a Logix controller with optional Ethernet communications module	• Offers a broad range of safety functions • Provides versatility through simple logic, reset and timing configurations • Includes single-wire safety relay connection, which allows for ease of installation and system flexibility • Terminals are grouped together by power inputs and outputs for clear connection • Offers compact solution, which saves energy and space on DIN rail • Provides consistent terminal layouts and configuration, which allows simplified installation	• Communicates CIP Safety™ over EtherNet/IP™ • Conforms to ODVA CIP Safety™, CIP Sync™ and CIP Security™ • Provides automatic diagnostics with PanelView™ 5000 and FactoryTalk® View Site Edition • Includes up to 3 independent channels • Monitors up to 32 devices per channel • Controls 1, 2 or 3 machine zones • Mounts On-Machine (IP66, IP67, and IP69K) • Applications up to PLe, Cat 4
Options	2080-IQ40B4 • 8-point combo: 4-point digital input, 12/24V DC, sink/source, Type3 and 4-point digital output, 12/24V DC, source 2080-IQ4 • 4-point digital input, 12/24V DC, sink/source, Type3 2080-OB4 • 4-point digital output, 12/24V DC, source 2080-OW4I • 4-point relay output, individually isolated, 2A 2080-MEMBAK-RTC • Project backup and restore module 440C-ENET • Ethernet plug-in module, slot 1 only	Guardmaster® DI/DIS • Consolidates functionality of two safety relays into a single electromechanical relay (DI) or solid-state (DIS) outputs Guardmaster® SI/CI • Ideal for safety functions using 1 dual- or single-channel safety device - ideally suited for global E-stop function in combination with another GSR relay Guardmaster® EM/EMD • Easily add 4 N.C. instantaneous (EM) or delayed (EMD) outputs to a system Guardmaster® GLT/GLP • Developed for applications requiring access control monitoring the stop time, standstill or safely limited speed to unlock guards when equipment reaches a safe condition Guardmaster® DG Dual GuardLink® Safety Relay • Multi-functional safety relay, which provides up to 20 configurable safety functions with an optional time delay of the relay outputs	N/A
Communications	• Provides embedded communication via USB programming port and non-isolated serial port for RS-232 communications • Offers optional Ethernet plug-in module	Optional Guardmaster® EtherNet/IP™ Network Interface	CIP Safety™ EtherNet/IP™
More Information	For the most up-to-date information, visit Safety Relays Allen-Bradley US		



					
	Stratix® 2100 Unmanaged Switch	Stratix® 2500 Lightly Managed Switch	Stratix® 5200 Fully Managed Switch	Stratix® 5800 High Performance Managed Switch	Stratix® 5410 High-Performance Distribution Switch
Overview	The Stratix® 2100 unmanaged switches offer a compact solution for small applications that require reliable network connectivity and EtherNet/IP™ network prioritization	This family of switches enables network connectivity in applications where traditional unmanaged switches lack the ability to provide diagnostics and security.	These switches are optimized for integration with Studio 5000 Automation Engineering & Design Environment® software, which simplifies configuration and monitoring.	Modular managed switches allow for maximum flexibility to adjust / expand port count to meet future needs. In addition, this flexibility allows support of various combinations of copper, fiber and Power over Ethernet ports. - Both Fixed (non-expandable) and Modular (expandable) models. - Offered with Advanced features	Distribution switches that offer a 19" rack mount design and increased port density, with capabilities for networks where high performance is critical.
Key Features	- Supports Layer 2switching - Quality of Service (QoS) - Broadcast Storm Protection - Energy-Efficient Ethernet (EEE) - Conformal Coating* - Compact design for maximized space *Select Catalog Numbers	- Supports Layer 2switching - QoS - Storm Control - Spanning Tree (Network Loop Prevention) - EtherChannel - VLANs	- Supports Layer 2 switching - WebUI for user configuration - Conformal Coating* - PTP (CIP Sync)* - DLR (1 or 2 Rings)* - NAT* - Additional switching and security features to meet a wide range of application needs *Select Catalog Numbers	- Supports Layer 2switching and Layer 3 routing - WebUI for user configuration - All Gb platform - DLR (3Rings)* - NAT* - Additional switching and security features to meet a wide range of application needs Select Catalog Numbers	- Layer 2 switching and layer 3 routing options - Horizontal stacking for higher port density - Supports multiple high-performance network resiliency protocols - Available with conformal coating to help protect in harsh environments
Ports	Various combinations of copper and fiber solutions from 5 to 18 ports	5 and 8-port versions	6, 10 and 20-port versions - Features all gigabit port options	10 port all gigabit base unit - Expandable up to 26 ports - Expansion modules include up to 16-gigabit copper, 16-gigabit Power over Ethernet, up to 8-gigabit SFP slots	28 total ports 16 SFP slots 12 Power over Ethernet ports - All support 1 Gb, up to four SFP slots support 10 Gb
Temperature Range	-40...+75 °C (-40...+167 °F)	-20...+65 °C (-4...+149 °F)	-40...+60 °C (-40...+140 °F)	-40...+60 °C (-40...+140 °F)	-40...+60 °C (-40...+140 °F)
Security Features		- Port control in Logix - IEEE 802.1x Security - Centralized Authentication Capable (RADIUS, TACACS+) - MAC ID port security - Encrypted Administrative Traffic 62443-4-2 Certification	- Port control in Logix - IEEE 802.1x Security - Centralized Authentication Capable (RADIUS, TACACS+) - MAC ID port security - Encrypted Administrative Traffic 62443-4-2 Certification - Access Control List (ACL)	- Port control in Logix - IEEE 802.1x Security - Centralized Authentication Capable (RADIUS, TACACS+) - MAC ID port security - Encrypted Administrative Traffic 62443-4-2 Certification - Access Control List (ACL) - Cyber Vision Support as an Advanced feature	- Port control in Logix - IEEE 802.1x Security - Centralized Authentication Capable (RADIUS, TACACS+) - MAC ID port security - Encrypted Administrative Traffic 62443-4-2 Certification - Access Control List (ACL)
Logix Integration		- Premier integration to Integrated Architecture® including: - Studio 5000® Add-on Profile for configuration and monitoring - Predefined Logix tags for monitoring and port control - FactoryTalk® View Faceplates for status monitoring and alarming	- Premier integration to Integrated Architecture® including: - Studio 5000® Add-on Profile for configuration and monitoring - Predefined Logix tags for monitoring and port control - FactoryTalk® View Faceplates for status monitoring and alarming	- Premier integration to Integrated Architecture® including: - Studio 5000® Add-on Profile for configuration and monitoring - Predefined Logix tags for monitoring and port control - FactoryTalk® View Faceplates for status monitoring and alarming	- Premier integration to Integrated Architecture® including: - Studio 5000® Add-on Profile for configuration and monitoring - Predefined Logix tags for monitoring and port control - FactoryTalk® View Faceplates for status monitoring and alarming
Operating System	Not applicable	Yes (Cisco IE (Not IOS or IOS-XE))	Yes (Cisco IOS-XE)	Yes (Cisco IOS-XE)	Yes (Cisco IOS)
Onboard backup/restore	Configuration supported through DIP Switch settings	Internal Flash	Internal Flash and/or SD card are sold as an option	Internal Flash and/or SD card are sold as an option	Internal Flash and/or SD card, included with purchase
More Information	For the most up-to-date information on our full range of industrial switches, visit: https://ab.rockwellautomation.com/Networks-and-Communications/Ethernet-IP-Network				



EtherNet/IP™ Modules	1756-EN2T	1756-EN3Tx	1756-EN4Tx
Overview	Our ControlLogix® system uses connections to establish communication links between devices. The 1756 Chassis-based communication modules help make those connections and implement network-based access control for devices and networks in the 1756 chassis. We offer a variety of modules that support the EtherNet/IP™ network.		
Key Features	• Provides real-time I/O messaging and message exchange • Uses off-the-shelf Ethernet communication chips and physical media • Supports 128 or 256 Logix connections • Offers embedded switch technology capabilities • Supports extreme environments via ControlLogix-XT™ communication modules • Offers secure connectivity from the control system to upper-level systems, programming terminals, and other ControlLogix® controllers using the secure communications module • Provides Device Level Ring (DLR) connectivity to allow devices to form a ring topology to provide resiliency • Offers Parallel Redundancy Protocol (PRP) support for a completely redundant network infrastructure		
Performance Features	• EN2Tx: 2 (RJ45 copper) for communication port with one mini-USB front port for configuration • 10/100 Mbps data communication speeds • Supports up to eight axes of Integrated Motion • EN3Tx: 2 (RJ45 copper) for communication port with one mini-USB front port for configuration • 10/100 Mbps data communication speeds • Supports up to 128 axes of Integrated Motion • EN4T: Provides 2 (RJ45 copper) for communication port with one mini-USB front port for configuration • 10/100/1000 Mbps data communication speeds • Supports up to 256 axes of Integrated Motion		
Temperature Range	-40...+75 °C (-40...+167 °F)		
Security Features	• Offers CIP Security protocol via EN4TR and EN4TRXT communication modules • Port control in Logix • Encrypted Administrative Traffic		
Logix Integration	• Premier integration to Integrated Architecture® including: • Studio 5000® Add-on Profile for configuration and monitoring • FactoryTalk® View Faceplates for DLR status		
More Information	For the most up-to-date information, visit: Chassis-based Communication Modules Allen-Bradley US		



	Stratix® 4300 Remote Access™ Router	Stratix® 4100 EtherNet/IP™ Tap (ETAP)	NAT Router
Overview	The Stratix® 4300 Remote Access™ Router can be integrated into any existing automation network without impacting the hardware devices installed in the plant.	The Stratix® 4100 EtherNet/IP™ Tap (ETAP) connects devices that do not support embedded switch technology to a linear or DLR network. The Stratix® 4100 ETAP offers single mode operation, with a variety of SFP options to meet customers' individual needs	The 1783-NATR is a network device with Embedded Switch Technology capable of doing Network Address Translation (NAT) for applications using Device Level Ring (DLR) or linear topologies. The 1783-NATR device can be used to connect a small private network (for example, a machine network) to a larger plant-wide network without changing IP addresses on the private network.
Key Features	- Dedicated hardware as a closed secure system for FactoryTalk® Remote Access™ - Quick and easy installation to existing remote networks where a runtime cannot be installed and/or a physical separation between the automation subnet (LAN) and the enterprise network (WAN) is required - Routing and NAT (1-to-many and 1:1) functionality - One-gigabit Ethernet WAN port for internet connection - One or four-gigabit Ethernet LAN ports for local area network connection - One USB 2.0 port - One isolated DB9 serial interface - Two digital inputs for enabling remote access, and two relay outputs for WAN connection activation and "remote service in progress" signaling. - Wireless configurations with - Wi-Fi Only - Cellular LTE only - Wi-Fi and Cellular LTE Combined - DIN rail mountable - Configuration through web-based system manager	- Three physical ports, capable of 10/100/1000 Mbps speeds with support for auto-MDIX on copper - Two SFP ports, capable of 100/1000 Mbps speeds with support for auto-MDIX on fiber - SFP options allow you to choose from a variety of either multimode fiber or single mode fiber offerings - DIN rail mountable - DIP switch for DLR Ring Supervisor configuration - Standard ODVA Ethernet device Status Indicator LEDs - Rotary dial physical interface allows for easy IP address changes, speeding configuration	- Three physical ports, capable of 10/100/1000 Mbps speeds with support for auto-MDIX on copper - Two SFP ports, capable of 100/1000 Mbps speeds with support for auto-MDIX on fiber - DIN rail mountable - DIP switch for DLR Ring Supervisor configuration - Standard ODVA Ethernet device Status Indicator LEDs
Temperature Range	-20...+65 °C (-4...+149 °F)	-25...+70 °C (-13...+158 °F)	-25...+70 °C (-13...+158 °F)
More Information	Routers Stratix® 4300	Not available yet (1/27/25)	Network Address Translation (NAT-R)



	CIP Security™ Proxy
Overview	Device security is an important component of the defense in depth strategy. Securing communications by leveraging CIP Security between devices adds another barrier to overcome for anyone with harmful intentions. By physically co-locating the CIP Security™ Proxy with a non-CIP Security capable device, CIP Security can be further extended across the plant floor. The CIP Security Proxy provides a path forward to enable secure communications to non-CIP Security capable products, facilitating modernization efforts.
Key Features	• Configured by FactoryTalk® Policy Manager software • Ability to be part of a DLR ring • Includes rotary switches for 192.168.1.xyz IP addressing • Supports DIN rail mounting • Supports motion for Kinetix® drives
Ports	Includes 3 EtherNet/IP™ ports: • Two 10M/100M/1G ports on the network side • One 10M/100M/1G port on the device side
Temperature Range	-25...+70 °C (-13...+158 °F)
Security Features	• Provides CIP Security for a single device that does not natively support CIP Security • Allows secure event generation syslog support showing security incidents
More Information	For the most up-to-date information, visit: https://www.rockwellautomation.com/en-us/products/hardware/allen-bradley/network-security-and-infrastructure/ethernet-networks/1783-cip-security-proxy.html



	PanelView™ Plus 7 Graphic Terminals		PanelView™ 5000 Graphic Terminals	
Overview	Available in Standard and Performance versions with display sizes from 4...19 in. with widescreen options. Use FactoryTalk® View Machine Edition to build your application and help simplify configuration and strengthen your Integrated Architecture® solution. Allows monitoring of applications from a remote location with VNC connectivity and FactoryTalk® ViewPoint.		With an intuitive, modern design, the PanelView™ 5000 Family provides enhanced Logix integration using Studio 5000 View Designer® software. This integration allows engineers to enter configuration information once and use it for the entire automation design.	
Key Features	Standard version - Ideal for small and mid-size machine applications requiring basic features - Connectivity to one controller and up to 50 screens (25 on top, 25 replace) and 500 alarm messages - Single, embedded Ethernet port for network connectivity - ATEX Zone 2/22 certification - Optional Device Level Ring (DLR)	Performance models - Designed for all applications, ranging from small to large, complex machines - High-performing processors and embedded Ethernet ports that support Device Level Ring, linear or star network topologies - Video playback support for advanced user help - View maintenance manuals and other documents directly on terminal - Stainless-steel bezel options available - Conformal coating available for 9" and 12" DC touch-only displays	PanelView™ 5310 - Ideal for small and mid-size machine applications requiring basic features - Modern design with display sizes from 6-12 in. with widescreen options 1 controller, 100 screens and 4000 alarms	PanelView™ 5510 - Designed for all applications, ranging from small to large, complex machines - Modern design with display sizes from 7-19 in. with widescreen, touch and keypad options 4 controllers, 500 screens, 4000 alarms per controller - HTML5-compatible web browser - Physical navigation button to display the navigation menu 2 Ethernet ports to support Device Level Ring (DLR) network topologies - Available with analog resistive or Projected Capacitive (PCAP) touch screens
			- Logix-based alarms to eliminate need for additional configuration - High-speed HMI button provides <100 ms response for jogging applications - Navigation button displays alarms, diagnostic and setting information - Ability to automatically share tags, alarms and other data using Studio 5000 View Designer®	
Display Options and Viewing Area Dimensions	4 in. (95 x 54 mm) to 15 in. display (304 x 228 mm) available *Select displays available in widescreen versions	7 in. (132 x 99 mm) to 19 in. display (376 x 301 mm) available *Select displays available in widescreen versions	6 in. wide (115 x 86 mm) to 12 in. wide display (261 x 163 mm) available *Select displays available in widescreen versions	Analog Resistive: 7 in. (132 x 99 mm) to 19 in. display (376 x 301 mm) available *Select displays available in widescreen versions Projected Capacitive: 7 in. (207 x 151 mm) to 21.5 in. (534 x 325 mm) all widescreen
Display Type	Color TFT LCD, 18-bit color graphics		Color TFT LCD, 24-bit color graphics (16.7 Million colors), light-emitting diode backlight	
Internal Storage	512 MB storage		500 MB internal storage	
Input Power Options	DC (18...30V DC)	DC (18...30V DC) and AC (100...240V AC)	24V DC nom (18...30V DC)	
Communications	1 10/100Base-T, Auto MDI/ MDIX Ethernet port with IEEE1588 support 2 10/100Base-T, Auto MDI/ MDIX Ethernet ports supporting star, linear, or DLR network topology	2 10/100Base-T, Auto MDI/ MDIX Ethernet ports that support DLR (Device Level Ring), linear, or star network topologies 2 USB-A and 1 USB-B (v2.0 high speed)	1 10/100Base-T, Auto MDI/ MDIX Ethernet port with IEEE1588 support	2 10/100 Base-T, Auto MDI/ MDIX Ethernet ports that support (Device Level Ring) DLR, linear or star network topologies
Environmental	NEMA 12, 13, 4X, IP54, IP66 0...55 °C (32...131 °F)		NEMA and UL Type 12, 13, 4X, also rated IP65 as Classified by UL 0...50 °C (32...122 °F)	
More Information	For the most up-to-date information on our full range of operator interfaces, visit: Graphic Terminals Allen-Bradley US			



	OptixPanel™ Graphic Terminals	
Overview	OptixPanel™ graphic terminals give you a PC-like user experience in a sealed HMI appliance. There is no operating system to secure, and smaller applications can benefit from the excellent price-performance ratio. These graphic terminals are also available in a wide range of screen sizes, bezel options, aspect ratios and touch screen technologies that support gestures, such as swipe and pinch, for easier integration on your factory floor.	
Key Features	OptixPanel™ Compact Graphic Terminal - Includes various bezel options and touch screen technologies - Aluminum widescreen with single-touch analog resistive screen - Aluminum and glass widescreen with PCAP multitouch screen that supports gestures (swipe, pinch and so on) - Includes FactoryTalk® Optix™ Runtime Small license (8 feature tokens), upgradable to Medium (11 feature tokens) - Includes FactoryTalk® Remote Access™ Runtime Basic license, upgradable to Pro license	OptixPanel™ Standard Graphic Terminal - Includes various bezel options, aspect ratios and touch screen technologies - Aluminum widescreen or 4:3 with single-touch analog resistive screen - Aluminum True Flat 4:3 with single-touch analog resistive screen - Stainless-steel IP69K widescreen with single-touch analog resistive screen - Aluminum and glass widescreen with PCAP multitouch screen that supports gestures (swipe, pinch and so on) - Includes FactoryTalk® Optix™ Runtime Medium license (11 feature tokens), upgradable to Large (15 feature tokens) - Includes FactoryTalk® Remote Access™ Runtime Pro license
Display Options and Viewing Area Dimensions	Available in 4" and 7" screen sizes making some applications easier *Select displays available in widescreen versions	Available from 7" to 21.5" screen size *Select displays available in widescreen versions
Display Type	LED Backlight TFT LCD	
Internal Storage	~2 Gb eMMC TLC	~12 Gb eMMC TLC
Input Power Options	24V DC (9 ÷ 32V DC) isolated	
Communications	1 USB 2.0 port 1 Gigabit Ethernet port 1 DB9 serial port (RS232/422/485) non-isolated	2 USB 3.0 ports 2 Gigabit Ethernet ports - Ability to operate independently on two networks - Ability to enable FactoryTalk® Remote Access™ connectivity to devices on the local subnetwork 1 DB9 serial port (RS232/422/485) isolated
Environmental	Storage temperature: -20...+60 °C (-4...+140 °F) Operating temperature: 0...50 °C (-32...+122 °F)	
More Information	For the most up-to-date information on our full range of operator interfaces, visit: Graphic Terminals Allen-Bradley US	



	MobileView™ Tethered Operator Terminal	PanelView™ 800 Graphic Terminals
Overview	Mobile graphic terminals help increase operator productivity and provide a safe production environment. This mobile operator interface runs the Windows-Embedded Standard 7 operating system but allows reuse of FactoryTalk® View ME and FactoryTalk® View Studio applications to help reduce development costs.	These graphic terminals are packed with high-speed processors, high-resolution displays with light-emitting diode backlight, internal memory and remote monitoring features for enhanced productivity and maintenance. They offer flexible solutions for small and mid-size applications with the capability to connect to micro and small controllers.
Key Features	- Offered in 5, 10, 15 m (16.41, 32.81, 49.21 ft) cables with QuickConnect and mounting bracket options - Software assignable function keys with either a hardwired momentary push button or keyswitch - Features 3-position enabling switch 10 in. wide display (1280 x 800) with resistive touch screen for easy viewing - Internal SD card for application and data log storage - Provides mobility without generating unintended E-stops - Offers cost-effective thin client mobile terminal - Second-generation MobileView™ terminal offers all the mobility features of the first-generation product with the addition of an illuminated E-stop, ability to work with the IP65 junction box and the option to be used as a thin client - IP65 junction box works with the second-generation MobileView™ terminal to provide an On-Machine™ visualization solution - E-stop bridging allows the MobileView™ terminal to be unplugged from the IP65 junction box - Box ID feature provides location awareness, which allows the MobileView™ terminal to know where on the manufacturing line it's located	- High-resolution display with LED backlights supporting 65K colors - Monitor and configure terminals remotely via Virtual Network Computing (VNC) servers - High-performance 800 MHz CPU processor with 256 MB memory - USB host port and microSD™ support file transfer or updating firmware - Alerts operators with alarm messages that include embedded variables - Supports Micro800™ direct tag referencing and pass-through download - Offers the ability to trace and locate tags in the application using the cross-reference Browser - Provides stored Alarm History Size of up to 500 records - Ability to upload and download groups of data or parameter settings with recipe capabilities - Provides optimization for compatibility with Micro800™ controllers, including the new Micro850® and Micro870® controller catalogs 2080-Lx0E* - Connects to CompactLogix™ 5370 L1, L2, L3 and CompactLogix® and Compact GuardLogix® 5380 L306x controllers for mid-size applications - Send email notification over encryption - Remotely access data log, alarm history and recipe using FTP - Offers flexible application modes in landscape and portrait
Display Options and Viewing Area Dimensions	- Screen size: 10.1" - Diameter of product: 349 mm (13.74 in.) - Depth w/o handle: 70 mm (2.75 in.) - Depth with handle: 110 mm (4.33 in.)	4 in. (95 x 53.9 mm) 7 in. (153.6 x 86.6 mm) 10 in. (211.2 x 158.4 mm)
Display Type	Color/resolution: WXGA/1280 x 800 pixels, resistive touch screen	TFT touch screen, wide LCD
Internal Storage	4 Gb DRAM / 32 Gb Flash / 2 Gb SD Card	256 MB
Input Power Options	24V DC	24V DC
Communications	10/100 Ethernet	1 Ethernet 10/100 Mbps - Separate RS-232 and RS422/RS485 connectors
Environmental	IP65; 0...45 °C (32...113 °F)	IP65, NEMA 4X, 12, 13
More Information	For the most up-to-date information, visit: MobileView Tethered Operator Terminals Allen-Bradley US	For the most up-to-date information on our full range of operator interfaces, visit: Graphic Terminals Allen-Bradley US

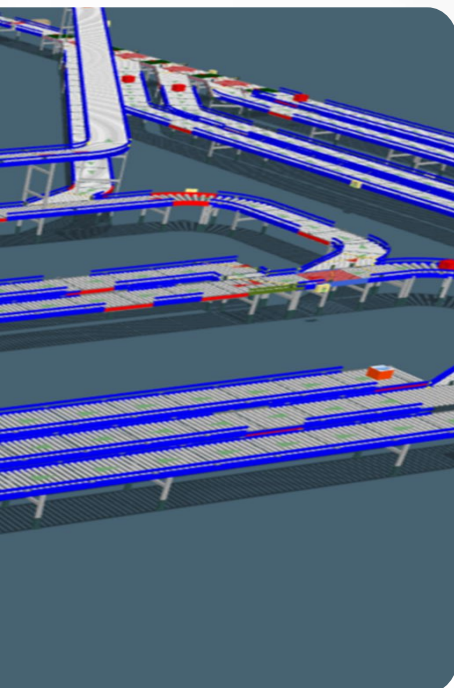


	6181X Extreme Environment Computers	ASEM™ 6300 Industrial PCs, Thin Clients and Monitors	Embedded Edge Compute Module
Overview	Extreme Environment Computers combine Hazardous Location certifications along with the capacity to withstand more extreme temperatures than any other offering on the market. These are geared toward industries such as oil and gas, chemicals and mining that involve potentially explosive materials in locations where hardware often takes a beating.	Our ASEM™ line of industrial PCs, thin clients and monitors are designed to help you optimize your operation. Our industrial ASEM™ 6300 PCs and thin clients combine with FactoryTalk® View human machine interface (HMI) software and ThinManager® thin client management software to create a complete visualization system.	See Compute Modules .
Key Features	6181X Hazardous Location Integrated Display Computers 12.1 in. TFT color display offers resistive touch and readability in sunlight 6181X Hazardous Location Non-display Computers - Wall-mountable - Combines with DC-powered ASEM™ 6300M Industrial Monitor to form a Class I Division 2 certified system	ASEM™ 6300B Box PCs are available in various form factors and processors and may be paired with FactoryTalk® View SE or FactoryTalk® Optix™ software ASEM™ 6300P Panel PCs can handle complex industrial applications, come in various sizes and have touch screen technologies, enhancing ease of use ASEM™ 6300M Monitors are available with analog resistive or edge-to-edge, all glass, 4-point multitouch screen that can also be operated with gloves ASEM™ 6300MA On-Machine™ Industrial Monitors are fully self-enclosed, saving you time, cost and physical space - optional button area adds 22 mm pilot devices in a sleek, modern package ASEM™ 6300PA On-Machine™ Industrial PCs add a range of powerful CPU options that can run your FactoryTalk® View or FactoryTalk® Optix™ application or function as a thin client ASEM™ 6300T Box Thin Clients feature Intel Apollo Lake Atom Processors and a ThinManager-ready BIOS, making them ideal for human machine interface (HMI) applications	
Included Software	FactoryTalk® Remote Access™ Standard	ThinManager-ready IOS	
Standard & Environment	- Operates in -20...+70 °C (-4...+158 °F) temperature range without requiring a heater on the back side - Rated ATEX Zone 2/22, IECEx and UL Listed for Class I Div 2 hazardous locations	Varies depending on PC, thin client and monitor	
More Information	For the most up-to-date information, visit: Industrial Computers and Monitors Allen-Bradley US		For the most up-to-date information, visit: Embedded Edge Compute Module Allen-Bradley US

Software Portfolio



Rockwell Automation offers a complete suite of software tools to help deliver efficiency and value across your Integrated Architecture®.



Control Design

FactoryTalk® Design Studio™ Software

This is a cloud-based, software-defined industrial automation design environment that enables industrial automation system designers to improve their collaboration and productivity with a more simplified and streamlined way to work.

Studio 5000® Environment

The Studio 5000® environment combines elements of design into one standard framework that optimizes productivity and reduces time to commission. This intuitive integrated design environment focuses on rapid design, reuse, collaboration and virtual design. The updated user interface provides a common, modern user experience across all Studio 5000® applications.

Connected Components Workbench™ Software

Connected Components Workbench™ is the configuration, simulation, and programming and visualization software that simplifies standalone machine development with one software solution. It offers easy programming for Micro800™ controllers with the PanelView™ 800 HMI editor integration and PowerFlex® drives configuration.

Simulation and Emulation

Arena® Simulation software

Arena® is an easy-to-use, powerful tool that allows you to create and run experiments on models of your systems. By exploring what-if scenarios in a risk-free modeling environment, you can predict the future with confidence and without disrupting your current business environment.

Emulate3D™ Digital Twin Software

With Emulate3D™ digital twin software, users can identify potential control issues preemptively, saving valuable time and resources during implementation. Plant personnel receive additional support by having a virtual space to train on new systems, predict future performance and simulate line changes without real-world consequences. Emulate3D® digital twin software provides a comprehensive and dynamic approach to enhancing efficiency and precision in industrial operations.

FactoryTalk® Logix Echo Software

FactoryTalk® Logix Echo is the next-generation controller emulation software, enabling you to emulate the current and future generations of Logix controllers. The software streamlines the development process from initial concept to final deployment, for iterative testing and evaluation of controller code. The code transitions to the physical controllers with minimal to no modifications, reducing deployment time and errors.



Visualization

HMI

FactoryTalk® Optix™ Software

FactoryTalk® Optix™ is a visualization platform that accelerates value delivery with modern technologies, innovative designs and modular deployment options. The platform is designed to help improve your process, efficiency and deliverables – in one easy-to-access tool.

FactoryTalk® View Software

With FactoryTalk® View software, you can get a clear, consistent story from the standalone machine level HMI to distributed visualization solutions covering your entire enterprise. A single software package covers HMI challenges in process, batch and discrete application. Clear displays and a common programming language, including a huge library of faceplates, help confirm that you get the best possible perspectives of your machine performance.

FactoryTalk® Vault™ Software

FactoryTalk® Vault™ provides a secure, cloud-based central storage location for your teams. This scalable, easy-to-configure asset management system can be used for collaboration, backup and recovery, and version control of your automation projects.

FactoryTalk® Remote Access™ Solution

With our FactoryTalk® Remote Access™ solution, visibility doesn't have to be tethered to an operator terminal. Manage, configure and initiate secure connections to automation equipment remotely and discover a faster way to deliver great support from anywhere, expand your workforce and enable new opportunities for revenue generation.

ThinManager® Thin Client Management Software

Our ThinManager® thin client management software allows you to optimize your operations through secure centralized management of applications and visual sources. ThinManager® manages the configuration and control of your facility in a truly scalable and reliable modern solution.

Studio 5000 View Designer®

Studio 5000 View Designer® is the design environment for the PanelView™ 5000 family of operator terminals. The VIEW™ Designer application provides an intuitive, modern design environment and enhances integration between the control system and operator interface to improve programming efficiency and runtime performance.



Industrial Communications

Connectivity

FactoryTalk® Linx Software

FactoryTalk® Linx is designed to deliver control system information from Rockwell Automation® control hardware to the software portfolio. It is proven to be the most efficient communication service for FactoryTalk® software with capabilities for enhanced automation network visibility, communications and user productivity.

FactoryTalk® Remote Access™

Connect to automation equipment easily and securely with FactoryTalk® Remote Access™. With the FactoryTalk® Remote Access™ solution, you don't have to travel to manage, configure and initiate secure connections to automation equipment. Discover a faster way to deliver great support from anywhere, expand your workforce and enable new opportunities for revenue generation.

Data Acquisition

FactoryTalk® Linx Gateway Software

FactoryTalk® Linx Gateway provides the ability to access valuable plant floor data in third-party visualization and information software for the highest data visibility. It offers a performant way to integrate a Rockwell Automation system with third-party devices or servers for a more data-rich environment.

Secure Communications Management

FactoryTalk® Policy Manager Software

FactoryTalk® Policy Manager is designed to help protect the devices in a control system through security modeling and implementing CIP Security™ and OPC UA protocols. It centralizes management of device security to provide data authenticity, integrity and confidentiality across plant floor assets.



Data and Analytics

Machine Learning, Analytics and Data Management

FactoryTalk® Analytics Software

Collect your raw data and turn it into actionable information with our scalable analytics solutions. From an Industrial IoT sensor to machines—all the way through your enterprise—we can help you with the right application and remove barriers to success.

FactoryTalk® AssetCentre Software

FactoryTalk® AssetCentre is a centralized tool for securing, managing, versioning, tracking and reporting automation-related asset information across your entire facility. It can improve uptime, productivity, quality, employee safety or regulatory compliance.

FactoryTalk® DataMosaix™ Software

FactoryTalk® DataMosaix™ enables controlled access to relevant and contextualized data. It's an industrial DataOps solution that provides flexible and scalable tools to accelerate data usability by domain experts and analysts. FactoryTalk® DataMosaix™ is cloud-based for multi-site, plant-wide access for people and applications.

FactoryTalk® Historian Software

FactoryTalk® Historian captures the data that you need to improve operations. Powerful reporting and trending tools provide critical insight into performance parameters and are available at high speed, reliably from machine to enterprise.

FactoryTalk® Optix™ Software

Easily access your machine and equipment data on a visualization platform that accelerates value delivery with modern technologies, innovative designs and modular deployment options. The platform is designed to help improve your process, efficiency and deliverables – in one easy-to-access tool.

FactoryTalk® Transaction Manager Software

FactoryTalk® Transaction Manager (previously known as RSSql) is an industrial transaction software engine that shares data between your shop floor systems and your industrial applications (for example, corporate databases).

FactoryTalk® Analytics™ Pavilion8® Software

Pavilion8® can help you turn data into action. Pavilion8® is model predictive control software that provides tools to improve operational agility, allowing quick adaptation to changing business priorities and customer demands. The software includes modules to control, analyze, monitor, visualize, warehouse and integrate via its powerful modeling engine.

Production Management

FactoryTalk® PharmaSuite® Software

This is the leading MES solution developed specifically for the life sciences industry. It provides role-based optimization for each lifecycle stage and drives time to results for all users. Its open-content architecture, paired with an intelligent upgrade engine, provides a robust system for growth in both batch and discrete.

FactoryTalk® ProductionCentre® Software

FactoryTalk® ProductionCentre® is a comprehensive MES that integrates quality management and business analytics with paperless shop floor and repair execution. This improves operational efficiencies and helps you achieve and demonstrate regulatory compliance and high quality.

Process

PlantPAx® System

PlantPAx® is the modern, world-class distributed control system (DCS) from Rockwell Automation®, designed to keep your process manufacturing running smoothly. Built on a scalable architecture, it enables plant-wide control and premier integration with the Rockwell Automation intelligent motor control portfolio.

FactoryTalk® Batch Software

FactoryTalk® Batch offers consistent, predictable, batch processing and supports reuse of code, recipes, phases and logic. It combines the ISA S88 standard with proven technology, providing the flexibility to go to market faster.

FactoryTalk® Analytics™ Pavilion8® Software

Optimize your process manufacturing with model predictive control software that provides tools to improve operational agility, allowing quick adaptation to changing business priorities and customer demands. The software includes modules to control, analyze, monitor, visualize, warehouse and integrate via its powerful modeling engine.



Control Design

			
	FactoryTalk® Design Studio™ Software	Studio 5000® Environment	Connected Components Workbench™ Software
Overview	A cloud-based, software-defined industrial automation design environment that enables industrial automation system designers to improve their collaboration and productivity with a more simplified and streamlined way to work.	The Studio 5000® environment combines elements of design into one standard framework that optimizes productivity and reduces time to commission. This intuitive integrated design environment focuses on rapid design, reuse, collaboration and virtual design. The updated user interface provides a common, modern user experience across all Studio 5000® applications.	Connected Components Workbench™ is programming and visualization software that simplifies standalone machine development with one software solution. It offers easy programming for Micro800™ controllers with the PanelView™ 800 HMI editor integration and PowerFlex® drives configuration.
Key Features	Modern: Development functionality that enables you to build and deploy projects faster - Integrated AI-powered design for code generation, product guidance, code explanation, code documentation, and help with troubleshooting - Develop and maintain projects more easily with object-oriented programming - Increase code standardization and reduce repetitive steps with integrated library tools - Always-available, browser-based access to the most up-to-date software Multi-user: Collaboration tools that support scalable teams and varying skill sets - Integrated Version Control System (VCS) powered by Git workflows enables multi-user collaboration and synchronization - Built-in project tracking enables users to monitor both local and remote project changes - Automatically merge local project changes with remote changes from other users - Power-user development with text-based project structure that automatically renders graphically Multi-controller: Support for all devices with context across the entire system - Streamline development by configuring and managing all system controllers and devices in one development space - Design intuitive projects by building your system based on what it needs to do, then allocating code to controllers based on application needs	Studio 5000 Architect® exchanges data with other Studio 5000® applications and third-party CAD packages to simplify the development experience Studio 5000 Logix Designer® provides a single, scalable, multi-discipline design environment for Logix controllers Studio 5000® Application Code Manager enables more efficient project development with bulk configuration of highly reusable libraries of code Studio 5000 View Designer® is the design environment for the PanelView™ 5000 family of operator terminals, and works in tandem with Studio 5000 Logix Designer® to simplify HMI deployment Studio 5000® Logix Emulate™ allows you to validate, test and optimize application code independent of hardware Studio 5000® Simulation Interface™ connects controllers—physical or emulated—to simulation and modeling tools to enable virtual commissioning and model-based design	- Optimize for compatibility with Micro850® and Micro870® 2080-Lx0E controllers, providing improved performance and expanded capabilities - Ease programming with simplified configuration screens to support additional drives and generic profile devices - Boost system performance and reliability through enhanced Ethernet diagnostics - Enable a streamlined integration with direct access to pre-defined tags for PowerFlex® 520 series and Kinetix® 5100 drives over EtherNet/IP - Save design time through faster data transfer rate with upload and download performance improvements by 23% and 40% respectively - Enhance system security with the password set/verify and user project encryption/decryption in the memory module - Shorten Micro800™ controller programming time by entering and modifying ladder rungs quickly using similar workflows as RSLogix 500® software and Studio 5000 Logix Designer® application - Design with ease in your preferred environment by switching between default IEC and Logix Themes - Use a familiar experience with Controller Organizer view through the Logix Theme - Elevate efficiency with the global and local variable data grid - Share code via user-defined functions (UDFs), user-defined function blocks (UDFBs) and copy/paste feature - Reduce engineering time with evaluating, training and debugging application code in a controlled environment using the Micro800™ Simulator - Gain insights by capturing, viewing and analyzing real-time data with PowerFlex® drives and Micro800™ trending - Shorten design time with the enhanced runtime performance and Run Mode Change (RMC) capabilities - Enrich user experience with the intuitive Find feature and easy-to-use Instruction Toolbar - Improve usability with enhanced object animation with PanelView™ 800 DesignStation
More Information	For the most up-to-date information, visit: FactoryTalk® Design Studio™ FactoryTalk® US	For the most up-to-date information, visit: Studio 5000® Design Software FactoryTalk® US	For the most up-to-date information, visit: Design and Configuration Software Rockwell Automation US



HMI Design



	FactoryTalk® View Software	FactoryTalk® Optix™ Software
Overview	With FactoryTalk® View software, you can get a clear, consistent story from the standalone machine level HMI to distributed visualization solutions covering your entire enterprise. A single software package covers HMI challenges in process, batch and discrete application. Clear displays and a common programming language, including a huge library of faceplates, help confirm that you get the best possible perspectives of your machine performance.	FactoryTalk® Optix™ is a visualization platform that accelerates value delivery with modern technologies, innovative designs and modular deployment options. The platform is designed to help improve your process, efficiency, and deliverables – in one easy-to-access tool.
Key Features	General - No need to create and maintain a separate HMI tag database – define tags once in the Logix controller, then access them throughout your system - Save design and troubleshooting time with rich, reusable graphics and animation capabilities, global objects and a library of faceplates that show status and diagnostic information - Extend your applications to your favorite iOS or Android mobile device for improved real-time decision-making - Publish HMI displays as-is or create mobile device-specific screens with FactoryTalk® ViewPoint for better visibility on a smaller screen Site Edition (SE) - Subscribe to Logix controller-based alarms to display, annunciate and manage them in the HMI - Logix extended tag properties with translated text reside in the controller and can be accessed by the HMI, reducing duplication errors and streamlining project design - Integration with ThinManager® software enables a single sign in for operators - Application edits can be automatically rolled out to a running system - View and interact with alarm conditions throughout the architecture with easy-to-use graphical alarm objects Machine Edition (SE) - Premier integration with Logix controllers - Language switching happens in the controller with no import/export necessary - Save commissioning time by emulating the application on the design workstation - Design-time language switching delivers the ability to configure multiple languages that easily switch at runtime - Build solutions that enable an application to meet validation requirements by using secured change control and an operator audit trail - Operating systems include Microsoft® Windows 10, Windows 8, Windows 7 and more - Supports PanelView™ Plus 6, PanelView™ Plus 7, MobileView™ and ME Station running on an industrial computer - Legacy products can be easily upgraded to the latest FactoryTalk® View ME version	- Design and test HMI projects directly from a web browser via the cloud, or use desktop-installable design software - Build and modify projects dynamically at runtime - Modify applications from anywhere, anytime, with an integrated cloud-based code repository and version management to track changes and know who did what and when - Use wizard-based workflows for managing users and groups, communications drivers, data logging and recipes - Start projects easily with modern templates for navigation, sign in, alarms and notifications - Build projects by using pre-built libraries and a comprehensive set of graphical objects - Create, save and reuse single objects or complete projects in user-defined libraries, with the flexibility to store your libraries locally or in a cloud storage Compatible Rockwell Automation devices: - OptixPanel™ Standard operator panel - OptixPanel™ Compact operator panel - Embedded Edge Compute module - ASEM™ 6300 industrial computers
More Information	For the most up-to-date information, visit: FactoryTalk View-HMI Software FactoryTalk US	For the most up-to-date information, visit: FactoryTalk Optix FactoryTalk US



			
	Arena® Simulation Software	Emulate3D™ Digital Twin Software	FactoryTalk® Logix Echo Software
Overview	Arena® is an easy-to-use, powerful tool that allows you to create and run experiments on models of your systems. By exploring what-if scenarios in a risk-free modeling environment, you can predict the future with confidence and without disrupting your current business environment.	With Emulate3D™ digital twin software, users can identify potential control issues preemptively, saving valuable time and resources during implementation. Plant personnel receive additional support by having a virtual space to train on new systems, predict future performance and simulate line changes without real-world consequences. Emulate3D™ digital twin software provides a comprehensive and dynamic approach to enhancing efficiency and precision in industrial operations.	FactoryTalk® Logix Echo is the next-generation controller emulation software, enabling you to emulate the current and future generations of Logix controllers. The software streamlines the development process from initial concept to final deployment, for iterative testing and evaluation of controller code. The code transitions to the physical controllers with minimal to no modifications, reducing deployment time and errors
Key Features	- Flowchart modeling methodology includes a large library of pre-defined building blocks to model your process without the need for custom programming - Complete range of statistical distribution options to accurately model process variability - Ability to define object paths and routes for simulation - Statistical analysis and report generation - Performance metrics and dashboards - Realistic 2D and 3D animation capabilities to visualize results beyond numbers	- Reimagine the design process by using virtual design and prototyping - Establish early connections between your machinery and control systems, helping to resolve operational and sequencing issues before on-site deployment - Connect natively to a wide range of PLCs and support a wide range of robots - Improve production by employing faster-than-real-time 3D simulation to help you identify optimal design layouts and configurations - Import existing 3D mechanical CAD models of machines and equipment, with support for a wide range of CAD formats - Benefit from premium integration for PTC® Creo Parametric, Solidworks and Autodesk Inventor with a specific Emulate3D® plug-in	- Emulate multiple controllers in multiple chassis to match the physical system implementation - Download directly to the virtual controller without any code changes for accurate emulation - Reduce overall risk by evaluating multiple versions of firmware for performance and compatibility before implementing into a production system - Create and restore snapshots at known controller states for quick and accurate testing/training with real data, in a controlled environment - Connect to digital twin software or Operator Training Simulators to add controller data to the models
More Information	For the most up-to-date information, visit: Arena Simulation Software Arena Simulation Software US	For the most up-to-date information, visit: Emulate3D Digital Twin Software FactoryTalk US	For the most up-to-date information, visit: FactoryTalk Logix Echo Software FactoryTalk US



HMI

			
	FactoryTalk® Optix™ Software	FactoryTalk® View Software	FactoryTalk® Vault™ Software
Overview	FactoryTalk® Optix™ is a visualization platform that accelerates value delivery with modern technologies, innovative designs and modular deployment options. The platform is designed to help improve your process, efficiency and deliverables – in one easy-to-access tool.	With FactoryTalk® View software, you can get a clear, consistent story from the standalone machine level HMI to distributed visualization solutions covering your entire enterprise. A single software package covers HMI challenges in process, batch and discrete application. Clear displays and a common programming language, including a huge library of faceplates, help confirm that you get the best possible perspectives of your machine performance.	FactoryTalk® Vault™ provides a secure, cloud-based central file storage location. This scalable, easy-to-configure asset management system can be used for collaboration, backup and recovery, and version control of your automation projects.
Key Features	- Design and test HMI projects directly from a web browser via the cloud, or use desktop-installable design software - Build and modify projects dynamically at runtime - Modify applications from anywhere, anytime, with an integrated, cloud-based code repository and version management to track changes and know who did what and when - Use wizard-based workflows for managing users and groups, communications drivers, data logging and recipes - Start projects easily with modern templates for navigation, sign in, alarms and notifications - Build projects by using pre-built libraries and a comprehensive set of graphical objects - Create, save and reuse single objects or complete projects in user-defined libraries, with the flexibility to store your libraries locally or in a cloud storage Compatible Rockwell Automation® devices: - OptixPanel™ Standard operator panel - OptixPanel™ Compact operator panel - Embedded Edge Compute module - ASEM™ 6300 industrial computers	General - No need to create and maintain a separate HMI tag database – define tags once in the Logix controller, then access them throughout your system - Save design and troubleshooting time with rich, reusable graphics and animation capabilities, global objects and a library of faceplates that show status and diagnostic information - Extend your applications to your favorite iOS or Android mobile device for improved real-time decision-making - Publish HMI displays as-is or create mobile device-specific screens with FactoryTalk® ViewPoint for better visibility on a smaller screen Site Edition (SE) - Subscribe to Logix controller-based alarms to display, annunciate and manage them in the HMI - Logix extended tag properties with translated text reside in the controller and can be accessed by the HMI, reducing duplication errors and streamlining project design - Integration with ThinManager® software enables a single sign in for operators - Application edits can be automatically rolled out to a running system - View and interact with alarm conditions throughout the architecture with easy-to-use graphical alarm objects Machine Edition (SE) - Premier integration with Logix controllers - Language switching happens in the controller with no import/export necessary - Save commissioning time by emulating the application on the design workstation - Design-time language switching delivers the ability to configure multiple languages that easily switch at runtime - Build solutions that enable an application to meet validation requirements by using secured change control and an operator audit trail - Operating systems include Microsoft® Windows 10, Windows 8, Windows 7 and more - Supports PanelView™ Plus 6, PanelView™ Plus 7, MobileView™ and ME Station running on an industrial computer - Legacy products can be easily upgraded to the latest FactoryTalk® View ME version	- Automatically records upgrades - Provides easy access to previous versions - Allows you to control who you share your project files with - Maintains file history of changes across a system - Enables you to group project files together to work more efficiently - Records changes to files to keep your work safe - Allows you to recover files whenever needed, wherever you are
More Information	For the most up-to-date information, visit: FactoryTalk Optix FactoryTalk US	For the most up-to-date information, visit: FactoryTalk View-HMI Software FactoryTalk US	For the most up-to-date information, visit: FactoryTalk Vault with Design Tools FactoryTalk US



HMI

	FactoryTalk® Remote Access™ Solution	ThinManager® Thin Client Management Software	Studio 5000 View Designer®
Overview	The FactoryTalk® Remote Access™ solution delivers secure communications over the internet to enable performance and security for on-demand remote assistance, installation, programming, troubleshooting and maintenance of any remote automation system and application.	Our ThinManager® thin client management software allows you to optimize your operations through secure centralized management of applications and visual sources. ThinManager® manages the configuration and control of your facility in a truly scalable and reliable modern solution.	Studio 5000 View Designer® is the design environment for the PanelView™ 5000 family of operator terminals. The VIEW™ Designer application provides an intuitive, modern design environment and enhances integration between the control system and operator interface to improve programming efficiency and runtime performance.
Key Features	- Provides the ability to integrate with any automation system, breaking down third-party compatibility connectivity barriers - Contains fundamental security features and functionality that follow IT standards and policies - FactoryTalk® Remote Access™ Manager is cloud-based software, available in FactoryTalk® Hub™, which streamlines the management of the entire remote access solution in a single place for your organization With FactoryTalk® Remote Access™, you can: - Manage, create and set permissions for permanent and temporary users within your organization - Leverage folders to organize your assets and applications - Invite users, as needed, into your remote access domain to support cross-business collaboration, extending your workforce and capabilities - Leverage interactive tools while securely connected to your remote endpoint, such as remote desktop with chat, screenshot and file explorer and transfer	- ThinManager® can centrally manage all resources, including line terminals, a control room monitoring station or mobile devices and IP cameras dispersed throughout the plant - Provides control and security for your plant floor applications in a sustainable and scalable platform, regardless of the size of your industrial environment or number of facilities - Active Directory integration allows synchronized control over users and groups when granting access to resources and visualization needs - Commingle disparate applications on a single pane of glass to visualize exactly what you want, how you want it, with ThinManager® Virtual Screens™	- Preconfigured banner, alarm summary and diagnostic displays help reduce design time - Simplify your engineering with shared tags between HMI and controller - Eliminate alarm programming and reduce network traffic with Logix-tag based alarms - High-speed button control provides quick response and feedback for machine jogging applications - Create custom, reusable add-on graphics to save engineering time and promote consistency - Configure the runtime web browser to display webpages, HTML help files, videos and IP camera streams. Display content stored locally on an SD card or USB drive, on a local server or on the Internet - Emulation capabilities enable users to test-run a project without downloading to decrease overall project risks - Data logging and historical trending features show historical data immediately when the screen is displayed, helping decrease troubleshooting time - Built-in VNC server enables a remote VNC client for monitoring and troubleshooting
More Information	For the most up-to-date information, visit: FactoryTalk Remote Access Solution FactoryTalk US	For the most up-to-date information, visit: Thin Client Management Software FactoryTalk US	For the most up-to-date information, visit: Studio 5000 Design Software FactoryTalk US



Connectivity



	FactoryTalk® Linx Software	FactoryTalk® Remote Access™ Solution
Overview	FactoryTalk® Linx is designed to deliver control system information from Rockwell Automation control hardware to the software portfolio. It is proven to be the most efficient communication service for FactoryTalk® software with capabilities for enhanced automation network visibility, communications and user productivity.	The FactoryTalk® Remote Access™ solution delivers secure communications over the internet to enable performance and security for on-demand remote assistance, installation, programming, troubleshooting and maintenance of any remote automation system and application.
Key Features	- FactoryTalk® Linx provides premier communication services across FactoryTalk® software and Allen-Bradley® hardware. - Uses common communication software and services for design software services, network and device management and data acquisition. - Support for multiple communication drivers and communication protocols for seamless data connectivity. - Configure and manage secure device communications with layered security configurations, auditing, and logging. - Support for various system architectures, including distributed, redundant, and standalone systems.	- Provides the ability to integrate with any automation system, breaking down third-party compatibility connectivity barriers - Contains fundamental security features and functionality that follow IT standards and policies - FactoryTalk® Remote Access™ Manager is cloud-based software, available in FactoryTalk® Hub™, which streamlines the management of the entire remote access solution in a single place for your organization With FactoryTalk® Remote Access™, you can: - Manage, create and set permissions for permanent and temporary users within your organization - Leverage folders to organize your assets and applications - Invite users, as needed, into your remote access domain to support cross-business collaboration, extending your workforce and capabilities - Leverage interactive tools while securely connected to your remote endpoint, such as remote desktop with chat, screenshot and file explorer and transfer
More Information	For the most up-to-date information, visit: FactoryTalk Linx FactoryTalk US	For the most up-to-date information, visit: FactoryTalk Remote Access Solution FactoryTalk US



Data Acquisition



	FactoryTalk® Linx Gateway Software
Overview	FactoryTalk® Linx Gateway provides the ability to access valuable plant floor data in third-party visualization and information software for the highest data visibility. It offers a performant way to integrate a Rockwell Automation® system with third-party devices or servers for a more data-rich environment.
Key Features	• Deliver automation system data to third-party HMI / MES / information for control, monitoring, dashboards and analysis • Reorganize automation data for improved context and industry specifications • Use FactoryTalk® Linx Data Bridge to exchange data between Logix and OPC-enabled equipment • Centrally managed approach to collect system data into Logix data concentrators • Manage / limit access to automation network using Remote Proxy service • Shared Network Browser drivers improve network / device visibility and productivity • Use Excel® for productivity with emulation, testing, debug and startup • Monitor, capture, upload and download data from multiple controllers • Kinetix® motion high-speed data capture / logging
More Information	For the most up-to-date information, visit: FactoryTalk Linx Gateway Software FactoryTalk I US



Device Policy Management



	FactoryTalk® Policy Manager
Overview	FactoryTalk® Policy Manager is designed to help protect the devices in a controls system through security modeling and implementing CIP Security™ and OPC UA protocols. It centralizes management of device security to provide data authenticity, integrity and confidentiality across plant floor assets.
Key Features	• Design zones of trust for known server and device communication for micro-segmentation • Define and set security profiles to appropriate segments to achieve authorized communication from zone to zone • Specify ODVA™ CIP Security™ and OPC UA communication configurations and certificate authentication per zone, as required • Add known Rockwell Automation or partner devices using the Device Discovery pane powered by FactoryTalk® Linx • Incorporate third-party server and clients from multiple vendors into one system model • Configure devices to send data to third-party syslog solutions for further analysis
More Information	For the most up-to-date information, visit: FactoryTalk Policy Manager

Machine Learning, Analytics and Data Management

				 
	FactoryTalk® Analytics Software	FactoryTalk® AssetCentre Software	FactoryTalk® DataMosaix™ Software	FactoryTalk® Historian Software
Overview	FactoryTalk® Analytics provides industrial manufacturers with a complete spectrum of descriptive to prescriptive analytics solutions for achieving business outcomes such as overall equipment effectiveness (OEE) improvement, downtime reduction and quality or process improvement.	FactoryTalk® AssetCentre provides you with a centralized tool for securing, managing, versioning, tracking and reporting automation-related asset information across your entire facility.	FactoryTalk® DataMosaix™ is an industrial DataOps solution that brings together information technology (IT), operations technology (OT), and engineering technology (ET) data and makes it available, meaningful, and useful.	This software captures the data that you need to improve operations. Powerful reporting and trending tools provide critical insight into performance parameters and are available at high speed, reliably from machine to enterprise.
Key Features	FactoryTalk® Metrics - Efficiently monitors, collects and analyzes manufacturing plant equipment data - Provides out-of-the-box, self-service reports on OEE and 14 other standard performance indicators (including MTTR and MTBF) FactoryTalk® Analytics™ Pavilion8® Model Predictive Control (MPC) - An intelligence layer on top of automation systems - Flexible hybrid modeling capabilities incorporate all available process knowledge to deliver the most accurate, highest fidelity models possible FactoryTalk® Analytics™ GuardianAI™ - Provides continuous condition-based monitoring, alerting the maintenance team when an asset begins to show signs of degradation and providing insights into the most probable cause of failure FactoryTalk® Analytics™ VisionAI™ - A machine learning and vision inspection solution - Takes a no-code approach to vision inspection to improve quality, maximize yield and gain critical insight from real-time production data - Provides an intuitive analysis of images, allowing for a human-like interpretation of the product during the inspection process	Disaster Recovery - Provides alerts when differences are found between a primary configuration and the version running in a device - Backs up application code and device configuration automatically Lifecycle Management - Allows you to scan networks and discover devices and software processes running in your plant - Provides access to the latest device lifecycle information through integration with the Product Compatibility and Download Center Change and Version Management - Enables you to maintain complete version control for all system assets - Provides the most current version of your device configuration or application code - On-demand reporting allows you to see the differences between two versions of the same managed asset Operator Track and Trace - Provides a detailed audit trail of user changes made to the system	Next-generation Historian - Easy access to every stakeholder - Context built in from many different sources - Use historian data widely as a single source of truth across the plant Enterprise Production Reporting - Integrate and aggregate quickly - Compare OEE by plant, line, region and more - Informed enterprise production planning decisions Asset Monitoring - Better understand sensor data trends with alarming and maintenance work order context - Find downtime root causes faster with ad-hoc engineering analysis - Compare similar equipment reliability and performance across multiple plants	General - Provides high-speed, reliable data capture, enabling manufacturers to reach continuous process improvement goals Machine Edition (ME) - Does not require a dedicated computer or special client/software to configure - Excellent reliability through a solid-state design hardened for on-machine use and with no moving parts - Limited software footprint requires no server or personal computer, significantly reducing the risk of data loss due to network or other system interruption - Ideal for remote or hard to service locations Site Edition (SE) - Can connect to virtually any control system or human machine interface (HMI) software and collect real-time data at high speeds and at full resolution - Auto configuration helps reduce deployment time - Off-the-shelf interfaces and automated installation procedures with Logix control systems - Can be configured for interoperability with other makes of legacy control systems
More Information	For the most up-to-date information, visit: FactoryTalk Analytics FactoryTalk US	For the most up-to-date information, visit: FactoryTalk AssetCentre FactoryTalk US	For the most up-to-date information, visit: FactoryTalk DataMosaix: Industrial DataOps Solution FactoryTalk US	For the most up-to-date information, visit: FactoryTalk Historian Machine Edition FactoryTalk US and FactoryTalk Historian Site Edition FactoryTalk US



Machine Learning, Analytics and Data Management

			
	FactoryTalk® Optix™ Software	FactoryTalk® Transaction Manager Software	FactoryTalk® Analytics™ Pavilion8® Software
Overview	FactoryTalk® Optix™ is a visualization platform that accelerates value delivery with modern technologies, innovative designs and modular deployment options. The platform is designed to help improve your process, efficiency and deliverables – in one easy-to-access tool.	FactoryTalk® Transaction Manager (previously known as RSSql) is an industrial transaction software engine that shares data between your shop floor systems and your enterprise applications (for example, corporate databases).	Model predictive control software that provides tools to improve operational agility, allowing quick adaptation to changing business priorities and customer demands. The software includes modules to control, analyze, monitor, visualize, warehouse and integrate via its powerful modeling engine.
Key Features	• Design and test HMI projects directly from a web browser via the cloud, or use desktop-installable design software • Build and modify projects dynamically at runtime • Modify applications from anywhere, anytime, with an integrated, cloud-based code repository and version management to track changes and know who did what and when • Use wizard-based workflows for managing users and groups, communications drivers, data logging and recipes • Start projects easily with modern templates for navigation, sign in, alarms and notifications • Build projects by using pre-built libraries and a comprehensive set of graphical objects • Create, save and reuse single objects or complete projects in user-defined libraries, with the flexibility to store your libraries locally or in a cloud storage Compatible Rockwell Automation® devices: • OptixPanel™ Standard operator panel • OptixPanel™ Compact operator panel • Embedded Edge Compute module • ASEM™ 6300 industrial computers	• Helps safeguard data integrity, including the ability to send notifications of failures • Creates custom interactions between factory control systems and enterprise database • Caches transactions before they reach the enterprise system • Supports bidirectional transactions • One-way transactions allow for custom production data logging • Two-way interactions allow for data downloads to the control system, such as work orders, recipes and setpoints • Data collection continues while adding new or modifying existing transactions • Preferred connectivity to FactoryTalk® Integrated Architecture™	• Hybrid modeling based on empirical data, first principles equations, operator knowledge or any combination thereof • Soft Sensors® integrate with Model Predictive Control providing timely in-process measurements to increase accuracy of control actions • Patented, Extrapolated Gain Constrained Neural Networks (EGCNN) to ensure model accuracy beyond the historic operating ranges • Incorporates changing process dynamics (dead-time, time constants and gains) over wide process operating ranges • Parametric model representation provides compact, computationally efficient controller model without sacrificing accuracy • Controller replay capability maintains a contextual history of control actions and controller trajectories (improved troubleshooting) • Embedded controller performance metrics measure utilization, time at constraints and error from targets
More Information	For the most up-to-date information, visit: FactoryTalk Optix FactoryTalk US	For the most up-to-date information, visit: FactoryTalk Transaction Manager FactoryTalk US	For the most up-to-date information, visit: Pavilion8 Model Predictive Control (MPC) FactoryTalk US



Production Management



	FactoryTalk® PharmaSuite® Software	FactoryTalk® ProductionCentre® Software
Overview	This is the leading MES solution developed specifically for the life sciences industry. It provides role-based optimization for each lifecycle stage and drives time to results for all users. Its open-content architecture, paired with an intelligent upgrade engine, provides a robust system for growth in both batch and discrete.	FactoryTalk® ProductionCentre® is a comprehensive MES that integrates quality management and business analytics with paperless shop floor and repair execution. This improves operational efficiencies and helps you achieve and demonstrate regulatory compliance and high quality.
Key Features	Resource Management - Automatically track all production-relevant resources like material, equipment and personnel within a comprehensive electronic batch recording (EBR) Weigh and Dispense - First-in-class support of pre-weighing scenarios - Weigh and Dispense is completely embedded in the modular EBR solution Recipe Design and Execution - Primary recipes follow ISA S88/95 standards and include a comprehensive set of standard building blocks to cover EBR for API, biotech, bulk manufacturing and packaging Review By Exception - Sophisticated exception management for a “best in practice” balance between flexibility and quality control on the shop floor - Quality dashboard supports a real-time view on the shop floor and facilitates the review by exception process Integration - Maintain data in a single place across business, MES and automation systems with seamless integration to ERP systems as well as to the automation layer	General - Warehouse and inventory management - ERP integration - Order management - Material management Pharmaceutical - Primary recipes and workflow - Equipment model and automation integration - Work order management - Electronic batch recording (EBR) - Review by exception Automotive/Tire - Recipe management - Production monitoring - Quality management Consumer Packaged Goods - Machine automation integration - Inventory management - Production execution and monitoring Electronics - Production execution - Quality management - Automation integration EV/Battery - Production monitoring - Machine integration Fashion - Good receiving - Picking - Production management - Shipping - Supply chain third parties - Interface with automatic warehouse, AGV, palletizers - Web reporting Metals and Mining - Recipe management - Production execution - Automation integration
More Information	For the most up-to-date information, visit: Achieve your goals with FactoryTalk PharmaSuite FactoryTalk US	For the most up-to-date information, visit: FactoryTalk ProductionCentre FactoryTalk US



	PlantPax® System Software	FactoryTalk® Batch Software	FactoryTalk® Analytics™ Pavilion8® Software
Overview	PlantPax® is the modern, world-class distributed control system (DCS) from Rockwell Automation. Built on a scalable architecture, it enables plant-wide control and premier integration with the Rockwell Automation® intelligent motor control portfolio.	FactoryTalk® Batch provides consistent, predictable batch processing and supports reuse of code, recipes, phases and logic. It combines the ISA S88 standard with proven technology, providing the flexibility to go to market faster.	This model predictive control software provides tools to improve operational agility, allowing quick adaptation to changing business priorities and customer demands. The software includes modules to control, analyze, monitor, visualize, warehouse and integrate via its powerful modeling engine.
Key Features	Plant-wide Control and Optimization - The PlantPax® system uses a common automation platform for seamless integration between critical areas of your plant - Connects process, discrete, power, information and safety control into one plant-wide infrastructure - Benefits include common platforms, seamless information flow, ease of management and lower total cost of ownership Scalable and Modular Architecture - A wide range of architecture options for increased flexibility are provided with the PlantPax® system - The same platform can be used for single stations or large distributed architectures for easy integration without replicating data, while also offering faster time to market and scalable system capabilities such as HMI, batch management and data collection Open, Information-enabled and Secure - Based on open communication standards leveraging EtherNet/IP™ as its backbone, making real-time information readily available plant-wide for better business decisions - Virtualization and mobility enable IT/OT convergence with COTS hardware, energy reduction of up to 10% and a systematic approach to defense in depth Flexible Delivery and Support Network - Select the optimal implementation and support team based on your needs - Delivery and support via Rockwell Automation or your local process system integrator	- Create and manage recipes and execute them automatically - Configure physical and procedural models - Collect and report on detailed electronic batch data - Integrate batch and recipe information with corporate information systems - Reduce validation and commissioning time by simulating your batch process - Preserve and lock recipe versions - Assign and trace approval workflows - Leverage built-in reporting and analytics	- Hybrid modeling based on empirical data, first principles equations, operator knowledge or any combination thereof - Soft Sensors® integrate with Model Predictive Control providing timely in-process measurements to increase accuracy of control actions - Patented, Extrapolated Gain Constrained Neural Networks (EGCNN) to achieve model accuracy beyond the historic operating ranges - Incorporates changing process dynamics (dead-time, time constants and gains) over wide process operating ranges - Parametric model representation provides compact, computationally efficient controller model without sacrificing accuracy - Controller replay capability maintains a contextual history of control actions and controller trajectories (improved troubleshooting) - Embedded controller performance metrics measure utilization, time at constraints and error from targets
More Information	For the most up-to-date information, visit: PlantPax Distributed Control System Rockwell Automation US	For the most up-to-date information, visit: FactoryTalk Batch Software FactoryTalk US	For the most up-to-date information, visit: Pavilion8 Model Predictive Control (MPC) FactoryTalk US

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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) 2663 0600, Fax: (32) 2 663 0640

ASIA PACIFIC: Rockwell Automation, No.2 Corporation Road, Singapore, 618494, Singapore, Tel: (65) 6302 8688, Fax: (65) 6302 8787

UNITED KINGDOM: Rockwell Automation Ltd., Pitfield, Kiln Farm, Milton Keynes, MK11 3DR, United Kingdom, Tel: (44) (1908) 838-800, Fax: (44) (1908) 261-917

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