



Allen-Bradley

by ROCKWELL AUTOMATION

ControlLogix[®] 5580 controllers

Smart technology for process control



Smart technology increases productivity

Allen-Bradley® programmable logic controller (PLC) systems are scalable to meet your discrete, process, motion and safety needs.

The ControlLogix® 5580 family of controllers delivers smart technology capabilities that increase productivity in the most demanding industrial applications. Ideal for food and beverage, oil and gas, chemical, plastics, life sciences, metals and mining industries, our family of PLCs helps make your business smarter, faster and safer.

COMMON PLANT-WIDE CONTROL

Using the ControlLogix 5580 family of controllers, you can:

- Reduce spares and training demands
- Seamlessly share information, without the constraint of data silos
- Create one look and feel for everyone who interacts with your system



A SIMPLIFIED ARCHITECTURE

Our Logix offerings work together in our Integrated Architecture® system to help reduce cost and system complexity:

- One software package to program ControlLogix 5580 controllers
- One protocol to move data across different networks
- One software package to configure all graphics displays

ENHANCE SECURITY

The ControlLogix 5580 controller incorporates security mechanisms like centralized authentication and access control.

- ISO 27001 certification to help protect intellectual property
- Vulnerability-management process aligns to IEC 29147 and 30111

ControlLogix 5580 Standard Controller



Create smarter, more productive and more secure production systems with the ControlLogix 5580 controller

Increase productivity. The ControlLogix 5580 controller offers greater performance and application capacity than ever before. This helps meet higher capacity and throughput requirements.

Create smarter, simpler systems. An embedded 1-gigabit EtherNet/IP port enables high-performance communications, I/O and applications with up to 256 axes of motion. This helps future-proof your systems and communication demands as operations become more connected and reliant on data. Plus, it reduces the need for additional ethernet modules.

Enhance security. The ControlLogix 5580 controller helps protect people, processes and intellectual property with advanced security technologies and features, such as digitally signed and encrypted firmware, change detection and audit logging. It's also certified compliant with IEC 62443-4-2, today's most robust control system security standard.

You can expand on these capabilities with ControlLogix 5580 controllers designed for specific applications and environments, including:

- Safety
- Process
- Mining



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Cutting energy costs in a Toyota engine plant

Toyota used the ControlLogix platform to help create more efficient air-compressor controls and reduce annual energy usage by nearly 1 million kilowatt hours.

"Producing zero CO2 in the process of building a vehicle is a very big task," said Eddy Kiggen, a facility specialist at Toyota.

"Right now, we're trying to save as much energy as possible before we jump into renewables. And for this plant, these control upgrades are the most successful energy projects we've ever done."

GuardLogix 5580 Safety Controller



Optimize safety and productivity together

The **GuardLogix® 5580 safety controller** integrates standard and safety control into one controller, software and network. This can reduce development time, purchasing costs and maintenance demands for your systems. Plus, it offers safety functions that can reduce downtime.

- **Safe torque off** allows machines to restart faster after reaching a safe state by removing motor torque without removing power from an entire machine
- **Safety zones** can improve productivity by allowing motion to continue on a machine outside of a safety zone that has experienced a trip

Save space and time: GuardLogix 5580 controllers can achieve faster reaction times and shorter safe distances than legacy controllers. This helps create smaller machines, save floor space and increase operator efficiencies.

Optimize your safety system design: The controller can achieve SIL 2, PLd, CAT 3 with a primary controller and SIL 3, PLe, CAT 4 with the addition of a safety partner.

- Standard memory options from 3...20 MB
- Safety memory options from 1.5...6 MB
- Communication options from 100...250 EtherNet/IP nodes
- Conformal coated options for harsh environments



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Reducing machine downtime with advanced safety

For one of its new machines, OEM Aagard incorporated advanced safety functionality with the GuardLogix 5580 controller and Kinetix® 5700 servo drives.

Instead of stopping, the machine goes into a safe speed state when the palletizer bay door is opened to clear an obstruction. The machine can then resume production without going through an entire restart procedure.

This reduces the downtime caused by minor events – like an askew case on a pallet – from 5 minutes or more to just 15 seconds.

ControlLogix 5580 Process Controller



Launch process applications faster

The ControlLogix 5580 process controller can save precious engineering time and effort, so you can deploy applications faster and with less risk. The controller is preloaded with the software, tools and faceplates for your application, and lets you leverage the PlantPAx® library of process objects.

The ControlLogix 5580 process controller

- Reduce the footprint and complexity of your applications with processing power and capacity
- Drive consistency in single projects and multi-site deployments with native process instructions embedded in the controller
- Reduce system costs by providing process and position control in one platform
- Reduce security risks with system architectures that are certified to the IEC 62443-3-3 security standard
- Leverage content and instructions that are native on the controller rather than downloaded from a website

Standardize large control architectures

When you combine the [CompactLogix™ 5380 controller](#) into a process application that uses the ControlLogix 5580 process controller, it aligns in our Integrated Architecture. Our standardized backbone for your process application is easier for workers to learn, operate and maintain.



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ControlLogix 5580 NSE and XT Controllers



Increasing safety, reducing downtime

Reduce safety risks in mining. When explosive gases build up in environments like underground mines, they can ignite and create catastrophic safety events. The ControlLogix 5580 NSE (no stored energy) controller helps reduce the risk of these events.

The electronics in the NSE controller help limit the amount of internal stored energy, which allows for reduced user wait times associated with opening the electrical equipment enclosure. Plus, it reduces the risks of igniting gases when servicing the controller and the need to obtain special enclosures and safety certifications.

Extreme temperatures and corrosive gases

Harsh environments and corrosive gases can degrade the performance and lifespan of your control system components, leading to downtime.

ControlLogix and GuardLogix 5580 XT controllers help protect automation investments with:

- Wider operating temperature range: $-25...+70^{\circ}\text{C}$ ($-13...+158^{\circ}\text{F}$)*
- Proprietary corrosive gas protection reduces premature equipment failure. Our corrosion-resistant components are designed for better performance. This includes critical connection-point protection and enhanced coatings
- Tested and validated to GX (ISA) and CX (IEC)

*Extended operating temperatures are available on select 1756 controller modules



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ControlLogix 5580 controller quick look

| Controller catalog | Description | Network Support | | | I/O Support | | | Security | | Process | | | High Availability | |
|--------------------|--------------------------|-----------------|-------------------------------|--------------------------------|---------------|----------|----------|----------------|---------------------|--------------------------|-------------------------|-------------------------------|-------------------------------|---|
| | | Ethernet | Use of embedded Ethernet port | ControlNet / DeviceNet / DHRIO | Existing I/O* | 5069 I/O | 5094 I/O | CIP security** | 62443-4-2 compliant | Embedded process objects | Phase Manager™ software | Sequence Manager™ software*** | Default Process Tasking model | Supports a redundancy configuration**** |
| 1756-L8xE | Standard controller | ■ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ● | ■ | ● | ● | ■ |
| 1756-L8xE-NSE | No stored energy | ■ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ● | ■ | ● | ● | ■ |
| 1756-L8xEK | Conformally coated | ■ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ● | ■ | ● | ● | ■ |
| 1756-L8xEXT | Harsh environment | ■ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ● | ■ | ● | ● | ■ |
| 1756-L8xEXTS | Harsh Environment safety | ■ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ● | ● | ■ | ● | ● | ● |
| 1756-L8xEP | Process controller | ■ | ▲ | ▲ | ■ | ▲ | ■ | ■ | ▲ | ■ | ■ | ■ | ■ | ■ |
| 1756-L8xES | Safety controller | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ● | ● | ■ | ● | ● | ● |

- Supported in all configurations
- ▲ Supported in standard (but not redundant) configuration
- Not Supported

* ControlLogix® 5580 controllers configured for redundancy will support the same I/O as a ControlLogix® 5570 redundant controller; for example, 1769 I/O isn't supported in a ControlLogix® 5570 redundant controller, so it's also not supported with ControlLogix® 5580 redundancy

** Support added in version 34. For more information, refer to [SECURE-AT001](#)

*** Support added in version 35. For more information, refer to [1756-UM015](#)

**** New functionality delivered through the Studio 5000 Logix Designer® application version 33 firmware and software; no new controller catalog number required to enable this feature



Integrating **controllers** and **control systems**

You can configure the ControlLogix 5580 family of controllers and develop all elements of your control system in one place – the Studio 5000® design environment.

The marriage of the hardware and software brings additional capabilities, streamlined processes and productivity savings to life.

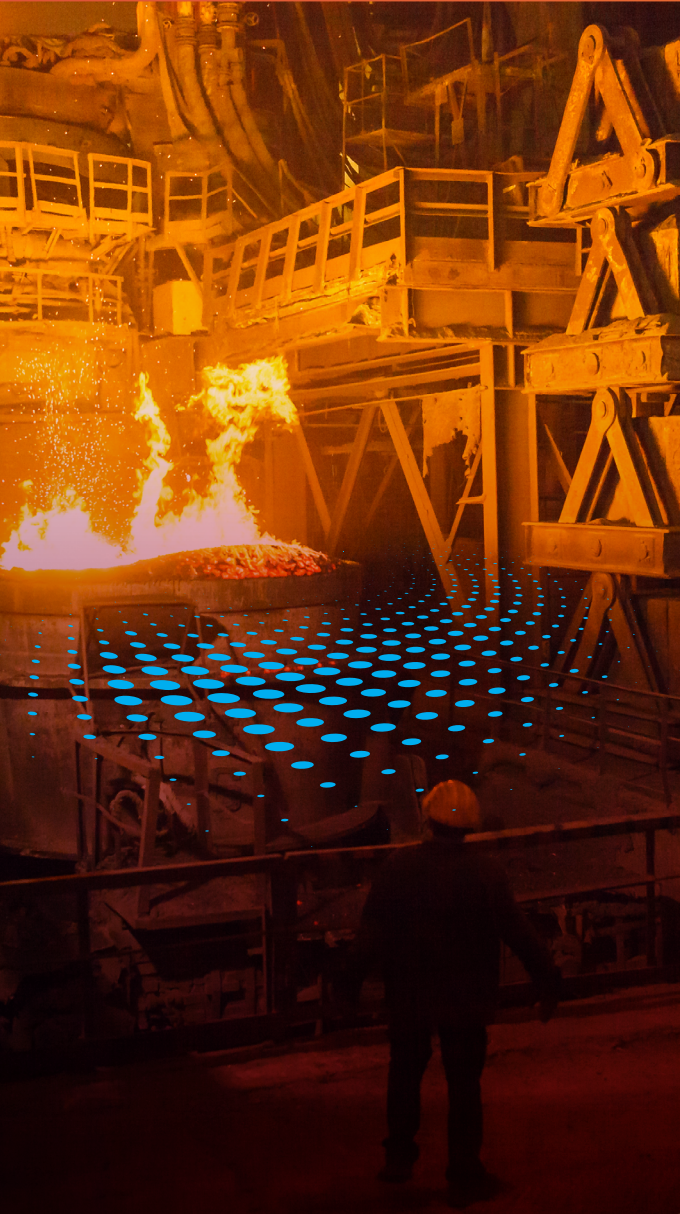
A key component of the Studio 5000 environment is the Studio 5000 Logix Designer® application. It provides a collaborative environment to create smart systems fast.

When the ControlLogix 5580 controllers are paired with the Studio 5000 Logix Designer version 33 application, the redundant capability is enabled.

Explore the features and benefits of Studio 5000 Logix Designer.



ControlLogix 5580 Family of Controllers



Maximize productivity and uptime

Take advantage of key capabilities in the ControlLogix 5580 family of controllers.

Redundant control

Unplanned downtime caused by failures, faults or system maintenance challenges everyone. Maybe your application is continuous or irreversible and requires high availability at all costs. Or maybe it simply can't afford to restart, either because the process takes too long or impacts customer service.

ControlLogix 5580 controllers are available with redundant capabilities to help reduce downtime. Key benefits include:

- Access to next generation I/O
- Provides the basis for the Process controller
- Enhanced productivity features such as onboard display and 2GB Secure Digital (SD) card
- One firmware for all solutions, standard and redundant
- No memory penalty for enabling redundancy

Whether you need one-click enablement or want to program the data sync yourself, Studio 5000 Logix Designer provides the environment for configuring your redundant control.

Learn more about [Logix Hot Backup Solution](#)

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Learn more

Stay ahead of challenges in manufacturing and industrial operations with the ControlLogix 5580 family of controllers.

- Deliver faster performance for production needs
- Enhance safety and security to help protect what matters most
- Simplify your systems to keep costs down and reduce worker fatigue

Additional resources:

[ControlLogix 5580 Controllers](#)

[PlantPAX 5.0 Distributed Control System](#)

[Studio 5000 Design Environment](#)

[Motion Control](#)

[Logix Hot Backup Solutions](#)

[Locate your local Rockwell Automation sales distributor](#)

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New to **ControlLogix** controllers?

The ControlLogix starter kit is a discounted bundle of hardware and software that provides everything you need to get started. Experience a truly integrated system. Build a kit that's right for you.

[LEARN MORE](#)

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