



**Rockwell  
Automation**

# ControlLogix 5580 More than a controller



# More than a controller

A modern control system is more than its name implies. It can deliver the fast system performance, high capacity and optimized productivity that you need from a control system today. But it can also play a central role in:

- Helping keep people safe.
- Enabling digital transformation.
- Securing your operations against cyber threats.

The ControlLogix® 5580 family of controllers delivers high-speed communications, I/O and motion control for demanding, information-driven applications. It can also help you create more competitive operations with:

## COMMON PLANT-WIDE CONTROL

ControlLogix 5580 controllers provide multi-discipline control for discrete, motion, process and safety applications. By using one 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 what we call our Integrated Architecture® offering. It helps you keep costs down and reduce system complexity with:

- One software package to program your ControlLogix 5580 controllers.
- One protocol to keep data moving seamlessly across different networks.
- One software package to configure all your graphics displays.

## ENHANCED SECURITY

The ControlLogix 5580 controller incorporates security mechanisms like centralized authentication and access control to help keep your systems secure. Rockwell Automation has also received ISO 27001 certification to help protect intellectual property – both ours and yours. And our vulnerability-management process aligns to IEC 29147 and 30111.



## STANDARD CONTROL FOR HIGH-PERFORMANCE APPLICATIONS

Create smarter, more productive and more secure production systems with the ControlLogix 5580 controller, our most modern control offering.

**Take productivity to new levels.** The ControlLogix 5580 controller offers up to 20 times greater performance and up to 45% more application capacity than legacy controllers. This can help you 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 can help future-proof your systems and keep up with future communications demands as operations become more connected and reliant on data. It can also reduce 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 the world's first controller to be certified compliant with IEC 62443-4-2, today's most robust control system security standard.

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

- Safety
- Process
- Mining



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Safety  
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Process  
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Harsh  
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Studio 5000  
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# Cutting energy costs in a Toyota engine plant

At one of its engine plants, 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."



## OPTIMIZE SAFETY AND PRODUCTIVITY TOGETHER

Safety and productivity don't need to be at odds with each other in your production systems.

**Integrated safety** technologies like the GuardLogix® 5580 controller combine standard and safety control into one controller, software and network. This can reduce development time, purchasing costs and maintenance demands for your systems. It also allows you to take advantage of safety functions that can reduce downtime.

For example, safe torque off allows machines to restart faster after reaching a safe state by removing motor torque without removing power from an entire machine. And 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:** The GuardLogix 5580 controller can achieve faster reaction times and shorter safe distances than legacy controllers. This can help you create smaller machines, save valuable floor space and increase operator efficiencies.

**Optimize your safety system design:** The scalable controller can achieve SIL2/PLd with a primary controller and SIL3/PLe with the addition of a safety partner. It also offers:

- Standard memory options from 3 to 20 MB.
- Safety memory options from 1.5 to 6 MB.
- Communication options from 100 to 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 helps reduce the downtime caused by minor events — like an askew case on a pallet — from 5 minutes or more to 15 seconds.



## LAUNCH PROCESS APPLICATIONS FASTER

Building process applications from the ground up can slow your time to market and create the potential for errors.

The ControlLogix 5580 process controller can save you 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 you need for your application, and allows you to leverage the PlantPax® library of process objects.

### The ControlLogix 5580 process controller can also:

- Reduce the footprint and complexity of your applications with cutting edge 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 control and position control in one platform.
- Reduce security risks with system architectures that are certified to the IEC 62443-3-3 security standard.
- Better use controller memory by leveraging content and instructions that are native on the controller rather than downloaded from a website.

### Standardize large control architectures

When you bring skids that use the [CompactLogix™ 5380 controller](#) into a process application that uses the ControlLogix 5580 process controller, it all comes together in our Integrated Architecture. The result? A standardized backbone for your process application – one that's easier for workers to learn, operate and maintain.



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## HELP PROTECT SAFETY AND UPTIME FROM ENVIRONMENTAL CHALLENGES

### Reduce safety risks in mining

When explosive gasses build up in environments like underground mines, they can ignite and create catastrophic safety events. The No Stored Energy (NSE) controller can reduce the risk of these events to help you enhance safety.

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. Additionally, it reduces the risks of igniting gases when a worker services the controller and the need to obtain special enclosures and safety certifications.

### Help protect assets in extreme temperatures

Harsh temperatures can degrade the performance and lifespan of your control system components, leading to more downtime and higher lifecycle costs.

The extended temperature (XT) controller helps you help protect automation investments with a wider operating temperature range, from -25 degrees Celsius to 70 degrees Celsius (-13 degrees Fahrenheit to 158 degrees Fahrenheit).



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# Conformal Coating Options



## DID YOU KNOW?

Like harsh temperatures, corrosive environments can affect the performance and longevity of your control system.

ControlLogix 5580 controllers are available with conformal coating options to help protect uptime in corrosive environments. The coating is a thin film that is sprayed onto an assembly to help protect it from corrosion and other environmental stresses.

### Conformal coating is often used in industries like:

- Water/wastewater
- Mining
- Pulp and paper
- Metal
- Food and beverage
- Tire and rubber



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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	Extreme temperature	■	▲	▲	■	▲	■	▲	▲	●	■	●	●	■
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

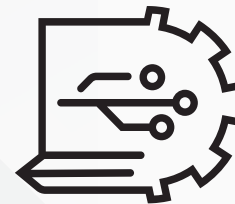
\*\* New functionality delivered through the Studio 5000 Logix Designer® application version 33 firmware and software; no new controller catalog number required to enable this feature

## It takes **two to tango**

With the ControlLogix 5580 family of controllers, you can configure your controllers and develop all elements of your control system in one place – the Studio 5000® design environment. It is the marriage of the hardware and software that brings additional capabilities, streamlined processes, and productivity savings to life.

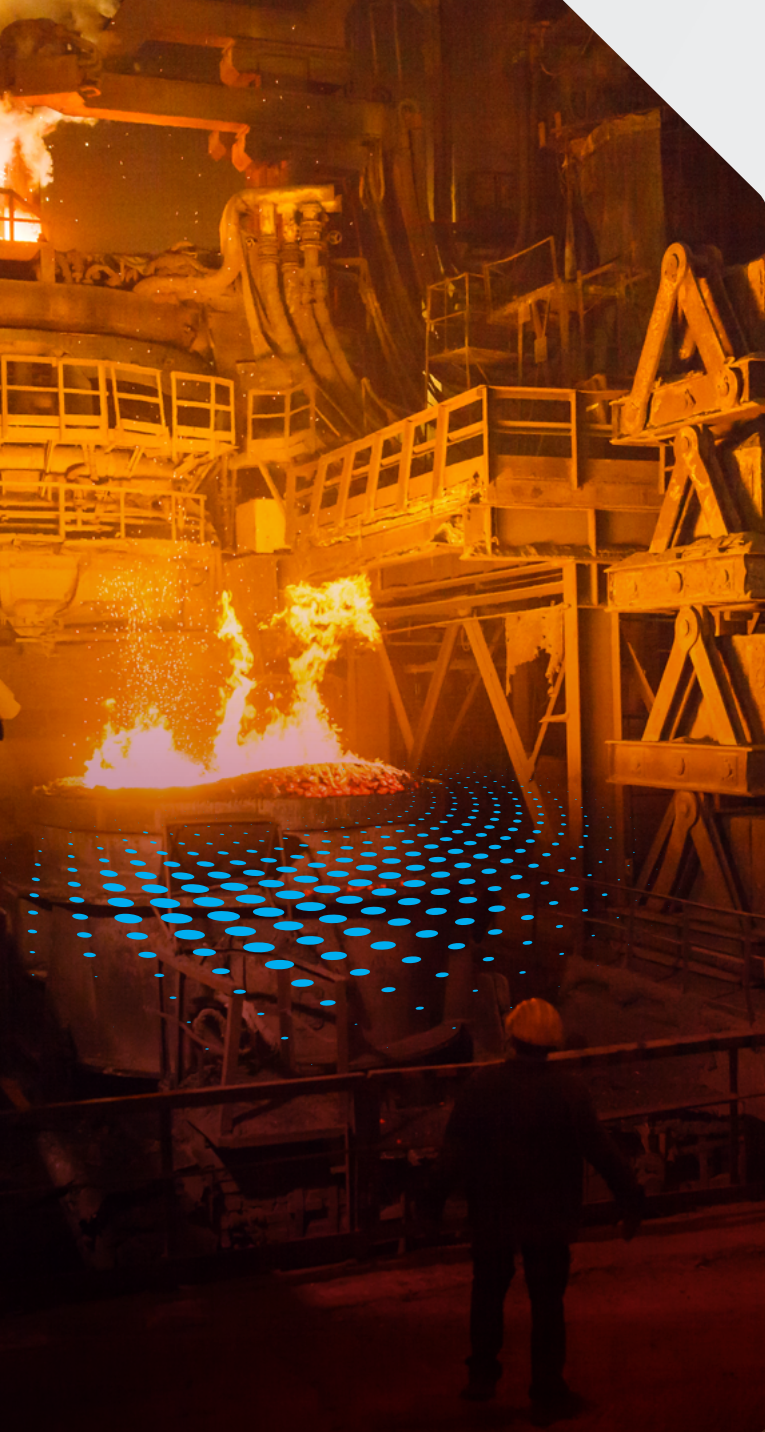
A key component of the Studio 5000 environment is the Studio 5000 Logix Designer® application. It provides a modern, collaborative environment that can help you create smart systems fast.

When the ControlLogix 5580 controllers are paired with the Studio 5000 Logix Designer version 33 application, the redundant capability, which is a function of firmware, is enabled. Continue reading to learn more about our redundant capability.



**Further explore** the features and benefits of Studio 5000 Logix Designer version 33.

[LEARN MORE](#)



# Maximize uptime



Help protect system availability and reduce downtime costs by taking advantage of key capabilities in the ControlLogix 5580 family of controllers.

## Redundant control

Unplanned downtime caused by failures, faults or system maintenance is a challenge for 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 unplanned downtime. Key benefits of this redundant capability 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.

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

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

# Learn more

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

- Deliver faster performance for modern production needs.
- Enhance safety and security to help protect what matters most.
- Simplify your systems to keep costs down and reduce the demands put on workers.

## Additional resources can be found below:

[ControlLogix 5580 Controllers](#)

[PlantPAx 5.0 Distributed Control System](#)

[Studio 5000 Design Environment](#)

[Motion Control](#)

[Logix Hot Backup Solutions](#)

[Locate your local RA sales distributor](#)

## New to ControlLogix?

The ControlLogix starter kit is a discounted bundle of hardware and software that provides everything you need to get started. It's time to experience a truly integrated system, and we encourage you to build a kit that's right for you.

[LEARN MORE](#)

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