

ControlLogix 5590 Controller Platform

Scalable, Secure and Adaptable Control for Demanding Industrial Applications

The ControlLogix® 5590 controller represents what's next in the Logix control family—engineered to meet the evolving demands of modern industrial environments. As operations become more connected, data-driven, and performance-intensive, manufacturers need a control solution that not only keeps pace but sets the standard. The ControlLogix 5590 controller does just that.

Built on more than two decades of innovation, the ControlLogix 5590 controller delivers a powerful combination of high-speed processing, integrated safety and built-in security—a scalable architecture that supports a wide range of applications, from standalone machines to plant-wide systems. It's designed to simplify complex automation challenges, reduce engineering overhead and enable smarter, more resilient operations.

Whether you're deploying new systems or modernizing legacy infrastructure, the ControlLogix 5590 controller provides the flexibility and performance to unify control across disciplines—motion, process, safety and batch—on a single platform. It supports contemporary communications like OPC UA and integrates seamlessly with a software suite that uses the same common tool chain as the previous generation of controllers. The ControlLogix 5590 controller is built to help you innovate with confidence and scale to meet your most demanding needs.



Key Features and Benefits

High-performance Processing and Capacity

- Up to **80 MB of memory**
- Supports up to **512 real and virtual motion axes**
- Handles **600+ Ethernet nodes per controller**
- Dual EtherNet/IP™ ports support linear and DLR topologies minimizing the need for extra network modules
- Ideal for **complex motion, redundant systems and large-scale applications**

Integrated Safety and Security

- **SIL 2/PLd safety** built into every controller variant (Safety partner required for SIL 3/PLe)
- **IEC 62443-4-2 compliant** with CIP Security and secure boot
- **Unified safety and process control** in a single platform

Simplified, Modernized and Built for What Is Next

- Design efficiently using **Studio 5000 Logix Designer® version 38 or FactoryTalk® Design Studio™***
- Accelerate deployment and achieve reliability with design and validation tools like **FactoryTalk® Logix Echo**.
- Enhanced hardware experience and built-in access to troubleshooting support
- Supports contemporary communication protocols including **OPC UA** for interoperability with third-party systems

Optimized for Modern Industrial Applications

- **Process and batch control:** Integrated safety and redundancy for PlantPAx® systems
- **Discrete and motion control:** High axes count and fast execution for robotics and packaging
- **Hybrid and safety-critical systems:** Unified Basic Process Control System and SIS in one controller
- **Modernization and migration:** Designed with backward compatibility to support seamless transitions from ControlLogix® 5570/5580 controllers

Configurations and Variants

- Available in **Standard, XT (corrosion-resistant), and P (Process)** variants
- Memory options range from 2 MB to 80 MB, offering scalable performance across all models
- All variants support **safety, redundancy and more secure communications**

* FactoryTalk Design Studio will support the ControlLogix 5590 Standard and XT (corrosion-resistant) controllers upon release of version 2.03 in November 2025. Support for the P (Process) variant will follow in a future release of FactoryTalk Design Studio.



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Controller catalog	Description	Network Support				I/O Support	Safety		Security		Process			High Availability
		Ethernet	Use of embedded Ethernet ports*	ControlNet/DeviceNet/DHRI0	OPC UA ***		Existing I/O**	Logix SIS	Simplex Safety	CIP security	62443-4-2 compliant	Embedded process objects	Sequence Manager™ software	Default process tasking model
1756-L9xxTS	Standard/Safety Controller	●	●	●	●	●	●	●	●	●	●	●	●	●
1756-L9xxTSXT	Standard/Safety Harsh Environment	●	●	●	●	●	●	●	●	●	●	●	●	●
1756-L9xxTPSXT	Process Controller with Safety (with Harsh Environment Protection)	●	●	●	●	●	●	●	●	●	●	●	●	●

● Supported in all configurations

● Supported in standard (but not redundant) configuration

● Not Supported

* The embedded ethernet ports can only be used for crossloading data when in a redundancy or Logix SIS configuration

** ControlLogix 5590 controllers will support the same I/O as the ControlLogix 5580 controller

*** Not supported in redundancy

Explore the ControlLogix 5590 controller and discover how it can help you modernize your operations, reduce risk and accelerate innovation.

To learn more, visit [ControlLogix 5590 controllers](#)



expanding **human possibility**®

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