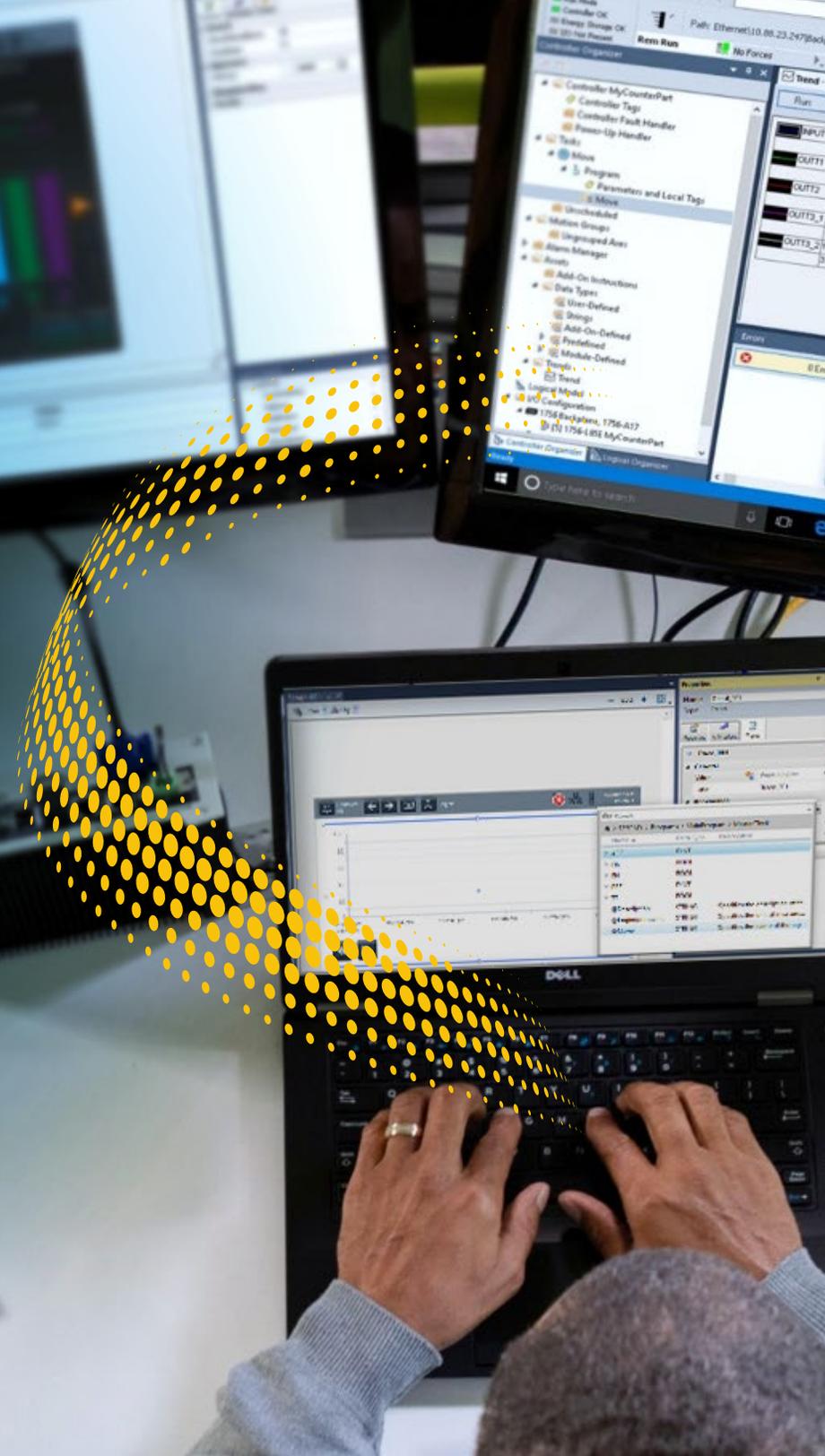




# Studio 5000 Automation Engineering & Design Environment



# Studio 5000

## ENHANCE PRODUCTIVITY THROUGH SIMPLIFIED SYSTEM DEVELOPMENT

### OVERVIEW

The Studio 5000® design 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, re-use, collaboration and virtual design.

The updated user interface provides a common, modern user experience across all Studio 5000 applications.

### Studio 5000® Architect™

Enables simplified system design and data exchange

### Studio 5000 Logix Designer®

Collaborative system programming and configuration

### Studio 5000 View Designer®

Highly integrated HMI with Logix

### Studio 5000® Application Code Manager

System reuse and quickly build projects

### Studio 5000® Logix Emulate™

Virtual design and operator training systems

### Studio 5000® Simulation Interface™

Connect logic to simulation models

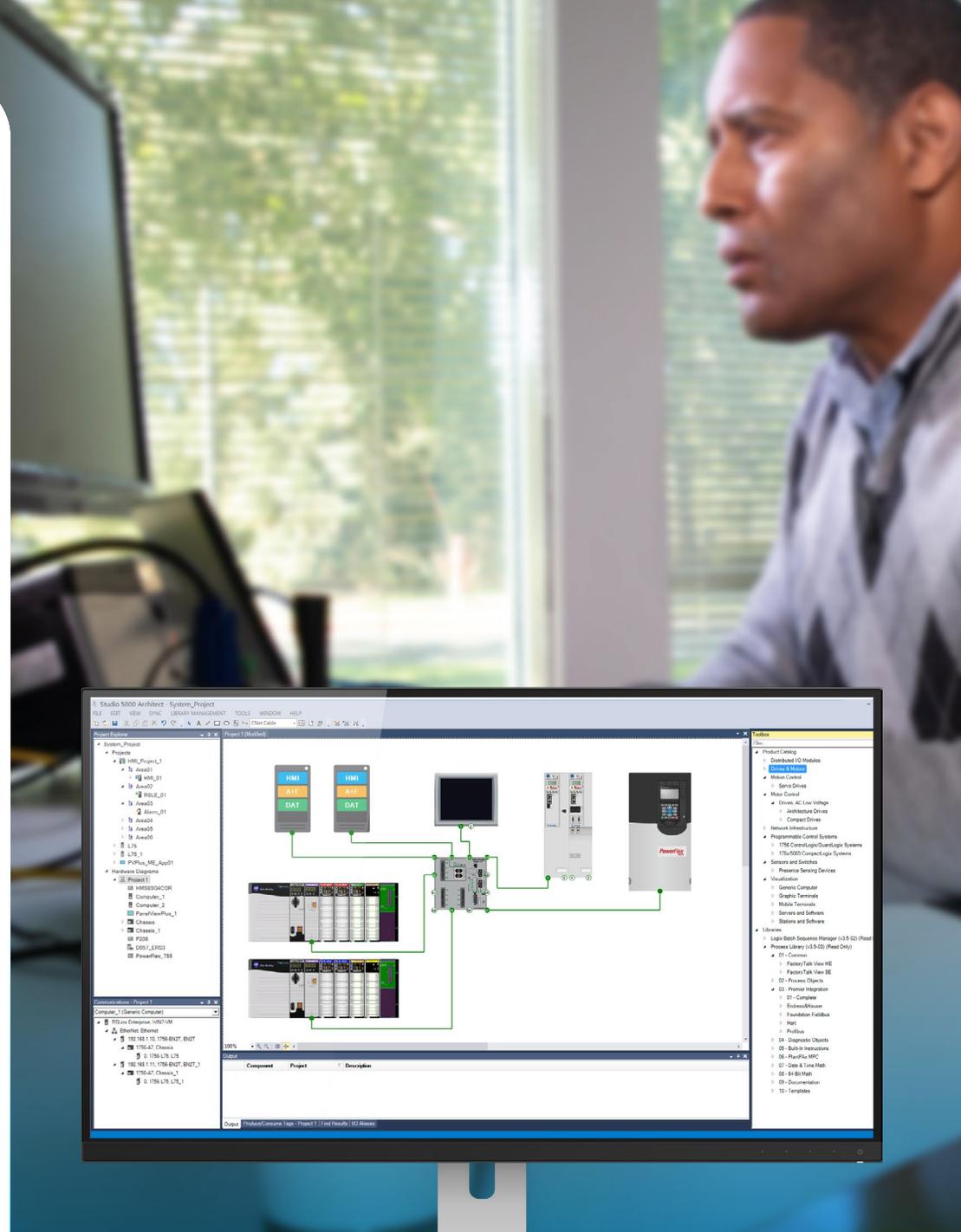
# Studio 5000 Architect

## MANAGE THE SYSTEM LAYOUT

Studio 5000 Architect is the central point within the Studio 5000 environment where users can view the overall automation system; configure devices such as controllers, Human Machine Interface (HMI) and Electronic Operator Interface (EOI); and manage the communications between the devices. The Studio 5000 Architect application also exchanges data with other Studio 5000 applications and third-party CAD packages to simplify the development experience.

This helps streamline the time to build your Logix and View automation system and allows you to:

- Create a graphical representation of your system for easier system modifications
- Build Logix and View projects from an integrated environment
- Re-use Logix and View content as well as use content from the Rockwell Automation Library of Process Objects
- Exchange hardware configuration data, like Controller, I/O, and Communications modules, with third-party tools
- AutomationML import/export capabilities for bi-directional exchange of data between Studio 5000 and electrical CAD packages for robust data management



Studio 5000  
PG 2

**Architect**  
**PG 3**

Logix Designer  
PG 4

View Designer  
PG 5

Application  
Code Manager  
PG 6

Logix Emulate  
PG 7

Simulation  
Interface  
PG 8

Software  
package options  
PG 9

3

# Studio 5000 Logix Designer

## CONFIGURE, PROGRAM AND MAINTAIN YOUR CONTROLLERS

Studio 5000 Logix Designer is the one application to configure, program and maintain the entire Allen-Bradley® Logix 5000™ family of controller products and related devices. Its intuitive, modern programming environment allows users to work collaboratively to design and maintain their systems.

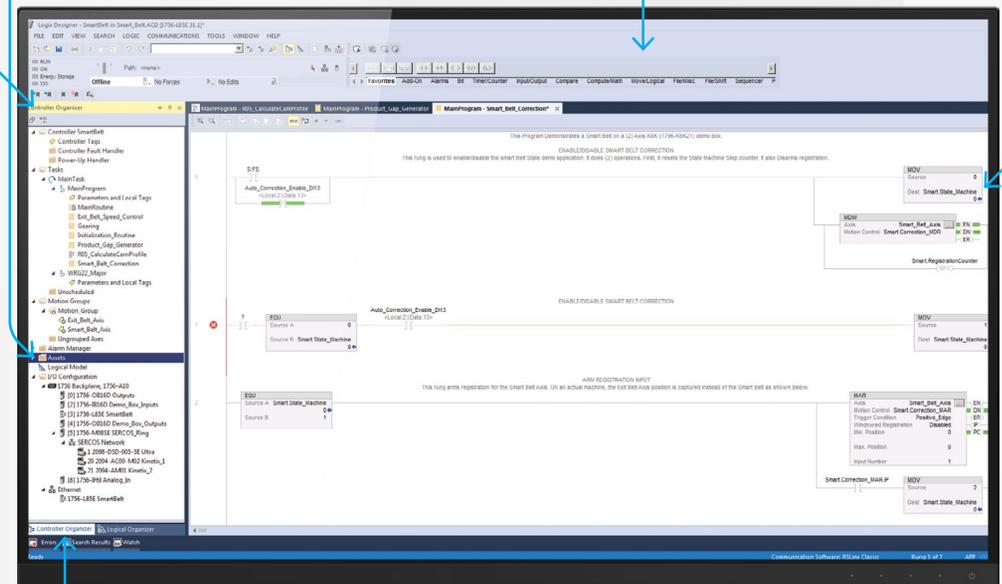
- One programming software for all disciplines – safety, motion, drives, process and discrete
- Easily configure devices with graphical wizards and automatically create tags
- Simplified, modern programming with multiple editors and modular programming features for increased productivity
- View the system and easily find what you need with the Logical Organizer and Controller Organizer views – helping maintain uptime
- Create code simultaneously with others, and then compare and merge changes
- Protect the design and execution of your Logix content with license-based protection capabilities – to help ensure that only authorized users are able to view, modify or execute protected code
- Logix tag-based alarms functionality allows users to add alarms directly to any tag or structure with a simple right click; no additional programming required
- Expanded library of safety instructions for network-based safety and motion instructions for improved kinematics support
- Supports scalable safety offerings providing a more right-sized solution SIL 2 and SIL 3
- Offers AutomationML capabilities for bidirectional exchange of data between Studio 5000 Design Environment and electrical CAD packages for robust data exchange and flexibility

Project Explorer offers multiple views to help define organization and execution

Integrated Motion and Integrated Safety in an intuitive design environment

Instruction Palette contains over 250 predefined instructions

Feature-rich editors help users write modular code



Powerful and easy-to-use device configuration simplifies setup and integration

# Studio 5000 View Designer

## CONFIGURE, PROGRAM AND MAINTAIN YOUR OPERATOR INTERFACES

Studio 5000 View Designer is the design environment for the PanelView™ 5000 family of operator terminals. The integration of the PanelView 5000 terminals with Studio 5000 View Designer helps build modern applications more easily and improve operator performance.

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.

- 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 joggng applications
- Create custom, re-usable add-on graphics to save engineering time and promote consistency
- Multi-language support with a language switching feature enables users to switch between languages on the PanelView 5000 terminals to support global user needs
- 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



Tags created in Logix Designer are automatically available in View Designer.

The screenshot shows the Studio 5000 interface with a ladder logic diagram on the left and a tag database on the right. The tag database is titled 'SSSCMX > Programs > MainProgram > MasterClock' and contains the following entries:

Name	Data Type	Description
ACC	DINT	
DN	BOOL	
EN	BOOL	
PRE	DINT	
TT	BOOL	
@Description	STRING	Specifies the description of th...
@EngineeringUnit	STRING	Specifies the unit of measure...
@Name	STRING	Specifies the name of the tag

# Studio 5000 Application Code Manager

## ACCELERATE PROJECT CREATION USING RE-USABLE CONTENT

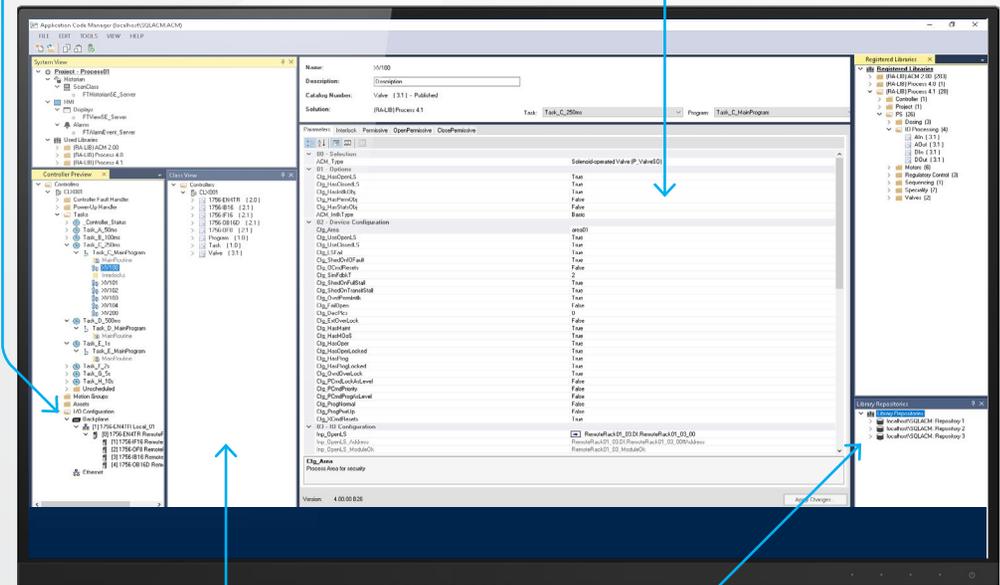
Studio 5000 Application Code Manager helps speed system development by building libraries of re-usable code that can be managed and deployed across the entire enterprise. Creating projects with Application Code Manager helps improve design consistency, reduce engineering costs and achieve faster commissioning.

- Easily create and configure objects in bulk using re-usable libraries of code to increase application development, without any additional programming
- Effortlessly import and export configuration data using Microsoft Excel
- The auto content generation feature creates not only the controller code for the modular object, but also the associated visualization, historical and alarming data – helping to build projects more efficiently
- Easily instantiate complex re-usable library objects into a new or an existing project
- Use standardized, application-focused libraries of code at no cost, including PlantPax® Process Object Libraries and our Machine Builder Libraries, to save time and more easily maintain your systems

**A no-cost Lite Edition is available from PCDC (Product Compatibility and Download Center) and includes the ability to use Rockwell Automation libraries and create custom libraries, but is limited to a single controller and local database. Studio 5000 Application Code Manager Standard Edition is available as a low cost, annual subscription.**

Project Explorer shows all of the configured objects in your automation project

Quickly and easily configure modular objects through simple parameter configuration



Add, edit and delete project content by Library Objects with Class View

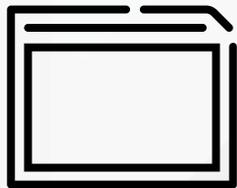
Manage your comprehensive library of reusable content across projects

# Studio 5000 Logix Emulate

## SIMULATE YOUR SYSTEM IN A SAFE, VIRTUAL ENVIRONMENT

Studio 5000 Logix Emulate increases design productivity, reduces risk and decreases overall project costs. It is the core of Studio 5000 virtual design; enabling Machine Prototyping, Throughput Analysis, Virtual Commissioning and Operator Training Systems (OTS). Logix Emulate provides the ability to validate, test and optimize application code independent of physical hardware. Interface capabilities provide connectivity to 3rd party simulation and OTS, enabling users to simulate their entire process and train teams in a safe, virtual environment.

- Simulate discrete Input/Output (I/O) and Logix5000 based controllers
- Simplify troubleshooting by utilizing advanced debugging to support code validation and virtual commissioning
- Easily adjust execution speeds to identify potential issues long before they are found in a production system
- Integrate into high fidelity process simulation systems for operator and situational based training



Logix Designer application



Logix Emulate

Download/Go online from the Logix Designer application, same workflow as with physical controller

17-slot virtual chassis (slots 9-16 hidden)

Configure time scaling and manage application debugging

Up to 16 emulated controllers

Simulated I/O modules

# Studio 5000 Simulation interface

## CONNECTIVITY TO SUPPORT SMART MACHINES AND DIGITAL DESIGN

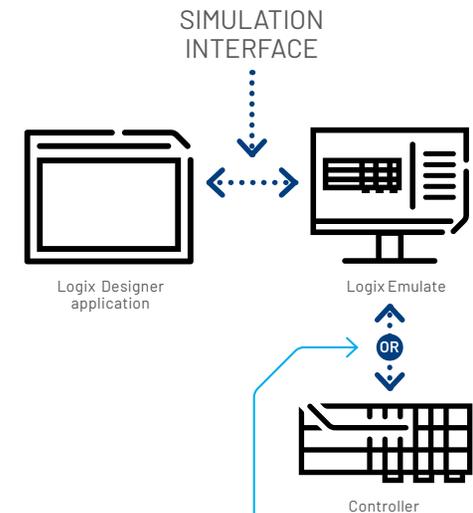
Studio 5000 Simulation Interface connects controllers – physical or emulated – to simulation and modeling tools to enable virtual commissioning and model-based design. This can help you design, test, validate and commission smart machines before they are put into service.

- Uses Functional Mock-up, a tool-independent standard, to support both model exchange and co-simulation of dynamic models to design and test smart machines easier
- Supports Matlab Simulink, allowing bi-directional communication with Simulink Models
- Simulate discrete Input/Output (I/O) and Logix 5000 based controllers
- Simplify troubleshooting by utilizing advanced debugging to support code validation and virtual commissioning
- Easily adjust execution speeds to identify potential issues long before they are found in a production system
- Integrate into high fidelity process simulation systems for operator and situational based training

Start in a model, either MATLAB directly, or with a modeling software that uses the FMI standard



Connect values in your model to tags in your PLC Program with Simulation Interface



Import FMU or Matlab Models

Controls to Start/ Stop/Step the simulation

Status information on the simulation

Name	Type	In/Out	Value	Connection
observer_main	REAL	Output	0	Periodic_Pulse/observer1
observer_periodic	REAL	Output	0	Periodic_Pulse/observer2
cntrl_observer	BOOL	Input	True	Periodic_Pulse/cntrl_observer

Name	Type	In/Out	Value	Connection
cntrl_observer	BOOL	Output	True	Periodic_Pulse/dl/cntrl_observer
observer1	REAL	Input	0	Periodic_Pulse/dl/observer_main
observer2	REAL	Input	0	Periodic_Pulse/dl/observer_periodic

Import controller projects and connect tags to the models

Download to either an emulated controller with Logix Emulate or a physical controller, such as ControlLogix® or CompactLogix™

# Studio 5000 software package options

Studio 5000 edition

	PROFESSIONAL	STANDARD	LITE
<b>Architect</b>	✓	✓	✓
<b>Logix Designer</b>	✓	✓	✓
Controllers supported	all	all	CompactLogix only
Editors included (before add-ons <sup>1</sup> )	all	ladder only	all
<b>View Designer</b>	✓	✓	✓
<b>Logix Emulate<sup>2</sup></b>	✓	+	N/A
<b>Application Code Manager Lite<sup>3</sup></b>	✓	✓	✓
<b>Simulation Interface</b>			
Simulation Interface Developer	+	+	+
Simulation Interface Run-time	+	+	+

 included
  add-on purchase

<sup>1</sup>Additional add-ons are available. For complete offering, consult the [Studio 5000 Ordering Information Guide](#).

<sup>2</sup>Logix Emulate is included in the Professional Edition, however Logix Emulate for Operator Training is a standalone license and must be purchased separately.

<sup>3</sup>Application Code Manager Lite is available at no charge on PCDC, Standard Edition is available as an add-on purchase.

## PURCHASING OPTIONS

### Perpetual software license and maintenance bundle

Work more confidently with automatic access to software version updates for a full year. Rockwell Automation software licenses are bundled with first year maintenance benefits to deliver important version updates. Perpetual licenses never expire.

### Software subscription

For more flexibility, opt for a software subscription. Add or remove licenses with a subscription to scale usage up or down and prevent overpaying for unused licenses. Change and edit the Studio 5000 design environment without reinvesting in new software. Access to support and upgrades are automatically included with subscriptions. Find the right fit with various term options (from 1-year to 5-year subscription plans).

## BUY NOW

The **myRockwell** Software Portal is a central location for all things Rockwell Automation.

Create an account with just a few clicks and gain access to BOMs, services, quotations, software subscriptions and more ways to customize your software package.

Connect with us.

[rockwellautomation.com](https://rockwellautomation.com)

expanding **human possibility**<sup>®</sup>

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

ASIA PACIFIC: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Allen-Bradley, ControlLogix, CompactLogix, Expanding human possibility, Logix 5000, Studio 5000 Application Code Manager, Studio 5000 Architect, Studio 5000 Automation Engineering & Design Environment, Studio 5000 Logix Designer, Studio 5000 Logix Emulate, Studio 5000 View Designer, Studio 5000 Simulation Interface, Studio 5000, PanelView, and Rockwell Automation are trademarks of Rockwell Automation, Inc.

Trademarks not belonging to Rockwell Automation are property of their respective companies.

Publication 9324-PP006M-EN-P - August 2020

Copyright © 2020 Rockwell Automation, Inc. All Rights Reserved. Printed in USA.