THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

MID-COAST
ELECTRIC SUPPLY
An Affiliate of The Reynolds Company

Learning Series

Automation Update

January 2023

Technical Seminars

Register to receive a calendar invite

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Tech Talk

Month	Description
January 25th	Grace Technologies – GraceSense
February 22nd	Cybersecurity Partner
March 29th	Cybersecurity Partner
https://www.reynoldsonline.com/training-and-events/techtalks	

Learning Series

Month	Description
January 12th	Automation Update
February 23rd	FactoryTalk Design Hub
March 16th	Networks and Security Update
https://www.reynoldsonline.com/training-and-events/learning-series	

Visit our Resources page on reynoldsonline.com

Our Presenters

Mike Masterson
Automation Specialist
Houston

Wayne Welk
Automation Specialist
New Orleans

Kevin Peterson
Industrial Controls
Specialist
Houston

David Nute
Process Business Development Lead
Houston

Michael Ouellette
Drives Specialist
Houston

Rockwell Automation

Studio 5000 Updates

Studio 5000 Logix Designer®

December 2018

Version 32

Hardware Support
- Kinetix® 5700 Servo Family

New Capabilities
- FBD Functions
- 64 Bit Data Types
- PhaseManager™

Ease-of-Use
- Data Preserve Download
- Rename UDT Members Online

September 2020

Version 33

Hardware Support
- NSE Controllers
- Process Controllers
- iTRAK® 5730
- ControlLogix® 5580 Redundancy

New Capabilities
- Process Instructions
- Automatic Diagnostics

Ease-of-Use
- Defaulted to FTLinx
- Improved Logix Tag-Based Alarm workflows

March 2022

Version 34

Hardware Support
- CIP Security on CompactLogix™ 5380, GuardLogix® 5580, and Compact GuardLogix® 5380

New Capabilities
- Improved Download Time on 5x80's
- DateTime data types

Ease-of-Use
- Import/Export Project Documentation Online

VERSION 35 November 2022

Studio 5000 Logix Designer®

HARDWARE SUPPORT

- FLEXHA 5000™
- 1756-EN4TR
- GuardLink®

- ControlLogix 1756-L8x Redundancy Bundle - 35.011_kit1

FEATURE ENHANCEMENTS

- SequenceManager™ for 5x80P Controllers
- Axis-Test Mode
- Embedded process instructions expansion
  - P_D4SD
  - P_nPos
  - P_ValveMP

PRODUCTIVITY ENHANCEMENTS

- Component Change Detection

Controller Change Detection Support Expansion

Now Supporting 5x80 Controllers

Two controller attributes support the Change Detection feature in version 20 and later

Attribute Name	Description	Access
AuditValue	A unique value that is generated when a project is downloaded to the controller or loaded from removable storage. When a change is detected this value is updated. To specify which changes are monitored, use the ChangesToDetect attribute.	GSV
ChangesToDetect	Used to specify which changes are monitored. When a monitored change occurs, the Audit Value is updated.	GSV/SSV

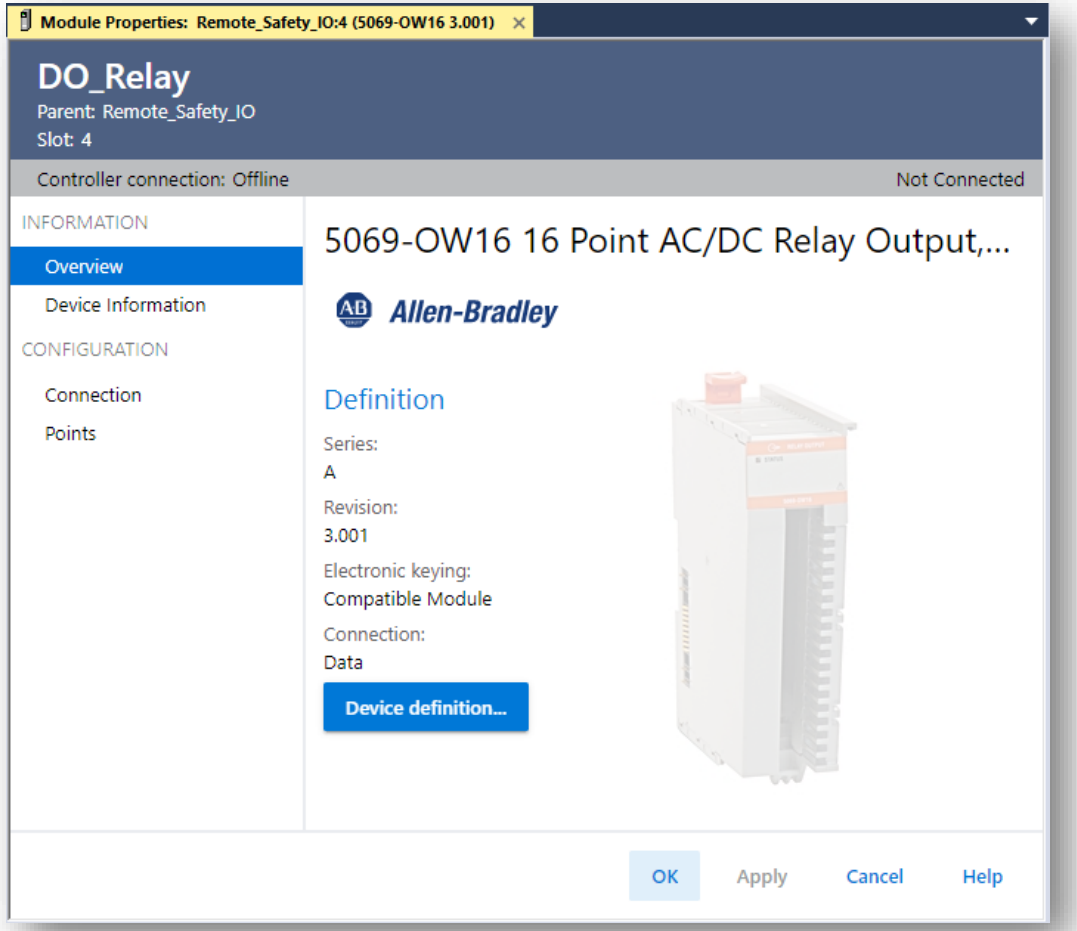
For more information on Controller Change Detection, refer to the Logix 5000® Controllers Information and Status Programming Manual

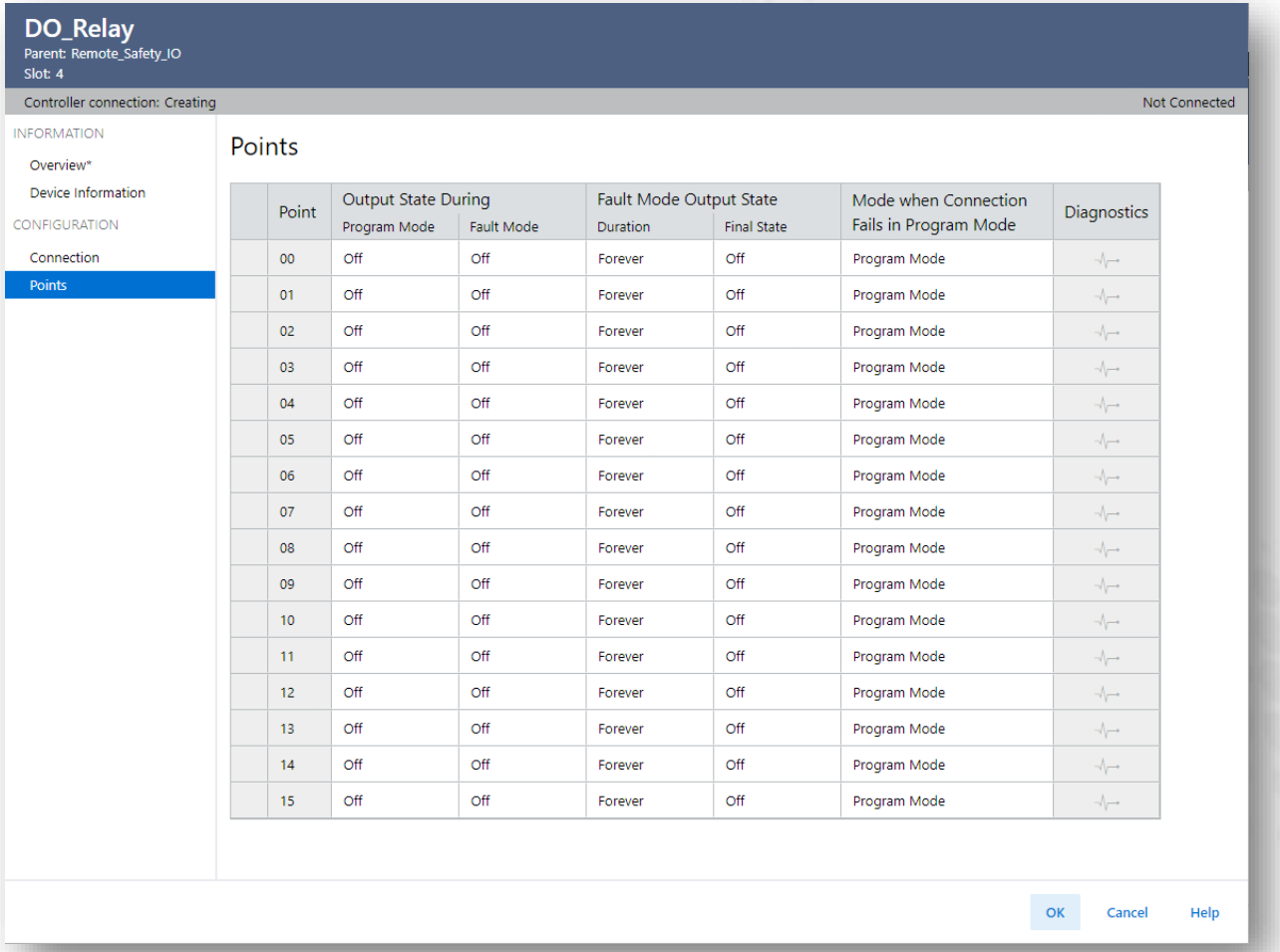
Rockwell Automation

Add-On Profiles

V35

Add-On Profiles that have been updated with a web-based user interface





Rockwell Automation

FT Logix Echo

V2

Nov 2022

5580 Safety: Supporting GuardLogix® emulated controllers

Multi-Chassis: Create multiple chassis in a single Echo instance on one PC

Axis Test Mode: Echo support of axes put in Test Mode for simulation

- Emulated ControlLogix® and GuardLogix® 5580 standard task motion logic & CIP Motion drive connection support
- Low Fidelity CIP Motion axis/drive simulation model for *Kinetix® & PowerFlex® CIP Motion drives and 5730 iTRAK®*

API Expansion: Extend API ability

- 64-bit application support
- Individual bits access for integer tags (DINT, SINT, INT,...)
- Improved tags handling

Rockwell Automation

System Updates

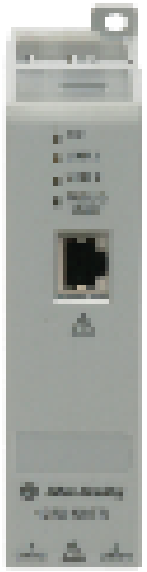
1783-ETAP (all catalog numbers) Lifecycle Announcement

Active Mature

- Current Lifecycle Status: **End of Life**

- Projected Discontinuation:
  - 1783 –ETAP, 1F, 2F : June 2024
  - 1783-ETAPK 1FK, 2FK : November 2024

- Migration/Modernization Path for customers:
  - Next Generation ETAP: June 2024
  - Full XT Catalog Number : October 2024



Product Lifecycle Status Definitions

ACTIVE: Most current offering within a product category

ACTIVE MATURE: Product is fully supported, but a newer product or family exists. Gain value by migrating.

End Of Life: Discontinued date announced – actively execute migrations and last time buys. Product generally orderable until the discontinued date*

DISCONTINUED: Product no longer manufactured or procured**. Repair/exchange services may be available

Electronic Operator Interface (EOI) Portfolio

Economy EOI
PanelView 800

Optimized for compatibility with Micro800® and MicroLogix™ controller

Advanced Graphic Terminals
PanelView Plus 7
Standard and Performance

Run FactoryTalk® View Studio Machine Edition software

Advanced Graphic Terminals
PanelView 5000
PV5310 – PV5510

Studio 5000 software for enhanced integration with Logix Controllers

Tethered Terminal
MobileView

Tethered terminal running Windows Embedded 7

Increasing Features / Performance

Rockwell Automation

VersaView 5000 (6200P/6200T/6200M) - End of Life ramp down

- Persistent issues with our supplier are forcing us to move them to End of Life over the 12+ months
- Monitors, Panel PCs and Panel Thin Clients
- Box PCs and Box Thin Clients
- Box Thin Client

ASEM 6300 Industrial PCs

- New content on ab.com
  - New ASEM 6300 Industrial Computers and Monitors Overview Video on ab.com and YouTube
  - New brochure: Enabling your Connected Enterprise production system with ASEM 6300
- New - Dual display ASEM 6300T thin client
- On-Machine ASEM 6300PA panel PC
- ASEM 6300MA monitor – Q1 of CY23
- ThinManager-ready BIOS updates by Q1 of CY23

Upcoming product releases

Additional 100k+ configurations to solve customer applications

- Recently introduced
  - 6300M Industrial Monitors
- Coming soon: Calendar 2022 Q4 / 2023 Q1 THINMANAGER
  - ThinManager Ready enabled BIOs to ship on existing IPCs
- Q1 of Calendar 2023
  - Expanded CTO for Box PCs
  - Long distance option (RVL) – up to 100m
  - RVL accessories – for retrofits
  - 6300T Thin Client with dual display and hazardous location certification
- Q2 of Calendar 2023
  - 6300PA On-machine Panel PCs
  - 6300MA On-machine Monitors

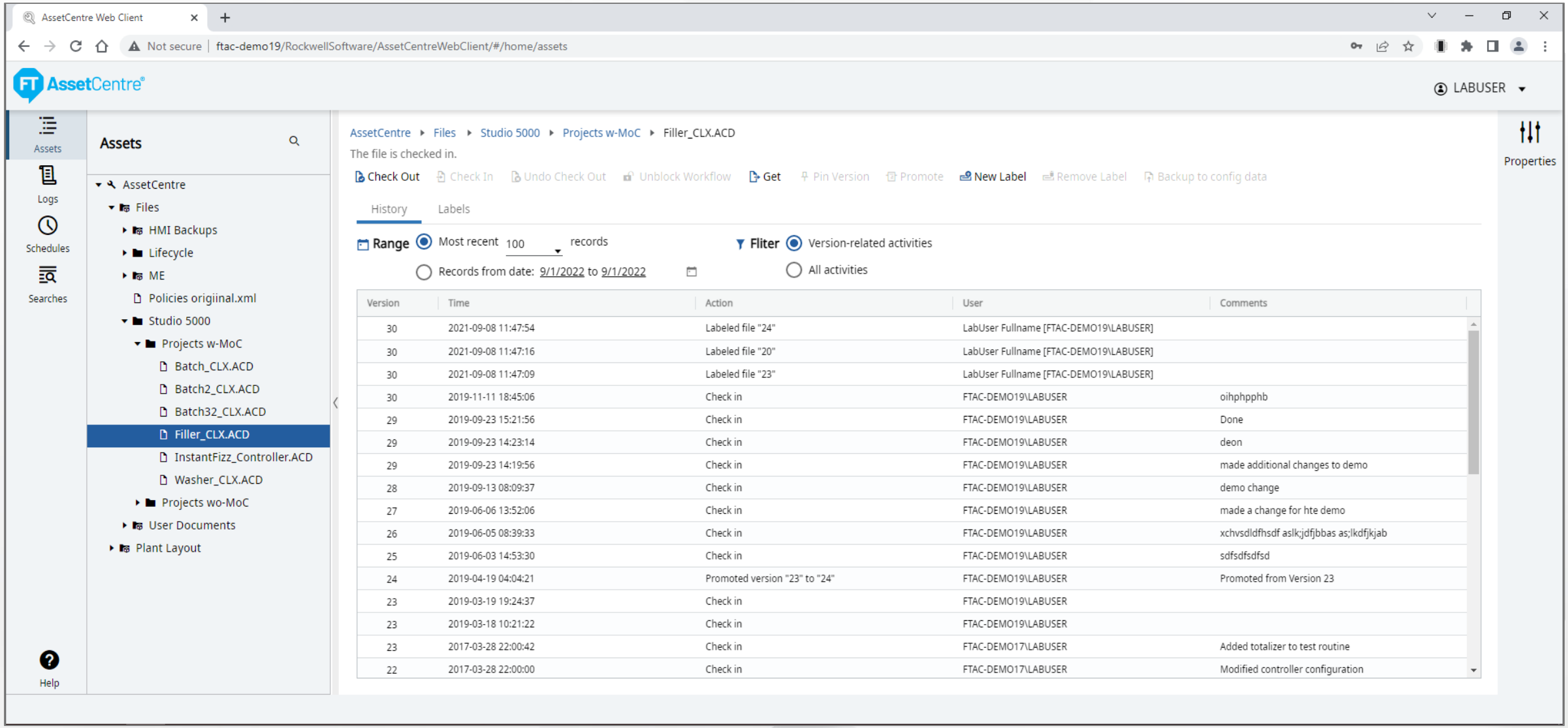
Rockwell Automation

Rockwell Automation

Process Updates

FactoryTalk® AssetCentre

FactoryTalk AssetCentre v12.00 software



Version	Time	Action	User	Comments
30	2021-09-08 11:47:54	Labeled file "24"	LabUser Fullname [FTAC-DEMO19\LABUSER]	
30	2021-09-08 11:47:16	Labeled file "20"	LabUser Fullname [FTAC-DEMO19\LABUSER]	
30	2021-09-08 11:47:09	Labeled file "23"	LabUser Fullname [FTAC-DEMO19\LABUSER]	
30	2019-11-11 18:45:06	Check in	FTAC-DEMO19\LABUSER	oihphpphb
29	2019-09-23 15:21:56	Check in	FTAC-DEMO19\LABUSER	Done
29	2019-09-23 14:23:14	Check in	FTAC-DEMO19\LABUSER	deon
29	2019-09-23 14:19:56	Check in	FTAC-DEMO19\LABUSER	made additional changes to demo
28	2019-09-13 08:09:37	Check in	FTAC-DEMO19\LABUSER	demo change
27	2019-06-06 13:52:06	Check in	FTAC-DEMO19\LABUSER	made a change for hte demo
26	2019-06-05 08:39:33	Check in	FTAC-DEMO19\LABUSER	xchvsdldfhsdf aslk;jdfjbbas as;lkdfjkjab
25	2019-06-03 14:53:30	Check in	FTAC-DEMO19\LABUSER	sdfsdfsdfsd
24	2019-04-19 04:04:21	Promoted version "23" to "24"	FTAC-DEMO19\LABUSER	Promoted from Version 23
23	2019-03-19 19:24:37	Check in	FTAC-DEMO19\LABUSER	
23	2019-03-18 10:21:22	Check in	FTAC-DEMO19\LABUSER	
23	2017-03-28 22:00:42	Check in	FTAC-DEMO17\LABUSER	Added totalizer to test routine
22	2017-03-28 22:00:00	Check in	FTAC-DEMO17\LABUSER	Modified controller configuration

PlantPAx® 5 » PlantPAx® 5.10 »

PlantPAx® 5.20

New release incrementally builds on our PlantPAx® differentiation in the market and amplifies our value for Process.

Continues our mission to help customers to be more efficient, optimize footprints and drive consistent operation.

- Universal high availability I/O
- Cyber Security (CIP Security)
- Process Library Expansion
- Sequence Manager

PlantPAx® Roadmap - Continuing to Add Value

PlantPAx® is the distributed control system driving Process Industry outcomes

5.0 — October 2021

- Process Controller with native objects
- Automatic diagnostics
- Analytics-enabled
- Cybersecurity
- Integrated HART

5.10 — June 2022

- FactoryTalk® Logix Echo – Process Controller Emulation
- IEC 61850 power integration
- PASS-C (with FactoryTalk® Batch)
- FactoryTalk® InnovationSuite Library
- EventQ
- ASEM™ – industrial computer adoption
- Sequencer update
- OPC UA
- CIP Security (Level 3 Message Integrity)
- PlantPAx® graphic element library embedded in FactoryTalk® View SE

5.20 — November 2022

- Process controller library expansion
- SequenceManager™
- FLEXHA 5000™ I/O support
- System ID for Tech Support access
- Cybersecurity (CIP Security)

5.30 — November 2023

- Navigation auto discovered and self organized
- Simplified OEM integration of skids
- Servers' management by Rockwell Automation
- Increased integration of data structures thru the stack
- OPC UA expansion
- Integrated maintenance system

6.0 — TBD

Rockwell Automation

I/O Built for Process

FLEXHA 5000™ I/O platform

Individual channel universal I/O

Fully redundant

Flexible in design

Built-in diagnostics

Individual channel isolation

Ease of wiring

Configured for simplex or duplex

FLEXHA 5000™ I/O – Rockwell Automation Universal I/O

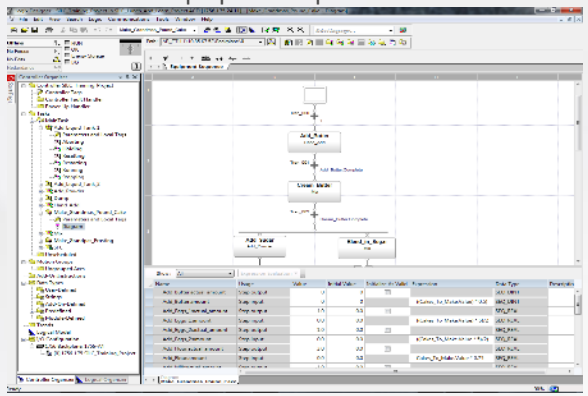
Universal value proposition

- A single card that can deliver AI/AO (with HART) and DI/DO by channel with online or offline software configuration
- 8 isolated channels
- Sinking and sourcing for HART
- 16-bit DAC/ADC
- CIP Sync™ support and channel time stamps
- Ease of wiring
- Configured for simplex or duplex
- Reduces inventory for spare parts
- Reduces the number of spares needed in a project.

SequenceManager™

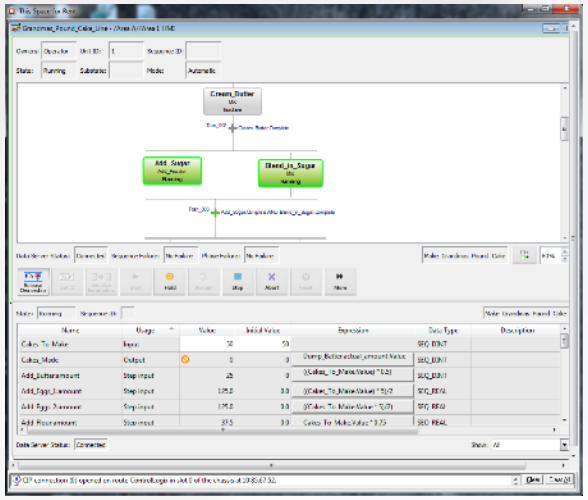
Editor – Logix Designer application

Define a procedural sequence that coordinates the execution of equipment phases



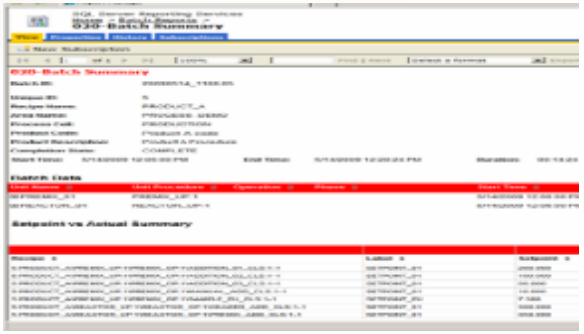
Operator – FTView SE

Monitor and interact with a running procedural sequence in the HMI



Data Collection & Reporting Services

Generate events used to produce batch reports and procedural analysis



Sequence Execution

Execute a procedural sequence through native functions in the controller

- Overview
  - Brings essential batch management forward to the 5x80P Controllers
  - Directs PhaseManager™ programs inside a Logix-based controller in an ordered sequence to conduct process-oriented task
  - Includes integrated visualization and reporting
  - Integrated with FactoryTalk® Batch
  - Functions with PlantPAx® Equipment Phase Object
- Benefits
  - Implement task-oriented sequences easily with native controller functionality
  - Intuitive operation with integrated control and HMI solution
  - Reduce infrastructure cost and software complexity

Rockwell Automation

Software Updates

VISUALIZATION PORTFOLIO

MACHINE LEVEL HMI

FT View Machine Edition

Studio 5000 View Designer®

FT OptixPanel

SCALABLE HMI

FT View Site Edition

PlantPAx
Distributed Control System

FT Optix

EXTENDING BEYOND HMI

THINMANAGER
A ROCKWELL AUTOMATION TECHNOLOGY

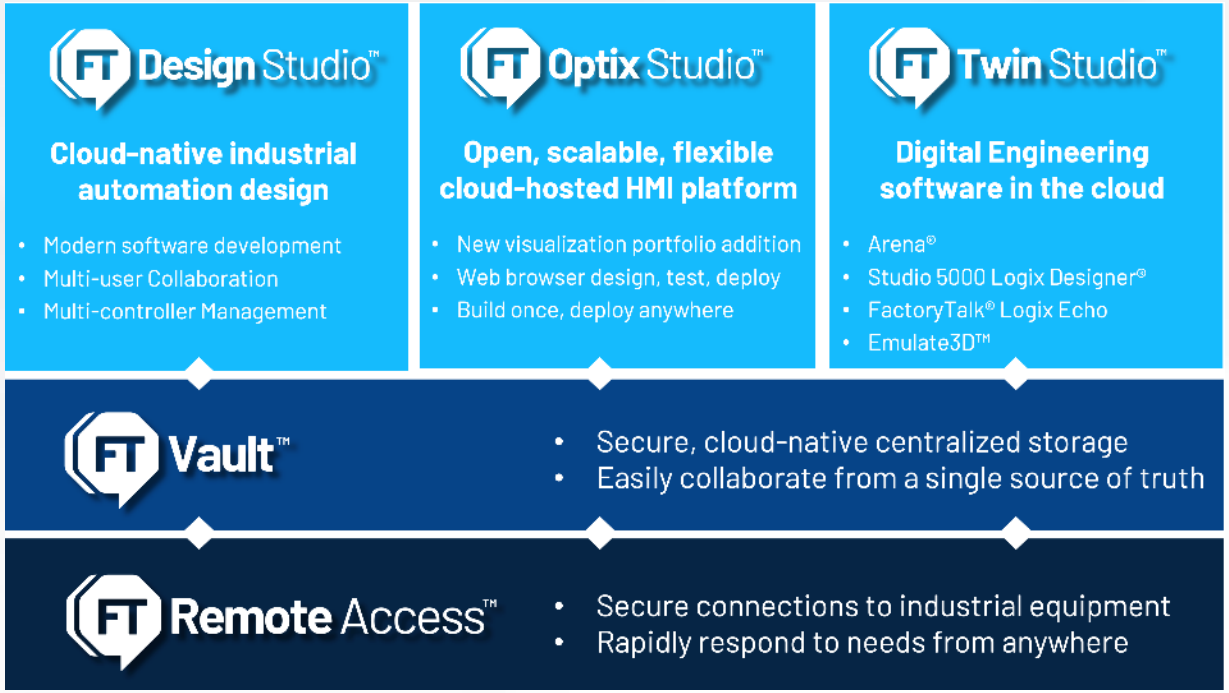
FT Historian SE

FT AssetCentre®

FT Remote Access™

New offerings

FT Design Hub™ Ecosystem



FactoryTalk® Design Hub™

On-demand platform that provides you and your customers design automation systems that:

- Reduce risk
- Accelerate schedules
- Enable better agility

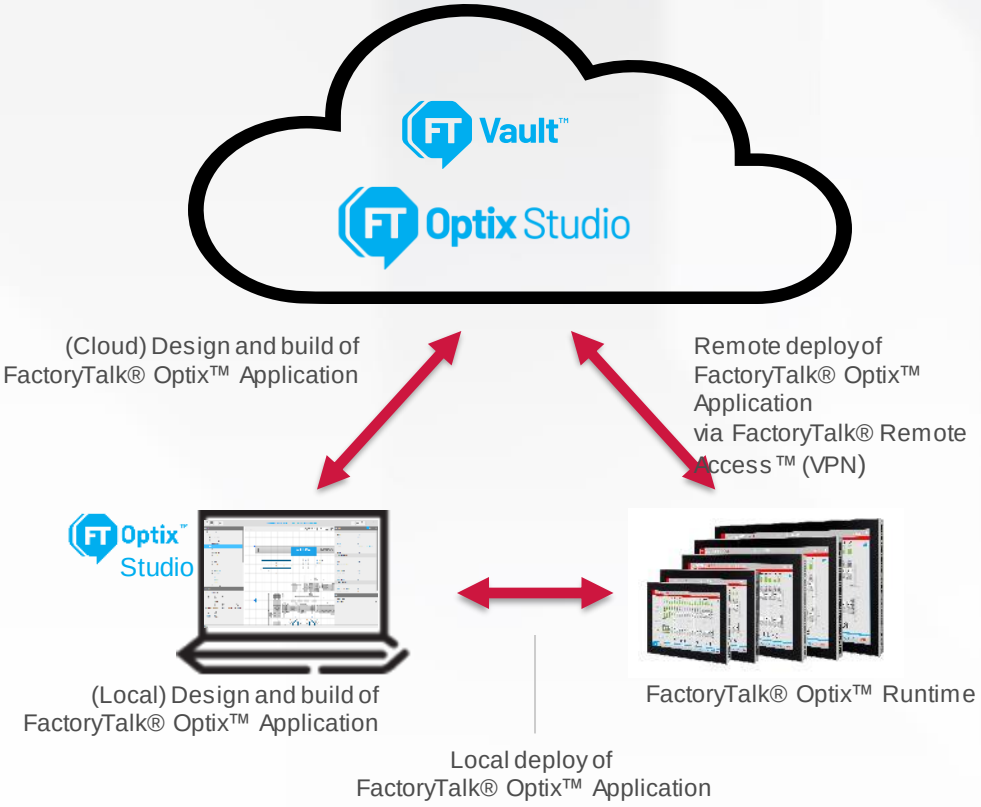
Navigate to the sign-in page using one of the easy URLs (FactoryTalkHub.com or rok.auto/hub)

  - Actual sign-in page: https://home.cloud.rockwellautomation.com/sign-in

FT Optix™

An open, scalable, flexible, visualization platform

- **Modular deployment** – uses only the components needed to run the project
- **Responsive graphics** - detects screen size and adapts layout accordingly
- **Multi-user collaboration** - using a web-based designer in the cloud
- **Version control** - using industry tools such as FactoryTalk® Vault™ and GitHub
- **Open architecture** – fully extensible with C# programs
- **Remote management** –update and maintain projects online
- **Third-party support** – built-in connectivity to non-Rockwell Automation devices
- **Internet of Things connectivity** – support for smart manufacturing and Digital Transformation
- **Scalable platform** - The same application can be deployed to a closed panel, Station, or Distributed architectures
- **OPC UA is core to the platform** – enable machine-to-machine communication or machine-to-cloud communication



Rockwell Automation

Only pay for what you need

Runtime licenses aligned to your specific requirements

FT Optix™ Runtime

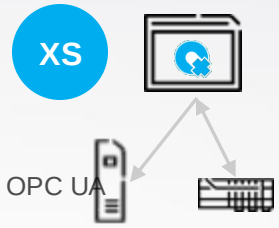
Station - Lite

X-Small

Typical Application

Controller connectivity acting OPC UA server and basic display

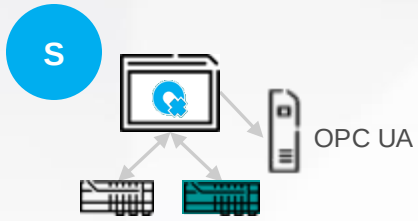
- Single controller (RA)
- OPC server (1 connected client)
- Data Logging with local DB
- HMI graphics



Small

Basic HMI including capabilities of XS plus:

- 3rd party controller support
- Alarming
- Basic Reporting
- Security w/ Active Directory

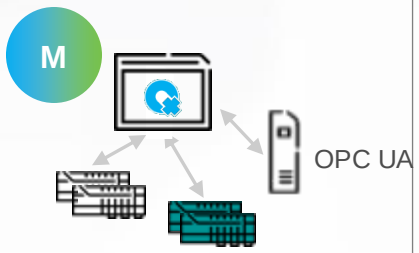


Station - Standard

Medium

HMI station including capabilities of S plus:

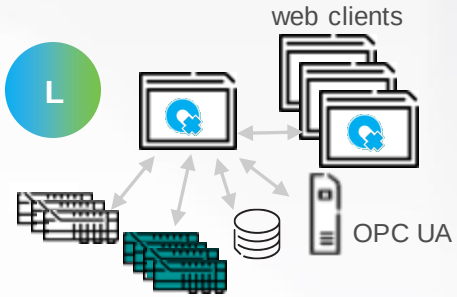
- Multiple controller (RA or 3rd party)
- Recipes
- OPC UA Client



Large

Comprehensive HMI including capabilities of M plus:

- HTML5 HMI up to 3 web clients
- Audit signatures
- Database – ODBC w/ 1 db connection

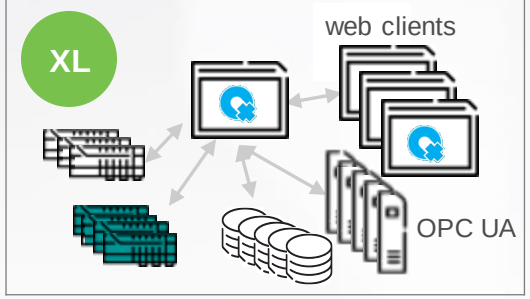


Station - Pro

X-Large

HMI with extensibility including capabilities of L plus:

- Multiple OPC UA Client connections
- OPC UA Server for multiple clients
- DB – ODBC, multiple db connections



UNL **Unlimited station runtime also available**

Flexible packaging: You can exchange capabilities shown in the examples above for specific capabilities you need

Rockwell Automation

FactoryTalk® Optix™

Powerful HMI platform for IIoT and Industry 4.0 applications

FactoryTalk Optix™ Station

AVAILABLE NOW

OptixPanel™

AVAILABLE EARLY 2023

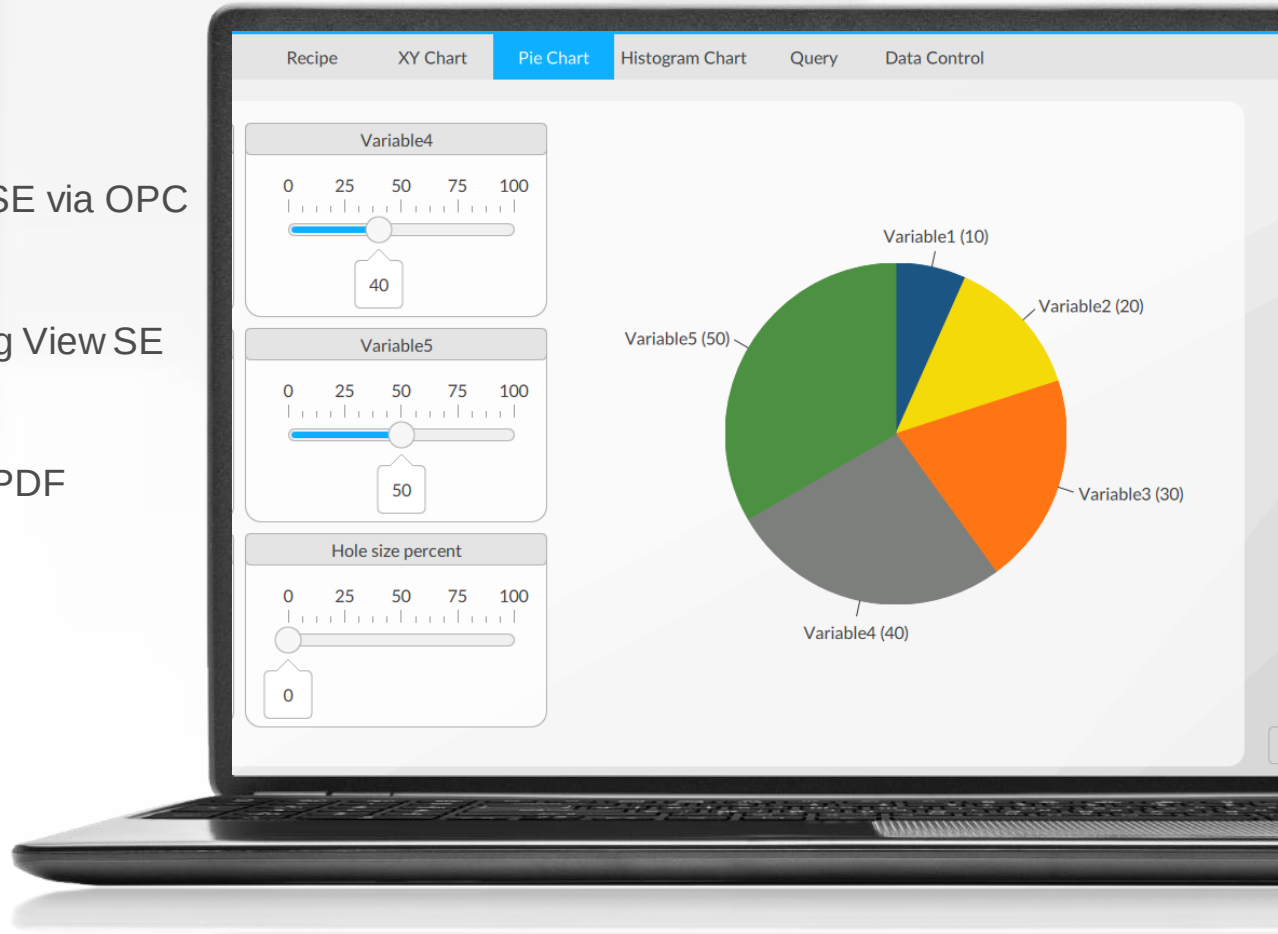
Rockwell Automation

How FactoryTalk Optix Complements FactoryTalk View SE

FactoryTalk Optix™ can complement existing and new installations of FactoryTalk View SE

FT View + FT Optix

- **Connectivity extensions**
  - MQTT (IIOT)
  - 3rd party controllers and making the data available to View SE via OPC UA
- **Basic Dashboarding**
  - ODBC database integration and dashboarding by leveraging View SE embedded web browser to view the data
- **Basic reports**
  - Running parallel to View SE, Optix will be able to generate PDF reporting
- **OPC UA Interoperability**
  - OPC UA Companion Spec for
    - PackML M2M communications
    - ISA-95 Common Object Model
- **Scripting engine extensibility**
  - Optix will provide a set of libraries written in C#
    - Notifications push agent, etc.



Rockwell Automation

Rockwell Automation

PowerFlex Series Update

PowerFlex® 755T AC Drive Products

Scalable Solutions

Rockwell Automation

Total*FORCE* Technology

- ***FORCE*** Motor Control (4th Generation)
- Advanced Power Control Capabilities
  - Regeneration, Harmonic Mitigation & Power Factor
- Internal Distributed Framework
  - Motor Shaft Performance, Dynamic Power Up
- Adaptive Control
  - Load Observer, Adaptive Tuning
- Predictive Analytics for Maintenance
  - Actively monitors key components and provides timely notifications

PowerFlex® 755TS Drive

Rockwell Automation

Power Range: 1-400 Hp/
0.75-350 kW; 400/480V

0-60°C operating temperature

Five-slot chassis for
option cards for safety,
communications and feedback

Enclosure options: IP 54, Flange,
Corrosive Gas (XT)

Same footprint as PF 755—use
same mechanical and electrical
considerations

Extended top of frame for frames 3
& 4—gives you smaller footprint
with
higher Hp/kW

Global certifications

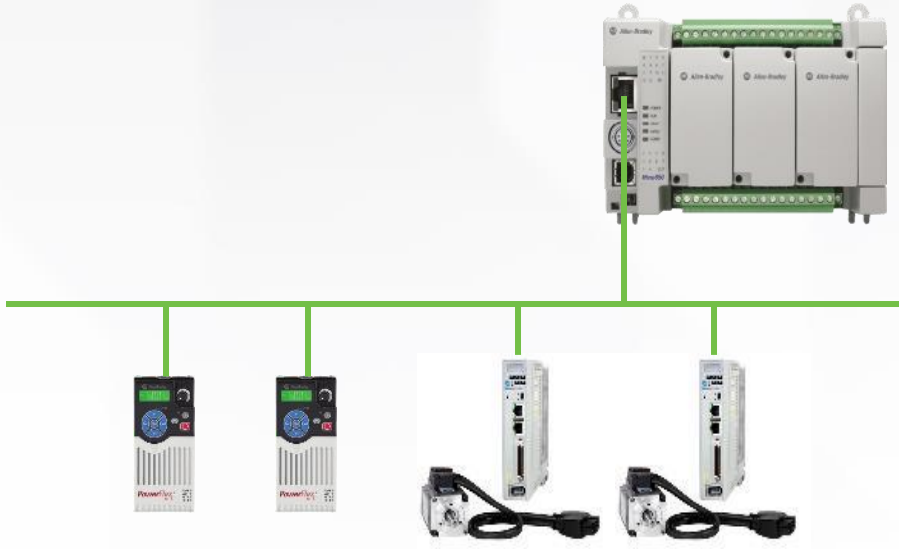
Rockwell Automation

Small Controller Update

New and enhanced capabilities for Micro850® and Micro870® 2080-Lx0E controller catalogs

Micro800™ controller with Connected Components Workbench™ software version 21 provides implicit messaging support to EtherNet/IP devices

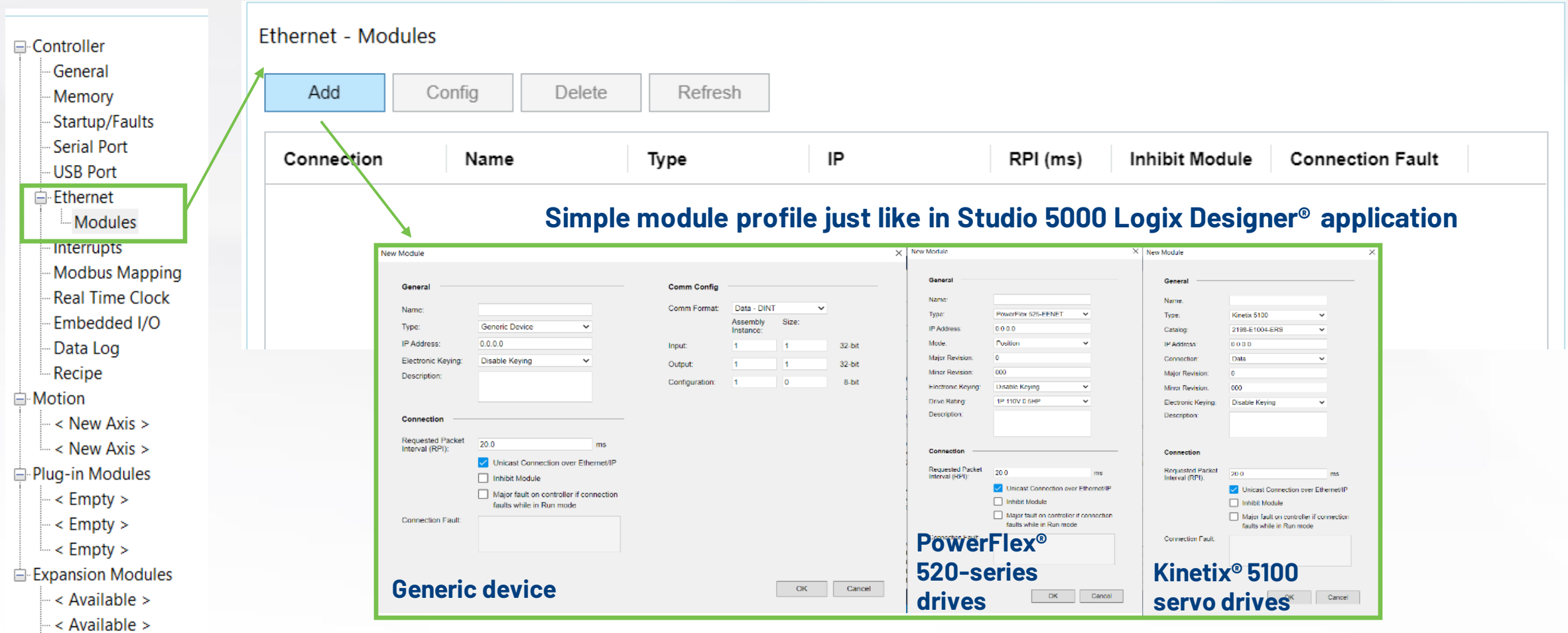
- Supported in Micro850® 2080-L50E and Micro870® 2080-L70E controller catalogs only
- Requires firmware revision 21.011
- Pre-defined tags available for PowerFlex® 520 series and Kinetix® 5100 drives
- Generic tags for all other EtherNet/IP devices
- Up to eight devices supported
- Pre-developed user-defined function block (UDFB) instructions for PowerFlex® 520 series and Kinetix® 5100 drives



Simple module profile

Class 1 implicit messaging support for Micro850® and Micro870® 2080-Lx0E controller catalogs only

- Simple table format to allow user to create the devices



Tag structure

- Easy identification of device status and pre-defined tags

Ethernet - Modules

Add | Config | Delete | Refresh

Connection	Name	Type	IP	RPI (ms)	Inhibit Module	Connection Fault
	PF	PowerFlex 525...	192.168.1.24	10.0	☐	
	Generic	Generic Device	192.168.1.46	20.0	☑	
	Motion1	Kinetix 5100	192.168.1.35	20.0	☑	

- Generic_I
- Generic_O
- Generic_C

Generic device

Name	Alias	Comment	Data Type
PF_I			PowerFlex525V_I
PF_I.DriveStatus		Ready,Active,CommandDir,A...	INT
PF_I.OutputFreq			INT
PF_O			PowerFlex525V_O
PF_O.LogicCommand		Stop,Start,Jog,ClearFaults,F...	INT
PF_O.FreqCommand			INT

PowerFlex® 520 series drives

Name	Alias	Comment	Data Type
Motion1_I			Kinetix5100_Camming_I
Motion1_O			Kinetix5100_Camming_O
Motion1_O.OperatingMode			SINT
Motion1_O.ServoControl		ServoOn,ServoOff,StopMotio...	SINT
Motion1_O.HomingMethod			SINT
Motion1_O.SpeedReference			DINT
Motion1_O.AccelReference			DINT
Motion1_O.DecelReference			DINT
Motion1_O.PositionReference			DINT

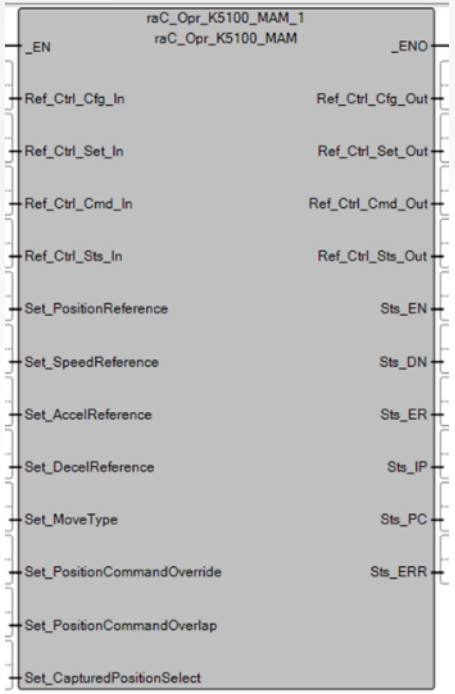
Kinetix® 5100 servo drives

Pre-developed user-defined function blocks (UDFB) for ease of programming

Supported with Class 1 implicit messaging capability

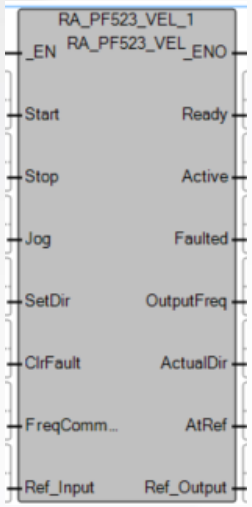
- 11 user-defined function blocks (UDFB) for Kinetix® 5100 servo drives, similar to the Logix user interface using Add-On Instruction (AOI)

Kinetix® 5100 UDFB	
raC_Opr_K5100_MSO	raC_Opr_K5100_MAM
raC_Opr_K5100_MSF	raC_Opr_K5100_MAI
raC_Opr_K5100_MAFR	raC_Opr_K5100_MAG
raC_Opr_K5100_MAS	raC_Opr_K5100_MAH
raC_Opr_K5100_MAJ	raC_Opr_K5100_MAT
raC_Drv_K5100	



- Three user-defined function blocks (UDFB) for the PowerFlex® 520 series drives

PowerFlex® 520 series UDFB
RA_PF523_VEL
RA_PF525_VEL
RA_PF525_POS



432ES GuardLink®® On-Machine™ EtherNet/IP Interface

Steve Dukich • Product Manager | 11. 2022

Rockwell Automation

expanding **human possibility**™

432ES-IG3 GuardLink® On-Machine™ Interface

World's most advanced serially connected safety input solution

1. Automatic Diagnostic Reporting to HMI
   - Eliminates software development time
   - Studio 5000® version 34.01 or later
   - PanelView™ 5000

2. CIP Safety over EtherNet/IP
   - Meets ODVA requirements
   - Supports linear, star and Device Level Ring (DLR) topologies

3. On-Machine™ mounting
   - IP66/67/69K
   - Can also be mounted in cabinet

4. Patchcord and cordset wiring
   - Reduces wiring costs
   - Facilitates troubleshooting

Rockwell Automation

432ES-IG3 GuardLink® On-Machine™ Interface

World's most advanced serially connected safety input system

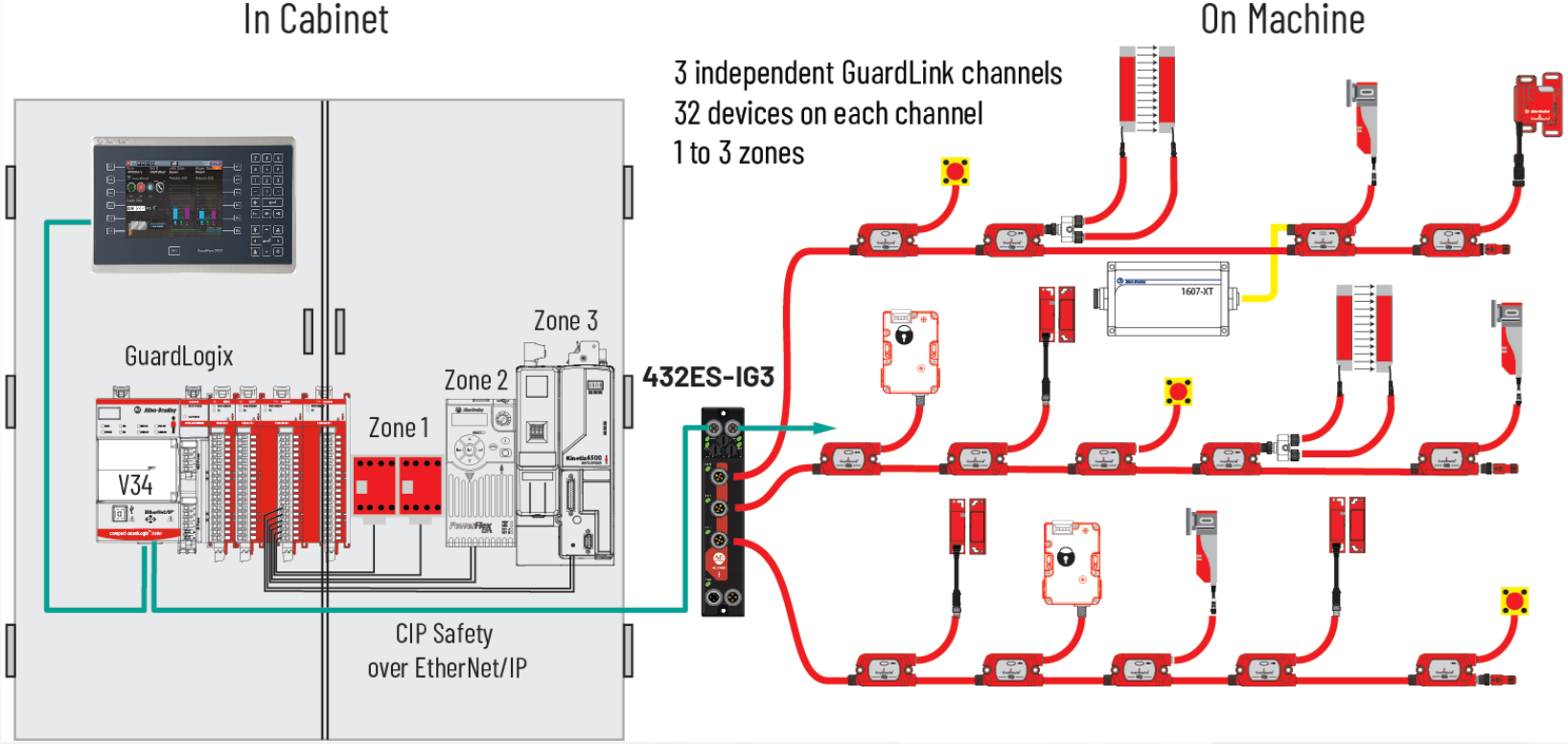
5. Three independent GuardLink® channels
   - Can control three independent zones
   - Or combine into 1 or 2 zones
   - Up to 32 devices per channel

6. Separate module and output wiring
   - Can cascade power to additional interfaces
   - Can turn off output power while leaving module power on

7. Timestamping
   - Keep track of timing and frequency of events
   - Good tool for improving maintenance programs/process improvements

8. Highest safety rating for serial connections
   - Up to SIL 3, SIL CL3, Cat 4 PLe

432ES-IG3 On-Machine™ Mounting (GuardLink® 2.0)



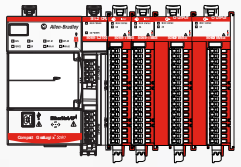
Key Characteristics
432ES-IG3 located On-Machine™
Taps and safety devices On-Machine™
Three independent GuardLink® channels
Up to 32 devices on each channel
One to three zones
Uses GuardLogix® (Studio 5000® version 34)
CIP Safety over EtherNet/IP

Can be mounted in cabinet too!

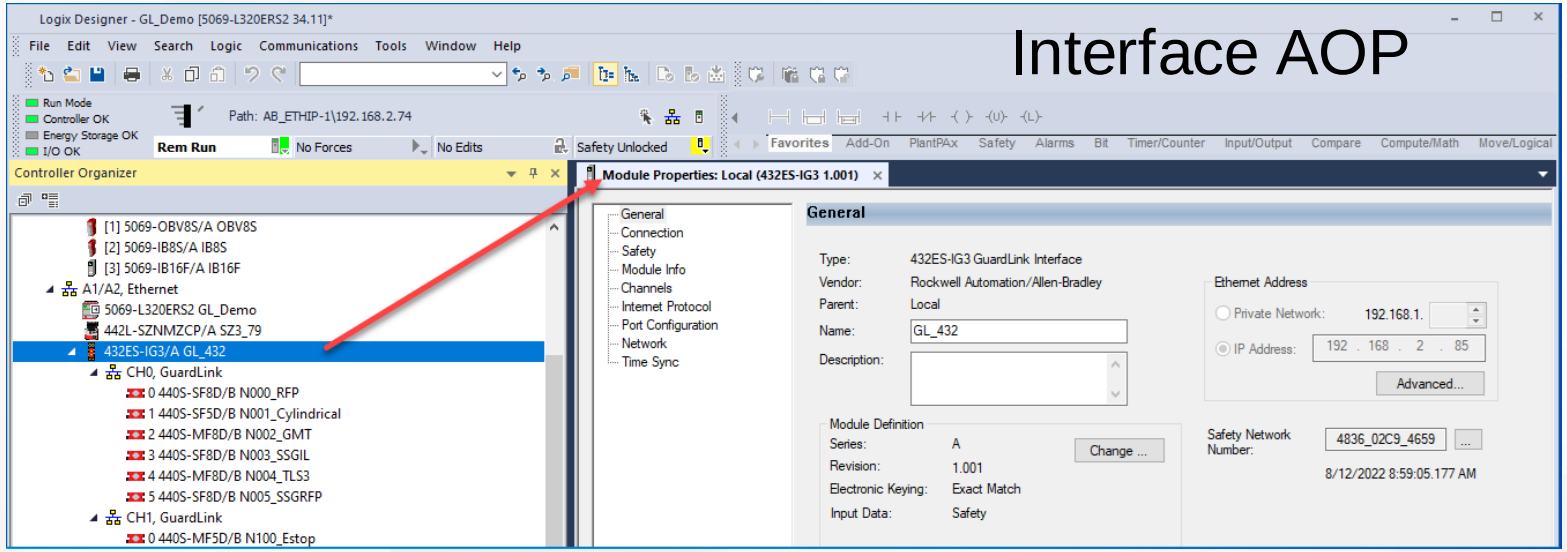
Rockwell Automation

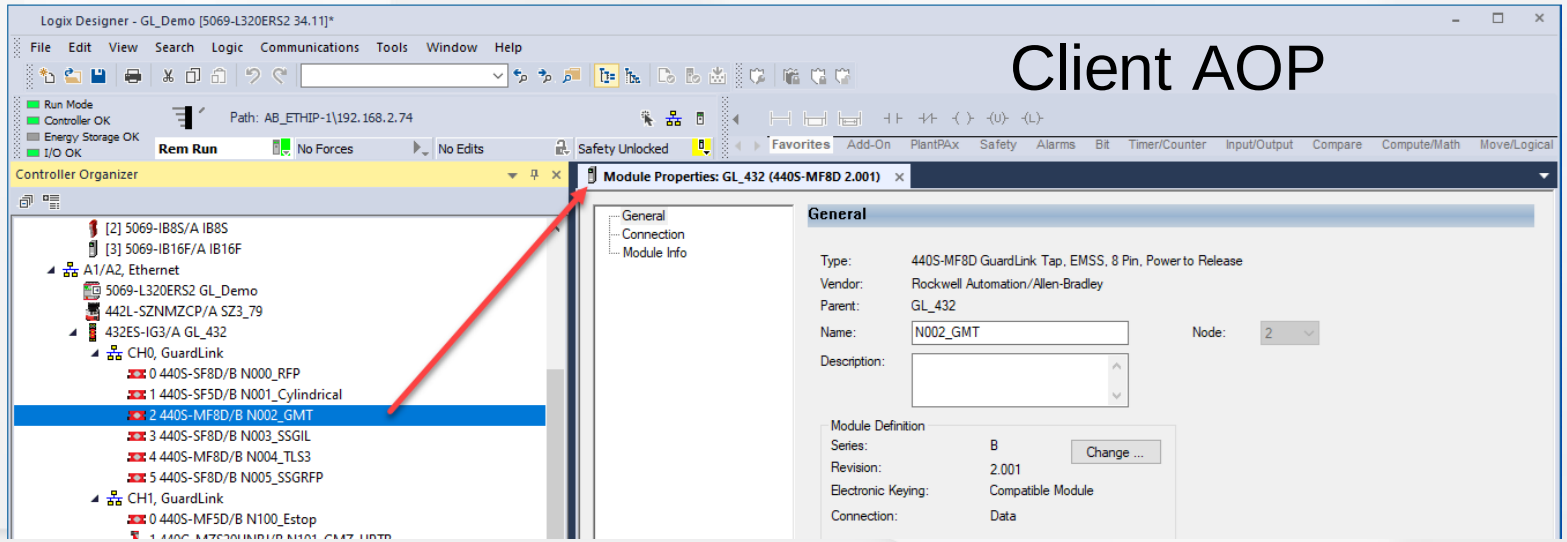
432ES-IG3 Studio 5000® Add-on-Profiles

- Must connect to a GuardLogix® ICE2 controller (not ControlLogix®)

  - 1756-L8xS
  - 5069-L3xERS
  - 5069-L3xERMS
- Will operate with
  - Studio 5000® V34.01 and later
  - FactoryTalk® 6.30 and later
  - PanelView™ 5000 for automatic diagnostic reporting
- The interface and client devices are listed in the Controller Organizer
  - The interface has an AOP
  - Each client device has an AOP





Many Typical Safety Devices Can be Connected to Smart Taps

Typical safety devices connect to the link via a Smart Tap (GuardLink-enabled) tap

Cable Pull Switches

- Mechanical contacts
- OSSD outputs

Contact Interlocks

- Mechanical contacts

Light Curtains (On/Off)

- OSSD outputs

Non-contact Interlocks

- MC2
- OSSD outputs

Safety Switches with Guard Locking

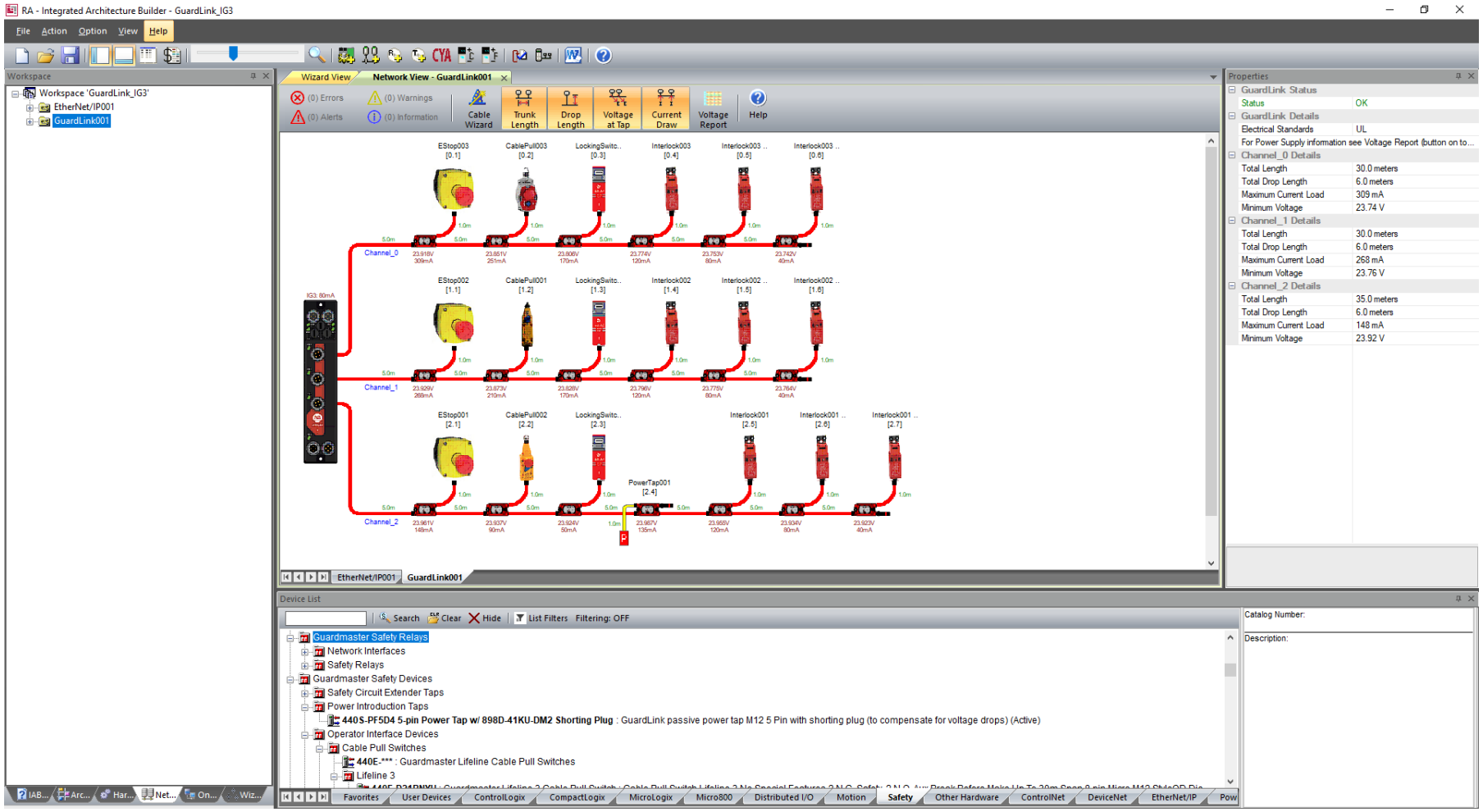
- Mechanical contacts
- OSSD outputs

E-stop Buttons

- Mechanical contacts

Integrated Architecture® Builder

Build a complete GuardLink® system



Summary

World's ***Most*** Advanced Serial-connected Safety Solution – Savings, Savings, Savings

So many ways…

Desire	Savings
Integration	Reduced system cost CIP Safety over EtherNet/IP No need for intermediary communication connection modules
Reduce Cabinet Space	What cabinet? On-Machine™ Mounting
Reduce wiring costs	Home-Run Wiring Single 4-conductor cable compared to running numerous cables in a wireway Home run wiring cable ***lengths*** add up quickly
Cable Costs	Reduce installation costs Daisy-chain trunk cable with standard off-the-shelf unshielded cables significantly reduces installation costs (material and labor)

Summary

World's ***Most*** Advanced Serial-connected Safety Solution – Savings, Savings, Savings

So many ways…

Desire	Savings
Timestamping	Reduced downtime Know ***when*** the machine went from an operational state to a safe state due to a safety device, and which safety device ***caused*** the transition
Automatic Diagnostic Reporting	Reduced programming time Introduced with Studio 5000® Version 33, certain diagnostics can be transferred to an HMI without user-specific programming
Improved Diagnostics	Reduced downtime The additional diagnostics being embedded in the devices (taps as well the safety devices themselves) will help to identify potential causes of downtime, more quickly

Rockwell Automation

Training Update

Learning+ Availability

E-Learning:
C – Chinese, **F** – French, **G** – German, I- Italian, J – Japanese, K – Korean, **P** – Portuguese, **PL** – Polish, **S** – Spanish, **T** – Turkish

V – Virtual Classroom
P – Programming
M – Maintenance

CONTROL

CCP146: Logix 5000™ System Fundamentals (P/M) (C,F,G,I,J,K,P,S,T) **(V)**

CCP151: Basic Ladder Logic Programming (P) (C,F,G,P,PL,S) **(V)**

CCP152: Function Block Programming Course (P) (F) **(V)**

CCP153: Studio 5000 Logix Designer® Level 2: ControlLogix® Maintenance and Troubleshooting (M) (F,I) **(V)**

CCP154: Structured Text and Sequential Function Chart Programming (P) (F)

CCCL21: Basic Ladder Logic Interpretation (M) (C,F,G,I,P,S) **(V)**

CCP143: Ladder Logic Project Development (P) (C,F,G,P,S,T) **(V)**

DRIVES

CCA182: PowerFlex® 750-Series Drives Configuration & Startup (P/M) (C,F,G,P,S) **(V)**

CCA183: PowerFlex 750 Series Maintenance & Troubleshooting (M)

CCA184: PowerFlex® 750-Series Drives Configuration for an Integrated Architecture® System (P/M) (C,F,G,P,S)

CCA185: PowerFlex® 525 Startup & Configuration (P/M) (F) **(V)**

CMP100: Connected Components Workbench™ Programming (P/M)

FY23 Release
755T V10 Enhanced 755 TS
DRV100 – PowerFlex® Drives Fundamentals

MOTION

CCN132: Motion Control Fundamentals using Kinetix® 5700 Drives (P/M) (C,F,G,P,S)

CCN144-A: CIP Motion Programming (Kinetix5700) (P) (C,F,G,P,S)

CCN202: Kinetix 5700 Troubleshoot & Project Interpretation

VISUALIZATION/ HMI

CCV204-A: FactoryTalk® View ME and PanelView™ Plus Programming (P) (C,F,G,P,S) **(V)**

CCV207: FactoryTalk® View SE Programming (P) (C,F,G,P,S) **(V)**

VIS230: ThinManager Configuration & Troubleshooting

PROCESS CONTROL

EK-ICM101E: Vibration Analysis Fundamentals (P/M)

PRC201: PlantPAx® System Design & Implementation (P)

PRC203: PlantPAx Operating & Maintenance (P/M)

FY23 Release
PRC111: FactoryTalk Batch I: Batch Server and Configuration Tools

INDUSTRIAL NETWORKING

CCP183: EtherNet/IP Configuration and Troubleshooting (P/M) (C,F,G,P,S) **(V)**

Industrial Network Architecture:
- **INA201:** Foundation (P)
- **INA202:** Intermediate (P)
- **INA203:** Advanced Part 1 (P)
- **INA204:** Advanced Part 2 (P)

CCP184: Network Fundamentals for Control Systems

FY23 Release
CYB101: Cybersecurity Fundamentals for OT Env

LEGACY PRODUCTS

CCPS41: SLC™ 500 and RSLogix500® Programming (P)

CCPS43: SLC 500 Maintenance and Troubleshooting (M)

SOFTWARE

FTAC: FactoryTalk® AssetCentre Design and Implementation V10 (P)

FTADTV: FactoryTalk Analytics Dataview

FTEG: FactoryTalk Edge Gateway

SAFETY

SAF-LOG104: GuardLogix® Application Development & Troubleshooting (P/M) (F) **(V)**

FY23 Release
- **SAF-FSM1:** Functional Safety Part 1
- **SAF-FSM2:** Functional Safety Part 2

* New releases subject to change