Overview of the New PlantPAx® 5.0 System

PlantPAx® Marketing

Rockwell Automation

expanding **human possibility**™

PlantPAx® System 5.0

PlantPAx® 5.0 was purpose built for plant-wide process and batch control. From the new dedicated Process Controller to the new firmware embedded Process Objects, PlantPAx® 5.0 is designed to serve larger and more complex operations in a more secure manner.

- Simplified Architectures with reduced server requirements

- Higher Performance Redundant Process Controllers

- **Embedded Process Objects**

- **Alarms in objects for single configuration**

- **Automatic Hardware Diagnostics**

- **Improved HART configuration/HART data structures**

- **New Organization, Ownership and Arbitration functionality**

- Embedded Libraries support 21CFR11 audit trails & e-signature

- IEC62443-3-3 Cybersecurity Certification

Benefit

- Systems that are easier to deploy and simpler to maintain

- Promotes consistent delivery from site to site.
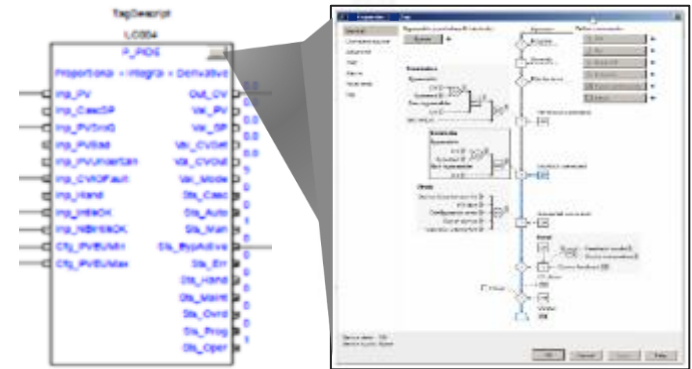
PlantPAx® System

Tools and Solutions

- Process System Estimator (PSE)
- Rapid Code development (ACM)
- Process Object Library Migration Tool

Library of Objects

- Standard Objects reusable objects
- Class-based solutions
- Known performance characterization
- Digital Device & Instrumentation Interface Objects

Reference Architecture

- Network Infrastructure
- Integration Skids
- Cybersecurity
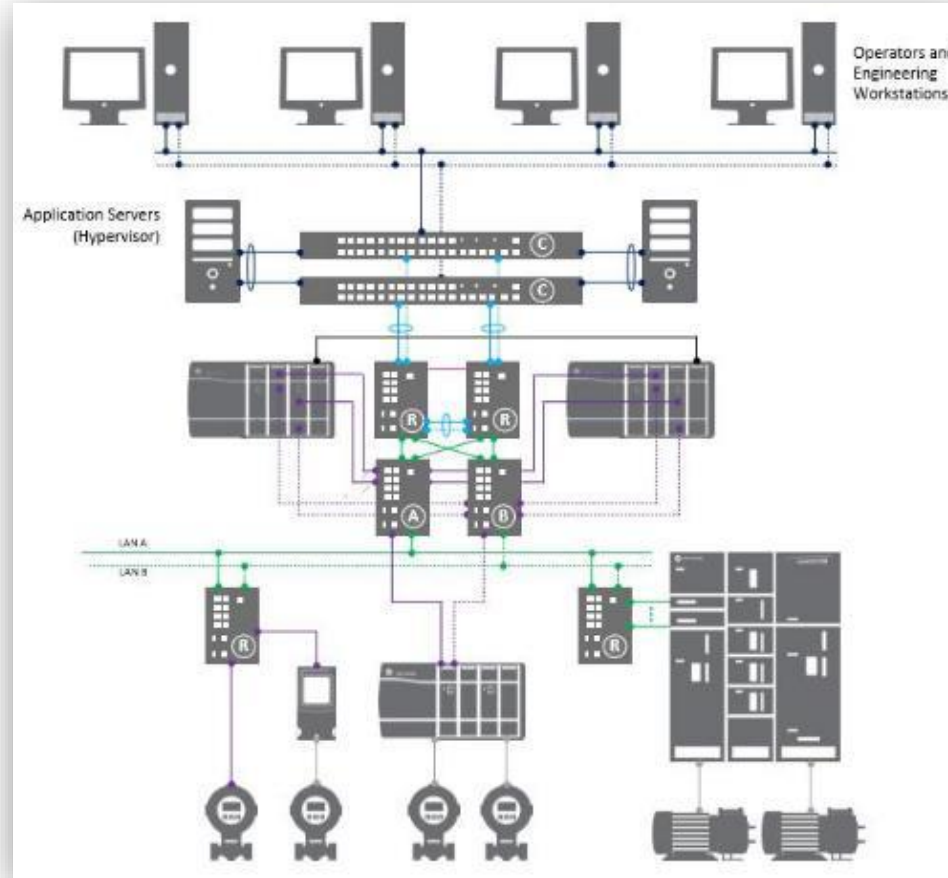
Product Development

- Key Process Features
  - Controller
  - Power
  - HMI
  - Historian
  - Asset Management

Documentation

- System Guidelines
- System References
- User Manuals
- Selection Guides
- Infrastructure Manual
- Online Help

Overview

Leverage native features like embedded instructions and task modeling to minimize project design time.

Available in three ControlLogix® catalogs and two CompactLogix™ catalogs.

Benefit

- Out-of-the-box settings and instructions that follow PlantPAx® guidelines
- 8-series Logix controller performance profile
- Intuitive workflows eliminate unnecessary rework, simplify design and deploy effort

Expanding the Logix Family for Process

Reduce deployment time and variability for process applications in the ControlLogix® and CompactLogix™ families.

Embedded Process Instructions

Simplifying Lifecycle Management

## Reduced footprint (Simplification & Strings)

- Many strings moved from instructions to extended tag properties
- Instructions in firmware (No overhead memory consumed)
- Fewer Servers, higher data volumes

Drives consistent delivery

- Library native to controller and design pallet
- Simplifies lifecycle management

Streamlined workflow

- Controller based alarming
- Instructions native to controller (no importing of Add-On Instruction)
- Supports multiple library versions on one system
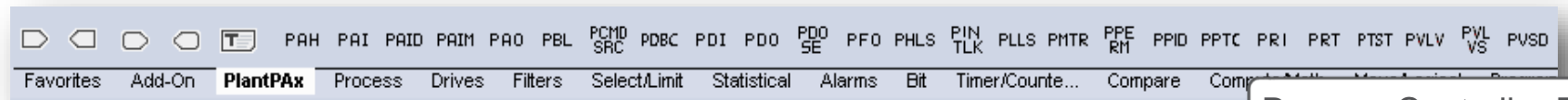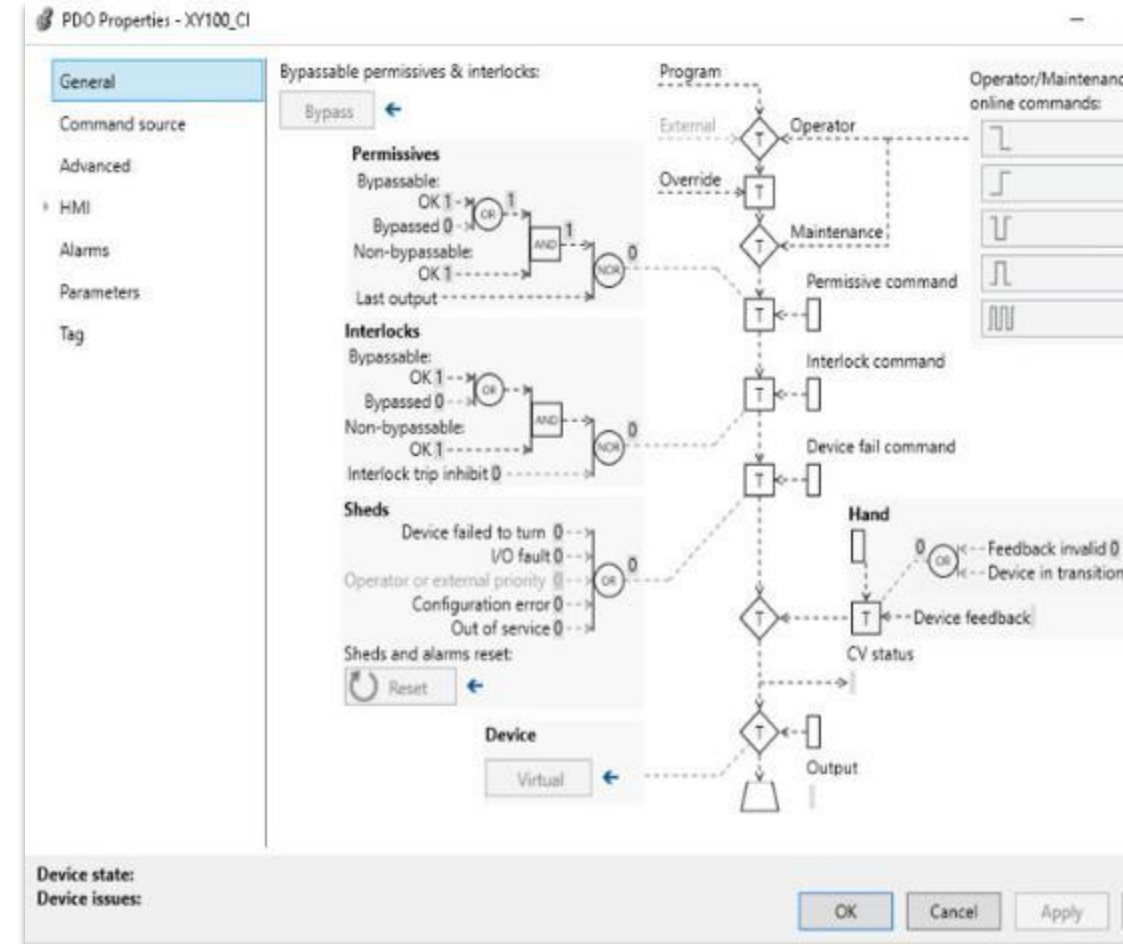
Process Controller Exclusive

PlantPAx® System 5.0

Select and Go Alarms within the Instructions

- Simple alarm setup and configuration

- Single environment – deploy alarms when creating control elements in Logix Designer application

- One place to go to add and configure alarms

- One click to add alarms from the object's definition

- Predefined alarms on every object

- Allow users to enable alarms for each instance.


Process Controller Exclusive

PlantPAx®: Dual Library Support

Consistent User Experience

- PlantPAx® 4.x library lives on in parallel with Next Generation (NG)
- Both Add-On Instruction (AOI) and NG objects co-exist together in PlantPAx® 5.0
- Both AOI and NG faceplates coexist together in PlantPAx® 5.0

Phased Migration Support

- Mixed library applications are supported
- Allows for gradual adoption of new technology
- Support for AOI and embedded style
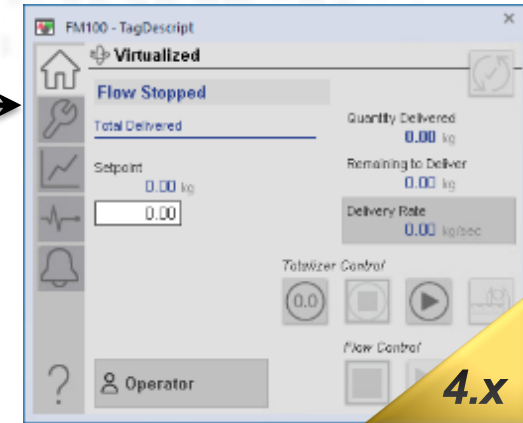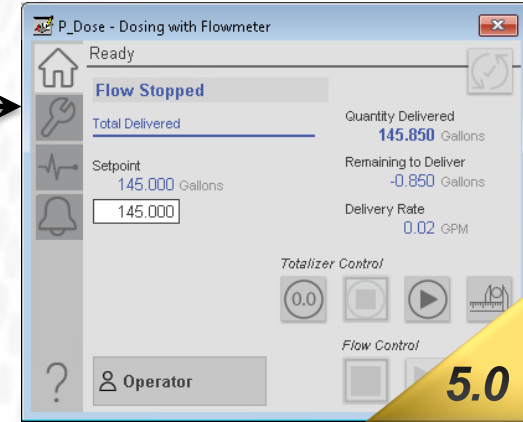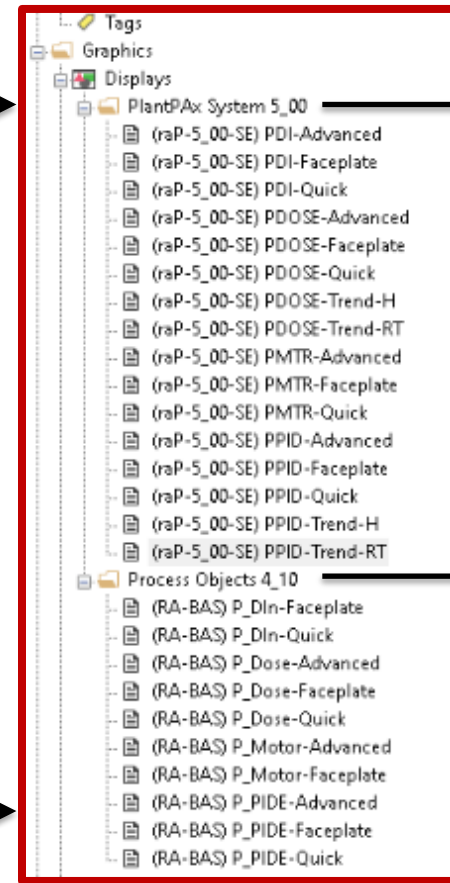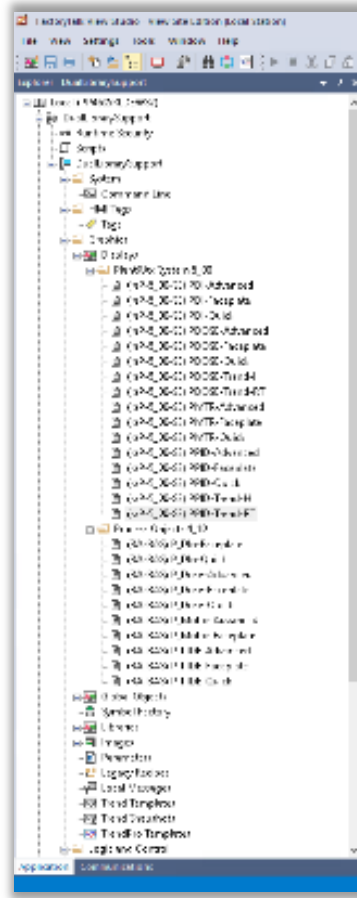
Instruction Usage

See PlantPAx® and Process instruction usage per task for optimal task balancing and visibility

Overview

See a dashboard of each task and the instructions used.

Use with embedded webpage to see CPU utilization and avoid task overlap.

Benefit

- Consistent performance and visibility into task loading during project creation.
- Easier identification of number of control strategies.

Instruction Usage

☑ Hide unused instructions

Category	Instruction	Fast	Normal	Slow	System	Total
PlantPAx	PAI	0	1	0	0	1
PlantPAx	PAO	0	1	0	0	1
PlantPAx	PCMDSRC	0	18	0	0	18
PlantPAx	PDI	0	1	0	0	1
PlantPAx	PDO	0	1	0	0	1
PlantPAx	PFO	0	1	0	0	1
PlantPAx	PTST	0	1	0	0	1
*						
Total ⓘ		0	24	0	0	24

Tasks
- Fast (100 ms)
- ▷ Normal (250 ms)
- Slow (500 ms)
- System (1000 ms)
- Unscheduled
- ▷ Motion Groups
- ▷ Alarm Manager

New Task...	
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Instruction Usage	

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Task Model

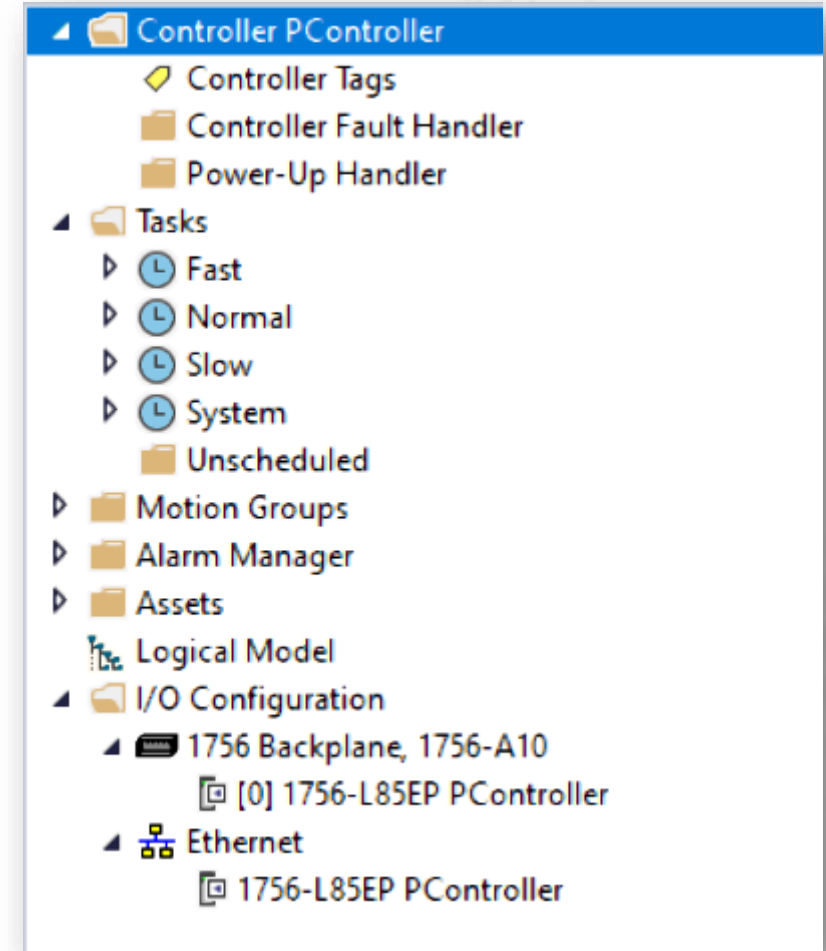Automatically create consistent task model in Logix Designer application

Overview

Start a project with a Fast, Normal, Slow, System periodic tasks already created.

Tasks created with period, priority and names already specified according to PlantPAx® guidance.

Benefit

- Shorter time dedicated to project creation and layout.
- Consistent project structure that aligns with PlantPAx® program guidelines.
- More predictable performance estimates and planning.

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Automatic Diagnostics

FactoryTalk® Alarms and Events v.6.20

Organization, Ownership, and Arbitration

Managing equipment using native functionality on PlantPAx® 5.0 objects

Overview

- Create organizational trees of related devices directly from the HMI

- Manage and prioritize device ownership within these trees

- Propagate commands down and statuses up the organizational trees (ie: Alarms, Physical vs. Virtual Mode, and Command Source)

Benefits

- Ability to command devices as an equipment group

- No custom code required to create equipment groups

- Identifies ownership status of equipment groups

- Queues ownership requests of an equipment group and allows user to set custom arbitration rules

- Get statuses and issue commands to equipment groups from a single request
  - Commands propagate down from selected parent
 - Status propagates up from children
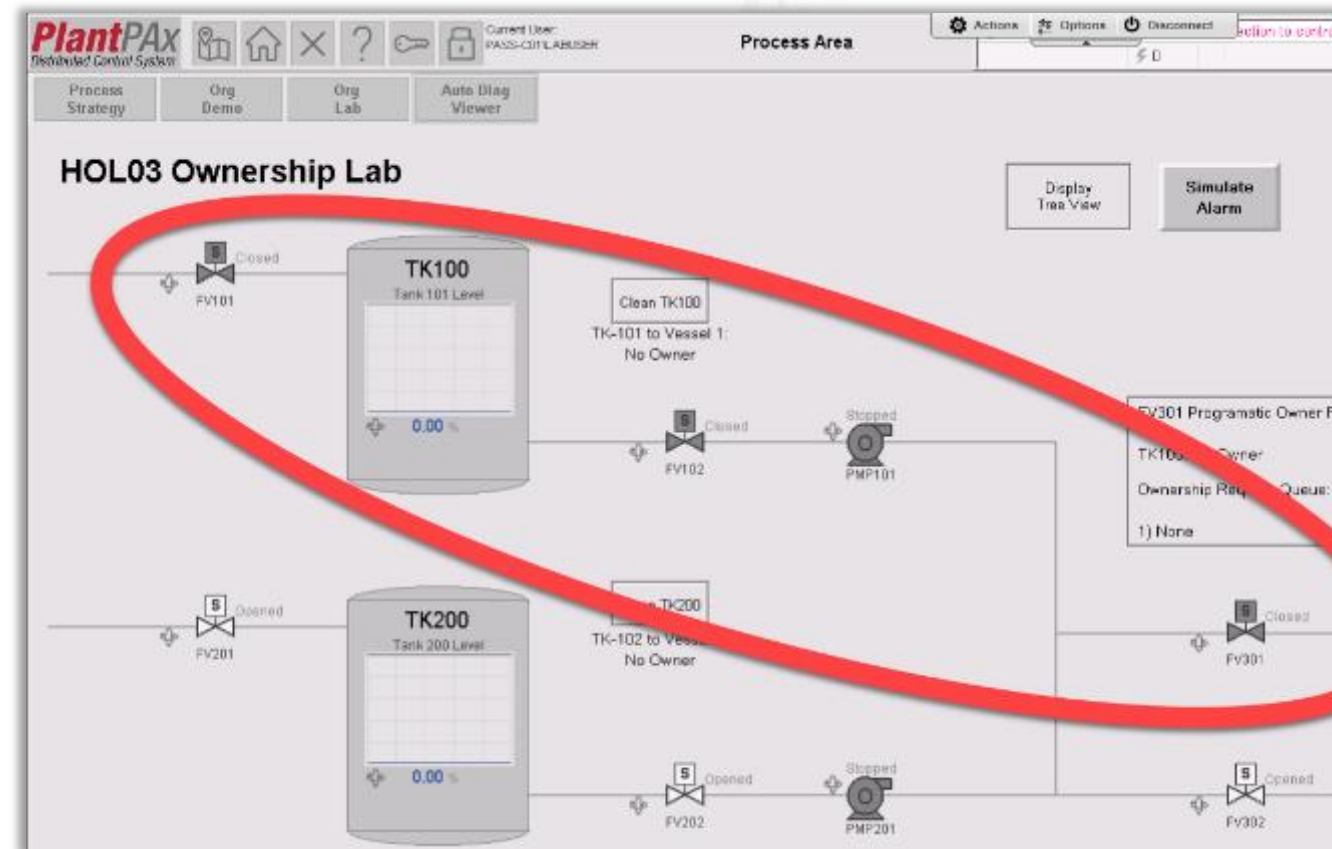
Highly Integrated HART

Features

- Add and replace HART devices online

- HART signals & connection status indicated Logix Designer application I/O tree

- Integrated device diagnostics via profile

- PlantPAx® connection type selection

Benefits

- Intuitive Integration
- Device diagnostics included in PlantPAx® data type connection

- Out of the box Faceplate renders HART content
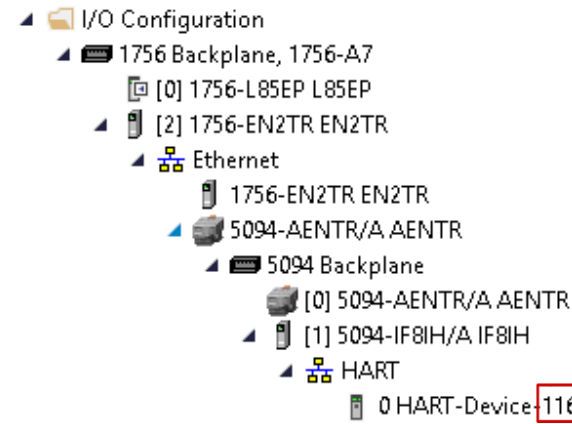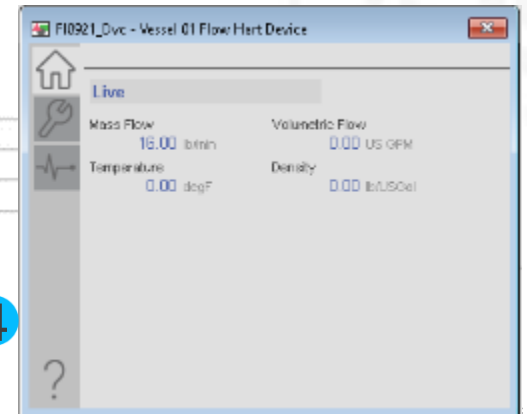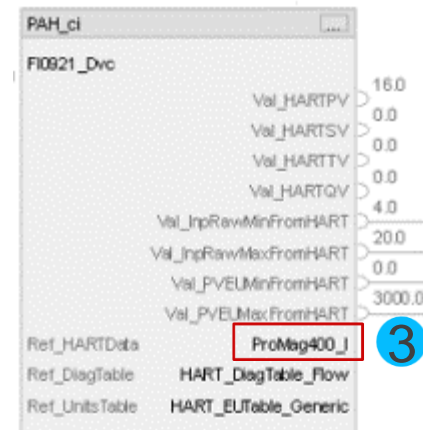

Catalog 5094-IF8IH
Catalog 5094-OF8IH

Process Instructions

Native instructions minimize extra compliance work in validated industries as a common, off the shelf solution.

Off the Shelf

- Instructions can be referenced as a standard offering without needing "Add-ons"

- Developed using a standard documented process with quality plan

- Standardized naming conventions

- Documented functional requirements and test requirements

Compliance

- E-signatures on operator actions (FDA 21 CFR pt 11)

- Audit trails on operator actions (FDA 21 CFR pt 11)

Process Controller Exclusive

PlantPAx® 5.0 Documentation Restructure

Focus: Consolidation and Simplification

- Each chapter (main section) based on overall system workflow
- Collapses detailed steps from existing documentation into higher-level steps to focus on the 'Why'
- Links to related product documentation for more information

Benefits
- Combines related content in one publication
- Focuses on PlantPAx® specific details
- Provides clearer picture of where to start and where to go
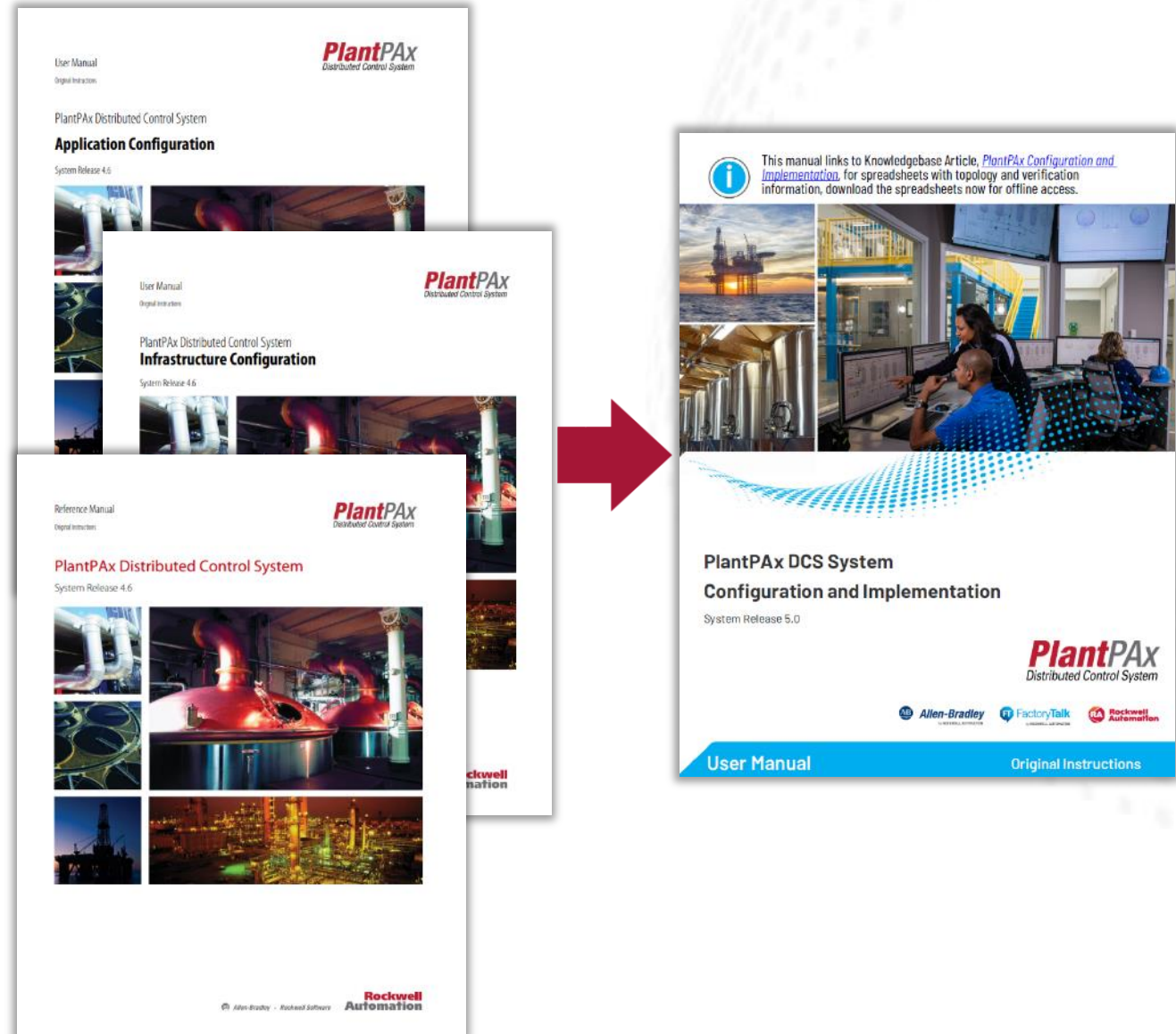
ControlLogix® Process Controller High Availability

Available at Launch of PlantPAx® 5.0!

- Intended as an addition to the 5570 redundancy solution (also available in V33)
- Leverages the 1756-RM2 modules
- No memory reduction when selecting redundancy - effectively doubling memory available over the 5570 redundant solutions

Thank you