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Systems

ISA88 with Rockwell HMI Training

COURSE CONTENT

GET IN TOUCH

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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

ISA-88 with Rockwell HMI Training by Multisoft Systems is designed to help automation professionals understand and apply the ISA-88 batch control standard using Rockwell Automation's HMI and control platforms. This training focuses on building standardized, modular, and scalable batch systems that improve consistency, flexibility, and operational efficiency in manufacturing environments.

Module 1: ISA-88 Fundamentals for Rockwell Users

- ✓ Why ISA-88 matters in batch and hybrid (batch + continuous) plants?
- ✓ ISA-88 model overview:
  - Physical model - Enterprise, Site, Area, Process Cell, Unit, Equipment Module, Control Module
  - Procedural model - Procedure, Unit Procedure, Operation, Phase
  - Recipe model - General, Site, Master, Control Recipe
- ✓ How ISA-88 maps to Rockwell architecture (Logix + FactoryTalk + Historian/MES basics)?
- ✓ Batch vs non-batch - where ISA-88 still helps (structured equipment, reusable code, standard alarms)

Module 2: Designing an ISA-88 Equipment Model in Logix

- ✓ Translating plant equipment into Units, Equipment Modules, Control Modules
- ✓ Practical guidelines for defining boundaries
  - What belongs in a Control Module vs Equipment Module?
  - Naming conventions and tag strategy
- ✓ ISA-88 state models (basic states and transitions)
- ✓ Building reusable equipment logic (AOIs / UDTs approach)
- ✓ Equipment interlocks and permissives using ISA-88 thinking

Module 3: Recipe Concepts and Operator Interactions

- ✓ Recipe parameters - equipment-independent vs equipment-dependent
- ✓ How recipes drive: setpoints, sequence steps, phase parameters?
- ✓ Operator inputs and confirmations (hold, restart, abort, manual override rules)
- ✓ Recipe versioning and change control basics (what operators should and should not edit)

Module 4: Rockwell HMI Foundation (FactoryTalk View ME/SE)

- ✓ FactoryTalk View ME vs SE - when to use which
- ✓ HMI project structure: displays, parameter files, global objects, macros, alarms, navigation
- ✓ Communications overview: RSLinx / FactoryTalk Linx, shortcuts, tag browsing
- ✓ Best-practice screen design:
  - high-performance HMI principles (overview-first mindset)
  - consistent faceplates, states, alarms, and trends

Module 5: ISA-88 Visualization Standards (What to Show on HMI)

- ✓ Visualizing the Physical model on screens:
  - Area overview → Unit overview → Equipment module detail → Control module faceplate
- ✓ Visualizing the Procedural model: Procedure / Unit Procedure / Operation / Phase status
- ✓ Displaying ISA-88 state: Running, Held, Aborted, Complete, Idle, etc.
- ✓ Batch execution indicators: current phase, next phase, step timer, reason codes
- ✓ Operator guidance: prompts, required actions, confirmations, and safe manual modes

Module 6: Building Unit Faceplates and Reusable HMI Objects

- ✓ Creating reusable faceplates for: motors, valves, pumps, analog loops, PID, VFD
- ✓ Using Global Objects (SE) / parameterized displays (ME)
- ✓ Standard elements in an ISA-88 faceplate: mode, command, state, interlocks, permissive, faults, maintenance override

- ✓ Tag naming templates to speed up development

Module 7: Batch Sequencing Concepts with Logix + HMI

- ✓ Designing phase logic in Logix: phase parameters, commands, handshakes, completion conditions
- ✓ HMI controls for batch sequencing: start/stop/hold/resume/abort, step advance, manual step confirmation
- ✓ Handling abnormal situations: loss of permissive, equipment fault during phase, operator holds, re-start logic
- ✓ Tracking and displaying step timers and progress

Module 8: Alarms and Events for ISA-88 Systems

- ✓ Alarm philosophy basics: what should alarm vs what should be message/event
- ✓ FactoryTalk Alarms & Events overview: alarm priorities, classes, suppression, shelving concept
- ✓ ISA-88 aligned alarm displays: unit alarms, equipment alarms, batch-related prompts
- ✓ Alarm rationalization checklist (noise reduction)

Module 9: Trends, Batch History and Reporting (HMI Perspective)

- ✓ Trend setup and best practices: key batch parameters, setpoint vs PV, phase markers
- ✓ Basic batch audit trail: operator actions, holds, abort reasons, phase transitions
- ✓ Optional integration overview: FactoryTalk Historian / SQL logs / MES (conceptual)

Module 10: Security, User Roles and Electronic Records Basics

- ✓ Role-based access: operator, supervisor, engineer, maintenance

- ✓ HMI security configuration basics (logins, permissions)
- ✓ Good practice for regulated environments: audit trails, e-signature concept, change control overview (high level)

Module 11: Hands-on Mini Project (Capstone)

- ✓ Build a small ISA-88 style unit with HMI: Example process: Mixing tank (fill → heat → mix → transfer)
- ✓ Deliverables:
  - physical model screens (Area/Unit/Equipment)
  - phase-based control with state display
  - alarms, trends, operator prompts
  - reusable faceplates for valve, motor, analog loop

Module 12: Troubleshooting and Commissioning Checklist

- ✓ Common HMI-tag issues, shortcuts, comms faults
- ✓ ISA-88 logic debugging: state stuck, permissive failure, phase not completing
- ✓ FAT/SAT checklist: screen navigation, alarm testing, interlock testing, step logic verification
- ✓ Documentation templates: tag list, alarm list, screen list, test sheets