

PLCbatch[®]

BATCH PROCESS CONTROL

Simpler implementation With PLC reliability



e-Factory
Partner Product



S88.01 style recipe running without the need for PCs



Simultaneous execution of several recipes



Simpler implementation of recipe-based process control systems

Less input. More output



To meet the challenges of modern process control, it is essential to be able to develop and implement new recipes easily, and to be able to make changes to existing recipes quickly, without creating the demand for complex and time-consuming programming. This is the goal of agile process control.

Traditionally, implementing effective batch control systems has meant a PC-based installation coupled within the real-time control loop. But many manufacturers prefer the greater simplicity and inherent reliability of a PLC-based system, eliminating the need for PCs on the plant floor.

To address this, Mitsubishi Electric, the World's largest producer of PLCs, and INEA, a leading supplier of specialist solutions for the Process Control market, have brought together a complete batch control solution that provides PLC recipe-based control in an ISA S88.01 compliant style.

The software provides many of the S88.01 features such as recipe creation and management, creation of batches and control of their execution, automatic execution of recipes, and simultaneous execution of several recipes – all without leaving the familiar PLC environment.

Industry standards

The S88.01 standard defines a common language and models for the design and specification of systems for batch processing. It enables the cost and complexity associated with dedicated, custom software traditionally needed to implement batch control systems to be eliminated.

It also provides the flexibility to make frequent changes to recipe parameters without the need for the manual reconfiguring of process lines or costly redesigning of batch control software.

The standard therefore provides a path to significant productivity improvements, allowing the same equipment to be used to make multiple products, or to perform any number of different operations, with simple recipe development and deployment.

Improved reliability

With INEA's PLCbatch® tools running on Mitsubishi PLC hardware, the execution of recipes is relocated from the PC platform to a PLC platform. Recipe-based batch process control systems are simplified for easier handling, without essentially reducing the expressive power and the abstraction level.

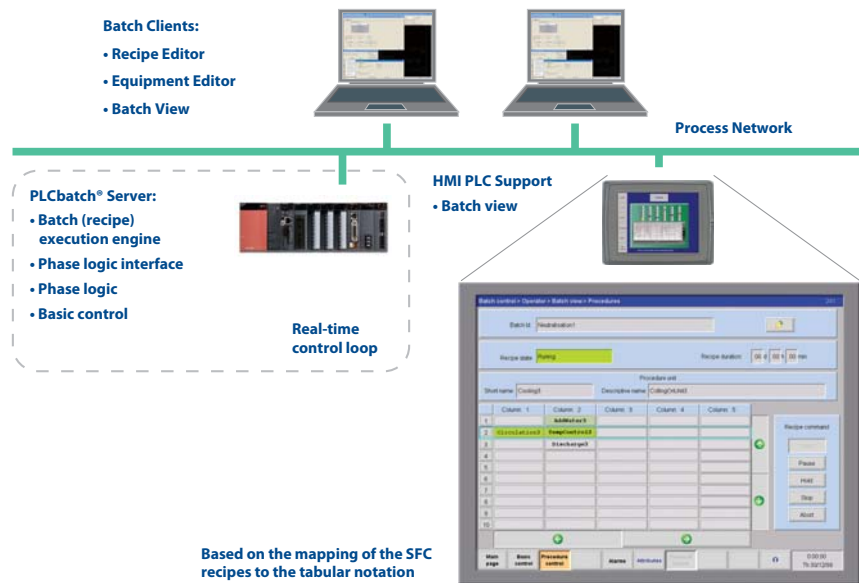
Software modules

The PLCbatch® software puts the recipe execution engine, phase logic interface, phase logic and basic control on the PLC. Recipe creation and editing is provided through the associated PC software module, and the operator interface is provided by the Batch View software running on Mitsubishi HMIs.

System features

PLCbatch® provides all the features you would expect from traditional PC-based batch control software, including:

- Simultaneous execution of several recipes with automatic allocation of units
- Support for parallel (AND) as well as selective (OR) branches
- Execution of the state-transition algorithm of individual phases, extended by the notion of superstates to improve the abstraction level
- The programmer is allowed to select a particular subset of the predefined states and superstates in order to create a defined model of phase behaviour
- Configurable behaviour related to propagation of holding transition from phases to recipe and vice versa
- Recipe versus physical model consistency check
- Improved flow of information



Improved flow of information

Data solutions

PLCbatch® is just one of the many data solutions within Mitsubishi's e-F@ctory automation concept. These data solutions enable manufacturers to realise reduced total cost of ownership, maximised productivity, and seamless integration of products and systems throughout the manufacturing enterprise.

Typical among these are the MES based interface solutions. These reside on the PLC backplane and can be used to capture information directly from the PLC system or in the case of the MES Interface IT also from third party devices and send that information directly to MES and inventory management applications.

Making life easy

Mitsubishi Electric also offer a range of process solutions from dedicated process CPUs (with standalone, multi CPU or redundant configurations) through to isolated analog I/O devices and temperature input modules with wire break detection.

Additionally, through another Mitsubishi e-F@ctory Partner, Wonderware, process users can reduce their programming and Scada development time with the direct integration of Wonderware's InTouch Scada and Mitsubishi's PX Developer Process CPU programming tool.

Specifications ///

Required PLC CPU

Model type	Q12H
Total Inputs/Outputs	4096/8192
Memory Capacity	32MB
Program memory	124 k steps (496 kByte)
Program cycle period per logical instruction	34nS
Multi CPU capability (Maximum 4 CPUs)	Yes

Required E1000 Series HMI

Model	E1151 (Pro +)
Unit style	Touch screen
CPU	RISC CPU (Intel XScale) 32MB Intel Strata Flash, 64MB RAM
Operating system	Windows CE.NET 4.2
Display	TFT, 65536 colours
Backlight	CCFL and burnout detection
Display in inches	15 "
Pixels	1024 x 768
Ethernet	10/100Mbit RJ45/TP
CF memory slot	1 internal for memory expansion (32-1024MB), 1 external for data capture/extraction)
Power supply	+24V DC (20-30V)
Construction	Case is made of cast aluminium
Dimensions (mm WxHxD)	398x304x66

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