United
PROCESS CONTROLS

INDUSTRIAL PROCESS CONTROL SOLUTION

The ActivePLC™ is an industrial standard programmable logic controller running the ActivePLC™ process control platform. The ActivePLC™ control platform provides a universal PLC program that is ready to run "out of the box" without PLC programming required. The ActivePLC™ platform provides a completely flexible and uniform system to define and setup inputs, outputs, alarms, timers, advanced math functions, logic operations, PID loops, recipe operation, analog signal scaling, and even thermocouple type selection and calibration on an industry standard controller.

The configuration of the ActivePLC™ is accomplished directly through the ActiveHMI™ touchscreen. Further, all ActivePLC™ settings and logic can be backed up locally and replicated to any other ActivePLC™ hardware regardless of the manufacturer. The purpose of ActivePLC™ is to provide a single, universal process control platform that a controls team can standardize on for many different applications, machines and projects within their facility, reducing development time, training, and spare part requirements.

ActiveHMI™

INCLUDES

• Customizable HMI
• Data Logging and Paperless Chart Recorder
• Recipe Control
• Alarm Log
• Calibratable Temperature Inputs
• Advanced Math and Logic Capabilities

APPLICATIONS

• Complete Furnace Control System (Multi-zone temperature and atmosphere)
• Nitriding Furnace Control (%DA or Kn)
• Annealing Furnace Control
• Gas Generators (Endo/Exo/DA)
• Batch Type and Continuous Applications
• ... and many others

Industrial ActivePLC™ Platforms

Brands: ATMOSPHERE ENGINEERING | FURNACE CONTROL corp | Marathon Monitors Inc | PROCESS-ELECTRONIC | WAUKEE ENGINEERING company inc.

HARDWARE & RECIPE DETAIL

DIGITAL INPUTS

- Full digital input status page
- Enable/Disable any digital input on HMI

DIGITAL OUTPUTS

- Full digital output status page
- Enable/Disable any digital output on HMI

ANALOG INPUTS

- Configurable types include:
    0-20mA, 4-20mA, 0-1V, 0-5V
- Auto scaled process variable for each input based on min/max values
- Signal and process variable offsets

ANALOG OUTPUTS

- Configurable types include
    0-20mA, 4-20mA, 0-1V, 0-5V
- Auto scaled process variable for each input based on min/max values
- Signal and process variable offsets
- Configurable process variable based on any value in the ActivePLC

THERMOCOUPLE INPUTS

- Configurable types include: J, K, S, B, C ,E, N, R
- 2 point calibration for each input
- Temperature process variable offset

RECIPE

- 12 operation x 12 step matrix
- Soak and Guaranteed soak step types
- Independent ramping feature available for each process variable in the recipe during each step
- Digital input and event output profiles which allow for any input or event output to be
- activated/deactivated during each step
- Configurable process variables based on any value in the ActivePLC

BENEFITS

- Standardization of application across hardware platforms
- No PLC programming required
- Traceable program revision control
- Integrated data logging and batch tracking
- Built-in recipe control
- Advanced math blocks provide Zirconia probe calculations
- Hardware and thermocouple setup & calibration without PLC software
- PLC application and HMI changes can be made "on the fly"

FEATURES

- Flexible Input and Output Configuration
- Universal Analog I/O Scaling
- Thermocouple Selection and Calibration
- Advanced Math Functionality
- Logic Operations
- Integrated Timers and Alarms
- Standardized PID Loop Functionality
- Built-In Recipe Capability

ACTIVEPLC™

DESCRIPTION

The primary goal of the ActivePLC™ is to minimize controller setup, programming, and integration costs without sacrificing controller capability and application flexibility. ActivePLC™ recognizes that PLC programming time, program standardization, and revision control can become a major investment that can consume a project's budget and require countless hours to debug and test. Further, it can become quickly cost prohibitive to maintain PLC programming software, files, licenses, and maintenance plans from one or more controller manufacturers.

Recently, safety guidelines such as those published by the NFPA and CE, as well as quality auditing systems including NADCAP, ISO, and CQI-9 require revision control

for all programmable logic controller (PLCs) programs. This means that any changes to a PLC program must be fully tested, verified, and documented. The ActivePLC™ provides a universal solution to all of these problems by providing an option for a single PLC program that is externally controlled across multiple devices, machines, and applications.

Application configuration and changes to the ActivePLC™ are logged at the machine and can be backed up, reviewed, compared, copied, and restored to any other ActivePLC™ controller on the fly. This feature provides complete process program stability for repeatable quality control for any application.

ACTIVEPLC™ PLATFORMS

		DIGITAL INPUTS	DIGITAL OUTPUTS	ANALOG INPUTS	ANALOG OUTPUTS	T/C INPUTS
Allen Bradley Controller						
	CL30ER-RACK	32	32	8	4	6
	CL30ER-CPU	0	0	0	0	0
	CL30ER-DI	32	0	0	0	0
	CL30ER-DO	0	32	0	0	0
	CL30ER-AI	0	0	8	0	0
	CL30ER-AO	0	0	0	4	0
	CL30ER-TC	0	0	0	0	6
Siemens Controller						
	S71200-RACK	30	26	8	4	8
	S71200-CPU	14	10	0	0	0
	S71200-DIO	16	16	0	0	0
	S71200-AI	0	0	8	0	0
	S71200-AO	0	0	0	4	0
	S71200-TC	0	0	0	0	8
ACTIVEHMI™						
	ACTIVEHMI-10	10.7" Touchscreen				
	ACTIVEHMI-18	18" Touchscreen				

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ALARMS (32)

- Configurable types include: digital input on/off, process variable low/high, deviation…
- Enable/Disable each alarm and hide on HMI
- Enable/Disable alarm horn and critical alarm status for each alarm
- Activate any alarm based on external logic in the ActivePLC™
- Built in delay timer
- Configurable bit/process variables based on any value in the ActivePLC™

PID LOOPS (8)

- Auto scaled process variable for each loop based on min/max values
- Pulsed output bit included within each loop
- Configurable process variable and setpoint values based on any value in the ActivePLC™

MATH BLOCKS (32)

- Configurable types include: add, subtract, multiply, divide, deviation, linear scale, %relative humidity,
- dew point probe, %carbon probe, Kn(nitriding potential), %oxygen probe, 10 point calibration curve…
- Add/subtract decimals to any math output
- Configurable math variables based on any value in the ActivePLC™

LOGIC BLOCKS (32)

- Configurable types include: "and", "or", equal to, less than, greater than, value toggle, value move, cycle output…
- Up to 5 configurable bits for each logic block based on any bit in the ActivePLC™
- Process variable move and comparison functions based on any value in the ActivePLC™

TIMER BLOCKS (8)

- Configurable types include: on delay, off delay, cycle timer…
- Configurable timer start and reset bits based on any bit in the ActivePLC
- Timer "output" and "running" bits availabe in each block

HMI CONFIGURATION

- Configurable screen sections include: system overview, recipe, chart, alarm/DIO status and setup
- All program tags/names, process variable information, chart recording, etc. are configurable through the HMI
- "System Overview" includes: Full color configurable panels that can track, hide/display and chart any information available in the ActivePLC
- "Recipe" includes: 12x12 recipe matrix setup screen
- "Alarm/DIO Status" includes: alarming and digital input/output status pages with alarm and history tracking
- "Chart" includes: process variable trending and batch tracking
- "Setup" includes: all hardware and internal function block setup as well as communication setup

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