Life Is On | Schneider Electric

Modicon programmable logic and automation controllers

Future-ready machine and process solutions

modicon.com

Modicon: Future-ready PLCs and PACs

Modicon™ is the first name in programmable logic controllers (PLCs). The inventor of the PLC, Modicon introduced the first PLC — the Modicon 048 — in 1968. This invention changed process design moving from complicated hard-wired relay systems to automation system reducing the time, effort, and cost previously associated with modifying a process. The following year, Schneider Electric helped expand the reach of Modicon technology worldwide.

Today, the Modicon Family continues to push boundaries and define the technology that enables and connects modern machines and processes. The Modicon Family of PLCs and programmable automation controllers (PACs) still stands for innovation, offering a full range of solutions to meet your automation needs. From HVAC/pumping to small automated machines to advanced machine automation, our robust offer of trusted automation solutions enhances machines and processes across industries.

History of innovation. Future of possibility.

1968	Modicon invents the first PLC
1996	Modicon releases the first PAC
2003	Modicon releases the first web-embedded PAC
2009	Modicon releases the first all-in-one PAC
2013	Modicon releases the first ePAC
Today	Modicon offers a full line of innovative PLCs and PACs

Modicon M171 and M172 PLCs

For HVAC and pumping applications

Maximize profitability and energy efficiency through scalable automation control using the Modicon M171/ M172 logic controllers.

Available in three controller types:

- M171 — Optimized for simple and compact machines
- M171 — Performance for complex and BMS-connectable machines
- M172 — Performance for large and connected machines

Onboard and remote options; supports modbus serial, modbus TCP, BACnet™ MS/TP, BACnet IP, and LonWorks

Modicon M221 PLC

For small to medium automated machines

Modicon M221 and M221 logic controllers are designed for simple machines.

Available in two controller formats:

- Modicon M221 controllers offer excellent connection capacity and customization options
- Modicon M221 book controllers offer very small dimensions and a wide choice of connections

All programming, visualization, and commissioning are handled in just one intuitive free tool.

Modicon M241 and M251 PLCs

For advanced machine automation

Modicon M241 is designed for high-performance compact machines incorporating speed and position control functions; available in 24 and 40 I/O controller types.

Modicon M251 is well suited to control multiple machines leveraging dual channel communications for handling both upstream and downstream communications simultaneously; no onboard I/O and can utilize TM4 and TM3 modules for expansion.

Embedded functions minimize the machine cost:

- Ethernet with embedded web server function, CANopen®, Serial, and USB programming port
- PID control, eight high-speed counter inputs and pulse train output for motion control
- Execution speed: 22 ns/boolean instruction
  - RAM: 64 MB
- Program: 128 K boolean instructions, DualCore CPU
  - Flash memory: 128 MB

Modicon I/O modules

For use with Modicon M221, M241, and M251 PLCs

Expand by up to seven local I/O modules (digital and analog) and up to 14 with the expander modules.

26 digital I/O modules

- 24 VDC or 120 VAC inputs
- Relay or transistor outputs
- Sink and source modules
- Screw/spring/HE10 terminals
- 7I/16O/4M

18 analog I/O modules

- 12 bit/11 bit + sign
- 16 bit/15 bit + sign
- Very fast read/transfer time (configurable): 1 or 10 ms
- 6I/4O/4M
- 4 TI

Three expert modules

- Transmitter/receiver
- TeSys™ Link

Five safety modules

- Light curtain/E-Stop
- Pressure pad/cable pull

TM4 comm modules

TM3 expansion modules

TMC2 cartridges

Modicon M340 PAC

For small to medium process automation

The extremely powerful, rugged, and compact Modicon M340 PAC provides cutting-edge features and high-end performance in a small to mid-range applications.

- Open standards modbus, CANopen, modbus TCP, and Ethernet/IP
- Wide selection of discrete, analog, serial, and communication X80 modules
- Hardened hardware ratings for shock, vibration, and temperature
- Application backup and data storage using SD card technology

Onboard and remote options; supports modbus serial, modbus TCP, BACnet MS/TP, BACnet IP, and LonWorks

Modicon M580 ePAC

For medium to large process automation

Scalable from a single rack system to a plantwide architecture, the Modicon M580 ePAC feature openness, flexibility, robustness, and sustainability.

Available in two controller formats:

- Ethernet backplane offering 10x communication speed
- Cybersecurity ready with Achilles Level 2 certification
- Advanced functions with high availability services (CCOTF, Hot standby, redundant power supplies)
- Deterministic Ethernet communication with up to 1 ms I/O time-stamping resolution
- Large memory capacity of 64 MB RAM and optional 4 GB storage SD card

Modicon X80 I/O modules

For use with Modicon M340 PAC and M580 ePAC

Serving as a common platform for the Modicon M340 PACs and the Modicon M580 ePACs, the Modicon X80 I/O modules offer a common platform, a much smaller stock of spare parts needs, and significantly reduced maintenance/ training costs.

- Configuration choices of over 80+ discrete, analog, communication, and expert I/O modules
- Expert modules provide for high speed counting, SSI encoder, and time stamping
- RTU protocols available for telemetry applications
- Hot swap modules allow for online modifications without stopping controller
- Ruggedized for use in harsh environments or extended temperatures
- Compliance with international certifications (ATEX, IEC, UL, CSA, etc.)

SoMachine software

Intuitive programming for industrial automation machines using Modicon M221, M241, and M251 PLCs

SoMachine™ software, the universal, single-programming environment for automated machines, makes design and commissioning faster than ever before.

Features and benefits

- SoMachine software brings an innovative approach to machine design and is a proven, intuitive, and robust software development environment with ready-to-use applications and function blocks to assist OEMs in getting their machines to market faster with added value and benefits
- SoMachine software features an optimized user interface that brings critical tools and functions to your fingertips with intuitive simplified navigation
- The centralized app launcher allows easier access to training and technical information, simplification of programming, uploading and downloading your application
- Through embedded tools like WebVisualizations and Webservers, SoMachine software enables the user to stay connected everywhere via Ethernet to simplify machine integration and maintenance

Unity Pro configuration software

For complete automation systems using Modicon M340 PACs or M580 ePACs

One platform to fully develop, test, debug, manage, and maintain any size process application, Unity™ Pro easily imports existing programs and supports all five IEC 61131-3 languages.

Cut development costs and reduce downtime

- Easy-to-use graphical user interface
- Built-in library of pretested application function blocks
- Advanced diagnostics controller simulator in the software
- Software backward compatibility and support all hardware firmwares
- Cybersecurity including access control list, audit trail, IPSec capability

Modicon PLC and PAC family

FROM SIMPLE ... TO COMPLEX APPLICATIONS

Modicon M580 ePAC

Modicon M340 PAC

Unity Pro software

SoMachine software

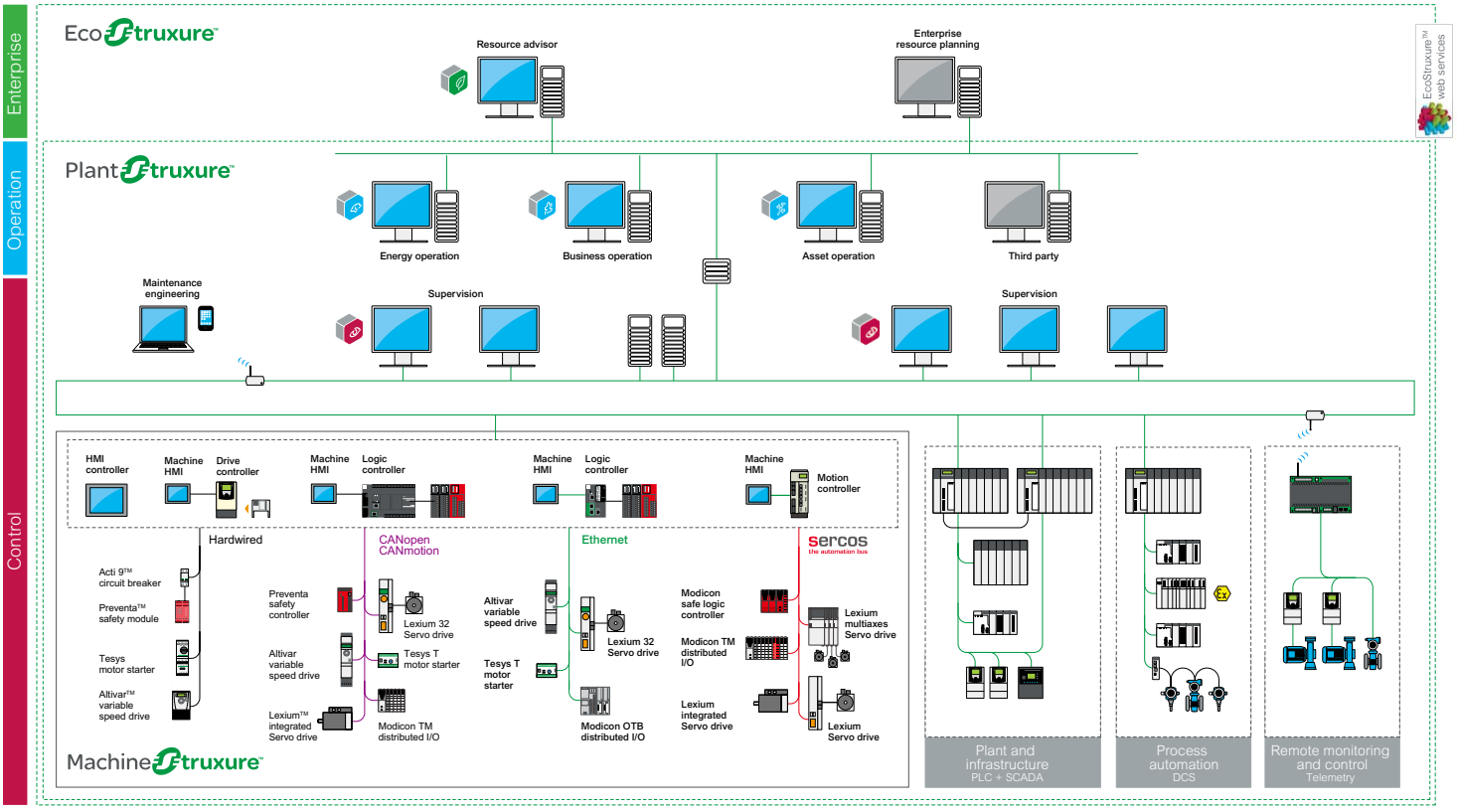
Modicon M241 PLC

Modicon M251 PLC

Modicon M221 PLC

Modicon M171/2 HVAC PLC

PLC FOOTPRINT, I/O CAPACITY, TCO, PRICE ...



Solutions for every stage of your equipment's life cycle

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At Schneider Electric, we take a long-term, holistic approach to determine your facility and operational needs, then develop strategies to improve the performance of your people, systems, and processes.

Our expertise enables you to cut costs, reduce energy consumption, and keep your systems up and running through routine maintenance, process enhancements, and migrations to new, state-of-the-art functionality.

Installation and commissioning

- Expert installation support, product software training, and commissioning

Technical training

- Training offered on-site, off-site, and online for Schneider Electric™ products taught by professional instructors

Remote technical support

- Comprehensive online and phone support from experts trained on Schneider Electric products

On-site technical support

- Regular maintenance, upgrades, and conversion assistance, small application/programming assistance, troubleshooting, and repair — even in emergencies

Preventive maintenance

- Programs to proactively detect potential system issues to help avoid costly unscheduled downtime and reduced equipment life

Industrial repair services

- Repair capabilities for more than 400,000 part numbers from more than 2,500 manufacturers at our Greensboro, North Carolina, facility

Spare parts management

- On-site assessment to determine parts/inventory needs to ensure proper system operation and reduce downtime/costs

Migration and modernization

- Process optimization through the identification/replacement of legacy products for new, innovative technology while maximizing existing hardware for cost-effective solutions

Software renewals

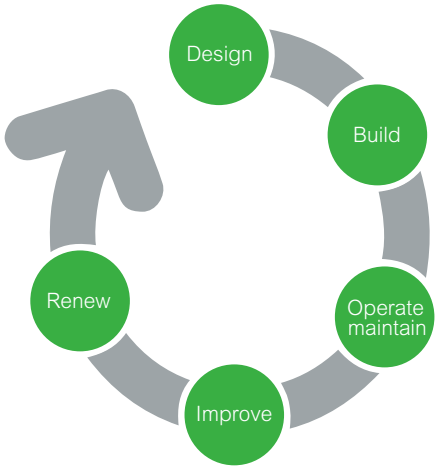
- Access to the latest software available to ensure optional functionality for your system

Extended warranty

- Protection plans tailored to your needs to reduce costs and out-of-service time

When it comes to your process equipment, we can help at each point:

- Personalized assessment, system design, and consulting
- Expert installation and new system start-up assistance
- Regular maintenance, repair, support, and troubleshooting
- Cost-effective modernization of legacy equipment
- Timely upgrades and conversion assistance to new equipment



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