

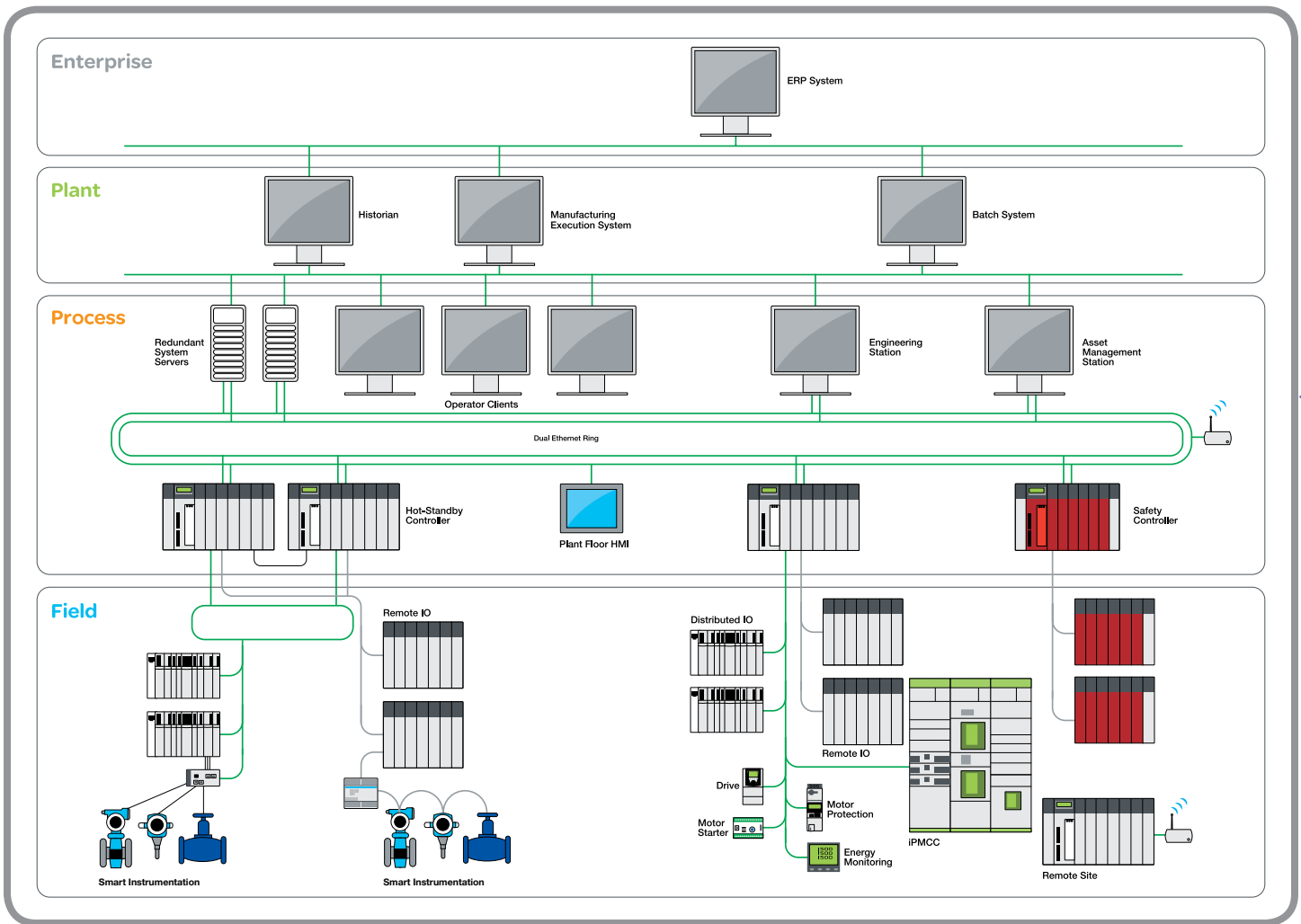
Improve your process and energy management with the Modicon™ M340™ PAC

Provided by Northeast Power Systems, Inc.
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Make the most of your energySM

Schneider
Electric™

When you need to achieve your energy and productivity improvement objectives by delivering innovative solutions throughout your enterprise, to create a single environment to measure energy usage, process data, asset utilization and machine performance, turn to Schneider Electric!



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Our innovative PLC solutions allow you to:

- Reduce engineering, operations and maintenance costs
- Maximize plant and production efficiency
- Improve production quality
- Protect people, plant assets and the environment
- Support production and business decisions



Extremely powerful, rugged and compact

The Modicon M340 programmable automation controller (PAC) provides cutting-edge features and high-end performance in a mid-range processor. Using commercial integrated circuit technology, the M340 PAC utilizes modern data networking to interact with distributed inputs/outputs (I/O), drives, other PAC devices and enterprise-type entities. It also uses the same Unity™ Pro application development software as the Modicon Quantum™ and Premium™ equipment, making it easy to quickly select, program and implement the controller to optimally manage simple to complex applications.

Integrate Modicon M340 PACs into your plant control system and boost your return on investment



Advantages for your application

The Modicon M340 PAC provides numerous cost and performance advantages over comparably priced PACs by:

- Requiring no battery, which helps to minimize maintenance costs and helps to eliminate program loss as a result of a power failure.
- Offering a compact size (4 in. height by 3.7 in. depth), which reduces panel size and costs.
- Utilizing high-density 64 point discrete I/O cards that are only 1.25 in. wide and provide the ability to manage large amounts of I/O in a very compact space.
- Utilizing high-density 8-channel analog I/O for voltage or current.
- Offering pre-terminated cables with flying leads or Telefast™ connections to reduce wiring time.
- Using enhanced EtherNet/IP 4-port switch that supports both EtherNet/IP and Modbus™ TCP/IP and can connect I/O in a daisy-chain architecture.
- Using CANopen networks to reduce field wiring and lower installation costs.
- Providing RTU module that supports DNP 3.0 and IEC60870-5 serial or Modbus TCP/IP connections.
- Utilizing USB connections for programming rather than proprietary networks, thereby promoting open standards.
- Exceeding IEC requirements for shock and vibration.

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Enhance power and speed

The Modicon M340 PAC enhances processing power with 4 Mb of internal RAM, up to 128 Mb of additional memory on an SD flash memory card and an execution speed of up to 8.1 K instructions/ms.

1 Compactness

- Height: 100 mm or 3.937 in.
- Depth: 93 mm or 3.661 in. for integration in 150 mm or 5.906 in. enclosures

2 Adaptable rack

- 4, 6, 8 or 12 modules
- Extensible up to 4 racks
- “Hot Swap” function for easy maintenance

3 High density I/O modules

- Discrete I/O modules have 16, 32 or 64 channels
- Analog I/O modules have 2, 4, 6 (4 in/2 out) or 8 channels

4 Wide power supply choice

- 24 ... 48 Vdc
- 24 Vdc/0.9 A sensor supply output
- 100 ... 240 Vac

5 Integrated USB port

- For a programming terminal or human/machine interface

6 Two communication ports

- Choose Modbus, Ethernet or CANopen

7 Adaptable to harsh environments

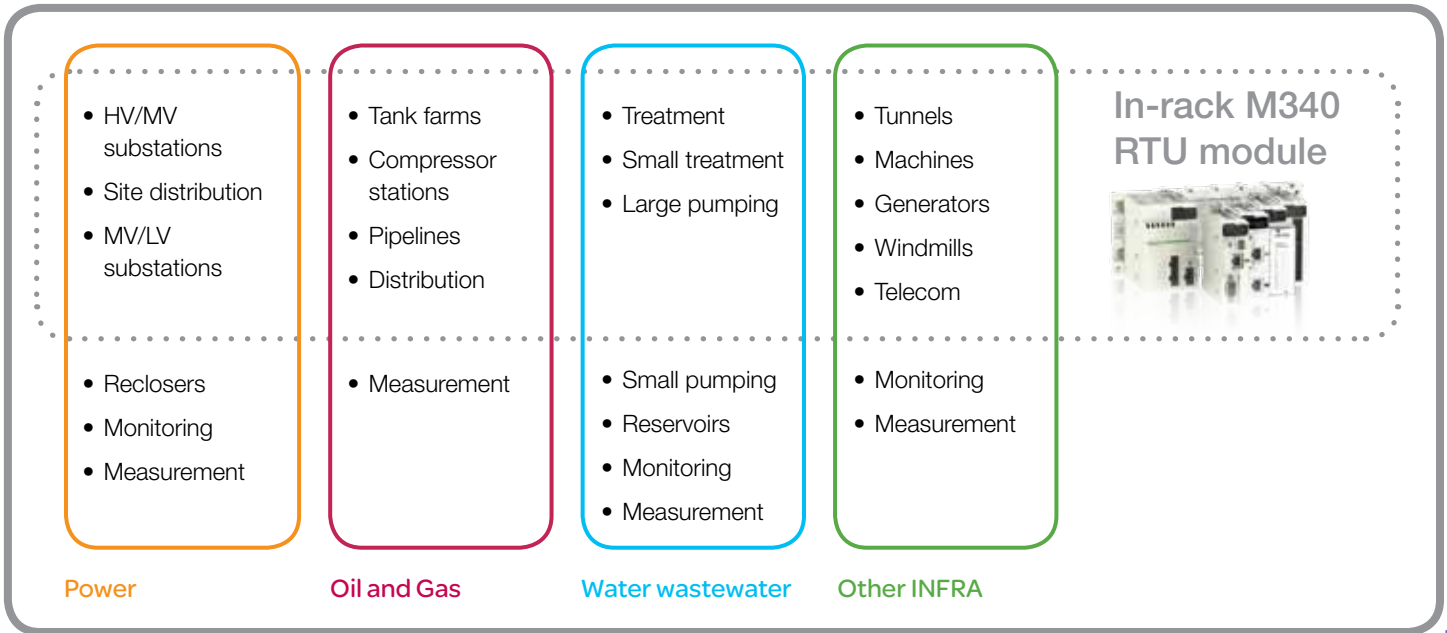
- Conformally coated to withstand harsh environments
- Extended temperature: -25° C to 70° C

8 RTU module

- Data logging with time stamping inside the RTU module SD card
- E-mail/SMS for alarm and report notifications
- Web server for RTU Protocols setup, diagnostics and monitoring



Get more with an integrated and cost effective solution for water, wastewater, oil and gas applications



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The Modicon M340 PAC offers extensive features and modularity suitable for RTU and telemetry applications including:

- The in-rack RTU module that supports IEC60870-5-101 (Serial – Master or Slave) and IEC60870-5-104* (over IP – Client or Server) and DNP3 protocols (DNP3 Serial – Master or Slave, DNP3 IP – Client or Server)
- Full range of CPU and I/O modules for operation in extended temperatures and harsh environments (conformal coating)
- Specialized functions blocks for flow calculations (AGA 3-7, 8, 9-5 and 11)
- Expandable rack-based modular I/O configurations and distributed I/O capabilities
- High density I/O modules (discrete, analog and 125 Vdc)
- Serial and Ethernet communications ports are built-in to the CPU and other modules
- Supports Modbus, Modbus TCP (Client and Server), CANopen, ASi and EtherNet/IP

* IEC 60870-5-101 (IEC101) is an international standard for power system monitoring, control and associated communications for telecontrol, teleprotection and associated telecommunications for electric power systems. IEC 60870-5-104 (IEC 104) protocol is an extension of IEC 101 with the changes in transport, network, link and physical layer services to meet the complete network access requirements.



Built-in functions include:

- Data logging with time stamping inside the RTU module SD card
- E-mail/SMS for alarm and report notifications
- Web server for RTU Protocols setup, diagnostics and monitoring



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More of what you need!

It's rugged and reliable

The Modicon M340 PAC requires no batteries and exceeds IEC requirements for shock and vibration standards. This translates into more mounting options, continuous operations at remote locations and the knowledge that programming won't be lost during power outages as a result of a dead battery.

It's smart

The Modicon M340 PAC allows you to "Hot Swap" modules without rebooting the PAC for faster access and responsiveness. In addition, 4 Mb of memory improves the sharing of data by storing drawings, bills of materials and cut sheets right inside the PAC's memory, as well as using faulty device replacement (FDR) to store configurations and load them into replacement devices such as drives. There's also an SD flash memory card with up to 128 Mb available for application backup including the executable program, source code and comments and data.

It's web friendly













The Modicon M340 PAC features an embedded web browser, which utilizes Schneider Electric's Transparent Ready™ web-based connectivity platform for remote monitoring and troubleshooting. This also enables users to maintain an accurate record of equipment life and schedule predictive maintenance based on known variables and milestones.

It's connectable

Implementation and connectivity have never been easier as the Modicon M340 PAC embeds Modbus Master serial protocol and Ethernet on the same processor. In addition, installation costs and wiring errors are reduced by utilizing a CANopen network, FCN/HE10 connectors, preterminated cables with flying leads and standard USB cabling to link to your programming PC.

Numerous certifications

The Modicon M340 platform conforms to international standards and marine classifications.

Certifications	
International standards	
CE	
UL	
CSA, CSA Class 1 Div 2	
C-Tick	
Gost R	
Marine certifications	
ABS	
DNV	
RMRS	
BV	
GL	
LR	
RINA	

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Counting



It counts

The counting offer on Modicon M340 PAC programmable controllers includes:

- Two modules: 2x60 kHz channels and 8x10 kHz channels, high performance with 32-bit counting, cycle time 1 μ s, two capture registers and reflex actions with response time down to 200 μ s
- Configurable advanced services offering a filter on each input, a wide choice of reflex actions, pulse generator, mechanical play reducer
- Counting and measurement mode configurable functions

Positioning



It positions

The Modicon M340 PAC offers positioning solutions that are integrated, flexible and highly economical for applications implementing independent and master/slave linked axes. No axis module needs to be added to the configuration because the solution is based on a motion function block (MFB) library conforming to PACopen standard. Variable speed drive and servomotor control is by MFB commands via CANopen.

Control Loop



It controls

A library of control loop functions is integrated as standard in Unity Pro software. IEC 61131-3 function block diagram language enables completely graphic and highly flexible programming. You therefore optimize your control loop algorithm and keep control of the operation.

In addition to PI and PID controllers, the library integrates numerous advanced blocks:

- PID automatic adjustment (autotune)
- Integrator with limitation, first and second order variation limiter
- Two- or three-position controller, PI hot/cold, PIP and PPI cascade
- Function generator
- PD/PI regulator structure switching
- Duration pulse modulation

Reduce your development costs

Sustainable

The Unity Pro development software is the only programming tool you need to fully develop, test, debug and manage your applications that leverage the current Modicon line of industrial controllers. Its versatility, ease-of-use and built-in library of pre-tested application function blocks allow users with multi-processor applications to share ideas and information visually, so individuals and teams can benefit from their collective experience and work together more effectively. As a result, you save time and money by reducing on-site development, installation times and debugging across your application's entire lifecycle.

Choose your language

The Unity Pro software offers five IEC 61131-3 languages as standard. Each section of code can be programmed in the language of your choice, adapted to each processing operation. All edit, debugging and operation tools are accessible whatever the language used.

- LD: ladder diagram
- IL: instructions list
- ST: structured text
- SFC: sequential function chart
- FBD: function block diagram



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Operates in severe environments

Flexibility and performance

	Standard processor	High performance processor			
	BMX P34 1000	BMX P34 2000	BMX P34 2010	BMX P34 2020	BMX P34 2030
Execution time					
Boolean instruction	0.18 µs	0.12 µs	0.12 µs	0.12 µs	0.12 µs
Numerical instruction	0.26 µs	0.17 µs	0.17 µs	0.17 µs	0.17 µs
Internal memory					
User RAM memory	2048 kB	4096 kB	4096 kB	4096 kB	4096 kB
Program Kinstructions	35 Kinst.	70 Kinst.	70 Kinst.	70 Kinst.	70 Kinst.
User data	128 kB	256 kB	256 kB	256 kB	256 kB
SD card memory					
File storage	—	128 MB	128 MB	128 MB	128 MB
Application backup	8 MB	8 MB	8 MB	8 MB	8 MB
Web server	2 MB	2 MB	2 MB	2 MB	2 MB
Communication					
Integrated USB port	1	1	1	1	1
Integrated TCP/IP Ethernet	—	—	—	1	1
Integrated CANopen	—	—	1	—	1
Integrated Modbus	1	1	1	1	—
Application expertise					
Counting	yes	yes	yes	yes	yes
Positioning	—	yes	yes	—	yes
Control loop	yes	yes	yes	yes	yes

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	IEC	Modicon M340
Mechanical constraints	IEC 60068-2-x	—
Shock	15 gn	30 gn
Vibration	1 gn	3 gn
Electrical immunity	IEC 61000-4-x	—
Electromagnetic field	10 V/m	15 V/m
Electrostatic contact discharge	4 kV	6 kV
Environmental immunity	IEC 60068-2-x	—
Temperature	-25° C to 70° C	-25° C to 70° C
Altitude	2000 m	4000 m



Talk to someone you can trust

When we introduced the first programmable controller, we were responding to the needs of our customers for better, more effective machine control. More than 40 years later, we continue to listen and work with you to pioneer innovative new ways of delivering value, efficiency and performance.

This commitment has earned us a reputation for dependability, innovation and reliability that is the defining characteristic of Schneider Electric team members from around the world. This includes product specialists, industry experts, distributors, partners and the countless other members of the Schneider Electric family.

For more information on how to put Schneider Electric to work for you, or about the Modicon M340 PAC, visit www.schneider-electric.us/go/plc or contact your Schneider Electric sales representative or distributor.

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