The Modicon Quantum PLC
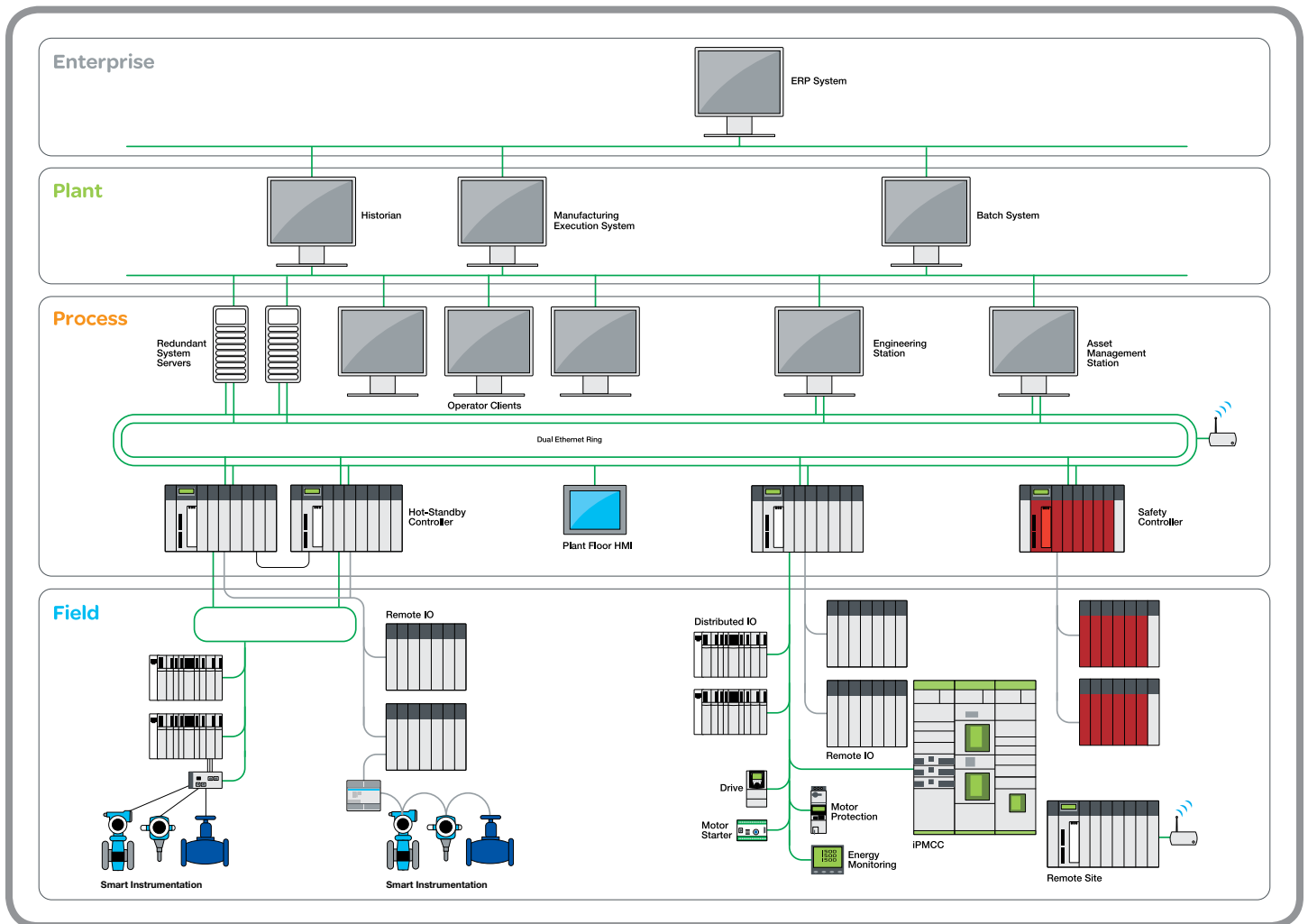
Leading performance and exceptionally high availability to handle the most critical applications

Make the most of your energy^{SM}

Schneider Electric

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

Enterprise

ERP System

Plant

Historian

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Process

Redundant System Servers

Operator Clients

Engineering Station

Asset Management Station

Dual Ethernet Ring

Hot-Standby Controller

Plant Floor HMI

Safety Controller

Field

Remote IO

Distributed IO

Remote IO

Drive

Motor Protection

Motor Starter

Energy Monitoring

iPMCC

Remote Site

Smart Instrumentation

Smart Instrumentation

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

The Modicon Quantum PLC provides a scalable, modular architecture that is **configurable to meet the needs** of even the most critical solutions from a single-rack system to a plant-wide architecture.

Ideally suited for industries that require continuous operation and rapid responsiveness to achieve optimum cycle times, the Modicon™ Quantum PLC offers integrated communication connectivity, extensive diagnostics functionality, and exceptional memory and data storage.

Memory and storage

With 3 MB of internal memory for programs and data as well as 8 MB of PCMCIA memory for program data and files, the Modicon Quantum PLC has the processing power and flexibility for any application. The PLC can hold the complete source project, process complex data structures, time stamp diagnostic information at the source, and store recipes or tracking data.

Open and flexible

With its modular and flexible architecture (extension racks, remote I/O (including Ethernet remote I/O), processors, PCMCIA memory...), the Modicon Quantum PLC meets the needs of the most complex applications, in both centralized and distributed topologies.

It offers an Ethernet Modbus™ TCP/IP port and a web server directly integrated into the processor. It supports distributed I/O and the use of standard/ open communication protocols. Ethernet communication modules embrace the newest ODVA standard for EtherNet/IP, which combined the former EtherNet/IP standard with the Modbus TCP/IP standard. This provides even more flexibility in distributing I/O and managing Ethernet communications.

High availability and efficiency

Redundant Quantum CPUs have a dedicated built-in Ethernet port (100BASE-FX) that provides rapid synchronization of all data from the primary CPU to the secondary or standby CPU, making the Modicon Quantum PLC hot standby system the solution for time-critical applications that can't afford unscheduled down time.

When combined with Unity™ Pro programming software, the hot standby offer effectively meets the needs of users: more memory, enhanced performance, and built-in hardware redundancy. What's more, it also offers supremely easy system setup, and improved management and communication functions – all without impacting performance.

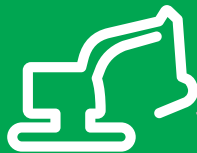# Optimized for process industries

Cement

Chemical

Cranes

Energy and
Infrastructure

Food and Beverage

Material Handling

Mining, Minerals &
Metals

Oil & Gas

Pharmaceuticals

Water and
Wastewater

Reduce your development costs

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 multiprocessor 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 life cycle.

Choose your language

Unity Pro 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. The 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

In addition to the five standard IEC languages, there is an additional LL984 language that allows you to import applications from legacy Modicon PLCs such as the Modicon 984 PLC that used 984 Ladder Logic for programming.

A graduated range of processors

140 CPU	31110	43412U	65150	65160	65260	67160	67261
Number of racks							
Local I/O	2 racks (1 main or CPU rack plus 1 extension rack)						
Remote I/O	31 drops x 2 racks (1 main rack plus 1 extension rack)						
Distributed I/O	3 networks with 63 single-rack drops						
Number of digital I/O channels							
Local I/O	No limit (27 slots maximum)		No limit (26 slots maximum)				
Remote I/O	31,744 input channels and 31,744 output channels						
Distributed I/O	8000 input channels and 8000 output channels						
Number of analog I/O channels							
Local I/O	No limit (27 slots maximum)		No limit (26 slots maximum)				
Remote I/O	1984 input channels and 1984 output channels						
Distributed I/O	500 input channels and 500 output channels per network						
CPU communication ports							
Integrated Modbus, Modbus Plus, Modbus Ethernet TCP/IP and USB	—	—	•	•	•	•	•
Memory							
Memory capacity w/o expansion card (IEC program and data)	548 Kb	1056 Kb	768 Kb	1024 Kb	3072 Kb	1024 Kb	3072 Kb
Memory extension							
Program	—	—	Up to 7,168 Kb				
Data	—	—	512 Kb	1024 Kb	3072 Kb	1024 Kb	3072 Kb
File storage	—	—	8 Mb (memory card in CPU slot number 0 and/or number 1)				

Increase your productivity through heightened awareness

A customized environment

By setting simple parameters, graphic screens can be used to set up complex specialized functions in line with the usual practices specific to each application area.

The integration of external files in our Unity software using hyperlinks simplifies the overall management of your application.

The Unity environment can integrate all your own functions developed in VBA to automate repetitive operations.

Libraries for your standards

Access genuine object-oriented programming: elementary functions can be encapsulated in function blocks and data structures can be organized into control system objects.

By adding your own objects to the library in this way, you can control the development of your applications, prepare for future developments, and share access to your expertise.

A functional approach

You are free to organize your application into "process functions" for direct access to the required function using a simple browser.

This approach can be based on the S88 model relating to resource sharing in batch applications.

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 Quantum PLC, visit www.schneider-electric.us/go/PLC or visit your local Square D™ distributor.

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