The Modicon Quantum PLC

Leading performance and exceptionally high availability to handle the most critical applications

Make the most of your energy™
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™!

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.

**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

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