

Integrated Architecture on EtherNet/IP

Rockwell Automation® offers an array of systems, solutions and services that help companies meet the critical need of integrating their factories. These offerings bridge islands of automation and carry information throughout plants, helping users make better decisions and, ultimately, increase profitability.

Over the past few months, Rockwell Automation announced a portfolio of products and enhancements that further helps customers leverage a network infrastructure based on standard, unmodified EtherNet/IP technology. The portfolio's products and enhancements – many of which are part of the Integrated Architecture™ solution – extend the benefits of Integrated Motion into applications using servo and variable frequency AC drives on EtherNet/IP. Rockwell Automation Integrated Motion on EtherNet/IP uses Common Industrial Protocol (CIP) Motion and CIP Synch technology from the Open Device Vendors Association. Read below to learn how these Integrated Architecture and other Rockwell Automation products can help address challenges associated with productivity, innovation, globalisation and sustainability.

Improve Performance with New Allen-Bradley ControlLogix PACs

The Allen-Bradley® ControlLogix® 1756-L73 and 1756-L75 Programmable Automation Controllers (PACs) use the same programming software, network protocol and information capabilities as ControlLogix L6x controllers, providing companies with a common control engine and development environment for multiple control disciplines.

In process applications, the controllers improve the amount of information that can be exchanged between the control and supervisory layers, offering improvement in the performance of redundant control applications. The 1756-L73 and 1756-L75 also provide high-speed motion command and axis trajectory planner execution; they've been optimised for control of high-performance motion drives on EtherNet/IP or SERCOS interfaces and are capable of supporting as many as 100 axes. In discrete applications, the PACs improve controller scan times using a faster, dual-core, custom CPU.

Specifically, the new PACs provide the following performance enhancements over the L6x controllers:

- 2.2X average ladder logic scan time improvement
- 2X average improved communications performance
- Faster backplane communications
- Reduced scan time impact in redundant applications

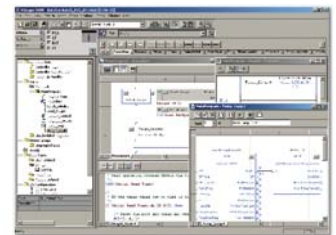
For more information, visit:
www.ab.com/programmablecontrol/pac/controllogix/index.html



Rockwell Software RSLogix 5000 Version 18 Adds 30+ Capabilities

With new features such as integrated motion on EtherNet/IP and high-integrity Add-On instructions (AOIs), the RSLogix™ 5000 Version 18 software can give manufacturers a higher level of design flexibility and help machine builders save engineering time. Highlights of the capabilities include:

- **Rockwell Automation Integrated Motion on EtherNet/IP.** Allows machine builders, for the first time, to access the features of an integrated motion solution for configuring, programming commission and maintaining high-performance drives, I/O, smart actuators and other devices on a single EtherNet/IP network.
- **High-Integrity Add-On Instructions.** Now included for standard and safety controllers to help maintain consistency and instruction-definition revision control, fulfill regulatory requirements and protect intellectual property.
- **EtherNet/IP Unicast I/O.** Reduces inefficiencies in networking and IT requirements by allowing one-to-one transmission of EtherNet/IP I/O data. Tag communications produced and consumed by EtherNet/IP can now span multiple subnets.
- **Improved Data Access Control Capabilities.** Protects against inadvertent data changes and speeds HMI creation by reducing the number of tags visible while browsing the controller from the HMI development environment.



For more information, visit:
http://literature.rockwellautomation.com/idc/groups/literature/documents/pp/9324-pp001_-en-p.pdf

Reduce the Risk of Machine Downtime

Rockwell Automation® FactoryTalk® Historian Machine Edition (ME) is an embedded, solid-state module hardened for on-machine data collection. It features a limited software footprint, no moving parts and reduced risk of data loss due to network or other system interruption.

The software leverages real-time production data to improve product quality, speed time to market and support regulatory compliance. It allows employees in different locations and at different operating levels to view and analyse role-appropriate historical data. FactoryTalk Historian ME, with its stand-alone design, can capture data remotely in challenging environments such as drilling rigs, wells and other previously inaccessible locations.

It also allows machine builders to pre-qualify the data collection of their machines to speed up on-site installation, configuration and validation efforts. Data capture produces historical information that helps provide effective sequence of events analysis.

For more information, visit:
<http://discover.rockwellautomation.com/historian>



FactoryTalk VantagePoint EMI Helps Users Make Informed Business Decisions

FactoryTalk® VantagePoint EMI business intelligence software helps manufacturers better monitor and manage productivity in real time and make more insightful decisions about business priorities such as product quality, equipment utilization and global supply chain management. The software connects to multiple data sources – real-time, historical, relational and transactional – to create a single resource that can access, aggregate and correlate information via a Web browser.



The new application is based on a unified production model (UPM) that provides a unified view of seemingly disparate manufacturing data and gives a context for relationships among equipment, products, materials and people. It can be used to address a single or multiple manufacturing problems on a manufacturing line or across a global enterprise. The software addresses specific needs, like downtime reporting, status tracking or multiple control-system reporting.

FactoryTalk VantagePoint EMI allows users to report data through a variety of tools including Microsoft Excel, Trend and SAP Business Objects Dashboard Builder. Data can be viewed through FactoryTalk VantagePoint, Microsoft SharePoint portals or other portals.

For more information, visit:
www.rockwellautomation.com/rockwellsoftware/performance/vantagepoint

The Allen-Bradley Stratix 8300 Switch for Designing Segmented Networks

The Allen-Bradley® Stratix 8300™ Layer 3 managed switch extends the Stratix 8000™ industrial switch family to provide virtual local-area network (VLAN) and subnet routing capabilities, reducing the need to run long cables back to an enterprise switch.

As a full-featured Layer 3 switch, the new Stratix 8300 offers static, dynamic, multicast and policy-based routing. This allows for maximum flexibility in providing secure segmented architectures for industrial Ethernet applications.

Segmenting a network provides ease of maintenance as large, flat networks are difficult to manage and troubleshoot. It also simplifies security management by segregating different traffic types. In addition, it improves performance, distributing traffic loading for efficient bandwidth utilization.

Both the Stratix 8300 and Stratix 8000 switches use the Cisco Catalyst operating system, feature set and user interface, providing seamless integration to the enterprise network – and making IT professionals feel at home. Simultaneously, the switches provide comprehensive diagnostic information from within the Rockwell Automation Integrated Architecture™ system.

For more information, visit:
www.ab.com/networks/switches



Servo Drive Combines Integrated Motion and EtherNet/IP

The new Kinetix® 6500 servo drive is a high-performance, modular servo drive with embedded EtherNet/IP. When used with the ControlLogix® PAC, the Kinetix 6500 servo drive provides an integrated drive solution on EtherNet/IP.

With the addition of the Kinetix 6500 drive, EtherNet/IP can integrate high-performance drive control, I/O, smart actuators and any other EtherNet/IP-connected device, helping to lower system cost – and improve system performance and ease of use. Linear and Device Level Ring (DLR) topologies are fully supported with the embedded switch technology.

The Kinetix 6500 supports Motion over EtherNet/IP, eliminating the need for separate networks for device-level, motion control and message control. It provides data availability, troubleshooting capability, fault-time stamping and data logging.

In addition, the servo drive protects personnel with safety options embedded into the drive. For example, Safe Speed Control technology can help maximize physical protection by providing safe access to guarded areas while a machine or process is allowed to continue operating under limited conditions. The safety features will help get a line up in production faster than a full restart, reducing wear on motor and power equipment.



For more information, visit:
www.ab.com/motion



KwikLink Lite Media & Configuration Terminal Simplifies DeviceNet Connectivity, Commissioning & Troubleshooting

The Allen-Bradley KwikLink™ Lite flat cable system, together with enhancements to the 193-DNCT DeviceNet Configuration Terminal, help make DeviceNet an ideal media for in-cabinet applications.

The KwikLink Lite cable system is the new, ODVA-approved solution for wiring DeviceNet networks that adds to our already comprehensive DeviceNet offering. This new physical media makes DeviceNet wiring and cable installation both quick and easy, and extends the network into light-duty, IP20-rated applications.

Users will see a dramatic reduction in the installation time of a DeviceNet network as the time-consuming process of stripping wire insulation, separating conductors and screwing individual wires onto terminals is now replaced with a colour-coded cabling system that makes DeviceNet wiring quick, easy and reliable.

Commissioning with the 193-DNCT DeviceNet Configuration Terminal is made simple with the capability to upload, store and later download complete device configurations through the network. The 193-DNCT, combined with the KwikLink Lite cable system, will help DeviceNet users reduce costs and focus on the solution not the problem.

These solutions help make DeviceNet even more suitable for your application. Combining new cabling options with existing, proven products puts the power of DeviceNet in easy reach.

For more information, visit:

www.ab.com/sensors/devicenet/media/kwiklinklite.html

Pendant Line Offers Quick Installation

We have introduced our new and exciting line of 800FC Pendant Stations, designed for quick and easy installation.

This new pendant line utilises the same time-saving benefits found in our Bulletin 800F 22.5 mm push buttons, helping users to maximize efficiency with quick installation. Multiple options and customizations are available to fit unique application needs.

800FC Pendant Stations utilise the standard 800F operators and contact blocks, allowing distributors to minimize their inventory. Wiring time can be drastically reduced as contact blocks have been spaced for using 1492 jumpers. 800FC Pendant Station enclosures are available with 3, 5, 7, or 9-holes, giving customers with the ability to have up to 18 functions within one pendant when using multi-operator devices. All pendants meet IP65/66, NEMA Type4/4X/13 degree of protection rating.

New 1-, 2- and 3-speed operators have been released for use with the pendants and feature the same high quality design of our existing 800F 22.5mm Push Button line. A new mechanical interlock latch for use with the 1-, 2- and 3-Speed operators allows for optional protection against inadvertent operation. Mechanical interlock prevents two functions [e.g. Up/Down] to be pushed at the same time and prevents the system from unwanted actions and potential damage.

Additionally, there is electrical interlock capability for the 1- and 2-speed operators simply by wiring an additional N.C. contact block to each operator/function. The operators are marked with standard symbols and text using epoxy pad printing or two color molded technology. Legend plates designed for pendant enclosures offer standard and custom engraving options.

800FC Pendant Stations represent an ideal solution for a large variety of applications. Pendants are typically found in hoists, overhand cranes and remote/portable control stations.

For more information, visit:

www.ab.com/en/epub/catalogs/12768/229240/229244/2531089/



Distributed I/O Modules Leverage EtherNet/IP

Dual Port ArmorBlock® EtherNet/IP modules make use of linear and ring network topologies, enabling users to connect devices directly to each other. This capability helps to eliminate the need for external switches and the added wiring costs associated with home-running all devices to a central switch.

Module features include:

- Use of EtherNet/IP messages encapsulated within standard TCP/UDP/IP protocol
- Common application layer with ControlNet and DeviceNet
- Interfacing via Category 5 rated twisted pair cable
- Half/full duplex 10 Mbit or 100 Mbit operation
- Communication supported by RSLinx® software
- I/O configuration via RSLogix™ 5000 software

Modules can be mounted on a wall or panel. There is no network scheduling required or routing tables. I/O configuration includes 16 inputs, 16 outputs, 8 in and 8 out. The modules, measuring 179 x 65 x 43.25 mm, have an operating temperature range of -20° to 60° C.

For more information, visit:

www.ab.com/io/onmachine/1732.html



Ethernet Physical Media is Designed for Rugged Industrial Environments

To complement its suite of Ethernet-enabled products, Rockwell Automation® provides a portfolio of **industrial-grade Ethernet physical media**. It is specifically designed for use in harsh industrial environments, combining a specially designed cable with rugged connector construction to help ensure reliability and flexibility. The portfolio includes:

- **RJ45 Patchcords and Cordsets.** They have been mechanically and electrically tested using category 5e cables with category 6 connectors. The design allows for more terminations in a single channel and stronger signal strength with reduced internal noise.

- **Allen-Bradley® M12 Connectivity.** These Ethernet cables have an IP67 overmolded connector with a twisted-pair cable, which is durable for flex applications and provides better performance in applications with noise and vibration. The overmolded housing protects the integrity of the signal, providing a reliable connection.

- **RJ45 Accessories.** These include a traditional crimp connector, rated to category 5e with a ruggedized boot, and an Insulation Displacement RJ45 connector (IDC) rated to category 6. The RJ45 IDC allows users to simply remove the cable jacket and place the conductors into the proper location.

For more information, visit:

www.ab.com/networks/media/ethernet/

Single Controller Provides Integrated Safety and Motion for Midrange Applications

Rockwell Automation® has introduced two new controllers to provide machine builders and manufacturers with integrated safety, motion, discrete and drive control capabilities in a single controller for midrange applications. The **Allen-Bradley® L43S and L45S Compact GuardLogix® programmable automation controllers (PACs)** extend capabilities previously available only in the larger Allen-Bradley ControlLogix® platform.

These include diagnostics and information capabilities that help reduce nuisance shutdowns and prolonged restarts as well as a single programming environment for enhanced design and development productivity.

As part of the Rockwell Automation Scalable Integrated Architecture system, the Compact GuardLogix controllers use the same configuration, networking and visualisation environment as the company's larger-scale systems. This helps provide machine builders and end users with cost-effective integration of a machine or safety application into the plant-wide control system. The scalability means that manufacturers and machine builders can design their applications using a single control engine and a single development environment, regardless of the application size.

The Compact GuardLogix PACs can control as many as eight axes of integrated motion over the SERCOS communication network. When used in combination with the Allen-Bradley® Kinetix® 6200 servo drive, machine builders have advanced safety options, including safe speed and safe direction.

The controllers also support the use of the Allen-Bradley CompactBlock™ Guard I/O™ modules and Allen-Bradley POINT Guard I/O™ modules on EtherNet/IP, enabling fast system configuration and improved sharing of information. Featuring a 1oo2 safety architecture, the Compact GuardLogix controllers are rated up to Safety Integrity Level 3 (SIL 3) and Performance Level e (PL e) – the highest level of machine safety.

When used with the latest version of Rockwell Software® RSLogix™ 5000 programming software (V18), the Compact GuardLogix

controllers can leverage high-integrity Add-On instructions (AOIs) for faster commissioning. AOIs encapsulate code for common routines into pre-validated modules that can be easily reused, helping to save time and lower the risk of coding errors.

For more information, visit:

www.ab.com/programmablecontrol/pac/compactlogix



840E Solid-State Level Switch

The Allen-Bradley Condition Sensing family introduces the compact **840E solid-state level switch** which is based on piezoelectric vibrating fork technology. The level switch monitors resonance frequency and indicates whether the tuning fork is freely vibrating or covered by liquid. With its IP66/67 rating, the 840E performs reliably in the harshest of environments, including turbulence, vibration, content build-up, changing media, and bubbles and foam.

Housed in rugged, corrosion-resistant 316L stainless steel enclosure, this cost-effective compact level switch is suitable for most fluid applications.

Utilised primarily for liquid level detection in industries such as factory automation, oil and gas, chemical, food and beverage and automotive this solid-state level switch is easy to install and has no moving parts, so it is virtually maintenance-free. Plus, the 840E can be mounted in any orientation – top, bottom, sideways, or even in pipe work.

The 840E is available in a DC PNP version with a M12 connector or an AC version with a DIN valve connector.



For more information, visit:

www.rockwellautomation.com.au/applications/gs/ap/gsau.nsf/pages/Bulletin_840E_Solid-State_Level_Switches

VISIT ROCKWELL AUTOMATION AT THESE EVENTS: JULY-SEPTEMBER 2010

DATE	EVENT	LOCATION
Week 19 July	NZ Water/Waste Water Seminars	Palmerston North and Wellington, New Zealand
21–22 July	Automation University	Adelaide SA, Australia
27–29 July	Queensland Mining & Engineering Exhibition	Mackay Showground Qld, Australia
29 July	Automation University	Mt Gambier SA, Australia
29 July	ECANZ	Christchurch, New Zealand
4–5 August	Automation University	Perth WA, Australia
5 August	IICA Table Top	Townsville Qld, Australia
11 August	Automation University	Kalgoorlie WA, Australia
18 August	IICA Automation Symposium – Gold Sponsor	Newcastle NSW, Australia
Week 23 August	NZ Water/Waste Water Seminars	Tauranga and Rotorua, New Zealand
26 August	IICA Table Top Series	Mildura Vic, Australia
1–2 September	WIOA (Water Industry Operators Association) Vic	Bendigo Vic, Australia
2 September	IICA Table Top	Ipswich Qld, Australia
8 September	IICA Table Top	Adelaide SA, Australia
13/14/15/17 September	Queensland Regional Roadshow	Gladstone / Mackay / Townsville / Mt Isa, Qld, Australia
14–16 September	RSTechED – Brisbane	Brisbane Qld, Australia
15 September	IICA Automation Symposium – Gold Sponsor	Perth WA, Australia
16–17 September	NZ Winery Engineers Association (WEA) Conference	Marlborough, New Zealand
21 September	NZ Water/Waste Water Seminar	Christchurch, New Zealand
22–24 September	NZ Water Show	Rotorua, New Zealand

Energy Management Accelerator Toolkit Speeds Monitoring and Analysis

Users can rapidly develop and deploy energy monitoring and analysis systems using system design, programming and analysis tools along with Rockwell Automation® Powermonitor™ and CompactLogix™ energy collection devices and RSEnergyMetrix® energy management software.

The toolkit includes the fundamentals of creating an energy management plan, an overall energy system configuration guide and CAD drawings. It also provides energy data collector and software configuration steps as well as local HMI monitoring and diagnostic faceplates.

For more information, visit:

www.rockwellautomation.com/solutions/integratedarchitecture/resources5.html



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