control NETWORK

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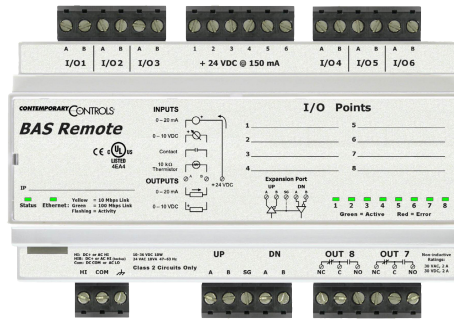**April 26–28**
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Over **30** Years
In Networked Controls

CONTEMPORARY CONTROLS

Connecting Networks Worldwide

Contemporary Controls Continues to Grow its Commitment to the BAS Community

By utilizing our skills in designing and manufacturing networked products, we've combined the popular BACnet protocol along with Ethernet connectivity to create the BAS Remote. The BAS Remote provides cost-effective I/O via the BACnet/IP networking protocol.

Joe Stasiek, Sales Manager for Contemporary Controls, says the BAS Remote is cost-effective in providing a small amount of I/O in areas where there is easy connection to an existing Ethernet network. "By using the existing Ethernet network, the building automation system can directly communicate to the BAS Remote via BACnet/IP," says Stasiek. "This eliminates the need for an external router or MSTP drop. A standard web browser is used for commissioning and troubleshooting."

The BAS Remote complies with BACnet/IP as defined in ANSI/ASHRAE standard 135-2004. It adheres to the BACnet Application Specific Controller (B-ASC) profile. BACnet/IP enables devices to communicate with each other over the Internet or a corporate Intranet.

By incorporating a 10/100 Mbps Ethernet port supporting auto-negotiation of data rate, duplex and pause control, it can be connected anywhere in a building's structured wiring system at a point convenient to mechanical equipment. This eliminates the need to pull proprietary network cable to the source of the I/O. Stasiek says the BAS Remote is best-suited for applications where several points of I/O must be accessed in areas void of proprietary BAS networks.

This product provides six universal input/output points, and two relay outputs. The six software, configurable universal I/O points form the key portion of the unit's design because they allow a variety of input or output requirements to be accommodated in a single point.

Universal I/O can connect to:

- contact closure
- Analog inputs with 10 bits of resolution providing ranges of 0–10 VDC or 0–20 mA, accommodating 0–5 VDC, 1–5 VDC, 2–10 VDC, and 4–20 mA devices.
- Thermistor 10 kž Type II and III curves are resident in the BAS Remote. Single-point calibration of temperature is accomplished using the unit's web server.
- Digital pulse trains in the range of 0 to 40 Hz (50% duty cycle) to measure flow rates.
- Analog outputs with 12 bits of resolution providing ranges of 0–10 VDC or 0–20 mA, accommodating 0–5 VDC, 1–5 VDC, 2–10 VDC, and 4–20 mA devices. Current sourcing into loads can be as high as 750ž .

Keep in mind that all Universal I/O are over-voltage protected up to 24 VAC short-circuited protected.

There are two form "C" relay contact outputs available with both normally open (NO) and normally closed (NC) contacts. These contacts are rated at 2A at 30 VAC/VDC.

Troubleshooting features include clear markings on the unit to identify its major components and a variety of LEDs. There are LED indicators for CPU status, status of each universal I/O point, relay output status, and link, data rate and communication status of the Ethernet port. And in the unlikely event the unit must be removed, all terminal connectors are removable making field replacement of units quick and simple.

Commissioning the unit is fast and easy. A resident web server communicating locally or from afar facilitates configuration, commissioning and troubleshooting.

Need to grow the BAS Remote? The BAS Remote has an expansion port to support additional I/O, or optionally this expansion port can be used as a Modbus Master. As a Modbus Master, it can communicate with a variety of Modbus slave devices including variable speed drives.

Power for the BAS Remote can be derived from a 24 VAC Class 2 transformer, or a 24 VDC power supply. At 24 VAC it requires 10 VA or from a 24 VDC power supply it consumes 10 W. Since the unit incorporates a half-wave rectified power supply, I/O points and the power supply can share a common ground. The BAS Remote can be powered by the same control transformer used to power other control equipment.

The unit can be DIN-rail or panel mounted inside a control panel. If panel mounting is required, optional mounting tabs are available.

The BAS Remote is a good example of the convergence of IT and building automation standards. By merging Ethernet to BACnet, the best of both worlds is achieved.

The ODVA Publishes the *Network Infrastructure for EtherNet/IP*™

The ODVA brought together some of its members to assist in identifying and explaining the features of Ethernet technology which are important to EtherNet/IP™ networks with the publication of the document, *Network Infrastructure for EtherNet/IP*™. Bennet Levine, R&D Manager for Contemporary Controls, was among one of the members on the EtherNet/IP™ Infrastructure Task Force who helped to write this document that provides an introduction to the network infrastructure used in EtherNet/IP™ networks and gives users a framework for identifying the considerations that are most critical to their specific applications.

Levine said this 118-page document references specific switch features that users of EtherNet/IP™ would require in the EtherNet/IP™ infrastructure to facilitate proper communication. He added that switch features (such as IGMP Snooping) are also examined as to their importance in the network type, be it small or complex.

He stated that IGMP Snooping is very significant. "It relieves the hosts from processing frames that are not needed. EtherNet/IP™ networks, with multiple end devices which are producing implicit data, will suffer performance issues if IGMP Snooping or other multicast limiting schemes are not implemented."

To obtain your copy of this document, please visit www.ctlink.com/odva to download from the ODVA website.
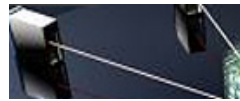
TECH UPDATE

Does Your Fiber Data Freeze?

Occasionally during winter, fiber optic cable will mysteriously fail then later return to proper operation. The failure could degrade speed and quality of traffic, or completely interrupt data communications. If this has happened to you, it could be the result of water freezing within the cable conduit.

Frozen water in ducts or conduits has always been a potential communications issue, but why should sealed and jacketed fiber optic cable be susceptible? The risk is that the force of water crystallization can bend fiber optic strands to the extent that cable performance is impaired. Signal quality usually returns with the thaw, but in rare cases cable can be ruined.

When water penetrates duct work (by infiltration or condensation) it flows down hill, resulting in substantial water in the lowest part of the duct. If a below-ground installation is under the frost line, there is no problem. But for shallow burials or exposed runs, ice can form in the duct.

Most freezing occurs near entrance points to buildings or other above-ground structures. It could also occur where soil erosion has rendered a previously acceptable burial depth too shallow—or simply due to improper installation.

One solution is rerouting the cable, but in many existing burials this could be very expensive. An alternative is to inject some substance (similar to the anti-freeze in your car radiator) to force water out of the portion of the duct that is subject to freezing. Drilling weep holes is not recommended because it may not eliminate all instances of trapped water and clogged weep holes also will become a maintenance issue.

Your cable contractor should recommend the best soution for you.

By Bill Greer, Senior Product Specialist. For other interesting topics, please visit "Bill's Blog on Industrial Ethernet" at www.ccontrols.com/blog.htm.

Contemporary Controls Ltd Celebrates its 10th Anniversary

Clockwise fom top: Alex Holloway is the first Office Manager; Richard McLaughlin (right) assisted George Thomas in setting up CCL at Barclays Venture Center at the University of Warwick Science Park (1997); Dawn Booth joins the team of CCL in 1999 as the new Office Manager.

Contemporary Controls Ltd (CCL), the UK-based branch of the company, first opened for business on May 1st, 1997, located at the University of Warwick Science Park in Coventry, just across the campus from DeviceNet's European conformance test center. This office would facilitate Contemporary Controls' European customers and expand their global market. The substained demand for ARC Control® products, from markets other than the Americas and Far East, required that a second sales office be opened to service this remaining area.

The Science Park presented itself as a good fit for CCL. Themission of the park was to assist small technology oriented growth businesses in the region.

Points in favor of opting to base the new enterprise in the UK was that the city of Birmingham, which neighbors Coventry, is twinned with Chicago. The Birmingham Chamber of Commerce was hosting a trade mission between the two cities during that period that George Thomas was thinking of expansion. The local government offices in Birmingham, including the West Midlands Development Agency, were able to offer considerable advice and assistance with the mechanics of setting up the new company.

An additional factor was that a friend and colleague of Mr. Thomas', Richard McLaughlin, was a Senior Research Fellow at the University at the time. He was very helpful with various practical matters such as locating office premises (on the Science Park attached to the University) and interviewing prospective staff.

At the outset, CCL had just one emloyee, Alex Holloway. Alex had been introduced by a friend and colleague of Richard McLaughlin, and she was taken on as the company's Office Manager. A few months later, in August 1997, Peter Jefferson joined the company as Technical Sales Engineer, having met and struck up a conversation with George Thomas during a trade exhibition at Birmingham's National Exhibition Centre. Peter is still at the company ten years later, though now as a Sales Manager, with full responsibility for the day-to-day operations and development of the company.

(left to right:) Lisa Sims, Office Manager; Katy Morrison, former Customer Service Rep; Peter Jefferson, Sales Manager; and Robert Owen, Technical Sales & Support.

In 1998, CCL developed a European website presence to better service its local customers: the URL address is www.ccontrols.co.uk.

By the start of 2004, the company had increased to three people, and was supporting many more products than it had done initially, following the successful introduction of the CTRLink® family of Industrial Ethernet products.

CCL's business continues to expand, both financially and geographically, despite having ceded the valuable German/Austrian/Swiss automation market to its sister company Contemporary Controls GmbH (CCG) a few years ago. The two offices work closely together on several initiatives across Europe, and offer strength in-depth by having resources and facilities located in two separate yet linked offices. Here's to the next 10 years!

CONTEMPORARY CONTROLS

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New Literature
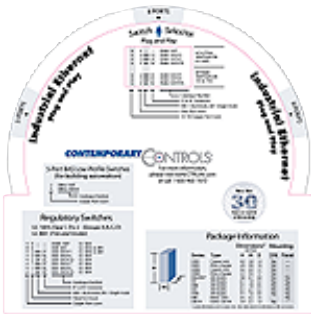
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- By utilizing our skills in designing and manufacturing networked products, we've combined the popular BACnet protocol along with Ethernet connectivity to create the BAS Remote.

- How BACnet® is Changing Building Automation Networking.

- This month's Tech Update examines why fiber optic cable mysteriously fails during winter then returns to proper operation.

- As part of International News, we celebrate the 10th anniversary of Contemporary Controls Ltd.

For your automation networking solutions visit: www.ccontrols.com