control
NETWORK

TRADE SHOWS

Learn the latest innovations in technology by attending these trade shows.

Green Sustainable Building Controls Conference
September 21–24
The Fairmont Dallas
Space #16
Dallas, TX USA

SPS/IPC/Drives
November 25–27
Exhibition Centre Nuremberg
Hall 10, Stand 131
Nuremberg, Germany

AHR Expo 2009
January 26–28
McCormick Place
Booth #3953
Chicago, IL USA

Over 30 Years

In Networked Controls

CONTEMPORARY CONTROLS

Connecting Networks Worldwide

BACnet® Portable Router Simplifies Field Service and System Checkout

Contemporary Controls releases the BAS Portable Router, the newest edition to the company's line of building automation BACnet routers. The new BASRTP-B is a convenient device used to connect a laptop computer to an MS/TP network. All the electronics are provided in a lightweight, small plastic case. The unit is powered from a USB port. This small device can easily be carried from jobsite to jobsite in a laptop computer bag while utilizing a CAT5 cable for communication and a USB cable for power. No batteries or wall wart power supplies are required. Because the BAS Portable Router operates on USB power from the computer, no source of power (like a 120 VAC receptacle) is required other than the laptop. "This product enables easier commissioning," says Sales Manager Joe Stasiek. "It also helps to reduce the cost and labor associated with this task."
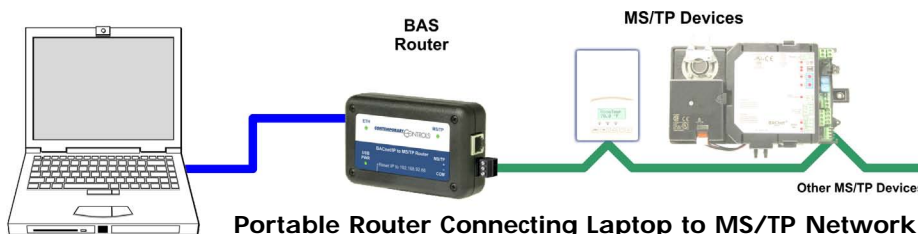
Portable Router Connecting Laptop to MS/TP Network

The BAS Router Portable routes messages between BACnet®/IP and BACnet MS/TP networks as per the ANSI/ASHRAE 135-2004 standard. It allows BACnet/IP devices connected over Ethernet to communicate with MS/TP devices.

The unit contains one MS/TP port and one 10/100 Mbps Ethernet port. The MS/TP port offers an optically-isolated transceiver. It has a removable 3-pin terminal block for the EIA-485 connection as well as an RJ-11. Through either one of these ports, up to 127 devices can be addressed—as many as 32 on the local bus. All MS/TP baud rates are supported from 9.6 to 76.8 kbps.

The Ethernet port offers a shielded RJ-45 connector. Through auto-negotiation and Auto-MDIX, it automatically matches its duplex setting, data rate and signal polarity to whatever is needed by the attached equipment. Therefore, any CAT5 cable can be used for hookup.

The BAS Router Portable is shipped with a 5' CAT5 Ethernet cable and a 6' USB cable.

A resident web server allows commissioning, re-configuration and troubleshooting with a standard web browser. A reset switch is provided on the router to set the unit to the factory default IP address.

Easily carry the portable router from jobsite to jobsite.

The unit complies with Class A radiated and conducted emissions as defined by EN55022 and CFR 47, Part 15. The price of the BASRTP-B is $295.00.

For more information on this product, please visit:
www.ccontrols.com/basrouter.htm.

Case Study

BAS Switch Handles Traffic Without "Choking"

As cited by a survey conducted by OnPath Technologies, lack of space, power inefficiencies, and increasing disaster recovery needs comprise the main reasons for the increase in data center construction. What most people don't realize is the importance of the data center infrastructure to prevent network downtime. It takes components like Contemporary Controls Ethernet switches and cabling to keep the infrastructure running smoothly and to extend its life cycle.
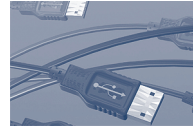
Located in downtown Los Angeles, the data center spans 450,000 square feet over five floors. This data center was built in 2002, but the existing Direct Digital Control (DDC) system was left idle for years. "The system was never commissioned after the dot.com bubble burst," explained Project Manager/Sales Engineer Robert Grenader of Azusa, CA-based Sunbelt Controls. (Sunbelt Controls is the largest Automated Logic® Corporation (ALC) controls dealer in the western U.S.) "I and my team of engineers realized the pressure was on for a complete system upgrade within a set timeline. The upgrade was necessary because devices from the existing system were no longer available and expansion was limited to the degree that it couldn't meet the needs of the new owner."

To accomplish this, Sunbelt Controls installed ALC's state-of-the-art HVAC equipment and controls to improve maintenance and energy use.

He added that all this system traffic goes through a consumer-grade, five-port Ethernet switch connected to the dedicated building automation server located in the facility's main computer room. But in this application, the switch posed a problem. Periodically, it would lock up due to excessive packet collisions requiring a power down to be performed to restore communication. In addition, there lacked a good method to install the switch in the control enclosures.

As an option, Sunbelt Controls chose to use Contemporary Controls' industrial-grade, five-port Ethernet switches since the customer's LAN was Ethernet. "With the EIBA5-100T/R we were able to take ALC system traffic onto the facility LAN, allowing us to take advantage of the gigabit backbone and remove traffic from our 156k ARCNET®," indicated Grenader.

This switch provided the functionality, DIN-rail mounting convenience, and ruggedness to meet the requirements. Sunbelt Controls was pleased with its $99 price tag and its compact size (measuring only 3.3" H x 3.5" W x 0.97" D). Engineers were able to mount it in a cabinet and operate it from the same source that powers other BAS equipment, making installation neat and secure. This device accepted 24 VAC for consistent power throughout the application and no extra wiring was required. Built-in broadcast control prevented excessive broadcasts from degrading network performance. Grenader said we needed a dependable switch to handle the traffic load without hang-ups which is a problem if you're using consumer-grade hardware.

Securing BAS Communication

Sometimes an issue arises regarding the security of BAS (Building Automation Systems) Ethernet communications. For example, an issue could arise if security is a major concern when Ethernet communicates BAS functions for college campus buildings—but travels over the same network infrastructure accessible by students. A simple way to provide the needed security is to use a VLAN (Virtual Local Area Network).

A VLAN restricts communication to stations that are VLAN members—non-members are not privy to VLAN conversations. There are two basic types of VLANs: Port VLAN and Tagged VLAN (IEEE 802.1Q). *Port* VLAN, available on some *configurable* or *smart* switches, is simple to implement but has limited utility because its area of control is the set of devices attached to a specific switch port. *Tagged* VLAN, a feature of almost all *managed* switches, can extend VLAN membership through many switches to stations separated by considerable distances. Therefore, Tagged VLAN is almost always the best choice for BAS security.

Tagged VLAN works by embedding a code segment (the *tag*) within each Ethernet message. Membership information in the tag allows the message to be sent to only those stations that belong to the VLAN. For this scheme to work, each VLAN member station must attach to an appropriately configured managed switch that has VLAN functionality enabled. But the total communication path could contain unmanaged switches at points where VLAN decision-making would be unneeded.

Typically, a managed switch can accommodate several VLANs, each with its own set of members grouped according to whatever criteria are relevant in the BAS strategy. Thus, configuration of VLANs can generally be as simple or as complex as the situation demands.

Security camera video traffic can consume a huge portion of available bandwidth. In addition to the security aspect of the video stream, VLANs also help in managing traffic levels—segregating bandwidth hogs (Internet downloads) from other traffic.

For more information about VLANs, point your browser to:
www..ccontrols.com/pdf/Extv5n1.pdf.

The Third Time is Definitely a Charm

The third time is definitely a charm. And so were the other two. I'm referring to the bi-annual Niagara Summit, held May 4 to 6, 2008, at the Saddlebrook Resort in the Greater Tampa area. At the Summit attendees, exhibitors, and sponsors had the opportunity to exchange ideas, share solutions, and forge partnerships with end-users, system integrators, distributors and OEMs that comprise this growing community. It was in this environment that Contemporary Controls exhibited our CTRLink® building automation products, using the tag line "Raising BACnet to the Next Level."

R&D Manager Bennet Levine was discussing the BAS Router with a show attendee at the Niagara Summit.

Four active panels were developed to display possible applications of CTRLink BAS products. The applications included both BAS Remote I/O and the BAS Router.

On one panel we demonstrated connecting a JACE-2 communicating via BACnet®/IP to our BAS Router for communication to MS/TP-based Alerton VAV and a Viconics stat. In another BAS Router application, we demonstrated "tunneling." Namely, using a BAS Router to connect a MS/TP communications path to the Ethernet infrastructure and then use a second BAS Router connected to the Ethernet infrastructure to provide MS/TP communications at a second location.

Looking toward the future one of the panels presented the PoE (Power Over Ethernet) version of the BAS Remote I/O unit. The BAS Remote PoE uses a single cable for both power and communications. By using the PoE, no power supply needs to be available to power the unit, and in addition, the loop power supply on the BAS Remote, can be used to power up devices local to the unit.

And the BAS Remote I/O was demonstrated with the addition of the Expansion Module that allows the BAS Remote to be expanded to a total of 32 I/O points.

The Tridium family of users, integrators, and vendors is a technology-driven group. They are constantly accepting the challenge of providing a better solution and Contemporary Controls will be part of the technology solution.

CCC Supports Earthquake Relief in China

Members of the Chinese community such as Contemporary Controls (Suzhou) Co. Ltd (CCC) and large corporations around the world are donating money for the victims of the earthquake that devastated central China on May 12th. A major earthquake, measuring 7.8 on the Richter scale, jolted the southwestern Sichuan Province. Significant damage was reported in the rural areas surrounding the epicenter. It destroyed millions of homes and buildings, as well as infrastructure like communication networks and electrical towers.

Current loss of life is estimated at more than 69,000 and many are still reported missing. Many of the victims were children, buried under the school buildings that crumbled around them while they were still in class.

All the people in CCC were very concerned about this catastrophe. The employees helped by collecting cash donations to support the relief efforts of the Suzhou Red Cross Association. Both the employees and the company made cash contributions. Employees also bought some relief supplies and sent them to Abazhou City, which was one of the most severely damaged areas.

This earthquake was the worst natural disaster to hit China in 30 years.
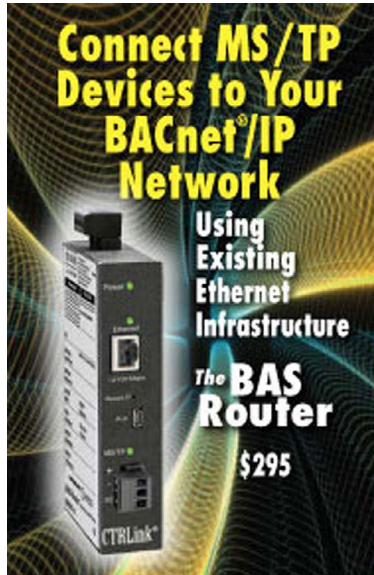

CCC employees make a cash contribution to the Sichuan people who suffered in the earthquake. Employees hope their money will provide for food, medical supplies and temporary shelter for millions of people who were left homeless.

CONTEMPORARY CONTROLS

Contemporary Control Systems, Inc.
2431 Curtiss Street
Downers Grove, IL 60515 USA

Address service requested.

Connect MS/TP Devices to Your BACnet®/IP Network Using Existing Ethernet Infrastructure
The BAS Router $295
CTRLink®

US fax back and e-mail:
1-630-963-0109
info@ccontrols.com

UK fax back and e-mail:
+44 (0)24 7641 3923
ccl.info@ccontrols.com

Germany fax back and e-mail:
+49 (0)341 520359-16
ccg.info@ccontrols.com

China fax back and e-mail:
+86 512 68095966
info@ccontrols.com.cn

- Contemporary Controls releases the BAS Portable Router which simplifies field service and system checkout. The new BASRTP-B is a convenient device used to connect a laptop computer to an MS/TP network.

- This month's Tech Update discusses securing BAS communication. A simple way to provide the needed security is to use a VLAN (Virtual Local Area Network).

- The BIG-EU was celebrating its 10th anniversary with a party during the recent Light + Building show in Frankfurt, Germany. One of the industry leaders, H. Michael Newman, was being recognized. Read what the "father of BACnet" had to say in this month's Extension Supplement.

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