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January 26–28
McCormick Place-South Hall
Booth #3953
Chicago, IL USA

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Connecting Networks Worldwide

Switch Your Way to the New EISK16 Ethernet Switch

With 16 ports, Contemporary Controls new Plug-and-Play EISK16-100T switch is the easy solution for increasing the functionality of your network. This compact switch allows you to have 16 copper 10/100 Mbps ports in only 41 mm of DIN-rail space. Housed in a metal enclosure, it provides reliable connectivity for industrial and building automation systems in a cost-effective manner, backed by a five-year warranty.

The EISK16-100T expands the CTRLink® family of Ethernet 5- and 8-port switches. It measures 6.02" H x 3.79" D x 1.61" W (153 mm x 96 mm x 41 mm) in size, making it ideal for areas with limited space. Just power it up, and this device will auto-configure each port for data rates at 10 or 100 Mbps and cable requirements. These ports support half-duplex operation with backpressure flow control or full-duplex operation with PAUSE control.

This unit does not require any configuration or software, making installation hassle-free. With Auto-MDIX support, there is no need for crossover cables when you are connecting to another switch.

Convenient mounting is available with the attached DIN-rail clip. Low-voltage 10–36 VDC or 24 VAC (± 10%) 47–63 Hz powers the unit. It is designed to operate in 0°C to +60°C industrial temperatures.

LED indicators enable you to monitor the activity and status of each port. Diagnostics include LEDs that show link, data rate (green for 100 Mbps, yellow for 10 Mbps), activity (flashing), duplex (green is full-duplex, off is half-duplex), and power (green). The label on the unit can be written upon so port connections can be documented as to the location of the connected equipment.

The auto-negotiation protocol allows this switch to link with any compatible 10BASE-T or 100BASE-TX device. It will function with any application layer that works with Ethernet including Modbus/TCP, BACnet®/IP or EtherNet/IP™. The unit is designed with the broadcast storm control option to prevent broadcasts from degrading network performance.

This model meets regulatory approvals including UL 508 Listed, C-UL C22.2 No. 14-M91, CE Mark and RoHS compliance.

So don't miss out to get your EISK16-100T switch in the first quarter of 2009.

For more details on the EISK family, please see our data sheet at www.ccontrols.com/pdf/TD0404000D.pdf.

Satellite Communication Reduces the Chaos Ensued in Disasters

No one is prepared for the loss of human lives, loss of livestock and the structural damage caused by earthquakes or floods. But in the event of such disasters, satellite communication is used to broadcast early warnings or other important information to local populations in these areas.

With the launch of the "SaTL" system (Satellite Transmitter Link) in 2005, Clear Channel Satellite strengthened its position as the leader in satellite communications. Engineers would design a bidirectional satellite-based system and related components to install at remote sites across the continental United States plus Hawaii, and connect them via satellite to the company's Englewood, Colorado facility.

To help reduce the cost of installation and maintenance, engineers selected Plug-and-Play (PnP) switches from Contemporary Controls. These industrial-grade Ethernet devices operate "right out of the box" and auto-negotiate all communication parameters such as data rate, duplex and flow control.

The satellite-based system is equipped with encoders at the studio site, an SaTL at any transmitter site and one repeating hub located at the Englewood plant. This system allows Clear Channel to provide WAN connectivity and audio programming to Clear Channel studios and transmitter sites despite land lines, TI's and microwave links failing.

The network is a star topology beginning from the repeating hub at the Englewood facility with connection to each of the remote sites. More than 500 of Contemporary Controls' EIBA5-100T/R switches are deployed in the field. "We ship the switches to our manufacturing plant, and technicians place one device in our IRU SaTL chassis among all the other components," explained Mike Sanchez, Clear Channel Satellite Senior Network Engineer. "Each remote facility has an SaTL. Installation varies considerably from site to site because of specific issues in order to prevent loss of network connection or any interference." The primary function of the switch was to connect the satellite modem to the audio decoder to a relay control box and then to an external port on the SaTL itself in the system.

"Overall" commented Sanchez, " a small form factor and convenient mounting plus a wide voltage range won us over compared to other manufacturers' switches." Why? Clear Channel engineers knew the switch had to occupy no more than 3.5 inches of space inside the case. DIN-rail mounting was essential because the relay box was built to have DIN-rail capability. "It was nice to have another device snap into DIN-rail along side it," he said. "It made mounting easy." The EIBA switches have a voltage range of 10–36 VDC or 24 VAC (± 10%) 47–63 Hz. "Previously, we used switches that were outside the 24 Volts we were trying to work with, and we enountered problems," Sanchez continued.

"With the EIBA switches, we have a highly cost-effective system with proven reliability," said Sanchez. "A good example was Hurricane Katrina. The studio facilities were completely underwater and the tower sites were operational, but they couldn't receive any audio. The studio was rendered useless. However, the satellite-based system alerted people on what was happening and where to get relief. Keeping the people informed in the area helps to reduce the chaos that ensues with disasters."

Applying MS/TP Cable BACnet® Routers

It's amazing how tricky a simple thing like attaching cable can be. You'd think it would be a snap, but it isn't. Little mistakes can ruin the router's communications.

The foremost issue is to observe the right signal pair polarity throughout the MS/TP network. Surprisingly, the MS/TP LED can glow even if the polarity is inverted! If the LED does not glow, look for a baud rate mismatch.

If polarity checks okay, but you still encounter erratic discovery and/or I/O point servicing, what next?

Each end of an MS/TP segment needs proper termination. If your BASRTP-B occupies the end of the line, apply 120 ohms to its signal pins. (The BASRT-B is internally terminated.) Don't forget that the other end of the segment must also have 120 ohms of termination.

That's the easy part. If you are using shielded cable, it gets harder.

The shield of each segment should attach to ground at only one point (as near the center of the segment as possible). If you tie shield to ground at more than one point, current can flow in the shield and cause interference.

At each point in a daisy-chain where upstream and downstream cables meet at a device, bridge the shield across the device with a wire nut.

You should have exposed, upgrounded shielding only at the end of a segment. At this point, fold the shield back onto the cable jacket and secure it with tape. For optimum performance, (but seldom needed), use a 100V gas discharge tube or 120V MOV between the shield and ground.

And remember, you should tie the router's SC terminal to ground (*essential* for two-wire topologies).

To learn more, please see this issue's Extension entitled "Introduction to BACnet Routers" (www.ccontrols.com/pdf/Extv9n6.pdf).

By Bill Greer, Senior Product Specialist

Maintaining the Theme of "Raising BACnet® to the Next Level"

Contemporary Controls will continue its focus on "Raising BACnet to the Next Level" as the company exhibits its BAS Remote I/O, BAS Routers and Ethernet infrastructure products at AHR Expo January 26–28, 2009. Attendees who visit the company's booth (#3953) at McCormick Place South in Chicago, IL, will learn why these products are attractive for building automation applications.

The BAS Remote family of remote I/O products allows a convenient expansion of BACnet systems in the field. Compliant with the BACnet B-ASC device profile, these units provide six universal I/O points and two relay outputs.

The BAS Router connects BACnet®/IP Ethernet to BACnet MS/TP allowing MS/TP gear to connect to the building's IP-network.

Ethernet has rapidly become the network of choice for intelligent buildings due to an environment that can be demanding. Our equipment is robust, reliable, and easy to install, maintain and use. It also carries proper regulatory approvals.

"In order to protect your profits and provide good customer satisfaction, we recommend that you use these products," says Sales Manager Joe Stasiek. "An installation with these devices will please the customer and lend itself to repeat business over time."

It Was a Good Learning Experience

"Yes," said Bennet Levine, Contemporary Controls R&D Manager, "BACnet® International's Plug Fest 2008 was a good learning experience for me and my Software Engineer Harpartap Parmar." "We were able to work with other engineers regarding a new feature of the BAS Remote I/O called Change of Value (COV) which alerts a client device when something has changed. We received good feedback on this feature."

This year's Plug Fest was sponsored by Trane in St. Paul, MN and attended by 98 engineers from 29 different companies such as Alerton/Honeywell, Carrier Corporation, Cimetrics, Phoenix Controls and the Siemens Building Technologies Team. Nearly 48 teams participated in one-on-one and group test sessions. In addition to the test sessions, training sessions were offered providing information on preparing for testing, creating interoperable implementations and new BACnet features.

Levine and Parmar were able to test the company's BAS Remote and BAS Routers with a number of products from other vendors. Levine said this year's Plug Fest provided more of an opportunity to attach the company's BAS router to more MS/TP devices, and it was an excellent way to test a variety of client devices. "Overall," he said, "this environment enabled us to see how our products interacted with a number of different products in a very short time period and witness how other vendors interpreted the BACnet standard."

What Recession?

International News

With two consecutive quarters on negative growth, Germany officially entered a recession during November 2008. However, you could not tell that from the activity at the recently completed SPS/IPC/Drives 2008 show in Nürnberg, Germany. It was their biggest show ever with 1386 exhibitors and 48,106 attendees. Contemporary Controls exhibited in Hall 10 which was used for the first time this year. When Contemporary Controls first started exhibiting at the show, only 2 ½ halls were occupied. Now there are eleven. Could automation be immune to the recession? Germany is still contending that there remains a severe shortage of engineers and technically-skilled workers so perhaps automation is the answer. Originally considered a discrete manufacturing automation show, SPS/IPC/Drives is expanding into process automation. The show is a perfect venue for displaying Contemporary Controls' new managed and unmanaged

Visitors expressed interest in the company's new managed and unmanaged switches.

Ethernet switches and IP routers. Although the majority of exhibitors and attendees are German, there is good support from the international community. For the automation community, we rate SPS/IPC/Drives the best show in the world.

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