CONTEMPORARY CONTROLS®

Raising BACnet® to the Next Level

Contemporary Controls is your ideal partner for applying network technology to your BACnet building automation project. The industry is embracing Ethernet connectivity to Direct Digital Controllers (DDC) along with open protocols such as BACnet. Access to the Internet is now assumed. With over 30 years of networking experience, primarily assisting building automation OEMs, Contemporary Controls has the expertise in guiding customers through the network maze. With locations around the world, and a reputation for technical support, Contemporary Controls can assist in making your building automation projects successful.

CTRLink® — Building on BACnet

BACnet, an open-system protocol and international standard, provides the customer with vendor independence. BACnet-compliant equipment can be purchased from many vendors, and implemented at more than one level. The lowest level has digital/analog sensors and actuators individually connected to a controller or remote I/O device. The next level has BACnet MS/TP intelligent devices sharing an EIA-485 network. Above that BACnet/IP Ethernet takes full advantage of rich BACnet objects and services directly tied to an IP-Ethernet network. The Internet on the highest level is accessed via IP-routers. Contemporary Controls makes all this work using our CTRLink BACnet and Ethernet infrastructure products.

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. Each I/O point can accept an analog signal or generate an analog signal of 0-10 VDC or 0-20 mA, in addition to providing input capability for thermistors, contact closures and pulses. The BAS Remote is powered from a 24 VAC/VDC source while providing a 24 VDC loop supply for transmitters.

There are several models. The **BAS Remote Master** is BACnet/IP compliant and has a 10/100 Mbps Ethernet port. Configuration is accomplished via the unit's web server. It can also function as a Modbus TCP server and as a 2-wire Modbus serial gateway.

Up to three **BAS Remote Expansion Modules** attached to a BAS Remote Master can greatly increase point count.

The **BAS Remote Master PoE** adds IEEE 802.3af compliance with power derived from its Ethernet port.

The **BAS Remote MS/TP** is a BACnet MS/TP master that can communicate with up to 32 devices on a single bus at data rates up to 76.8 kbps.

The **BAS Router** connects BACnet/IP Ethernet to BACnet MS/TP allowing MS/TP gear to connect to the building's IP-network. The unit has a 10/100 Mbps Ethernet port and an opto-isolated MS/TP port with configuration via its web server. It mounts on DIN-rail and is powered from a 24 VAC/VDC source.

The **BAS Portable Router** provides the same functionality but in a small plastic case for use with a laptop PC, making it ideal for commissioning and troubleshooting. It is USB powered from the laptop but communicates via the laptop Ethernet port.
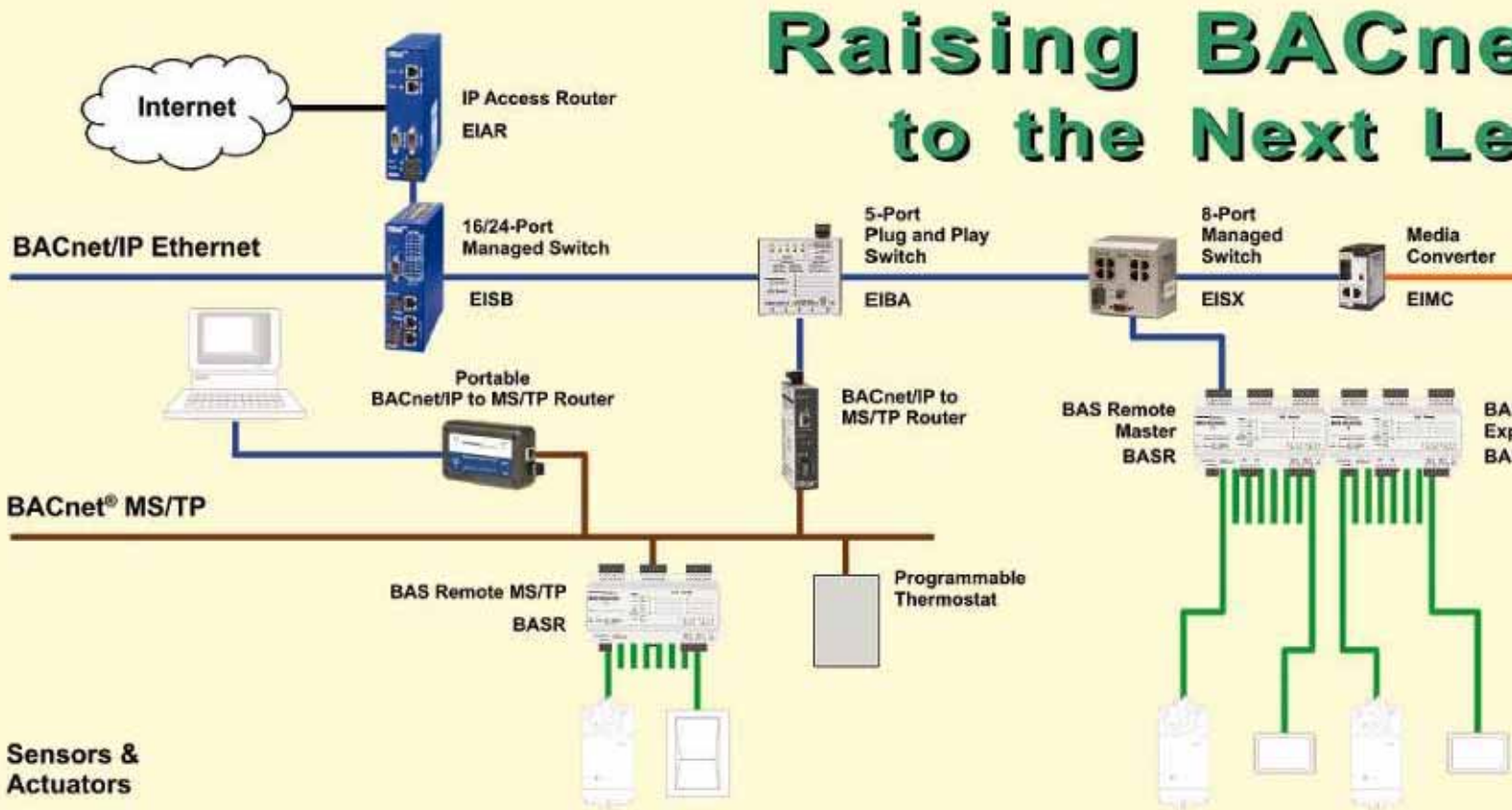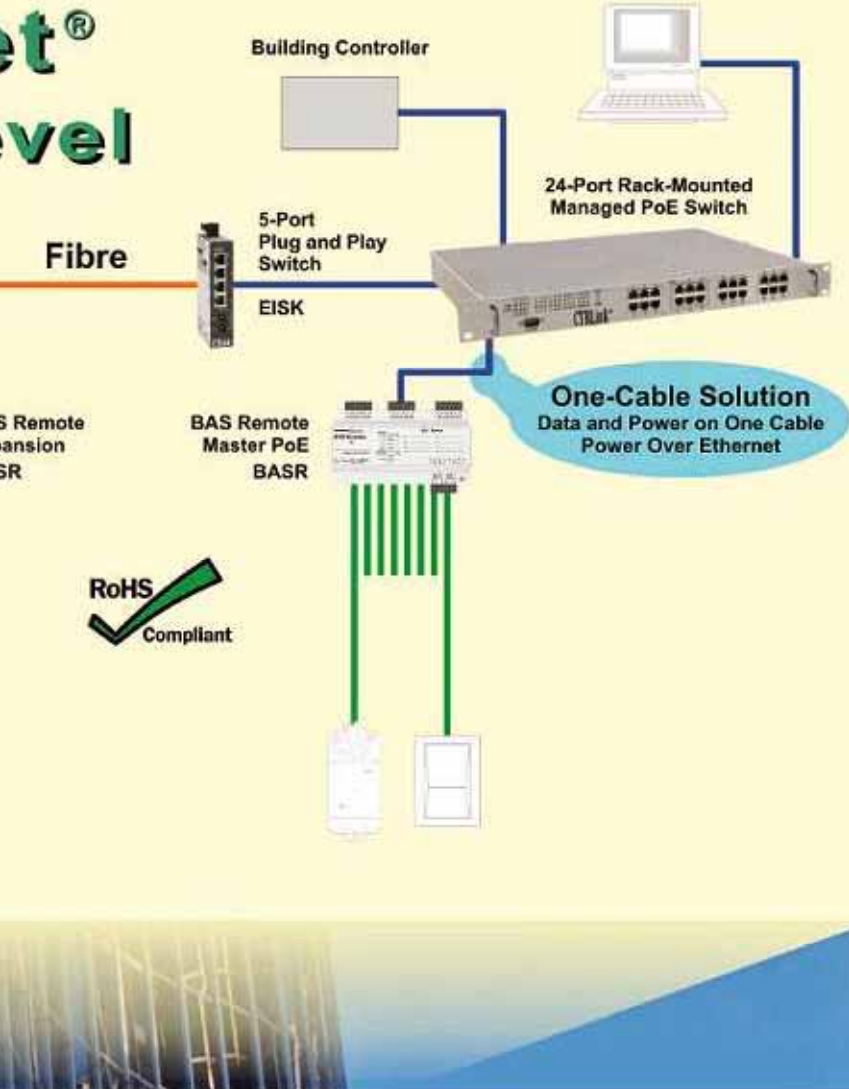

BAS Remote

BAS Router

BAS Portable Router

Use Your Existing Ethernet Infrastructure and Save

Why pull proprietary building automation cabling when you already have Ethernet cabling in place? Buildings are being designed with an Ethernet infrastructure to carry phone and data services. With BACnet/IP you can attach to this existing infrastructure, eliminating the need to install dedicated BAS cabling. With the **BAS Remote Master**, a direct connection to Ethernet is provided. Simply attach your analog and digital I/O points to the BAS Remote's universal I/O connections and you are up on Ethernet without the need for an external router. This saves the cost of purchasing and installing the cabling and may gain you LEED's points as well.

Oops! I Missed a Point

Perhaps someone forgot to pull cable to a distant point or you need to add another point and no BAS cable is there. Why not use the existing Ethernet infrastructure? If you have some BACnet MS/TP devices to install, but no MS/TP home run is available, use a **BAS Router** to make the BACnet/IP to BACnet MS/TP connection. This would allow any BACnet/IP device attached to the Ethernet infrastructure the ability to communicate to your MS/TP devices regardless of their location. Do you need to inquire about a point on an MS/TP network from your laptop? Use the **BAS Portable Router** instead.

CTRLink® Built for Buildings

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Fibre

Building Controller

5-Port
Plug and Play
Switch

EISK

24-Port Rack-Mounted
Managed PoE Switch

CTRLink

S Remote
...ansion
...SR

BAS Remote
Master PoE
BASR

One-Cable Solution
Data and Power on One Cable
Power Over Ethernet

RoHS
Compliant

The One Cable Solution—Power Over Ethernet (PoE)

The **BAS Remote Master PoE** is unique in its ability to communicate over Ethernet while deriving power for itself and attached I/O devices over the same cable. Connecting to equipment without a fieldbus drop or low-voltage power is now easy if an Ethernet port is available. By installing the BAS Remote near field devices, power can be obtained over Ethernet if IEEE 802.3af power-sourcing equipment (PSE), such as Contemporary Controls' **rack-mounted managed switch**, is at the other end of the cable. Power could also come from a commercial mid-span PSE device. Since the BAS Remote can power both attached input and output devices, it is only necessary to power the BAS Remote which then powers connected devices. The only limitation is the total power drawn over Ethernet—if total consumption caps at 13 watts, the One Cable Solution is viable.

Plug-and-Play Switches

Smart Switches

Managed Switches

Media Converters

IP-routers

Specialty Switches

Rack-mounted Switches

CTRLink® Ethernet Built for Buildings

Ethernet has rapidly become the network of choice for intelligent buildings due to its high speed, familiarity among users, and ability to easily connect to the Internet. But the environment can be demanding. The equipment must be robust, reliable, and easy to install, maintain and use. It must carry proper regulatory approvals and, in some instances, withstand outdoor temperatures. Office-grade equipment, with its frequent model changes and inconvenient mounting, will not do.

Equipment performance can range greatly. For simple systems, **plug-and-play** units will suffice. These products will operate "right out of the box" and can be put into service without adjustments. Auto-negotiation is standard where data rate (10/100 Mbps) and duplex (half or full) are set between link partners without user intervention. DIN-rail and panel-mounting are standard, as is 24 VAC/VDC power.

More demanding applications require **managed switches** that support the SNMP protocol—providing data on network health and the ability to configure the network. Advanced functions like redundancy, IGMP snooping, VLANs and priority tagging can be found in Contemporary Controls' managed switches.

Between these two extremes are **smart switches** that provide many advanced networking features without the complexity of a managed switch and the SNMP protocol.

For long runs up to 15 km and inherent immunity to electromagnetic interference, use media converters or switches with fiber ports. **Media converters** make the copper-to-fiber transition quick and efficient. Both single-mode and multi-mode fiber are supported.

IP-routers connect two Internet Protocol (IP) networks—passing necessary traffic while blocking all other traffic. Either Ethernet-to-Ethernet or Ethernet-to-Serial routing is possible with either internal or external modems.

In some instances, agency approvals (beyond that normally required for an Ethernet switch) are needed—requiring a **specialty switch**. Contemporary Controls has worked with OEMs in obtaining UL 864 compliance on our Ethernet switches, and can help in other areas such as private-labeling, unique packaging or extreme environmental design.

For high port count, head-end installations in equipment rooms, **rack-mounted managed switches** are often used. With the same management software (M-Software) as used in our panel-mounted managed switches, customers can manage a network via convenient web pages. Our rack-mounted switches have several power options and can support IEEE 802.3af Power Over Ethernet (PoE) devices.

CONTEMPORARY CONTROLS

Our Commitment to the Environment

We adhere to the goals of reduced energy consumption, reduced amounts of hazardous materials in our environment, greater recycling, reduced waste in landfills, and the use of fewer natural resources. We are a responsible partner in facing this challenging issue.

In keeping with the above policy, Contemporary Controls has successfully developed a 10-point plan to restrict the use of hazardous substances in electrical and electronic equipment—in line with the requirements stated in the European Union's RoHS Directive. The plan ranges from identifying banned substances and segregating leaded inventory from unleaded—to conducting internal audits to verify that established RoHS compliance procedures are being followed. The company is also in compliance with the WEEE Directive which minimizes the impact on the environment due to industrial waste.

Our Quality Policy

Our **MISSION** is to develop, manufacture and market networking technologies to the benefit of our automation customers worldwide.

Our **VISION** is to be regarded by our customers as experts in the networking technologies we support.

Our **VALUES** are the foundation of how we conduct business.

- Our customers depend upon us to deliver products and services that meet their needs. Their success provides us the means to exist.
- Our suppliers are important to our success and, therefore, we treat them as partners.
- Each employee is considered a professional, independent of position, and contributor to the success of the organization.
- We are all members of a working team, striving to develop innovative products, technologies, and processes.
- We stress quality in everything we do and know we can do better through continuous improvement efforts.
- The ethical way of doing business is the only way.

Worldwide Locations

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

info@ccontrols.com
www.basautomation.com
www.ccontrols.com

Contemporary Controls Ltd
Sovereign Court Two
University of Warwick
Science Park
Sir William Lyons Road
Coventry, CV4 7EZ
United Kingdom

info@ccontrols.co.uk
www.basautomation.eu
www.ccontrols.eu

Contemporary Controls (Suzhou) Co. Ltd
11 Huoju Road
Science & Technology Park
New District, Suzhou
PR China 215009

info@ccontrols.com.cn
www.basautomation.com
www.ccontrols.com.cn

Contemporary Controls GmbH
Markt 54
D-06295 Lutherstadt
Eisleben, Germany

info@ccontrols.de
www.basautomation.eu
www.ccontrols.eu