

Introducing CTRLink[®] Ethernet for Automation



About CTRLink®

- ▶ Designed for unattended operation in environments not conducive to office grade equipment
- ▶ Convenient mounting in control panels
- ▶ Low-voltage power wiring
- ▶ Improved EMC compliance
- ▶ Reliability



The CTRLink® Family

- ▶ Simple plug-and-play unmanaged switches
 - ▶ Operate “right out of the box”
 - ▶ Can be put into service without adjustments
- ▶ Fully-managed switches
 - ▶ For more demanding applications
 - ▶ Supports SNMP protocol
 - ▶ Provides advanced features such as VLANs, Quality of Service (QoS), port security and port mirroring
- ▶ Media converters
 - ▶ For when fibre optic ports are not available on the equipment to be connected
- ▶ IP Routers
 - ▶ Connect two Internet Protocol (IP) networks together
 - ▶ Either Ethernet-to-Ethernet (LAN-LAN) or Ethernet-to-modem (LAN-WAN) is possible
- ▶ Power over Ethernet (PoE)

Unmanaged Switches for Simple Systems

- ▶ Plug & Play operation
- ▶ 10BASE-T/100BASE-TX/100BASE-FX
- ▶ Auto-negotiation
- ▶ Auto-MDIX
- ▶ Rugged metal enclosure
- ▶ Diagnostic LEDs
- ▶ Enhanced EMC compliance
- ▶ UL 508 listed, c-UL listed, CE mark
- ▶ 24 VAC/VDC powered

Unmanaged switches are simple to use.

They automatically adapt to the network environment.

Skorpion Switch Series

- ▶ For cost-effective general purpose automation applications
- ▶ 5, 8 and 16-port versions
- ▶ Copper & copper/fibre models
- ▶ Redundant power connections
- ▶ DIN-rail mounting
- ▶ 0 to 60°C

One-port and two-port single-mode and multimode fibre optic versions are available with ST and SC connectors.



EISK

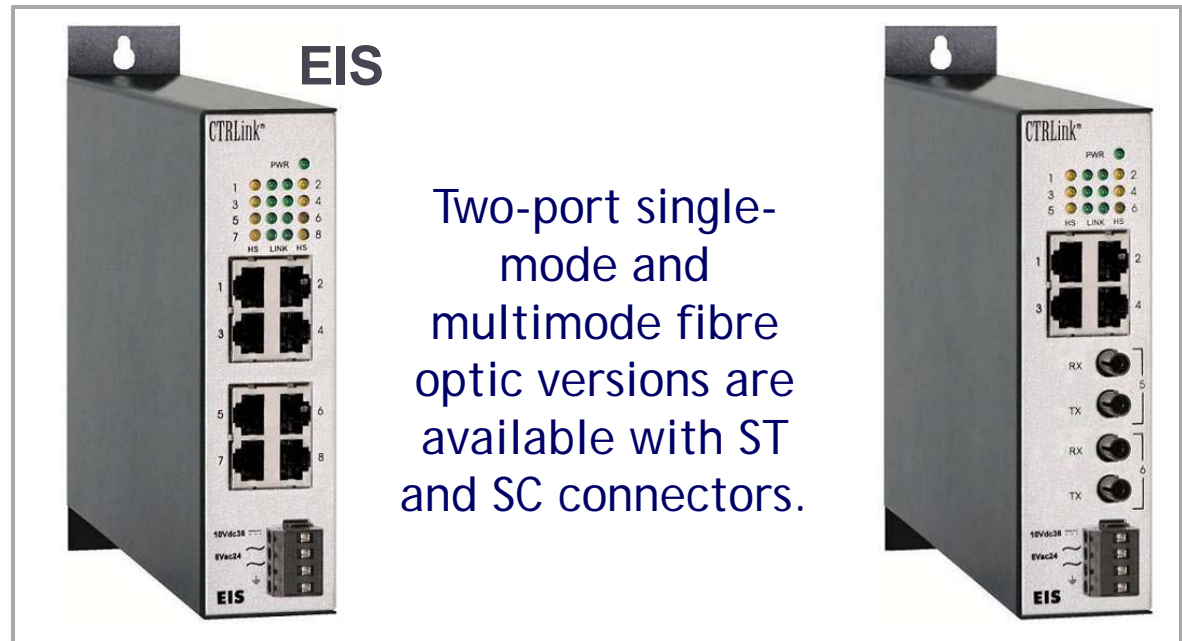
BAS Switch Series

- ▶ For shallow-depth cabinets and wiring closets commonly found in building automation systems
- ▶ Power can be shared with other BAS equipment
- ▶ Writeable label to identify attached equipment location
- ▶ 5-port copper models
- ▶ DIN-rail or panel mounting
- ▶ 0 to 60°C



Ethernet Interconnect Switch Series

- ▶ Intended for UL 864 Control Units and Accessories for Fire Alarm Systems
- ▶ Used in smoke control, fire alarm and security applications
- ▶ EIS Series UL 864 ninth edition recognized
- ▶ Copper & copper/fibre models
- ▶ 6, and 8-port versions
- ▶ DIN-rail or panel mounting
- ▶ 0 to 60°C



Compact Switch Series

- ▶ Suitable for outdoor temperature applications
- ▶ Compact design ideal for small control panels
- ▶ 8 and 9-port versions
- ▶ Copper & copper/fibre models
- ▶ Redundant power connections
- ▶ DIN-rail or panel mounting
- ▶ -40 to 75°C

EISX



One-port and two-port single-mode and multimode fibre optic versions are available with ST and SC connectors.

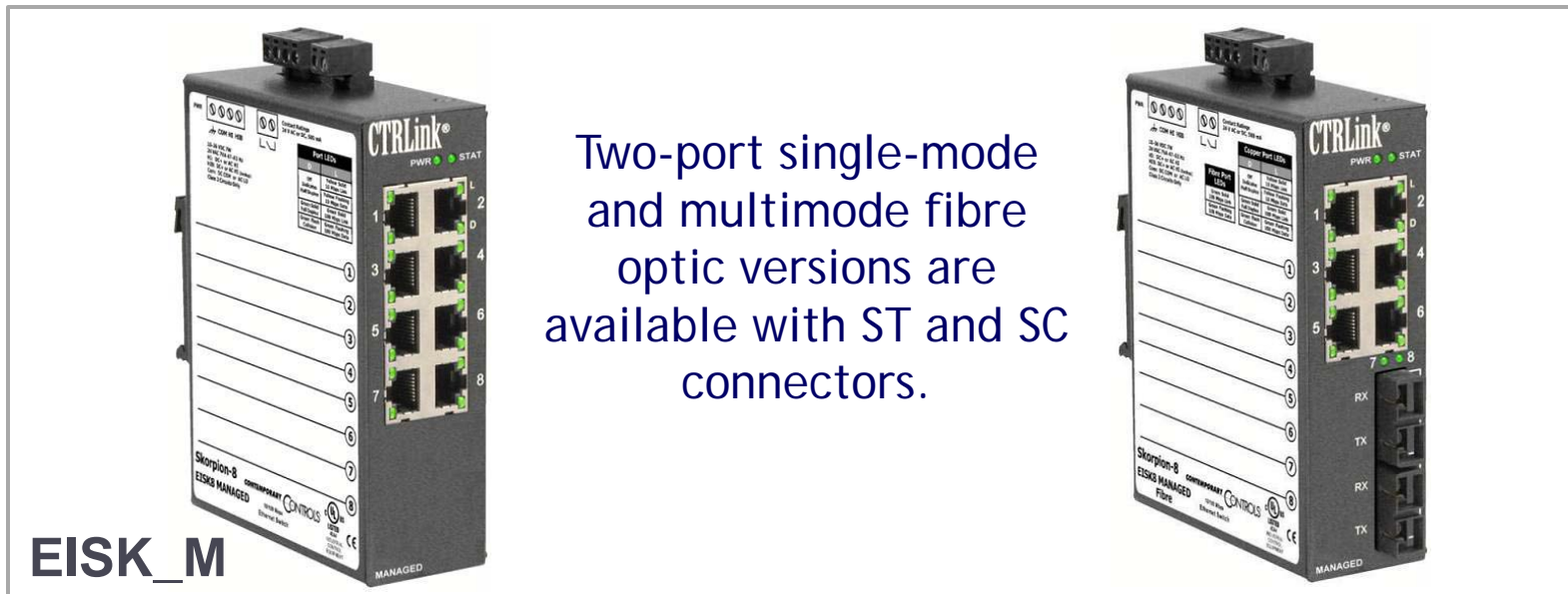


Managed Switches for Controlling Your Network

- ▶ Managed via the SNMP protocol
- ▶ 10BASE-T/100BASE-TX/100BASE-FX
- ▶ Web browser configurable
- ▶ IGMP snooping with query
- ▶ Virtual LAN (VLAN)
- ▶ Quality of Service (QoS)
- ▶ RSTP or RapidRing® cable redundancy
- ▶ Port mirroring, port security, trunking & rate limiting
- ▶ Auto-MDIX, Auto-negotiation or static port settings
- ▶ Programmable fault relay
- ▶ Optional Power-over-Ethernet (PoE)
- ▶ UL 508 listed, c-UL listed, CE mark
- ▶ 24 VAC/VDC powered

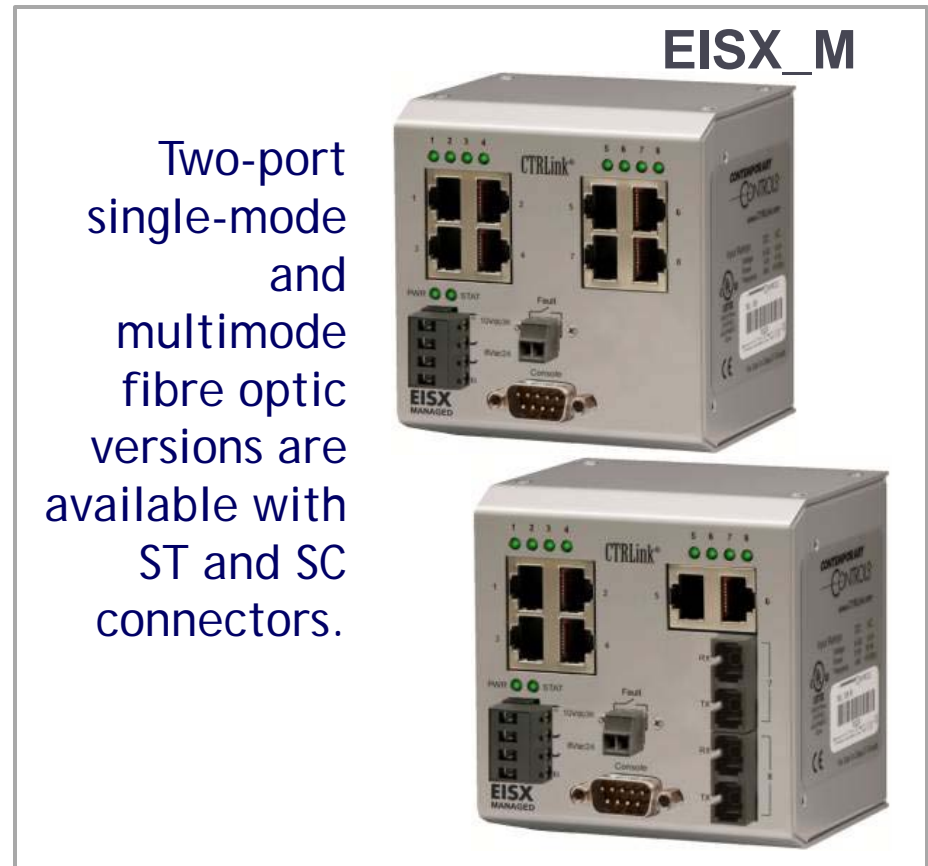
Skorpion Managed Switch Series

- ▶ For cost-effective general purpose automation applications
- ▶ Excellent value in a managed switch
- ▶ 8-port versions
- ▶ Copper & copper/fiber models
- ▶ Redundant power connections
- ▶ DIN-rail mounting
- ▶ 0 to 60°C



Compact Managed Switch Series

- ▶ Suitable for outdoor temperature applications
- ▶ Compact design ideal for small control panels
- ▶ 8-port versions
- ▶ Console port
- ▶ Copper & copper/fibre models
- ▶ Redundant power connections
- ▶ DIN-rail or panel mounting
- ▶ -40 to 75°C



Compact Switch Web Page

CTRLink® EISX_M Series

Home

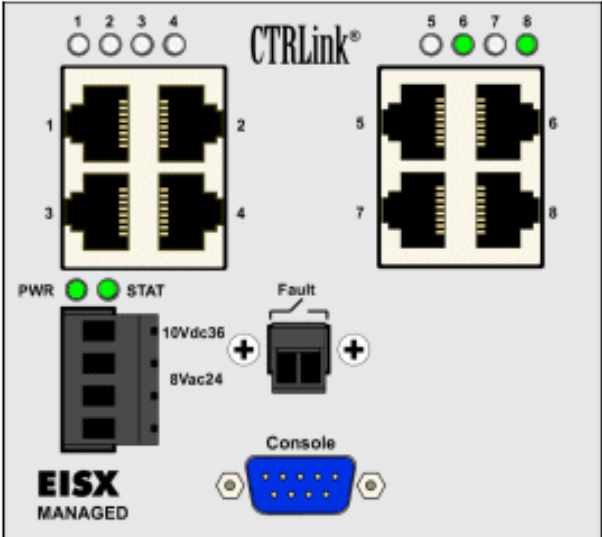
[System Configuration](#)
[SNMP Configuration](#)
[Performance Monitor](#)
[Save Settings](#)
[CTRLink Webpage](#)
[Logout](#)

CTRLink Compact Managed Switching Hub

[Refresh](#)

[Help](#)

EISX8M Information:	
Name	Managed Switch V4.16
Location	Central Command
Contact	Shift Supervisor
MAC Address	00-50-DB-00-13-3D
Firmware Version	4.16
Uptime	672149 seconds
Switch Temperature	42°C



The diagram shows the physical switch with two RJ45 port blocks. The left block has ports 1-4, and the right block has ports 5-8. Above each block are four status LEDs. The left block's LEDs are all off, while the right block's LEDs for ports 6 and 8 are lit green. Below the ports are two power input sections: one for 10Vdc36 and 8Vac24, and another for a Fault indicator. A console port is also shown at the bottom.

Note: The port and relay status and settings can be accessed by clicking on their images above.

Compact Switch Console Screen

Port Frame Statistics

Port Number (1 - 8)	[6]
Unicast Frames Received	[688927]
Unicast Frames Sent	[758143]
Multicast Frames Received	[34]
Multicast Frames Sent	[5331]
Broadcast Frames Received	[624]
Broadcast Frames Sent	[270433]

Refresh <<Back

Help Area:

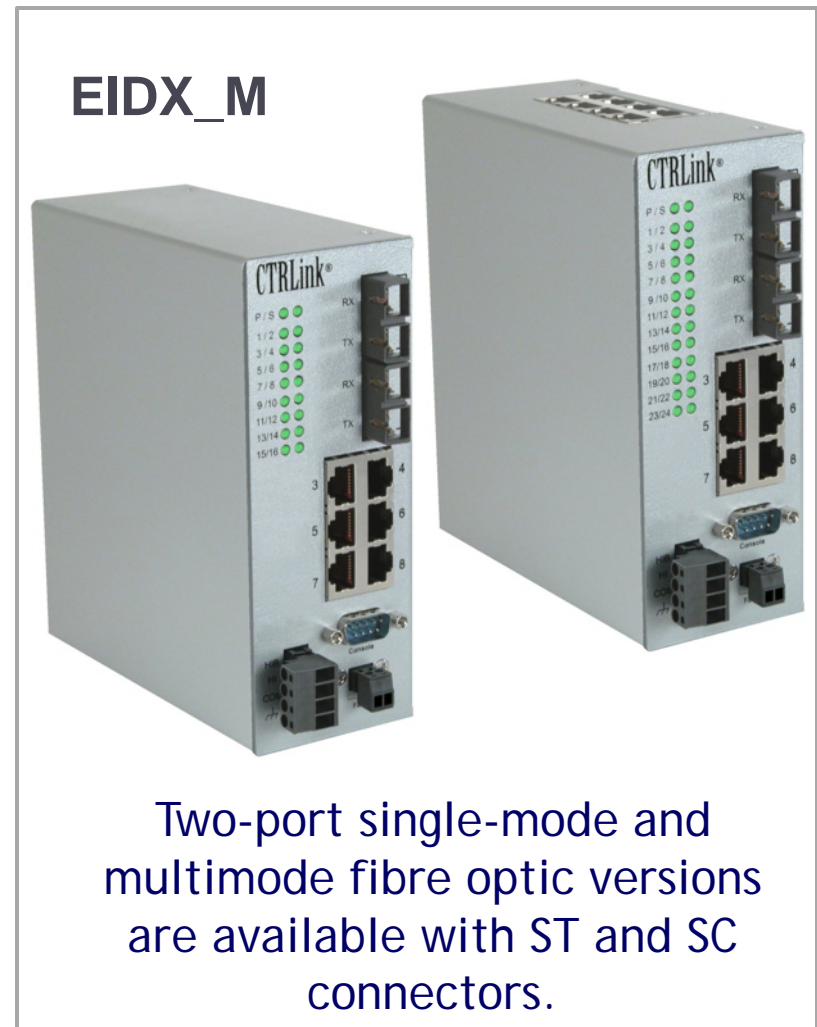
Refresh the above statistics

Use TAB, Arrow Up, Arrow Down to move cursor among screen elements

<<Back: previous page

Automation Switch Series

- ▶ Intended for higher port-count systems
- ▶ Suitable for outdoor temperatures
- ▶ High-density 16 and 24-port versions
- ▶ Copper & copper/fibre models
- ▶ Redundant power connections
- ▶ Console port
- ▶ DIN-rail or panel mounting
- ▶ -40 to 75°C



Automation Switch Series with PoE

- ▶ 8 ports of Power over Ethernet (PoE)
- ▶ Intended for higher port-count systems
- ▶ Suitable for outdoor temperatures
- ▶ High-density 16 and 24-port versions
- ▶ Copper & copper/fiber models
- ▶ Redundant power connections
- ▶ Console port
- ▶ DIN-rail or panel mounting
- ▶ -40 to 75°C
- ▶ 48 VDC powered

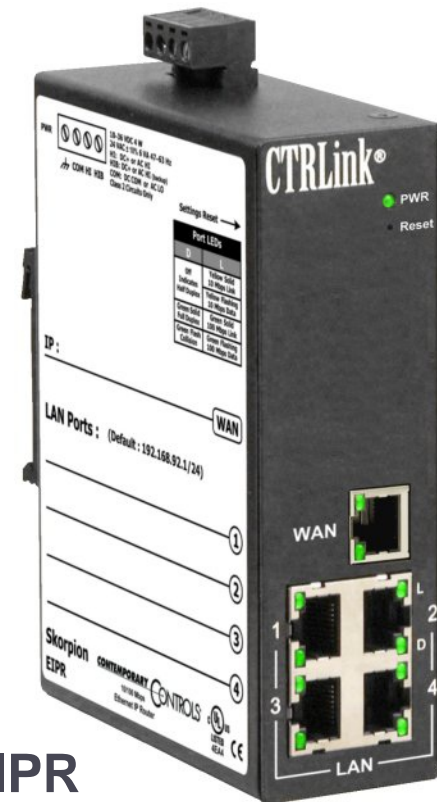


Two-port single-mode and multimode fibre optic versions are available with ST and SC connectors.

Skorpion IP Router

- ▶ We can connect to the Internet with a Skorpion IP Router
- ▶ Four-port LAN-side switch
- ▶ WAN-side Ethernet port
- ▶ WAN-side DHCP client
- ▶ LAN-side DHCP server
- ▶ Port Address Translation
- ▶ Network Address Translation
- ▶ Port Forwarding
- ▶ Port Range Forwarding
- ▶ Whitelist
- ▶ Stateful Firewall
- ▶ PPTP protocol for VPN
- ▶ PPPoE protocol for DSL
- ▶ Web page configuration

An external DSL modem can attach to the WAN port.

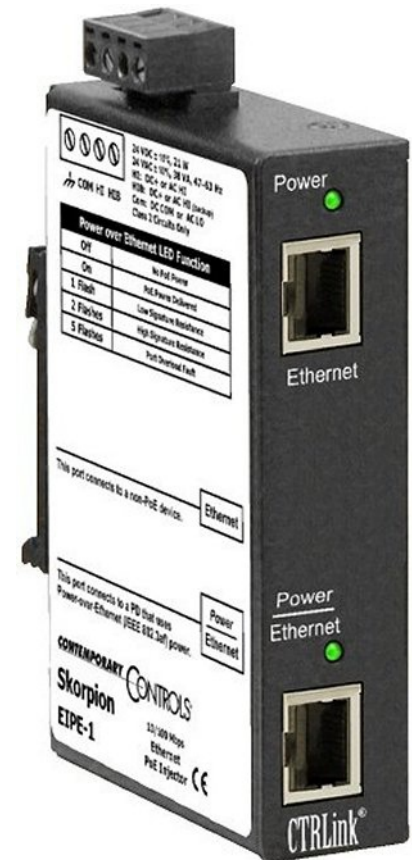


EIPR

Skorpion PoE Injector

- ▶ Can fully power one Powered Device (PD)
- ▶ Mid-span Power Sourcing Equipment (PSE)
- ▶ 10BASE-T/100BASE-TX
- ▶ Isolated 15.4 W power output
- ▶ IEEE 802.3af compliant
- ▶ 24 VAC/VDC powered
- ▶ DIN-rail mounting

This mid-span device will work with any 10/100 Mbps Ethernet switch.



EIPE

Proven Success with CTRLink®

- ▶ CTRLink has been successfully used in diverse industries, including
 - ▶ Industrial Automation
 - ▶ Building Automation
 - ▶ Commercial Automation
 - ▶ Communications and Networking
 - ▶ Energy, Utilities and Transportation
 - ▶ Embedded Networking



Appliance Manufacturing Goes With EtherNet/IP

- ▶ Rockwell's Contrologix, RSView HMI, SLC welding controllers, and motion controllers along a 25 m forming line
- ▶ 51 Ethernet devices connected by CTRLink 8-port and 16-port unmanaged switches
- ▶ EtherNet/IP replaced earlier Data Highway network



The VLAN feature in the EISC16 was used to isolate broadcast messages to only those stations of interest.

Appliance Manufacturing Goes With EtherNet/IP



Switches can be either DIN-rail or direct panel mounted

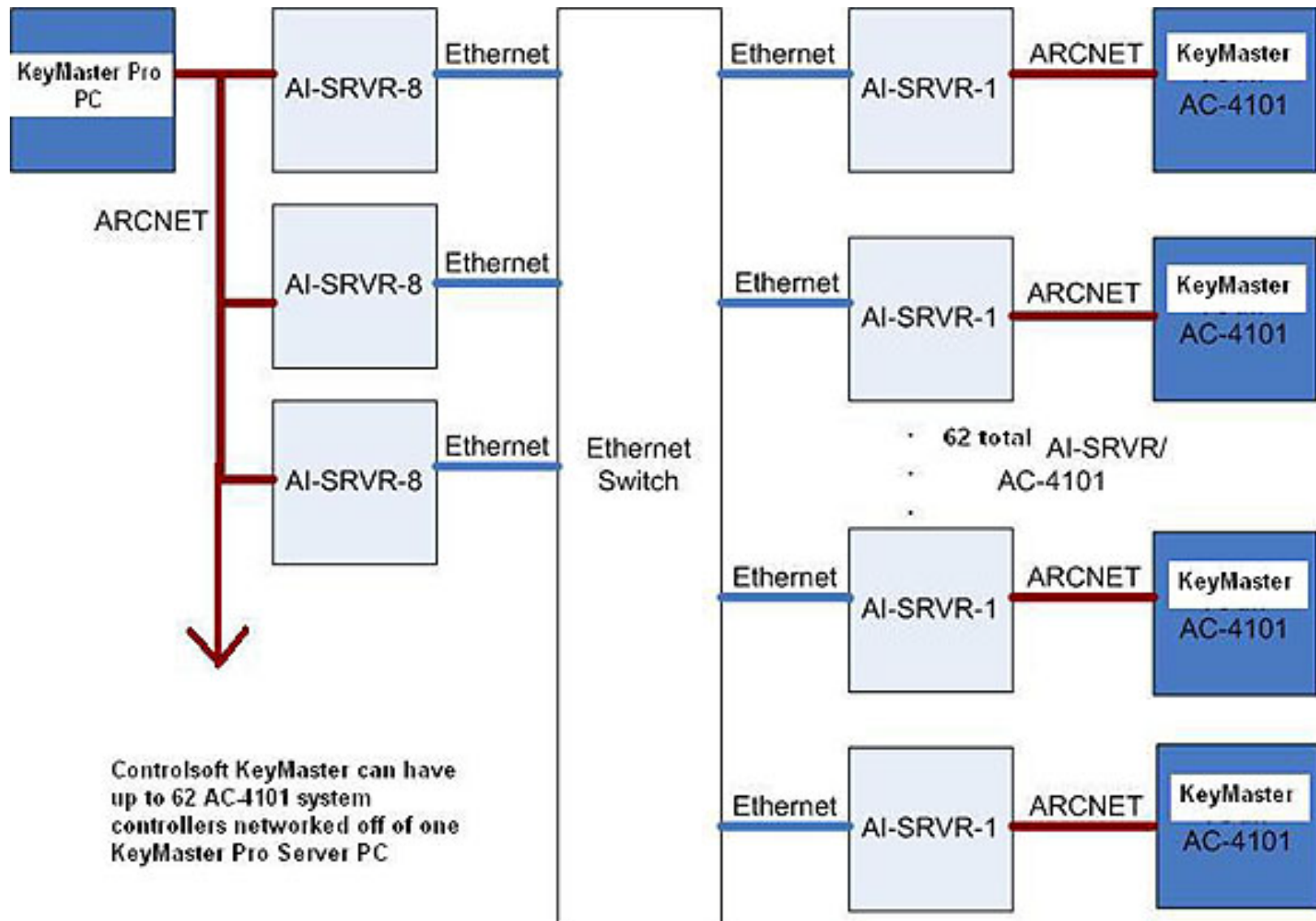
KeyMaster Card Access Operates over Ethernet

- ▶ ControlSoft's KeyMaster card access system is based upon ARCNET
- ▶ KeyMaster is used by American Auto-Matrix as part of their building automation system
- ▶ Needed to connect ARCNET to an Ethernet backbone
- ▶ An AI-SRVR was used as an ARCNET server to Ethernet

The AI-SRVR can operate in proxy mode requiring no special software. A pair of servers tunnel ARCNET messages over Ethernet transparently.



Card Access System



Chicago Office Building Upgraded to Ethernet

- ▶ HVAC, lighting, access control systems upgraded by installing Tridium's Niagara Framework running BACnet/IP
- ▶ All systems including life-safety, video surveillance, and security centralized into one control room
- ▶ All systems operate over 10/100 Mbps Ethernet using Skorpion plug & play switches to a server room



Data Center Automation Uses Ethernet

- ▶ Automated Logic Corporation (ALC) system controlling the cooling of a data center
- ▶ 100 computer room air-conditioners, emergency generators, 10 UPS systems, and roof-top chillers all being controlled
- ▶ BAS Switches used for Ethernet communication

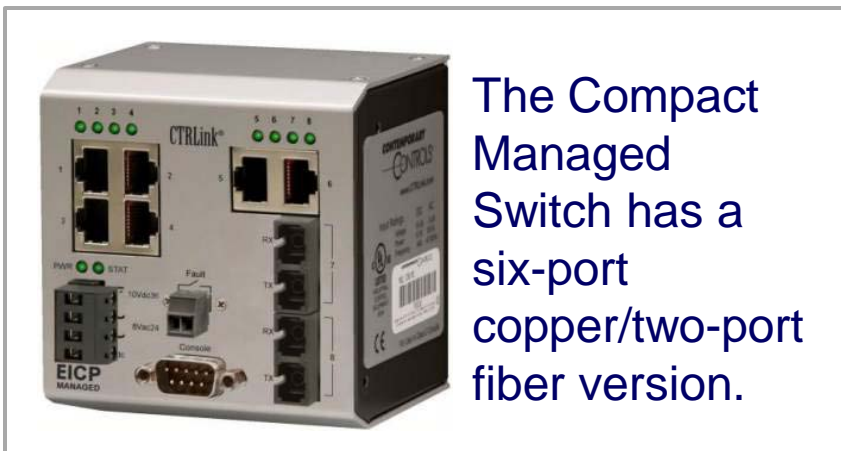
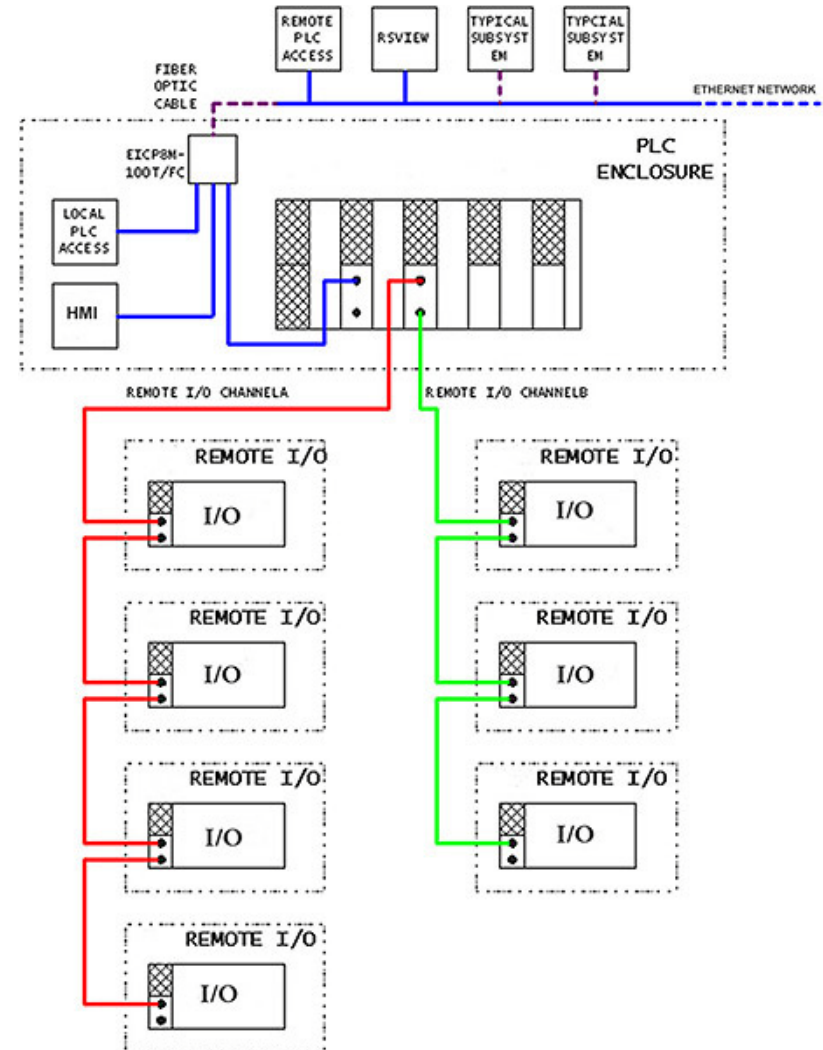


The shallow depth of the BAS Switch makes it ideal for mounting with other BAS equipment.



Modernization of Railroad Maintenance Facility

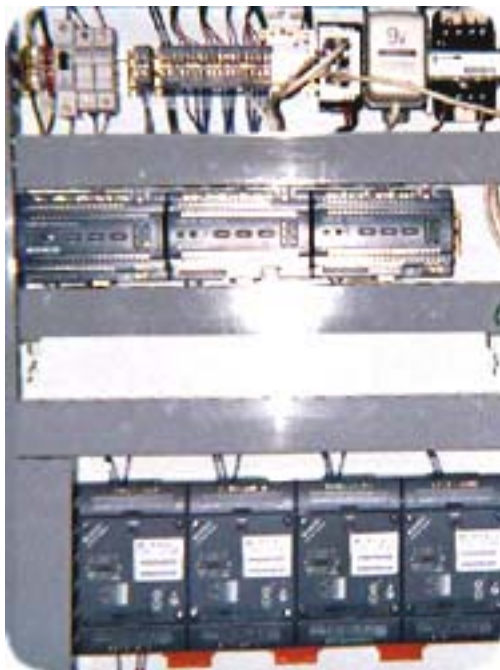
- ▶ 14 parallel tracks each handle six cars at a time
- ▶ Replaced Rockwell's Data Highway with EtherNet/IP
- ▶ Seven sub-systems communicate to control room over multimode fiber optics
- ▶ Compact Managed Switch connects to PLCs and HMIs within the maintenance facility



The Compact Managed Switch has a six-port copper/two-port fiber version.

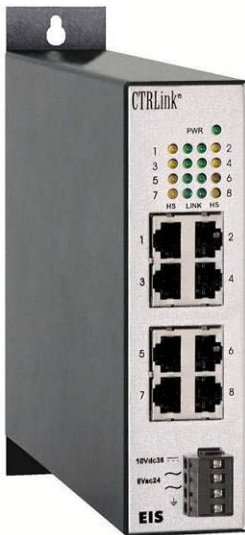
Robert Redford Building Earns LEED Rating

- ▶ Platinum-rated Green building
- ▶ Uses CTRLink Miniature Ethernet switch to connect to three Echelon iLON 100 Internet Servers
- ▶ 32 sensors used to measure and record energy usage

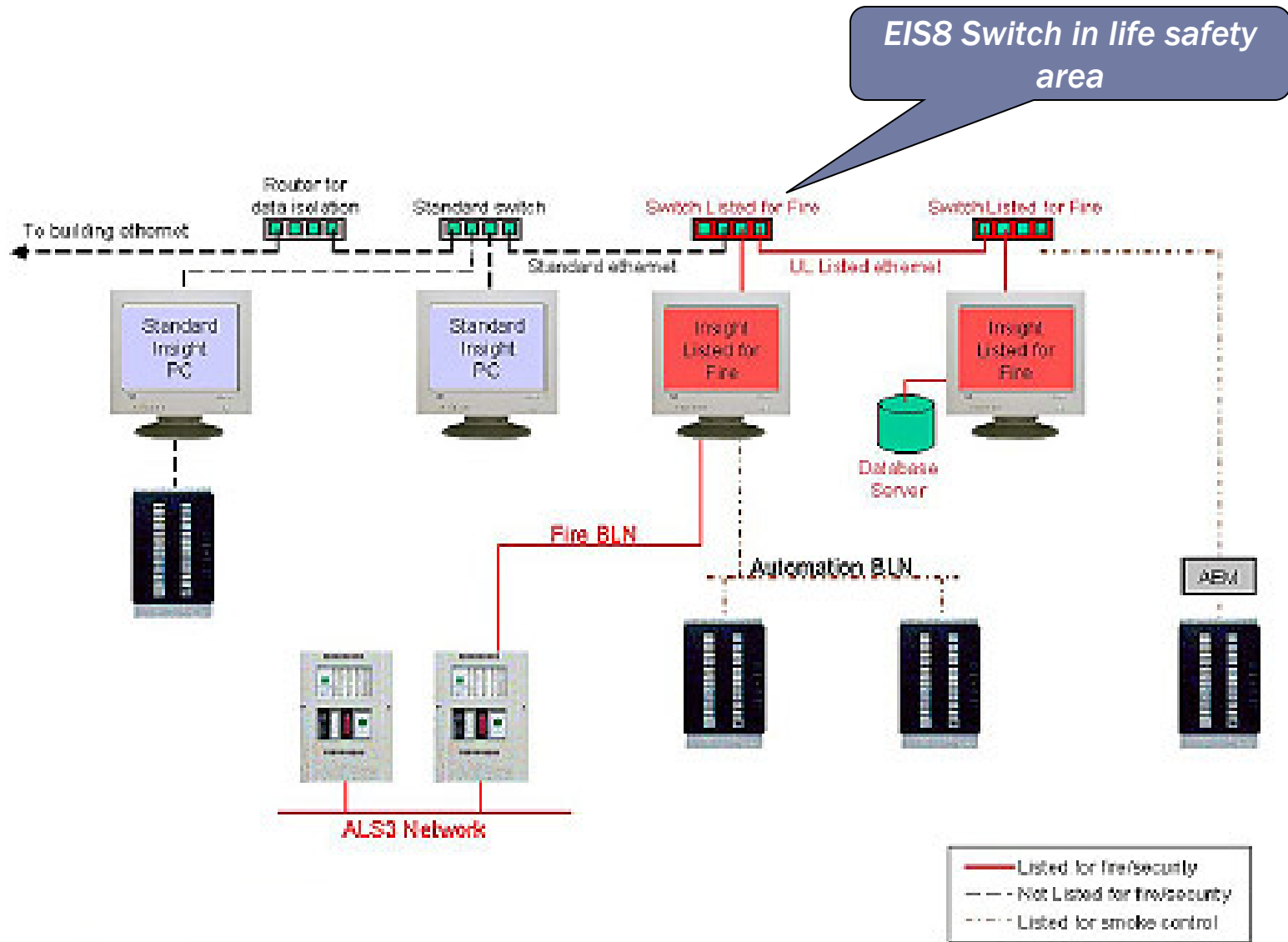


Siemens' APOGEE Fire Protection System

- ▶ Ethernet-based fire alarm system
- ▶ Listed under UL 864 Control Units and Accessories for Fire Alarm Systems
- ▶ Utilizes CTRLink UL 864 recognized Ethernet switches



Siemens' APOGEE Fire Protection System



More CTRLink® Success Stories



CTRLink's BAS Switch provides communication interface in embedded systems used in the field of medical imaging.



Digital "training easels" with LCD interactive touch-screen displays are linked together using CTRLink's Ethernet Miniature Repeating Hub.



CTRLink's Compact Ethernet Switch helps to sustain record of high reliability in scribing and breaking semiconductor wafers.

Read more success stories at
<http://www.ccontrols.com/successstories.htm>

Our Products Are “Green”



**RoHS
Compliant**

CONTEMPORARY CONTROLS[®]

Thank You



Visit our web site at <http://www.ccontrols.com>