

EIS Ethernet Switching Hubs



- Plug-and-Play (PnP)
- 10BASE-T/100BASE-TX/100BASE-FX compliant
- Shielded RJ-45 connectors or SC/ST-style fibre optic connectors
- Auto-negotiated data rate and flow control on twisted-pair ports
- Powered from an unregulated DC power source (10–36 V) or from an AC power source (8–24 V, 47–63 Hz). Power is provided through a quick-disconnect terminal strip.
- Broadcast storm control
- Multimode or single-mode fibre
- Full- or half-duplex operation on twisted-pair ports
- Provision for redundant power connections
- LEDs for link/activity, data rate, power and loop detection
- Easy panel or DIN-rail installation
- Industrial environment EMC compatible
- UL 508 Listed, Industrial Control Equipment
- C-UL Listed, CSA 22.2 No. 14-M91, Industrial Control Equipment
- UL 1604 Listed, CSA Standard C22.2 No. 213-M1987, Non-Incentive Electrical Equipment for use in Class I, Division 2, Hazardous Locations (Groups A, B, C, D)
- UL 864 Recognized Component Control Units for Fire-Protective Signaling System (EIS8-100T and EIS6-100T/FT only)
- CE Mark

PRODUCT OVERVIEW

EIS switches, supporting both twisted-pair and fibre optics, segment the Ethernet network into separate collision domains. All models function as a “bridge” between data links, creating a larger network diameter and greater throughput in industrial applications than possible with repeating hubs.

The EIS Series meets UL 864 and UL 1604 compliance. Two models, the EIS8-100T and the EIS6-100T/FT, qualify as Control Unit Accessories for fire-protective signaling systems (UL 864). These products also qualify for use in Class I, Division 2, hazardous locations (Groups A, B, C, D), meeting UL 1604 regulatory approval. Class I hazardous locations are those where fire or explosion hazards may exist due to the presence of flammable gases, vapors, or flammable liquids.

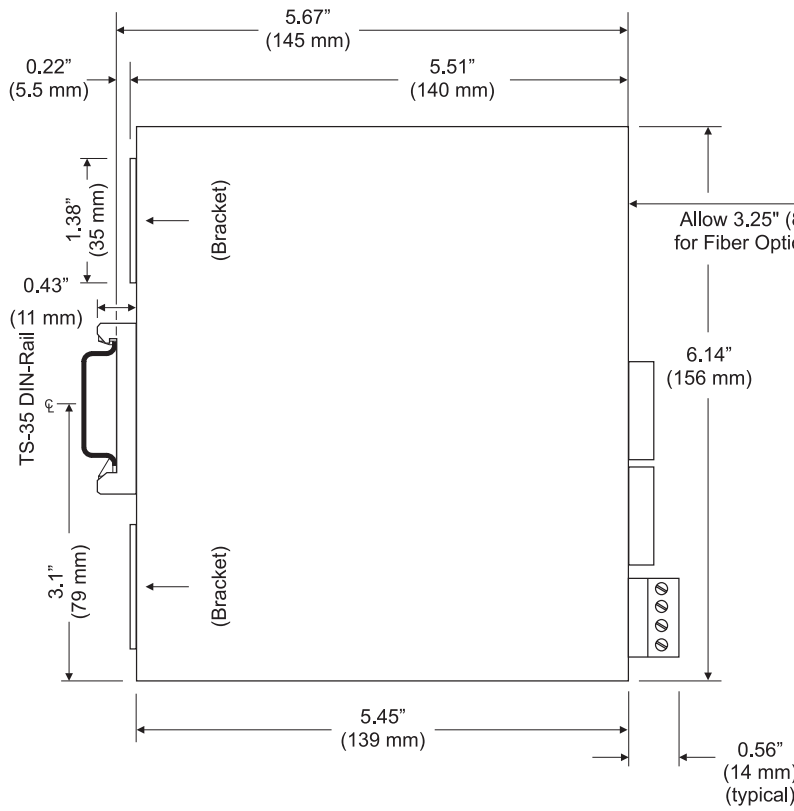
Each switch port automatically negotiates data rate, duplex, and flow control. The switch learns the port locations of Ethernet devices by reading complete Ethernet frames and observing source addresses. The switch then creates and maintains a table of source addresses and

corresponding port assignments. Throughput is improved by restricting traffic to ports involved in a data exchange—allowing simultaneous packet transfers. Address table aging allows changes to field wiring. Messages to unknown destinations are flooded to all ports—as are broadcast and multicast frames.

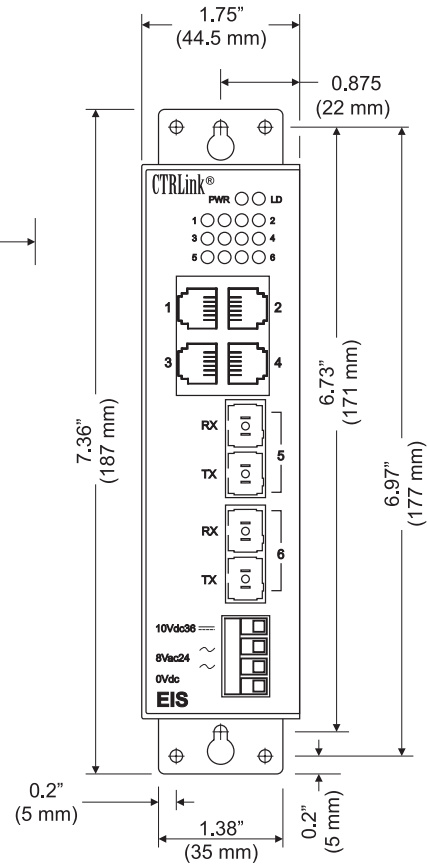
These units accommodate industrial applications requiring a fibre backbone with its EIS5 and EIS6 models, making them ideal for those applications where immunity to EMI/RFI and a networking distance up to 15 km are important. These benefits result in decreased downtime, fewer outages and improved reliability.

One power LED and one loop-detection LED are provided. Each port has two LEDs: one is green and one is yellow. The green LED glows if a link exists and flashes to indicate activity. The yellow LED glows if data is transferring at 100 Mbps. Each unit accepts wide-range, low-voltage AC or DC power, designed with broadcast storm protection; and redundant power can be connected.

Mechanical

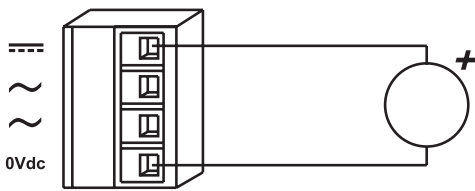


Side View showing DIN-rail Clip
(Mounting Brackets Retracted)

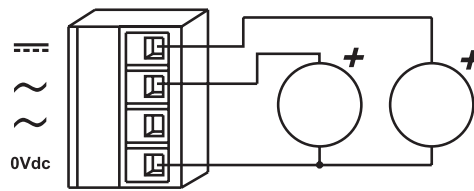


Front View with
Mounting Brackets Extended

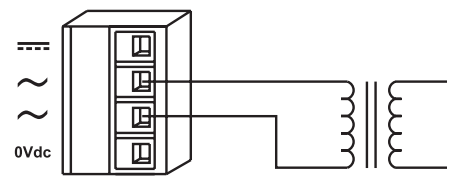
Power Diagrams



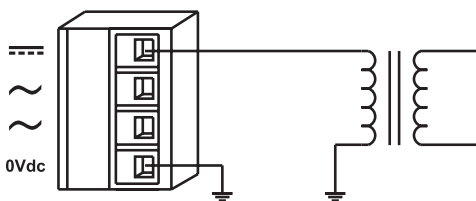
DC Powered



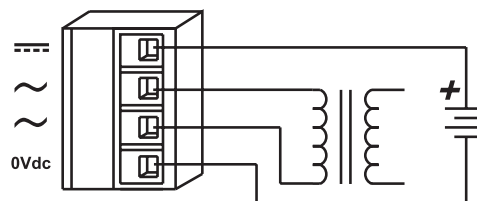
Redundant DC Powered



AC Powered



AC Powered (grounded secondary)



AC Powered with Battery Backup

Specifications

Electrical	DC	AC
Input voltage	10–36 Volts	8–24 Volts
Input power	6 W	6 VA
Input frequency	N/A	47–63 Hz

Environmental	
Operating temperature	0°C to +60°C
Storage temperature	–40°C to +85°C
Relative humidity	10–95% non-condensing
Protection	IP30

Functionality	
Standards	IEEE 802.3
Process type	Store-and-Forward

Ports	Copper twisted-pair	Fibre 1300 nm
Number of ports	8 or 4	0, 1 or 2
Interface	10BASE-T/100BASE-TX 10/100 Mbps Auto-negotiates data rate and flow control	100BASE-FX 100 Mbps
Connectors	Shielded RJ-45	Multimode SC or ST or single-mode SC
Segment length	100 m (max)	2 km (max) multimode, optical budget is 13 dB 15 km (max) single-mode, optical budget is 19 dB
LED indicators	Link — Green Flashing — Activity Yellow — 100 Mbps	Green — 100 Mbps link Flashing — Activity
Flow control		Half-duplex (backpressure) Full-duplex (PAUSE)
Aging		215 to 322 seconds

RJ-45 Pin Assignments

MDI-X¹ 10BASE-T/100BASE-TX	
RJ-45	Usage
1	TD+
2	TD–
3	RD+
4	Not Used
5	Not Used
6	RD–
7	Not Used
8	Not Used

¹ Ports normally assume the internal crossover function, but will automatically adapt to connected devices.

Electromagnetic Compatibility

Standard	Test Method	Description	Test Levels
EN 55024	EN 61000-4-2	Electrostatic Discharge	6 kV Contact
EN 55024	EN 61000-4-3	Radiated immunity	10 V/m, 80 MHz to 1 GHz
EN 55024	EN 61000-4-4	Fast Transient Burst	1 kV Clamp & 2 kV Direct
EN 55024	EN 61000-4-5	Voltage Surge	1 kV L to L & 2 kV L to Earth
EN 55024	EN 61000-4-6	Conducted Immunity	10 Volts (rms)
EN 55024	EN 61000-4-11	Voltage Dips & Interruptions	1 Line Cycle, 1 to 5 sec. @ 100% dip
EN 55022	CISPR 22	Radiated Emissions	Class A
EN 55022	CISPR 22	Conducted Emissions	Class B
CFR 47, Part 15	ANSI C63.4	Radiated Emissions	Class A

Ordering Information**Copper Only**

Model	Description
EIS8-100T	Eight-port 10BASE-T/100BASE-TX switch

Fibre and Copper

EIS5-100T/FC	Four-port 100BASE-TX/one-port 100BASE-FX (multimode) switch w/SC connectors
EIS5-100T/FT	Four-port 100BASE-TX/one-port 100BASE-FX (multimode) switch w/ST connectors
EIS5-100T/FCS	Four-port 100BASE-TX/one-port 100BASE-FX (single-mode) switch w/SC connectors
EIS6-100T/FC	Four-port 100BASE-TX/two-port 100BASE-FX (multimode) switch w/SC connectors
EIS6-100T/FT	Four-port 100BASE-TX/two-port 100BASE-FX (multimode) switch w/ST connectors
EIS6-100T/FCS	Four-port 100BASE-TX/two-port 100BASE-FX (single-mode) switch w/SC connectors

Accessories

Model	Description
AI-XFMR	Wall-mount plug-in transformer 120V AC (nom) input/24V AC (nom) output
AI-XFMR-E	Wall-mount plug-in transformer 230V AC (nom) input/24V AC (nom) output

Contemporary Controls, ARC Control, ARC DETECT, EXTEND-A-BUS and CTRLink are registered trademarks or trademarks of Contemporary Control Systems, Inc. Specifications are subject to change without notice. Other product names may be trademarks or registered trademarks of their respective companies.

©Copyright 2007 Contemporary Control Systems, Inc.

CONTEMPORARY CONTROLS®
www.ccontrols.com

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

Telephone (630) 963-7070
Fax (630) 963-0109