

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 Signalling Systems (EIS8-100T and EIS6-100T/FT only)
- CE Mark
- RoHS compliant

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 offers UL 864 and UL 1604 compliance. Two models, the EIS8-100T and the EIS6-100T/FT, qualify as Control Unit Accessories for fire-protective signalling systems (UL 864). All EIS models 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, vapours, or flammable liquids.

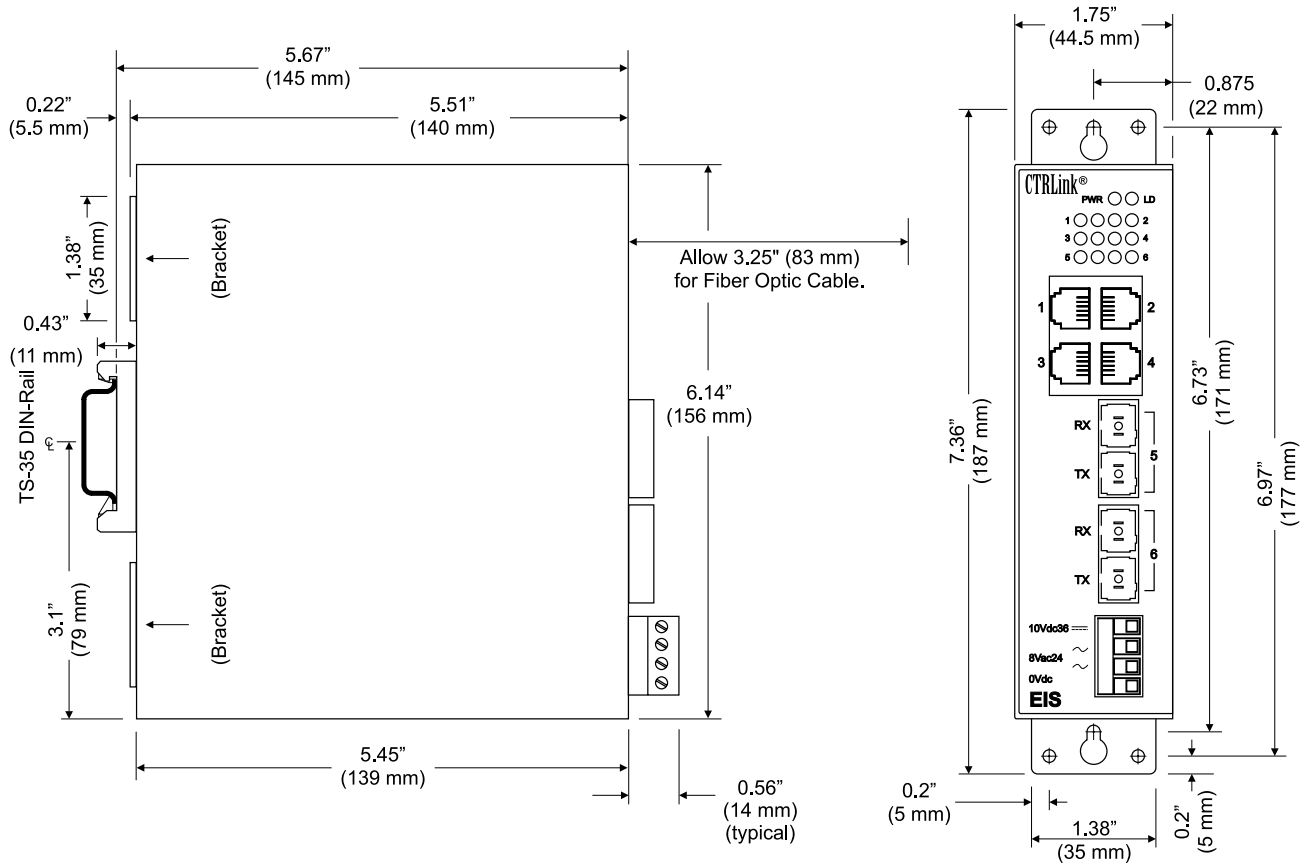
Each switch port automatically negotiates data rate, duplex, and flow control. The switch learns the port locations of Ethernet devices by reading complete Ethernet frames and observing source addresses. The switch then creates and maintains a table of source addresses and

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 the 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; offers broadcast storm protection; has terminals for redundant power.

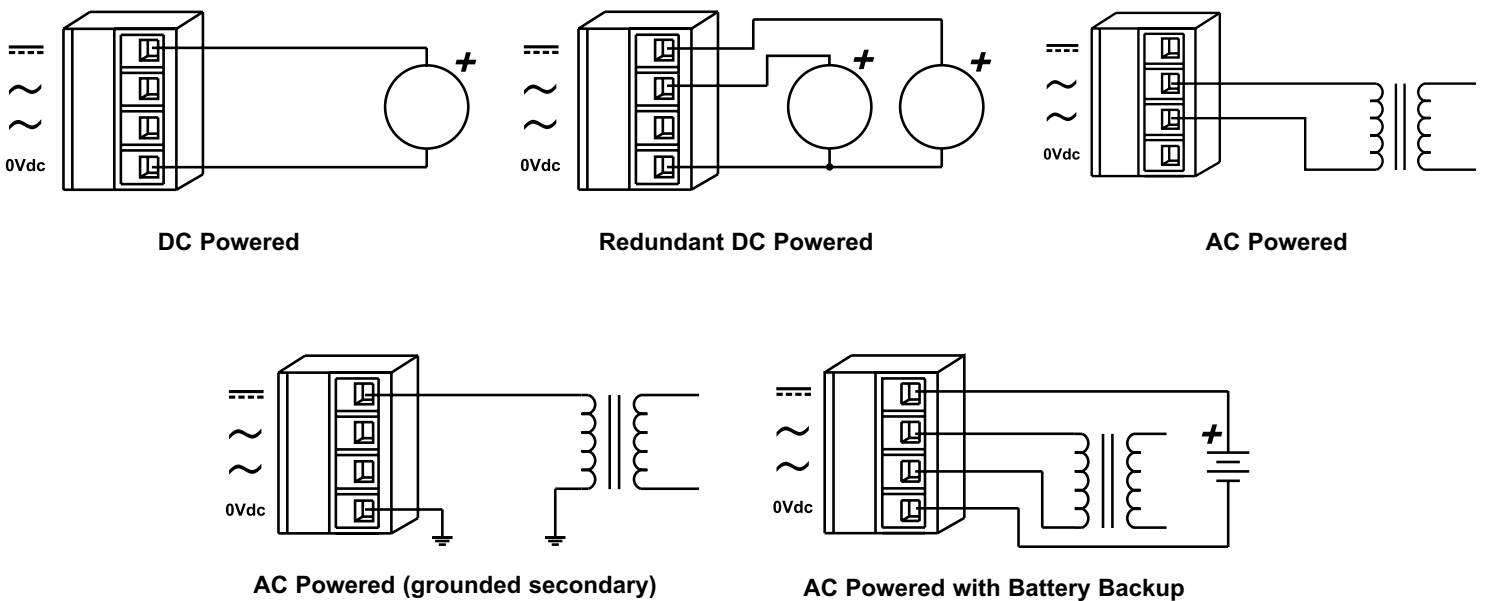
Mechanical



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-negotiated data rate & flow control	100BASE-FX 100 Mbps
Connectors	Shielded RJ-45	SC (on mutlimode or single-mode models) ST (only on multimode models)
Maximum segment length	100 m	2 km (multimode), optical budget: 13 dB 15 km (single-mode), optical budget: 19 dB
LED indicators	Link — Green Power — Green Loop Detect — Red	Green —100 Mbps link Flashing — Activity
Flow control		Half-duplex (backpressure) Full-duplex (PAUSE)
Aging		215 to 322 seconds

RJ-45 Pin Assignments

MDI-X [†] 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

[†] 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-L & 2 kV L-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 s @ 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, SC connectors
EIS5-100T/FT	Four-port 100BASE-TX/one-port 100BASE-FX (multimode) switch, ST connectors
EIS5-100T/FCS	Four-port 100BASE-TX/one-port 100BASE-FX (single-mode) switch, SC connectors
EIS6-100T/FC	Four-port 100BASE-TX/two-port 100BASE-FX (multimode) switch, SC connectors
EIS6-100T/FT	Four-port 100BASE-TX/two-port 100BASE-FX (multimode) switch, ST connectors
EIS6-100T/FCS	Four-port 100BASE-TX/two-port 100BASE-FX (single-mode) switch, SC connectors

Accessories

Model	Description
AI-XFMR	Wall-mount plug-in transformer, 120 VAC input/24 VAC output (nominal values)
AI-XFMR-E	Wall-mount plug-in transformer, 230 VAC input/24 VAC output (nominal values)

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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