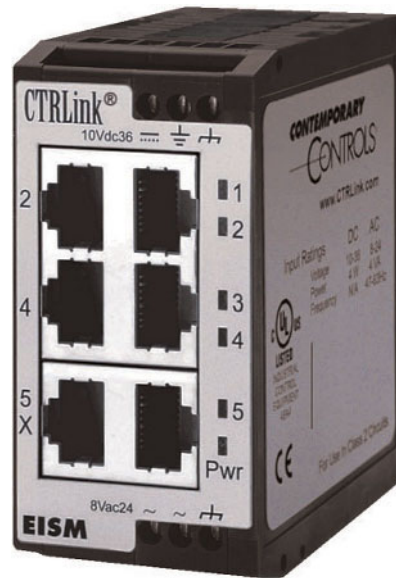# EISM CTRLink® Switch — UL 1604 Compliant

Plug-and-Play Functionality

- 10BASE-T/100BASE-TX compliant

- Auto-negotiated data rate, duplex, and flow control

- Full- or half-duplex operation

- Industrial temperatures (0°C to +60°C)

Simple Installation

- Miniature size (3.1" H x 3.4" D x 1.6" W; 79 mm x 85 mm x 40 mm)

- Easy DIN-rail installation

- Input power range is 10–36 VDC or 8–24 VAC, 47–63 Hz. Power is provided through a quick-disconnect terminal strip.

- Built-in uplink provision

- Provisions for redundant power connections

- LEDs for link/activity, data rate, and power

Standards Compliant

- 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)

- CE Mark

- RoHS compliant

EISM CTRLink® Switch — UL 1604 Compliant

Product Overview

The EISM5-100T, miniature 5-port switch, is designed for small space requirements. This device brings together the benefits of flexibility and increased network performance in a cost-effective approach.

It meets UL 1604 compliance. It qualifies for use in Class 1, Division 2, hazardous locations (Groups A, B, C, D). Class 1 hazardous locations are those where fire or explosion hazards may exist due to the presence of flammable gases, vapours, or flammable liquids.

This unit is similar in capabilities to its EIS8-100T counterpart. It divides the Ethernet network into as many as five separate collision domains, terminating the collision domain at each port. The switch functions as a "bridge" between these various data links to create a larger network diameter than can be achieved with repeating hubs.

Each port automatically negotiates data rate, duplex, and flow control. One port has an extra RJ-45 jack for use as an uplink port — eliminating the need for a crossover cable.

The EISM5-100T 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.

Link integrity assures a working device is on the distant end of a segment. Each port LED glows solid if a link exists, flashes to show activity and shows data rate by colour: green for 100 Mbps and yellow for 10 Mbps. One green power LED is provided.

Each unit accepts wide-range, low-voltage AC or DC power and redundant power can be connected.
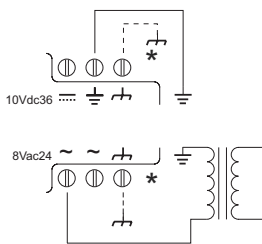
The EISM5-100T mounts on TS-32 or TS-35 DIN-rail for simple installation in control panels.
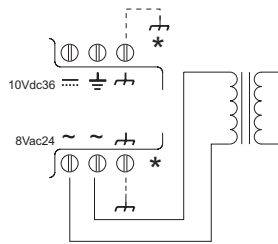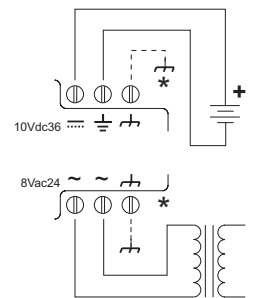
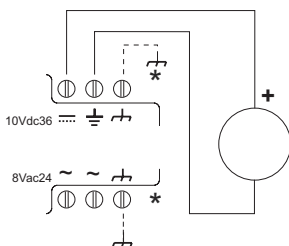# EISM *CTRLink®* Switch — UL 1604 Compliant

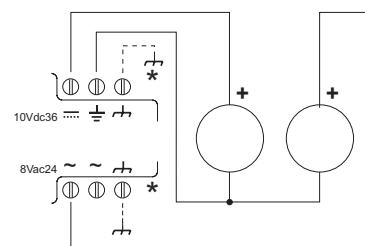## Mechanical
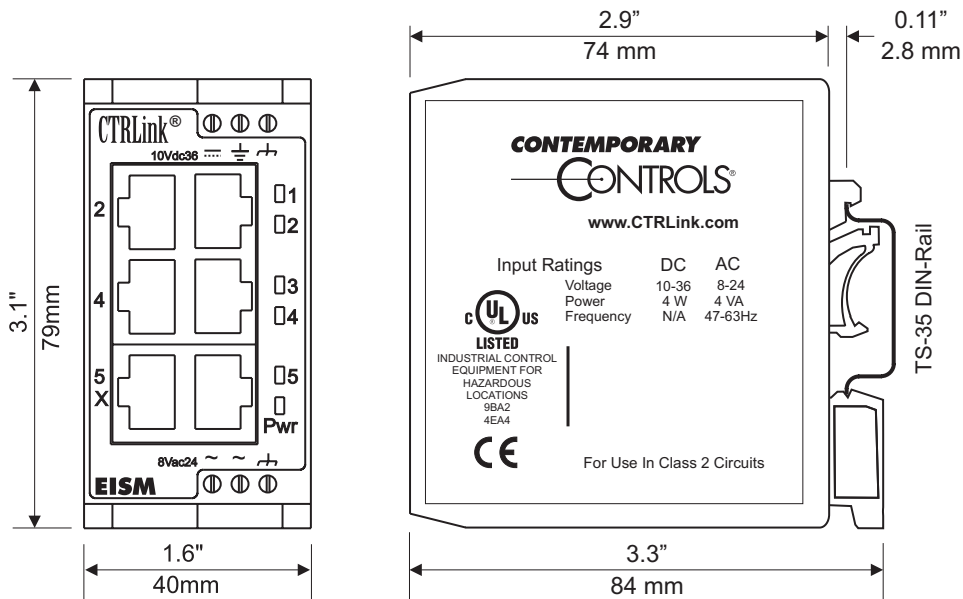
Power Diagrams

**AC Powered
(grounded secondary)**

**AC Powered
(ungrounded secondary)**

**AC Powered with
Battery Backup**

DC Powered

* Connecting either or both
chassis connections to earth is
optional in all applications.

Redundant DC Powered

Specifications

Electrical

	DC	AC
Input voltage	10–36 Volts	8–24 Volts
Input power (max)	4 W	4 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%, noncondensing
Protection	IP30

Functional

Standards	IEEE 802.3
Process type	Store-and-forward
Data rate	10/100 Mbps
Signalling	10BASE-T/100BASE-TX
Connectors	Shielded RJ-45
Segment length	100 m (max)

LED indicators	Port Link:
	    Yellow — 10 Mbps, Green — 100 Mbps
	     Flashing — Activity
	Power — Green

Flow control	Half-duplex (Backpressure) Full-duplex (IEEE 802.3x — PAUSE)
Aging	200 to 300 seconds

EISM CTRLink® Switch — UL 1604 Compliant

RJ-45 Pin Assignments

MDI-X[1]	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]The EISM implements the crossover function internally allowing straight-through cables to connect to network interface modules. Socket "5X" allows Port 5 to connect to another hub or switch without requiring a crossover cable, in which case the regular Port 5 socket cannot be used.

Electromagnetic Compatibility

Standard	Test Method	Description	Test Levels
EN 55024	EN 61000-4-2	Electrostatic Discharge	6 kV contact & 8 kV air
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

Model	Description
EISM5-100T	Five-port 10BASE-T/100BASE-TX miniature switch

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)