

# EISM5-100T

CTRLink®

Industrial Ethernet 10/100 Mbps Miniature Switching Hub

---

## Installation Guide

The EISM5-100T segments the Ethernet LAN into five collision domains. It acts as a “bridge” between data links—creating a larger network diameter than possible with repeating hubs. Each port *automatically negotiates* its data rate to 10 Mbps or 100 Mbps and controls data flow with the PAUSE function in full-duplex or the backpressure method in half-duplex.

The switch provides preamble regeneration with symmetry and amplitude compensation—retiming signals to eliminate jitter. Digital pre-emphasis compensates for inherent signal strength roll-off. Link integrity is monitored, verifying that a working adapter or hub is on the distant end of a segment.

The switch learns port assignments by reading Ethernet frames and logs source addresses on a table. With this information, it improves throughput by restricting traffic to only those ports party to a data exchange—while other data is *simultaneously* exchanged on other ports. Store-and-forward operation is implemented and broadcast, multicast, or unicast transmissions are received by all ports.

The switch has five *normal* ports for attaching local devices. A sixth *uplink* port allows cascading two hubs without the need of a crossover cable. In addition to one power LED, each port has an LED showing link/activity/rate.

The EISM mounts on TS-32 or TS35 DIN-rail, can operate from a wide range of low-voltage AC or DC power and offers redundant power connections.

Designed for Industrial Ethernet applications, the unit complies with EMC immunity and emissions compatibility standards for industrial environments.

**CONTEMPORARY** CONTROLS®



INDUSTRIAL CONTROL  
EQUIPMENT FOR  
HAZARDOUS  
LOCATIONS  
9BA2

## Specifications

### Electrical

INPUT	DC	AC
Voltage:	10–36 V	8–24 V
Power:	4 W	4 VA
Frequency:	N/A	47-63 Hz

### Environmental

Operating Temp.:	0°C to +60°C
Storage Temp.:	-40°C to +85°C
Humidity: (non-cond.)	10% to 95%

### Mounting

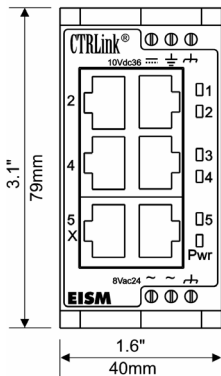
DIN-rail: TS-32 or TS-35

Shipping Weight 1 lb (0.45 kg)

### Regulatory Compliance

CE Mark; CFR 47 Part 15, Class A  
UL508, UL1604 Listed  
Ind. Cont. Equip. for Haz. Loc.

### Mechanical



### Functional

Compliance:	ANSI/IEEE 802.3
Data Rates:	10 and 100 Mbps
Signaling:	10BASE-T and 100BASE-TX
Connectors:	Shielded RJ-45
Segment length:	100 m (max)

### LED Indicators

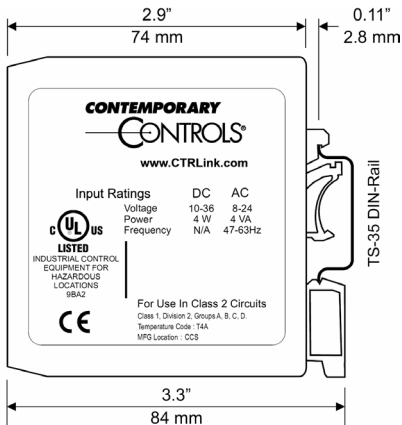
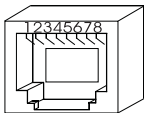
Power	green
Activity/Link	green or yellow

### RJ-45 Connector Pin Assignments

#### Pin Function

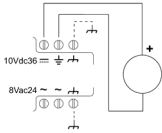
1	TD+
2	TD-
3	RD+
6	RD-

(All other pins are unused.)

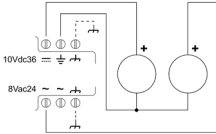


## Power Options

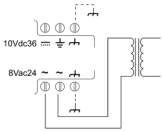
### DC POWERED



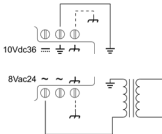
### REDUNDANT DC POWERED



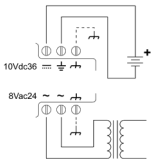
### AC POWERED (ungrounded secondary)



### AC POWERED (grounded secondary)



### AC POWERED WITH BATTERY BACKUP



## Power Considerations

Voltage in the range of 10–36 VDC or 8–24 VAC must deliver current commensurate with power consumption. Power conductors can be stranded (16–18 AWG) or solid (16–22 AWG). Zero volts and chassis are isolated from each other. Input connections are reverse-polarity protected. Primary power backup for a substitute DC supply or backup battery is possible by way of built-in redundant diode-isolated inputs, but separate provisions are required for charging any backup battery.

## LED Indicators

To aid troubleshooting, each port LED glows solid green if a link exists, flashes to show activity and shows data rate by color: green for 100 Mbps and yellow for 10 Mbps. One power LED is provided.

## Network Connections

Only standard straight-through cables are needed to connect to NIMs or another hub. Five “normal” ports make the crossover function internally. Port 5 provides a hub-to-hub cabling option: crossover wiring via its “normal” port or straight-through cable via its “uplink” port (marked “X”) — but the two Port 5 options can NOT be used simultaneously.

## UL1604 Considerations

- Equipment suitable for Class I, Div. 2, Groups A, B, C, D or non-hazardous locations only.
- WARNING – Explosion Hazard – Substitution of component may impair suitability for Class I, Div. 2.
- WARNING – Explosion Hazard – Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Operating Temperature Code (T-Code): T4A
- Supplied from a Class 2 source

## NEED MORE HELP INSTALLING THIS PRODUCT?

More information can be found in the Technical Support part of our web site at [www.ccontrols.com](http://www.ccontrols.com). If contacting our office, ask for Technical Support.

## WARRANTY

Contemporary Controls (CC) warrants this product to the original purchaser for two years from the shipping date. If it fails to operate in compliance with its specification during this period, CC will, at its option, repair or replace the product at no charge. Product returned to CC for repair is warranted for one year from the date that the repaired product is shipped back to the purchaser or for the remainder of the original warranty period, whichever is longer. The customer is responsible for shipping product; CC assumes no responsibility for product until received. This limited warranty covers products only as delivered. User modification may void the warranty. Damage from abuse, accident, disaster, misuse, or incorrect installation are not covered. This warranty in no way warrants suitability of the product for any specific application. More warranty information can be found at [www.ccontrols.com](http://www.ccontrols.com).

**Warning:** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## RETURNING PRODUCTS FOR REPAIR

Before returning a product for repair, contact the manufacturer (USA office) or its representative (UK office) below for instructions on return procedure:

Contemporary Control Systems, Inc.  
2431 Curtiss Street  
Downers Grove, Illinois 60515 USA  
Tel: +1-630-963-7070  
Fax: +1-630-963-0109  
E-mail: [info@ccontrols.com](mailto:info@ccontrols.com)  
WWW: <http://www.ccontrols.com>

Contemporary Controls Ltd  
Sovereign Court Two, UWSP  
Sir William Lyons Road  
Coventry CV4 7EZ UK  
Tel: +44 (0)24 7641 3786  
Fax: +44 (0)24 7641 3923  
E-mail: [info@ccontrols.co.uk](mailto:info@ccontrols.co.uk)

## DECLARATION OF CONFORMITY

**Applied Council Directives:** EMC Directive 89/336/EEC as amended by 92/31/EEC & 93/68/EEC; General Product Safety Directive 92/59/EEC

**Standards to which Conformity is Declared:** EN 55022:1995 (CISPR22: 1993), Class A; EN 55024:1998, ITE – Immunity – Limits and Methods.

**Manufacturer's Declaration of January 1, 2005:** I declare that the EISM5-100T conforms to the above directives and standards.

George M. Thomas, President

TD011200-01D