EIM

CTRLink®

Industrial Ethernet 10 Mbps Miniature Repeating Hub

Installation Guide

The EIM4-10T miniature Industrial Ethernet repeating hub is a simple, cost-effective method for increasing 10BASE-T node count or network distance. It has four *normal* Ethernet ports for attaching local devices and one *uplink* port for connecting two hubs without the need for a crossover cable.

Conforming to the IEEE 802.3 standard, the hub provides preamble regeneration with symmetry and amplitude compensation. It retimes signals so that jitter, introduced by transceivers and cabling, does not accumulate over multiple segments. Upon detecting a runt packet or collision, the hub generates a jam signal. Additionally, jabbering ports are automatically partitioned so that the entire network is not disrupted.

The EIM4-10T adds digital pre-emphasis to transmissions, compensating for the inherent signal strength roll-off of twisted-pair cable. Each twisted-pair segment length can be up to 100 meters. Shielded RJ-45 connectors accommodate either UTP or STP cabling. Link integrity is monitored, confirming a working adapter or hub is on the other end of the segment. Hubs can be cascaded with either straight-through or crossover cables.

Several LEDs aid in troubleshooting. There is one common Collision LED and one LED to indicate power. Each port has one green LED which indicates link established when solid and port activity when flashing.

The unit 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 hub complies with EMC immunity and emissions compatibility standards for industrial environments.

CONTEMPORARY CONTROLS®

Specifications

Electrical

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

Temperature

Operating: 0°C to +60°C
Storage: –40°C to +85°C

Mounting

DIN-rail: TS-32 or TS-35

Shipping Weight 1 lb (0.45 kg)

Regulatory Compliance

CE Mark, UL 508 Listed,
CFR 47 Part 15 Class A,
EN50081-2, EN50082-2,
C-UL Listed, CSA Std. C22.2 No. 14-M91

Functional

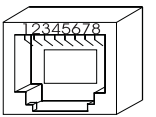
Compliance:	ANSI/IEEE 802.3
Data Rate:	10 Mbps
Signaling:	10BASE-T
Connectors:	Shielded RJ-45
Segment length:	100 m (max)

LED Indicators

ENTIRE HUB	EACH PORT
Collision–red Power–green	Activity/Link–green

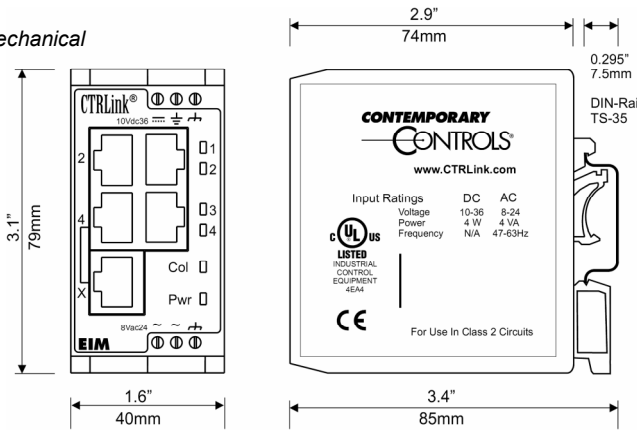
RJ-45 Connector Pin Assignments

Pin	Function
1	TD+
2	TD–
3	RD+
6	RD–

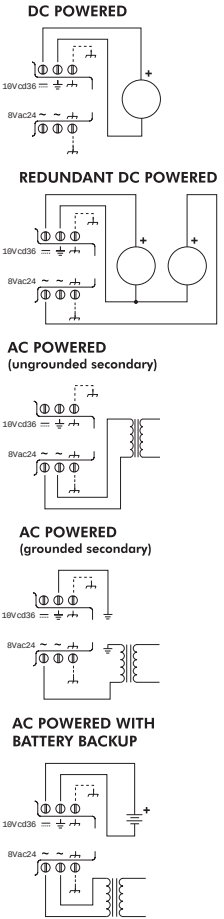


(All other pins are unused.)

Mechanical



Power Options



Power Considerations

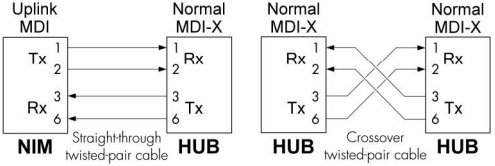
Voltage in the range of 10–36 VDC or 8–24 VAC must deliver current commensurate with 4-watt power consumption. Conductors should be sized accordingly. Ground is directly connected to zero volts and the chassis is isolated from zero volts. Input connections are reverse-polarity protected. Primary power backup is possible via redundant diode-isolated inputs for a substitute DC supply or a backup battery, but separate provisions are required for charging any backup battery.

LED Indicators

Each port LED glows when a valid link is made to other equipment—flashing at a rate proportionate to data speed. One green LED indicates power applied and a red LED reports network collisions.

Network Connections

Only standard straight-through cables are needed to connect to NIMs or another hub. Four "normal" ports make the crossover function internally. Port 4 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 4 options can NOT be used simultaneously.



Uplink Ports vs. Normal Ports

NEED MORE HELP INSTALLING THIS PRODUCT?

More information can be found in the Technical Support part of our web site at www.ccontrols.com. If contacting our office, ask for Technical Support.

WARRANTY

Contemporary Controls (CC) warrants this product to the original purchaser for one year 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. The customer is responsible for shipping the product; CC assumes no responsibility for the product until received. This limited warranty covers products only as delivered. If user modification damages the product, repair or replacement are not covered. 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.

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:

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Downers Grove, Illinois 60515 USA
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Coventry CV4 7EZ UK
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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 50082-2:1995, EMC – Part 2: Industrial Environment

Manufacturer's Declaration of January 1, 2002: I declare that the EIM4-10T conforms to the above directives and standards.

George M. Thomas, President